

METRIC

MIL-PRF-89023

19 December 1997

**PERFORMANCE SPECIFICATION
DIGITAL NAUTICAL CHART**

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

1. SCOPE

1.1 Scope This specification defines the content and format for the U.S. National Imagery and Mapping Agency (NIMA) Digital Nautical Chart (DNC) product. The DNC is a vector-based digital product that portrays selected maritime significant physical features in a format suitable for computerized marine navigation.

1.2 Purpose The DNC is a general purpose global database designed to support marine navigation and Geographic Information System (GIS) applications. This specification provides a description of the content, accuracy, data format, and design of the DNC database.

1.3 Classification. DNC data is classified into four basic types, corresponding to DNC libraries, based on the scale of the source charts. These are HARBOR, APPROACH, COASTAL and GENERAL. A BROWSE library is also included, which provides a global overview of the DNC coverage.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the

**Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to :
Director, National Imagery and Mapping Agency, ATTN: Customer Support/COD,
Mail Stop P-38, 12310 Sunrise Valley Drive, Reston, VA 20191-3449 by using
the Standardization Document Improvement Proposal (DD Form 1426) appearing at
the end of this document or by letter.**

AMSC N/A

AREA MCGT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation.

ANSI/IEEE 754-1985. IEEE Standard for Binary Floating Point Arithmetic. August 12, 1985.

(Application for copies should be addressed to the publisher : IEEE, Inc., 345 East 47th St., NY, 10017.)

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.)

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, USGS on p. 104, 3rd ed. 1988)

(Nongovernment 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.)

2.4 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 First article When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Accuracy.

3.2.1 Absolute horizontal accuracy. The difference between the recorded horizontal coordinates of features and their true positions ; in this comparison, both sets of coordinates must be referenced to WGS84. Absolute horizontal accuracy is expressed as a circular error at 90% probability (.9p). Accuracy specifications for traditional paper charts are expressed in terms of chart distances; for digital products, such as DNC, accuracy is expressed in ground distances. The following shows the ground distance horizontal accuracy categories for DNC product resolutions. Accuracy categories are not listed for DNC GENERAL charts because these are compiled from sources of 1:500,000 and smaller. Feature accuracy of DNC GENERAL charts should be considered to exceed 500m in all cases. The user should refer to the Data Quality coverage for an indication of source chart scale.

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<u>Class</u>	<u>DNC CE</u> <u>HARBOR</u>	<u>DNC CE</u> <u>APPROACH</u>	<u>DNC CE</u> <u>COASTAL</u>	<u>DNC CE</u> <u>GENERAL</u>
1	25m	50m	250m	
2	50m	100m	500m	>500m
3	100m	200m	1000m	
4	>100m	>200m	>1000m	

3.2.2 Absolute vertical accuracy. The difference between an assigned elevation and the true elevation at a specific point. In this comparison, both elevations must be referenced to 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. Vertical accuracy is expressed at 90% probability (.9p) linear error as a proportion of the contour interval. The following lists the vertical accuracy categories:

<u>Class</u>	<u>DNC LE</u> (Contour Interval)
1	0.5
2	1.0
3	2.0
4	>2.0

3.2.3 Relative accuracy. NIMA does not have a formal relative accuracy objective for this product.

3.2.4 Hydrographic accuracy. NIMA strives to compile hardcopy nautical charts with the most accurate depth information available. The charts are compiled from a variety of sources with varying accuracies. The most accurate data is taken from hydrographic surveys which meet IHO survey vertical accuracy standards. Information regarding the source data used for each chart comprising the DNC can be found in the Data Quality coverage of each library.

3.3 Datum.

3.3.1 Horizontal datum. The horizontal datum shall be referenced to WGS84. If the source map/chart sheets are not referenced to WGS84, then they will be converted from their original horizontal datum to WGS84.

3.3.2 Vertical datum. Charts generally have three vertical datums. Topographic features are referenced to Mean Sea Level. Shoreline is referenced to Mean High Water. The hydrographic features are referenced to a vertical datum based on low water tide level and is called the Sounding Datum or Hydrographic Datum. The specific low water datum used depends on the type of tide in the area or on the number and magnitude of high and low tides in one tidal cycle. Hydrographic datums used in the DNC will be specified in the Data Quality coverage for each library.

3.4 Units of measure. Units of measurement in this specification are generally given in the metric system. With very few exceptions, units of measurement for the DNC will employ the metric system (see Appendix section A.3.1.2).

3.5 DNC product description. This section provides information about the DNC databases.

3.5.1 Database sources. The DNC is based on the feature content of the hardcopy Harbor, Approach, Coastal and General charts produced by NIMA.

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3.5.2 DNC database design. This specification contains the database design and the feature content for a thematically layered, relationally structured set of databases to support electronic chart display systems.

3.5.3 Thematic layer organization. The DNC is organized into thematic layers. Each thematic layer is stored as a single coverage. The HARBOR, APPROACH, and COASTAL and GENERAL libraries each contain twelve thematic layers. The BROWSE library contains two thematic layers (TABLE 1).

TABLE 1. Thematic layers for GENERAL, HARBOR, APPROACH, COASTAL and BROWSE libraries.

GENERAL, HARBOR, APPROACH, and COASTAL library thematic layers	Coverage name	BROWSE library thematic layers	Coverage name
Cultural Landmarks	CUL	Coastline/Countries	COA
Earth Cover	ECR	Library Boundaries	LIB
Environment	ENV		
Hydrography	HYD		
Inland Waterways	IWY		
Land Cover	LCR		
Limits	LIM		
Aids to Navigation	NAV		
Obstructions	OBS		
Port Facilities	POR		
Relief	REL		
Data Quality	DQY		

3.5.4 DNC feature coding scheme. The DNC utilizes the Feature and Attribute Coding Catalog (FACC), developed by the Digital Geographic Information Working Group (DGIWG) to support the Digital Geographic Information Exchange Standard (DIGEST).

3.5.5 Coordinate system. DNC data is 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 the geographic coordinates should be stored to the equivalent precision of 0.02 arc-seconds (0.000005 decimal degrees) for the GENERAL and COASTAL libraries, and 0.01 arc-seconds (0.000003 decimal degrees) for the APPROACH and HARBOR libraries.

3.5.6 DNC tiling scheme. Each non-BROWSE DNC coverage is divided into a seamless set of tiles using the World Geographic Reference System (GEOREF) described in DMA TM 8358.1. This system divides the surface of the earth into quadrangles, the sides of which are specific arc lengths of longitude and latitude; each quadrangle is identified by a simple systematic letter code giving positive identification with no risk of ambiguity.

a. DNC tile sizes. The DNC is divided into libraries based on the source chart scale. Since traditional hardcopy nautical charts are not produced in standard sizes or scales, the DNC groups paper chart sizes into four scale bands (see TABLE 2) and uses an equal arc-length (measured in degrees of latitude/longitude) tiling scheme with the tile sizes shown. The lower left (southwesternmost) corner of each tile is identified using the GEOREF naming conventions described in 3.5.5.b. This GEOREF identifier is used as the name for the directory containing the primitives contained in that tile. There is no conflict in tile names since the tiles for each chart scale band reside in different libraries and are therefore uniquely identified by

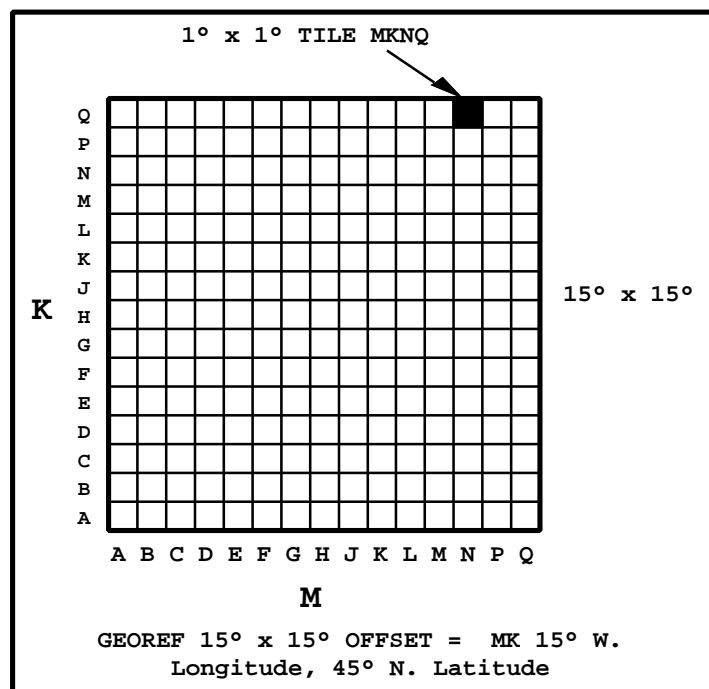
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their pathnames (DNC03\GEN03\MKNN is a 3° tile in the GENERAL library and DNC03\COA03\MKNN is a 3° tile in the COASTAL library of the DNC03 database).

TABLE 2. DNC tile sizes.

LIBRARY (Chart Type)	TILE SIZE	CHART SCALES
GENERAL	3°	<1:500,000
COASTAL	3°	1:75,000-1:500,000
APPROACH	30'	1:25,000-1:100,000
HARBOR	15'	>1:50,000

b. GEOREF description. There are 24 longitudinal zones each of 15 degrees width extending eastward from the 180° meridian around the globe through 360 degrees of longitude. These zones are lettered from A to Z inclusive (omitting I and O). There are 12 bands of latitude each of 15 degrees height, extending northward from the South Pole. These bands are lettered from A to M inclusive (omitting I) northward from the South Pole. This code divides the earth's surface into 288 15-degree quadrangles, each of which is identified by two letters. The first letter is that of the longitude zone and the second letter that of the latitude band. Each 15-degree quadrangle is sub-divided into 15 one-degree bands of longitude eastward from the western meridian of the quadrangle. These one-degree units are lettered from A to Q inclusive (omitting I and O). Each 15-degree quadrangle is also sub-divided into 15 one-degree bands of latitude northward from the southern parallel of the quadrangle. These bands are lettered from A to Q inclusive (omitting I and O). See FIGURE 1.

FIGURE 1. 1° by 1° GEOREF tiling scheme example.

For the GENERAL and COASTAL libraries, each 15-degree quadrangle is sub-divided into five three-degree bands of longitude eastward from the western meridian, and five three-degree bands of latitude northward from the southern

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parallel of the quadrangle. The resulting 25 three-degree zones are coded as shown in FIGURE 2. Thus, a four letter code can be used to represent any tile in the GENERAL or COASTAL libraries.

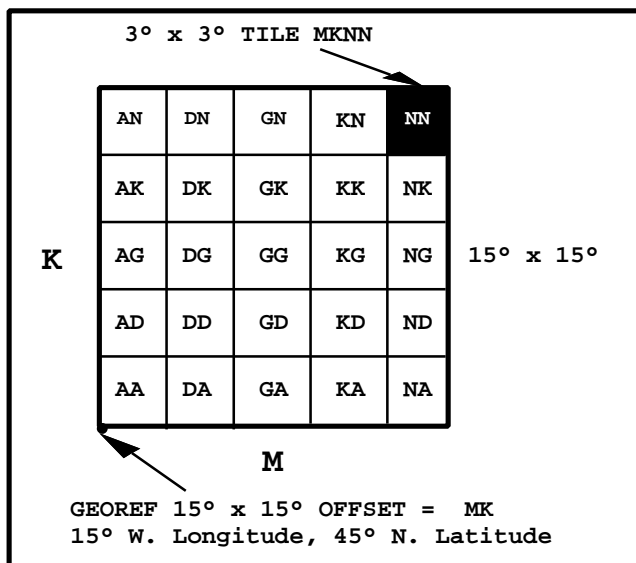


FIGURE 2. 3° by 3° tiling scheme example from the GEOREF offset "MK".

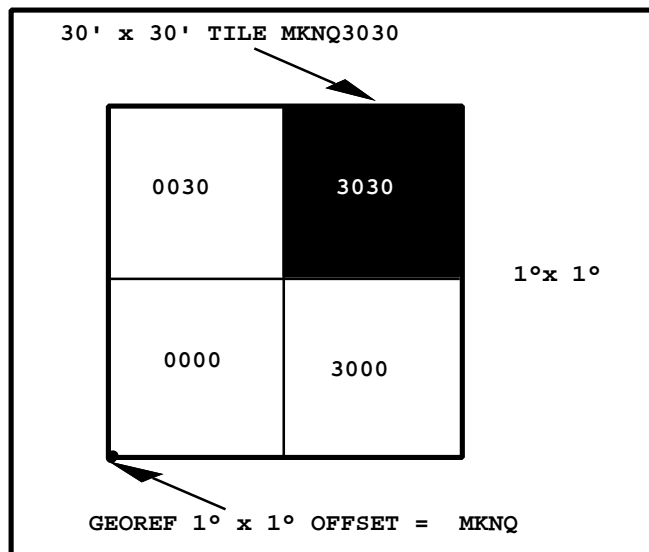


FIGURE 3. 30' by 30' tiling scheme example from the GEOREF offset "MKNQ".

GEOREF specifies that cells of smaller than 1° (but greater than 1') are to be identified by the location of the southwest corner of the cell in minutes, using the southwest corner of the 1° cell. Thus, tiles in the APPROACH and HARBOR libraries are named as illustrated in FIGURE 3 and FIGURE 4, respectively. Note that names for tiles in these libraries require 8 characters.

