Note: The document identifier and heading has been changed on this page to reflect that this is a performance specification. There are no other changes to this document. The document identifier on subsequent pages has not been changed, but will be changed the next time this document is revised.

PERFORMANCE SPECIFICATION
VECTOR SMART MAP (VMap) Level 0

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1

1.2 Purpose. This product specification provides a description of the content, accuracy, data format, and design of the VMap Level 0 product. Conformance to these specifications will assure uniformity of treatment among all mapping and charting elements engaged in a coordinated production and maintenance program for this product.

1.3 Security.

1.3.1 Security classification of specification. This product specification is UNCLASSIFIED.

1.3.2 Security classification of product. The CD-ROMs (Compact Discs - Read Only Memory) containing VMap Level 0 data are UNCLASSIFIED.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, Defense Mapping Agency, ATTN: PR, Mail Stop A-13, 8613 Lee Highway, Fairfax, VA 22031-2137 by using the Standardization Document Improvement Proposal (DD Form 1426) or by letter.

AMSC N/A **AREA MCGT**

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto, cited in the solicitation (see 6.2).

STANDARDS

MILITARY

MIL-STD-490R	-	Specification Practices
MIL-STD-600001	-	Mapping, Charting & Geodesy Accuracy Standard, 26 February 1990
MIL-STD-2407	-	Vector Product Format, 1993
MIL-STD-600010	-	DMA Stock Number Bar Coding

(Unless otherwise indicated, copies of federal and Military Specifications, standards, and handbooks are available from the Standards Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the document versions are those cited in the solicitation.

DMA SPECIFICATIONS

Digital Geographic Information Exchange Standard, Part 4: Feature and Attribute Coding Catalog (FACC) Edition 1.2, January 1994.

DMA Technical Manual (DMA TM) 8358.1 - Datums, Ellipsoids, Grids, and Grid Reference Systems. (Stock Number DMATR 8351 TEXT)

DMA Technical Manual (DMA TM) 8350.2 - Department of Defense World Geodetic System, 1984. (Stock Number DMATR 8350 WGS 84)

(These publications are available from DMA by writing to: Defense Mapping Agency, Combat Support Center, ATTN: DDCP, 6001 MacArthur Blvd., Bethesda, MD 20816-5001.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

Bureau of the Budget, United States National Map Accuracy Standard, GPO, 1947.

(This standard is printed in its entirety in Thompson, Morris M., Maps for America, U.S. Geological Survey, Third Edition, 1988, page 104.)

ISO 9660. 1988 (E). International Organization for Standardization Information Processing - Volume and File Structure of CD-ROM for Information Interchange. First Edition, 1988.

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)

(Non-government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other information services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Accuracy.

3.1.1 Absolute horizontal accuracy. This represents the difference between the recorded horizontal coordinates of features and their true positions. Absolute horizontal accuracy is expressed as a circular error at 90 percent probability (.9p).

The absolute horizontal accuracy of VMap Level 0 for all features derived from Operational Navigation Charts (ONCs) is 2,040 meters rounded to the nearest 5 meters at 90 percent circular error (CE), World Geodetic System (WGS 84). The absolute horizontal accuracy of VMap Level 0 for all features derived from Jet Navigation Charts (JNCs) is 4,270 meters at 90 percent circular error.

3.1.2 Absolute vertical accuracy. This represents the difference between an assigned elevation and the true elevation at a specific point. In this comparison, both elevations must be referenced to mean sea level (MSL). A point's elevation may be determined through interpolation of the digital contour file or it may be listed as a vertex coordinate of a feature.

For VMap Level 0 derived from cartographic source, vertical elevation values shall be filled with the VPF null (NaN), as defined in the VPF Mil-Standard Section 5.5.2, unless an elevation value is provided on the source material.

The absolute vertical accuracy of VMap Level 0 is the same as for the original ONC and JNC lithographs at 90 percent linear error (LE), mean sea level.

a. Contour accuracy. The accuracy of contours collected from ONC source is ±152.4 meters.

b. Spot elevations. The accuracy of spot elevations collected from ONC source is ±30 meters.

3.1.3 Relative accuracy. DMA does not have a formal relative accuracy objective for this product.

3.2 Datum.

3.2.1 Horizontal datum. The horizontal datum for this VMap product shall be WGS84 as identified in DMA TM 8350.2.

3.2.2 Vertical datum. The vertical datum for this VMap product shall be mean sea level (MSL).

3.3 Data density levels.

a. VMap Level 0 data are collected at a density of detail that approximates that of DMA Standard small scale products.

b. Based on its data collection density, if VMap Level 0 data are to be output in hard-copy form, the appropriate scale for this output is at 1:1,000,000.

3.4 Database source and extent. The geographic extent of the VMap Level 0 product is global and consists of multiple regional databases. VMap Level 0 data from standard DMA source products are derived from the feature content defined in the associated military specification. Exceptions to the defined feature content may be found in this specification.

3.5 Continuity. All VMap Level 0 data are subject to the inclusion conditions specified in Appendix section 80.

a. Each VMap database shall be organized into VPF libraries such that a seamless product is produced where data are present. No data overlap may exist in the libraries of this VMap database.

b. Where data collection procedures require individual source sheets, digital files or other media to be combined, features crossing source boundaries shall be continuous whenever possible. Exceptions to this rule occur when more current source data are used and the feature position or presence has changed, or a mismatch occurs due to different specifications of the incorporated source data. In these cases, a discontinuity along a source boundary shall occur and be documented in the Data Quality coverage.

3.6 Thematic layer organization. VMap Level 0 products are organized into thematic layers. Each VMap thematic layer is stored as a single coverage within a VPF library. There are two reference coverages and ten thematic coverages in the data library level (TABLE 1), and one reference coverage and three thematic coverages in the reference library (TABLE 1).

TABLE 1. VMap coverages by VPF structure level.

VPF Structure Level	VMap Coverages (thematic layers)	Coverage (Directory) Name
Reference Library	Library Reference	libref
	Database Reference	dbref
	Political Entities	polbnd
	Place Names	placenam
Data Libraries	Library Reference	libref
	Tile Reference	tileref
	Boundaries	bnd
	Data Quality	dq
	Elevation	elev
	Hydrography	hydro
	Industry	ind
	Physiography	phys
	Population	pop
	Transportation	trans
	Utilities	util
	Vegetation	veg

3.7 Dimensions.

3.7.1 Unit of measure. The unit of measure for VMap is metric.

3.8 Feature and attribute coding scheme. VMap Level 0 implements the Digital Geographic Information Exchange Standard (DIGEST) Feature Attribute Coding Catalog (FACC). See Appendix section 80 for a listing of the FACC feature codes and attribute codes allowable for VMap Level 0 thematic files.

a. Unknown, not applicable and null values. In cases where FACC does not assign an unknown or null attribute value, and one is required to populate a field, refer to data dictionary tables in Appendix section 80 for the appropriate unknown and null value for the attribute column.

(1) Unknown value condition. The FACC system supports the use of an attribute value that signifies an "unknown" condition. Generally, with few exceptions, FACC implements a value of 0 to represent an unknown data condition for integer values. For text data types, the field will contain the characters "UNK".

During data capture, it may not be possible to determine the value of an attribute using the inclusion conditions or collateral data sources. When FACC provides an attribute value to support the "unknown" condition, it must be used. In cases where the "0" value is already used to represent a valid number, an alternative value is needed to represent the unknown condition. These values may be found in Appendix section 80.

(2) Null value conditions. Some features classes may have attribute columns present in the feature table which are defined for some features, but not others. In this case a

null value is entered for those attribute values when they do not apply to the feature code. The convention for implementing the null value for FACC is based on the VPF-defined null.

In general, the maximum negative value is used to represent a null value for integer and an "N/A" for fixed length text data types. For variable length text data types (T*), a zero-length null is used. The null value will be present in a field when an attribute column is not defined for a feature code.

3.9 Coordinate system. VMap data shall be stored in decimal degrees as geographic coordinates with southern and western hemispheres having a negative sign for latitude and longitude, respectively. The horizontal resolution for geographic coordinates shall be stored to the equivalent precision of 0.1 arc-seconds or 0.00002 decimal degrees.

3.10 Data format. VMap Level 0 shall be produced in Vector Product Format (VPF), which provides a standard format for storing digital vector cartographic data. Refer to the VPF military standard (MIL-STD-2407) for more detail on VPF format and structure. This specification provides guidance for the specific implementation of VMap Level 0 in VPF.

3.11 Database description. Each VMap database is a vector-based product implemented in VPF. This product is designed to support Geographic Information System (GIS) applications with geographic data at small resolution. Data at this resolution are separated into ten thematic layers, where each layer contains thematically consistent data. The VMap thematic layers are organized into coverages contained in VPF libraries (see TABLE 1). The VMap database also contains a reference library containing generalized data coverages to orient the user to the database. Each coverage contains a set of files that describe the features in that thematic layer.

3.11.1 File structure. VMap Level 0 data shall utilize the standard Disk Operating System (DOS) directory structure as specified in the VPF Military Standard.

3.11.2 Distribution medium. VMap will be distributed on CD-ROM disc implementing ISO 9660 for CD-ROM formatting. Multiple libraries may exist on one CD-ROM. Each library shall be fully contained on a single disc.

3.12 VPF table and file structure. Three types of VPF files are implemented in this VMap database: directories, tables, and indices.

3.12.1 Directories. All VMap Level 0 database files and tables are contained in a hierarchy of system-level directories in accordance with the VPF standard. Contained within these directories are the tables and indexes that provide information about the database.

3.12.2 VPF tables. Each directory within the VMap Level 0 database contains VPF tables as defined in the VPF Mil-Standard (MIL-STD-2407).

3.12.3 Indices. The VMap Level 0 product contains four types of indices: spatial indices, thematic indices, variable-length indices and feature index tables. The structure and format of indices are defined in MIL-STD-2407. A bucket size of 8 shall be used for the creation of spatial indices.

3.13 VMap directory organization.

3.13.1 VMap digital files are organized into four VPF structure levels: Database, Library, Coverage, and Feature Class (See FIGURE 1). Database, Library, and Coverage are represented as directories. The Feature Class Level is represented by a group of files stored at the coverage level. A feature class is defined as a group of features that share a homogeneous set of attributes and consists of one or more primitive tables and one or more attribute tables. If a coverage is tiled, these primitive tables will be stored in subdirectories of the coverage directory. There shall be only one database directory in the VMap Level 0 database. The VMap database directory shall be duplicated on each CD-ROM where one or more library directories are present. Each database contains two types of libraries: data libraries and one reference library. Within each library, there are reference coverages and thematic coverages.

3.13.2 The VMap reference library directory (**rference**) shall contain three thematic coverage directories. These coverages are not tiled. VMap data library directories shall contain up to ten thematic coverage directories. Library directory names reflect the geographic content of the library and will be provided to the producer as part of the source package.

3.13.3 VMap thematic data at the VPF coverage level in each data library are tiled in order to manage the large amounts of data. Therefore, primitive files are stored in a hierarchy of tile directories under each VPF coverage directory. See section 3.15 for the VMap level 0 tiling scheme.

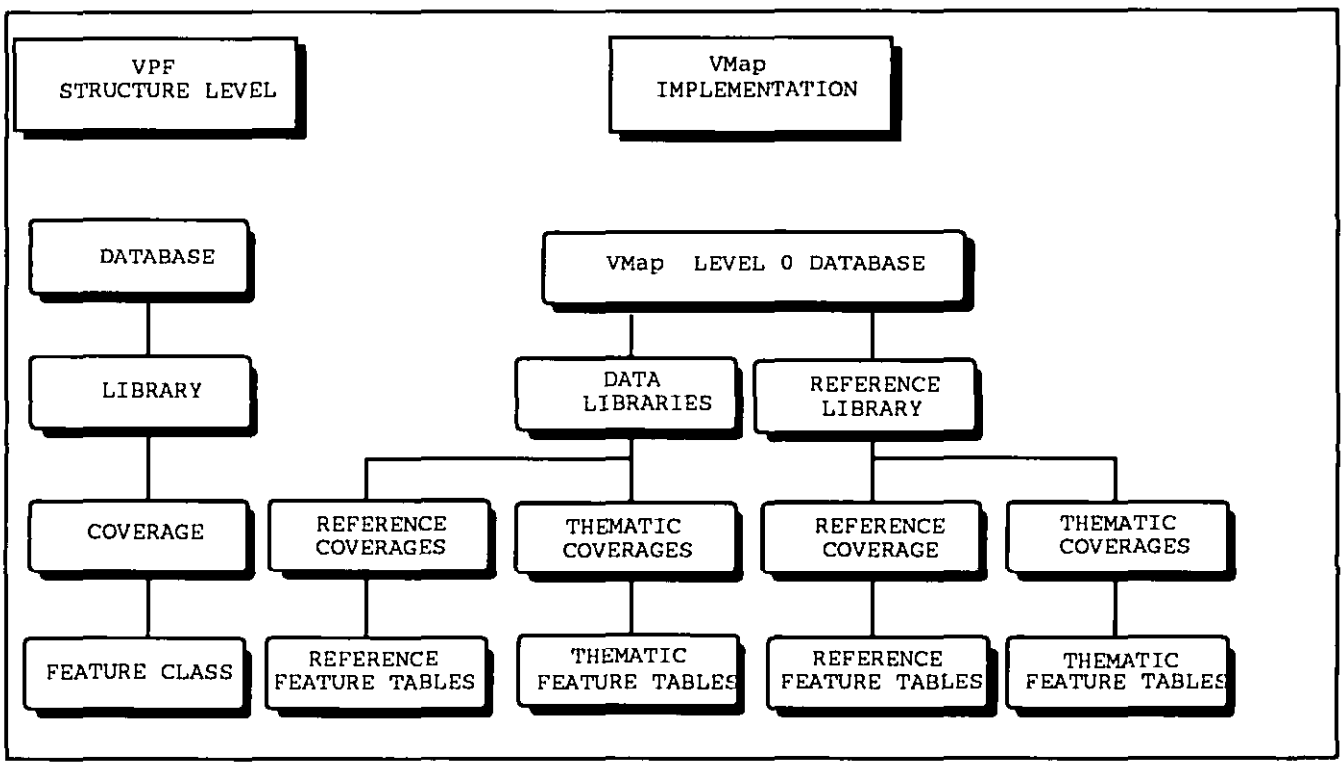
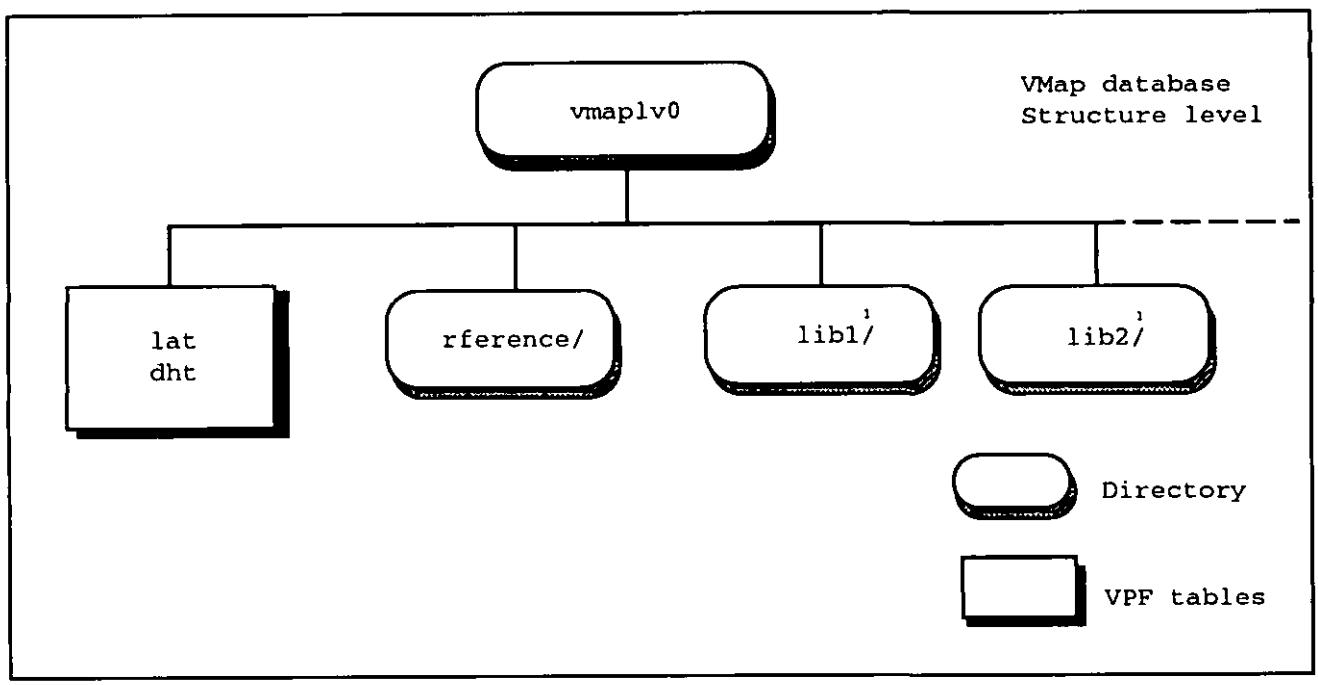


FIGURE 1. VPF structure levels and VMap implementation.

3.14 VPF structure levels, tables, and files. The following sections present the tables and files according to VPF structure level. The structure levels are presented as follows: database, library, coverage, and feature class. All directory names and file names shall be represented in lowercase letters. Each VPF directory contains VPF tables and files that provide information about the VMap database. Some files contain geographic data represented as spatial and tabular files. Other files contain metadata that provide descriptive information about the database and are represented as tabular files. The record layout and content of the VMap Level 0 tables and files are described in Appendix sections 40 through 80.

3.14.1 Database directory files. The VMap database contains one database directory. The database directory name shall be represented in lowercase letters. The database directory shall be present on each CD-ROM disc containing VMap Level 0 libraries, and it shall be the first file appearing on a CD-ROM. The tables and files contained in the VMap database directory are described below. A representation of the tables and files appearing in the VMap database level are depicted in FIGURE 2.



[1]These are representative directory names for VMap libraries.

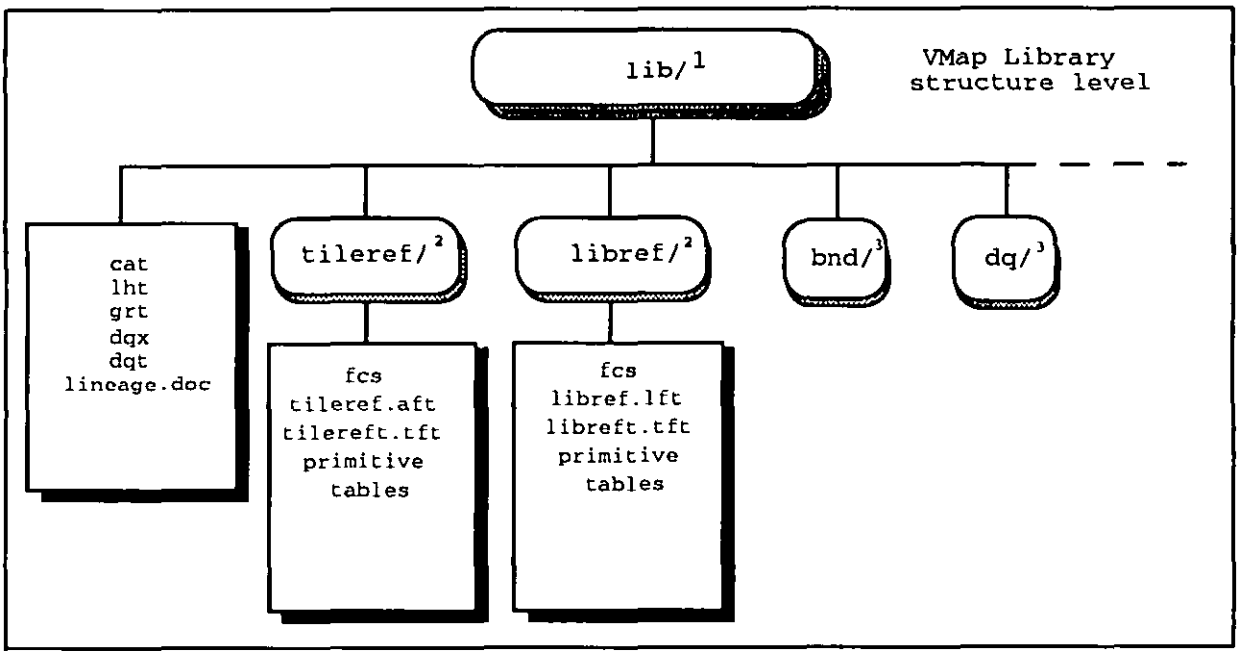
FIGURE 2. VMap database directory.

TABLE 2. VMap database table and file names and description.

Table or File Description	Table or File Name
VMap database directory	vmaplv0/
Library Attribute Table	lat
Database Header Table	dht
Reference Library	rference/
VMap Level 0 library directories	lib/[1]

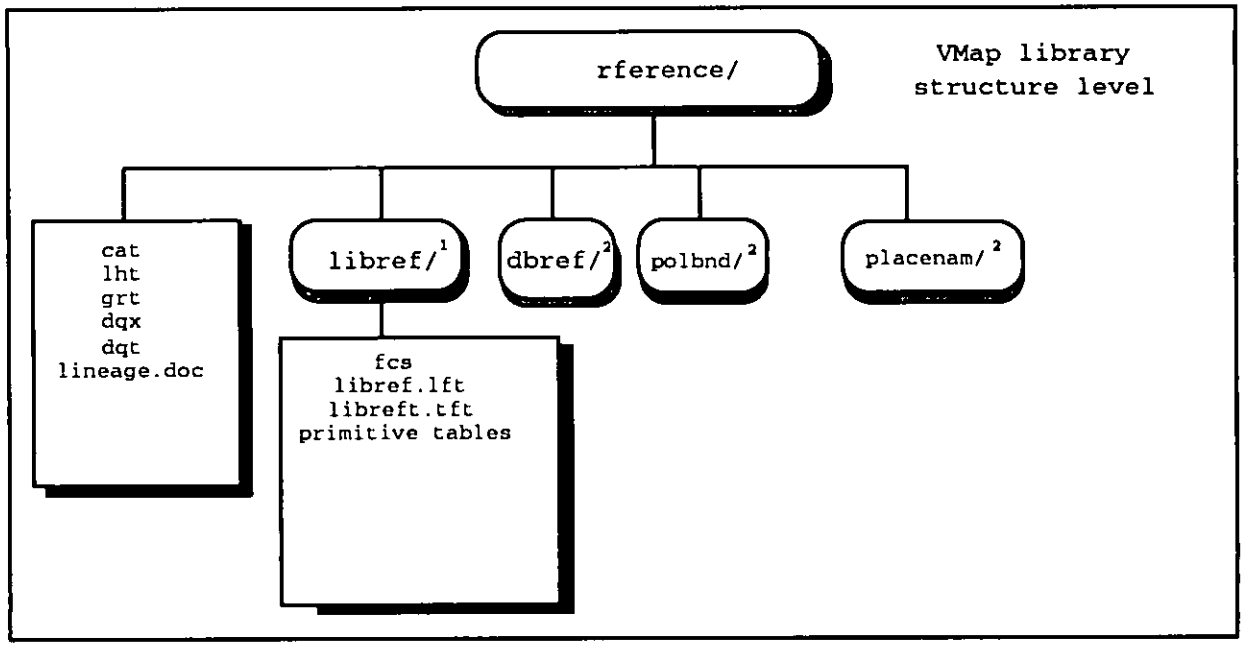
[1]This is a representative directory name for a VMap library.

3.14.2 Library directory files. The contents of each VMap library are stored in a directory whose name shall be represented in lowercase letters no more than eight characters in length. The entire contents of one or more VMap libraries shall be contained on a CD-ROM. A representation of the tables and files present in a VMap library is given in FIGURES 3 and 4.



[1]These are representative directory names for VMap libraries.
[2]These represent reference coverage directories.
[3]These represent thematic coverage directories.

FIGURE 3. VMap data library structure.



[1]Reference coverage directories.
[2]Thematic coverage directories.

FIGURE 4. VMap reference library structure.

a. Library metadata. Each library directory shall contain five required metadata tables and one variable-length index. These include the coverage attribute table (**cat**), library header table (**lht**), geographic reference table (**grt**), data quality index (**dqx**), data quality table (**dqt**), and lineage narrative table (**lineage.doc**). Each VMap library must contain these six VPF files. Content and format for the **cat**, **lht**, **grt**, **dqt** and **dqx** are defined MIL-STD-2407. Product specific content information is defined in the Appendix Section 70 to this specification.

   The **lineage.doc** table is a data quality file related to the **dqt** which describes how the data were processed for the database. It provides a textual description of the procedures used to collect the data in each VMap library, including special processing techniques, processing tolerances, feature interpretation rules, and basic production quality assurance procedures, feature integration schemes, and database design issues. This information is common to all coverages in the library.

b. Library coverages. Each tiled VMap Level 0 library shall contain a Tile Reference Coverage (**tileref**) and a Library Reference Coverage (**libref**) as defined in MIL-STD-2407.

   The **rference** library is untiled and shall contain a Library Reference coverage (**libref**).

   The VMap Level 0 **libref** coverages shall be based on representative transportation and political/administrative boundary information in the library area.

TABLE 3. VMap library tables, file names, and description.

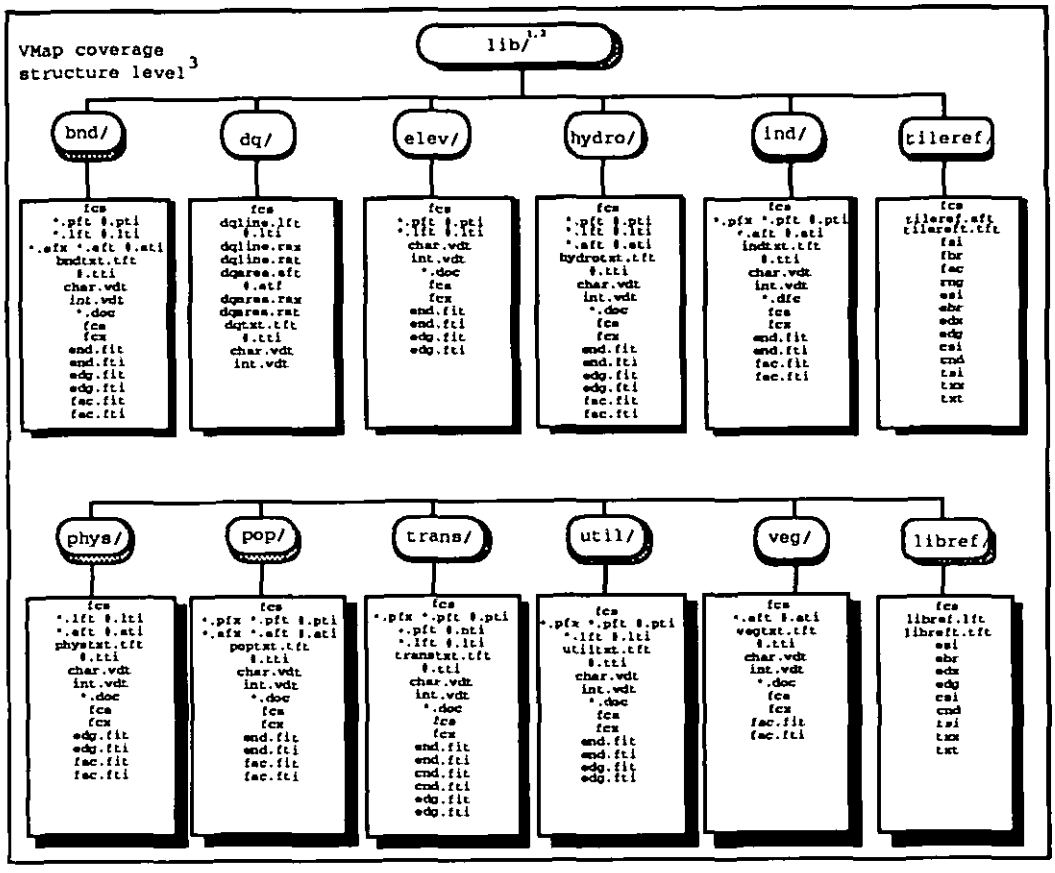
Table or File Description	Table or File Name
Directory	vmaplv0/lib/[1]
Coverage Attribute Table	cat
Library Header Table	lht
Geographic Reference Table	grt
Data Quality Index File	dqx
Data Quality Table	dqt
Lineage Documentation File	lineage.doc
Tile Reference Coverage Directory	vmaplv0/lib/tileref/
Feature Class Schema Table	fcs
Tile Reference Area Feature Table	tileref.aft
Tile Reference Text Feature Table	tilereft.tft
Primitive Tables[2]	primitive table and indices
Library Reference Coverage Directory	vmaplv0/lib/libref/
Feature Class Schema Table	fcs
Library Reference Line Feature Table	libref.lft
Library Reference Text Feature Table	libreft.tft
Primitive Tables[2]	primitive tables and indices

[1]This is a representative directory name for VMap libraries.
[2]Primitive tables are described in 3.14.5.

3.14.3 Coverage directory files. All thematic coverages are contained within a library directory. All VMap Level 0 thematic coverages share the same coordinate system, are spatially registered to one another, and contain tiled primitive tables. A list of the VMap Level 0 coverage directories and a brief description are shown in TABLE 4. A representation of the tables and files in the data coverages are depicted in FIGURE 5. A representation of the tables and files in the reference library coverages is depicted in FIGURE 6.

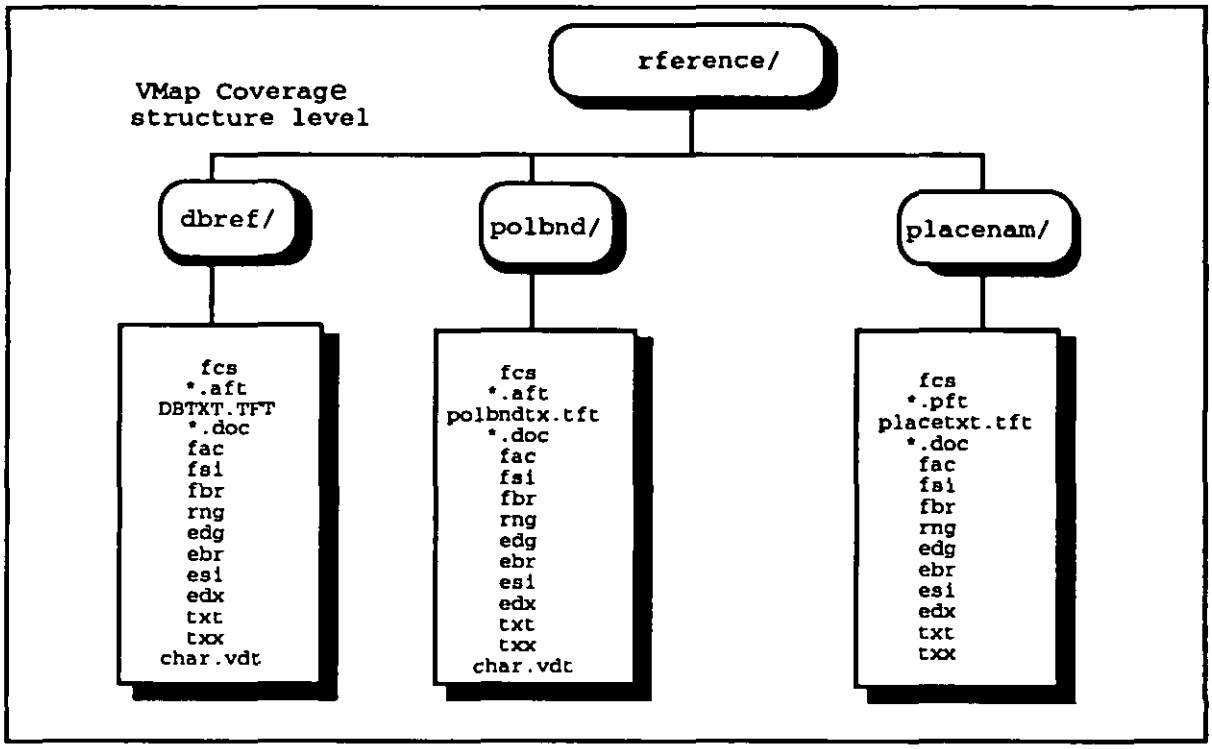
TABLE 4. Directories and descriptions for VMap Level 0 thematic coverages.

Library	Coverage Description	Coverage Name
Data Libraries	Library Reference	libref
	Tile Reference	tileref
	Boundaries	bnd
	Data Quality	dq
	Elevation	elev
	Hydrography	hydro
	Industry	ind
	Physiography	phys
	Population	pop
	Transportation	trans
	Utilities	util
	Vegetation	veg
Reference Library	Library Reference	libref
	Database Reference	dbref
	Political Entities	polbnd
	Place Names	placenam



1 This is a representative VMap library directory name.
2 The actual combination of tables in each coverage is based on the features present within the coverage for that library.
3 Primitive information is stored in tile subdirectories under each coverage.
* The asterisk is replaced with the prefix of the point, line, or area feature class name.
\+ The plus is replaced with the prefix of the node feature class name that has the same file extensions as the point feature tables.
\# The pound is replaced with the prefix of the thematic index name, which is based on the column name to which the index refers.

FIGURE 5. VMap Level 0 data library roadmap.



* The asterisk is replaced with the prefix of the point, node, line, or area feature class name.

FIGURE 6. VMap Level 0 Reference Library roadmap.

a. Coverage metadata. The metadata tables and their content will vary with each coverage. Each coverage directory shall contain one feature class schema table (**fcs**). All coverages that contain feature tables having the FACC feature code column will have a character value description table (**char.vdt**). If FACC coded attributes are present, the description of their values will be defined in an integer value description table (**int.vdt**). Other optional metadata tables include documentation tables (e.g., ***.doc**) that provide data quality information in textual format pertaining to the coverage, a feature table, or an attribute column. Content and format for these tables are defined in MIL-STD-2407. Product specific content information is provided in the Appendix, Sections 70 and 80, to this specification.