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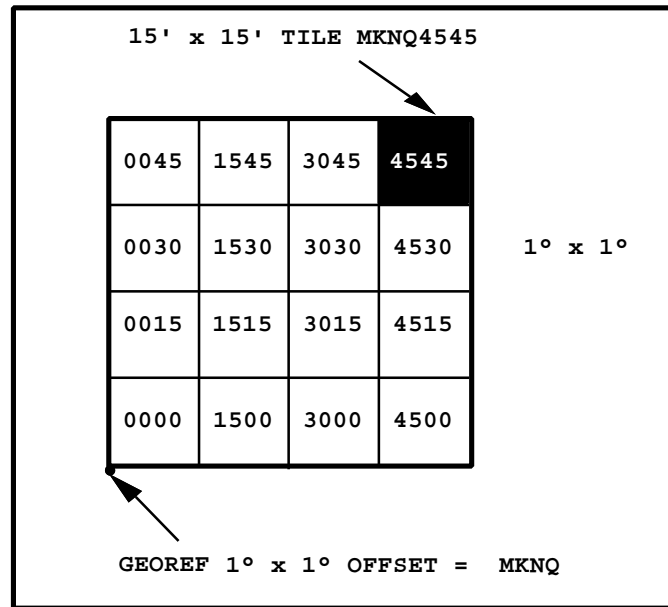


FIGURE 4. 15' by 15' tiling scheme example from the GEOREF offset "MKNQ".

3.5.7 Vector Product Format (VPF). The DNC is implemented in Vector Product Format and conforms to MIL-STD-2407 for its data structure.

3.5.8 Distribution medium. The DNC shall be distributed on CD-ROM discs, each of which is a single VPF database. The format of the CD-ROM discs conforms to ISO Standard 9660.

3.5.9 Geographic organization. The DNC shall be organized on multiple CD-ROM discs based on geographic regions of the world. There is no overlap present on adjoining discs.

3.5.10 GIS analysis. The DNC is topologically structured and may support GIS analysis; however, in order to perform GIS functions, the DNC must be used with a GIS software system. The kind of GIS functions possible depends upon the specific GIS program used to access the database. The DNC is not a GIS. However, the DNC database can be a component of a GIS when combined with separate GIS software.

3.5.11 Minimum hardware specification. The DNC may be accessed by any hardware system that includes a CD-ROM reader and supports the ISO 9660 interface.

3.5.12 Operating system. The DNC directories utilize the standard DOS system disc directory structure and file-naming conventions. All file structures of the DNC are contained in DOS directories. The coverages within the library are contained in DOS subdirectories. The DNC may also be accessed by other operating systems.

3.5.13 Database size. The size of a DNC database is dependent on the complexity of the hardcopy source used to produce the product and the number of particular charts included in the database. A single database will not exist on more than one CD-ROM.

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3.6 DNC structure levels. The DNC organizes geographic data into the four VPF structure levels (FIGURE 5), three of which are also named directories. The hierarchy of directories begins with the database level and ends at the coverage level. Contained under the coverage directories are all the VPF tables and files of the coverage structure level (including data dictionary information) and feature class structure level, as well as the primitives. Contained within the database and library directories are VPF tables and metadata tables that provide information about the database.

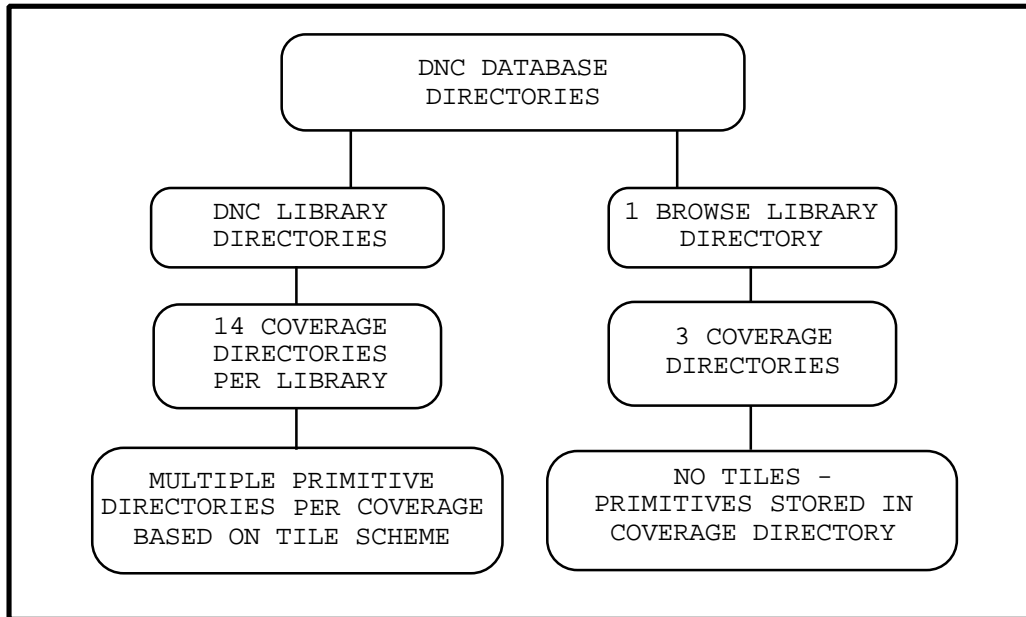


FIGURE 5. VPF structure levels and DNC implementation.

The DNC contains multiple database directories, each of which contains at least three library directories (COASTAL, GENERAL and BROWSE). Contained within each library are the coverage directories. Each coverage directory contains the geographic data comprising the database. These data are organized within the feature class structure level. A feature class is defined as a set of features that share a homogeneous set of attributes, and consists of a set of tables that includes one or more primitive tables and one or more attribute tables. There are four primitive types: face, edge, node and text.

3.6.1 Database structure level.

a. Database-level directories. The DNC contains a number of database directories, each of which is contained on exactly one CD-ROM disc. The database name is represented as a directory name and shall be in lower case letters (examples in this document are shown as capital letters). The naming convention is "DNCXX", where "XX" represents the disc number. The discs are numbered geographically, not sequentially; hence, DNC03 may be produced after DNC04 if the data comprising the DNC03 geographic area is reissued on a later disc.

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b. Database-level VPF tables. The VPF tables implemented at the database level take the form of a VPF attribute table. These tables shall include a Database Header Table (DHT) and a Library Attribute Table (LAT). The structure and contents of the DNC database-level tables are described in section 3.8.1.

3.6.2 Library structure level. A library is defined as a collection of coverages sharing the same tiling structure and coordinate system. Each library name is also represented as a directory name and shall be represented in lower case letters (examples in this document are shown as capital letters). The contents of these libraries are described in section 3.8.2.

a. Library-level directories. The DNC contains four library categories based on scale and purpose of the source chart: HARBOR (H), APPROACH (A), COASTAL (COA), and GENERAL (GEN). In addition, there is a single BROWSE library. The HARBOR and APPROACH categories are partitioned into individual libraries based on the port(s) to which they apply. The naming convention shall be the one letter category designator (H or A), followed by the two digit disc number, followed by the five digit port designator defined by the World Port Index for the largest port contained in the library. (If there is no port listed in the World Port Index in the library area, a unique five digit identifier and name that does not conflict with the World Port Index will be assigned.) For example, the harbor library containing Norfolk as its largest port would be named H0508280 if it is contained in the DNC05 database. The COASTAL and GENERAL categories do not correspond to ports. The naming convention shall be the three letter category designator (COA or GEN) followed by the two digit database number (e.g., COA02 or GEN13). In cases where there are multiple COASTAL or GENERAL libraries in the same database, a single letter designator is appended to the name (e.g., COA07A and COA07B). Each library except the BROWSE library contains up to 14 coverage directories, depending on feature content. The BROWSE library contains three coverage directories.

b. Library-level VPF tables. The VPF tables implemented at the library level take the form of a VPF attribute table. These tables contain metadata information and include the following tables: library header table (LHT), geographic reference table (GRT), and coverage attribute table (CAT). The structure and contents of the HARBOR library tables are described in 3.8.3.

3.6.3 Coverage structure level. A coverage is composed of one or more feature class types stored in a coverage directory. Depending upon the feature classes comprising the coverage, the type(s) of feature tables contained in a coverage directory may include area, line, point and text. Likewise, the type(s) of primitive tables stored in the coverage directory depend upon the primitive types implemented. These tables may include face, ring, edge, text, entity node and connected node.

a. Coverage-level directories. Each coverage name is also represented as a directory name and is represented in lower case letters (examples in this document are shown as capital letters). The coverage names in the GENERAL, HARBOR, APPROACH, and COASTAL libraries are: CUL (Cultural Landmarks), ECR (Earth Cover), ENV (Environment), HYD (Hydrography), IWY (Inland Waterways), LCR (Land Cover), LIM (Limits), NAV (Aids to Navigation), OBS (Obstructions), POR (Port Facilities), REL (Relief), DQY (Data Quality), TILEREF (Tile Reference), and LIBREF (Library Reference).

b. Coverage-level VPF tables. For the DNC, the VPF tables stored at coverage level include a feature class schema table (FCS), feature index table for each valid primitive type (.FIT), feature class attribute table (FCA),

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notes related attribute table (NOTES.RAT), notes join table (*.NJT, with * equal to feature class name), area and line join tables (*.AJT, *.LJT; for the Limits and Library Boundaries coverages only), character value description table (CHAR.VDT), and integer value description table (INT.VDT), as well as tables describing the geometric primitives.

c. Coverage topology. The topology level of each coverage is defined by the types of feature classes present. The topology level of each coverage is specified in the coverage attribute table (CAT) (section 3.8.3.c). Topology is not supported between coverages.

3.6.4 Feature class structure level. Feature classes are stored in coverage directories. Feature classes represent a thematic grouping of data expressed by the combination of feature tables, attribute tables and primitive tables.

a. Feature class. A feature class is logically composed of at least two tables: a feature table and a primitive table. Feature class definitions are product specific. For example, in the OBS coverage, a line feature class description is hazard lines. The feature class name is HAZARDL. This feature class is composed of the hazard line feature table (HAZARDL.LFT) which defines the attributes, and the related set of edge primitives in the edge table (EDG). These attributes and primitives compose the hazard line feature class.

b. Point feature class. A point feature class contains a point feature table in combination with an entity node or connected node table. For instance, the sounding point feature class is composed of attributes in the sounding point feature table (SOUNDP.PFT) and entity node primitives in the entity node table (END).

c. Line feature class. A line feature class is composed of an edge table in combination with a line feature table and the attributes that define values such as bridge overhead clearance or width.

d. Area feature class. An area feature class is composed of an area feature table and a face, edge, and ring table. For example, the hydrography area feature class is composed of the faces, edges, rings, and attributes from the hydrography area feature table. The attributes in the feature table contain attribute values whose meaning defines the area as a shoal or other feature from the legal hydrography area attribute value combinations.

e. Text feature class. A text feature class is composed of a text feature table and text primitive table. All text in the DNC (both at the feature and primitive level) will be limited to characters found in the Latin alphabet primary code table, (see MIL-STD-2407).

3.6.5 Primitives. There are three geometric primitives: node, edge and face. There are two types of nodes: entity nodes and connected nodes. There is one cartographic primitive: text.

a. Entity node primitive. The coordinates for entity nodes are stored in entity node tables. Entity nodes may not occur on an edge, and are topologically linked to a containing face in a level 3 topology coverage. In the DNC database entity nodes represent such items as buoys or spot soundings, or area features that cannot be resolved at the collection scale.

b. Connected node primitive. Connected nodes are nodes which reside at either end of an edge. They are topologically linked to edges. There are no point features in the DNC modeled with connected nodes.

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c. Edge primitive. Edges are topologically linked to the nodes at the end of each edge. Edges are also topologically linked to the faces on each side of an edge when faces are present in the same coverage. In the DNC database, edges represent linear features such as depth contours. Edges also define the borders of faces.

d. Face primitive. Faces are areas enclosed by edges. All faces are defined by the set of edges composing the face border. All faces are topologically linked to the edge table and ring table. In the DNC database, faces represent such area features as shoals, anchorage areas or restricted areas.

e. Text primitive. The text primitive is composed of the text string and the shape line. Text does not participate in topology. Text is implemented to allow the representation of names associated with vague or ill-defined regions, such as the Gulf of Mexico.

3.7 DNC files. The DNC implements the three types of VPF files: tables, indexes and directories.

3.7.1 VPF tables. Since all VPF tables are attribute tables, it is permitted to extend a VPF table with additional attribute columns to further describe the characteristics of a database. The VPF tables defined in this specification shall include only those columns specified.

TABLE 3. Example schema table for the coverage attribute table.

Column name	Column name description	Column definition
ID	Row ID	I,1,U
COVERAGE_NAME	The DNC coverage name	T,8,P
DESCRIPTION	Coverage description	T,50,N
LEVEL	The topology level	I,1,N

a. Schema tables. Since it is possible for variations to exist in the column definitions of a VPF table, schema tables are used in this specification to define the columns and format of the VPF tables implemented in the DNC (TABLE 3). These schema tables are not part of the DNC. A schema table contains three items: column name, column name description, and column definition. The "column name" contains the exact representation of that column name in the table. The "column name description" provides a brief explanation of the preceding column name. The "column definition" contains three types of information: the field type, field size, and key type (see VPF column definition 3.7.1.c). MIL-STD-2407 defines the field types and key types allowable in a VPF database. Only those field types and key types implemented in the DNC are depicted in TABLE 4. Most tables and example tables are preceded by a general schema table. All tables implemented in the DNC are listed by structure level in TABLE 7.

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TABLE 4. Field type and key type implemented in the DNC.