For VMap Level 0 data libraries, all coverages except **tileref**, **libref** and **dq** shall implement feature indices (feature index tables (**fit**) and a feature class attribute (**fca**) table). Examples of a **fca** and **fit** for VMap Level 0 are provided in Tables 6 and 7.

TABLE 5. VMap coverage metadata tables and description.

Metadata Tables	Description
<coverage name>	Directory File
fcs	Feature class schema table
FEATURE TABLES	Point, node, line, or area feature tables and indexes
char.vdt	Character value description table
int.vdt	Integer value description table
<coverage>.doc	Documentation table for a coverage
<feature class>.doc	Documentation table for a feature class
<attribute>.doc	Documentation table for an attribute within a feature class
fca	Feature class attribute table

TABLE 6. Feature class attribute table (**fca**) definition.

{Header length}L; Feature Class Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: fclass=T,8,U,Feature Class Name,-,-,-,: type=T,1,N,Feature Type,char.vdt,-,-,: descr=T,*,N,Description,-,-,-,:;			
1	dangerp	p	Danger Point Features
2	watrcrsl	l	Water Courses
3	inwatera	a	Inland Water Areas
:	:	:	:
n	n	n	n

TABLE 7. Format and example of content for feature index table (**fit**).

{Header length}L; Feature Index Table;-; id=I,1,P,Row Identifier,-,-,-,: prim_id=I,1,N,Primitive ID,-,*_fit1.fti,-,: tile_id[1]=S,1,N,Tile Reference ID,-,*_fit2.fti,-,: fc_id=I,1,N,Feature Class ID,-,*_fit3.fti,-,: feature_id=I,1,N,Feature Table ID,-,*_fit4.fti,-,:;				
1	23	1	8	1
2	189	1	4	56
3	566	4	6	787
4	76	3	5	452
:	:	:	:	:
n	n	n	n	n

[1] This column will not be present for untiled coverages.

Note: For the thematic index name, replace the * with the primitive table name being indexed (ex. **edg_fit1.fti**).

Documentation tables. Documentation (or narrative) tables provide data quality information that describes how the data were processed for a coverage. Topics can include processing

tolerances, feature interpretation rules, and basic production quality assurance procedures. Three levels of documentation tables may be present in a coverage. These levels include coverage, feature class, and attribute. The presence of documentation tables will vary with each VMap Level 0 coverage.

<Coverage> documentation table. Each coverage may have an optional documentation table. If present, this table shall be named so that the prefix contains the same name as the coverage, and the suffix is **.doc**. This table may contain information that pertains to the lineage and data quality characteristics in general for all features for the coverage.

<Feature class> documentation table. Any feature class table may have an associated documentation table, <feature class>.**doc**, which is referenced in the feature class table header. Information in this table will pertain to all features in the feature class. The documentation table prefix will reflect the appropriate feature class.

<Attribute> documentation table. Any attribute column defined in a feature table may have an associated documentation table, <attribute>.**doc**, which may be referenced in the header of the table and associated with the particular attribute column definition. This table contains information pertaining to that attribute or its values. The documentation table prefix will reflect the appropriate attribute column name. If documentation tables are created for the same attribute column in multiple feature class tables within a coverage, each will have a separate documentation file identified by a unique prefix.

b. Data coverages. There are up to ten thematic coverage directories present in any VMap data library. Within a library, coverage directories shall not be included if no data exists for that coverage within the library's geographic area. The contents of each VMap Level 0 data coverage are stored in a directory whose name shall be represented in lowercase letters with a three-to-five-character name representative of the thematic layer name (i.e., **bnd** for Boundaries coverage, **trans** for Transportation), as shown in FIGURE 5. There are three thematic coverage directories present in the VMap reference library. The coverage directory names contain from five to eight characters as shown in FIGURE 6.

c. Coverage topology. The topology level of each coverage within a library is defined by the types of feature classes present (see 3.14.4). A coverage with level 0 topology can contain point and line feature classes. There are no topological relationships between primitives. Coverages with level 2 topology must contain a line feature class and may also contain a point feature class. Level 3 topology coverages must contain faces. The topology level of each coverage within a library is specified in the library's coverage attribute table (**cat**). The number specified in the **level** column represents the topology level for the entire coverage regardless of the type of data present. For example, if area features are not present in a particular Vegetation coverage,

level 3 topology will still be built for the coverage based on the value of "3" specified in the **cat** in the level column for the Vegetation coverage. Topology is not supported between coverages.

3.14.4 Feature class structure level.

3.14.4.1 Feature class definition. A feature class is defined as a group of features sharing a homogeneous set of attributes and consists of one or more attribute tables and one or more primitive tables. These primitive tables store the spatial or geometric information defining the location of features. In tiled coverages, primitive tables are stored in subdirectories of the coverage directory. Each coverage shall contain at least one feature class. Although a feature class is considered to be a structure level of VPF, along with the data bases, library, and coverage levels, feature classes are not represented as directories. Rather, the feature class level is represented by a combination of files stored at the coverage level.

The definition of all possible features and attributes for each feature class in a VMap Level 0 coverage is presented in Appendix section 80.

a. Feature class types. The VMap database contains five types of feature classes as defined by MIL-STD-2407: point, node, line, area, and text. The suffixes for each feature class type are shown in TABLE 8. The node feature class is a subtype of the point feature class.

TABLE 8. Feature table suffixes.

Point Feature Table	.pft
Node Feature Table	.pft
Line Feature Table	.lft
Area Feature Table	.aft
Text Feature Table	.tft

b. Feature class/feature table names. Feature class names and descriptions are product specific. Feature class names for VMap Level 0 thematic coverages are shown in Table 9.

TABLE 9. VMap Level 0 thematic coverages and feature classes.

Coverage Name	Feature classes				
	Point	Node	Line	Area	Text
bnd	polbndp		barrierl coastl depthl polbndl	oceansea polbnda	bndtxt
dq			dqline	dqarea	dqtxt
elev	elevp		contourl		
hydro	dangerp miscp		aquecanl dangerl miscl watrcrsl	inwatera	hydrotxt
ind	extractp misindp storagep			extracta fishinda	indtxt
phys			cutfill lndfrml	grounda landicea seaicea	phystxt
pop	builtupp mispopp			builtupa mispopa	poptxt
trans	aerofacp rryardp	transtrc	mistranl railrdl roadl traill transtrl		transtxt
util	utilp		pipel utill		utiltxt
veg				cropa rangea swampa treesa	vegtxt

Note: Additional data quality point, node, line, area, and text feature classes may be implemented for all coverages (except **dq**) where desired.

c. Number of feature classes. The complete set of possible feature classes within each coverage is described in this specification; however, only those feature classes containing data shall be present in a coverage. The presence or absence of a feature class depends upon data content and availability.

d. Text feature symbology. The text feature class has an associated related attribute table called the **symbol.rat**. This table contains information that may be used to replicate the font, style, and point size of text strings found on an original ONC map sheet or other source for representation on a plot or subsequently

printed map. All text (both at the feature and primitive level) will be limited to the characters found in the Latin alphabet primary code table, Figure 24 of the MIL-STD-2407.

3.14.4.2 Feature table structure and contents. All feature tables (in tiled coverages) have the same structure. Each contains a row identifier column (or **id**) followed by an "**f_code**" attribute column. The **f_code** field for each record contains a five-character FACC code value. The heading of subsequent attribute columns, if present, is a three-character FACC attribute code. The attribute fields for each record will contain representative values for the corresponding **f_code**. Following the last FACC attribute code column there is a **tile_id** column. This column contains the row **id** of the tile reference area feature table record where the tile path name is stored and references the location of a primitive table. The last column in every feature table is a primitive identifier column which contains primitive record identifier for the feature record. This column is identified as ***_id** (the * is replaced with the **end**, **cnd**, **edg**, **fac**, or **txt** *primitive table name*). Sample point, node, line, area, and text feature tables are presented in TABLES 10 to 14.

TABLE 10. Format and example of content for a tiled point feature table (**elevp.pft**).

(HEADER LENGTH)L;
ELEVATION POINT FEATURE TABLE;-;
id=I,1,P,ROW IDENTIFIER,-,-,-,:
f_code=T,5,N,FACC FEATURE CODE,char.vdt,f_code1.pti,-,:
acc=S,1,N,ACCURACY CATEGORY,int.vdt,-,-,:
ela=S,1,N,ELEVATION ACCURACY,int.vdt,-,-,:
zv2=S,1,N,HIGHEST Z-VALUE (METERS),int.vdt,-,-,:
tile_id[1]=S,1,N,TILE REFERENCE ID,-,tile1_id.pti,-,:
end_id=I,1,N,ENTITY NODE PRIMITIVE ID,-,end1_id.pti,-,:;

1	CA030	1	1	100	1	1
2	CA035	2	1	56	2	
:	:	:	:	:	:	:
N	N	N	N	N	N	N

[1]This column will not be present for untiled point feature tables.

TABLE 11. Format and example of content for a tiled node feature table (transtrc.pft).

{Header length}L; Transportation Structures Node Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.nti,-,: tuc=S,1,N,Transportation Use Category,int.vdt,-,-,: tile_id[1]=S,1,N,Tile Reference ID,-,tile1_id.nti,-,: cnd_id=I,1,N,Connected Node Primitive ID,-,cnd1_id.nti,-,:;				
1	AQ040	4	1	1
:	:	:	:	:
n	n	n	n	n

[1]This column will not be present for untiled node feature tables.

TABLE 12. Format and example content for a tiled line feature table (watrcrsl.lft).

{Header length}L; Water Course Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: hyc=I,1,N,Hydrological Category,int.vdt,-,-,: tile_id[1]=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;				
1	BH140	8	1	1
:	:	:	:	:
n	n	n	n	n

[1]This column will not be present for untiled line feature tables.

TABLE 13. Format and example content for a tiled area feature table (inwatera.aft).

{Header length}L; Inland Water Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.ati,-,: hyc=S,1,N,Hydrological Category,int.vdt,-,-,: tile_id[1]=S,1,N,Tile Reference ID,-,tile2_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;				
1	BH090	6	1	2
2	BH000	8	2	3
:	:	:	:	:
n	n	n	n	n

[1]This column will not be present for untiled area feature tables.

TABLE 14. Format and example of content for a tiled text feature table (hydrotxt.tft).

{Header length}L; Hydrography Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,-,f_code1.tti,-,: symbol_id=S,1,N,Symbol Identification,-,-,-,: tile_id[1]=S,1,N,Tile Reference ID,-,tile1_id.tti,-,: txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	1	1	23
2	ZD045	2	2	45
:	:	:	:	:
n	n	n	n	n

[1]This column will not be present for untiled text feature tables.

3.14.5 Primitive tables and associated files. VMap implements the four geometric primitives (entity node (**end**), connected node (**cnd**), edge (**edg**) and face (**fac**)) and one cartographic primitive (text (**txt**)) as defined in MIL-STD-2407. The primitive tables contained in any coverage are dependent on the feature classes present in that coverage. The foreign key columns contained in primitive tables shall be tailored to the coverage's topology level defined in the **cat**. For coverages with level 2 topology, entity node tables will not have a containing face column and edge tables will not have left and right face columns. Primitive level supporting files, defined in MIL-STD-2407, are implemented as shown in Table 15. Example VMap Level 0 primitive tables are shown in Tables 16-20.

TABLE 15. Primitive table and associated files.

Primitive Table	File Names	Table Description
edge table	esi	edge spatial index file
	ebr	edge bounding rectangle table
	edx	edge variable-length index file
	edg	edge primitive table
face table	fsi	face spatial index file
	fbr	face bounding rectangle table
	fac	face primitive table
	rng	ring table
entity node table	nsi	entity node spatial index file
	end	entity node primitive table
connected node table	csi	connected node spatial index file
	cnd	connected node primitive table
text table	tsi	text spatial index file
	txx	text variable-length index file
	txt	text primitive table

TABLE 16. Format and example of content for entity node primitive table (end).

{Header length}L; Entity Node Primitive Table;-; id= I,1,P,Row Identifier,-,-,-,: *.pft_id=I,1,N,Point Feature Table Identifier,-,-,-,: containing_face[1]=I,1,N,Foreign Key to Face Table,-,-,-,: coordinate=Z,1,N,Coordinates of Entity Node,-,-,-,:;			
1	1	0	-7.893952 43.774712 0.000000
2	2	3	-7.893897 43.773613 0.000000
3	3	0	-7.843663 43.768391 0.000000
:	:	:	:
n	n	n	x.xxxxxx y.yyyyyy z.zzzzzz

Note: The "*" preceding the ".**pft_id**" is replaced with the appropriate point feature class name. A feature class name must be entered for each point feature class present in the data.

[1] The **containing_face** column is present only for coverages of level 3 topology.

TABLE 17. Format and example of content for connected node primitive table (end).

{Header length}L; Connected Node Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: *.pft_id=I,1,N,Node Feature Table Identifier,-,-,-,: first_edge=I,1,N,Foreign Key to Edge Table,-,-,-,: coordinate=Z,1,N,Coordinates of Connected Node,-,-,-,:;			
1	1	0	-7.893952 43.774712 0.000000
2	2	3	-7.893897 43.773613 0.000000
3	3	0	-7.843663 43.768391 0.000000
:	:	:	:
n	n	n	x.xxxxxx y.yyyyyy z.zzzzzz

Note: The "*" preceding the ".**pft_id**" is replaced with the appropriate node feature class name. A feature class name must be entered for each node feature class present in the data.

first_edge

TABLE 18. Format and example of content for edge (**edg**) primitive table.

{Header length}L; Edge Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: *.lft_id=I,1,N,Line Feature Table ID,-,-,-,: start_node=I,1,N,Start/Left Node,-,-,-,: end_node=I,1,N,End/Right Node,-,-,-,: right_face[1]=K,1,N,Right Face,-,-,-,: left_face[1]=K,1,N,Left Face,-,-,-,: right_edge=K,1,N,Right Edge from End Node,-,-,-,: left_edge=K,1,N,Left Edge from Start Node,-,-,-,: coordinates=Z,*,N,Coordinates of Edge,-,-,-:;								
1	1	1	2	6 260 210	1 0 0	29 196 14	26 12 18	-10.00 45.00 9.90
2	2	3	5	5 0 0	8 260 214	30 198 12	76 52 48	-7.70 43.69 9.50 -7.80 43.70 10.69 -7.90 43.80 9.96
:	:	:	:	:	:	:	:	:
n	n	n	n	n n n	n n n	n n n	n n n	x.xxxxxx y.yyyyyy z.zzzzzz

Note: The "*" preceding the "**.lft_id**" is replaced with the appropriate line feature class names. A feature class name must be entered for each line feature class present in the data.

[1]The **right_face** and **left_face** columns are required only for coverages with level 3 topology.

TABLE 19. Format and example of content for face (**fac**) primitive table.

{Header length}L; Face Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: *.aft_id=I,1,N,Area Feature Table ID,-,-,-,: ring_ptr=I,1,N,Foreign Key to Ring Table,-,-,-,:;		
1	null	1
2	75	13
3	97	14
:	:	:
n	n	n

Note: The "*" preceding the "**.aft_id**" is replaced with the appropriate area feature class name. A feature class name must be entered for each area feature class present in the data.

TABLE 20. Format and example of content for text (txt) primitive table.

{Header length}L; Text Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: *.tft_id=I,1,N,text feature table id,-,-,-,: string=T,*,N,Text String,-,-,-,: shape_line=C,*,N,Shape of Text String,-,-,-,:;			
1	1	Nolanville	-5.811609 43.662006
2	2	Killeen	-8.574136 43.435287
3	3	Harker Heights	-7.437326 42.881957
4	4	Wainwright Heights	-6.835582 40.736553
:	:	:	:
n	n	n	n

3.15 VMap tiling schemes. As stated in 3.14.2, the **tileref** coverage defines the tiling scheme for each VMap library. The tiling schemes for VMap Level 0 libraries will differ in their spatial extent and number of tiles per library. The tiling scheme for each library implements pairs of alphanumeric characters to represent the coordinate positions of the tiles. VMap libraries shall be partitioned in a systematic tile structure based upon the Geographic Reference System (GEOREF).

All thematic coverages in a library share the same tiling structure and coordinate system. Although a coverage is said to be tiled, tiling of data actually occurs at the primitive level. This ensures that all feature tables are stored intact directly under the coverage directory. For tiled coverages, primitive tables are organized on the basis of physical tile partitions. Tile directories are located under coverage directories such that the primitive tables are subdivided in a hierarchy of directories and are stored under the last tile directory. A representation of the table and file organization for VMap Level 0 tiled primitive tables and files is depicted in FIGURE 8.

3.15.1 VMap Level 0 tiling scheme. The VMap Level 0 database will contain data in variable sized tiles based on the GEOREF reference system as defined in the tileref of each library. The tiling scheme for 5° by 5° tiles is illustrated in this section. The following tile sizes, which vary by latitude, will be used in VMap Level 0 in both northern and southern latitudes:

Latitude	Tile Size (Degrees Longitude by Degrees Latitude)
0°-40°	$5^{\circ} \times 5^{\circ}$
40°-50°	$5^{\circ} \times 6^{\circ}$
50°-60°	$5^{\circ} \times 8^{\circ}$
60°-65°	$5^{\circ} \times 10^{\circ}$
65°-70°	$5^{\circ} \times 12^{\circ}$
70°-75°	$5^{\circ} \times 15^{\circ}$
75°-80°	$5^{\circ} \times 20^{\circ}$
80°-90°	$5^{\circ} \times 90^{\circ}$

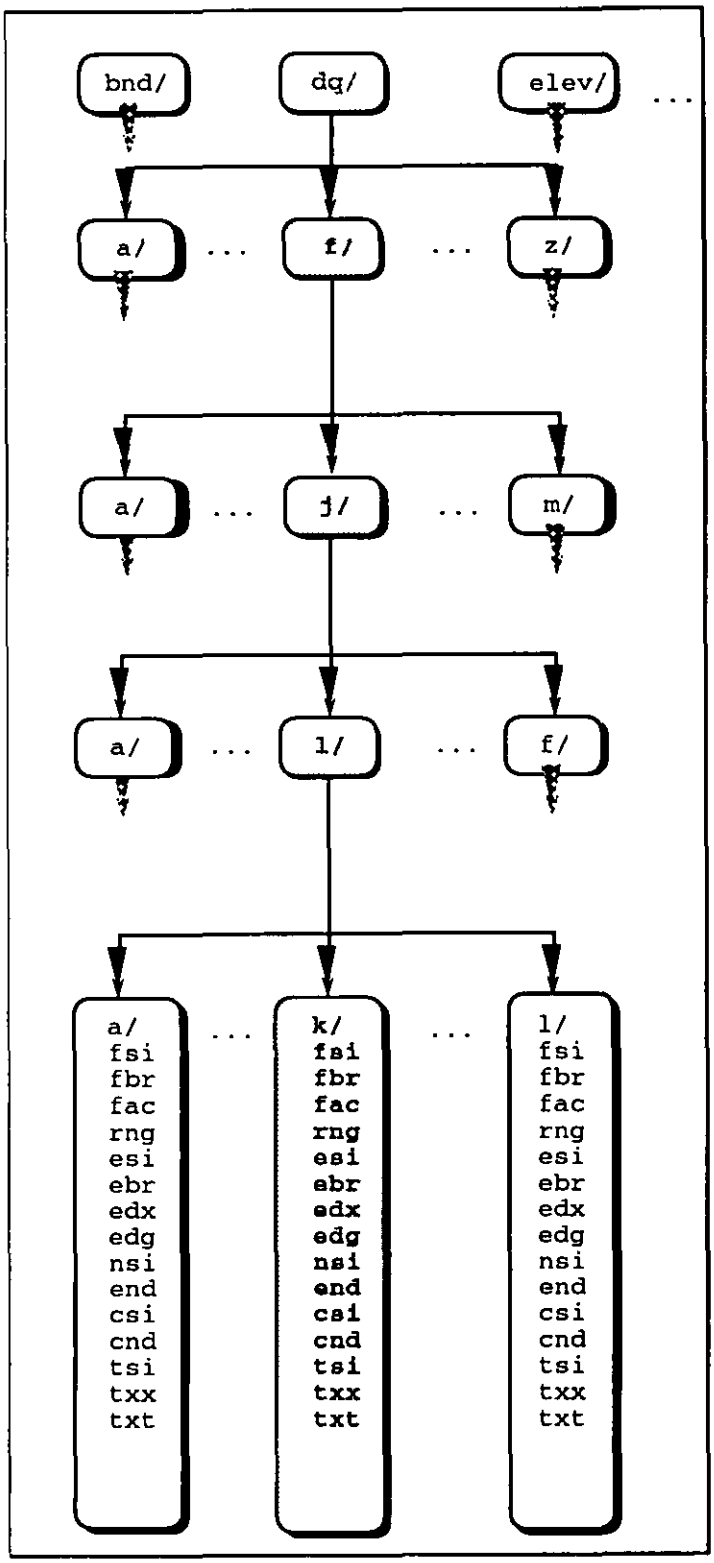
The tiling scheme for 5° by 5° tiles is illustrated in this section.

a. VMap Level 0 tile directory hierarchy. The primitive tables for each VMap Level 0 coverage are partitioned among tile directories that are ordered in a four-tier hierarchy based on the GEOREF naming convention. The first, second, and third tier subdirectories contain only pointers to the fourth subdirectory, where all primitive tables are stored. The tiling scheme may be viewed as pairs of letters and numbers which represent the standard GEOREF cells.

b. Tile directory description and naming. The first pair of letters represents the coarsest, 15° by 15° standard GEOREF division, and represents the first coordinate pair identifying the tile name. This pair of letters also represents the first and second directory tiers of the tiling scheme. The first letter represents the first tile partition of the southwest coordinate in the x direction (longitude). There are a maximum of 24 subdirectories lettered from A to Z (omitting I and O), according to the 15°

bands of GEOREF longitude zones. The second letter represents the second partition of the southwest coordinate in the y direction (latitude). There are a maximum of 12 subdirectories lettered from A to M (omitting I), according to the 15° GEOREF latitude zones for a total of 288 15° by 15° cells globally. (FIGURES 7 & 8)

The second pair of letters represents the 1° by 1° standard GEOREF divisions, and represents the second coordinate pair of the tile name. This pair of letters also represents the third and fourth directory tiers of the tiling scheme. The first letter represents the x coordinate (longitude) of the southwest corner of the VMap Level 0 tile. There are a maximum of 15 subdirectories lettered from A to Q (omitting I and O), according to the 1° bands of GEOREF longitude zones. The second letter represents the y coordinate (latitude) of the southwest corner of the tile. There are a maximum of 15 subdirectories lettered from A to Q (omitting I and O) according to the 1° bands of GEOREF latitude zones. These letters partition each 15° by 15° GEOREF cell into a total of 225 1° by 1° cells. (FIGURES 7 & 8)



Level 0 Coverage Directories

First partition of 24 tile subdirectories lettered A to Z (15° bands of GEOREF longitude zones)

Second partition of 12 tile subdirectories lettered A to M (15° bands of GEOREF latitude zones)

Third partition of tile subdirectories lettered A to Q (divides the 15° longitude zones into 15 1° GEOREF longitude zones)

Fourth partition of tile subdirectories lettered A to Q (divides the 15° latitude zones into 15 1° GEOREF latitude zones)

FIGURE 7. VMap Level 0 tile directory hierarchy.

VMap LEVEL 0 TILING SCHEME BASED ON GEOREF:
EXAMPLE OF NAMING CONVENTIONS FOR 5° BY 5° TILE

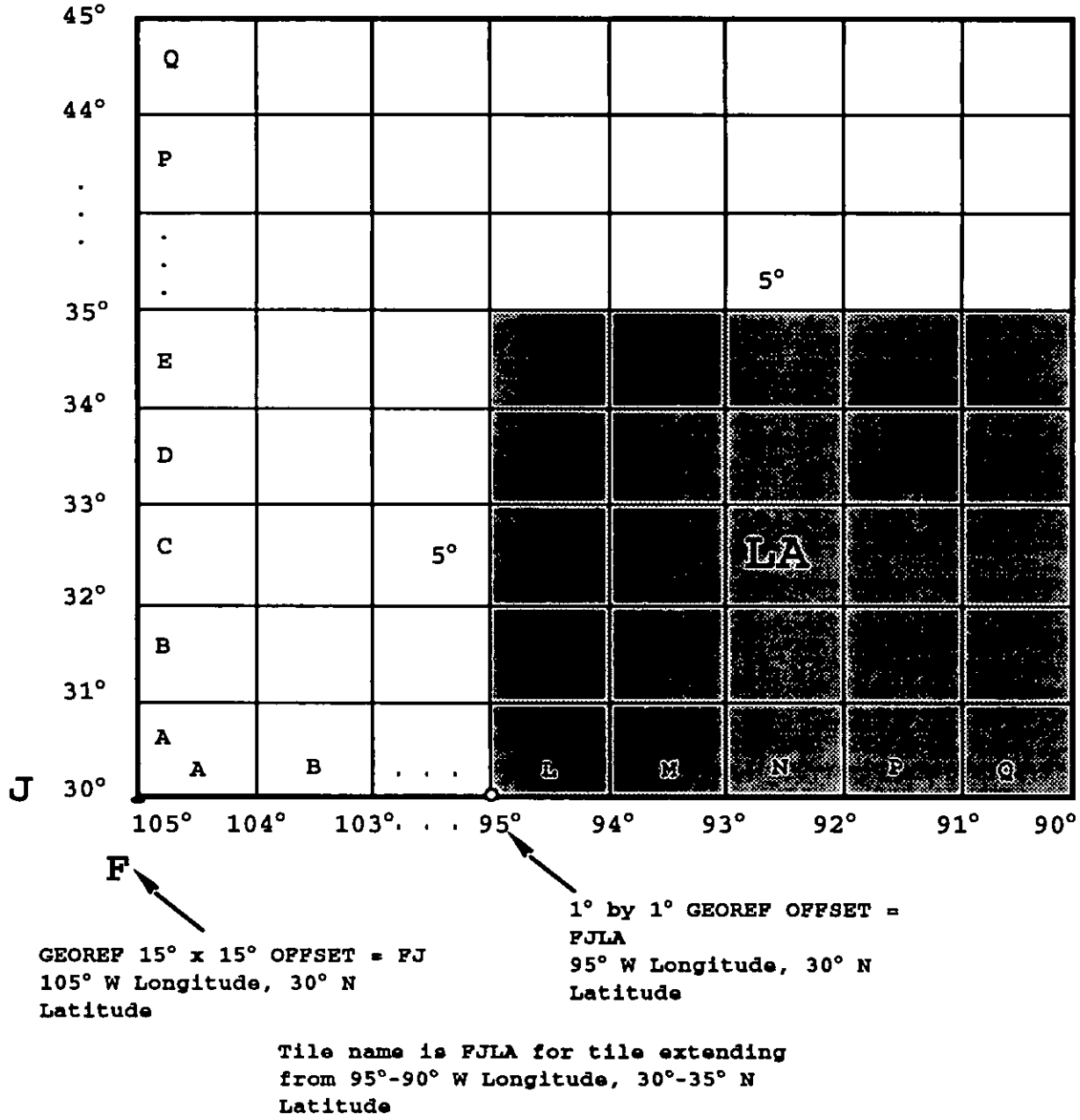


FIGURE 8. Coordinates for a 15° by 15° cell of GEOREF system (FJ).

3.15.2 Cross-tile topology. Cross-tile topology ensures that topology is retained between the primitive tables across the tile boundaries. Topology across the tiles is maintained through the use of a reference tile **id** in the edge primitive table that establishes a "cross-tile" link over the tile partitions. This enables the database to function as a seamless unit for analysis purposes.

3.16 Naming conventions. TABLE 21 provides the naming conventions for the table extensions or table names for the following: feature table extensions, primitive table names, thematic index extensions, spatial index file names, variable-length index extensions.

TABLE 21. Naming conventions for VMap tables and files.

Table or File Type	Area	Line	Point	Node	Text
Feature Table	aft	lft	pft	pft	tft
Primitive Table	fac	edg	end	cnd	txt
Thematic Index	ati	lti	pti	nti	tti
Spatial Index	fsi	esi	nsi	csi	tsi
Variable-length Index	afx	lfx	pfx	pfx	txx

4. QUALITY ASSURANCE

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, contractors may use their own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure that supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The accuracy reviews set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of responsibility for ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract.

4.1.2 Final product quality. The final VMap product quality will reflect the quality expressed by each applicable military standard. A series of independent data quality inspections shall be undertaken to ensure the quality of the VMap product.

5. PACKAGING

5.1 General. The VMap package shall contain at least one CD-ROM with associated user documentation.

5.1.1 CD-ROM labeling. Each CD-ROM label shall indicate the DMA stock number, the geographic extent of the CD-ROM, and the database edition number and date.

5.1.2 Installation instructions. Installation instructions shall be provided on a separate sheet in the VMap package, or as part of the CD case insert.

5.1.3 Packing list. A packing list shall be included in the VMap package to notify an user of the contents of the VMap package.

5.2 Containers. [DMASC will provide insert text describing cardboard cases upon receipt from HQ.]

5.2.1 VMap outer container. The outer container shall be used to distribute and store all VMap materials. The outer container shall consist of a material with thickness sufficient to protect the contents. The VMap database name and a bar code shall be present on the outer container. The VMap materials shall be shrink-wrapped prior to shipping.

5.2.2 CD-ROM cases. The CD-ROM disc or discs shall be distributed in 100% recyclable cardboard sleeves.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use.

6.1.1 General usage. The VMap Level 0 product is intended for use as a low-resolution, general purpose database which can support GIS applications.

6.2 Acquisition requirements. When this specification is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation (see 2.1.1 and 2.2).

6.3 Subject term (keyword) listing.

FACC
GEOREF
GIS
THEMATIC LAYERS
VPF

6.4 Definitions. See MIL-STD-2407 for definition of terms used in this specification.

6.4.1 Acronyms.

ANSI	American National Standards Institute
ASCC	Air Standardization Coordinating Committee Agreements
CD-ROM	Compact Disc-Read Only Memory
CE	Circular Error
DCW	Digital Chart of the World
DMA	Defense Mapping Agency
DoD	Department of Defense
DODISS	Department of Defense Index of Specifications and Standards
DOS	Disk Operating System
DPS	Digital Production System
FACC	Feature Attribute Coding Catalog
GEOREF	Geographic Reference System

GIS	Geographic Information System
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
JOG	Joint Operations Graphic
LE	Linear Error
MC&G	Mapping, Charting, and Geodesy
MSL	Mean Sea Level
NMAS	National Map Accuracy Standard
ONC	Operational Navigation Chart
PC	Personal Computer
QA	Quality Assurance
QC	Quality Control
QSTAGs	Quadripartite Standardization Agreements
STANAG	NATO Standardization Agreement
VGA	Virtual Graphics Array
VPF	Vector Product Format
VMap	Vector Smart Map
WGS	World Geodetic System

6.5 International standardization agreements. "Certain provisions of this specification are subject to international standardization agreement. When amendment, revision, or cancellation of this specification is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations."

6.5.1 International Standardization Agreements (STANAGs). STANAG 2211, "Geodetic Datums, Spheroids, Grids, and Cell References".

6.5.2 Quadripartite Standardization Agreements (QSTAGs). This section is not applicable to this specification.

6.5.3 Air Standardization Coordinating Committee Agreements (ASCC AIR STDs/STDs/ADV PUBs). This section is not applicable to this specification.

6.5.4 International MC&G agreements. This section is not applicable to this specification.

6.5.5 Executive orders. This section is not applicable to this specification.

6.5.6 Inter-Agency agreements. This section is not applicable to this specification.

6.5.7 Other documentation. This section is not applicable to this specification.

APPENDIX

10. SCOPE

10.1 Scope. This appendix is a mandatory part of the specification. The information contained herein is intended for compliance.

20. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

30. VMap Data Dictionary Organization

30.1 Data dictionary organization. The data provided in this appendix are organized according to VPF structure levels. The VMap database tables appear first; they are described in Appendix section 40. The information provided in database tables applies to the entire Level 0 database. The VMap Level 0 database contains two types of libraries: the reference library described in sections 50 and 60, and one or more data libraries (containing the geographic data). Data libraries are described in sections 70 and 80. Section 50 contains the library VPF tables and files and the VPF coverage (**libref**) for the reference library. Section 60 contains the data coverages for the reference library. Section 70 contains the library VPF tables and files and VPF coverages (**tileref** and **libref**) for the data libraries. Section 80 contains the data coverages (spatial and attribute data) for the data libraries.

Section 90 contains a listing of the FACC feature codes with descriptions and the feature types they represent for VMap Level 0 libraries. Section 90 also contains a list of attribute codes with their associated features and feature types.

For this data dictionary, a brief description of each feature table is provided. All VPF tables consist of a header that is followed by the actual record contents. This appendix contains examples of the records that may be contained in actual tables. The data structure and contents for both the metadata tables and feature tables that may be present within a coverage are defined in this appendix. Tables not described in this appendix are described in the main sections of this product specification. Specifically, the format of metadata tables (such as documentation tables) is defined in section 3.14.3, the format and structure of index files are defined in section 3.12.3, and the format and structure of primitive tables are defined in section 3.14.5.

30.2 Notes regarding table format.

a. The header portion of each table (top half of each illustration) defines the entries required for the VPF table header; the content portion (bottom half) of each table defines the record entries for the data fields.

b. A semicolon (;) is a separator for the four components of a header.

c. The colon (:) indicates the end of a column definition.

d. Carriage returns are embedded in the text for readability only. All header information shall be a continuous string of characters with no carriage returns.

e. For more information on the format of a VPF table, see section 3.12.

f. For tables with a large number of columns and only one record entry (i.e., **dht**, **lht**, **grt**), the backslash character (\) at the end of a line in the data records section indicates that the record entry is continued for each column for that record; no carriage returns are implied. This format permits the data records for a large number of columns to be represented so that they may fit on a page of this appendix.