Field Type	Description	Key Type	Description
K	ID triplet	P	Primary key
I	Long Integer	U	Unique key
S	Short Integer	N	Non-unique key
T<n>	Fixed length text string		
T*	Variable length text string		
C	Coordinate pair (x, y)		
C<n>	Coordinate array		
D	Date		
C*	Coordinate string		
F	Floating point		
X	Null column		

b. Schema tables for metadata. The DNC contains metadata tables. Metadata tables provide information about the database. The format and contents of three metadata tables (Database Header Table, Library Header Table, and Geographic Reference Table; see 3.8.1.a, 3.8.3.a, and 3.8.3.b) are documented through the use of schema tables. A metadata schema table is sufficient to describe the entire content and layout since they are composed of only one record and have more columns than will fit across a page. Other metadata as contained in the Library Attribute Table and Coverage Attribute Table are defined by a regular schema table (3.7.1.a) and are depicted with an actual table. The metadata schema tables contain three columns, called respectively DNC column name, record entry (which defines the content of the field), and column definition. In non-metadata tables, the "record entry" column is called the "description" column.

c. VPF column definition. A VPF column definition contains three types of information: the field type, field size, and key type. The first character is the field type which depicts how the data for that column are stored. The second value in the column definition represents the number of elements that make up the field. The third character in the column definition is the key type. The "key type" column indicates whether a column is implemented as a primary key, unique key, or non-unique key. The items in a VPF column definition are delimited by commas.

d. VPF table structure. Since the information provided in the header of a VPF table is product specific in nature, information pertaining to a VPF table is provided so the reader can understand the context of the information as well as the format. VPF tables consist of two parts: header and data records.

Every table header contains the same format. The table header is divided into three sections: header length, standard header information, and the repeating header information used to describe each column in the table. A semicolon signifies the end of each of the header sections. The header length is a 4-byte integer indicating the length of the ASCII header text string. The standard header section includes byte order, a table description, and an optional documentation file name. The standard header entry is followed by eight header entries that are repeated for each column defined for the table. The repeating header entries include: column name, field type, field size, key type, column description, a value description table (if applicable), thematic index (if applicable), and an optional narrative table, ending with a colon separator (TABLE 5). In the DNC, dashes represent the non-applicability

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of value description tables and thematic indexes for a particular column; there is no dash placeholder for narrative table.

TABLE 5. Schema for VPF table structure

Type of table contents	Header contents	Description	Field definition
Header length	Header length	The length in bytes of the ASCII header text string	I,1
Standard header	Byte order	Byte order in which table is written: L=least-significant first, M=most-significant first (semicolon separator)	T,1 T,1
Standard header	Table description	Description of table including the table name and table description (semicolon separator)	T,n (n<=80) T,1
Standard header	Documentation file name	Name of an optional ASCII text file with more descriptive information about the table (semicolon separator)	T,n (n<=12) T,1
Repeating header	Column name	The name of the column (equal sign separator)	T,n (n<=16) T,1
Repeating header	Field type	The data type of the field (comma separator)	T,1 T,1
Repeating header	Number*	The number of elements (comma separator)	T,n (n<=3) T,1
Repeating header	Key type	The type of key (comma separator)	T,1 T,1
Repeating header	Column description	A description of the column's meaning (comma separator)	T,n (n<=80) T,1
Repeating header	Value description table	Name of a VDT that relates to the table (comma separator)	T,n (n<=12) T,1
Repeating header	Thematic index	Name of thematic index (comma separator)	T,n (n<=12) T,1
Repeating header	End of column	(colon separator)	T,1
Standard header	End of header	(semicolon separator)	T,1
Table records (or values in columns)	-	The actual table records that follow the header. Contains the values in each field for the defined columns.	Legal VPF column definitions

* This field contains the number of occurrences of the data type specified, not the number of bytes. For example, if there is only one integer value in the field the header will contain the number "1" in that field. For text fields only, the value indicates the maximum number of bytes allowed for that column. For example, if a maximum of 12 characters are allowed in the field, then the number of elements is specified as "12". The number of bytes specified for a particular text field are shown in subsequent tables in this specification.

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Following every header is a series of one or more records (or rows). A row identifier, or ID, is required as the first column of every table and is defined as sequential integer beginning with the number 1. Each row contains that set of fields (or columns) corresponding to the definitions of the columns found in the header. The values contained in each row store the information pertaining to each defined column. The column names within every DNC table shall be unique.

EXAMPLE: In the following example (TABLE 6) the standard header contains two items after the header length and byte order: 1) table name, description, and 2) documentation file name. Since there is no documentation file associated with this table, a dash "-" is used to replace the documentation file name. Since the following example is of a feature table, the value description table (VDT) name is used for each field when it is required to relate to one. The VDT name is replaced with a dash at the end of each column description when one is not required. Similarly, the thematic index name is replaced with a dash when one is not required. The values in each repeating header record are delimited by "=" or "," for clarity. The end of each repeating header entry is denoted by a comma "," followed by a colon ":". The backslash character "\" is not required, but is used in this document to denote a continuation of the table header. The last two rows in this example represent two records to demonstrate the values entered for each column name.

TABLE 6. Example of feature table with header and records.

{Header length and byte order};\		
ENVAREA.AFT,Environment Area Feature Table;-;\		
ID=I,1,P,Row ID,-,-,:\		
F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\		
VAV=I,1,N,Variation Anomaly Value,INT.VDT,-,;:		
1	ZC040	2
2	ZC040	1

3.7.2 VPF indexes The DNC contains three types of indexes: variable length indexes, spatial indexes, and thematic indexes.

a. Variable length indexes. VPF tables with variable length fields have an associated variable length index. One example is an edge table which contains variable length coordinate strings. This index is called EDX. indexes specify the length in bytes for each variable-length coordinate record in the edge table. The index consists of two columns: the byte offsets to the beginning of the row data in the edge table, and the length of the record in bytes. Indexes enhance direct data access and retrieval (see MIL-STD-2407). In addition to EDX, there are variable length indexes for the TXT, NOTES.RAT and FCA tables (TXX, NOTES.RAX and FCX).

b. Spatial indexes. A spatial index provides the capability to use a set of coordinates to identify a primitive, and its associated feature attributes. The DNC implements spatial query indexes for reduction of data access time for geographic coordinate queries of the DNC database. For example, after an area or feature is selected, a list of tiles comprising the area will be generated. The feature can now be extracted from the database based upon the user-defined geographic coordinates, improving data access time. Since spatial indexing occurs on the primitive level, the three spatial indexes are identified as face spatial index (FSI), edge spatial index (ESI) and node spatial index (NSI) and are implemented for area, line and point

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feature classes. A bucket size of 8 shall be used for the creation of spatial indexes. See MIL-STD-2407 for information on the format and content of a spatial index.

c. Thematic indexes. A thematic index may be created for any column in an attribute table. There are two types of indexes, depending on the data content in a column: an inverted list thematic index or a bit array thematic index (see MIL-STD-2407, paragraph 5.4.3). Thematic indices are placed on the F_CODE (for those feature classes containing more than one F_CODE only), TILE_ID and [primitive]_ID * columns of the feature table, the FEATURE_ID and RAT_ID columns of the notes join table, the *.AFT_ID (*.LFT_ID), TILE_ID and FAC_ID (EDG_ID) columns of the area (line) join tables, and the TILE_ID and FC_ID columns of the feature index table (except for the COA coverage). In general, the naming convention for thematic indexes is the feature class name (shortened if necessary by deleting the second to last character) followed by a number. The number used represents the ordering of the indexed columns in the table: "1" is assigned to the first column indexed in that table, "2" to the second, etc. The appropriate suffix (.ATI, .LTI, .PTI, .TTI) is appended to the name. Feature index table thematic indexes are named with the primitive type, followed by "FIT", followed by a number ending with the suffix .FTI; e.g., ENDFIT1.FTI. Note that the indexes for feature table columns TILE_ID and [primitive]_ID may sometimes be numbered "1", "2" and sometimes "2", "3", respectively, depending on whether the F_CODE column (always numbered "1") is indexed for that particular table.

3.7.3 VPF directories. VPF directories are hierarchical, and exist at the database, library, coverage and (if applicable) tile level (see FIGURE 5). Contained within coverage directories of the untiled library (BROWSE) are feature tables and their associated primitive tables, which contain all of the locational aspects of the primitives. Since the combination of a feature table and primitive table defines a feature class, each DNC coverage contains at least one, and may have two, three or four feature class types (i.e., point, line, area or text), the feature tables for which appear in the coverage directory. Also contained in each coverage directory are the feature class schema table, feature class attribute table, notes related attribute table, value description tables, join tables, feature index tables, variable length indexes and thematic indexes. (Not all coverages contain the full range of possible tables; see Appendix section 50.) Coverages within the tiled libraries (HARBOR, APPROACH, COASTAL and GENERAL) include subdirectories for each tile, which contain all the primitive tables and their associated tables and indexes.

3.8 DNC database record layout. The tables implemented at each structure level of the DNC are presented in the following order (TABLE 7): database, library, coverage and feature class (including primitives). When, for purposes of clarity, it is not feasible to include a complete table, an example table is provided. In most cases, examples are given only for the HARBOR DNC libraries; however, the GENERAL, APPROACH, and COASTAL libraries will be constructed in the same manner.

* [primitive]_ID columns in feature tables of TILEREF, LIBREF and LIB will not be indexed

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TABLE 7. Table descriptions, names, indexes by structure level.

Structure level	Table description	Table name	Index name
DATABASE	Database Header Table	DHT	-
	Library Attribute Table	LAT	-
LIBRARY	Library Header Table	LHT	-
	Geographic Reference Table	GRT	-
	Coverage Attribute Table	CAT	-
COVERAGE	Feature Class Schema Tables	FCS	-
	Feature Class Attribute Tables	FCA	FCX
	Feature Index Tables	FAC.FIT EDG.FIT END.FIT TXT.FIT	.FTI
	Notes Related Attribute Tables	NOTES.RAT	NOTES.RAX
	Notes Join Tables	*.NJT	.NTI
(LIM, LIB only)	Area Join Tables	*.AJT	.JTI
(LIM only)	Line Join Tables	*.LJT	.JTI
	Character Value Description Tables	CHAR.VDT	-
	Integer Value Description Tables	INT.VDT	-
	Feature Table Thematic Indices	-	.ATI .LTI .PTI .TTI
FEATURE CLASS	Area Feature Tables	*.AFT	-
	Line Feature Tables	*.LFT	-
	Point Feature Tables	*.PFT	-
	Text Feature Tables	*.TFT	-
	Face Primitive Tables	FAC	FSI
	Face Bounding Rectangle Tbls	FBR	
	Edge Primitive Tables	EDG	EDX, ESI
	Edge Bounding Rectangle Tbls	EBR	
	Entity Node Primitive Tables	END	NSI
	Connected Node Primitive Tables	CND	-
	Ring Tables	RNG	-
	Text Primitive Tables	TXT	TXX

* valid feature class names are found in TABLES 61 - 65

3.8.1 Database-level record layout. The DNC consists of multiple databases. Two required VPF files are implemented at the database level. These are the database header table and the library attribute table. Metadata pertaining to DNC data are contained in the database header table.

a. Database header table. This table contains information about the contents of the database and security information. The schema for the database header table is presented in TABLE 8. Note that the entries for a number of the columns include placeholders ("X") in place of information specific to a particular database.

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TABLE 8. Schema for database header table (DHT).

Column Name	Record Entry	Column Definition
ID	1	I,1,P
VPF_VERSION	TBD	T,10,N
DATABASE_NAME	DNCXX	T,8,N
DATABASE_DESC	Digital Nautical Chart database number XX based on General, Harbor, Approach & Coastal charts.	T,100,N
MEDIA_STANDARD	ISO 9660	T,20,N
ORIGINATOR	HQ NIMA\ 8613 Lee Highway\ Fairfax, VA 22031-2137	T,50,N
ADDRESSEE	[Null]	T,100,N
MEDIA_VOLUMES	1	T,1,N
SEQ_NUMBERS	[Null]	T,1,N
NUM_DATA_SETS	X	T,1,N
SECURITY_CLASS	U	T,1,N
DOWNGRADING	[Null]	T,3,N
DOWNGRADE_DATE	[Null]	D,1,N
RELEASABILITY	TBD	T,20,N
OTHER_STD_NAME	[Null]	T,50,N
OTHER_STD_DATE	[Null]	D,1,N
OTHER_STD_VER	[Null]	T,10,N
TRANSMITTAL_ID	[Null]	T,1,N
EDITION_NUMBER	TBD	T,10,N
EDITION_DATE	TBD	D,1,N

b. Library attribute table. The library attribute table (TABLE 9) contains six columns describing the row id, name, and geographic extent for each library in the database.

TABLE 9. Schema for library attribute table.

Column name	Column name description	Column definition
ID	The row identifier	I,1,U
LIBRARY_NAME	The library name	T,8,P
XMIN	X coordinate of the SW corner	F,1,N
YMIN	Y coordinate of the SW corner	F,1,N
XMAX	X coordinate of the NE corner	F,1,N
YMAX	Y coordinate of the NE corner	F,1,N

3.8.2 Library-level record layout. DNC libraries must contain the same minimum set of required VPF files; however, they may not contain the same thematic layers or coverages. A library is defined as a collection of coverages sharing the same tiling structure and coordinate system. The

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GENERAL, HARBOR, APPROACH, and COASTAL libraries are tiled. The library names are also the directory names and shall be represented in lower case letters (examples in this document are shown in capital letters). The record layout of the HARBOR libraries is described in 3.8.3 and is largely identical for the GENERAL, APPROACH, and COASTAL libraries. The BROWSE library tables are described in 3.8.4.

3.8.3 HARBOR library contents. A HARBOR library is a directory containing VPF tables and coverages (within sub-directories). There are three VPF tables: library header table, geographic reference table, and coverage attribute table. There are up to 14 coverage subdirectories, each of which contains a VPF coverage. The coverages are listed in the coverage attribute table.

a. HARBOR library header table. The library header table identifies the data set, sources and security information in the library. The schema for a HARBOR library header table is presented in TABLE 10.

TABLE 10. Schema for HARBOR library header table (LHT).

DNC column name	Record entry	Column definition
ID	1	I,1,P
PRODUCT_TYPE	DNC	T,12,N
LIBRARY_NAME	TBD	T,12,N
DESCRIPTION	TBD	T,100,N
DATA_STRUCT_CODE	8	T,1,N
SCALE	[Null]	I,1,N
SOURCE_SERIES	2AA/2AB	T,15,N
SOURCE_ID	HAC	T,30,N
SOURCE_EDITION	MIL-H-89201A	T,20,N
SOURCE_NAME	Military Specification - Harbor, Approach and Coastal Charts (HAC)	T,100,N
SOURCE_DATE	4/29/95	D,1,N
SECURITY_CLASS	U	T,1,N
DOWNGRADING	NO	T,3,N
DOWNGRADING_DATE	[Null]	D,1,N
RELEASABILITY	TBD	T,20,N

b. Geographic reference table. This table contains the geographic parameters, and projection information about a HARBOR library (TABLE 11).