40. VMap database VPF tables and contents

The structure and content of each VPF table in the VMap (VMAPLV0) database directory are described in this section.

40.1 Database metadata tables. The VMap database directory file name is the first file to appear on a CD-ROM followed by database metadata files as follows:

vmaplv0	database directory file
lat	library attribute table
dht	database header table

40.1.1 Library attribute table. The **lat** contains the geographic extent of each library in the database (TABLE 22).

TABLE 22. Format and content for library attribute table (**lat**).

{Header length}L; Library Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: library_name=T,8,N,Library name,-,-,-,: xmin=F,1,N,Westernmost longitude,-,-,-,: ymin=F,1,N,Southernmost latitude,-,-,-,: xmax=F,1,N,Easternmost longitude,-,-,-,: ymax=F,1,N,Northernmost latitude,-,-,-,:;					
1	rference	-180.0	-90.0	180.0	90.0
2	eastus[1]	-90.0	30.0	-75.0	45.0
3	westus[1]	-120.0	30.0	-105.0	45.0
4	northus[1]	-90.0	60.0	-75.0	45.0
:	:	:	:	:	:
n	n	n	n	n	n

[1] The names and extent of the libraries are only examples, actual names will be provided as part of the source package.

40.1.2 Database header table. The **dht** describes the database (TABLE 23).

TABLE 23. Format and content for database header table (**dht**).

```
{Header length}L;
Database Header Table;-;
id=I,1,P,Row Identifier,-,-,-,:
vpf_version=T,10,N,VPF version number,-,-,-,:
database_name=T,8,N,Directory name of this database,-,-,-,:
database_desc=T,100,N,Description of this database,-,-,-,:
media_standard=T,20,N,Media Standard,-,-,-,:
originator=T,50,N,Producer of this database,-,-,-,:
addressee=T,100,N,Address of the producer,-,-,-,:
media_volumes=T,1,N,Number of Volumes in this database,-,-,-,:
seq_numbers=T,1,N,The Sequential Number(s) in this database,-,-,-,:
num_data_sets=T,1,N,Number of Libraries,-,-,-,:
security_class=T,1,N,Security Classification,-,-,-,:
downgrading=T,3,N,Downgrading,-,-,-,:
downgrade_date=D,1,N,Date,-,-,-,:
releasability=T,20,N,Releasability restrictions of data,-,-,-,:
transmittal_id=T,1,N,Unique Transmittal Identifier,-,-,-,:
edition_number=T,10,N,Edition Number of this database,-,-,-,:
edition_date=D,1,N,Date of edition,-,-,-,:;
```

```
1\
1.0\
VMAPLV0\
Vector Smart Map:  a general-purpose database design to support GIS
applications.\
ISO 9660\
HQ DMA PRW 8613 Lee Highway Fairfax VA 22031-2137\
N/A\
1\
1\
1\
U\
NO\
                .\
UNRESTRICTED\
1\
1\
19930930        .
```

50. REFERENCE LIBRARY

Each database will contain a reference library named **rference**. This library will contain smaller scale coverages which show a generalized extent of the database. Each coverage contains reference information designed to orient the user to the location and extent of the database and the libraries in it.

The structure and content of each VPF table in a reference library directory are provided in this section. Those records that vary are indicated by footnotes.

50.1 Reference library metadata tables. The **rference** library shall contain the following metadata tables at the library level.

rference	directory file
cat	coverage attribute table
dqt	data quality table
dqx	data quality index file
grt	geographic reference table
lht	library header table
lineage.doc	an optional documentation table

50.1.1 Coverage attribute table. The following **cat** shall be present in the **rference** library. TABLE 24 depicts the records that are present in the **cat**.

TABLE 24. Format and content for **rference** coverage attribute table (**cat**).

{Header length}L; Coverage Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: coverage_name=T,8,N,Coverage name,-,-,-,: description=T,50,N,Coverage description,-,-,-,: level=S,1,N,Topology level,-,-,-,:;			
1	libref	Library Reference	2
2	dbref	Database Reference	3
3	polbnd	Political Entities	3
4	placenam	Place Names	0

50.1.2 Library header table. The following **lht** shall be present in the **rference** library. the format and content of the library header table for each library is presented in TABLE 25.

TABLE 25. Format and content for **rference** library header table (**lht**).

```
{Header length}L;
Library Header Table;-;
id=I,1,P,Row Identifier,-,-,-,:
product_type=T,12,N,Product Type,-,-,-,:
library_name=T,12,N,Name,-,-,-,:
description=T,100,N,Description of the library,-,-,-,:
data_struct_code=T,1,N,Data Structure Code,-,-,-,:
scale=I,1,N,Scale of the library,-,-,-,:
source_series=T,15,N,Series,-,-,-,:
source_id=T,30,N,Identifier of the source reference,-,-,-,:
source_edition=T,20,N,Edition number of the source,-,-,-,:
source_name=T,100,N,Name of library source,-,-,-,:
source_date=D,1,N,Source Date,-,-,-,:
security_class=T,1,N,Security Classification,-,-,-,:
downgrading=T,3,N,Downgrading,-,-,-,:
downgrading_date=D,1,N,Date,-,-,-,:
releasability=T,20,N,Releasability,-,-,-,:;
```

```
1\
VMAP LEVEL 0\
rference\
Small-scale data to give users a geographic reference of VMap Level 0
database.\
8\
Various\
Various\
Various\
Various\
Various\
                .\
U\
NO\
                .\
UNRESTRICTED
```

Note: Each line represents the record value for each defined column.

50.1.3 Geographic reference table. The following **grt** shall be present in the **rference** library.

TABLE 26. Format and content for a **rference** geographic reference table (**grt**).

{Header length}L; Geographic Reference Table;-; id=I,1,P,Row Identifier,-,-,-,: data_type=T,3,N,Data Type,-,-,-,: units=T,3,N,Units,-,-,-,: ellipsoid_name=T,15,N,Ellipsoid,-,-,-,: ellipsoid_detail=T,50,N,Ellipsoid Details,-,-,-,: vert_datum_name=T,15,N,Datum Vertical Reference,-,-,-,: vert_datum_code=T,3,N,Vertical Datum Code,-,-,-,: sound_datum_name=T,15,N,Sounding Datum,-,-,-,: sound_datum_code=T,3,N,Sounding Datum Code,-,-,-,: geo_datum_name=T,15,N,Datum Geodetic Name,-,-,-,: geo_datum_code=T,3,N,Datum Geodetic Code,-,-,-,: projection_name=T,20,N,Projection Name,-,-,-,;
1\ GEO\ M\ WGS 84\ A=6378137 B=6356752 Meters\ MEAN SEA LEVEL\ 015\ N/A\ N/A\ WGS 84\ WGE\ Dec. Deg. (unproj.)\

50.1.4 Data quality table. The following data quality table shall be in the library directory for the **rference** library. The record content of this table may vary for each library. The format and sample content of the **dqt** for each library is presented in TABLE 27.

TABLE 27. Format and content for example data quality table (dqt).

```
{Header length}L;
Library Data Quality Table;lineage.doc;
id=I,1,P,Row Identifier,-,-,-,:
vpf_level=T,8,N,VPF Level,-,-,-,:
vpf_level_name=T,8,N,Name of VPF Level,-,-,-,:
feature_complete=T,*,N,Feature Completeness Percent,-,-,-,:
attrib_complete=T,*,N,Attribute Completeness Percent,-,-,-,:
logical_consist=T,*,N,Logical Consistency,-,-,-,:
edition_num=T,8,N,Edition Number,-,-,-,:
creation_date=D,1,N,Creation Date,-,-,-,:
revision_date=D,1,N,Revision Date,-,-,-,:
spec_name=T,*,N,Product Specification Name,-,-,-,:
spec_date=D,1,N,Product Specification Date,-,-,-,:
earliest_source=D,1,N,Date of Earliest Source,-,-,-,:
latest_source=D,1,N,Date of Latest Source,-,-,-,:
collection_spec=T,*,N,Collection Specification Name,-,-,-,:
abs_horiz_acc=T,*,N,Absolute Horizontal Accuracy of VPF Level,-,-,-,:
abs_horiz_units=T,20,N,Unit of Measure for Absolute Horizontal Accuracy,-,-,-,:
abs_vert_acc=T,*,N,Absolute Vertical Accuracy of VPF Level,-,-,-,:
abs_vert_units=T,20,N,Unit of Measure for Absolute Vertical Accuracy,-,-,-,:
rel_horiz_acc=T,*,N,Point to Point Horizontal Accuracy of VPF Level,-,-,-,:
rel_horiz_units=T,20,N,Unit of Measure for Point to Point Horizontal Accuracy,-,-,-,:
rel_vert_acc=T,*,N,Point to Point Vertical Accuracy of VPF Level,-,-,-,:
rel_vert_units=T,20,N,Unit of Measure for Point to Point Vertical Accuracy,-,-,-,:
comments=T,*,N,Miscellaneous Comments,-,-,-,:;
```

```
1\
library\
rference\
All features in this library are captured from the source materials and
generalized as necessary to depict referential information.\
All features in this library have valid attribute codes assigned to them in
accordance with this specification.\
All data are topologically correct.  No duplicate features are present within
a coverage.
All areas are completely described as extracted from the source materials.
No undershoots or overshoots are present. All data were consistently captured
using the rules described in the documentation table associated with this
table and in the various feature table narrative files present at the
coverage level within the library.\
```

```
1\
                .\
                .\
VMap Level 0 Product Specification\
19930930        .\
                .\
                .\
VMap Level 0 Product Specification\
N/A\
N/A\
N/A\
N/A\
N/A\
N/A\
N/A\
N/A\
Additional descriptions of data lineage are available in the documentation
table associated with this data quality table (called lineage.doc).
```

50.1.5 Lineage narrative table. Information regarding the data contained in the library is captured in the **lineage.doc** file (TABLE 28).

TABLE 28. Format and sample content for lineage documentation table (**lineage.doc**).

```
(Header length)L;
Lineage Documentation Table;-;
id=I,1,P,Row Identifier,-,-,-,:
text=T,80,N,Text information,-,-,-,:;
```

1	This table describes characteristics of the feature data within
2	this library. Three subjects are discussed: (1) special
3	automation techniques, (2) source materials, and (3) database
4	design issues. The table does not contain a full description
5	of the data production process.
:	:
n	...

50.2 Reference library coverage and tables. Each **rference** library in a database shall be untiled, and will contain the following directory file and tables.

50.2.1 Library Reference coverage directory and files. The library reference coverage directory contains the following files:

libref	directory file
cnd	connected node table
ebr	edge bounding rectangle table
edg	edge primitive table
edx	edge variable length index file
esi	edge spatial index table
fcs	feature class schema table
libref.lft	library reference line feature table
libreft.tft	library reference text feature table (optional)
tsi	text spatial index file
txt	text primitive table
txx	text variable length index file

50.2.1.1 Library Reference feature class schema table. A feature class schema table shall be present in the library reference coverage. The format and content of the **fcs** are presented in TABLE 29.

TABLE 29. Content and format for **libref** feature class schema table (**fcs**).

Thematic Layer: Library Reference
Coverage Name: **libref**
Table Description: Library Reference Feature Class Schema Table
Table Name: **fcs**

```
{Header length}L;
Library Reference Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,6,N,Column Name in Second Table,-,-,-,:;
```

1	libref	libref.lft	edg_id	edg	id
2	libref	edg	libref.lft_id	libref.lft	id
3	libreft	libreft.tft	txt_id	txt	id
4	libreft	txt	libreft.tft_id	libreft.tft	id

50.2.1.2 Library reference feature tables. The feature tables implemented in the library reference coverage are specified in TABLES 30 to 31.

TABLE 30. Format and content for **libref line** feature table (**libref.lft**).

Thematic Layer:	Library Reference
Coverage Name:	**libref**
Table Description:	Library Reference Line Feature Table
Table Name:	**libref.lft**

{Header length}L; Library Reference Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: edg_id=I,1,N,Edge Primitive ID,-,-,-,:;		
1	BA010	1
2	FA000	2
3	AP030	3
:	:	:
n	n	n

TABLE 31. Format and content for **libref** text feature table (**libreft.tft**).

Thematic Layer:	Library Reference
Coverage Name:	**libref**
Table Description:	Library Reference Text Feature Table
Table Name:	**libreft.tft**

{Header length}L; Library Reference Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;		
1	ZD040	1
2	ZD040	2
3	ZD045	3
:	:	:
n	n	n

50.2.1.3 Library reference primitive tables. The edge, connected node, and text primitive tables in the library reference coverage directory have the same format as the coverage primitive files (reference TABLES 16 to 20). Although the text feature table is optional, a sample text primitive table is presented to show sample values for the **string** column (TABLE 32). The text string depicting the library name will be appropriately placed near the top center of each library reference coverage in an appropriately sized font.

The structure and format of the variable-length index files and spatial index files are provided in section 3.12.3. The structure and format of the bounding rectangle tables are described in section 3.14.5.

TABLE 32. Format and example of content for **libref** text primitive table (**txt**).

Thematic Layer: Library Reference
Coverage Name: **libref**
Table Description: Text Primitive Table
Table Name: **txt**

{Header length}L; Text Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: libreft.txt_id=I,1,N,text feature table id,-,-,-,: string=T,*,N,Text String,-,-,-,: shape_line=C,*,N,Shape of Text String,-,-,-,:;			
1 : n	1 : n	Text string[1] : n	-5.811609,43.662006 : n

[1] The names and extent of the Level 1 libraries, or other geographic identifiers.

TABLE 33. Library reference character value description table.

Thematic Layer: Library Reference
Coverage Name: **libref**
Table Description: Library Reference Character Value Description Table
Table Name: **char.vdt**

{Header length}L; Library Reference Character Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,6,N,Column Name,-,-,-,: value=T,5,N,Unique Value of Attribute,-,-,-,: description=T,24,N,Description of Value,-,-,-,:;				
1	libref.lft	f_code	AP030	Road
2	libref.lft	f_code	BA010	Coastline/Shoreline
3	libref.lft	f_code	FA000	Administrative Boundary
4	libreft.tft	f_code	ZD040	Named Location
5	libreft.tft	f_code	ZD045	Text Description
6	dqline.lft	f_code	AP030	Road
7	dqline.lft	f_code	BA010	Coastline/Shoreline
8	dqline.lft	f_code	FA000	Administrative Boundary
9	dqline.lft	f_code	ZD045	Text Description

60. **rference** library coverage tables and content

60.1 Coverage table and file order. Coverages for the **rference** library are shown in TABLE 34. For each coverage, the feature class schema table is described first, followed by the feature tables. The type and content of documentation tables will vary with each coverage. For each feature table the attribute names, description, and attribute values are also represented. A summary of the **rference** coverages and feature classes is presented in TABLE 35.

The structure and content of each VPF table in the **rference** library directory are provided in this section. Those records that vary are indicated by footnotes.

Thematic index files identified in the header of a feature table are defined in section 3.12.3. The structure and format of the variable-length index files and spatial index files are provided in section 3.12.3. The structure and format of the bounding rectangle tables are described in section 3.14.5.

TABLE 34. **rference** coverages.

Library Reference Coverage
Database Reference coverage
Political Entities coverage
Place Names coverage

TABLE 35. **rference** Library feature table(s) in coverages.

Coverage name	Feature classes				
	Point	Node	Line	Area	Text
libref[1]			libref.lft		libreft.tft
dbref				dbref.aft	dbtxt.tft
polbnd				polbnd.aft	polbndtx.tft
placenam	placenam.pft				placetxt.tft

[1] Described in section 50.2.1.2.

60.2 **dbref** coverage. This coverage contains the generalized small-scale outlines of each data library in the VMap Level 0 database. The files in this coverage are presented in TABLES 36-39.

TABLE 36. Content and format for **dbref** coverage feature class schema table.

Thematic Layer: Database Reference
Coverage Name: **dbref**
Table Description: Database Reference Feature Class Schema Table
Table Name: **fcs**

```
{Header length}L;
Database Reference Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,2,N,Column Name in Second Table,-,-,-,:;
```

1	dbref	dbref.aft	fac_id	fac	id
2	dbref	fac	dbref.aft_id	dbref.aft	id
3	dbtxt	dbtxt.tft	txt_id	txt	id
4	dbtxt	txt	dbtxt.tft_id	dbtxt.tft	id

TABLE 37. **dbref** area feature table.

Thematic Layer: Database Reference
Coverage Name: **dbref**
Table Description: Database Reference Area Feature Table
Table Name: **dbref.aft**

```
{Header length}L;
Database Reference Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
library_name=T,8,N,VMap Library Name,-,-,-,:
fac_id=I,1,N,Face Primitive ID,-,-,-,:;
```

1	lib1[1]	2
2	lib2[1]	3
3	:	4
:	:	:
n	n	n

[1] Library names in VMap products will vary.

TABLE 38. **dbref** text feature table.

Thematic Layer: Database Reference
Coverage Name: **dbref**
Table Description: Database Reference Text Feature Table
Table Name: **dbtxt.tft**

{Header length}L; Database Reference Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;		
1	ZD040	1
:	:	:
n	n	n

TABLE 39. Database reference character value description table.

Thematic Layer: Database Reference
Coverage Name: **dbref**
Table Description: Database Reference Character Value Description Table
Table Name: **char.vdt**

{Header length}L; Database Reference Character Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,6,N,Column Name,-,-,-,: value=T,5,N,Unique Value of Attribute,-,-,-,: description=T,24,N,Description of Value,-,-,-,:;				
1	dbtxt.tft	f_code	ZD040	Named Location
2	dbtxt.tft	f_code	ZD045	Text Description

60.3 **polbnd** coverage. This coverage contains the generalized small-scale outlines of the political entities in the VMap Level 0 database. The files for this coverage are described in TABLES 40-43.

TABLE 40. Content and format for **polbnd** coverage feature class schema table.

Thematic Layer: Political Entities
Coverage Name: **polbnd**
Table Description: Political Entities Feature Class Schema Table
Table Name: **fcs**

{Header length}L; Political Entities Feature Class Schema Table;-; id=I,1,P,Row Identifier,-,-,-,: feature_class=T,8,N,Name of Feature Class,-,-,-,: table1=T,12,N,First Table,-,-,-,: table1_key=T,16,N,Column Name in First Table,-,-,-,: table2=T,12,N,Second Table,-,-,-,: table2_key=T,2,N,Column Name in Second Table,-,-,-,:;

1	polbnd	polbnd.aft	fac_id	fac	id
2	polbnd	fac	polbnd.aft_id	polbnd.aft	id
3	polbndtx	polbndtx.tft	txt_id	txt	id
4	polbndtx	txt	polbndtx.tft_id	polbndtx.tft	id

TABLE 41. **polbnd** area feature table.

Thematic Layer: Political Entities
Coverage Name: **polbnd**
Table Description: Political Entities Area Feature Table
Table Name: **polbnd.aft**

{Header length}L; Political Entities Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: country_name=T,40,N,Political Entity Name,-,-,-,: fac_id=I,1,N,Face Primitive ID,-,-,-,:;

1	United States of America	2
2	Canada	3
3	Mexico	4
4	:	5
:	:	:
n	n	n

TABLE 42. **polbnd text feature table**.

Thematic Layer: Political Entities
Coverage Name: **polbnd**
Table Description: Political Entities Text Feature Table
Table Name: **polbndtx.tft**

{Header length}L; Political Entities Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;		
1	ZD040	1
:	:	:
n	n	n

TABLE 43. Political entities character value description table.

Thematic Layer: Political Entities
Coverage Name: **polbnd**
Table Description: Political Entities Character Value Description Table
Table Name: **char.vdt**

{Header length}L; Political Entities Character Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,6,N,Column Name,-,-,-,: value=T,5,N,Unique Value of Attribute,-,-,-,: description=T,16,N,Description of Value,-,-,-,:;				
1	polbndtx.tft	f_code	ZD040	Named Location
2	polbndtx.tft	f_code	ZD045	Text Description

60.4 **placenam** *coverage*. This coverage contains named places in the VMap Level 0 database. The files for this coverage are described in TABLES 44-46.

TABLE 44. Content and format for **placenam** coverage feature class schema table.

Thematic Layer: Place Names
Coverage Name: **placenam**
Table Description: Place Names Feature Class Schema Table
Table Name: **fcs**

{Header length}L;
Place Names Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,2,N,Column Name in Second Table,-,-,-,:;

1	placenam	placenam.pft	end_id	end	id
2	placenam	end	placenam.pft_id	placenam.pft	id
3	placetxt	placetxt.tft	txt_id	txt	id
4	placetxt	txt	placetxt.tft_id	placetxt.tft	id

TABLE 45. **placenam** point feature table.

Thematic Layer: Place Names
Coverage Name: **placenam**
Table Description: Place Names Point Feature Table
Table Name: **placenam.pft**

{Header length}L;
Place Names Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
place_name=T,40,N,Place Name,-,-,-,:
end_id=I,1,N,Entity Node Primitive ID,-,-,-,:;

1	Gulf of Mexico[1]	1
2	Chicago[1]	2
3	Boston[1]	3
4	Lake Superior[1]	4
:	:	:
n	n	n

[1] Representative place names.

TABLE 46. placenam text feature table.

Thematic Layer: Place Names
Coverage Name: **placenam**
Table Description: Place Names Text Feature Table
Table Name: **placetxt.tft**

{Header length}L; Place Names Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: name=T,20,N,Place Name,-,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;	
1	Richmond
2	Denver
3	Baltimore
:	:
n	n

70. DATA Library

The structure and content of each VPF table in a data library of the VMap database are provided in this section. The actual record contents of the metadata tables will vary with each library. Those records that vary are indicated by footnotes.

Each VMap library is represented as a directory file.

70.1 Library metadata tables. Each data library shall contain the following metadata tables at the library level.

lib1[1]	directory file
cat	coverage attribute table
dqt	data quality table
dqx	data quality index file
grt	geographic reference table
lht	library header table
lineage.doc	an optional documentation table

[1] Representative directory name for a Level 0 library.

70.1.1 Coverage attribute table. The following **cat** shall be present in every data library. TABLE 47 depicts all of the possible records that may be present in the **cat**.

TABLE 47. Format and sample content for coverage attribute table (cat).

{Header length}L; Coverage Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: coverage_name[1]=T,8,N,Coverage name,-,-,-,: description=T,24,N,Coverage description,-,-,-,: level[2]=S,1,N,Topology level,-,-,-,:;			
1	libref	Library Reference	2
2	tileref	Tile Reference	3
3	bnd	Boundaries	3
4	dq	Data Quality	3
5	elev	Elevation	2
6	hydro	Hydrography	3
7	ind	Industry	3
8	phys	Physiography	3
9	pop	Population	3
10	trans	Transportation	2
11	util	Utilities	2
12	veg	Vegetation	3

[1] This table depicts all possible coverages that may be present in a library, presence of these coverages will vary with data availability. If the library does not contain any data for a particular coverage, then the record describing that coverage will not be present.

[2] The number specified in the **level** column represents the topology level for the entire coverage regardless of the type of data present. For example, if area features are not present in a particular Vegetation coverage, level 3 topology will still be built for the coverage based on the value of "3" specified in the **cat** in the level column for the Vegetation coverage.

70.1.2 Library header table. The following LHT shall be present in every library. The format and sample content of the library header table for each library is presented in TABLE 48. The record content of this table will vary for each library.

TABLE 48. Format and content for example library header table (lht).

```
{Header length}L;
Library Header Table;-;
id=I,1,P,Row Identifier,-,-,-,:
product_type=T,12,N,Product Type,-,-,-,:
library_name=T,12,N,Name,-,-,-,:
description=T,100,N,Description of the library,-,-,-,:
data_struct_code=T,1,N,Data Structure Code,-,-,-,:
scale=I,1,N,Scale of the library,-,-,-,:
source_series=T,15,N,Series,-,-,-,:
source_id=T,30,N,Identifier of the source reference,-,-,-,:
source_edition[1]=T,20,N,Edition number of the source,-,-,-,:
source_name=T,100,N,Name of library source,-,-,-,:
source_date=D,1,N,Source Date,-,-,-,:
security_class=T,1,N,Security Classification,-,-,-,:
downgrading=T,3,N,Downgrading,-,-,-,:
downgrading_date=D,1,N,Date,-,-,-,:
releasability=T,20,N,Releasability,-,-,-,:;
```

```
1\
VMap LEVEL 0\
eusproto[1]\
Digital data from the Digital Chart of the World database at scale of
1:1,000,000.\
8\
1000000\
ONC\
Refer to lineage.doc\
11\
Operational Navigation Charts\
198701        .\
U\
NO\
              .\
UNRESTRICTED
```

[1] Replace with appropriate record content for each library.
Note: Each line represents the record value for each defined column.

70.1.3 Geographic reference table. The following **grt** shall be present in every library. The record content of this table may vary for each library. The format and sample content of the geographic reference table for each library is presented in TABLE 49.

TABLE 49. Format and sample content for a geographic reference table (grt).

{Header length}L; Geographic Reference Table;-; id=I,1,P,Row Identifier,-,-,-,: data_type=T,3,N,Data Type,-,-,-,: units=T,3,N,Units of Measure Code for Library,-,-,-,: ellipsoid_name=T,15,N,Ellipsoid,-,-,-,: ellipsoid_detail=T,50,N,Ellipsoid Details,-,-,-,: vert_datum_name=T,15,N,Datum Vertical Reference,-,-,-,: vert_datum_code=T,3,N,Vertical Datum Code,-,-,-,: sound_datum_name=T,15,N,Sounding Datum,-,-,-,: sound_datum_code=T,3,N,Sounding Datum Code,-,-,-,: geo_datum_name=T,15,N,Datum Geodetic Name,-,-,-,: geo_datum_code=T,3,N,Datum Geodetic Code,-,-,-,: projection_name=T,20,N,Projection Name,-,-,-,:;
1\ GEO\ M\ WGS 84\ A=6378137 B=6356752 Meters\ MEAN SEA LEVEL\ 015\ N/A\ N/A\ WGS 84\ WGE\ Dec. Deg. (unproj.)\

70.1.4 Data quality table. The following data quality table shall be present at the library level for every library. The record content of this table may vary for each library. The format and sample content of the **dqt** for each library is presented in TABLE 50.

TABLE 50. Format and content for example data quality table (dqt).

{Header length}L; Library Data Quality Table;lineAGE.doc; id=I,1,P,Row Identifier,-,-,-,: vpf_level=T,8,N,VPF Level,-,-,-,: vpf_level_name[1]=T,8,N,Name of VPF Level,-,-,-,: feature_complete=T,*,N,Feature Completeness Percent,-,-,-,: attrib_complete=T,*,N,Attribute Completeness Percent,-,-,-,: logical_consist=T,*,N,Logical Consistency,-,-,-,: edition_num=T,8,N,Edition Number,-,-,-,: creation_date=D,1,N,Creation Date,-,-,-,: revision_date=D,1,N,Revision Date,-,-,-,: spec_name[2]=T,*,N,Product Specification Name,-,-,-,: spec_date=D,1,N,Product Specification Date,-,-,-,: earliest_source=D,1,N,Date of Earliest Source,-,-,-,: latest_source=D,1,N,Date of Latest Source,-,-,-,:

```
collection_spec=T,*,N,Collection Specification Name,-,-,-,:
abs_horiz_acc=T,*,N,Absolute Horizontal Accuracy of VPF Level,-,-,-,:
abs_horiz_units=T,20,N,Unit of Measure for Absolute Horizontal Accuracy,-,-,-,:
abs_vert_acc=T,*,N,Absolute Vertical Accuracy of VPF Level,-,-,-,:
abs_vert_units=T,20,N,Unit of Measure for Absolute Vertical Accuracy,-,-,-,:
rel_horiz_acc=T,*,N,Point-to-Point Horizontal Accuracy of VPF Level,-,-,-,:
rel_horiz_units=T,20,N,Unit of Measure for Point-to-Point Horizontal Accuracy,-,-,-,:
rel_vert_acc=T,*,N,Point-to-Point Vertical Accuracy of VPF Level,-,-,-,:
rel_vert_units=T,20,N,Unit of Measure for Point-to-Point Vertical Accuracy,-,-,-,:
comments=T,*,N,Miscellaneous Comments,-,-,-,:;
```

```
1\
library\
eusproto\
All features in this library were converted from the source digital DCW data
using the rules for feature extraction and inclusion conditions in accordance
with this specification.\
All features in this library have valid attribute codes assigned to them in
accordance with this specification.\
All data are topologically correct.  No duplicate features are present within
a coverage.
All areas are completely described as extracted from the source materials.
No undershoots or overshoots are present.  All data were consistently
captured using the rules described in the documentation table associated with
this table and in the various feature table narrative files present at the
coverage level within the library.\
1\
19930930       .,\
               .,\
VMap Level 0 Product Specification
19930930       .\
19870100       .\
19890600       .\
Digital Chart of the World MILSPEC MIL-D-89009\
Chart-specific accuracies derived during the DCW project are available as
area feature attributes in the data quality coverage.\
Meters\
Chart-specific accuracies derived during the DCW project are available as
area feature attributes in the data quality coverage.\
Meters\
Unknown\
N/A\
Unknown\
N/A\
Additional descriptions of data lineage are available in the documentation
table associated with this data quality table (called lineage.doc).
```

1 Replace with appropriate VMap library name for each appropriate library.
2 This field length has been modified to accommodate the complete product specification name.
3 These values are for example only refer to section 3.1 for clarification.

70.1.5 Lineage narrative table. Information regarding the data contained in the library is captured in the **lineage.doc** file (TABLE 51).

TABLE 51. Format and sample content for lineage documentation table (**lineage.doc**).

(Header length)L; Lineage Documentation Table;-; id=I,1,P,Feature table primary key,-,-,-,: text=T,80,N,Text information,-,-,-,:;	
1	This table describes characteristics of the feature data within
2	this coverage. Three subjects are discussed: (1) special
3	automation techniques, (2) feature coincidence, and (3) database
4	design issues. The table does not contain a full description
5	of the data production process.
:	
n	...

70.2 Data library reference coverages and tables. The following coverages, including directory files and tables, apply to all tiled data libraries.

70.2.1 Tile Reference coverage directory and files. The tile reference coverage directory contains the following files:

tileref	directory file
cnd	connected node table
ebr	edge bounding rectangle table
edg	edge primitive table
edx	edge variable length index file
esi	edge spatial index table
fac	face primitive table
fbr	face bounding rectangle
fcs	feature class schema table
fsi	face spatial index table
rng	*ring* table
tileref.aft	tile reference area feature table
tilereft.tft	tile reference text feature table (optional)
tsi	text spatial index file
txt	text primitive table
txx	text variable length index file

70.2.1.1 Tile Reference feature class schema table. A feature class schema table shall be present in every tile reference coverage (**tileref**). The format and content of the **fcs** is presented in TABLE 52. The record content of this table may vary for each tile reference coverage depending upon the presence or absence of a text feature class.

TABLE 52. Content and format for **tileref** feature class schema table.

Thematic Layer: Tile Reference
Coverage Name: **tileref**
Table Description: Feature Class Schema Table
Table Name: **fcs**

{Header length}L;
Tile Reference Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,2,N,Column Name in Second Table,-,-,-,:;

1	tileref	tileref.aft	fac_id	fac	id
2	tileref	fac	tileref.aft_id	tileref.aft	id
3	tilereft	tilereft.tft	txt_id	txt	id
4	tilereft	txt	tilereft.tft_id	tilereft.tft	id

70.2.1.2 Tile reference feature tables. The feature tables implemented in the tile reference coverage are specified in TABLES 53 and 54. The text feature table is optional. If it is present, there is a one-to-one correspondence between the records of the tile reference area feature table and text feature table.

TABLE 53. Format and sample content for Level 0 **tileref** area feature table.

Thematic Layer: Tile Reference
Coverage Name: **tileref**
Table Description: Tile Reference Area Feature Table
Table Name: **tileref.aft**

{Header length}L; Tile Reference Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: tile_name=T,9,N,VMap Library Tile Path Name,-,-,-,: fac_id=I,1,N,Face Primitive ID,-,-,-,:;		
1	\F\J\A\A\[1]	2
2	\F\J\A\F\[1]	3
3	\F\J\A\L\[1]	4
4	\F\J\F\A\[1]	5
:	:	:
n	n	n

[1] The sample tile path names for libraries.

TABLE 54. Format and content for **tileref** text feature table.

Thematic Layer: Tile Reference
Coverage Name: **tileref**
Table Description: Tile Reference Text Feature Table
Table Name: **tilereft.tft**

{Header length}L; Tile Reference Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: tile_name=T,4,N,Tile Name,-,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;		
1	FJAA	1
2	FJAF	2
3	:	3
:	:	:
n	n	n

70.2.1.3 Tile Reference primitive tables. The face, edge, and text primitive tables in the tile reference coverage directory have the same format as the primitive files (reference TABLES 16-20). Although the text feature table is optional, a sample text primitive table is presented to show sample values for the **string** column (TABLE 55).

The structure and format of the variable-length index files and spatial index files are provided in section 3.12.3. The structure and format of the bounding rectangle tables are described in section 3.14.5.

TABLE 55. Format and example of content for **tileref** text primitive table.

Thematic Layer: **tileref**
Coverage Name: **tileref**
Table Description: Text Primitive Table
Table Name: **txt**

{Header length}L; Text Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: tilereft.txt_id=I,1,N,text feature table id,-,-,-,: string=T,*,N,Text String,-,-,-,: shape_line=C,*,N,Shape of Text String,-,-,-,:;			
1	1	\F\J\A\A\[1]	-5.811609,43.662006
2	2	\F\J\A\F\[1]	-8.574136,43.435287
3	3	\F\J\A\L\[1]	-7.437326,42.881957
4	4	\F\J\F\A\[1]	-6.835582,40.736553 -6.825007,40.846355
:	:	:	:
n	n	n	n

[1] Sample tile path names for libraries.

70.2.2 Library Reference coverage directory and files. The library reference coverage directory contains the following files:

libref	directory file
cnd	connected node table
ebr	edge bounding rectangle table
edg	edge primitive table
edx	edge variable length index file
esi	edge spatial index table
fcs	feature class schema table
libref.lft	library reference line feature table
libreft.tft	library reference text feature table (optional)
tsi	text spatial index file
txt	text primitive table
txx	text variable length index file

70.2.2.1 Library Reference feature class schema table. A feature class schema table shall be present in every library reference coverage (**libref**). The format and content of the **fcs** is presented in TABLE 56. The record content of this table may vary for each library reference coverage, depending upon the presence or absence of a text feature class.

TABLE 56. Content and format for **libref** feature class schema table.

Thematic Layer: **libref**
Coverage Name: **libref**
Table Description: Library Reference Feature Class Schema Table
Table Name: **fcs**

```
(Header length)L;
Library Reference Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,2,N,Column Name in Second Table,-,-,-,:;
```

1	libref	libref.lft	edg_id	edg	id
2	libref	edg	libref.lft_id	libref.lft	id
3	libreft	libreft.tft	txt_id	txt	id
4	libreft	txt	libreft.tft_id	libreft.tft	id

70.2.2.2 Library Reference feature tables. The feature tables implemented in the library reference coverage are specified in TABLES 57-60.

TABLE 57. Format and content for **libref** line feature table.

Thematic Layer: **libref**
Coverage Name: **libref**
Table Description: Library Reference Line Feature Table
Table Name: **libref.lft**

```
(Header length)L;
Library Reference Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
edg_id=I,1,N,Edge Primitive ID,-,-,-,:;
```

1	FA000	1
2	BA010	2
:	:	:
n	n	n

TABLE 58. Format and content for **libref** text feature table.

Thematic Layer: Library Reference
Coverage Name: **libref**
Table Description: Library Reference Text Feature Table
Table Name: **libreft.tft**

{Header length}L; Library Reference Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: txt_id=I,1,N,Text Primitive ID,-,-,-,:;		
1	ZD040	1
2	ZD040	2
3	ZD045	3
:	:	:
n	n	n

70.2.2.3 Library Reference primitive tables. The edge, connected node, and text primitive tables in the library reference coverage directory have the same format as the coverage primitive files (reference TABLES 16-20). Although the text feature table is optional, a sample text primitive table is presented to show sample values for the **string** column (TABLE 59). The text string depicting the library name will be placed appropriately near the top center of each library reference coverage in an appropriately sized font.

The structure and format of the variable-length index files and spatial index files are provided in section 3.12.3. The structure and format of the bounding rectangle tables are described in section 3.14.5.

TABLE 59. Format and example of content for **libref** text primitive table.

Thematic Layer: Library Reference
Coverage Name: **libref**
Table Description: Text Primitive Table
Table Name: **txt**

{Header length}L; Text Primitive Table;-; id=I,1,P,Row Identifier,-,-,-,: libreft.txt_id=I,1,N,text feature table id,-,-,-,: string=T,*,N,Text String,-,-,-,: shape_line=C,*,N,Shape of Text String,-,-,-,:;			
1 : n	1 : n	Text string[1] : n	-5.811609,43.662006 : n

[1] The names and extent of the Level 0 libraries, or other geographic identifiers.

TABLE 60. Library reference character value description table.

Thematic Layer: **libref**
Coverage Name: **libref**
Table Description: Library Reference Character Value Description Table
Table Name: **char.vdt**

(Header length)L;
Library Reference Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,24,N,Description of Value,-,-,-,:;

1	libref.lft	f_code	BA010	Coastline/Shoreline
2	libref.lft	f_code	FA000	Administrative Boundary
3	libreft.tft	f_code	ZD040	Named Location
4	libreft.tft	f_code	ZD045	Text Description
5	dqline.lft	f_code	BA010	Coastline/Shoreline
6	dqline.lft	f_code	FA000	Administrative Boundary
7	dqline.lft	f_code	ZD045	Text Description

80. VMap LEVEL 0 THEMATIC COVERAGE DIRECTORY RECORD LAYOUT.

80.1 General. For each coverage (TABLE 61), the feature class schema table is described first, followed by the feature tables, then value description tables. The type and content of documentation tables will vary with each coverage. The feature class schema (**fcs**) table given for each coverage contains entries for each possible feature class in the coverage. Only those feature classes actually present in the coverage shall have entries in the **fcs**. For each feature table, the attribute names, descriptions, and values are given. A summary of the VMap Level 0 thematic layers, coverages, and feature classes is presented in TABLE 62.

The format and content for thematic indices, spatial indices and variable-length indices are defined in MIL-STD-2407.

TABLE 61. VMap Level 0 coverages.

Boundaries coverage
Data quality coverage
Elevation coverage
Hydrography coverage
Industry coverage
Physiography coverage
Population coverage
Transportation coverage
Utilities coverage
Vegetation coverage

Data quality feature tables can be present in any coverage when appropriate. Symbol related attribute tables are present in any coverage with a text feature table. These tables may appear in multiple libraries; to avoid redundancy, they are discussed only once, starting in section 80.1.1.

TABLE 62. VMap Level 0 feature table(s) in tiled coverages.

Coverage name	Feature tables				
	Point	Node	Line	Area	Text
bnd	polbndp.pft		barrierl.lft coastl.lft depthl.lft polbndl.lft	oceansea.aft polbnda.aft	bndtxt.tft
dq			dqline.lft	dqarea.aft	dqtxt.tft
elev	elevp.pft		contourl.lft		
hydro	dangerp.pft miscp.pft		aquecanl.lft *dangerl*.lft miscl.lft watrcrsl.lft	inwatera.aft	hydrotxt.tft
ind	extractp.pft misindp.pft storagep.pft			extracta.aft fishinda.aft	indtxt.tft
phys			cutfill.lft lndfrml.lft	grounda.aft landicea.aft seaicea.aft	phystxt.tft
pop	builtupp.pft mispopp.pft			builtupa.aft mispopa.aft	poptxt.tft
trans	aerofacp.pft rryardp.pft	transtrc.pft	mistranl.lft railrdl.lft roadl.lft traill.lft transtrl.lft		transtxt.tft
util	utilp.pft		pipel.lft utill.lft		utiltxt.tft
veg				cropa.aft rangea.aft swampa.aft treesa.aft	vegtxt.tft

Note: Additional data *quality point, node, line, area, and text* feature tables may be implemented for all coverages (except **dq**) where desired.

80.1.1 VMap Level 0 data quality feature classes in thematic coverages. Each VMap coverage may contain data quality information for individual point, node, line, or area features. Data quality feature classes have been defined for each coverage to describe data quality information for any or all of the point, node, line, and area features in a coverage (TABLES 63 to 66). Data quality feature tables presented in this section may be implemented if needed in any VMap Level 0 coverage.

Two other data quality tables may be defined—data quality text feature tables (TABLE 67), which contain information about text features, and data quality description related attribute tables (TABLE 68), which contain descriptions for particular features.

Using data quality tables within a coverage is a way to store information about specific features or feature classes within that coverage. A Data Quality coverage may also be implemented in the database; its use is described in section 80.3.

TABLE 63. Data quality point feature table.

Thematic Layer: <applicable layer>
Coverage Name: <any coverage> (e.g., **bnd** or **elev**)
Table Description: Data Quality Point Feature Table
Table Name: **dqpoint.pft**
dq Layer Number: Use Applicable Layer Number

```
{Header length}L;
Data Quality Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
dqdescr_id=S,1,N,dq Description Related Row Identifier,-,-,-,:
feature_class=T,8,N,Feature Class,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,dqf_code.pti,-,:
tile_id=S,1,N,Tile Reference ID,-,dqtil_id.pti,-,:
end_id=I,1,N,Entity Node Primitive ID,-,dqend_id.pti,-,:;
```

1	1	elevp	CA030	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqdescr_id	Data Quality Description Related Row Identifier		This is the relate key to the **dqdescr.rat**
feature_class	VMap Point Feature Class		Pertinent point feature class name in the coverage to which the data quality information applies
f_code	FACC Feature Code		
		any	Capture the F_CODE for the point feature to which the **dq** statement applies
		ZD045	Text Description. For **dq** pertaining to a point feature with no other applicable F_CODE

TABLE 64. Data quality node feature table.

Thematic Layer: <applicable layer>
Coverage Name: <any coverage> (e.g., **hydro** or **trans**)
Table Description: Data Quality Node Feature Table
Table Name: **dqnode.pft**
dq Layer Number: Use Applicable Layer Number

(Header length)L;
Data Quality Node Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
dqdescr_id=S,1,N,dq Description Related Row Identifier,-,-,-,:
feature_class=T,8,N,Feature Class,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,dqf_code.nti,-,:
tile_id=S,1,N,Tile Reference ID,-,dqtil_id.nti,-,:
cnd_id=I,1,N,Connected Node Primitive ID,-,dqcnd_id.nti,-,:;

1	1	transtrc	AL210	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqdescr_id	Data Quality Description Related Row Identifier		This is the relate key to the **dqdescr.rat**
feature_class	VMap Node Feature Class		Pertinent node feature class name in the coverage to which the data quality information applies
f_code	FACC Feature Code		
		any	Capture the F_CODE for the node feature to which the **dq** statement applies
		ZD045	Text Description. For **dq** pertaining to a node feature with no other applicable F_CODE

TABLE 65. Data quality line feature table.

Thematic Layer:	<applicable layer>
Coverage Name:	<any coverage> (e.g., **bnd** or **elev**)
Table Description:	Data Quality Line Feature Table
Table Name:	**dqline.lft**
dq Layer Number:	Use Applicable Layer Number

{Header length}L;
Data Quality Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
dqdescr_id=S,1,N,dq Description Related Row Identifier,-,-,-,:
feature_class=T,8,N,Feature Class,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,dqf_code.lti,-,:
tile_id=S,1,N,Tile Reference ID,-,dqtil_id.lti,-,:
edg_id=I,1,N,Edge Primitive ID,-,dqedg_id.lti,-,:;

1	1	polbndl	FA000	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqdescr_id	Data Quality Description Related Row Identifier		This is the relate key to the **dqdescr.rat**
feature_class	VMap Line Feature Class		Pertinent line feature class name in the coverage to which the data quality information applies
f_code	FACC Feature Code		
		any	Capture the F_CODE for the line feature to which the **dq** statement applies
		ZD045	Text Description. For **dq** pertaining to a line feature with no other applicable F_CODE

TABLE 66. Data quality area feature table.

Thematic Layer: <applicable layer>
Coverage Name: <any coverage> (e.g., **bnd** or **elev**)
Table Description: Data Quality Area Feature Table
Table Name: **dqarea.aft**
dq Layer Number: Use Applicable Layer Number

{Header length}L; Data Quality Area Feature Table;~; id=I,1,P,Row Identifier,-,-,-,: dqdescr_id=S,1,N,dq Description Related Row Identifier,-,-,-,: feature_class=T,8,N,Feature Class,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,dqf_code.ati,-,: tile_id=S,1,N,Tile Reference ID,~,dqtil_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,dqfac_id.ati,-,:;					
1	1	builtupa	AL020	1	2
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqdescr_id	Data Quality Description Related Row Identifier		This is the relate key to the **dqdescr.rat**
feature_class	VMap Area Feature Class		Pertinent area feature class name in the coverage to which the data quality information applies
f_code	FACC Feature Code		
		any	Capture the F_CODE for the area feature to which the **dq** statement applies
		ZD045	Text Description. For **dq** pertaining to an area feature with no other applicable F_CODE

TABLE 67. Data quality text feature table.

Thematic Layer:	<applicable layer>
Coverage Name:	<any coverage> (e.g., **bnd** or **elev**)
Table Description:	Data Quality Text Feature Table
Table Name:	**dqtext.tft**
dq Layer Number:	Use Applicable Layer Number

{Header length)L; Data Quality Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,dqtil_id.tti,-: txt_id=I,1,N,Text Primitive ID,-,dqtxt_id.tti,-,:;		
1	1	1
:	:	:
n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	

This is all that is required.

TABLE 68. Data quality description related attribute table.

Thematic Layer: <applicable layer>
Coverage Name: <any coverage> (e.g., **bnd** or **elev**)
Table Description: Data Quality Description Related Attribute Table
Table Name: **dqdescr.rat**
dq Layer Number: Not Applicable

(Header length)L; Data Quality Description Related Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: dqdescr=T,*,N,dq Description for Feature,-,-,-,:;	
1	Existence doubtful
:	:
n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqdescr	Data Quality Description for Feature		
			Data quality information present on a source that is appropriate to describe at the feature level

80.1.2 Symbology. The symbology for the geometric features in the VMap database is defined in the application software. Diacritical marks and non-Roman characters for text are not incorporated in the VMap database. The text display table in each coverage has an associated symbol related attribute table (**symbol.rat**), which provides information on how to symbolize text for representation on a plot or lithograph. Other application software packages may be written to access the symbology related attribute table.

80.1.3 Symbology related attribute table. The symbol related attribute table (TABLE 69) will be present whenever a text feature table is present in a VMap Level 0 coverage. To avoid duplication in this appendix, the **symbol.rat** is presented only once, but it may be present in multiple VMap Level 0 coverages. The **symbol.rat** defines the fonts, font sizes, text style, and color for each text record specified in a text feature table. There is a many-to-one correspondence between the records of the text feature table and the **symbol.rat**.

TABLE 69. Symbol related attribute table.

Thematic Layer: <applicable layer>
Coverage Name: <any coverage> (e.g., **bnd** or **elev**)
Table Description: Symbol Related Attribute Table
Table Name: **symbol.rat**
dq Layer Number: Not Applicable

```
(Header length)L;
Symbol Related Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
symbol_id=S,1,N,Symbol Identification,-,-,-,:
fon=S,1,N,Type of Font,int.vdt,-,-,:
sty=S,1,N,Style of Text,int.vdt,-,-,:
size=S,1,N,Font Size in Points,-,-,-,:
col=S,1,U,Color of Text,int.vdt,-,-,:;
```

1	1	1	1	12	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
symbol_id	Symbol Identification		
		1	1,1,12,1
		2	1,1,8,1
		3	1,1,16,1
		5	1,1,7,1
		6	1,1,8,9
		7	1,1,5,1
		8	1,1,6,1
		9	1,1,6,9
		10	1,1,5,4
		12	1,1,7,4
		13	1,1,8,4
		16	1,1,6,4
		18	1,1,12,4
		21	1,1,10,1
		25	1,1,14,1
		29	1,1,4,1
		31	1,1,9,1
		34	1,1,9,4
		35	1,1,10,4
		36	1,1,7,12
		37	1,1,14,4
		38	1,1,16,4
		39	1,1,5,9
		40	1,1,7,9
		41	1,1,14,9
		42	1,1,16,9
fon	Type of Font	1	Machine Default
sty	Style of Text	1	Kern
		2	Proportional
		3	Constant

size	Font Size in Points		
		4	
		5	
		6	
		7	
		8	
		9	
		10	
		12	
		14	
		16	
col	Color of Text	1	Black
		4	Blue
		9	Red-Brown
		12	Magenta

80.2 Boundaries coverage.

TABLE 70. Content and format for boundaries coverage feature class schema table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Boundaries Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 1

{Header length}L;					
Boundaries Feature Class Schema Table;-;					
id=I,1,P,Row Identifier,-,-,-,:					
feature_class=T,8,N,Name of Feature Class,-,-,-,:					
table1=T,12,N,First Table,-,-,-,:					
table1_key=T,16,N,Column Name in First Table,-,-,-,:					
table2=T,12,N,Second Table,-,-,-,:					
table2_key= T,9,N,Column Name in Second Table,-,-,-,:;					
1	polbndp	polbndp.pft	end_id	end	id
2	polbndp	end	polbndp.pft_id	polbndp.pft	id
3	barrierl	barrierl.lft	edg_id	edg	id
4	barrierl	edg	barrierl.lft_id	barrierl.lft	id
5	coastl	coastl.lft	edg_id	edg	id
6	coastl	edg	coastl.lft_id	coastl.lft	id
7	depthl	depthl.lft	edg_id	edg	id
8	depthl	edg	depthl.lft_id	depthl.lft	id
9	polbndl	polbndl.lft	edg_id	edg	id
10	polbndl	edg	polbndl.lft_id	polbndl.lft	id
11	oceansea	oceansea.aft	fac_id	fac	id
12	oceansea	fac	oceansea.aft_id	oceansea.aft	id
13	polbnda	polbnda.aft	fac_id	fac	id
14	polbnda	fac	polbnda.aft_id	polbnda.aft	id
15	dqpoint	dqpoint.pft	end_id	end	id
16	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
17	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
18	dqline	dqline.lft	edg_id	edg	id
19	dqline	edg	dqline.lft_id	dqline.lft	id
20	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
21	dqarea	dqarea.aft	fac_id	fac	id
22	dqarea	fac	dqarea.aft_id	dqarea.aft	id
23	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
24	dqtext	dqtext.tft	txt_id	txt	id
25	dqtext	txt	dqtext.tft_id	dqtext.tft	id
26	bndtxt	bndtxt.tft	txt_id	txt	id
27	bndtxt	txt	bndtxt.tft_id	bndtxt.tft	id
28	bndtxt	bndtxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 71. Political boundary point feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Political Boundary Point Feature Table
Table Name: **polbndp.pft**
dq Layer Number: 1

```
{Header length}L;
Political Boundary Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
nam=T,*,N,Name,char.vdt,-,-,:
na2=T,2,N,Second Name,char.vdt,-,-,:
na3=T,1,N,Classification Name,char.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,:
end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;
```

1	FA001	US	N	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		FA001	Administrative Area	
nam	Name	UNK	Unknown	FA001
		actual value	(e.g. Pitcairn Island)	FA001
na2	Second Name			
		Two-character country codes		FA001
		AA	Aruba	
		AC	Antigua and Barbuda	
		AF	Afghanistan	
		AG	Algeria	
		AJ	Azerbaijan	
		AL	Albania	
		AM	Armenia	
		AN	Andorra	
		AO	Angola	
		AQ	American Samoa	
		AR	Argentina	
		AS	Australia	
		AT	Ashmore and Cartier Islands	
		AU	Austria	
		AV	Anguilla	
		AY	Antarctica	
		BA	Bahrain	
		BB	Barbados	
		BC	Botswana	
		BD	Bermuda	
		BE	Belgium	
		BF	Bahamas, The	

BG	Bangladesh
BH	Belize
BK	Bosnia and Herzegovina
BL	Bolivia
BM	Burma
BN	Benin
BO	Belarus
BP	Solomon Islands
BQ	Navassa Island
BR	Brazil
BT	Bhutan
BU	Bulgaria
BV	Bouvet Island
BX	Brunei
BY	Burundi
CA	Canada
CB	Cambodia
CD	Chad
CE	Sri Lanka
CF	Congo
CG	Zaire
CH	China
CI	Chile
CJ	Cayman Islands
CK	Cocos (Keeling) Islands
CM	Cameroon
CN	Comoros
CO	Colombia
CQ	Northern Mariana Islands
CR	Coral Sea Islands
CS	Costa Rica
CT	Central African Republic
CU	Cuba
CV	Cape Verde
CW	Cook Islands
CY	Cyprus
DA	Denmark
DJ	Djibouti
DO	Dominica
DQ	Jarvis Island
DR	Dominican Republic
EC	Ecuador
EG	Egypt
EI	Ireland
EK	Equatorial Guinea
EN	Estonia
ER	Eritrea
ES	El Salvador
ET	Ethiopia
EZ	Czech Republic
FG	French Guiana
FI	Finland
FJ	Fiji
FK	Falkland Islands (Islas Malvinas)
FM	Micronesia, Federated States of
FO	Faroc Islands
FP	French Polynesia
FQ	Baker Island

FR	France
FS	French Southern and Antarctic Lands
GA	Gambie, The
GB	Gabon
GG	Georgia
GH	Ghana
GI	Gibraltar
GJ	Grenada
GK	Guernsey
GL	Greenland
GM	Germany
GP	Guadeloupe
GQ	Guam
GR	Greece
GT	Guatemala
GV	Guinea
GY	Guyana
HA	Haiti
HK	Hong Kong
HM	Heard Island andMcDonald Islands
HO	Honduras
HQ	Howland Island
HR	Croatia
HU	Hungary
IC	Iceland
ID	Indonesia
IM	Man, Isle of
IN	India
IO	British Indian Ocean Territory
IP	Clipperton Island
IR	Iran
IS	Israel
IT	Italy
IV	Cote d'Ivoire (Ivory Coast)
IZ	Iraq
JA	Japan
JE	Jersey
JM	Jamaica
JN	Jan Mayen
JO	Jordan
JQ	Johnson Atoll
KE	Kenya
KG	Kyrgyzstan
KN	Korea, North
KQ	Kingman Reef
KR	Klribati
KS	Korea, South
KT	Christmas Island
KU	Kuwait
KZ	Kazakhstan
LA	Laos
LE	Lebanon
LG	Latvia
LH	LIthuania
LI	Liberia
LO	Slovakia
LQ	Palrnyra Atoll
LS	Liechtenstein

LT	Lesotho
LU	Luxembourg
LY	Libya
MA	Madagascar
MB	Martinique
MC	Macau
MD	Moldova
MF	Mayotie
MG	Mongolia
MH	Montserrat
MI	Malawi
MK	Macedonia, The Former Yugoslav Republic of
ML	Mali
MN	Monaco
MO	Morocco
MP	Mauritius
MQ	Midway Islands
MR	Mauritania
MT	Malta
MU	Oman
MV	Maldives
MX	Mexico
MY	Malaysia
MZ	Mozambique
NC	New Caledonia
NE	Nioe
NF	Norfolk Island
NG	Niger
NH	Vanuatu
NI	Nigeria
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NS	Suriname
NT	Netherlands Antilles
NU	Nicaragua
NZ	New Zealand
PA	Paraguay
PC	Pitcairn Islands
PE	Peru
PF	Paracel Islands
PG	Spratly Islands
PK	Pakistan
PL	Poland
PM	Panama
PO	Portugal
PP	Papua New Guinea
PS	Pacific Islands (Palau), Trust Territory of the
PU	Guinea-Bissau
QA	Qatar
RE	Reunion
RM	Marshall Islands
RO	Romania
RP	Philippines
RQ	Puerto Rico
RS	Russia

RW	Rwanda
SA	Saudi Arabia
SB	Saint Pierre and Miquelon
SC	Saint Kitts and Nevis
SE	Seychelles
SF	South Africa
SG	Senegal
SH	Saint Helena
SI	Slovenia
SL	Sierra Leone
SM	San Marino
SN	Singapore
SO	Somalia
SP	Spain
ST	Saint Lucia
SU	Sudan
SV	Svalbard
SW	Sweden
SX	South Georgia and the South Sandwich Islands
SY	Syria
SZ	Switzerland
TC	United Arab Emirates
TD	Trinidad and Tobago
TH	Thailand
TI	Tajikistan
TK	Turks and Caicas Islands
TL	Tokelau
TN	Tonga
TO	Togo
TP	Sao Tome and Principe
TS	Tunisla
TU	Turkey
TV	Tuvalu
TX	Turkmenistan
TZ	Tanzania
UG	Uganda
UK	United Kingdom
UP	Ukraine
US	United States
UV	Burkina
UY	Uruguay
UZ	Uzbekistan
VC	Saint Vincent and the Grenadines
VE	Venezuela
VI	Virgin Islands, British
VM	Vietnam
VQ	Virgin Islands
VT	Holy See
WA	Namibia
WF	Wallis and Futuna
WI	Western Sahara
WQ	Wake Island
WS	Western Samoa
WZ	Swaziland
YM	Yemen
ZA	Zambia
ZI	Zimbabwe

na3	Classification Name		
	A	Asia	FA001
	E	Europe	FA001
	F	Africa	FA001
	N	North America	FA001
	S	South America	FA001
	T	Antarctic Area	FA001
	U	Australian Area	FA001

TABLE 72. Barrier line feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Barrier Line Feature Table
Table Name: **barrierl.lft**
dq Layer Number: 1

{Header length}L; Barrier Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;			
1	AL260	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AL260	Wall	

TABLE 73. Coast line feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Coast Line Feature Table
Table Name: **coastl.lft**
dq Layer Number: 1

{Header length}L; Coast Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: acc=S,1,N,Accuracy Category,int.vdt,-,-,: exs=S,1,N,Existence Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;					
1	BA010	0	0	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BA010	Coastline/Shoreline	
acc	Accuracy Category			
		0	Unknown	BA010
		1	Accurate	BA010
		2	Approximate	BA010
exs	Existence Category			
		0	Unknown	BA010
		1	Definite	BA010
		44	Approximate/About	BA010
		46	Man-made	BA010
		55	Unexamined/Unsurveyed	BA010
		60	Indefinite (Shoreline)	BA010

TABLE 74. Depth line feature table.

Thematic Layer: *Boundaries*
Coverage Name: **bnd**
Table Description: Depth Line Feature Table
Table Name: **depthl.lft**
dq Layer Number: 1

```
{Header length}L;
Depth Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
crv=S,1,N,Depth Curve or Contour Value (meters),-,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile3_id.lti,-,:
edg_id=I,1,N,Edge Primitive ID,-,edg3_id.lti,-,:;
```

1	BE015	0	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	BE015	Depth Contour	
crv	Depth Curve or Contour Value (meters)	200		BE015
		600		BE015
		1000		BE015
		2000		BE015
		4000		BE015
		6000		BE015
		8000		BE015

TABLE 75. Political boundary line feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Political Boundary Line Feature Table
Table Name: **polbnd1.lft**
dq Layer Number: 1

{Header length}L; Political Boundary Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code4.lti,-,: acc=S,1,N,Accuracy Category,int.vdt,-,-,: bst=S,1,N,Boundary Status Type,int.vdt,-,-,: use=S,1,N,Usage,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile4_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg4_id.lti,-,:;						
1	FA000	1	1	23	1	1
2	FA020	1	1	-32768	2	2
3	FA030	1	1	-32768	3	3
4	FA050	2	1	-32768	4	4
5	FA060	2	1	23	5	5
6	FA110	-32768	-32768	-32768	6	6
:	:	:	:	:	:	:
n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		FA000	Administrative Boundary	
		FA020	Armistice Line	
		FA030	Cease-Fire Line	
		FA040	Claim Line	
		FA050	Mandate Line/Convention Line	
		FA060	Defacto Boundary	
		FA110	International Date Line (no attributes)	
acc	Accuracy Category			
		-32768	Null	FA110
		1	Accurate	FA000, FA020, FA030, FA040, FA050, FA060
		2	Approximate	FA000, FA020, FA030, FA040, FA050, FA060
bst	Boundary Status Type			
		-32768	Null	FA110
		1	Definite	FA000, FA020, FA030, FA040, FA050, FA060
		2	Indefinite	FA000, FA020, FA030, FA040, FA050, FA060
		3	In Dispute	FA060
		4	No Defined Boundary	FA060

use	Usage		
	-32768	Null	FA020, FA030, FA040 FA050, FA110
	23	International	FA000, FA060
	26	Primary/1st Order	FA000

TABLE 76. Ocean/Sea area feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Ocean/Sea Area Feature Table
Table Name: **oceansea.aft**
dq Layer Number: 1

{Header length}L; Ocean/Sea Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: nam=T,*,N,Name,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;

1	BA040	North Atlantic Ocean	1	2
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	BA040	Water (except Inland)	
nam	Name	Character text string representing the ocean or sea name as depicted in IHO Special Publication 23		BA040

TABLE 77. Political boundary area feature table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Political Boundary Area Feature Table
Table Name: **polbnda.aft**
dq Layer Number: 1

```
{Header length}L;
Political Boundary Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.ati,-,:
nam=T,*,N,Name,char.vdt,-,-,:
na2=T,2,N,Second Name,char.vdt,-,-,:
na3=T,1,N,Classification Name,char.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile2_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;
```

1	FA001	Virginia	US	N	1	2
:	:	:	:	:	:	:
n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		FA001	Administrative Area	
		FA070	Demilitarized Zone	
		FA170	Zone of Occupation	
nam	Name			
		zero-length	Null	FA070, FA170
			Character text string	FA001
			"UNK" (no entry present for feature)	FA001
na2	Second Name			
		Two-character country codes		FA001, FA070, FA170
		AA	Aruba	
		AC	Antigua and Barbuda	
		AF	Afghanistan	
		AG	Algeria	
		AJ	Azerbaijan	
		AL	Albania	
		AM	Armenia	
		AN	Andorra	
		AO	Angola	
		AQ	American Samoa	
		AR	Argentina	
		AS	Australia	
		AT	Ashmore and Cartier Islands	
		AU	Austria	
		AV	Anguilla	
		AY	Antarctica	
		BA	Bahrain	
		BB	Barbados	

BC	Botswana
BD	Bermuda
BE	Belgium
BF	Bahamas, The
BG	Bangladesh
BH	Belize
BK	Bosnia and Herzegovina
BL	Bolivia
BM	Burma
BN	Benin
BO	Belarus
BP	Solomon Islands
BQ	Navassa Island
BR	Brazil
BT	Bhutan
BU	Bulgaria
BV	Bouvet Island
BX	Brunei
BY	Burundi
CA	Canada
CB	Cambodia
CD	Chad
CE	Sri Lanka
CF	Congo
CG	Zaire
CH	China
CI	Chile
CJ	Cayman Islands
CK	Cocos (Keeling) Islands
CM	Cameroon
CN	Comoros
CO	Colombia
CQ	Northern Mariana Islands
CR	Coral Sea Islands
CS	Costa Rica
CT	Central African Republic
CU	Cuba
CV	Cape Verde
CW	Cook Islands
CY	Cyprus
DA	Denmark
DJ	Djibouti
DO	Dominica
DQ	Jarvis Island
DR	Dominican Republic
EC	Ecuador
EG	Egypt
EI	Ireland
EK	Equatorial Guinea
EN	Estonia
ER	Eritrea
ES	El Salvador
ET	Ethiopia
EZ	Czech Republic
FG	French Guiana
FI	Finland
FJ	Fiji
FK	Falkland Islands (Islas Malvinas)

FM	Micronesia, Federated States of
FO	Faroc Islands
FP	French Polynesia
FQ	Baker Island
FR	France
FS	French Southern and Antarctic Lands
GA	Gambie, The
GB	Gabon
GG	Georgia
GH	Ghana
GI	Gibraltar
GJ	Grenada
GK	Guernsey
GL	Greenland
GM	Germany
GP	Guadeloupe
GQ	Guam
GR	Greece
GT	Guatemala
GV	Guinea
GY	Guyana
HA	Haiti
HK	Hong Kong
HM	Heard Island andMcDonald Islands
HO	Honduras
HQ	Howland Island
HR	Croatia
HU	Hungary
IC	Iceland
ID	Indonesia
IM	Man, Isle of
IN	India
IO	British Indian Ocean Territory
IP	Clipperton Island
IR	Iran
IS	Israel
IT	Italy
IV	Cote d'lvoire (Ivory Coast)
IZ	Iraq
JA	Japan
JE	Jersey
JM	Jamaica
JN	Jan Mayen
JO	Jordan
JQ	Johnson Atoll
KE	Kenya
KG	Kyrgyzstan
KN	Korea, North
KQ	Kingman Reef
KR	Klribati
KS	Korea, South
KT	Christmas Island
KU	Kuwait
KZ	Kazakhstan
LA	Laos
LE	Lebanon
LG	Latvia
LH	LIthuania

LI	Liberia
LO	Slovakia
LQ	Palrnyra Atoll
LS	Liechtenstein
LT	Lesotho
LU	Luxembourg
LY	Libya
MA	Madagascar
MB	Martinique
MC	Macau
MD	Moldova
MF	Mayotie
MG	Mongolia
MH	Montserrat
MI	Malawi
MK	Macedonia, The Former Yugoslav Republic of
ML	Mali
MN	Monaco
MO	Morocco
MP	Mauritius
MQ	Midway Islands
MR	Mauritania
MT	Malta
MU	Oman
MV	Maldives
MX	Mexico
MY	Malaysia
MZ	Mozambique
NC	New Caledonia
NE	Nioe
NF	Norfolk Island
NG	Niger
NH	Vanuatu
NI	Nigeria
NL	Netherlands
NO	Norway
NP	Nepal
NR	Nauru
NS	Suriname
NT	Netherlands Antilles
NU	Nicaragua
NZ	New Zealand
PA	Paraguay
PC	Pitcairn Islands
PE	Peru
PF	Paracel Islands
PG	Spratly Islands
PK	Pakistan
PL	Poland
PM	Panama
PO	Portugal
PP	Papua New Guinea
PS	Pacific Islands (Palau), Trust Territory of the
PU	Guinea-Bissau
QA	Qatar
RE	Reunion
RM	Marshall Islands

RO	Romania
RP	Philippines
RQ	Puerto Rico
RS	Russia
RW	Rwanda
SA	Saudi Arabia
SB	Saint Pierre and Miquelon
SC	Saint Kitts and Nevis
SE	Seychelles
SF	South Africa
SG	Senegal
SH	Saint Helena
SI	Slovenia
SL	Sierra Leone
SM	San Marino
SN	Singapore
SO	Somalia
SP	Spain
ST	Saint Lucia
SU	Sudan
SV	Svalbard
SW	Sweden
SX	South Georgia and the South Sandwich Islands
SY	Syria
SZ	Switzerland
TC	United Arab Emirates
TD	Trinidad and Tobago
TH	Thailand
TI	Tajikistan
TK	Turks and Caicas Islands
TL	Tokelau
TN	Tonga
TO	Togo
TP	Sao Tome and Principe
TS	Tunisla
TU	Turkey
TV	Tuvalu
TX	Turkmenistan
TZ	Tanzania
UG	Uganda
UK	United Kingdom
UP	Ukraine
US	United States
UV	Burkina
UY	Uruguay
UZ	Uzbekistan
VC	Saint Vincent and the Grenadines
VE	Venezuela
VI	Virgin Islands, British
VM	Vietnam
VQ	Virgin Islands
VT	Holy See
WA	Namibia
WF	Wallis and Futuna
WI	Western Sahara
WQ	Wake Island
WS	Western Samoa
WZ	Swaziland

	YM	Yemen	
	ZA	Zambia	
	ZI	Zimbabwe	

na3	Classification Name		
	A	Asia	FA001, FA070, FA170
	E	Europe	FA001, FA070, FA170
	F	Africa	FA001, FA070, FA170
	N	North America	FA001, FA070, FA170
	S	South America	FA001, FA070, FA170
	T	Antarctic Area	FA001, FA070, FA170
	U	Australian Area	FA001, FA070, FA170

TABLE 78. Boundaries text feature table.