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TABLE 11. HARBOR library geographic reference table (GRT).

DNC column name	Record entry	Column definition
ID	1	I,1,P
DATA_TYPE	GEO	T,3,N
UNITS	M	T,3,N
ELLIPSOID_NAME	WGS84	T,15,N
ELLIPSOID_DETAIL	A=6378137, B=6356752 M	T,50,N
VERT_DATUM_NAME	Mean Sea Level	T,15,N
VERT_DATUM_CODE	015	T,3,N
SOUND_DATUM_NAME	varies; see DQY	T,15,N
SOUND_DATUM_CODE	[Null]	T,3,N
GEO_DATUM_NAME	WGS84	T,15,N
GEO_DATUM_CODE	WGE	T,3,N
PROJECTION_NAME	Dec. Deg. (unproj.)	T,20,N

c. Coverage attribute table. A HARBOR library coverage attribute table (TABLES 12 and 13) contains four columns: the row identifier, coverage name, coverage description, and topology level. The description column contains the equivalent of the thematic layer name. For a discussion of topology level, refer to MIL-STD-2407.

TABLE 12. Schema for DNC coverage attribute table.

Column name	Column name description	Column definition
ID	The row identifier	I,1,U
COVERAGE_NAME	The coverage name	T,8,P
DESCRIPTION	Coverage description	T,50,N
LEVEL	The topology level	I,1,N

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TABLE 13. HARBOR coverage attribute table (CAT).

ID	COVERAGE_NAME	DESCRIPTION	LEVEL
1	CUL	Cultural Landmarks	3
2	ECR	Earth Cover	3
3	ENV	Environment	3
4	HYD	Hydrography	3
5	IWY	Inland Waterways	3
6	LCR	Land Cover	3
7	LIM	Limits	3
8	NAV	Aids to Navigation	3
9	OBS	Obstructions	3
10	POR	Port Facilities	3
11	REL	Relief	2
12	DQY	Data Quality	3
13	TILEREF	Tile Reference	3
14	LIBREF	Library Reference	2

d. TILEREF and LIBREF coverages. The data in the non-BROWSE libraries are partitioned in systematic tile structures using the World Geographic Reference System as described in paragraph 3.8.5. Both the tile reference coverage (TILEREF) and the library reference coverage (LIBREF) are mandatory for tiled libraries. TILEREF contains an area feature table and primitive tables which relate the tile names and areas. LIBREF contains a line feature table and primitive tables needed to draw a small scale depiction of the coverage considered most significant to the library in order to support the "zoom out" function. For more information on these two additional coverages, see MIL-STD-2407.

3.8.4 BROWSE library contents. The BROWSE library is a directory containing three required VPF files and three coverage directories. The library files required by VPF are library header table, geographic reference table, and coverage attribute table.

a. BROWSE library header table. The library header table contains the data set, source and security information. The content of the BROWSE library header table is presented in TABLE 14.

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TABLE 14. Schema for BROWSE library header table (LHT).

DNC column name	Record entry	Column definition
ID	1	I,1,P
PRODUCT_TYPE	DNC	T,12,N
LIBRARY_NAME	BROWSE	T,12,N
DESCRIPTION	The BROWSE library contains data which supports overview displays at a global scale.	T,100,N
DATA_STRUCT_CODE	8	T,1,N
SCALE	31000000	I,1,N
SOURCE_SERIES	[Null]	T,15,N
SOURCE_ID	[Null]	T,30,N
SOURCE_EDITION	[Null]	T,20,N
SOURCE_NAME	COA: DCW BROWSE map with ports added from the World Port Index; LIB: custom-built for each database.	T,100,N
SOURCE_DATE	1992	D,1,N
SECURITY_CLASS	U	T,1,N
DOWNGRADING	NO	T,3,N
DOWNGRADING_DATE	[Null]	D,1,N
RELEASABILITY	TBD	T,20,N

b. Geographic reference table. The BROWSE library geographic reference table is presented in TABLE 15.

TABLE 15. BROWSE library geographic reference table (GRT).

DNC column name	Record entry	Column definition
ID	1	I,1,P
DATA_TYPE	GEO	T,3,N
UNITS	M	T,3,N
ELLIPSOID_NAME	WGS84	T,15,N
ELLIPSOID_DETAIL	A=6378137, B=6356752 M	T,50,N
VERT_DATUM_NAME	Mean Sea Level	T,15,N
VERT_DATUM_CODE	015	T,3,N
SOUND_DATUM_NAME	[Null]	T,15,N
SOUND_DATUM_CODE	[Null]	T,3,N
GEO_DATUM_NAME	WGS84	T,15,N
GEO_DATUM_CODE	WGE	T,3,N
PROJECTION_NAME	Dec. Deg. (unproj.)	T,20,N

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c. Coverage attribute table. The BROWSE library coverage attribute table (TABLE 16) contains four columns: the row identifier, coverage name, coverage description, and topology level. The coverage description is the equivalent of the thematic layer name. The BROWSE library is untiled and thus does not contain TILEREF.

TABLE 16. BROWSE coverage attribute table (CAT).

ID	COVERAGE_NAME	DESCRIPTION	Level
1	COA	Coastlines /Countries	3
2	LIB	Library Boundaries	3
3	LIBREF	Library Reference	2

3.8.5 Coverage-level record layout. The DNC contains coverages in each of the HARBOR, APPROACH, COASTAL, GENERAL and BROWSE libraries. A coverage consists of feature tables and their associated primitive tables, which contain all of the locational aspects of the primitives. Since the combination of a feature table and primitive table defines a feature class, each DNC coverage contains at least one, and may have two, three or four feature class types (i.e., point, line, area, text).

a. Thematic layers. Except for TILEREF and LIBREF, each coverage name is the conceptual equivalent of a thematic layer (e.g., HYD for hydrography), and each coverage directory contains one coverage with a three-character name representative of the thematic layer name. A DNC coverage is composed of one or more feature classes.

b. Coverage topology. The topology level of each coverage is reflected in the types of feature classes present and the columns in the edge primitive table. The topology level of each coverage is specified in the coverage attribute table within each library (TABLES 13 and 16). The DNC does not provide topology between coverages.

3.8.6 Non-BROWSE coverage contents. In addition to one or more feature classes, each DNC non-BROWSE library coverage may contain a feature class schema table, feature class attribute table, feature index table (for each valid primitive), notes related attribute table, notes join table, value description tables, and join tables (for each valid feature class). In addition, there are variable length indexes and thematic indexes. Appendix section 50 shows the valid set of tables and indexes for each coverage.

a. Feature class schema table. Each coverage contains one feature class schema table (FCS). The FCS defines the feature classes in a coverage and describes the way in which each table in a feature class related to another. The FCS also defines the table-to-table relationships for join tables and related attribute tables. Table 17 defines the structure of a feature class schema table. The FCS tables for the HARBOR libraries follow (TABLES 18-31). Note that the FCS tables for the other non-BROWSE libraries are subsets of that of HARBOR, depending on feature content of each library (see TABLES 61-64).

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TABLE 17. Schema for feature class schema table.

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
FEATURE_CLASS	The name of the feature class	T,8,N
TABLE1	The first table in a relationship	T,12,N
TABLE1_KEY	Join column in the first table	T,24,N
TABLE2	The second table in a relationship	T,12,N
TABLE2_KEY	Join column in the second table	T,24,N

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TABLE 18. Cultural Landmarks feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	BUILDNGA	BUILDNGA.AFT	FAC_ID	FAC	ID
2	BUILDNGA	FAC	ID	BUILDNGA.AFT	FAC_ID
3	BUILDNGA	BUILDNGA.AFT	ID	BUILDNGA.NJT	FEATURE_ID
4	BUILDNGA	BUILDNGA.NJT	RAT_ID	NOTES.RAT	ID
5	BUILDNGA	NOTES.RAT	ID	BUILDNGA.NJT	RAT_ID
6	BUILDNGA	BUILDNGA.NJT	FEATURE_ID	BUILDNGA.AFT	ID
7	INDUSTA	INDUSTA.AFT	FAC_ID	FAC	ID
8	INDUSTA	FAC	ID	INDUSTA.AFT	FAC_ID
9	INDUSTA	INDUSTA.AFT	ID	INDUSTA.NJT	FEATURE_ID
10	INDUSTA	INDUSTA.NJT	RAT_ID	NOTES.RAT	ID
11	INDUSTA	NOTES.RAT	ID	INDUSTA.NJT	RAT_ID
12	INDUSTA	INDUSTA.NJT	FEATURE_ID	INDUSTA.AFT	ID
13	LANDMRKA	LANDMRKA.AFT	FAC_ID	FAC	ID
14	LANDMRKA	FAC	ID	LANDMRKA.AFT	FAC_ID
15	LANDMRKA	LANDMRKA.AFT	ID	LANDMRKA.NJT	FEATURE_ID
16	LANDMRKA	LANDMRKA.NJT	RAT_ID	NOTES.RAT	ID
17	LANDMRKA	NOTES.RAT	ID	LANDMRKA.NJT	RAT_ID
18	LANDMRKA	LANDMRKA.NJT	FEATURE_ID	LANDMRKA.AFT	ID
19	PARKA	PARKA.AFT	FAC_ID	FAC	ID
20	PARKA	FAC	ID	PARKA.AFT	FAC_ID
21	PARKA	PARKA.AFT	ID	PARKA.NJT	FEATURE_ID
22	PARKA	PARKA.NJT	RAT_ID	NOTES.RAT	ID
23	PARKA	NOTES.RAT	ID	PARKA.NJT	RAT_ID
24	PARKA	PARKA.NJT	FEATURE_ID	PARKA.AFT	ID
25	TRANSA	TRANSA.AFT	FAC_ID	FAC	ID
26	TRANSA	FAC	ID	TRANSA.AFT	FAC_ID
27	TRANSA	TRANSA.AFT	ID	TRANSA.NJT	FEATURE_ID
28	TRANSA	TRANSA.NJT	RAT_ID	NOTES.RAT	ID
29	TRANSA	NOTES.RAT	ID	TRANSA.NJT	RAT_ID
30	TRANSA	TRANSA.NJT	FEATURE_ID	TRANSA.AFT	ID
31	FENCEL	FENCEL.LFT	EDG_ID	EDG	ID
32	FENCEL	EDG	ID	FENCEL.LFT	EDG_ID
33	FENCEL	FENCEL.LFT	ID	FENCEL.NJT	FEATURE_ID
34	FENCEL	FENCEL.NJT	RAT_ID	NOTES.RAT	ID
35	FENCEL	NOTES.RAT	ID	FENCEL.NJT	RAT_ID
36	FENCEL	FENCEL.NJT	FEATURE_ID	FENCEL.LFT	ID
37	PARKL	PARKL.LFT	EDG_ID	EDG	ID
38	PARKL	EDG	ID	PARKL.LFT	EDG_ID
39	PARKL	PARKL.LFT	ID	PARKL.NJT	FEATURE_ID
40	PARKL	PARKL.NJT	RAT_ID	NOTES.RAT	ID
41	PARKL	NOTES.RAT	ID	PARKL.NJT	RAT_ID
42	PARKL	PARKL.NJT	FEATURE_ID	PARKL.LFT	ID

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TABLE 18. Cultural Landmarks feature class schema table (FCS) - Continued

43	POWERL	POWERL.LFT	EDG_ID	EDG	ID
44	POWERL	EDG	ID	POWERL.LFT	EDG_ID
45	POWERL	POWERL.LFT	ID	POWERL.NJT	FEATURE_ID
46	POWERL	POWERL.NJT	RAT_ID	NOTES.RAT	ID
47	POWERL	NOTES.RAT	ID	POWERL.NJT	RAT_ID
48	POWERL	POWERL.NJT	FEATURE_ID	POWERL.LFT	ID
49	RAILRDL	RAILRDL.LFT	EDG_ID	EDG	ID
50	RAILRDL	EDG	ID	RAILRDL.LFT	EDG_ID
51	RAILRDL	RAILRDL.LFT	ID	RAILRDL.NJT	FEATURE_ID
52	RAILRDL	RAILRDL.NJT	RAT_ID	NOTES.RAT	ID
53	RAILRDL	NOTES.RAT	ID	RAILRDL.NJT	RAT_ID
54	RAILRDL	RAILRDL.NJT	FEATURE_ID	RAILRDL.LFT	ID
55	TRANSL	TRANSL.LFT	EDG_ID	EDG	ID
56	TRANSL	EDG	ID	TRANSL.LFT	EDG_ID
57	TRANSL	TRANSL.LFT	ID	TRANSL.NJT	FEATURE_ID
58	TRANSL	TRANSL.NJT	RAT_ID	NOTES.RAT	ID
59	TRANSL	NOTES.RAT	ID	TRANSL.NJT	RAT_ID
60	TRANSL	TRANSL.NJT	FEATURE_ID	TRANSL.LFT	ID
61	AEROP	AEROP.PFT	END_ID	END	ID
62	AEROP	END	ID	AEROP.PFT	END_ID
63	AEROP	AEROP.PFT	ID	AEROP.NJT	FEATURE_ID
64	AEROP	AEROP.NJT	RAT_ID	NOTES.RAT	ID
65	AEROP	NOTES.RAT	ID	AEROP.NJT	RAT_ID
66	AEROP	AEROP.NJT	FEATURE_ID	AEROP.PFT	ID
67	BUILDNGP	BUILDNGP.PFT	END_ID	END	ID
68	BUILDNGP	END	ID	BUILDNGP.PFT	END_ID
69	BUILDNGP	BUILDNGP.PFT	ID	BUILDNGP.NJT	FEATURE_ID
70	BUILDNGP	BUILDNGP.NJT	RAT_ID	NOTES.RAT	ID
71	BUILDNGP	NOTES.RAT	ID	BUILDNGP.NJT	RAT_ID
72	BUILDNGP	BUILDNGP.NJT	FEATURE_ID	BUILDNGP.PFT	ID
73	BUILTUPP	BUILTUPP.PFT	END_ID	END	ID
74	BUILTUPP	END	ID	BUILTUPP.PFT	END_ID
75	BUILTUPP	BUILTUPP.PFT	ID	BUILTUPP.NJT	FEATURE_ID
76	BUILTUPP	BUILTUPP.NJT	RAT_ID	NOTES.RAT	ID
77	BUILTUPP	NOTES.RAT	ID	BUILTUPP.NJT	RAT_ID
78	BUILTUPP	BUILTUPP.NJT	FEATURE_ID	BUILTUPP.PFT	ID
79	COMMP	COMMP.PFT	END_ID	END	ID
80	COMMP	END	ID	COMMP.PFT	END_ID
81	COMMP	COMMP.PFT	ID	COMMP.NJT	FEATURE_ID
82	COMMP	COMMP.NJT	RAT_ID	NOTES.RAT	ID
83	COMMP	NOTES.RAT	ID	COMMP.NJT	RAT_ID