Thematic Layer:	Boundaries
Coverage Name:	**bnd**
Table Description:	Boundaries Text Feature Table
Table Name:	**bndtxt.tft**
dq Layer Number:	1

{Header length}L; Boundaries Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,: symbol_id=S,1,N,Symbol Identification,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,: txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification			

(Refer to Symbol Related Attribute Table for selection of values)

TABLE 79. Boundaries feature class attribute table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Boundaries Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 1

(Header length)L; Boundaries Feature Class Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: fclass=T,8,U,Feature Class Name,-,-,-,: type=T,1,N,Feature Type,char.vdt,-,-,: descr=T,*,N,Description,-,-,-,:;			
1 : n	polbndp : n	P : n	Political Boundary : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name			
		polbndp		
		barrierl		
		coastl		
		depthl		
		polbndl		
		oceansea		
		polbnda		
		bndtxt		
type	Feature Type			
		P	Point Feature	**polbndp**
		L	Line Feature	**barrierl,coastl, depthl,polbndl**
		A	Area Feature	**oceansea,polbnda**
		T	Text Feature	**bndtxt**
descr	Description			
		Political Boundary		
		Point Features		**polbndp**
		Barrier Line Features		**barrierl**
		Coastlines		**coastl**
		Depth Contours		**depthl**
		Political Boundaries		**polbndl**
		Oceans/Seas		**oceansea**
		Administrative Areas		**polbnda**
		Boundaries Coverage Text		**bndtxt**

TABLE 80. Boundaries character value description table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Boundaries Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 1

```
{Header length}L;
Boundaries Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;
```

1	polbndp.pft	f_code	FA001	Administrative Area
2	polbndp.pft	na2	AA	Aruba
3	polbndp.pft	na2	AC	Antigua and Barbuda
4	polbndp.pft	na2	AF	Afghanistan
5	polbndp.pft	na2	AG	Algeria
6	polbndp.pft	na2	AJ	Azerbaijan
7	polbndp.pft	na2	AL	Albania
8	polbndp.pft	na2	AM	Armenia
9	polbndp.pft	na2	AN	Andorra
10	polbndp.pft	na2	AO	Angola
11	polbndp.pft	na2	AQ	American Samoa
12	polbndp.pft	na2	AR	Argentina
13	polbndp.pft	na2	AS	Australia
14	polbndp.pft	na2	AT	Ashmore and Cartier Islands
15	polbndp.pft	na2	AU	Austria
16	polbndp.pft	na2	AV	Anguilla
17	polbndp.pft	na2	AY	Antarctica
18	polbndp.pft	na2	BA	Bahrain
19	polbndp.pft	na2	BB	Barbados
20	polbndp.pft	na2	BC	Botswana
21	polbndp.pft	na2	BD	Bermuda
22	polbndp.pft	na2	BE	Belgium
23	polbndp.pft	na2	BF	Bahamas, The
24	polbndp.pft	na2	BG	Bangladesh
25	polbndp.pft	na2	BH	Belize
26	polbndp.pft	na2	BK	Bosnia and Herzegovina
27	polbndp.pft	na2	BL	Bolivia
28	polbndp.pft	na2	BM	Burma
29	polbndp.pft	na2	BN	Benin
30	polbndp.pft	na2	BO	Belarus
31	polbndp.pft	na2	BP	Solomon Islands
32	polbndp.pft	na2	BQ	Navassa Island
33	polbndp.pft	na2	BR	Brazil
34	polbndp.pft	na2	BT	Bhutan
35	polbndp.pft	na2	BU	Bulgaria
36	polbndp.pft	na2	BV	Bouvet Island
37	polbndp.pft	na2	BX	Brunei
38	polbndp.pft	na2	BY	Burundi
39	polbndp.pft	na2	CA	Canada

40	polbndp.pft	na2	CB	Cambodia
41	polbndp.pft	na2	CD	Chad
42	polbndp.pft	na2	CE	Sri Lanka
43	polbndp.pft	na2	CF	Congo
44	polbndp.pft	na2	CG	Zaire
45	polbndp.pft	na2	CH	China
46	polbndp.pft	na2	CI	Chile
47	polbndp.pft	na2	CJ	Cayman Islands
48	polbndp.pft	na2	CK	Cocos (Keeling) Islands
49	polbndp.pft	na2	CM	Cameroon
50	polbndp.pft	na2	CN	Comoros
51	polbndp.pft	na2	CO	Colombia
52	polbndp.pft	na2	CQ	Northern Mariana Islands
53	polbndp.pft	na2	CR	Coral Sea Islands
54	polbndp.pft	na2	CS	Costa Rica
55	polbndp.pft	na2	CT	Central African Republic
56	polbndp.pft	na2	CU	Cuba
57	polbndp.pft	na2	CV	Cape Verde
58	polbndp.pft	na2	CW	Cook Islands
59	polbndp.pft	na2	CY	Cyprus
60	polbndp.pft	na2	DA	Denmark
61	polbndp.pft	na2	DJ	Djibouti
62	polbndp.pft	na2	DO	Dominica
63	polbndp.pft	na2	DQ	Jarvis Island
64	polbndp.pft	na2	DR	Dominican Republic
65	polbndp.pft	na2	EC	Ecuador
66	polbndp.pft	na2	EG	Egypt
67	polbndp.pft	na2	EI	Ireland
68	polbndp.pft	na2	EK	Equatorial Guinea
69	polbndp.pft	na2	EN	Estonia
70	polbndp.pft	na2	ER	Eritrea
71	polbndp.pft	na2	ES	El Salvador
72	polbndp.pft	na2	ET	Ethiopia
73	polbndp.pft	na2	EZ	Czech Republic
74	polbndp.pft	na2	FG	French Guiana
75	polbndp.pft	na2	FI	Finland
76	polbndp.pft	na2	FJ	Fiji
77	polbndp.pft	na2	FK	Falkland Islands (Islas Malvinas)
78	polbndp.pft	na2	FM	Micronesia, Federated States of
79	polbndp.pft	na2	FO	Faroc Islands
80	polbndp.pft	na2	FP	French Polynesia
81	polbndp.pft	na2	FQ	Baker Island
82	polbndp.pft	na2	FR	France
83	polbndp.pft	na2	FS	French Southern and Antarctic Lands
84	polbndp.pft	na2	GA	Gambie, The
85	polbndp.pft	na2	GB	Gabon
86	polbndp.pft	na2	GG	Georgia
87	polbndp.pft	na2	GH	Ghana
88	polbndp.pft	na2	GI	Gibraltar
89	polbndp.pft	na2	GJ	Grenada
90	polbndp.pft	na2	GK	Guernsey
91	polbndp.pft	na2	GL	Greenland
92	polbndp.pft	na2	GM	Germany
93	polbndp.pft	na2	GP	Guadeloupe

94	polbndp.pft	na2	GQ	Guam
95	polbndp.pft	na2	GR	Greece
96	polbndp.pft	na2	GT	Guatemala
97	polbndp.pft	na2	GV	Guinea
98	polbndp.pft	na2	GY	Guyana
99	polbndp.pft	na2	HA	Haiti
100	polbndp.pft	na2	HK	Hong Kong
101	polbndp.pft	na2	HM	Heard Island andMcDonald Islands
102	polbndp.pft	na2	HO	Honduras
103	polbndp.pft	na2	HQ	Howland Island
104	polbndp.pft	na2	HR	Croatia
105	polbndp.pft	na2	HU	Hungary
106	polbndp.pft	na2	IC	Iceland
107	polbndp.pft	na2	ID	Indonesia
108	polbndp.pft	na2	IM	Man, Isle of
109	polbndp.pft	na2	IN	India
110	polbndp.pft	na2	IO	British Indian Ocean Territory
111	polbndp.pft	na2	IP	Clipperton Island
112	polbndp.pft	na2	IR	Iran
113	polbndp.pft	na2	IS	Israel
114	polbndp.pft	na2	IT	Italy
115	polbndp.pft	na2	IV	Cote d'lvoire (Ivory Coast)
116	polbndp.pft	na2	IZ	Iraq
117	polbndp.pft	na2	JA	Japan
118	polbndp.pft	na2	JE	Jersey
119	polbndp.pft	na2	JM	Jamaica
120	polbndp.pft	na2	JN	Jan Mayen
121	polbndp.pft	na2	JO	Jordan
122	polbndp.pft	na2	JQ	Johnson Atoll
123	polbndp.pft	na2	KE	Kenya
124	polbndp.pft	na2	KG	Kyrgyzstan
125	polbndp.pft	na2	KN	Korea, North
126	polbndp.pft	na2	KQ	Kingman Reef
127	polbndp.pft	na2	KR	Klribati
128	polbndp.pft	na2	KS	Korea, South
129	polbndp.pft	na2	KT	Christmas Island
130	polbndp.pft	na2	KU	Kuwait
131	polbndp.pft	na2	KZ	Kazakhstan
132	polbndp.pft	na2	LA	Laos
133	polbndp.pft	na2	LE	Lebanon
134	polbndp.pft	na2	LG	Latvia
135	polbndp.pft	na2	LH	LIthuania
136	polbndp.pft	na2	LI	Liberia
137	polbndp.pft	na2	LO	Slovakia
138	polbndp.pft	na2	LQ	Palrnyra Atoll
139	polbndp.pft	na2	LS	Liechtenstein
140	polbndp.pft	na2	LT	Lesotho
141	polbndp.pft	na2	LU	Luxembourg
142	polbndp.pft	na2	LY	Libya
143	polbndp.pft	na2	MA	Madagascar
144	polbndp.pft	na2	MB	Martinique
145	polbndp.pft	na2	MC	Macau
146	polbndp.pft	na2	MD	Moldova
147	polbndp.pft	na2	MF	Mayotie

148	polbndp.pft	na2	MG	Mongolia
149	polbndp.pft	na2	MH	Montserrat
150	polbndp.pft	na2	MI	Malawi
151	polbndp.pft	na2	MK	Macedonia, The Former Yugoslav Republic of
152	polbndp.pft	na2	ML	Mali
153	polbndp.pft	na2	MN	Monaco
154	polbndp.pft	na2	MO	Morocco
155	polbndp.pft	na2	MP	Mauritius
156	polbndp.pft	na2	MQ	Midway Islands
157	polbndp.pft	na2	MR	Mauritania
158	polbndp.pft	na2	MT	Malta
159	polbndp.pft	na2	MU	Oman
160	polbndp.pft	na2	MV	Maldives
161	polbndp.pft	na2	MX	Mexico
162	polbndp.pft	na2	MY	Malaysia
163	polbndp.pft	na2	MZ	Mozambique
164	polbndp.pft	na2	NC	New Caledonia
165	polbndp.pft	na2	NE	Nioe
166	polbndp.pft	na2	NF	Norfolk Island
167	polbndp.pft	na2	NG	Niger
168	polbndp.pft	na2	NH	Vanuatu
169	polbndp.pft	na2	NI	Nigeria
170	polbndp.pft	na2	NL	Netherlands
171	polbndp.pft	na2	NO	Norway
172	polbndp.pft	na2	NP	Nepal
173	polbndp.pft	na2	NR	Nauru
174	polbndp.pft	na2	NS	Suriname
175	polbndp.pft	na2	NT	Netherlands Antilles
176	polbndp.pft	na2	NU	Nicaragua
177	polbndp.pft	na2	NZ	New Zealand
178	polbndp.pft	na2	PA	Paraguay
179	polbndp.pft	na2	PC	Pitcairn Islands
180	polbndp.pft	na2	PE	Peru
181	polbndp.pft	na2	PF	Paracel Islands
182	polbndp.pft	na2	PG	Spratly Islands
183	polbndp.pft	na2	PK	Pakistan
184	polbndp.pft	na2	PL	Poland
185	polbndp.pft	na2	PM	Panama
186	polbndp.pft	na2	PO	Portugal
187	polbndp.pft	na2	PP	Papua New Guinea
188	polbndp.pft	na2	PS	Pacific Islands (Palau), Trust Territory of the
189	polbndp.pft	na2	PU	Guinea-Bissau
190	polbndp.pft	na2	QA	Qatar
191	polbndp.pft	na2	RE	Reunion
192	polbndp.pft	na2	RM	Marshall Islands
193	polbndp.pft	na2	RO	Romania
194	polbndp.pft	na2	RP	Philippines
195	polbndp.pft	na2	RQ	Puerto Rico
196	polbndp.pft	na2	RS	Russia
197	polbndp.pft	na2	RW	Rwanda
198	polbndp.pft	na2	SA	Saudi Arabia
199	polbndp.pft	na2	SB	Saint Pierre and Miquelon

200	polbndp.pft	na2	SC	Saint Kitts and Nevis
201	polbndp.pft	na2	SE	Seychelles
202	polbndp.pft	na2	SF	South Africa
203	polbndp.pft	na2	SG	Senegal
204	polbndp.pft	na2	SH	Saint Helena
205	polbndp.pft	na2	SI	Slovenia
206	polbndp.pft	na2	SL	Sierra Leone
207	polbndp.pft	na2	SM	San Marino
208	polbndp.pft	na2	SN	Singapore
209	polbndp.pft	na2	SO	Somalia
210	polbndp.pft	na2	SP	Spain
211	polbndp.pft	na2	ST	Saint Lucia
212	polbndp.pft	na2	SU	Sudan
213	polbndp.pft	na2	SV	Svalbard
214	polbndp.pft	na2	SW	Sweden
215	polbndp.pft	na2	SX	South Georgia and the South Sandwich Islands
216	polbndp.pft	na2	SY	Syria
217	polbndp.pft	na2	SZ	Switzerland
218	polbndp.pft	na2	TC	United Arab Emirates
219	polbndp.pft	na2	TD	Trinidad and Tobago
220	polbndp.pft	na2	TH	Thailand
221	polbndp.pft	na2	TI	Tajikistan
222	polbndp.pft	na2	TK	Turks and Caicas Islands
223	polbndp.pft	na2	TL	Tokelau
224	polbndp.pft	na2	TN	Tonga
225	polbndp.pft	na2	TO	Togo
226	polbndp.pft	na2	TP	Sao Tome and Principe
227	polbndp.pft	na2	TS	Tunisla
228	polbndp.pft	na2	TU	Turkey
229	polbndp.pft	na2	TV	Tuvalu
230	polbndp.pft	na2	TX	Turkmenistan
231	polbndp.pft	na2	TZ	Tanzania
232	polbndp.pft	na2	UG	Uganda
233	polbndp.pft	na2	UK	United Kingdom
234	polbndp.pft	na2	UP	Ukraine
235	polbndp.pft	na2	US	United States
236	polbndp.pft	na2	UV	Burkina
237	polbndp.pft	na2	UY	Uruguay
238	polbndp.pft	na2	UZ	Uzbekistan
239	polbndp.pft	na2	VC	Saint Vincent and the Grenadines
240	polbndp.pft	na2	VE	Venezuela
241	polbndp.pft	na2	VI	Virgin Islands, British
242	polbndp.pft	na2	VM	Vietnam
243	polbndp.pft	na2	VQ	Virgin Islands
244	polbndp.pft	na2	VT	Holy See
245	polbndp.pft	na2	WA	Namibia
246	polbndp.pft	na2	WF	Wallis and Futuna
247	polbndp.pft	na2	WI	Western Sahara
248	polbndp.pft	na2	WQ	Wake Island
249	polbndp.pft	na2	WS	Western Samoa
250	polbndp.pft	na2	WZ	Swaziland
251	polbndp.pft	na2	YM	Yemen
252	polbndp.pft	na2	ZA	Zambia

253	polbndp.pft	na2	ZI	Zimbabwe
254	polbndp.pft	na3	A	Asia
255	polbndp.pft	na3	E	Europe
256	polbndp.pft	na3	F	Africa
257	polbndp.pft	na3	N	North America
258	polbndp.pft	na3	S	South America
259	polbndp.pft	na3	T	Antarctic Area
260	polbndp.pft	na3	U	Australian Area
261	polbndp.pft	nam	UNK	No entry present
262	barrierl.lft	f_code	AL260	Wall
263	coastl.lft	f_code	BA010	Coastline/Shoreline
264	depthl.lft	f_code	BE015	Depth Contour
265	polbndl.lft	f_code	FA000	Administrative Boundary
266	polbndl.lft	f_code	FA020	Armistice Line
267	polbndl.lft	f_code	FA030	Cease-Fire Line
268	polbndl.lft	f_code	FA040	Claim Line
269	polbndl.lft	f_code	FA050	Mandate Line/Convention Line
270	polbndl.lft	f_code	FA060	Defacto Boundary
271	polbndl.lft	f_code	FA110	International Date Line
272	oceansea.aft	f_code	BA040	Water (except Inland)
273	polbnda.aft	f_code	FA001	Administrative Area
274	polbnda.aft	f_code	FA070	Demilitarized Zone
275	polbnda.aft	f_code	FA170	Zone of Occupation
276	polbnda.aft	nam	UNK	No entry present
277	polbnda.aft	na2	AA	Aruba
278	polbnda.aft	na2	AC	Antigua and Barbuda
279	polbnda.aft	na2	AF	Afghanistan
280	polbnda.aft	na2	AG	Algeria
281	polbnda.aft	na2	AJ	Azerbaijan
282	polbnda.aft	na2	AL	Albania
283	polbnda.aft	na2	AM	Armenia
284	polbnda.aft	na2	AN	Andorra
285	polbnda.aft	na2	AO	Angola
286	polbnda.aft	na2	AQ	American Samoa
287	polbnda.aft	na2	AR	Argentina
288	polbnda.aft	na2	AS	Australia
289	polbnda.aft	na2	AT	Ashmore and Cartier Islands
290	polbnda.aft	na2	AU	Austria
291	polbnda.aft	na2	AV	Anguilla
292	polbnda.aft	na2	AY	Antarctica
293	polbnda.aft	na2	BA	Bahrain
294	polbnda.aft	na2	BB	Barbados
295	polbnda.aft	na2	BC	Botswana
296	polbnda.aft	na2	BD	Bermuda
297	polbnda.aft	na2	BE	Belgium
298	polbnda.aft	na2	BF	Bahamas, The
299	polbnda.aft	na2	BG	Bangladesh
300	polbnda.aft	na2	BH	Belize
301	polbnda.aft	na2	BK	Bosnia and Herzegovina
302	polbnda.aft	na2	BL	Bolivia
303	polbnda.aft	na2	BM	Burma
304	polbnda.aft	na2	BN	Benin
305	polbnda.aft	na2	BO	Belarus
306	polbnda.aft	na2	BP	Solomon Islands

307	polbnda.aft	na2	BQ	Navassa Island
308	polbnda.aft	na2	BR	Brazil
309	polbnda.aft	na2	BT	Bhutan
310	polbnda.aft	na2	BU	Bulgaria
311	polbnda.aft	na2	BV	Bouvet Island
312	polbnda.aft	na2	BX	Brunei
313	polbnda.aft	na2	BY	Burundi
314	polbnda.aft	na2	CA	Canada
315	polbnda.aft	na2	CB	Cambodia
316	polbnda.aft	na2	CD	Chad
317	polbnda.aft	na2	CE	Sri Lanka
318	polbnda.aft	na2	CF	Congo
319	polbnda.aft	na2	CG	Zaire
320	polbnda.aft	na2	CH	China
321	polbnda.aft	na2	CI	Chile
322	polbnda.aft	na2	CJ	Cayman Islands
323	polbnda.aft	na2	CK	Cocos (Keeling) Islands
324	polbnda.aft	na2	CM	Cameroon
325	polbnda.aft	na2	CN	Comoros
326	polbnda.aft	na2	CO	Colombia
327	polbnda.aft	na2	CQ	Northern Mariana Islands
328	polbnda.aft	na2	CR	Coral Sea Islands
329	polbnda.aft	na2	CS	Costa Rica
330	polbnda.aft	na2	CT	Central African Republic
331	polbnda.aft	na2	CU	Cuba
332	polbnda.aft	na2	CV	Cape Verde
333	polbnda.aft	na2	CW	Cook Islands
334	polbnda.aft	na2	CY	Cyprus
335	polbnda.aft	na2	DA	Denmark
336	polbnda.aft	na2	DJ	Djibouti
337	polbnda.aft	na2	DO	Dominica
338	polbnda.aft	na2	DQ	Jarvis Island
339	polbnda.aft	na2	DR	Dominican Republic
340	polbnda.aft	na2	EC	Ecuador
341	polbnda.aft	na2	EG	Egypt
342	polbnda.aft	na2	EI	Ireland
343	polbnda.aft	na2	EK	Equatorial Guinea
344	polbnda.aft	na2	EN	Estonia
345	polbnda.aft	na2	ER	Eritrea
346	polbnda.aft	na2	ES	El Salvador
347	polbnda.aft	na2	ET	Ethiopia
348	polbnda.aft	na2	EZ	Czech Republic
349	polbnda.aft	na2	FG	French Guiana
350	polbnda.aft	na2	FI	Finland
351	polbnda.aft	na2	FJ	Fiji
352	polbnda.aft	na2	FK	Falkland Islands (Islas Malvinas)
353	polbnda.aft	na2	FM	Micronesia, Federated States of
354	polbnda.aft	na2	FO	Faroc Islands
355	polbnda.aft	na2	FP	French Polynesia
356	polbnda.aft	na2	FQ	Baker Island
357	polbnda.aft	na2	FR	France
358	polbnda.aft	na2	FS	French Southern and Antarctic Lands
359	polbnda.aft	na2	GA	Gambie, The
360	polbnda.aft	na2	GB	Gabon

361	polbnda.aft	na2	GG	Georgia
362	polbnda.aft	na2	GH	Ghana
363	polbnda.aft	na2	GI	Gibraltar
364	polbnda.aft	na2	GJ	Grenada
365	polbnda.aft	na2	GK	Guernsey
366	polbnda.aft	na2	GL	Greenland
367	polbnda.aft	na2	GM	Germany
368	polbnda.aft	na2	GP	Guadeloupe
369	polbnda.aft	na2	GQ	Guam
370	polbnda.aft	na2	GR	Greece
371	polbnda.aft	na2	GT	Guatemala
372	polbnda.aft	na2	GV	Guinea
373	polbnda.aft	na2	GY	Guyana
374	polbnda.aft	na2	HA	Haiti
375	polbnda.aft	na2	HK	Hong Kong
376	polbnda.aft	na2	HM	Heard Island andMcDonald Islands
377	polbnda.aft	na2	HO	Honduras
378	polbnda.aft	na2	HQ	Howland Island
379	polbnda.aft	na2	HR	Croatia
380	polbnda.aft	na2	HU	Hungary
381	polbnda.aft	na2	IC	Iceland
382	polbnda.aft	na2	ID	Indonesia
383	polbnda.aft	na2	IM	Man, Isle of
384	polbnda.aft	na2	IN	India
385	polbnda.aft	na2	IO	British Indian Ocean Territory
386	polbnda.aft	na2	IP	Clipperton Island
387	polbnda.aft	na2	IR	Iran
388	polbnda.aft	na2	IS	Israel
389	polbnda.aft	na2	IT	Italy
390	polbnda.aft	na2	IV	Cote d'lvoire (Ivory Coast)
391	polbnda.aft	na2	IZ	Iraq
392	polbnda.aft	na2	JA	Japan
393	polbnda.aft	na2	JE	Jersey
394	polbnda.aft	na2	JM	Jamaica
395	polbnda.aft	na2	JN	Jan Mayen
396	polbnda.aft	na2	JO	Jordan
397	polbnda.aft	na2	JQ	Johnson Atoll
398	polbnda.aft	na2	KE	Kenya
399	polbnda.aft	na2	KG	Kyrgyzstan
400	polbnda.aft	na2	KN	Korea, North
401	polbnda.aft	na2	KQ	Kingman Reef
402	polbnda.aft	na2	KR	Klribati
403	polbnda.aft	na2	KS	Korea, South
404	polbnda.aft	na2	KT	Christmas Island
405	polbnda.aft	na2	KU	Kuwait
406	polbnda.aft	na2	KZ	Kazakhstan
407	polbnda.aft	na2	LA	Laos
408	polbnda.aft	na2	LE	Lebanon
409	polbnda.aft	na2	LG	Latvia
410	polbnda.aft	na2	LH	LIthuania
411	polbnda.aft	na2	LI	Liberia
412	polbnda.aft	na2	LO	Slovakia
413	polbnda.aft	na2	LQ	Palrnyra Atoll
414	polbnda.aft	na2	LS	Liechtenstein

415	polbnda.aft	na2	LT	Lesotho
416	polbnda.aft	na2	LU	Luxembourg
417	polbnda.aft	na2	LY	Libya
418	polbnda.aft	na2	MA	*Madagascar*
419	polbnda.aft	na2	MB	Martinique
420	polbnda.aft	na2	MC	Macau
421	polbnda.aft	na2	MD	Moldova
422	polbnda.aft	na2	MF	Mayotie
423	polbnda.aft	na2	MG	Mongolia
424	polbnda.aft	na2	MH	Montserrat
425	polbnda.aft	na2	MI	Malawi
426	polbnda.aft	na2	MK	Macedonia, The Former Yugoslav *Republic of*
427	polbnda.aft	na2	ML	Mali
428	polbnda.aft	na2	MN	Monaco
429	polbnda.aft	na2	MO	Morocco
430	polbnda.aft	na2	MP	Mauritius
431	polbnda.aft	na2	MQ	Midway Islands
432	polbnda.aft	na2	MR	Mauritania
433	polbnda.aft	na2	MT	Malta
434	polbnda.aft	na2	MU	Oman
435	polbnda.aft	na2	MV	*Maldives*
436	polbnda.aft	na2	MX	Mexico
437	polbnda.aft	na2	MY	Malaysia
438	polbnda.aft	na2	MZ	Mozambique
439	polbnda.aft	na2	NC	New Caledonia
440	polbnda.aft	na2	NE	Nioe
441	polbnda.aft	na2	NF	Norfolk Island
442	polbnda.aft	na2	NG	Niger
443	polbnda.aft	na2	NH	Vanuatu
444	polbnda.aft	na2	NI	Nigeria
445	polbnda.aft	na2	NL	Netherlands
446	polbnda.aft	na2	NO	Norway
447	polbnda.aft	na2	NP	Nepal
448	polbnda.aft	na2	NR	Nauru
449	polbnda.aft	na2	NS	Suriname
450	polbnda.aft	na2	NT	Netherlands Antilles
451	polbnda.aft	na2	NU	Nicaragua
452	polbnda.aft	na2	NZ	New Zealand
453	polbnda.aft	na2	PA	Paraguay
454	polbnda.aft	na2	PC	Pitcairn Islands
455	polbnda.aft	na2	PE	Peru
456	polbnda.aft	na2	PF	Paracel Islands
457	polbnda.aft	na2	PG	Spratly Islands
458	polbnda.aft	na2	PK	Pakistan
459	polbnda.aft	na2	PL	Poland
460	polbnda.aft	na2	PM	Panama
461	polbnda.aft	na2	PO	Portugal
462	polbnda.aft	na2	PP	Papua New Guinea
463	polbnda.aft	na2	PS	Pacific Islands (Palau), Trust Territory of the
464	polbnda.aft	na2	PU	Guinea-Bissau
465	polbnda.aft	na2	QA	Qatar
466	polbnda.aft	na2	RE	Reunion

467	polbnda.aft	na2	RM	Marshall Islands
468	polbnda.aft	na2	RO	Romania
469	polbnda.aft	na2	RP	Philippines
470	polbnda.aft	na2	RQ	Puerto Rico
471	polbnda.aft	na2	RS	Russia
472	polbnda.aft	na2	RW	Rwanda
473	polbnda.aft	na2	SA	Saudi Arabia
474	polbnda.aft	na2	SB	Saint Pierre and Miquelon
475	polbnda.aft	na2	SC	Saint Kitts and Nevis
476	polbnda.aft	na2	SE	Seychelles
477	polbnda.aft	na2	SF	South Africa
478	polbnda.aft	na2	SG	Senegal
479	polbnda.aft	na2	SH	Saint Helena
480	polbnda.aft	na2	SI	Slovenia
481	polbnda.aft	na2	SL	Sierra Leone
482	polbnda.aft	na2	SM	San Marino
483	polbnda.aft	na2	SN	Singapore
484	polbnda.aft	na2	SO	Somalia
485	polbnda.aft	na2	SP	Spain
486	polbnda.aft	na2	ST	Saint Lucia
487	polbnda.aft	na2	SU	Sudan
488	polbnda.aft	na2	SV	Svalbard
489	polbnda.aft	na2	SW	Sweden
490	polbnda.aft	na2	SX	South Georgia and the South Sandwich Islands
491	polbnda.aft	na2	SY	Syria
492	polbnda.aft	na2	SZ	Switzerland
493	polbnda.aft	na2	TC	United Arab Emirates
494	polbnda.aft	na2	TD	Trinidad and Tobago
495	polbnda.aft	na2	TH	Thailand
496	polbnda.aft	na2	TI	Tajikistan
497	polbnda.aft	na2	TK	Turks and Caicas Islands
498	polbnda.aft	na2	TL	Tokelau
499	polbnda.aft	na2	TN	Tonga
500	polbnda.aft	na2	TO	Togo
501	polbnda.aft	na2	TP	Sao Tome and Principe
502	polbnda.aft	na2	TS	Tunisla
503	polbnda.aft	na2	TU	Turkey
504	polbnda.aft	na2	TV	Tuvalu
505	polbnda.aft	na2	TX	Turkmenistan
506	polbnda.aft	na2	TZ	Tanzania
507	polbnda.aft	na2	UG	Uganda
508	polbnda.aft	na2	UK	United Kingdom
509	polbnda.aft	na2	UP	Ukraine
510	polbnda.aft	na2	US	United States
511	polbnda.aft	na2	UV	Burkina
512	polbnda.aft	na2	UY	Uruguay
513	polbnda.aft	na2	UZ	Uzbekistan
514	polbnda.aft	na2	VC	Saint Vincent and the Grenadines
515	polbnda.aft	na2	VE	Venezuela
516	polbnda.aft	na2	VI	Virgin Islands, British
517	polbnda.aft	na2	VM	Vietnam
518	polbnda.aft	na2	VQ	Virgin Islands
519	polbnda.aft	na2	VT	Holy See

520	polbnda.aft	na2	WA	Namibia
521	polbnda.aft	na2	WF	Wallis and Futuna
522	polbnda.aft	na2	WI	Western Sahara
523	polbnda.aft	na2	WQ	Wake Island
524	polbnda.aft	na2	WS	Western Samoa
525	polbnda.aft	na2	WZ	Swaziland
526	polbnda.aft	na2	YM	Yemen
527	polbnda.aft	na2	ZA	Zambia
528	polbnda.aft	na2	ZI	Zimbabwe
529	polbnda.aft	na3	A	Asia
530	polbnda.aft	na3	E	Europe
531	polbnda.aft	na3	F	Africa
532	polbnda.aft	na3	N	North America
533	polbnda.aft	na3	S	South America
534	polbnda.aft	na3	T	Antarctic Area
535	polbnda.aft	na3	U	Australian Area
536	bndtxt.tft	f_code	ZD040	Named Location
537	bndtxt.tft	f_code	ZD045	Text Description
538	fca	type	A	Area Feature
539	fca	type	L	Line Feature
540	fca	type	P	Point/Node Feature
541	fca	type	T	Text Feature
542	dqpoint.pft	f_code	FA001	Administrative Area
543	dqpoint.pft	f_code	ZD045	Text Description
544	dqline.lft	f_code	AL260	Wall
545	dqline.lft	f_code	BA010	Coastline/Shoreline
546	dqline.lft	f_code	BE015	Depth Contour
547	dqline.lft	f_code	FA000	Administrative Boundary
548	dqline.lft	f_code	FA020	Armistice Line
549	dqline.lft	f_code	FA030	Cease-Fire Line
550	dqline.lft	f_code	FA040	Claim Line
551	dqline.lft	f_code	FA050	Mandate Line/Convention Line
552	dqline.lft	f_code	FA060	Defacto Boundary
553	dqline.lft	f_code	FA110	International Date Line
554	dqline.lft	f_code	ZD045	Text Description
555	dqarea.aft	f_code	BA040	Water (except Inland)
556	dqarea.aft	f_code	FA001	Administrative Area
557	dqarea.aft	f_code	FA070	Demilitarized Zone
558	dqarea.aft	f_code	FA170	Zone of Occupation
559	dqarea.aft	f_code	ZD045	Text Description

TABLE 81. Boundaries integer value description table.

Thematic Layer: Boundaries
Coverage Name: **bnd**
Table Description: Boundaries Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 1

(Header length)L;				
Boundaries Integer Value Description Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
table=T,12,N,Name of the Feature Table,-,-,-,:				
attribute=T,3,N,Column Name,-,-,-,:				
value=S,1,N,Unique Value of Attribute,-,-,-,:				
description=T,50,N,Description of Value,-,-,-,:;				
1	coastl.lft	acc	0	Unknown
2	coastl.lft	acc	1	Accurate
3	coastl.lft	acc	2	Approximate
4	coastl.lft	exs	0	Unknown
5	coastl.lft	exs	1	Definite
6	coastl.lft	exs	44	Approximate/About
7	coastl.lft	exs	46	Man-made
8	coastl.lft	exs	55	Unexamined/Unsurveyed
9	coastl.lft	exs	60	Indefinite (Shoreline)
10	polbndl.lft	acc	1	Accurate
11	polbndl.lft	acc	2	Approximate
12	polbndl.lft	bst	1	Definite
13	polbndl.lft	bst	2	Indefinite
14	polbndl.lft	bst	3	In Dispute
15	polbndl.lft	bst	4	No Defined Boundary
16	polbndl.lft	use	23	International
17	polbndl.lft	use	26	Primary/1st Order
18	symbol.rat	fon	1	Machine Default
19	symbol.rat	sty	1	Kern
20	symbol.rat	sty	2	Proportional
21	symbol.rat	sty	3	Constant
22	symbol.rat	col	1	Black
23	symbol.rat	col	4	Blue
24	symbol.rat	col	9	Red-Brown
25	symbol.rat	col	12	Magenta

80.3 Data quality coverage. A data quality coverage may be implemented as shown in TABLES 82 to 89. This coverage may contain information that affects the entire library. For example, the line feature table **dqline.lft** (TABLE 83) and line related attribute table **dqline.rat** (TABLE 84) are used to describe data quality conditions that result from the edge-matching of two source sheets.

TABLE 82. Content and format for data quality coverage feature class schema table.

Thematic Layer:	Data Quality
Coverage Name:	**dq**
Table Description:	Data Quality Feature Class Schema Table
Table Name:	**fcs**
dq Layer Number:	Not Applicable

(Header length)L;
Data Quality Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;

1	dqline	dqline.lft	edg_id	edg	id
2	dqline	edg	dqline.lft_id	dqline.lft	id
3	dqline	dqline.lft	dqline_id	dqline.rat	dqline_id
4	dqline	dqline.rat	dqline_id	dqline.lft	dqline_id
5	dqarea	dqarea.aft	fac_id	fac	id
6	dqarea	fac	dqarea.aft_id	dqarea.aft	id
7	dqarea	dqarea.aft	source_id	dqarea.rat	source_id
8	dqarea	dqarea.rat	source_id	dqarea.aft	source_id
9	dqtxt	dqtxt.tft	txt_id	txt	id
10	dqtxt	txt	dqtxt.tft_id	dqtxt.tft	id
11	dqtxt	dqtxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 83. Data quality line feature table.

Thematic Layer: Data Quality
Coverage Name: **dq**
Table Description: Data Quality Line Feature Table
Table Name: **dqline.lft**
dq Layer Number: Not Applicable

{Header length}L;
Data Quality Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
dqline_id=I,1,N,Data Quality Line Feature Identifier,-,-,-,:
source1=T,6,N,First Source Sheet or Data ID,-,-,-,:
source2=T,6,N,Second Source Sheet or Data ID,-,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,:
edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;

1	68	G21	G20	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqline_id	Data Quality Line Feature Identifier		Data quality line feature identifier
source1	Source Sheet or Data Identifier on One Side		This item contains the name of an ONC map sheet number or other source located on one side of the line (e.g., G21) and requires a data quality description (see **dqline.rat**)
source2	Source Sheet or Data Identifier on Other Side		This item contains the name of an ONC map sheet number or other source located on the other side of the line (e.g., G20) and requires a data quality description (see **dqline.rat**)

TABLE 84. Data quality line related attribute table.

Thematic Layer:	Data Quality
Coverage Name:	**dq**
Table Description:	Data Quality Line Related Attribute Table
Table Name:	**dqline.rat**
dq Layer Number:	Not Applicable

(Header length)L;			
Data Quality Line Related Attribute Table;-;			
id=I,1,P,Row Identifier,-,-,-,:			
dqline_id=I,1,N,Line Feature Identifier,-,-,-,:			
layer=T,5,N,Data Quality Thematic Layer,-,-,-,:			
dqdescr=T,*,N,dq Description for Line Feature,-,-,-,:;			
1	2	elev	Sources are positionally irreconcilable along this edge
:	:	:	:
n	*n*	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
dqline_id	Line Feature Identifier		Relate item to the ***dqline.lft***
layer	Data Quality Thematic Layer		This is the thematic layer identifier for each layer in an VMap Level 0 library
dqdescr	Data Quality Description for Line Feature		This item contains a text string describing specific conditions occurring within the database for a particular line feature. Typically this refers to edgematch problems observed between two source maps and identifies any steps taken to ameliorate the problem.

TABLE 85. Data quality area feature table.

Thematic Layer: Data Quality
Coverage Name: **dq**
Table Description: Data Quality Area Feature Table
Table Name: **dqarea.aft**
dq Layer Number: Not Applicable

```
{Header length}L;
Data Quality Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
source_id=T,6,N,Source Identification Name or Number,-,-,-,:
comp_date=D,1,N,Map Compilation Date,-,-,-,:
rev_date=D,1,N,Map Revision Date,-,-,-,:
print_date=D,1,N,Map Print Date,-,-,-,:
source_info=T,*,N,General Sheet Information,-,-,-,:
abs_horiz_acc=S,1,N,Absolute Horizontal Accuracy (meters),-,-,-,:
abs_vert_acc=S,1,N,Absolute Vertical Accuracy (meters),-,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;
```

1	G21	19700800000000.	19870100000000.	19890300000000.	Roads…	200	600	1	2
:	:	:	:	:	:	:	:	:	:
n	n	n	n	n	n	n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
source_id	Source Identification Name or Number		Alphanumeric String of the ONC, other map sheet, or Source Name or Identification Number
comp_date	Compilation Date of Source		Appropriate date value or space character filled if null
rev_date	Last Revision Date of Source		Appropriate date value or space character filled if null
print_date	Print Date of Source Sheet or Litho Date of Most Current Revision		Appropriate date value or space character filled if null

source_info	General Source Information	Contains a description of conditions occurring in the database such as sheetwide phenomena, regional phenomena, or marginalia. Character String of the map sheet information (i.e., all roads are approximately aligned).
abs_horiz_acc	Absolute Horizontal Accuracy (meters)	DMA-specified absolute horizontal accuracy
abs_vert_acc	Absolute Vertical Accuracy (meters)	DMA-specified absolute vertical accuracy

TABLE 86. Data quality area related attribute table.

Thematic Layer: Data Quality
Coverage Name: **dq**
Table Description: Data Quality Area Related Attribute Table
Table Name: **dqarea.rat**
dq Layer Number: Not Applicable

(Header length)L; Data Quality Area Related Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: source_id=T,6,N,Source ID Number,-,-,-,: layer=T,5,N,Data Quality Thematic Layer,-,-,-,: dqdescr=T,*,N,dq Description for Area Feat,-,-,-,:;			
1	G21	hydro	Sources irreconcilable
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning
id	Row Identifier	Sequential beginning with 1	
source_id	Source Identification Number		Alphanumeric String of the Identification Number of the ONC, other map sheet, or source material
layer	Data Quality Thematic Layer		This is the thematic layer identifier for each coverage in an VMap Level 0 library
dqdescr	Data Quality Description for Area Feature		This item contains a text string describing specific conditions occurring within the database for a particular area feature. Typically this refers to edgematch problems observed between two source maps and identifies any steps taken to ameliorate the problem.

TABLE 87. Data quality text feature table.

Thematic Layer:	Data Quality
Coverage Name:	**dq**
Table Description:	Data Quality Text Feature Table
Table Name:	**dqtxt.tft**
dq Layer Number:	Not Applicable

(Header length)L;				
Data Quality Text Feature Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:				
symbol_id=S,1,N,Symbol Identification,-,-,-,:				
tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,:				
txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD045	TBD	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	ZD045	Text Description	

symbol_id Symbol Identification

(Refer to Symbol Related Attribute Table for selection of values)

TABLE 88. Data quality character value description table.

Thematic Layer:	Data Quality
Coverage Name:	**dq**
Table Description:	Data Quality Character Value Description Table
Table Name:	**char.vdt**
dq Layer Number:	Not Applicable

```
{Header length}L;
Data Quality Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;
```

1	dqtxt.tft	f_code	ZD045	Text Description

TABLE 89. Data quality integer value description table.

Thematic Layer:	Data Quality
Coverage Name:	**dq**
Table Description:	Data Quality Integer Value Description Table
Table Name:	**int.vdt**
dq Layer Number:	Not Applicable

{Header length}L;
Data Quality Integer Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,3,N,Column Name,-,-,-,:
value=S,1,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	symbol.rat	fon	1	Machine Default
2	symbol.rat	sty	1	Kern
3	symbol.rat	sty	2	Proportional
4	symbol.rat	sty	3	Constant
5	symbol.rat	col	1	Black
6	symbol.rat	col	4	Blue
7	symbol.rat	col	9	Red-Brown
8	symbol.rat	col	12	Magenta

80.4 Elevation coverage.

TABLE 90. Content and format for elevation coverage feature class schema table.

Thematic Layer: Elevation
Coverage Name: elev
Table Description: Elevation Feature Class Schema Table
Table Name: fcs
dq Layer Number: 2

{Header length}L;
Elevation Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;

1	elevp	elevp.pft	end_id	end	id
2	elevp	end	elevp.pft_id	elevp.pft	id
3	contour1	contour1.lft	edg_id	edg	id
4	contour1	edg	contour1.lft_id	contour1.lft	id
5	dqpoint	dqpoint.pft	end_id	end	id
6	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
7	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
8	dqline	dqline.lft	edg_id	edg	id
9	dqline	edg	dqline.lft_id	dqline.lft	id
10	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
11	dqtext	dqtext.tft	txt_id	txt	id
12	dqtext	txt	dqtext.tft_id	dqtext.tft	id

TABLE 91. Elevation point feature table.

Thematic Layer: Elevation
Coverage Name: **elev**
Table Description: Elevation Point Feature Table
Table Name: **elevp.pft**
dq Layer Number: 2

```
{Header length}L;
Elevation Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.pti,-,:
acc=S,1,N,Accuracy Category,int.vdt,-,-,:
ela=S,1,N,Elevation Accuracy,int.vdt,-,-,:
zv2=S,1,N,Highest Z-value (meters),int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,:
end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;
```

1	CA030	1	1	50	1	1
:	:	:	:	:	:	:
n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		CA030	Spot Elevation	
		CA035	Inland Water Elevation	
acc	Accuracy Category			
		1	Accurate	CA030
		2	Approximate	CA030, CA035
ela	Elevation Accuracy			
		0	Unknown	CA030, CA035
		1	Accurate	CA030, CA035
		2	Approximate	CA030
zv2	Highest Z-value (meters)			
		29999	Unknown	CA030, CA035
		-400 to 11999		CA030, CA035

TABLE 92. Contour line feature table.

Thematic Layer: Elevation
Coverage Name: **elev**
Table Description: Contour Line Feature Table
Table Name: **contour1.lft**
dq Layer Number: 2

{Header length}L; Contour Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: hqc=S,1,N,Hypsography Portrayal Category,int.vdt,-,-,: zv2=S,1,N,Highest Z-value (meters),int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;					
1	CA010	0	29999	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Note: A **contour.doc** table may be implemented when the source data are in feet and the contour values must be converted to meters.

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		CA010	Contour Line (Land)	
hqc	Hypsography Portrayal Category			
		0	Unknown	CA010
		2	Intermediate	CA010
		4	Form Lines	CA010
		6	Depression Intermediate	CA010
		12	Intermediate Approximate	CA010
		13	Supplementary Approximate	CA010
		18	Intermediate Depression Approximate	CA010
		19	Carrying Contour (coincident contours)	CA010
		20	Supplemental Carrying Contour	CA010
		21	Supplementary	CA010
		22	Supplemental Depression	CA010
		23	Supplemental Depression Approximate	CA010
zv2	Highest Z-value (meters)			
		29999	Unknown	CA010
		-400 to 11999		CA010

TABLE 93. Elevation feature class attribute table.

Thematic Layer: Elevation
Coverage Name: **elev**
Table Description: Elevation Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 2

{Header length}L;
Elevation Feature Class Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
fclass=T,8,U,Feature Class Name,-,-,-,:
type=T,1,N,Feature Type,char.vdt,-,-,:
descr=T,,N,Description,-,-,-,:;*

1	elevp	P	Spot Elevations
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name			
		elevp		
		contourl		
type	Feature Type			
		P	Point Feature	**elevp**
		L	Line Feature	**contourl**
descr	Description			
		Spot Elevations		**elevp**
		Elevation Contours		**contourl**

TABLE 94. Elevation character value description table.

Thematic Layer: Elevation
Coverage Name: **elev**
Table Description: Elevation Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 2

{Header length}L;
Elevation Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	elevp.pft	f_code	CA030	Spot Elevation
2	elevp.pft	f_code	CA035	Inland Water Elevation
3	contour1.1ft	f_code	CA010	Contour Line (Land)
4	fca	type	L	Line Feature
5	fca	type	P	Point/Node Feature
6	dqpoint.pft	f_code	CA030	Spot Elevation
7	dqpoint.pft	f_code	CA035	Inland Water Elevation
8	dqpoint.pft	f_code	ZD045	Text Description
9	dqline.1ft	f_code	CA010	Contour Line (Land)
10	dqline.1ft	f_code	ZD045	Text Description

TABLE 95. Elevation integer value description table.

Thematic Layer: Elevation
Coverage Name: **elev**
Table Description: Elevation Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 2

{Header length}L;
Elevation Integer Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,3,N,Column Name,-,-,-,:
value=S,1,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	elevp.pft	acc	1	Accurate
2	elevp.pft	acc	2	Approximate
3	elevp.pft	ela	0	Unknown
4	elevp.pft	ela	1	Accurate
5	elevp.pft	ela	2	Approximate
6	elevp.pft	zv2	29999	Unknown
7	contour1.lft	hqc	0	Unknown
8	contour1.lft	hqc	2	Intermediate
9	contour1.lft	hqc	4	Form Lines
10	contour1.lft	hqc	6	Depression Intermediate
11	contour1.lft	hqc	12	Intermediate Approximate
12	contour1.lft	hqc	13	Supplementary Approximate
13	contour1.lft	hqc	18	Intermediate Depression Approximate
14	contour1.lft	hqc	19	Carrying Contour (coincident contours)
15	contour1.lft	hqc	20	Supplemental Carrying Contour
16	contour1.lft	hqc	21	Supplementary
17	contour1.lft	hqc	22	Supplemental Depression
18	contour1.lft	hqc	23	Supplemental Depression Approximate
19	contour1.lft	zv2	29999	Unknown
20	symbol.rat	fon	1	Machine Default
21	symbol.rat	sty	1	Kern
22	symbol.rat	sty	2	Proportional
23	symbol.rat	sty	3	Constant
24	symbol.rat	col	1	Black
25	symbol.rat	col	4	Blue
26	symbol.rat	col	9	Red-Brown
27	symbol.rat	col	12	Magenta

80.5 Hydrography coverage.

TABLE 96. Content and format for hydrography coverage feature class schema table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Hydrography Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 3

```
(Header length)L;
Hydrography Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;
```

1	dangerp	dangerp.pft	end_id	end	id
2	dangerp	end	dangerp.pft_id	dangerp.pft	id
3	miscp	miscp.pft	end_id	end	id
4	miscp	end	miscp.pft_id	miscp.pft	id
5	aquecanl	aquecanl.lft	edg_id	edg	id
6	aquecanl	edg	aquecanl.lft_id	aquecanl.lft	id
7	dangerl	dangerl.lft	edg_id	edg	id
8	dangerl	edg	dangerl.lft_id	dangerl.lft	id
9	miscl	miscl.lft	edg_id	edg	id
10	miscl	edg	miscl.lft_id	miscl.lft	id
11	watrcrsl	watrcrsl.lft	edg_id	edg	id
12	watrcrsl	edg	watrcrsl.lft_id	watrcrsl.lft	id
13	inwatera	inwatera.aft	fac_id	fac	id
14	inwatera	fac	inwatera.aft_id	inwatera.aft	id
15	dqpoint	dqpoint.pft	end_id	end	id
16	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
17	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
18	dqline	dqline.lft	edg_id	edg	id
19	dqline	edg	dqline.lft_id	dqline.lft	id
20	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
21	dqarea	dqarea.aft	fac_id	fac	id
22	dqarea	fac	dqarea.aft_id	dqarea.aft	id
23	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
24	dqtext	dqtext.tft	txt_id	txt	id
25	dqtext	txt	dqtext.tft_id	dqtext.tft	id
26	hydrotxt	hydrotxt.tft	txt_id	txt	id
27	hydrotxt	txt	hydrotxt.tft_id	hydrotxt.tft	id
28	hydrotxt	hydrotxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 97. Danger point feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Danger Point Feature Table
Table Name: **dangerp.pft**
dq Layer Number: 3

{Header length}L; Danger Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.pti,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;			
1	BD130	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BD130	Rock	
		BD180	Wreck	

TABLE 98. Miscellaneous point feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Miscellaneous Point Feature Table
Table Name: **miscp.pft**
dq Layer Number: 3

{Header length}L; Miscellaneous Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.pti,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end2_id.pti,-,:;			
1	BA030	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BA030	Island	
		BH120	Rapids	
		BH170	Spring/Water-Hole	
		BH180	Waterfall	
		BI020	Dam/Weir	
		BI030	Lock	
		BI040	Sluice Gate	

TABLE 99. Aqueduct/Canal/Flume/Penstock line feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Aqueduct/Canal/Flume/Penstock Line Feature Table
Table Name: **aquecanl.lft**
dq Layer Number: 3

```
{Header length}L;
Aqueduct/Canal/Flume/Penstock Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
exs=S,1,N,Existence Category,int.vdt,-,-,:
loc=S,1,N,Location Category,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,:
edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;
```

1	BH000	6	0	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BH000	Inland Water	
exs	Existence Category			
		1	Definite	BH000
		5	Under Construction	BH000
		6	Abandoned/Disused	BH000
loc	Location Category			
		0	Unknown	BH000
		4	Below Surface/Submerged Underground	BH000
		8	On Ground Surface	BH000
		25	Suspended or Elevated Above Ground or Water Surface	BH000

TABLE 100. Danger line feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Danger Line Feature Table
Table Name: **danger1.lft**
dq Layer Number: 3

(Header length)L; Danger Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.lti,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;			
1 : n	BD000 : n	1 : n	1 : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BD000	Underwater-Danger/Hazard	
		BD120	Reef	

TABLE 101. Miscellaneous line feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Miscellaneous Line Feature Table
Table Name: **miscl.lft**
dq Layer Number: 3

{Header length}L; Miscellaneous Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code3.lti,-,: tile_id=S,1,N,Tile Reference ID,-,tile3_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg3_id.lti,-,:;			
1	BB040	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BB040	Breakwater/Groyne	
		BB230	Seawall	
		BI020	Dam/Weir	

TABLE 102. Water course line feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Water Course Line Feature Table
Table Name: **watrcrsl.lft**
dq Layer Number: 3

{Header length}L; Water Course Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: hyc=S,1,N,Hydrological Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile4_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg4_id.lti,-,:;				
1	BH140	6	1	1
2	BH140	8	2	2
3	BH140	8	3	3
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BH140	River/Stream	
hyc	Hydrological Category			
		6	Non-Perennial/Intermittent/ Fluctuating	BH140
		8	Perennial/Permanent	BH140

TABLE 103. Inland water area feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Inland Water Area Feature Table
Table Name: **inwatera.aft**
dq Layer Number: 3

```
{Header length}L;
Inland Water Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.ati,-,:
hyc=S,1,N,Hydrological Category,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;
```

1	BH090	6	1	2
2	BH000	6	2	3
3	BH000	8	2	4
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BH090	Land Subject to Inundation	
		BH000	Inland Water	
hyc	Hydrological Category			
		6	Non-Perennial/Intermittent/ Fluctuating	BH090, BH000
		8	Perennial/Permanent	BH000

TABLE 104. Hydrography text feature table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Hydrography Text Feature Table
Table Name: **hydrotxt.tft**
dq Layer Number: 3

{Header length}L;
Hydrography Text Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,:
symbol_id=S,1,N,Symbol Identification,-,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,:
txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;

1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification (Refer to Symbol Related Attribute Table for selection of values)			

TABLE 105. Hydrography feature class attribute table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Hydrography Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 3

{Header length}L; Hydrography Feature Class Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: fclass=T,8,U,Feature Class Name,-,-,-,: type=T,1,N,Feature Type,char.vdt,-,-,: descr=T,*,N,Description,-,-,-,:;			
1 : n	dangerp : n	P : n	Danger Point Features : n

Column	Description	Value	Value Meaning	Applicable Feature Class for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**dangerp** **miscp** **aquecanl** **dangerl** **miscl** **watrcrsl** **inwatera** **hydrotxt**		
type	Feature Type	P L A T	Point Feature Line Feature Area Feature Text Feature	**dangerp, miscp** **aquecanl, dangerl, miscl, watrcrsl** **inwatera** **hydrotxt**
descr	Description	Danger Point Features Miscellaneous Point Features Aqueducts/Canals/Flumes/ Penstocks Danger Line Features Miscellaneous Line Features Water Courses Inland Water Areas Hydrography Coverage Text		**dangerp** **miscp** **aquecanl** **dangerl** **miscl** **watrcrsl** **inwatera** **hydrotxt**

TABLE 106. Hydrography character value description table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Hydrography Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 3

{Header length}L;				
Hydrography Character Value Description Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
table=T,12,N,Name of the Feature Table,-,-,-,:				
attribute=T,6,N,Column Name,-,-,-,:				
value=T,5,N,Unique Value of Attribute,-,-,-,:				
description=T,50,N,Description of Value,-,-,-,:;				
1	dangerp.pft	f_code	BD130	Rock
2	dangerp.pft	f_code	BD180	Wreck
3	miscp.pft	f_code	BA030	Island
4	miscp.pft	f_code	BH120	Rapids
5	miscp.pft	f_code	BH170	Spring/Water-Hole
6	miscp.pft	f_code	BH180	Waterfall
7	miscp.pft	f_code	BI020	Dam/Weir
8	miscp.pft	f_code	BI030	Lock
9	miscp.pft	f_code	BI040	Sluice Gate
10	aquecanl.lft	f_code	BH000	Inland Water
11	dangerl.lft	f_code	BD000	Underwater-Danger/Hazard
12	dangerl.lft	f_code	BD120	Reef
13	miscl.lft	f_code	BB040	Breakwater/Groyne
14	miscl.lft	f_code	BB230	Seawall
15	miscl.lft	f_code	BI020	Dam/Weir
16	watrcrsl.lft	f_code	BH140	River/Stream
17	inwatera.aft	f_code	BH090	Land Subject to Inundation
18	inwatera.aft	f_code	BH000	Inland Water
19	hydrotxt.tft	f_code	ZD040	Named Location
20	hydrotxt.tft	f_code	ZD045	Text Description
21	fca	type	A	Area Feature
22	fca	type	L	Line Feature
23	fca	type	P	Point/Node Feature
24	fca	type	T	Text Feature
25	dqpoint.pft	f_code	BD130	Rock
26	dqpoint.pft	f_code	BD180	Wreck
27	dqpoint.pft	f_code	BA030	Island
28	dqpoint.pft	f_code	BH120	Rapids
29	dqpoint.pft	f_code	BH170	Spring/Water-Hole
30	dqpoint.pft	f_code	BH180	Waterfall
31	dqpoint.pft	f_code	BI020	Dam/Weir
32	dqpoint.pft	f_code	BI030	Lock
33	dqpoint.pft	f_code	BI040	Sluice Gate
34	dqpoint.pft	f_code	ZD045	Text Description
35	dqline.lft	f_code	BH000	Inland Water
36	dqline.lft	f_code	BD000	Underwater-Danger/Hazard
37	dqline.lft	f_code	BD120	Reef
38	dqline.lft	f_code	BB040	Breakwater/Groyne
39	dqline.lft	f_code	BB230	Seawall
40	dqline.lft	f_code	BI020	Dam/Weir

41	dqline.lft	f_code	BH140	River/Stream
42	dqline.lft	f_code	ZD045	Text Description
43	dqarea.aft	f_code	BH090	Land Subject to Inundation
44	dqarea.aft	f_code	BH000	Inland Water
45	dqarea.aft	f_code	ZD045	Text Description

TABLE 107. Hydrography integer value description table.

Thematic Layer: Hydrography
Coverage Name: **hydro**
Table Description: Hydrography Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 3

{Header length}L; Hydrography Integer Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,3,N,Column Name,-,-,-,: value=S,1,N,Unique Value of Attribute,-,-,-,: description=T,50,N,Description of Value,-,-,-,:;				
1	aquecanl.lft	exs	1	Definite
2	aquecanl.lft	exs	5	Under Construction
3	aquecanl.lft	exs	6	Abandoned/Disused
4	aquecanl.lft	loc	0	Unknown
5	aquecanl.lft	loc	4	Below Surface/Submerged/Underground
6	aquecanl.lft	loc	8	On Ground Surface
7	aquecanl.lft	loc	25	Suspended/Elevated Above Ground or Water Surface
8	watrcrsl.lft	hyc	6	Non-Perennial/Intermittent/Fluctuating
9	watrcrsl.lft	hyc	8	Perennial/Permanent
10	inwatera.aft	hyc	6	Non-Perennial/Intermittent/Fluctuating
11	inwatera.aft	hyc	8	Perennial/Permanent
12	symbol.rat	fon	1	Machine Default
13	symbol.rat	sty	1	Kern
14	symbol.rat	sty	2	Proportional
15	symbol.rat	sty	3	Constant
16	symbol.rat	col	1	Black
17	symbol.rat	col	4	Blue
18	symbol.rat	col	9	Red-Brown
19	symbol.rat	col	12	Magenta

80.6 Industry coverage.

TABLE 108. Content and format for industry coverage feature class schema table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Industry Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 4

```
{Header length}L;
Industry Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;
```

1	extractp	extractp.pft	end_id	end	id
2	extractp	end	extractp.pft_id	extractp.pft	id
3	misindp	misindp.pft	end_id	end	id
4	misindp	end	misindp.pft_id	misindp.pft	id
5	storagep	storagep.pft	end_id	end	id
6	storagep	end	storagep.pft_id	storagep.pft	id
7	extracta	extracta.aft	fac_id	fac	id
8	extracta	fac	extracta.aft_id	extracta.aft	id
9	fishinda	fishinda.aft	fac_id	fac	id
10	fishinda	fac	fishinda.aft_id	fishinda.aft	id
11	dqpoint	dqpoint.pft	end_id	end	id
12	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
13	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
14	dqarea	dqarea.aft	fac_id	fac	id
15	dqarea	fac	dqarea.aft_id	dqarea.aft	id
16	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
17	dqtext	dqtext.tft	txt_id	txt	id
18	dqtext	txt	dqtext.tft_id	dqtext.tft	id
19	indtxt	indtxt.tft	txt_id	txt	id
20	indtxt	txt	indtxt.tft_id	indtxt.tft	id
21	indtxt	indtxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 109. Extraction point feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Extraction Point Feature Table
Table Name: **extractp.pft**
dq Layer Number: 4

{Header length}L; Extraction Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.pti,-,: txt=T,*,N,Text Attribute,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;				
1	AA010		1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AA010	Mine/Quarry	
		AA050	Well	
		AA052	Oil/Gas Field	
		BH155	Salt Evaporator	
txt	Text Attribute			
		Character text string		AA050, AA052, BH155
		zero-length Null		AA010

TABLE 110. Miscellaneous industry point feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Miscellaneous Industry Point Feature Table
Table Name: **misindp.pft**
dq Layer Number: 4

{Header length}L; Miscellaneous Industry Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.pti,-,: txt=T,*,N,Text Attribute,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end2_id.pti,-,:;				
1	AC000	Steel Works	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AC000	Processing Plant/Treatment Plant	
		AC040	Oil/Gas Facilities	
		AL240	Tower (Non-communication)	
txt	Text Attribute			
		Character text string		AC000, AC040, AL240

TABLE 111. Storage point feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Storage Point Feature Table
Table Name: **storagep.pft**
dq Layer Number: 4

{Header length}L; Storage Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code3.pti,-,: txt=T,*,N,Text Attribute,-,-,-,: tile_id=S,1,N,Tile Reference ID, -,tile3_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end3_id.pti,-,:;				
1	AM070	Oil Tank	3	3
2	AM080	Water Tower	4	4
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AM010	Depot (Storage)	
		AM070	Tank	
		AM080	Water Tower	
txt	Text Attribute			
		Character text string		AM010, AM070, AM080

TABLE 112. Extraction area feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Extraction Area Feature Table
Table Name: **extracta.aft**
dq Layer Number: 4

{Header length}L;				
Extraction Area Feature Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.ati,-,:				
min=S,1,N,Mining Category,int.vdt,-,-,:				
tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,:				
fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;				
1	AA010	0	1	2
2	BH155	999	3	3
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AA010	Mine/Quarry	
		AA052	Oil/Gas Field	
		BH155	Salt Evaporator	
min	Mining Category			
		0	Unknown	AA010
		8	Peat Cuttings	AA010
		999	Other	AA052, BH155

TABLE 113. Fishery industry area feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Fishery Industry Area Feature Table
Table Name: **fishinda.aft**
dq Layer Number: 4

{Header length}L; Fishery Industry Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;			
1	BH050	1	2
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	BH050	Fish Hatchery/Fish Farm/Marine Farm	

TABLE 114. Industry text feature table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Industry Text Feature Table
Table Name: **indtxt.tft**
dq Layer Number: 4

(Header length)L;				
Industry Text Feature Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,:				
symbol_id=S,1,N,Symbol Identification,-,-,-,:				
tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,:				
txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification			
	(Refer to Symbol Related Attribute Table for selection of values)			

TABLE 115. Industry feature class attribute table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Industry Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 4

{Header length}L; Industry Feature Class Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: fclass=T,8,U,Feature Class Name,-,-,-,: type=T,1,N,Feature Type,char.vdt,-,-,: descr=T,*,N,Description,-,-,-,:;			
1 : n	extractp : n	P : n	Extraction Point Features : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**extractp** **misindp** **storagep** **extracta** **fishinda** **indtxt**		
type	Feature Type	P	Point Feature	**extractp, misindp, storagep**
		A	Area Feature	**extracta, fishinda**
		T	Text Feature	**indtxt**
descr	Description	Extraction Point Features		**extractp**
		Miscellaneous Industry Point Features		**misindp**
		Storage Point Features		**storagep**
		Extraction Areas		**extracta**
		Fish Hatcheries/Fish Farms		**fishinda**
		Industry Coverage Text		**indtxt**

TABLE 116. Industry character value description table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Industry Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 4

{Header length}L;				
Industry Character Value Description Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
table=T,12,N,Name of the Feature Table,-,-,-,:				
attribute=T,6,N,Column Name,-,-,-,:				
value=T,5,N,Unique Value of Attribute,-,-,-,:				
description=T,50,N,Description of Value,-,-,-,:;				
1	extractp.pft	f_code	AA010	Mine/Quarry
2	extractp.pft	f_code	AA050	Well
3	extractp.pft	f_code	AA052	Oil/Gas Field
4	extractp.pft	f_code	BH155	Salt Evaporator
5	misindp.pft	f_code	AC000	Processing Plant/Treatment Plant
6	misindp.pft	f_code	AC040	Oil/Gas Facilities
7	misindp.pft	f_code	AL240	Tower (Non-communication)
8	storagep.pft	f_code	AM010	Depot (Storage)
9	storagep.pft	f_code	AM070	Tank
10	storagep.pft	f_code	AM080	Water Tower
11	extracta.aft	f_code	AA010	Mine/Quarry
12	extracta.aft	f_code	AA052	Oil/Gas Field
13	extracta.aft	f_code	BH155	Salt Evaporator
14	fishinda.aft	f_code	BH050	Fish Hatchery/Fish Farm/Marine Farm
15	indtxt.tft	f_code	ZD040	Named Location
16	indtxt.tft	f_code	ZD045	Text Description
17	fca	type	A	Area Feature
18	fca	type	P	Point/Node Feature
19	fca	type	T	Text Feature
20	dqpoint.pft	f_code	AA010	Mine/Quarry
21	dqpoint.pft	f_code	AA050	Well
22	dqpoint.pft	f_code	AA052	Oil/Gas Field
23	dqpoint.pft	f_code	BH155	Salt Evaporator
24	dqpoint.pft	f_code	AC000	Processing Plant/Treatment Plant
25	dqpoint.pft	f_code	AC040	Oil/Gas Facilities
26	dqpoint.pft	f_code	AL240	Tower (Non-communication)
27	dqpoint.pft	f_code	AM010	Depot (Storage)
28	dqpoint.pft	f_code	AM070	Tank
29	dqpoint.pft	f_code	AM080	Water Tower
30	dqpoint.pft	f_code	ZD045	Text Description
31	dqarea.aft	f_code	AA010	Mine/Quarry
32	dqarea.aft	f_code	AA052	Oil/Gas Field
33	dqarea.aft	f_code	BH155	Salt Evaporator
34	dqarea.aft	f_code	BH050	Fish Hatchery/Fish Farm/Marine Farm
35	dqarea.aft	f_code	ZD045	Text Description

TABLE 117. Industry integer value description table.