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TABLE 18. Cultural Landmarks feature class schema table (FCS) - Continued

84	COMP	COMP.NJT	FEATURE_ID	COMP.PFT	ID
85	INDUSTP	INDUSTP.PFT	END_ID	END	ID
86	INDUSTP	END	ID	INDUSTP.PFT	END_ID
87	INDUSTP	INDUSTP.PFT	ID	INDUSTP.NJT	FEATURE_ID
88	INDUSTP	INDUSTP.NJT	RAT_ID	NOTES.RAT	ID
89	INDUSTP	NOTES.RAT	ID	INDUSTP.NJT	RAT_ID
90	INDUSTP	INDUSTP.NJT	FEATURE_ID	INDUSTP.PFT	ID
91	LANDMRKP	LANDMRKP.PFT	END_ID	END	ID
92	LANDMRKP	END	ID	LANDMRKP.PFT	END_ID
93	LANDMRKP	LANDMRKP.PFT	ID	LANDMRKP.NJT	FEATURE_ID
94	LANDMRKP	LANDMRKP.NJT	RAT_ID	NOTES.RAT	ID
95	LANDMRKP	NOTES.RAT	ID	LANDMRKP.NJT	RAT_ID
96	LANDMRKP	LANDMRKP.NJT	FEATURE_ID	LANDMRKP.PFT	ID
97	POWERP	POWERP.PFT	END_ID	END	ID
98	POWERP	END	ID	POWERP.PFT	END_ID
99	POWERP	POWERP.PFT	ID	POWERP.NJT	FEATURE_ID
100	POWERP	POWERP.NJT	RAT_ID	NOTES.RAT	ID
101	POWERP	NOTES.RAT	ID	POWERP.NJT	RAT_ID
102	POWERP	POWERP.NJT	FEATURE_ID	POWERP.PFT	ID

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TABLE 19. Earth Cover feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	ECRAREA	ECRAREA.AFT	FAC_ID	FAC	ID
2	ECRAREA	FAC	ID	ECRAREA.AFT	FAC_ID
3	ECRAREA	ECRAREA.AFT	ID	ECRAREA.NJT	FEATURE_ID
4	ECRAREA	ECRAREA.NJT	RAT_ID	NOTES.RAT	ID
5	ECRAREA	NOTES.RAT	ID	ECRAREA.NJT	RAT_ID
6	ECRAREA	ECRAREA.NJT	FEATURE_ID	ECRAREA.AFT	ID
7	FORESHOA	FORESHOA.AFT	FAC_ID	FAC	ID
8	FORESHOA	FAC	ID	FORESHOA.AFT	FAC_ID
9	FORESHOA	FORESHOA.AFT	ID	FORESHOA.NJT	FEATURE_ID
10	FORESHOA	FORESHOA.NJT	RAT_ID	NOTES.RAT	ID
11	FORESHOA	NOTES.RAT	ID	FORESHOA.NJT	RAT_ID
12	FORESHOA	FORESHOA.NJT	FEATURE_ID	FORESHOA.AFT	ID
13	ADMINL	ADMINL.LFT	EDG_ID	EDG	ID
14	ADMINL	EDG	ID	ADMINL.LFT	EDG_ID
15	ADMINL	ADMINL.LFT	ID	ADMINL.NJT	FEATURE_ID
16	ADMINL	ADMINL.NJT	RAT_ID	NOTES.RAT	ID
17	ADMINL	NOTES.RAT	ID	ADMINL.NJT	RAT_ID
18	ADMINL	ADMINL.NJT	FEATURE_ID	ADMINL.LFT	ID
19	BOUNDRYL	BOUNDRYL.LFT	EDG_ID	EDG	ID
20	BOUNDRYL	EDG	ID	BOUNDRYL.LFT	EDG_ID
21	BOUNDRYL	BOUNDRYL.LFT	ID	BOUNDRYL.NJT	FEATURE_ID
22	BOUNDRYL	BOUNDRYL.NJT	RAT_ID	NOTES.RAT	ID
23	BOUNDRYL	NOTES.RAT	ID	BOUNDRYL.NJT	RAT_ID
24	BOUNDRYL	BOUNDRYL.NJT	FEATURE_ID	BOUNDRYL.LFT	ID
25	COASTL	COASTL.LFT	EDG_ID	EDG	ID
26	COASTL	EDG	ID	COASTL.LFT	EDG_ID
27	COASTL	COASTL.LFT	ID	COASTL.NJT	FEATURE_ID
28	COASTL	COASTL.NJT	RAT_ID	NOTES.RAT	ID
29	COASTL	NOTES.RAT	ID	COASTL.NJT	RAT_ID
30	COASTL	COASTL.NJT	FEATURE_ID	COASTL.LFT	ID
31	FORESHOL	FORESHOL.LFT	EDG_ID	EDG	ID
32	FORESHOL	EDG	ID	FORESHOL.LFT	EDG_ID
33	FORESHOL	FORESHOL.LFT	ID	FORESHOL.NJT	FEATURE_ID
34	FORESHOL	FORESHOL.NJT	RAT_ID	NOTES.RAT	ID
35	FORESHOL	NOTES.RAT	ID	FORESHOL.NJT	RAT_ID
36	FORESHOL	FORESHOL.NJT	FEATURE_ID	FORESHOL.LFT	ID
37	FORESHOP	FORESHOP.PFT	END_ID	END	ID
38	FORESHOP	END	ID	FORESHOP.PFT	END_ID
39	FORESHOP	FORESHOP.PFT	ID	FORESHOP.NJT	FEATURE_ID
40	FORESHOP	FORESHOP.NJT	RAT_ID	NOTES.RAT	ID
41	FORESHOP	NOTES.RAT	ID	FORESHOP.NJT	RAT_ID
42	FORESHOP	FORESHOP.NJT	FEATURE_ID	FORESHOP.PFT	ID

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TABLE 19. Earth Cover feature class schema table (FCS) - Continued

43	ISLANDP	ISLANDP.PFT	END_ID	END	ID
44	ISLANDP	END	ID	ISLANDP.PFT	END_ID
45	ISLANDP	ISLANDP.PFT	ID	ISLANDP.NJT	FEATURE_ID
46	ISLANDP	ISLANDP.NJT	RAT_ID	NOTES.RAT	ID
47	ISLANDP	NOTES.RAT	ID	ISLANDP.NJT	RAT_ID
48	ISLANDP	ISLANDP.NJT	FEATURE_ID	ISLANDP.PFT	ID
49	ECRTEXT	ECRTEXT.TFT	TXT_ID	TXT	ID
50	ECRTEXT	TXT	ID	ECRTEXT.TFT	TXT_ID
51	ECRTEXT	ECRTEXT.TFT	ID	ECRTEXT.NJT	FEATURE_ID
52	ECRTEXT	ECRTEXT.NJT	RAT_ID	NOTES.RAT	ID
53	ECRTEXT	NOTES.RAT	ID	ECRTEXT.NJT	RAT_ID
54	ECRTEXT	ECRTEXT.NJT	FEATURE_ID	ECRTEXT.TFT	ID

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TABLE 20. Environment feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	ENVAREA	ENVAREA.AFT	FAC_ID	FAC	ID
2	ENVAREA	FAC	ID	ENVAREA.AFT	FAC_ID
3	ENVAREA	ENVAREA.AFT	ID	ENVAREA.NJT	FEATURE_ID
4	ENVAREA	ENVAREA.NJT	RAT_ID	NOTES.RAT	ID
5	ENVAREA	NOTES.RAT	ID	ENVAREA.NJT	RAT_ID
6	ENVAREA	ENVAREA.NJT	FEATURE_ID	ENVAREA.AFT	ID
7	CURRDIAP	CURRDIAP.PFT	END_ID	END	ID
8	CURRDIAP	END	ID	CURRDIAP.PFT	END_ID
9	CURRDIAP	CURRDIAP.PFT	ID	CURRDIAP.NJT	FEATURE_ID
10	CURRDIAP	CURRDIAP.NJT	RAT_ID	NOTES.RAT	ID
11	CURRDIAP	NOTES.RAT	ID	CURRDIAP.NJT	RAT_ID
12	CURRDIAP	CURRDIAP.NJT	FEATURE_ID	CURRDIAP.PFT	ID
13	CURRFLP	CURRFLP.PFT	END_ID	END	ID
14	CURRFLP	END	ID	CURRFLP.PFT	END_ID
15	CURRFLP	CURRFLP.PFT	ID	CURRFLP.NJT	FEATURE_ID
16	CURRFLP	CURRFLP.NJT	RAT_ID	NOTES.RAT	ID
17	CURRFLP	NOTES.RAT	ID	CURRFLP.NJT	RAT_ID
18	CURRFLP	CURRFLP.NJT	FEATURE_ID	CURRFLP.PFT	ID
19	TIDEP	TIDEP.PFT	END_ID	END	ID
20	TIDEP	END	ID	TIDEP.PFT	END_ID
21	TIDEP	TIDEP.PFT	ID	TIDEP.NJT	FEATURE_ID
22	TIDEP	TIDEP.NJT	RAT_ID	NOTES.RAT	ID
23	TIDEP	NOTES.RAT	ID	TIDEP.NJT	RAT_ID
24	TIDEP	TIDEP.NJT	FEATURE_ID	TIDEP.PFT	ID

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TABLE 21. Hydrography feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	HYDAREA	HYDAREA.AFT	FAC_ID	FAC	ID
2	HYDAREA	FAC	ID	HYDAREA.AFT	FAC_ID
3	HYDAREA	HYDAREA.AFT	ID	HYDAREA.NJT	FEATURE_ID
4	HYDAREA	HYDAREA.NJT	RAT_ID	NOTES.RAT	ID
5	HYDAREA	NOTES.RAT	ID	HYDAREA.NJT	RAT_ID
6	HYDAREA	HYDAREA.NJT	FEATURE_ID	HYDAREA.AFT	ID
7	HYDLINE	HYDLINE.LFT	EDG_ID	EDG	ID
8	HYDLINE	EDG	ID	HYDLINE.LFT	EDG_ID
9	HYDLINE	HYDLINE.LFT	ID	HYDLINE.NJT	FEATURE_ID
10	HYDLINE	HYDLINE.NJT	RAT_ID	NOTES.RAT	ID
11	HYDLINE	NOTES.RAT	ID	HYDLINE.NJT	RAT_ID
12	HYDLINE	HYDLINE.NJT	FEATURE_ID	HYDLINE.LFT	ID
13	BOTCHARP	BOTCHARP.PFT	END_ID	END	ID
14	BOTCHARP	END	ID	BOTCHARP.PFT	END_ID
15	BOTCHARP	BOTCHARP.PFT	ID	BOTCHARP.NJT	FEATURE_ID
16	BOTCHARP	BOTCHARP.NJT	RAT_ID	NOTES.RAT	ID
17	BOTCHARP	NOTES.RAT	ID	BOTCHARP.NJT	RAT_ID
18	BOTCHARP	BOTCHARP.NJT	FEATURE_ID	BOTCHARP.PFT	ID
19	SOUNDP	SOUNDP.PFT	END_ID	END	ID
20	SOUNDP	END	ID	SOUNDP.PFT	END_ID
21	SOUNDP	SOUNDP.PFT	ID	SOUNDP.NJT	FEATURE_ID
22	SOUNDP	SOUNDP.NJT	RAT_ID	NOTES.RAT	ID
23	SOUNDP	NOTES.RAT	ID	SOUNDP.NJT	RAT_ID
24	SOUNDP	SOUNDP.NJT	FEATURE_ID	SOUNDP.PFT	ID