Thematic Layer: Industry
Coverage Name: **ind**
Table Description: Industry Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 4

{Header length}L; Industry Integer Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,3,N,Column Name,-,-,-,: value=S,1,N,Unique Value of Attribute,-,-,-,: description=T,50,N,Description of Value,-,-,-,:;				
1	extracta.aft	min	0	Unknown
2	extracta.aft	min	8	Peat Cuttings
3	extracta.aft	min	999	Other
4	symbol.rat	fon	1	Machine Default
5	symbol.rat	sty	1	Kern
6	symbol.rat	sty	2	Proportional
7	symbol.rat	sty	3	Constant
8	symbol.rat	col	1	Black
9	symbol.rat	col	4	Blue
10	symbol.rat	col	9	Red-Brown
11	symbol.rat	col	12	Magenta

80.7 Physiography coverage.

TABLE 118. Content and format for physiography coverage feature class schema table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Physiography Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 5

{Header length}L;
Physiography Feature Class Schema Table;-;
id=I,1,P,Row Identifier,-,-,-,:
feature_class=T,8,N,Name of Feature Class,-,-,-,:
table1=T,12,N,First Table,-,-,-,:
table1_key=T,16,N,Column Name in First Table,-,-,-,:
table2=T,12,N,Second Table,-,-,-,:
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;

1	cutfill	cutfill.lft	edg_id	edg	id
2	cutfill	edg	cutfill.lft_id	cutfill.lft	id
3	lndfrml	lndfrml.lft	edg_id	edg	id
4	lndfrml	edg	lndfrml.lft_id	lndfrml.lft	id
5	grounda	grounda.aft	fac_id	fac	id
6	grounda	fac	grounda.aft_id	grounda.aft	id
7	landicea	landicea.aft	fac_id	fac	id
8	landicea	fac	landicea.aft_id	landicea.aft	id
9	seaicea	seaicea.aft	fac_id	fac	id
10	seaicea	fac	seaicea.aft_id	seaicea.aft	id
11	dqline	dqline.lft	edg_id	edg	id
12	dqline	edg	dqline.lft_id	dqline.lft	id
13	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
14	dqarea	dqarea.aft	fac_id	fac	id
15	dqarea	fac	dqarea.aft_id	dqarea.aft	id
16	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
17	dqtext	dqtext.tft	txt_id	txt	id
18	dqtext	txt	dqtext.tft_id	dqtext.tft	id
19	phystxt	phystxt.tft	txt_id	txt	id
20	phystxt	txt	phystxt.tft_id	phystxt.tft	id
21	phystxt	phystxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 119. Cut/Fill line feature table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Cut/Fill Line Feature Table
Table Name: **cutfill.lft**
dq Layer Number: 5

{Header length}L; Cut/Fill Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;			
1	DB090	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		DB090	Embankment/Fill	

TABLE 120. Landform line feature table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Landform Line Feature Table
Table Name: **lndfrml.lft**
dq Layer Number: 5

(Header length)L; Landform Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.lti,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;			
1	BJ040	1	1
2	DB010	2	2
3	DB080	3	3
4	DB110	4	4
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BJ040	Ice Cliff	
		DB010	Bluff/Cliff/Escarpment	
		DB080	Depression	
		DB090	Embankment/Fill	
		DB110	Fault	
		DB160	Rock Strata/Rock Formation	

TABLE 121. Ground area feature table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Ground Area Feature Table
Table Name: **grounda.aft**
dq Layer Number: 5

```
Header length}L;
Ground Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
smc=S,1,N,Surface Material Category,int.vdt,-,-,:
swc=S,1,N,Soil Wetness Condition,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;
```

1	DA010	88	3	1	2
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		DA010	Ground Surface Element	
smc	Surface Material Category			
		0	Unknown	DA010
		52	Lava	DA010
		88	Sand	DA010
		119	Distorted Surface	DA010
swc	Soil Wetness Condition			
		0	Unknown	DA010
		3	Wet	DA010

TABLE 122. Land ice area feature table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Land Ice Area Feature Table
Table Name: **landicea.aft**
dq Layer Number: 5

{Header length}L; Land Ice Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;			
1	BJ100	1	2
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BJ100	Snow Field/Ice Field	

TABLE 123. Sea ice area feature table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Sea Ice Area Feature Table
Table Name: **seaicea.aft**
dq Layer Number: 5

```
(Header length)L;
Sea Ice Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code3.ati,-,:
nam=T,*,N,Name,char.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile3_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac3_id.ati,-,:;
```

1	BJ065	AY	1	2
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BJ065	Ice Shelf	
		BJ070	Pack Ice	
		BJ080	Polar Ice	
nam	Name	UNK	Unknown	BJ080 BJ065 BJ070
		actual value (e.g., Pitcairn Island)		BJ065 BJ070 BJ080

TABLE 124. *Physiography text feature table*.

Thematic Layer:	Physiography
Coverage Name:	**phys**
Table Description:	Physiography Text Feature Table
Table Name:	**phystxt.tft**
dq Layer Number:	5

(Header length)L; Physiography Text Feature Table;~; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,: symbol_id=S,1,N,Symbol Identification,-,-,-,: tile_id=S,1,N,Tile Reference ID,~,tile1_id.tti,-,: txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;

1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification			
	(Refer to Symbol Related Attribute Table for selection of values)			

TABLE 125. Physiography feature class attribute table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Physiography Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 5

```
{Header length}L;
Physiography Feature Class Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
fclass=T,8,U,Feature Class Name,-,-,-,:
type=T,1,N,Feature Type,char.vdt,-,-,:
descr=T,*,N,Description,-,-,-,:;
```

1	cutfill	L	Cuts and Fills
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**cutfill**		
		lndfrml		
		grounda		
		landicea		
		seaicea		
		phystxt		
type	Feature Type	L	Line Feature	**cutfill, lndfrml**
		A	Area Feature	**grounda, landicea,seaice**
		T	Text Feature	**phystxt**
descr	Description	Cuts and Fills		**cutfill**
		Landform Line Features		**lndfrml**
		Ground Surface Areas		**grounda**
		Snow/Ice Fields and Glaciers		**landicea**
		Sea Ice Areas		**seaicea**
		Physiography Coverage Text		**phystxt**

TABLE 126. Physiography character value description table.

Thematic Layer: Physiography
Coverage Name: **phys**
Table Description: Physiography Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 5

{Header length}L;
Physiography Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	cutfill.lft	f_code	DB090	Embankment/Fill
2	lndfrml.lft	f_code	BJ040	Ice Cliff
3	lndfrml.lft	f_code	DB010	Bluff/Cliff/Escarpment
4	lndfrml.lft	f_code	DB080	Depression
5	lndfrml.lft	f_code	DB090	Embankment/Fill
6	lndfrml.lft	f_code	DB110	Fault
7	lndfrml.lft	f_code	DB160	Rock Strata/Rock Formation
8	grounda.aft	f_code	DA010	Ground Surface Element
9	landicea.aft	f_code	BJ100	Snow Field/Ice Field
10	seaicea.aft	f_code	BJ065	Ice Shelf
11	seaicea.aft	f_code	BJ070	Pack Ice
12	seaicea.aft	f_code	BJ080	Polar Ice
13	seaicea.aft	nam	UNK	No entry present
14	phystxt.tft	f_code	ZD040	Named Location
15	phystxt.tft	f_code	ZD045	Text Description
16	fca	type	A	Area Feature
17	fca	type	L	Line Feature
18	fca	type	T	Text Feature
19	dqline.lft	f_code	DB090	Embankment/Fill
20	dqline.lft	f_code	BJ040	Ice Cliff
21	dqline.lft	f_code	DB010	Bluff/Cliff/Escarpment
22	dqline.lft	f_code	DB080	Depression
23	dqline.lft	f_code	DB090	Embankment/Fill
24	dqline.lft	f_code	DB110	Fault
25	dqline.lft	f_code	DB160	Rock Strata/Rock Formation
26	dqline.lft	f_code	ZD045	Text Description
27	dqarea.aft	f_code	DA010	Ground Surface Element
28	dqarea.aft	f_code	BJ100	Snow Field/Ice Field
29	dqarea.aft	f_code	BJ065	Ice Shelf
30	dqarea.aft	f_code	BJ070	Pack Ice
31	dqarea.aft	f_code	BJ080	Polar Ice
32	dqarea.aft	f_code	ZD045	Text Description

TABLE 127. Physiography integer value description table.

Thematic Layer:	Physiography
Coverage Name:	**phys**
Table Description:	Physiography Integer Value Description Table
Table Name:	**int.vdt**
dq Layer Number:	5

{Header length}L;
Physiography Integer Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,3,N,Column Name,-,-,-,:
value=S,1,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	grounda.aft	smc	0	Unknown
2	grounda.aft	smc	52	Lava
3	grounda.aft	smc	88	Sand
4	grounda.aft	smc	119	Distorted Surface
5	grounda.aft	swc	0	Unknown
6	grounda.aft	swc	3	Wet
7	symbol.rat	fon	1	Machine Default
8	symbol.rat	sty	1	Kern
9	symbol.rat	sty	2	Proportional
10	symbol.rat	sty	3	Constant
11	symbol.rat	col	1	Black
12	symbol.rat	col	4	Blue
13	symbol.rat	col	9	Red-Brown
14	symbol.rat	col	12	Magenta

80.8 Population coverage.

TABLE 128. Content and format for population coverage feature class schema table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Population Feature Class Schema Table
Table Name: **fcs**
***dq** Layer Number:* 6

(Header length)L;					
Population Feature Class Schema Table;-;					
id=I,1,P,Row Identifier,-,-,-,:					
feature_class=T,8,N,Name of Feature Class,-,-,-,:					
table1=T,12,N,First Table,-,-,-,:					
table1_key=T,16,N,Column Name in First Table,-,-,-,:					
table2=T,12,N,Second Table,-,-,-,:					
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;					
1	builtupp	builtupp.pft	end_id	end	id
2	builtupp	end	builtupp.pft_id	builtupp.pft	id
3	mispopp	mispopp.pft	end_id	end	id
4	mispopp	end	mispopp.pft_id	mispopp.pft	id
5	builtupa	builtupa.aft	fac_id	fac	id
6	builtupa	fac	builtupa.aft_id	builtupa.aft	id
7	mispopa	mispopa.aft	fac_id	fac	id
8	mispopa	fac	mispopa.aft_id	mispopa.aft	id
9	dqpoint	dqpoint.pft	end_id	end	id
10	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
11	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
12	dqline	dqline.lft	edg_id	edg	id
13	dqline	edg	dqline.lft_id	dqline.lft	id
14	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
15	dqarea	dqarea.aft	fac_id	fac	id
16	dqarea	fac	dqarea.aft_id	dqarea.aft	id
17	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
18	dqtext	dqtext.tft	txt_id	txt	id
19	dqtext	txt	dqtext.tft_id	dqtext.tft	id
20	poptxt	poptxt.tft	txt_id	txt	id
21	poptxt	txt	poptxt.tft_id	poptxt.tft	id
22	poptxt	poptxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 129. Built-up area point feature table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Built-Up Area Point Feature Table
Table Name: **builtupp.pft**
dq Layer Number: 6

{Header length}L; Built-Up Area Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: nam=T,*,N,Name,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;				
1	AL020	UNK	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	AL020	Built-Up Area	
nam	Name	Character text string		AL020
		"UNK" (no entry present for feature)		AL020

TABLE 130. Miscellaneous population point feature table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Miscellaneous Population Point Feature Table
Table Name: **mispopp.pft**
dq Layer Number: 6

```
{Header length}L;
Miscellaneous Population Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.pti,-,:
nam=T,*,N,Name,char.vdt,-,-,:
txt=T,*,N,Text Attribute,char.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile2_id.pti,-,:
end_id=I,1,N,Entity Node Primitive ID,-,end2_id.pti,-,:;
```

1	AI030		Camp	1	1
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AI030	Camp	
		AK160	Stadium/Amphitheatre	
		AL015	Building	
		AL025	Cairn	
		AL105	Settlement	
		AL130	Monument	
		AL135	Native Settlement	
		AL200	Ruins	
		AL260	Wall	
		BC050	Lighthouse	
		SU001	Military Base	
nam	Name			
		zero-length	Null	AI030, AK160, AL015, AL025, AL105, AL130, AL200, AL260, BC050, SU001
		Character text string		AL135
		"UNK" (no entry present for feature)		AL135
txt	Text Attribute			
		zero-length	Null	AL135
		Character text string		AI030, AK160, AL015, AL025, AL105, AL130, AL200, AL260, BC050, SU001
		"UNK" (no entry		AI030, AK160, AL015, AL025,

present for feature)	AL105, AL130, AL200, AL260, BC050, SU001

TABLE 131. Built-up area area feature table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Built-Up Area Area Feature Table
Table Name: **builtupa.aft**
dq Layer Number: 6

{Header length}L; Built-Up Area Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: nam=T,*,N,Name,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;				
1	AL020	UNK	1	2
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	AL020	Built-Up Area	
nam	Name	Character text string		AL020
		"UNK" (no entry present for feature)		AL020

TABLE 132. Miscellaneous population area feature table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Miscellaneous Population Area Feature Table
Table Name: **mispopa.aft**
dq Layer Number: 6

{Header length}L; Miscellaneous Population Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.ati,-,: nam=T,*,N,Name,char.vdt,-,-,: txt=T,*,N,Text Attribute,char.vdt,-,-: tile_id=S,1,N,Tile Reference ID,-,tile2_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;					
1	AK040			1	2
2	AL135	UNK		2	3
3	SU001		UNK	3	4
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AK040	Athletic Field	
		AK130	Race Track	
		AL135	Native Settlement	
		SU001	Military Base	
nam	Name			
		zero-length Character text string	Null	AK040, AK130, SU001
		"UNK" (no entry present for feature)		AL135
				AL135
txt	Text Attribute			
		zero-length Character text string	Null	AK040, AK130, AL135
		"UNK" (no entry present for feature)		SU001
				SU001

TABLE 133. *Population text feature table.*

Thematic Layer:	Population
Coverage Name:	**pop**
Table Description:	Population Text Feature Table
Table Name:	**poptxt.tft**
dq Layer Number:	6

{Header length}L; Population Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,: symbol_id=S,1,N,Symbol Identification,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,: txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	*Symbol Identification*			
	(Refer to Symbol Related Attribute Table for selection of values)			

TABLE 134. Population feature class attribute table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Population Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 6

```
{Header length}L;
Population Feature Class Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
fclass=T,8,U,Feature Class Name,-,-,-,:
type=T,1,N,Feature Type,char.vdt,-,-,:;
descr=T,*,N,Description,-,-,-,:;
```

1 : n	builtupp : n	P : n	Built-up Area Points : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**builtupp**		
		mispopp		
		builtupa		
		mispopa		
		poptxt		
type	Feature Type	P	Point Feature	**builtupp, mispopp**
		A	Area Feature	**builtupa, mispopa**
		T	Text Feature	**poptxt**
descr	Description	Built-Up Area Points		**builtupp**
		Miscellaneous Population Points		**mispopp**
		Built-Up Areas		**builtupa**
		Miscellaneous Population Areas		**mispopa**
		Population Coverage Text		**poptxt**

TABLE 135. Population character value description table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Population Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 6

(Header length)L;
Population Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	builtupp.pft	f_code	AL020	Built-Up Area
2	builtupp.pft	nam	UNK	No entry present
3	mispopp.pft	f_code	AI030	Camp
4	mispopp.pft	f_code	AK160	Stadium/Amphitheatre
5	mispopp.pft	f_code	AL015	Building
6	mispopp.pft	f_code	AL025	Cairn
7	mispopp.pft	f_code	AL105	Settlement
8	mispopp.pft	f_code	AL130	Monument
9	mispopp.pft	f_code	AL135	Native Settlement
10	mispopp.pft	f_code	AL200	Ruins
11	mispopp.pft	f_code	AL260	Wall
12	mispopp.pft	f_code	BC050	Lighthouse
13	mispopp.pft	f_code	SU001	Military Base
14	mispopp.pft	nam	UNK	No entry present
15	mispopp.pft	txt	UNK	No entry present
16	builtupa.aft	f_code	AL020	Built-Up Area
17	builtupa.aft	nam	UNK	No entry present
18	mispopa.aft	f_code	AK040	Athletic Field
19	mispopa.aft	f_code	AK130	Race Track
20	mispopa.aft	f_code	AL135	Native Settlement
21	mispopa.aft	f_code	SU001	Military Base
22	mispopa.aft	nam	UNK	No entry present
23	mispopa.aft	txt	UNK	No entry present
24	poptxt.tft	f_code	ZD040	Named Location
25	poptxt.tft	f_code	ZD045	Text Description
26	fca	type	A	Area Feature
27	fca	type	P	Point/Node Feature
28	fca	type	T	Text Feature
29	dqpoint.pft	f_code	AL020	Built-Up Area
30	dqpoint.pft	f_code	AI030	Camp
31	dqpoint.pft	f_code	AK160	Stadium/Amphitheatre
32	dqpoint.pft	f_code	AL015	Building
33	dqpoint.pft	f_code	AL025	Cairn
34	dqpoint.pft	f_code	AL105	Settlement
35	dqpoint.pft	f_code	AL130	Monument
36	dqpoint.pft	f_code	AL135	Native Settlement
37	dqpoint.pft	f_code	AL200	Ruins

38	dqpoint.pft	f_code	AL260	Wall
39	dqpoint.pft	f_code	BC050	Lighthouse
40	dqpoint.pft	f_code	SU001	Military Base
41	dqpoint.pft	f_code	ZD045	Text Description
42	dqarea.aft	f_code	AL020	Built-Up Area
43	dqarea.aft	f_code	AK040	Athletic Field
44	dqarea.aft	f_code	AK130	Race Track
45	dqarea.aft	f_code	AL135	Native Settlement
46	dqarea.aft	f_code	SU001	Military Base
47	dqarea.aft	f_code	ZD045	Text Description

TABLE 136. Population integer value description table.

Thematic Layer: Population
Coverage Name: **pop**
Table Description: Population Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 6

{Header length}L;
Population Integer Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,3,N,Column Name,-,-,-,:
value=S,1,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	symbol.rat	fon	1	Machine Default
2	symbol.rat	sty	1	Kern
3	symbol.rat	sty	2	Proportional
4	symbol.rat	sty	3	Constant
5	symbol.rat	col	1	Black
6	symbol.rat	col	4	Blue
7	symbol.rat	col	9	Red-Brown
8	symbol.rat	col	12	Magenta

80.9 Transportation coverage.

TABLE 137. Content and format for transportation coverage feature class schema table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 7

{Header length}L;					
Transportation Feature Class Schema Table;-;					
id=I,1,P,Row Identifier,-,-,-,:					
feature_class=T,8,N,Name of Feature Class,-,-,-,:					
table1=T,12,N,First Table,-,-,-,:					
table1_key=T,16,N,Column Name in First Table,-,-,-,:					
table2=T,12,N,Second Table,-,-,-,:					
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;					
1	aerofacp	aerofacp.pft	end_id	end	id
2	aerofacp	end	aerofacp.pft_id	aerofacp.pft	id
3	rryardp	rryardp.pft	end_id	end	id
4	rryardp	end	rryardp.pft_id	rryardp.pft	id
5	transtrc	transtrc.pft	cnd_id	cnd	id
6	transtrc	cnd	transtrc.pft_id	transtrc.pft	id
7	mistranl	mistranl.lft	edg_id	edg	id
8	mistranl	edg	mistranl.lft_id	mistranl.lft	id
9	railrdl	railrdl.lft	edg_id	edg	id
10	railrdl	edg	railrdl.lft_id	railrdl.lft	id
11	roadl	roadl.lft	edg_id	edg	id
12	roadl	edg	roadl.lft_id	roadl.lft	id
13	traill	traill.lft	edg_id	edg	id
14	traill	edg	traill.lft_id	traill.lft	id
15	transtrl	transtrl.lft	edg_id	edg	id
16	transtrl	edg	transtrl.lft_id	transtrl.lft	id
17	dqpoint	dqpoint.pft	end_id	end	id
18	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
19	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
20	dqnode	dqnode.pft	cnd_id	cnd	id
21	dqnode	cnd	dqnode.pft_id	dqnode.pft	id
22	dqnode	dqnode.pft	dqdescr_id	dqdescr.rat	id
23	dqline	dqline.lft	edg_id	edg	id
24	dqline	edg	dqline.lft_id	dqline.lft	id
25	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
26	dqtext	dqtext.tft	txt_id	txt	id
27	dqtext	txt	dqtext.tft_id	dqtext.tft	id
28	transtxt	transtxt.tft	txt_id	txt	id
29	transtxt	txt	transtxt.tft_id	transtxt.tft	id
30	transtxt	transtxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 138. Airport point feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Airport Point Feature Table
Table Name: **aerofacp.pft**
dq Layer Number: 7

```
(Header length)L;
Airport Point Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
iko=T,4,N,ICAO Designator,char.vdt,-,-,:
nam=T,*,N,Name,char.vdt,-,-,:
na3=T,*,N,Name,char.vdt,-,-,:
use=S,1,N,Usage,int.vdt,-,-,:
zv3=S,1,N,Airfield/Aerodrome Elevation (meters),int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,:
end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;
```

1	GB005	1234	XYZ	8	230	1	1
2	:	:	:	:	:	2	2
:	:	:	:	:	:	:	:
n	n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		GB005	Airport/Airfield	
iko	ICAO Designator			
		Character text string		GB005
		"UNK" (no entry present for feature)		
nam	Name			
		Character text string		GB005
		"UNK" (no entry present for feature)		GB005
na3	Classification Name			
		Character text string		GB005
		"UNK" (no entry present for feature)		
use	Usage			
		0	Unknown	GB005
		8	Military	GB005
		22	Joint Military/Civilian	GB005
		49	Civilian/Public	GB005
		999	Other	GB005
zv3	Airfield/Aerodrome Elevation (meters)			
		29999	Unknown	GB005
		-400 to 9999		GB005

TABLE 139. Railroad yard point feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Railroad Yard Point Feature Table
Table Name: **rryardp.pft**
dq Layer Number: 7

{Header length}L; Railroad Yard Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id= S,1,N,Tile Reference ID,-,tile2_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end2_id.pti,-,:;			
1	AN060	1	2
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AN060	Railroad Yard/Marshalling Yard	

TABLE 140. Transportation structures node feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Structures Node Feature Table
Table Name: **transtrc.pft**
dq Layer Number: 7

{Header length}L; Transportation Structures Node Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.nti,-,: tuc=S,1,N,Transportation Use Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.nti,-,: cnd_id=I,1,N,Connected Node Primitive ID,-,cnd1_id.nti,-,:;				
1	AQ130	4	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AL210	Snow Shed/Rock Shed	
		AQ040	Bridge/Overpass/Viaduct	
		AQ064	Causeway	
		AQ070	Ferry Crossing	
		AQ130	Tunnel	
		BH070	Ford	
tuc	Transportation Use Category			
		3	Railroad	AL210, AQ040, AQ064, AQ070, AQ130
		4	Road	AL210, AQ040, AQ064, AQ070, AQ130, BH070

TABLE 141. Miscellaneous transportation line feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Miscellaneous Transportation Line Feature Table
Table Name: **mistranl.lft**
dq Layer Number: 7

(Header length)L; Miscellaneous Transportation Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.lti,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;			
1	AQ010	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AQ010	Aerial Cableway Lines/Ski Lift Lines	
		BB190	Pier/Wharf/Quay	

TABLE 142. Railroad line feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Railroad Line Feature Table
Table Name: **railrd1.lft**
dq Layer Number: 7
exs=55 for schematic railroad connectors added in urbanized areas for network connectivity.

```
{Header length}L;
Railroad Line Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
exs=S,1,N,Existence Category,int.vdt,-,-,:
fco=S,1,N,Feature Configuration,int.vdt,-,-,:
rrc=S,1,N,Railroad Categories,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,:
edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;
```

1	AN010	28	3	0	1	1
:	:	:	:	:	:	:
n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AN010	Railroad	
exs	Existence Category			
		2	Doubtful	AN010
		5	Under Construction	AN010
		28	Operational	AN010
		55	Unexamined/Unsurveyed	AN010
		59	Not Usable	AN010
fco	Feature Configuration			
		0	Unknown	AN010
		2	Multiple	AN010
		3	Single	AN010
rrc	Railroad Categories			
		0	Unknown	AN010
		2	Car-Line	AN010

TABLE 143. Road line feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Road Line Feature Table
Table Name: **roadl.lft**
dq Layer Number: 7
exs=55 for schematic road connectors added in urbanized areas for network connectivity.

{Header length}L; Road Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: acc=S,1,N,Accuracy Category,int.vdt,-,-,: exs=S,1,N,Existence Category,int.vdt,-,-,: med=S,1,N,Median Category,int.vdt,-,-,: rtt=S,1,N,Route Intended Use,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile3_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg3_id.lti,-,:;							
1	AP030	2	5	2	13	1	1
:	:	:	:	:	:	:	:
n	n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AP030	Road	
acc	Accuracy Category			
		1	Accurate	AP030
		2	Approximate	AP030
exs	Existence Category			
		2	Doubtful	AP030
		5	Under Construction	AP030
		28	Operational	AP030
		55	Unexamined/Unsurveyed	AP030
med	Median Category			
		0	Unknown	AP030
		1	With Median	AP030
		2	Without Median	AP030
rtt	Route Intended Use			
		0	Unknown	AP030
		14	Primary Route	AP030
		15	Secondary Route	AP030

TABLE 144. Trails and tracks line feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Trails and Tracks Line Feature Table
Table Name: **traill.lft**
dq Layer Number: 7

{Header length}L; Trails and Tracks Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: exs=S,1,N,Existence Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile4_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg4_id.lti,-,:;				
1	AP050	2	2	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AP050	Trail	
exs	Existence Category			
		2	Doubtful	AP050
		5	Under Construction	AP050
		28	Operational	AP050

TABLE 145. Transportation structures line feature table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Structures Line Feature Table
Table Name: **transtrl.lft**
dq Layer Number: 7

(Header length)L; Transportation Structures Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code5.lti,-,: tuc=S,1,N,Transportation Use Category,int.vdt,-,-,: tile_id= S,1,N,Tile Reference ID,-,tile5_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg5_id.lti,-,:;				
1	AL210	4	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AL210	Snow Shed/Rock Shed	
		AQ040	Bridge/Overpass/Viaduct	
		AQ064	Causeway	
		AQ070	Ferry Crossing	
		AQ130	Tunnel	
		BH070	Ford	
tuc	Transportation Use	Category		
		3	Railroad	AL210, AQ040, AQ064, AQ070, AQ130
		4	Road	AL210, AQ040, AQ064, AQ070, AQ130, BH070

TABLE 146. Transportation text feature table.

Thematic Layer:	Transportation
Coverage Name:	**trans**
Table Description:	Transportation Text Feature Table
Table Name:	**transtxt.tft**
dq Layer Number:	7

{Header length}L;				
Transportation Text Feature Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,:				
symbol_id=S,1,N,Symbol Identification,-,-,-,:				
tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,:				
txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification (Refer to Symbol Related Attribute Table for selection of values)			

TABLE 147. Transportation feature class attribute table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 7

```
{Header length}L;
Transportation Feature Class Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
fclass=T,8,U,Feature Class Name,-,-,-,:
type=T,1,N,Feature Type,char.vdt,-,-,:
descr=T,*,N,Description,-,-,-,:;
```

1 : n	aerofacp : n	P : n	Airport/Facilities Points : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**aerofacp** **rryardp** **transtrc** **mistranl** **railrdl** **roadl** **traill** **transtrl** **transtxt**		
type	Feature Type	P	Point Feature	**aerofacp, rryardp**
		P	Node Feature	**transtrc**
		L	Line Feature	**mistranl, railrdl, roa** **traill, transtrl**
		T	Text Feature	**transtxt**
descr	Description	Airport Facilities Points		**aerofacp**
		Railroad Yard Points		**rryardp**
		Transportation Structures Points		**transtrc**
		Miscellaneous Transportation Line Features		**mistranl**
		Railroads		**railrdl**
		Roads		**roadl**
		Trails and Tracks		**traill**
		Transportation Structures Lines		**transtrl**
		Transportation Coverage Text		**transtxt**

TABLE 148. Transportation character value description table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 7

(Header length)L;
Transportation Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	aerofacp.pft	f_code	GB005	Airport/Airfield
2	aerofacp.pft	iko	UNK	No entry presen
3	aerofacp.pft	nam	UNK	No entry present
4	aerofacp.pft	na3	UNK	No entry present
5	rryardp.pft	f_code	AN060	Railroad Yard/Marshalling Yard
6	transtrc.pft	f_code	AL210	Snow Shed/Rock Shed
7	transtrc.pft	f_code	AQ040	Bridge/Overpass/Viaduct
8	transtrc.pft	f_code	AQ064	Causeway
9	transtrc.pft	f_code	AQ070	Ferry Crossing
10	transtrc.pft	f_code	AQ130	Tunnel
11	transtrc.pft	f_code	BH070	Ford
12	mistranl.lft	f_code	AQ010	Aerial Cableway Lines/Ski Lift Line
13	mistranl.lft	f_code	BB190	Pier/Wharf/Quay
14	railrdl.lft	f_code	AN010	Railroad
15	roadl.lft	f_code	AP030	Road
16	traill.lft	f_code	AP050	Trail
17	transtrl.lft	f_code	AL210	Snow Shed/Rock Shed
18	transtrl.lft	f_code	AQ040	Bridge/Overpass/Viaduct
19	transtrl.lft	f_code	AQ064	Causeway
20	transtrl.lft	f_code	AQ070	Ferry Crossing
21	transtrl.lft	f_code	AQ130	Tunnel
22	transtrl.lft	f_code	BH070	Ford
23	transtxt.tft	f_code	ZD040	Named Location
24	transtxt.tft	f_code	ZD045	Text Description
25	fca	type	L	Line Feature
26	fca	type	P	Point/Node Feature
27	fca	type	T	Text Feature
28	dqpoint.pft	f_code	GB005	Airport/Airfield
29	dqpoint.pft	f_code	AN060	Railroad Yard/Marshalling Yard
30	dqnode.pft	f_code	AL210	Snow Shed/Rock Shed
31	dqnode.pft	f_code	AQ040	Bridge/Overpass/Viaduct
32	dqnode.pft	f_code	AQ064	Causeway
33	dqnode.pft	f_code	AQ070	Ferry Crossing
34	dqnode.pft	f_code	AQ130	Tunnel
35	dqnode.pft	f_code	BH070	Ford
36	dqpoint.pft	f_code	ZD045	Text Description
37	dqline.lft	f_code	AQ010	Aerial Cableway Lines/Ski Lift Line
38	dqline.lft	f_code	BB190	Pier/Wharf/Quay
39	dqline.lft	f_code	AN010	Railroad
40	dqline.lft	f_code	AP030	Road

41	dqline.lft	f_code	AP050	Trail
42	dqline.lft	f_code	AL210	Snow Shed/Rock Shed
43	dqline.lft	f_code	AQ040	Bridge/Overpass/Viaduct
44	dqline.lft	f_code	AQ064	Causeway
45	dqline.lft	f_code	AQ070	Ferry Crossing
46	dqline.lft	f_code	AQ130	Tunnel
47	dqline.lft	f_code	BH070	Ford
24	dqline.lft	f_code	ZD045	Text Description

TABLE 149. Transportation integer value description table.

Thematic Layer: Transportation
Coverage Name: **trans**
Table Description: Transportation Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 7

(Header length)L; Transportation Integer Value Description Table;-; id=I,1,P,Row Identifier,-,-,-,: table=T,12,N,Name of the Feature Table,-,-,-,: attribute=T,3,N,Column Name,-,-,-,: value=S,1,N,Unique Value of Attribute,-,-,-,: description=T,50,N,Description of Value,-,-,-,:				
1	aerofacp.pft	use	0	Unknown
2	aerofacp.pft	use	8	Military
3	aerofacp.pft	use	22	Joint Military/Civilian
4	aerofacp.pft	use	49	Civilian/Public
5	aerofacp.pft	use	999	Other
6	aerofacp.pft	zv3	29999	Unknown
7	transtrc.pft	tuc	3	Railroad
8	transtrc.pft	tuc	4	Road
9	railrdl.lft	exs	2	Doubtful
10	railrdl.lft	exs	5	Under Construction
11	railrdl.lft	exs	28	Operational
12	railrdl.lft	exs	55	Unexamined/Unsurveyed
13	railrdl.lft	exs	59	Not Usable
14	railrdl.lft	fco	0	Unknown
15	railrdl.lft	fco	2	Multiple
16	railrdl.lft	fco	3	Single
17	railrdl.lft	rrc	0	Unknown
18	railrdl.lft	rrc	2	Car-Line
19	roadl.lft	acc	1	Accurate
20	roadl.lft	acc	2	Approximate
21	roadl.lft	exs	2	Doubtful
22	roadl.lft	exs	5	Under Construction
23	roadl.lft	exs	28	Operational
24	roadl.lft	exs	55	Unexamined/Unsurveyed
25	roadl.lft	med	0	Unknown
26	roadl.lft	med	1	With Median
27	roadl.lft	med	2	Without Median
28	roadl.lft	rtt	0	Unknown
29	roadl.lft	rtt	14	Primary Route
30	roadl.lft	rtt	15	Secondary Route
31	traill.lft	exs	2	Doubtful
32	traill.lft	exs	5	Under Construction
33	traill.lft	exs	28	Operational
34	transtrl.lft	tuc	3	Railroad
35	transtrl.lft	tuc	4	Road
36	symbol.rat	fon	1	Machine Default
37	symbol.rat	sty	1	Kern
38	symbol.rat	sty	2	Proportional
39	symbol.rat	sty	3	Constant
40	symbol.rat	col	1	Black
41	symbol.rat	col	4	Blue
42	symbol.rat	col	9	Red-Brown
43	symbol.rat	col	12	Magenta

80.10 Utilities coverage.

TABLE 150. Content and format for utilities coverage feature class schema table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utilities Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 8

{Header length}L; Utilities Feature Class Schema Table;-; id=I,1,P,Row Identifier,-,-,-,: feature_class=T,8,N,Name of Feature Class,-,-,-,: table1=T,12,N,First Table,-,-,-,: table1_key=T,16,N,Column Name in First Table,-,-,-,: table2=T,12,N,Second Table,-,-,-,: table2_key=T,9,N,Column Name in Second Table,-,-,-,:;					
1	utilp	utilp.pft	end_id	end	id
2	utilp	end	utilp.pft_id	utilp.pft	id
3	pipel	pipel.lft	edg_id	edg	id
4	pipel	edg	pipel.lft_id	pipel.lft	id
5	util1	util1.lft	edg_id	edg	id
6	util1	edg	util1.lft_id	util1.lft	id
7	dqpoint	dqpoint.pft	end_id	end	id
8	dqpoint	end	dqpoint.pft_id	dqpoint.pft	id
9	dqpoint	dqpoint.pft	dqdescr_id	dqdescr.rat	id
10	dqline	dqline.lft	edg_id	edg	id
11	dqline	edg	dqline.lft_id	dqline.lft	id
12	dqline	dqline.lft	dqdescr_id	dqdescr.rat	id
13	dqtext	dqtext.tft	txt_id	txt	id
14	dqtext	txt	dqtext.tft_id	dqtext.tft	id
15	utiltxt	utiltxt.tft	txt_id	txt	id
16	utiltxt	txt	utiltxt.tft_id	utiltxt.tft	id
17	utiltxt	utiltxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 151. Utility point feature table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utility Point Feature Table
Table Name: **utilp.pft**
dq Layer Number: 8

(Header length)L; Utility Point Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.pti,-,: txt=T,*,N,Text Attribute,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.pti,-,: end_id=I,1,N,Entity Node Primitive ID,-,end1_id.pti,-,:;				
1	AT050	Radio Station	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AD010	Power Plant	
		AD030	Substation/Transformer Yard	
		AQ116	Pumping Station	
		AT050	Communication Building	
		AT080	Communication Tower	
txt	Text Attribute			
		Character text string		AD010, AD030, AQ116, AT050, AT080

TABLE 152. Pipeline line feature table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Pipeline Line Feature Table
Table Name: **pipe1.lft**
dq Layer Number: 8

{Header length}L; Pipeline Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: loc=S,1,N,Location Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;				
1	AQ113	4	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AQ113	Pipeline/Pipe	
loc	Location Category			
		4	Below Surface/Submerged/ Underground	AQ113
		8	On Ground Surface	AQ113

TABLE 153. Utility line feature table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utility Line Feature Table
Table Name: **util.lft**
dq Layer Number: 8

{Header length}L; Utility Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.lti,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;			
1	AT030	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		AT030	Power Transmission Line	
		AT060	Telephone Line/Telegraph Line	

TABLE 154. Utilities text feature table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: *Utilities Text Feature Table*
Table Name: **utiltxt.tft**
dq Layer Number: 8

(Header length)L; Utilities Text Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.tti,-,: symbol_id=S,1,N,Symbol Identification,-,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,: txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id		Symbol Identification (Refer to Symbol Related Attribute Table for selection of values)		

TABLE 155. Utilities feature class attribute table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utilities Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 8

(Header length)L; Utilities Feature Class Attribute Table;-; id=I,1,P,Row Identifier,-,-,-,: fclass=T,8,U,Feature Class Name,-,-,-,: type=T,1,N,Feature Type,char.vdt,-,-,: descr=T,*,N,Description,-,-,-,:;			
1 : n	utilp : n	P : n	Utility Point Features : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**utilp** **pipel** **util1** **utiltxt**		
type	Feature Type	P	Point Feature	**utilp**
		L	Line Feature	**pipel, util1**
		T	Text Feature	**utiltxt**
descr	Description	Utility Point Features		**utilp**
		Pipelines		**pipel**
		Power Transmission/Telephone/ Telegraph Lines		**util1**
		Utilities Coverage Text		**utiltxt**

TABLE 156. Utilities character value description table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utilities Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 8

{Header length}L;
Utilities Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	utilp.pft	f_code	AD010	Power Plant
2	utilp.pft	f_code	AD030	Substation/Transformer Yard
3	utilp.pft	f_code	AQ116	Pumping Station
4	utilp.pft	f_code	AT050	Communication Building
5	utilp.pft	f_code	AT080	Communication Tower
6	pipel.lft	f_code	AQ113	Pipeline/Pipe
7	utill.lft	f_code	AT030	Power Transmission Line
8	utill.lft	f_code	AT060	Telephone Line/Telegraph Line
9	utiltxt.tft	f_code	ZD040	Named Location
10	utiltxt.tft	f_code	ZD045	Text Description
11	fca	type	L	Line Feature
12	fca	type	P	Point/Node Feature
13	fca	type	T	Text Feature
14	dqpoint.pft	f_code	AD010	Power Plant
15	dqpoint.pft	f_code	AD030	Substation/Transformer Yard
16	dqpoint.pft	f_code	AQ116	Pumping Station
17	dqpoint.pft	f_code	AT050	Communication Building
18	dqpoint.pft	f_code	AT080	Communication Tower
19	dqpoint.tft	f_code	ZD045	Text Description
20	dqline.lft	f_code	AQ113	Pipeline/Pipe
21	dqline.lft	f_code	AT030	Power Transmission Line
22	dqline.lft	f_code	AT060	Telephone Line/Telegraph Line
23	dqarea.aft	f_code	ZD045	Text Description

TABLE 157. Utilities integer value description table.