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TABLE 22. Inland Waterways feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	CANALA	CANALA.AFT	FAC_ID	FAC	ID
2	CANALA	FAC	ID	CANALA.AFT	FAC_ID
3	CANALA	CANALA.AFT	ID	CANALA.NJT	FEATURE_ID
4	CANALA	CANALA.NJT	RAT_ID	NOTES.RAT	ID
5	CANALA	NOTES.RAT	ID	CANALA.NJT	RAT_ID
6	CANALA	CANALA.NJT	FEATURE_ID	CANALA.AFT	ID
7	LAKEA	LAKEA.AFT	FAC_ID	FAC	ID
8	LAKEA	FAC	ID	LAKEA.AFT	FAC_ID
9	LAKEA	LAKEA.AFT	ID	LAKEA.NJT	FEATURE_ID
10	LAKEA	LAKEA.NJT	RAT_ID	NOTES.RAT	ID
11	LAKEA	NOTES.RAT	ID	LAKEA.NJT	RAT_ID
12	LAKEA	LAKEA.NJT	FEATURE_ID	LAKEA.AFT	ID
13	MISCIWYA	MISCIWYA.AFT	FAC_ID	FAC	ID
14	MISCIWYA	FAC	ID	MISCIWYA.AFT	FAC_ID
15	MISCIWYA	MISCIWYA.AFT	ID	MISCIWYA.NJT	FEATURE_ID
16	MISCIWYA	MISCIWYA.NJT	RAT_ID	NOTES.RAT	ID
17	MISCIWYA	NOTES.RAT	ID	MISCIWYA.NJT	RAT_ID
18	MISCIWYA	MISCIWYA.NJT	FEATURE_ID	MISCIWYA.AFT	ID
19	RIVERA	RIVERA.AFT	FAC_ID	FAC	ID
20	RIVERA	FAC	ID	RIVERA.AFT	FAC_ID
21	RIVERA	RIVERA.AFT	ID	RIVERA.NJT	FEATURE_ID
22	RIVERA	RIVERA.NJT	RAT_ID	NOTES.RAT	ID
23	RIVERA	NOTES.RAT	ID	RIVERA.NJT	RAT_ID
24	RIVERA	RIVERA.NJT	FEATURE_ID	RIVERA.AFT	ID
25	AQUEDCTL	AQUEDCTL.LFT	EDG_ID	EDG	ID
26	AQUEDCTL	EDG	ID	AQUEDCTL.LFT	EDG_ID
27	AQUEDCTL	AQUEDCTL.LFT	ID	AQUEDCTL.NJT	FEATURE_ID
28	AQUEDCTL	AQUEDCTL.NJT	RAT_ID	NOTES.RAT	ID
29	AQUEDCTL	NOTES.RAT	ID	AQUEDCTL.NJT	RAT_ID
30	AQUEDCTL	AQUEDCTL.NJT	FEATURE_ID	AQUEDCTL.LFT	ID
31	BARRIERL	BARRIERL.LFT	EDG_ID	EDG	ID
32	BARRIERL	EDG	ID	BARRIERL.LFT	EDG_ID
33	BARRIERL	BARRIERL.LFT	ID	BARRIERL.NJT	FEATURE_ID
34	BARRIERL	BARRIERL.NJT	RAT_ID	NOTES.RAT	ID
35	BARRIERL	NOTES.RAT	ID	BARRIERL.NJT	RAT_ID
36	BARRIERL	BARRIERL.NJT	FEATURE_ID	BARRIERL.LFT	ID
37	CANALL	CANALL.LFT	EDG_ID	EDG	ID
38	CANALL	EDG	ID	CANALL.LFT	EDG_ID
39	CANALL	CANALL.LFT	ID	CANALL.NJT	FEATURE_ID
40	CANALL	CANALL.NJT	RAT_ID	NOTES.RAT	ID
41	CANALL	NOTES.RAT	ID	CANALL.NJT	RAT_ID
42	CANALL	CANALL.NJT	FEATURE_ID	CANALL.LFT	ID
43	DAML	DAML.LFT	EDG_ID	EDG	ID

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TABLE 22. Inland Waterways feature class schema table (FCS) - Continued

44	DAML	EDG	ID	DAML.LFT	EDG_ID
45	DAML	DAML.LFT	ID	DAML.NJT	FEATURE_ID
46	DAML	DAML.NJT	RAT_ID	NOTES.RAT	ID
47	DAML	NOTES.RAT	ID	DAML.NJT	RAT_ID
48	DAML	DAML.NJT	FEATURE_ID	DAML.LFT	ID
49	RIVERL	RIVERL.LFT	EDG_ID	EDG	ID
50	RIVERL	EDG	ID	RIVERL.LFT	EDG_ID
51	RIVERL	RIVERL.LFT	ID	RIVERL.NJT	FEATURE_ID
52	RIVERL	RIVERL.NJT	RAT_ID	NOTES.RAT	ID
53	RIVERL	NOTES.RAT	ID	RIVERL.NJT	RAT_ID
54	RIVERL	RIVERL.NJT	FEATURE_ID	RIVERL.LFT	ID

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TABLE 23. Land Cover feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	EMBANKA	EMBANKA.AFT	FAC_ID	FAC	ID
2	EMBANKA	FAC	ID	EMBANKA.AFT	FAC_ID
3	EMBANKA	EMBANKA.AFT	ID	EMBANKA.NJT	FEATURE_ID
4	EMBANKA	EMBANKA.NJT	RAT_ID	NOTES.RAT	ID
5	EMBANKA	NOTES.RAT	ID	EMBANKA.NJT	RAT_ID
6	EMBANKA	EMBANKA.NJT	FEATURE_ID	EMBANKA.AFT	ID
7	ORCHARDA	ORCHARDA.AFT	FAC_ID	FAC	ID
8	ORCHARDA	FAC	ID	ORCHARDA.AFT	FAC_ID
9	ORCHARDA	ORCHARDA.AFT	ID	ORCHARDA.NJT	FEATURE_ID
10	ORCHARDA	ORCHARDA.NJT	RAT_ID	NOTES.RAT	ID
11	ORCHARDA	NOTES.RAT	ID	ORCHARDA.NJT	RAT_ID
12	ORCHARDA	ORCHARDA.NJT	FEATURE_ID	ORCHARDA.AFT	ID
13	SNOWICEA	SNOWICEA.AFT	FAC_ID	FAC	ID
14	SNOWICEA	FAC	ID	SNOWICEA.AFT	FAC_ID
15	SNOWICEA	SNOWICEA.AFT	ID	SNOWICEA.NJT	FEATURE_ID
16	SNOWICEA	SNOWICEA.NJT	RAT_ID	NOTES.RAT	ID
17	SNOWICEA	NOTES.RAT	ID	SNOWICEA.NJT	RAT_ID
18	SNOWICEA	SNOWICEA.NJT	FEATURE_ID	SNOWICEA.AFT	ID
19	TREEA	TREEA.AFT	FAC_ID	FAC	ID
20	TREEA	FAC	ID	TREEA.AFT	FAC_ID
21	TREEA	TREEA.AFT	ID	TREEA.NJT	FEATURE_ID
22	TREEA	TREEA.NJT	RAT_ID	NOTES.RAT	ID
23	TREEA	NOTES.RAT	ID	TREEA.NJT	RAT_ID
24	TREEA	TREEA.NJT	FEATURE_ID	TREEA.AFT	ID
25	VOLCANOA	VOLCANOA.AFT	FAC_ID	FAC	ID
26	VOLCANOA	FAC	ID	VOLCANOA.AFT	FAC_ID
27	VOLCANOA	VOLCANOA.AFT	ID	VOLCANOA.NJT	FEATURE_ID
28	VOLCANOA	VOLCANOA.NJT	RAT_ID	NOTES.RAT	ID
29	VOLCANOA	NOTES.RAT	ID	VOLCANOA.NJT	RAT_ID
30	VOLCANOA	VOLCANOA.NJT	FEATURE_ID	VOLCANOA.AFT	ID
31	LCRLINE	LCRLINE.LFT	EDG_ID	EDG	ID
32	LCRLINE	EDG	ID	LCRLINE.LFT	EDG_ID
33	LCRLINE	LCRLINE.LFT	ID	LCRLINE.NJT	FEATURE_ID
34	LCRLINE	LCRLINE.NJT	RAT_ID	NOTES.RAT	ID
35	LCRLINE	NOTES.RAT	ID	LCRLINE.NJT	RAT_ID
36	LCRLINE	LCRLINE.NJT	FEATURE_ID	LCRLINE.LFT	ID
37	SNOWICEP	SNOWICEP.PFT	END_ID	END	ID
38	SNOWICEP	END	ID	SNOWICEP.PFT	END_ID
39	SNOWICEP	SNOWICEP.PFT	ID	SNOWICEP.NJT	FEATURE_ID
40	SNOWICEP	SNOWICEP.NJT	RAT_ID	NOTES.RAT	ID
41	SNOWICEP	NOTES.RAT	ID	SNOWICEP.NJT	RAT_ID
42	SNOWICEP	SNOWICEP.NJT	FEATURE_ID	SNOWICEP.PFT	ID
43	TREEP	TREEP.PFT	END_ID	END	ID

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TABLE 23. Land Cover feature class schema table (FCS) - Continued

44	TREEP	END	ID	TREEP.PFT	END_ID
45	TREEP	TREEP.PFT	ID	TREEP.NJT	FEATURE_ID
46	TREEP	TREEP.NJT	RAT_ID	NOTES.RAT	ID
47	TREEP	NOTES.RAT	ID	TREEP.NJT	RAT_ID
48	TREEP	TREEP.NJT	FEATURE_ID	TREEP.PFT	ID

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TABLE 24. Limits feature class schema table (FCS)

ID	FEATURE _CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	LIMBNDYA	LIMBNDYA.AFT	ID	LIMBNDYA.AJT	LIMBNDYA.AFT_ID
2	LIMBNDYA	LIMBNDYA.AJT	FAC_ID	FAC	ID
3	LIMBNDYA	FAC	ID	LIMBNDYA.AJT	FAC_ID
4	LIMBNDYA	LIMBNDYA.AJT	LIMBNDYA.AFT_ID	LIMBNDYA.AFT	ID
5	LIMBNDYA	LIMBNDYA.AFT	ID	LIMBNDYA.NJT	FEATURE_ID
6	LIMBNDYA	LIMBNDYA.NJT	RAT_ID	NOTES.RAT	ID
7	LIMBNDYA	NOTES.RAT	ID	LIMBNDYA.NJT	RAT_ID
8	LIMBNDYA	LIMBNDYA.NJT	FEATURE_ID	LIMBNDYA.AFT	ID
9	MARITIMA	MARITIMA.AFT	ID	MARITIMA.AJT	MARITIMA.AFT_ID
10	MARITIMA	MARITIMA.AJT	FAC_ID	FAC	ID
11	MARITIMA	FAC	ID	MARITIMA.AJT	FAC_ID
12	MARITIMA	MARITIMA.AJT	MARITIMA.AFT_ID	MARITIMA.AFT	ID
13	MARITIMA	MARITIMA.AFT	ID	MARITIMA.NJT	FEATURE_ID
14	MARITIMA	MARITIMA.NJT	RAT_ID	NOTES.RAT	ID
15	MARITIMA	NOTES.RAT	ID	MARITIMA.NJT	RAT_ID
16	MARITIMA	MARITIMA.NJT	FEATURE_ID	MARITIMA.AFT	ID
17	ROUTEA	ROUTEA.AFT	ID	ROUTEA.AJT	ROUTEA.AFT_ID
18	ROUTEA	ROUTEA.AJT	FAC_ID	FAC	ID
19	ROUTEA	FAC	ID	ROUTEA.AJT	FAC_ID
20	ROUTEA	ROUTEA.AJT	ROUTEA.AFT_ID	ROUTEA.AFT	ID
21	ROUTEA	ROUTEA.AFT	ID	ROUTEA.NJT	FEATURE_ID
22	ROUTEA	ROUTEA.NJT	RAT_ID	NOTES.RAT	ID
23	ROUTEA	NOTES.RAT	ID	ROUTEA.NJT	RAT_ID
24	ROUTEA	ROUTEA.NJT	FEATURE_ID	ROUTEA.AFT	ID
25	SEPARTNA	SEPARTNA.AFT	ID	SEPARTNA.AJT	SEPARTNA.AFT_ID
26	SEPARTNA	SEPARTNA.AJT	FAC_ID	FAC	ID
27	SEPARTNA	FAC	ID	SEPARTNA.AJT	FAC_ID
28	SEPARTNA	SEPARTNA.AJT	SEPARTNA.AFT_ID	SEPARTNA.AFT	ID
29	SEPARTNA	SEPARTNA.AFT	ID	SEPARTNA.NJT	FEATURE_ID
30	SEPARTNA	SEPARTNA.NJT	RAT_ID	NOTES.RAT	ID
31	SEPARTNA	NOTES.RAT	ID	SEPARTNA.NJT	RAT_ID
32	SEPARTNA	SEPARTNA.NJT	FEATURE_ID	SEPARTNA.AFT	ID
33	SWEPTA	SWEPTA.AFT	ID	SWEPTA.AJT	SWEPTA.AFT_ID
34	SWEPTA	SWEPTA.AJT	FAC_ID	FAC	ID
35	SWEPTA	FAC	ID	SWEPTA.AJT	FAC_ID
36	SWEPTA	SWEPTA.AJT	SWEPTA.AFT_ID	SWEPTA.AFT	ID
37	SWEPTA	SWEPTA.AFT	ID	SWEPTA.NJT	FEATURE_ID
38	SWEPTA	SWEPTA.NJT	RAT_ID	NOTES.RAT	ID
39	SWEPTA	NOTES.RAT	ID	SWEPTA.NJT	RAT_ID
40	SWEPTA	SWEPTA.NJT	FEATURE_ID	SWEPTA.AFT	ID
41	DISTL	DISTL.LFT	ID	DISTL.LJT	DISTL.LFT_ID

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TABLE 24. Limits feature class schema table (FCS) - Continued