Thematic Layer: Utilities
Coverage Name: **util**
Table Description: Utilities Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 8

{Header length}L;
Utilities Integer Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,3,N,Column Name,-,-,-,:
value=S,1,N,Unique Value of Attribute,-,-,-,:
description=T,50,N,Description of Value,-,-,-,:;

1	pipel.lft	loc	4	Below Surface/Submerged/Underground
2	pipel.lft	loc	8	On Ground Surface
3	symbol.rat	fon	1	Machine Default
4	symbol.rat	sty	1	Kern
5	symbol.rat	sty	2	Proportional
6	symbol.rat	sty	3	Constant
7	symbol.rat	col	1	Black
8	symbol.rat	col	4	Blue
9	symbol.rat	col	9	Red-Brown
10	symbol.rat	col	12	Magenta

80.11 Vegetation coverage.

TABLE 158. Content and format for Vegetation coverage feature class schema table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Feature Class Schema Table
Table Name: **fcs**
dq Layer Number: 9

{Header length}L;					
Vegetation Feature Class Schema Table;-;					
id=I,1,P,Row Identifier,-,-,-,:					
feature_class=T,8,N,Name of Feature Class,-,-,-,:					
table1=T,12,N,First Table,-,-,-,:					
table1_key=T,16,N,Column Name in First Table,-,-,-,:					
table2=T,12,N,Second Table,-,-,-,:					
table2_key=T,9,N,Column Name in Second Table,-,-,-,:;					
1	firebrkl	firebrkl.lft	edg_id	edg	id
2	firebrkl	edg	firebrkl.lft_id	firebrkl.lft	id
3	hedgel	hedgel.lft	edg_id	edg	id
4	hedgel	edg	hedgel.lft_id	hedgel.lft	id
5	cropa	cropa.aft	fac_id	fac	id
6	cropa	fac	cropa.aft_id	cropa.aft	id
7	grassa	grassa.aft	fac_id	fac	id
8	grassa	fac	grassa.aft_id	grassa.aft	id
9	oasisa	oasisa.aft	fac_id	fac	id
10	oasisa	fac	oasisa.aft_id	oasisa.aft	id
11	orcharda	orcharda.aft	fac_id	fac	id
12	orcharda	fac	orcharda.aft_id	orcharda.aft	id
13	swampa	swampa.aft	fac_id	fac	id
14	swampa	fac	swampa.aft_id	swampa.aft	id
15	treesa	treesa.aft	fac_id	fac	id
16	treesa	fac	treesa.aft_id	treesa.aft	id
17	tundraa	tundraa.aft	fac_id	fac	id
18	tundraa	fac	tundraa.aft_id	tundraa.aft	id
19	vegvoida	vegvoida.aft	fac_id	fac	id
20	vegvoida	fac	vegvoida.aft_id	vegvoida.aft	id
21	dqarea	dqarea.aft	fac_id	fac	id
22	dqarea	fac	dqarea.aft_id	dqarea.aft	id
23	dqarea	dqarea.aft	dqdescr_id	dqdescr.rat	id
24	dqtext	dqtext.tft	txt_id	txt	id
25	dqtext	txt	dqtext.tft_id	dqtext.tft	id
26	vegtxt	vegtxt.tft	txt_id	txt	id
27	vegtxt	txt	vegtxt.tft_id	vegtxt.tft	id
28	vegtxt	vegtxt.tft	symbol_id	symbol.rat	symbol_id

TABLE 159. Firebreak Line Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Firebreak Line Feature Table
Table Name: **firebrk1.lft**
dq Layer Number: 9

(Header length)L; Firebreak Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: wid=S,1,N,Width (meters),int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile1_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg1_id.lti,-,:;				
1	EC040	75	1	1
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		EC040	Cleared Way/Cut Line/Firebreak	
wid	Width (meters)			
		0	Unknown	EC040
		>=25		EC040

TABLE 160. Hedge Line Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
FeatureTable Description: Hedge Line Feature Table
Table Name: **hedge1.lft**
dq Layer Number: 9

{Header length}L; Hedge Line Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile2_id.lti,-,: edg_id=I,1,N,Edge Primitive ID,-,edg2_id.lti,-,:;			
1	EA020	1	1
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		EA020	Hedgerow	

TABLE 161. Cropland Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Cropland Area Feature Table
Table Name: **cropa.aft**
dq Layer Number: 9

```
{Header length}L;
Cropland Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code1.ati,-,:
ftc=S,1,N,Farming Type Category,int.vdt,-,-,:
veg=S,1,N,Vegetation Characteristics,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile1_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac1_id.ati,-,:;
```

1	EA010	3	1	1	2
2	BH135	3	-32768	2	3
:	:	:	:	:	:
n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		EA010	Cropland	
		BH135	Rice Field	
ftc	Farming Type Category			
		0	Unknown	EA010,BH135
		1	Shifting Cultivation/ Crop Rotation	EA010
		3	Terraced	EA010,BH135
		999	Other	EA010,BH135
veg	Vegetation Characteristics			
		-32768	Null	BH135
		0	Unknown	EA010
		1	Dry Crops	EA010
		999	Other	EA010

TABLE 162. Grassland Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Grassland Area Feature Table
Table Name: **grassa.aft**
dq Layer Number: 9

{Header length}L;
Grassland Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code2.ati,-,:
dmb=S,1,N,Density Measure(Brush/Undergrowth),int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile2_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac2_id.ati,-,:;

1	BH077	-32768	4	2
2	EB010	-32768	1	3
3	EB020	0	2	4
4	EC010	-32768	3	5
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BH077	Hummock	
		EB010	Grassland	
		EB020	Scrub/Brush	
		EC010	Bamboo/Cane	
dmb	Density Measure(Brush/Undergrowth)			
		-32768	Null	BH077,EB010,EC010
		0	Unknown	EB020
		1-100	Allowable values	EB020

TABLE 163. Oasis Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Oasis Area Feature Table
Table Name: **oasisa.aft**
dq Layer Number: 9

{Header length}L; Oasis Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile3_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac3_id.ati,-,:;			
1	EC020	1	2
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code	EC020	Oasis	

TABLE 164. Orchard Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Orchard Area Feature Table
Table Name: **orcharda.aft**
dq Layer Number: 9

{Header length}L; Orchard Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,f_code4.ati,-,: pro=S,1,N,Product Category,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile4_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac4_id.ati,-,:;				
1	EA030	-32768	1	2
2	EA040	126	2	3
3	EA050	-32768	3	4
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		EA030	Nursery	
		EA040	Orchard/Plantation	
		EA050	Vineyards	
pro	Product Category			
		-32768	Null	EA030,EA050
		0	Unknown	EA040
		85	Rubber	EA040
		120	Bananas	EA040
		121	Cotton	EA040
		122	Bamboo/Cane	EA040
		123	Coffee	EA040
		124	Common fruit and/or nut	EA040
		125	Palms	EA040
		126	Palmetto	EA040
		999	Other	EA040

TABLE 165. Marsh/Swamp Area Feature Table.

Thematic Layer:	Vegetation
Coverage Name:	**veg**
Table Description:	Marsh/Swamp Area Feature Table
Table Name:	**swampa.aft**
dq Layer Number:	9

{Header length}L;
Marsh/Swamp Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,f_code5.ati,-,:
veg=S,1,N,Vegetation Characteristics,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile5_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac5_id.ati,-,:;

1	BH015	7	1	2
2	BH095	-32768	2	3
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BH015	Bog	
		BH095	Marsh/Swamp	
veg	Vegetation Characteristics			
		-32768	Null	BH095
		0	Unknown	BH015
		6	Cranberry	BH015
		7	Peat	BH015
		999	Other	BH015

TABLE 166. Trees Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Trees Area Feature Table
Table Name: **treesa.aft**
dq Layer Number: 9

```
{Header length}L;
Trees Area Feature Table;-;
id=I,1,P,Row Identifier,-,-,-,:
f_code=T,5,N,FACC Feature Code,char.vdt,-,-,:
dmt=S,1,N,Density Measure (% Tree/Canopy Cover),int.vdt,-,-,:
exs=S,1,N,Existence Category,int.vdt,-,-,:
nam=T,*,N,Name,char.vdt,-,-,:
pht=S,1,N,Predominant Height (meters),int.vdt,-,-,:
veg=S,1,N,Vegetation Characteristics,int.vdt,-,-,:
tile_id=S,1,N,Tile Reference ID,-,tile6_id.ati,-,:
fac_id=I,1,N,Face Primitive ID,-,fac6_id.ati,-,:;
```

1	EC030	32	31	Mariposa Grove	90	12	1	2
:	:	:	:	:	:	:	:	:
n	n	n	n	n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		EC030	Trees	
dmt	Density Measure (% Tree/Canopy Cover)			
		0	Unknown	EC030
		>=25		EC030
exs	Existence Category			
		0	Unknown	EC030
		31	Isolated	EC030
		61	Not Isolated	EC030
nam	Name			
		Character text string		EC030
		"UNK" (no name present for feature)		EC030

pht	Predominant Height (meters)		
	0	Unknown	EC030
	> 3		EC030
veg	Vegetation Characteristics		
	0	Unknown	EC030
	11	Casuarina	EC030
	12	Coniferous	EC030
	16	Nipa Palm	EC030
	17	Palm	EC030
	18	Filao	EC030
	19	Mangrove	EC030
	24	Deciduous	EC030
	25	Evergreen	EC030
	29	Eucalyptus	EC030
	38	Cypress	EC030
	50	Mixed Trees	EC030
	999	Other	EC030

TABLE 167. Tundra Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Tundra Area Feature Table
Table Name: **tundraa.aft**
dq Layer Number: 9

{Header length}L; Tundra Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile7_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac7_id.ati,-,:;			
1	BJ110	1	2
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		BJ110	Tundra	

TABLE 168. Vegetation Void Collection Area Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Void Collection Area Feature Table
Table Name: **vegvoida.aft**
dq Layer Number: 9

{Header length}L; Vegetation Void Collection Area Feature Table;-; id=I,1,P,Row Identifier,-,-,-,: f_code=T,5,N,FACC Feature Code,char.vdt,-,-,: vca=S,1,N,Void Collection Attribute,int.vdt,-,-,: tile_id=S,1,N,Tile Reference ID,-,tile8_id.ati,-,: fac_id=I,1,N,Face Primitive ID,-,fac8_id.ati,-,:;				
1 : n	ZD020 : n	2 : n	1 : n	2 : n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD020	Void Collection Area	
vca	Void Collection Attribute			
		0	Unknown	ZD020
		2	Area Too Rough to Collect	ZD020
		3	No Available Imagery	ZD020
		6	No Available Map Source	ZD020
		7	No Suitable Imagery	ZD020

TABLE 169. Vegetation Text Feature Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Text Feature Table
Table Name: **vegtxt.tft**
dq Layer Number: 9

{Header length}L;				
Vegetation Text Feature Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
f_code=T,5,N,FACC Feature Code,char.vdt,f_code.tti,-,:				
symbol_id=S,1,N,Symbol Identification,-,-,-,:				
tile_id=S,1,N,Tile Reference ID,-,tile1_id.tti,-,:				
txt_id=I,1,N,Text Primitive ID,-,txt1_id.tti,-,:;				
1	ZD040	TBD	1	1
2	ZD045	TBD	4	45
:	:	:	:	:
n	n	n	n	n

Column	Description	Value	Value Meaning	Applicable f_code for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
f_code	FACC Feature Code			
		ZD040	Named Location	
		ZD045	Text Description	
symbol_id	Symbol Identification (Refer to Symbol Related Attribute Table for selection of values)			

TABLE 170. Vegetation Feature Class Attribute Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Feature Class Attribute Table
Table Name: **fca**
dq Layer Number: 9

```
{Header length}L;
Vegetation Feature Class Attribute Table;-;
id=I,1,P,Row Identifier,-,-,-,:
fclass=T,8,U,Feature Class Name,-,-,-,:
type=T,1,N,Feature Type,char.vdt,-,-,:
descr=T,*,N,Description,-,-,-,:;
```

1	oasisp	P	Oases
:	:	:	:
n	n	n	n

Column	Description	Value	Value Meaning	Applicable Feature Class for Each Attribute Value
id	Row Identifier	Sequential beginning with 1		
fclass	Feature Class Name	**oasisp**		
		treesp		
		firebrkl		
		hedgel		
		cropa		
		grassa		
		oasisa		
		orcharda		
		swampa		
		treesa		
		tundraa		
		vegvoida		
		vegtxt		
type	Feature Type	P	Point Feature	**oasisp, treesp**
		L	Line Feature	**firebrkl, hedgel**
		A	Area Feature	**cropa, grassa, oasisa, orcharda, swampa, treesa, tundraa, vegvoida**
		T	Text Feature	**vegtxt**
descr	Description	Oases		**oasisp, oasisa**
		Tree (landmark)		**treesp**
		Cleared Way/ Cut Line/Firebreaks		**firebrkl**
		Hedgerow		**hedgel**
		Croplands		**cropa**
		Grasslands		**grassa**
		Orchards/Vineyards		**orcharda**
		Marshs/Swamps		**swampa**
		Trees		**treesa**
		Tundra		**tundraa**

Vegetation Void Collection Area	**vegvoida**
Vegetation Coverage Text	**vegtxt**

TABLE 171. Vegetation Character Value Description Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Character Value Description Table
Table Name: **char.vdt**
dq Layer Number: 9

{Header length}L;
Vegetation Character Value Description Table;-;
id=I,1,P,Row Identifier,-,-,-,:
table=T,12,N,Name of the Feature Table,-,-,-,:
attribute=T,6,N,Column Name,-,-,-,:
value=T,5,N,Unique Value of Attribute,-,-,-,:
description=T,21,N,Description of Value,-,-,-,:;

1	firebrkl.lft	f_code	EC040	Cleared Way/Cut Line/Firebreak
2	hedgel.lft	f_code	EA020	Hedgerow
3	cropa.aft	f_code	BH135	Rice Field
4	cropa.aft	f_code	EA010	Cropland
5	grassa.aft	f_code	BH077	Hummock
6	grassa.aft	f_code	EB010	Grassland
7	grassa.aft	f_code	EB020	Scrub/Brush
8	grassa.aft	f_code	EC010	Bamboo/Cane
9	oasisa.aft	f_code	EC020	Oasis
10	orcharda.aft	f_code	EA030	Nursery
11	orcharda.aft	f_code	EA040	Orchard/Plantation
12	orcharda.aft	f_code	EA050	Vineyards
13	swampa.aft	f_code	BH015	Bog
14	swampa.aft	f_code	BH095	Marsh/Swamp
15	treesa.aft	f_code	EC030	Trees
16	treesa.aft	nam	UNK	No entry present
17	tundraa.aft	f_code	BJ110	Tundra
18	vegvoida.aft	f_code	ZD020	Void Collection Area
19	vegtxt.tft	f_code	ZD040	Named Location
20	vegtxt.tft	f_code	ZD045	Text Description
21	fca	type	A	Area Feature
22	fca	type	L	Line Feature
23	fca	type	P	Point/Node Feature
24	fca	type	T	Text Feature
25	dqline.lft	f_code	EC040	Cleared Way/Cut Line/Firebreak
26	dqline.lft	f_code	EA020	Hedgerow
27	dqline.lft	f_code	ZD045	Text Description
28	dqarea.aft	f_code	BH135	Rice Field
29	dqarea.aft	f_code	EA010	Cropland
30	dqarea.aft	f_code	BH077	Hummock
31	dqarea.aft	f_code	EB010	Grassland
32	dqarea.aft	f_code	EB020	Scrub/Brush
33	dqarea.aft	f_code	EC010	Bamboo/Cane
34	dqarea.aft	f_code	EC020	Oasis
35	dqarea.aft	f_code	EA030	Nursery
36	dqarea.aft	f_code	EA040	Orchard/Plantation
37	dqarea.aft	f_code	EA050	Vineyards
38	dqarea.aft	f_code	BH015	Bog
39	dqarea.aft	f_code	BH095	Marsh/Swamp

40	dqarea.aft	f_code	EC030	Trees
41	dqarea.aft	f_code	BJ110	Tundra
42	dqarea.aft	f_code	ZD020	Void Collection Area
43	dqarea.aft	f_code	ZD045	Text Description

TABLE 172. Vegetation Integer Value Description Table.

Thematic Layer: Vegetation
Coverage Name: **veg**
Table Description: Vegetation Integer Value Description Table
Table Name: **int.vdt**
dq Layer Number: 9

(Header length)L;				
Vegetation Integer Value Description Table;-;				
id=I,1,P,Row Identifier,-,-,-,:				
table=T,12,N,Name of the Feature Table,-,-,-,:				
attribute=T,3,N,Column Name,-,-,-,:				
value=S,1,N,Unique Value of Attribute,-,-,-,:				
description=T,24,N,Description of Value,-,-,-,:;				
1	firebrkl.lft	wid	0	Unknown
2	cropa.aft	ftc	0	Unknown
3	cropa.aft	ftc	1	Shifting Cultivation/Crop Rotation
4	cropa.aft	ftc	3	Terraced
5	cropa.aft	ftc	999	Other
6	cropa.aft	veg	0	Unknown
7	cropa.aft	veg	1	Dry Crops
8	cropa.aft	veg	999	Other
9	grassa.aft	dmb	0	Unknown
10	orcharda.aft	pro	0	Unknown
11	orcharda.aft	pro	85	Rubber
12	orcharda.aft	pro	120	Bananas
13	orcharda.aft	pro	121	Cotton
14	orcharda.aft	pro	122	Bamboo/Cane
15	orcharda.aft	pro	123	Coffee
16	orcharda.aft	pro	124	Common fruit and/or nut
17	orcharda.aft	pro	125	Palms
18	orcharda.aft	pro	126	Palmetto
19	orcharda.aft	pro	999	Other
20	swampa.aft	veg	0	Unknown
21	swampa.aft	veg	6	Cranberry
22	swampa.aft	veg	7	Peat
23	swampa.aft	veg	999	Other
24	treesa.aft	dmt	0	Unknown
25	treesa.aft	exs	0	Unknown
26	treesa.aft	exs	31	Isolated
27	treesa.aft	exs	61	Not Isolated
28	treesa.aft	pht	0	Unknown
29	treesa.aft	veg	0	Unknown
30	treesa.aft	veg	11	Casuarina
31	treesa.aft	veg	12	Coniferous
32	treesa.aft	veg	16	Nipa Palm
33	treesa.aft	veg	17	Palm
34	treesa.aft	veg	18	Filao
35	treesa.aft	veg	19	Mangrove
36	treesa.aft	veg	24	Deciduous
37	treesa.aft	veg	25	Evergreen
38	treesa.aft	veg	29	Eucalyptus
39	treesa.aft	veg	38	Cyprus

40	treesa.aft	veg	50	Mixed Trees
41	treesa.aft	veg	999	Other
42	vegvoida.aft	vca	0	Unknown
43	vegvoida.aft	vca	2	Area Too Rough to Collect
44	vegvoida.aft	vca	3	No Available Imagery
45	vegvoida.aft	vca	6	No Available Map Source
46	vegvoida.aft	vca	7	No Suitable Imagery
47	symbol.rat	fon	1	Machine Default
48	symbol.rat	sty	1	Kern
49	symbol.rat	sty	2	Proportional
50	symbol.rat	sty	3	Constant
51	symbol.rat	col	1	Black
52	symbol.rat	col	4	Blue
53	symbol.rat	col	9	Red-Brown
54	sybmol.rat	col	12	Magenta

90. VMAP LEVEL 0 FEATURES.

90.1 Description of coverage. Table 173 contains all valid FACC codes and primitive types for each coverage in VMap Level 0 data libraries.

TABLE 173. Level 0 FACC codes by coverage and feature type.

Layer	FACC Code	Feature Name	end	cnd	edg	fac	txt
bnd	AL260	Wall			X		
bnd	BA010	Coastline/Shoreline			X		
bnd	BA040	Water (except Inland)				X	
bnd	BE015	Depth Contour			X		
bnd	FA000	Administrative Boundary			X		
bnd	FA001	Administrative Area	X			X	
bnd	FA020	Armistice Line			X		
bnd	FA030	Cease-Fire Line			X		
bnd	FA040	Claim Line			X		
bnd	FA050	Mandate Line/Convention Line			X		
bnd	FA060	Defacto Boundary			X		
bnd	FA070	Demilitarized Zone				X	
bnd	FA110	International Date Line			X		
bnd	FA170	Zone of Occupation				X	
bnd	ZD040	Named Location					X
bnd	ZD045	Text Description					X
dq	ZD045	Text Description					X
elev	CA010	Contour Line (Land)			X		
elev	CA030	Spot Elevation	X				
elev	CA035	Inland Water Elevation	X				
hydro	BA030	Island	X				
hydro	BB040	Breakwater/Groyne			X		
hydro	BB230	Seawall			X		
hydro	BD000	Underwater-Danger/ Hazard			X		
hydro	BD120	Reef			X		
hydro	BD130	Rock	X				
hydro	BD180	Wreck	X				
hydro	BH090	Land Subject to Inundation				X	
hydro	BH120	Rapids	X				
hydro	BH140	River/Stream			X		
hydro	BH170	Spring/Water-Hole	X				
hydro	BH180	Waterfall	X				
hydro	BI020	Dam/Weir	X		X		
hydro	BI030	Lock	X				
hydro	BI040	Sluice Gate	X				
hydro	BH000	Inland Water			X	X	
hydro	ZD040	Named Location					X
hydro	ZD045	Text Description					X
ind	AA010	Mine/Quarry	X			X	
ind	AA050	Well	X				
ind	AA052	Oil/Gas Field	X			X	
ind	AC000	Processing Plant/Treatment Plant	X				
ind	AC040	Oil/Gas Facilities	X				
ind	AL240	Tower (Non-Communication)	X				
ind	AM010	Depot (Storage)	X				
ind	AM070	Tank	X				
ind	AM080	Water Tower	X				

ind	BH050	Fish Hatchery/Fish Farm/Marine Farm				X	
ind	BH155	Salt Evaporator	X			X	
ind	ZD040	Named Location					X
ind	ZD045	Text Description					X
phys	BJ040	Ice Cliff			X		
phys	BJ065	Ice Shelf				X	
phys	BJ070	Pack Ice				X	
phys	BJ080	Polar Ice				X	
phys	BJ100	Snow Field/Ice Field				X	
phys	DA010	Ground Surface Element				X	
phys	DB010	Bluff/Cliff/Escarpment			X		
phys	DB080	Depression			X		
phys	DB090	Embankment/Fill			X		
phys	DB110	Fault			X		
phys	DB160	Rock Strata/Rock Formation			X		
phys	ZD040	Named Location					X
phys	ZD045	Text Description					X
pop	AI030	Camp	X				
pop	AK040	Athletic Field				X	
pop	AK130	Race Track				X	
pop	AK160	Stadium/Amphitheater	X				
pop	AL015	Building	X				
pop	AL020	Built-Up Area	X			X	
pop	AL025	Cairn	X				
pop	AL105	Settlement	X				
pop	AL130	Monument	X				
pop	AL135	Native Settlement	X			X	
pop	AL200	Ruins	X				
pop	AL260	Wall	X				
pop	BC050	Lighthouse	X				
pop	SU001	Military Base	X			X	
pop	ZD040	Named Location					X
pop	ZD045	Text Description					X
trans	AL210	Snow Shed/Rock Shed		X	X		
trans	AN010	Railroad			X		
trans	AN060	Railroad Yard/Marshalling Yard	X				
trans	AP030	Road			X		
trans	AP050	Trail			X		
trans	AQ010	Aerial Cableway Lines/Ski Lift Lines			X		
trans	AQ040	Bridge/Overpass/Viaduct		X	X		
trans	AQ064	Causeway		X	X		
trans	AQ070	Ferry Crossing		X	X		
trans	AQ130	Tunnel		X	X		
trans	BB190	Pier/Wharf/Quay			X		
trans	BH070	Ford		X	X		
trans	GB005	Airport/Airfield	X				
trans	ZD040	Named Location					X
trans	ZD045	Text Description					X
util	AD010	Power Plant	X				
util	AD030	Substation/Transformer Yard	X				
util	AQ113	Pipeline/Pipe			X		
util	AQ116	Pumping Station	X				
util	AT030	Power Transmission Line			X		
util	AT050	Communication Building	X				
util	AT060	Telephone Line/Telegraph Line			X		
util	AT080	Communication Tower	X				

util	ZD040	Named Location					X
util	ZD045	Text Description					X
veg	BH015	Bog				X	
veg	BH077	Hummock				X	
veg	BH095	Marsh/Swamp				X	
veg	BH135	Rice Field				X	
veg	BJ110	Tundra				X	
veg	EA010	Cropland				X	
veg	EA020	Hedgerow			X		
veg	EA030	Nursery				X	
veg	EA040	Orchard/Plantation				X	
veg	EA050	Vineyards				X	
veg	EB010	Grassland				X	
veg	EB020	Scrub/Brush				X	
veg	EC010	Bamboo/Cane				X	
veg	EC020	Oasis				X	
veg	EC030	Trees				X	
veg	EC040	Cleared Way/Cut Line/Firebreak			X		
veg	ZD020	Void Collection Area				X	
veg	ZD040	Named Location					X
veg	ZD045	Text Description					X

90.2 Description of features. Table 174 contains all valid attributes for each FACC feature code in VMap Level 0 data libraries.

TABLE 174. Level 0 attributes by FACC codes and feature type.

Layer	Feature Name	FACC Code	Attr.	end	cnd	edg	fac	txt
bnd	Wall	AL260	-			x		
bnd	Coastline/Shoreline	BA010	ACC			x		
			EXS			x		
bnd	Water (except Inland)	BA040	NAM				x	
bnd	Depth Contour	BE015	CRV			x		
bnd	Administrative Boundary	FA000	ACC			x		
			BST			x		
			USE			x		
bnd	Administrative Area	FA001	NAM				x	
			NA2	x			x	
bnd	Armistice Line	FA020	ACC			x		
			BST			x		
bnd	Cease-Fire Line	FA030	ACC			x		
			BST			x		
bnd	Claim Line	FA040	ACC			x		
			BST			x		
bnd	Mandate Line/Convention Line	FA050	ACC			x		
			BST			x		
bnd	Defacto Boundary	FA060	ACC			x		
			BST			x		
			USE			x		
bnd	Demilitarized Zone	FA070	NA2				x	
bnd	International Date Line	FA110	-			x		
bnd	Zone of Occupation	FA170	NA2				x	
bnd	Named Location	ZD040	-					x
bnd	Text Description	ZD045	-					x
dq	Text Description	ZD045	-					x
elev	Contour Line (Land)	CA010	HQC			x		
			ZV2			x		
elev	Spot Elevation	CA030	ACC	x				
			ELA	x				
			ZV2	x				
elev	Inland Water Elevation	CA035	ACC	x				
			ELA	x				
			ZV2	x				
hydro	Island	BA030	-	x				
hydro	Breakwater/Groyne	BB040	-			x		
hydro	Seawall	BB230	-			x		
hydro	Underwater-Danger/ Hazard	BD000	-			x		
hydro	Reef	BD120	-			x		
hydro	Rock	BD130	-	x				
hydro	Wreck	BD180	-	x				
hydro	Land Subject to Inundation	BH090	HYC				x	
hydro	Rapids	BH120	-	x				

hydro	Dam/Weir	BI020	-	x		x		
hydro	Lock	BI030	-	x				
hydro	Sluice Gate	BI040	-	x				
hydro	Inland Water	BH000	EXS			x		
			HYC				x	
			LOC			x		
hydro	Named Location	ZD040	-					x
hydro	Text Description	ZD045	-					x
ind	Mine/Quarry	AA010	-	x				
			MIN				x	
ind	Well	AA050	TXT	x				
ind	Oil/Gas Field	AA052	MIN				x	
			TXT	x				
ind	Processing Plant/Treatment Plant	AC000	TXT	x				
ind	Oil/Gas Facilities	AC040	TXT	x				
ind	Tower (Non-Communication)	AL240	TXT	x				
ind	Depot (Storage)	AM010	TXT	x				
ind	Tank	AM070	TXT	x				
ind	Water Tower	AM080	TXT	x				
ind	Fish Hatchery/Fish Farm/Marine Farm	BH050	-				x	
ind	Salt Evaporator	BH155	MIN				x	
			TXT	x				
ind	Named Location	ZD040	-					x
ind	Text Description	ZD045	-					x
phys	Ice Cliff	BJ040	-			x		
phys	Ice Shelf	BJ065	NA2				x	
phys	Pack Ice	BJ070	NA2				x	
phys	Polar Ice	BJ080	NA2				x	
phys	Snow Field/Ice Field	BJ100	-				x	
phys	Ground Surface Element	DA010	SMC				x	
			SWC				x	
phys	Bluff/Cliff/Escarpment	DB010	-			x		
phys	Depression	DB080	-			x		
phys	Embankment/Fill	DB090	-			x		
phys	Fault	DB110	-			x		
phys	Rock Strata/Rock Formation	DB160	-			x		
phys	Named Location	ZD040	-					x
phys	Text Description	ZD045	-					x
pop	Camp	AI030	TXT	x				
pop	Athletic Field	AK040	-				x	
pop	Race Track	AK130	-				x	
pop	Stadium/Amphitheater	AK160	TXT	x				
pop	Building	AL015	TXT	x				
pop	Built-Up Area	AL020	NAM	x			x	
pop	Cairn	AL025	TXT	x				
pop	Settlement	AL105	TXT	x				
pop	Monument	AL130	TXT	x				
pop	Native Settlement	AL135	NAM	x			x	
pop	Ruins	AL200	TXT	x				
pop	Wall	AL260	TXT	x				

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I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-V-89039	2. DOCUMENT DATE *(YYMMDD)* 950209

3. DOCUMENT TITLE: Military Specification for Vector Smart Map (VMap) Level 0

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)*

5. REASON FOR RECOMMENDATION

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a. NAME Defense Mapping Agency ATTN: PR, ST A-13	b. TELEPHONE *(Include Area Code)* (1) Commercial (703) 285-9333	(2) AUTOVON 356-9333
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