42	DISTL	DISTL.LJT	EDG_ID	EDG	ID
43	DISTL	EDG	ID	DISTL.LJT	EDG_ID
44	DISTL	DISTL.LJT	DISTL.LFT_ID	DISTL.LFT	ID
45	DISTL	DISTL.LFT	ID	DISTL.NJT	FEATURE_ID
46	DISTL	DISTL.NJT	RAT_ID	NOTES.RAT	ID
47	DISTL	NOTES.RAT	ID	DISTL.NJT	RAT_ID
48	DISTL	DISTL.NJT	FEATURE_ID	DISTL.LFT	ID
49	FERRYL	FERRYL.LFT	ID	FERRYL.LJT	FERRYL.LFT_ID
50	FERRYL	FERRYL.LJT	EDG_ID	EDG	ID
51	FERRYL	EDG	ID	FERRYL.LJT	EDG_ID
52	FERRYL	FERRYL.LJT	FERRYL.LFT_ID	FERRYL.LFT	ID
53	FERRYL	FERRYL.LFT	ID	FERRYL.NJT	FEATURE_ID
54	FERRYL	FERRYL.NJT	RAT_ID	NOTES.RAT	ID
55	FERRYL	NOTES.RAT	ID	FERRYL.NJT	RAT_ID
56	FERRYL	FERRYL.NJT	FEATURE_ID	FERRYL.LFT	ID
57	LIMBNDYL	LIMBNDYL.LFT	ID	LIMBNDYL.LJT	LIMBNDYL.LFT_ID
58	LIMBNDYL	LIMBNDYL.LJT	EDG_ID	EDG	ID
59	LIMBNDYL	EDG	ID	LIMBNDYL.LJT	EDG_ID
60	LIMBNDYL	LIMBNDYL.LJT	LIMBNDYL.LFT_ID	LIMBNDYL.LFT	ID
61	LIMBNDYL	LIMBNDYL.LFT	ID	LIMBNDYL.NJT	FEATURE_ID
62	LIMBNDYL	LIMBNDYL.NJT	RAT_ID	NOTES.RAT	ID
63	LIMBNDYL	NOTES.RAT	ID	LIMBNDYL.NJT	RAT_ID
64	LIMBNDYL	LIMBNDYL.NJT	FEATURE_ID	LIMBNDYL.LFT	ID
65	MARITIML	MARITIML.LFT	ID	MARITIML.LJT	MARITIML.LFT_ID
66	MARITIML	MARITIML.LJT	EDG_ID	EDG	ID
67	MARITIML	EDG	ID	MARITIML.LJT	EDG_ID
68	MARITIML	MARITIML.LJT	MARITIML.LFT_ID	MARITIML.LFT	ID
69	MARITIML	MARITIML.LFT	ID	MARITIML.NJT	FEATURE_ID
70	MARITIML	MARITIML.NJT	RAT_ID	NOTES.RAT	ID
71	MARITIML	NOTES.RAT	ID	MARITIML.NJT	RAT_ID
72	MARITIML	MARITIML.NJT	FEATURE_ID	MARITIML.LFT	ID
73	ROUTE	ROUTE.LFT	ID	ROUTE.LJT	ROUTE.LFT_ID
74	ROUTE	ROUTE.LJT	EDG_ID	EDG	ID
75	ROUTE	EDG	ID	ROUTE.LJT	EDG_ID
76	ROUTE	ROUTE.LJT	ROUTE.LFT_ID	ROUTE.LFT	ID
77	ROUTE	ROUTE.LFT	ID	ROUTE.NJT	FEATURE_ID
78	ROUTE	ROUTE.NJT	RAT_ID	NOTES.RAT	ID
79	ROUTE	NOTES.RAT	ID	ROUTE.NJT	RAT_ID
80	ROUTE	ROUTE.NJT	FEATURE_ID	ROUTE.LFT	ID
81	SEPARTNL	SEPARTNL.LFT	ID	SEPARTNL.LJT	SEPARTNL.LFT_ID
82	SEPARTNL	SEPARTNL.LJT	EDG_ID	EDG	ID
83	SEPARTNL	EDG	ID	SEPARTNL.LJT	EDG_ID

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TABLE 24. Limits feature class schema table (FCS) - Continued

84	SEPARTNL	SEPARTNL.LJT	SEPARTNL.LFT_ID	SEPARTNL.LFT	ID
85	SEPARTNL	SEPARTNL.LFT	ID	SEPARTNL.NJT	FEATURE_ID
86	SEPARTNL	SEPARTNL.NJT	RAT_ID	NOTES.RAT	ID
87	SEPARTNL	NOTES.RAT	ID	SEPARTNL.NJT	RAT_ID
88	SEPARTNL	SEPARTNL.NJT	FEATURE_ID	SEPARTNL.LFT	ID
89	SWEPTL	SWEPTL.LFT	ID	SWEPTL.LJT	SWEPTL.LFT_ID
90	SWEPTL	SWEPTL.LJT	EDG_ID	EDG	ID
91	SWEPTL	EDG	ID	SWEPTL.LJT	EDG_ID
92	SWEPTL	SWEPTL.LJT	SWEPTL.LFT_ID	SWEPTL.LFT	ID
93	SWEPTL	SWEPTL.LFT	ID	SWEPTL.NJT	FEATURE_ID
94	SWEPTL	SWEPTL.NJT	RAT_ID	NOTES.RAT	ID
95	SWEPTL	NOTES.RAT	ID	SWEPTL.NJT	RAT_ID
96	SWEPTL	SWEPTL.NJT	FEATURE_ID	SWEPTL.LFT	ID
97	LIMBNDYP	LIMBNDYP.PFT	END_ID	END	ID
98	LIMBNDYP	END	ID	LIMBNDYP.PFT	END_ID
99	LIMBNDYP	LIMBNDYP.PFT	ID	LIMBNDYP.NJT	FEATURE_ID
100	LIMBNDYP	LIMBNDYP.NJT	RAT_ID	NOTES.RAT	ID
101	LIMBNDYP	NOTES.RAT	ID	LIMBNDYP.NJT	RAT_ID
102	LIMBNDYP	LIMBNDYP.NJT	FEATURE_ID	LIMBNDYP.PFT	ID
103	MARITIMP	MARITIMP.PFT	END_ID	END	ID
104	MARITIMP	END	ID	MARITIMP.PFT	END_ID
105	MARITIMP	MARITIMP.PFT	ID	MARITIMP.NJT	FEATURE_ID
106	MARITIMP	MARITIMP.NJT	RAT_ID	NOTES.RAT	ID
107	MARITIMP	NOTES.RAT	ID	MARITIMP.NJT	RAT_ID
108	MARITIMP	MARITIMP.NJT	FEATURE_ID	MARITIMP.PFT	ID
109	ROUTEPE	ROUTEPE.PFT	END_ID	END	ID
110	ROUTEPE	END	ID	ROUTEPE.PFT	END_ID
111	ROUTEPE	ROUTEPE.PFT	ID	ROUTEPE.NJT	FEATURE_ID
112	ROUTEPE	ROUTEPE.NJT	RAT_ID	NOTES.RAT	ID
113	ROUTEPE	NOTES.RAT	ID	ROUTEPE.NJT	RAT_ID
114	ROUTEPE	ROUTEPE.NJT	FEATURE_ID	ROUTEPE.PFT	ID
115	SEPARTNP	SEPARTNP.PFT	END_ID	END	ID
116	SEPARTNP	END	ID	SEPARTNP.PFT	END_ID
117	SEPARTNP	SEPARTNP.PFT	ID	SEPARTNP.NJT	FEATURE_ID
118	SEPARTNP	SEPARTNP.NJT	RAT_ID	NOTES.RAT	ID
119	SEPARTNP	NOTES.RAT	ID	SEPARTNP.NJT	RAT_ID
120	SEPARTNP	SEPARTNP.NJT	FEATURE_ID	SEPARTNP.PFT	ID

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TABLE 25. Aids to Navigation feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	SECTORA	SECTORA.AFT	FAC_ID	FAC	ID
2	SECTORA	FAC	ID	SECTORA.AFT	FAC_ID
3	SECTORA	SECTORA.AFT	ID	SECTORA.NJT	FEATURE_ID
4	SECTORA	SECTORA.NJT	RAT_ID	NOTES.RAT	ID
5	SECTORA	NOTES.RAT	ID	SECTORA.NJT	RAT_ID
6	SECTORA	SECTORA.NJT	FEATURE_ID	SECTORA.AFT	ID
7	LEADINGL	LEADINGL.LFT	EDG_ID	EDG	ID
8	LEADINGL	EDG	ID	LEADINGL.LFT	EDG_ID
9	LEADINGL	LEADINGL.LFT	ID	LEADINGL.NJT	FEATURE_ID
10	LEADINGL	LEADINGL.NJT	RAT_ID	NOTES.RAT	ID
11	LEADINGL	NOTES.RAT	ID	LEADINGL.NJT	RAT_ID
12	LEADINGL	LEADINGL.NJT	FEATURE_ID	LEADINGL.LFT	ID
13	LIGHTSL	LIGHTSL.LFT	EDG_ID	EDG	ID
14	LIGHTSL	EDG	ID	LIGHTSL.LFT	EDG_ID
15	LIGHTSL	LIGHTSL.LFT	ID	LIGHTSL.NJT	FEATURE_ID
16	LIGHTSL	LIGHTSL.NJT	RAT_ID	NOTES.RAT	ID
17	LIGHTSL	NOTES.RAT	ID	LIGHTSL.NJT	RAT_ID
18	LIGHTSL	LIGHTSL.NJT	FEATURE_ID	LIGHTSL.LFT	ID
19	BUOYBCNP	BUOYBCNP.PFT	END_ID	END	ID
20	BUOYBCNP	END	ID	BUOYBCNP.PFT	END_ID
21	BUOYBCNP	BUOYBCNP.PFT	ID	BUOYBCNP.NJT	FEATURE_ID
22	BUOYBCNP	BUOYBCNP.NJT	RAT_ID	NOTES.RAT	ID
23	BUOYBCNP	NOTES.RAT	ID	BUOYBCNP.NJT	RAT_ID
24	BUOYBCNP	BUOYBCNP.NJT	FEATURE_ID	BUOYBCNP.PFT	ID
25	LIGHTSP	LIGHTSP.PFT	END_ID	END	ID
26	LIGHTSP	END	ID	LIGHTSP.PFT	END_ID
27	LIGHTSP	LIGHTSP.PFT	ID	LIGHTSP.NJT	FEATURE_ID
28	LIGHTSP	LIGHTSP.NJT	RAT_ID	NOTES.RAT	ID
29	LIGHTSP	NOTES.RAT	ID	LIGHTSP.NJT	RAT_ID
30	LIGHTSP	LIGHTSP.NJT	FEATURE_ID	LIGHTSP.PFT	ID
31	MARKERP	MARKERP.PFT	END_ID	END	ID
32	MARKERP	END	ID	MARKERP.PFT	END_ID
33	MARKERP	MARKERP.PFT	ID	MARKERP.NJT	FEATURE_ID
34	MARKERP	MARKERP.NJT	RAT_ID	NOTES.RAT	ID
35	MARKERP	NOTES.RAT	ID	MARKERP.NJT	RAT_ID
36	MARKERP	MARKERP.NJT	FEATURE_ID	MARKERP.PFT	ID

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TABLE 26. Obstructions feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	BRIDGEA	BRIDGEA.AFT	FAC_ID	FAC	ID
2	BRIDGEA	FAC	ID	BRIDGEA.AFT	FAC_ID
3	BRIDGEA	BRIDGEA.AFT	ID	BRIDGEA.NJT	FEATURE_ID
4	BRIDGEA	BRIDGEA.NJT	RAT_ID	NOTES.RAT	ID
5	BRIDGEA	NOTES.RAT	ID	BRIDGEA.NJT	RAT_ID
6	BRIDGEA	BRIDGEA.NJT	FEATURE_ID	BRIDGEA.AFT	ID
7	BRIDGSPA	BRIDGSPA.AFT	FAC_ID	FAC	ID
8	BRIDGSPA	FAC	ID	BRIDGSPA.AFT	FAC_ID
9	BRIDGSPA	BRIDGSPA.AFT	ID	BRIDGSPA.NJT	FEATURE_ID
10	BRIDGSPA	BRIDGSPA.NJT	RAT_ID	NOTES.RAT	ID
11	BRIDGSPA	NOTES.RAT	ID	BRIDGSPA.NJT	RAT_ID
12	BRIDGSPA	BRIDGSPA.NJT	FEATURE_ID	BRIDGSPA.AFT	ID
13	DANGERA	DANGERA.AFT	FAC_ID	FAC	ID
14	DANGERA	FAC	ID	DANGERA.AFT	FAC_ID
15	DANGERA	DANGERA.AFT	ID	DANGERA.NJT	FEATURE_ID
16	DANGERA	DANGERA.NJT	RAT_ID	NOTES.RAT	ID
17	DANGERA	NOTES.RAT	ID	DANGERA.NJT	RAT_ID
18	DANGERA	DANGERA.NJT	FEATURE_ID	DANGERA.AFT	ID
19	FISHHATA	FISHHATA.AFT	FAC_ID	FAC	ID
20	FISHHATA	FAC	ID	FISHHATA.AFT	FAC_ID
21	FISHHATA	FISHHATA.AFT	ID	FISHHATA.NJT	FEATURE_ID
22	FISHHATA	FISHHATA.NJT	RAT_ID	NOTES.RAT	ID
23	FISHHATA	NOTES.RAT	ID	FISHHATA.NJT	RAT_ID
24	FISHHATA	FISHHATA.NJT	FEATURE_ID	FISHHATA.AFT	ID
25	HAZARDA	HAZARDA.AFT	FAC_ID	FAC	ID
26	HAZARDA	FAC	ID	HAZARDA.AFT	FAC_ID
27	HAZARDA	HAZARDA.AFT	ID	HAZARDA.NJT	FEATURE_ID
28	HAZARDA	HAZARDA.NJT	RAT_ID	NOTES.RAT	ID
29	HAZARDA	NOTES.RAT	ID	HAZARDA.NJT	RAT_ID
30	HAZARDA	HAZARDA.NJT	FEATURE_ID	HAZARDA.AFT	ID
31	LOADINGA	LOADINGA.AFT	FAC_ID	FAC	ID
32	LOADINGA	FAC	ID	LOADINGA.AFT	FAC_ID
33	LOADINGA	LOADINGA.AFT	ID	LOADINGA.NJT	FEATURE_ID
34	LOADINGA	LOADINGA.NJT	RAT_ID	NOTES.RAT	ID
35	LOADINGA	NOTES.RAT	ID	LOADINGA.NJT	RAT_ID
36	LOADINGA	LOADINGA.NJT	FEATURE_ID	LOADINGA.AFT	ID
37	OBSTRUCA	OBSTRUCA.AFT	FAC_ID	FAC	ID
38	OBSTRUCA	FAC	ID	OBSTRUCA.AFT	FAC_ID
39	OBSTRUCA	OBSTRUCA.AFT	ID	OBSTRUCA.NJT	FEATURE_ID
40	OBSTRUCA	OBSTRUCA.NJT	RAT_ID	NOTES.RAT	ID
41	OBSTRUCA	NOTES.RAT	ID	OBSTRUCA.NJT	RAT_ID
42	OBSTRUCA	OBSTRUCA.NJT	FEATURE_ID	OBSTRUCA.AFT	ID

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TABLE 26. Obstructions feature class schema table (FCS) - Continued

43	REEFA	REEFA.AFT	FAC_ID	FAC	ID
44	REEFA	FAC	ID	REEFA.AFT	FAC_ID
45	REEFA	REEFA.AFT	ID	REEFA.NJT	FEATURE_ID
46	REEFA	REEFA.NJT	RAT_ID	NOTES.RAT	ID
47	REEFA	NOTES.RAT	ID	REEFA.NJT	RAT_ID
48	REEFA	REEFA.NJT	FEATURE_ID	REEFA.AFT	ID
49	RUINSA	RUINSA.AFT	FAC_ID	FAC	ID
50	RUINSA	FAC	ID	RUINSA.AFT	FAC_ID
51	RUINSA	RUINSA.AFT	ID	RUINSA.NJT	FEATURE_ID
52	RUINSA	RUINSA.NJT	RAT_ID	NOTES.RAT	ID
53	RUINSA	NOTES.RAT	ID	RUINSA.NJT	RAT_ID
54	RUINSA	RUINSA.NJT	FEATURE_ID	RUINSA.AFT	ID
55	BRIDGEL	BRIDGEL.LFT	EDG_ID	EDG	ID
56	BRIDGEL	EDG	ID	BRIDGEL.LFT	EDG_ID
57	BRIDGEL	BRIDGEL.LFT	ID	BRIDGEL.NJT	FEATURE_ID
58	BRIDGEL	BRIDGEL.NJT	RAT_ID	NOTES.RAT	ID
59	BRIDGEL	NOTES.RAT	ID	BRIDGEL.NJT	RAT_ID
60	BRIDGEL	BRIDGEL.NJT	FEATURE_ID	BRIDGEL.LFT	ID
61	BRIDGSPL	BRIDGSPL.LFT	EDG_ID	EDG	ID
62	BRIDGSPL	EDG	ID	BRIDGSPL.LFT	EDG_ID
63	BRIDGSPL	BRIDGSPL.LFT	ID	BRIDGSPL.NJT	FEATURE_ID
64	BRIDGSPL	BRIDGSPL.NJT	RAT_ID	NOTES.RAT	ID
65	BRIDGSPL	NOTES.RAT	ID	BRIDGSPL.NJT	RAT_ID
66	BRIDGSPL	BRIDGSPL.NJT	FEATURE_ID	BRIDGSPL.LFT	ID
67	HAZARDL	HAZARDL.LFT	EDG_ID	EDG	ID
68	HAZARDL	EDG	ID	HAZARDL.LFT	EDG_ID
69	HAZARDL	HAZARDL.LFT	ID	HAZARDL.NJT	FEATURE_ID
70	HAZARDL	HAZARDL.NJT	RAT_ID	NOTES.RAT	ID
71	HAZARDL	NOTES.RAT	ID	HAZARDL.NJT	RAT_ID
72	HAZARDL	HAZARDL.NJT	FEATURE_ID	HAZARDL.LFT	ID
73	PIPELINL	PIPELINL.LFT	EDG_ID	EDG	ID
74	PIPELINL	EDG	ID	PIPELINL.LFT	EDG_ID
75	PIPELINL	PIPELINL.LFT	ID	PIPELINL.NJT	FEATURE_ID
76	PIPELINL	PIPELINL.NJT	RAT_ID	NOTES.RAT	ID
77	PIPELINL	NOTES.RAT	ID	PIPELINL.NJT	RAT_ID
78	PIPELINL	PIPELINL.NJT	FEATURE_ID	PIPELINL.LFT	ID
79	TUNNELL	TUNNELL.LFT	EDG_ID	EDG	ID
80	TUNNELL	EDG	ID	TUNNELL.LFT	EDG_ID
81	TUNNELL	TUNNELL.LFT	ID	TUNNELL.NJT	FEATURE_ID
82	TUNNELL	TUNNELL.NJT	RAT_ID	NOTES.RAT	ID
83	TUNNELL	NOTES.RAT	ID	TUNNELL.NJT	RAT_ID
84	TUNNELL	TUNNELL.NJT	FEATURE_ID	TUNNELL.LFT	ID
85	DANGERP	DANGERP.PFT	END_ID	END	ID

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TABLE 26. Obstructions feature class schema table (FCS) - Continued

86	DANGERP	END	ID	DANGERP.PFT	END_ID
87	DANGERP	DANGERP.PFT	ID	DANGERP.NJT	FEATURE_ID
88	DANGERP	DANGERP.NJT	RAT_ID	NOTES.RAT	ID
89	DANGERP	NOTES.RAT	ID	DANGERP.NJT	RAT_ID
90	DANGERP	DANGERP.NJT	FEATURE_ID	DANGERP.PFT	ID
91	HAZARDP	HAZARDP.PFT	END_ID	END	ID
92	HAZARDP	END	ID	HAZARDP.PFT	END_ID
93	HAZARDP	HAZARDP.PFT	ID	HAZARDP.NJT	FEATURE_ID
94	HAZARDP	HAZARDP.NJT	RAT_ID	NOTES.RAT	ID
95	HAZARDP	NOTES.RAT	ID	HAZARDP.NJT	RAT_ID
96	HAZARDP	HAZARDP.NJT	FEATURE_ID	HAZARDP.PFT	ID
97	LOADINGP	LOADINGP.PFT	END_ID	END	ID
98	LOADINGP	END	ID	LOADINGP.PFT	END_ID
99	LOADINGP	LOADINGP.PFT	ID	LOADINGP.NJT	FEATURE_ID
100	LOADINGP	LOADINGP.NJT	RAT_ID	NOTES.RAT	ID
101	LOADINGP	NOTES.RAT	ID	LOADINGP.NJT	RAT_ID
102	LOADINGP	LOADINGP.NJT	FEATURE_ID	LOADINGP.PFT	ID
103	OBSTRUCP	OBSTRUCP.PFT	END_ID	END	ID
104	OBSTRUCP	END	ID	OBSTRUCP.PFT	END_ID
105	OBSTRUCP	OBSTRUCP.PFT	ID	OBSTRUCP.NJT	FEATURE_ID
106	OBSTRUCP	OBSTRUCP.NJT	RAT_ID	NOTES.RAT	ID
107	OBSTRUCP	NOTES.RAT	ID	OBSTRUCP.NJT	RAT_ID
108	OBSTRUCP	OBSTRUCP.NJT	FEATURE_ID	OBSTRUCP.PFT	ID
109	RUINSP	RUINSP.PFT	END_ID	END	ID
110	RUINSP	END	ID	RUINSP.PFT	END_ID
111	RUINSP	RUINSP.PFT	ID	RUINSP.NJT	FEATURE_ID
112	RUINSP	RUINSP.NJT	RAT_ID	NOTES.RAT	ID
113	RUINSP	NOTES.RAT	ID	RUINSP.NJT	RAT_ID
114	RUINSP	RUINSP.NJT	FEATURE_ID	RUINSP.PFT	ID

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TABLE 27. Port Facilities feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	LANDINGA	LANDINGA.AFT	FAC_ID	FAC	ID
2	LANDINGA	FAC	ID	LANDINGA.AFT	FAC_ID
3	LANDINGA	LANDINGA.AFT	ID	LANDINGA.NJT	FEATURE_ID
4	LANDINGA	LANDINGA.NJT	RAT_ID	NOTES.RAT	ID
5	LANDINGA	NOTES.RAT	ID	LANDINGA.NJT	RAT_ID
6	LANDINGA	LANDINGA.NJT	FEATURE_ID	LANDINGA.AFT	ID
7	PIERA	PIERA.AFT	FAC_ID	FAC	ID
8	PIERA	FAC	ID	PIERA.AFT	FAC_ID
9	PIERA	PIERA.AFT	ID	PIERA.NJT	FEATURE_ID
10	PIERA	PIERA.NJT	RAT_ID	NOTES.RAT	ID
11	PIERA	NOTES.RAT	ID	PIERA.NJT	RAT_ID
12	PIERA	PIERA.NJT	FEATURE_ID	PIERA.AFT	ID
13	STRUCTRA	STRUCTRA.AFT	FAC_ID	FAC	ID
14	STRUCTRA	FAC	ID	STRUCTRA.AFT	FAC_ID
15	STRUCTRA	STRUCTRA.AFT	ID	STRUCTRA.NJT	FEATURE_ID
16	STRUCTRA	STRUCTRA.NJT	RAT_ID	NOTES.RAT	ID
17	STRUCTRA	NOTES.RAT	ID	STRUCTRA.NJT	RAT_ID
18	STRUCTRA	STRUCTRA.NJT	FEATURE_ID	STRUCTRA.AFT	ID
19	PIERL	PIERL.LFT	EDG_ID	EDG	ID
20	PIERL	EDG	ID	PIERL.LFT	EDG_ID
21	PIERL	PIERL.LFT	ID	PIERL.NJT	FEATURE_ID
22	PIERL	PIERL.NJT	RAT_ID	NOTES.RAT	ID
23	PIERL	NOTES.RAT	ID	PIERL.NJT	RAT_ID
24	PIERL	PIERL.NJT	FEATURE_ID	PIERL.LFT	ID
25	SEAWALLL	SEAWALLL.LFT	EDG_ID	EDG	ID
26	SEAWALLL	EDG	ID	SEAWALLL.LFT	EDG_ID
27	SEAWALLL	SEAWALLL.LFT	ID	SEAWALLL.NJT	FEATURE_ID
28	SEAWALLL	SEAWALLL.NJT	RAT_ID	NOTES.RAT	ID
29	SEAWALLL	NOTES.RAT	ID	SEAWALLL.NJT	RAT_ID
30	SEAWALLL	SEAWALLL.NJT	FEATURE_ID	SEAWALLL.LFT	ID
31	STRUCTRL	STRUCTRL.LFT	EDG_ID	EDG	ID
32	STRUCTRL	EDG	ID	STRUCTRL.LFT	EDG_ID
33	STRUCTRL	STRUCTRL.LFT	ID	STRUCTRL.NJT	FEATURE_ID
34	STRUCTRL	STRUCTRL.NJT	RAT_ID	NOTES.RAT	ID
35	STRUCTRL	NOTES.RAT	ID	STRUCTRL.NJT	RAT_ID
36	STRUCTRL	STRUCTRL.NJT	FEATURE_ID	STRUCTRL.LFT	ID
37	BERTHP	BERTHP.PFT	END_ID	END	ID
38	BERTHP	END	ID	BERTHP.PFT	END_ID
39	BERTHP	BERTHP.PFT	ID	BERTHP.NJT	FEATURE_ID
40	BERTHP	BERTHP.NJT	RAT_ID	NOTES.RAT	ID
41	BERTHP	NOTES.RAT	ID	BERTHP.NJT	RAT_ID
42	BERTHP	BERTHP.NJT	FEATURE_ID	BERTHP.PFT	ID

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TABLE 27. Port Facilities feature class schema table (FCS) - Continued

43	CALLINP	CALLINP.PFT	END_ID	END	ID
44	CALLINP	END	ID	CALLINP.PFT	END_ID
45	CALLINP	CALLINP.PFT	ID	CALLINP.NJT	FEATURE_ID
46	CALLINP	CALLINP.NJT	RAT_ID	NOTES.RAT	ID
47	CALLINP	NOTES.RAT	ID	CALLINP.NJT	RAT_ID
48	CALLINP	CALLINP.NJT	FEATURE_ID	CALLINP.PFT	ID
49	LANDINGP	LANDINGP.PFT	END_ID	END	ID
50	LANDINGP	END	ID	LANDINGP.PFT	END_ID
51	LANDINGP	LANDINGP.PFT	ID	LANDINGP.NJT	FEATURE_ID
52	LANDINGP	LANDINGP.NJT	RAT_ID	NOTES.RAT	ID
53	LANDINGP	NOTES.RAT	ID	LANDINGP.NJT	RAT_ID
54	LANDINGP	LANDINGP.NJT	FEATURE_ID	LANDINGP.PFT	ID
55	MOORINGP	MOORINGP.PFT	END_ID	END	ID
56	MOORINGP	END	ID	MOORINGP.PFT	END_ID
57	MOORINGP	MOORINGP.PFT	ID	MOORINGP.NJT	FEATURE_ID
58	MOORINGP	MOORINGP.NJT	RAT_ID	NOTES.RAT	ID
59	MOORINGP	NOTES.RAT	ID	MOORINGP.NJT	RAT_ID
60	MOORINGP	MOORINGP.NJT	FEATURE_ID	MOORINGP.PFT	ID

TABLE 28. Relief feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	RELLINE	RELLINE.LFT	EDG_ID	EDG	ID
2	RELLINE	EDG	ID	RELLINE.LFT	EDG_ID
3	RELLINE	RELLINE.LFT	ID	RELLINE.NJT	FEATURE_ID
4	RELLINE	RELLINE.NJT	RAT_ID	NOTES.RAT	ID
5	RELLINE	NOTES.RAT	ID	RELLINE.NJT	RAT_ID
6	RELLINE	RELLINE.NJT	FEATURE_ID	RELLINE.LFT	ID
7	RELPOINT	RELPOINT.PFT	END_ID	END	ID
8	RELPOINT	END	ID	RELPOINT.PFT	END_ID
9	RELPOINT	RELPOINT.PFT	ID	RELPOINT.NJT	FEATURE_ID
10	RELPOINT	RELPOINT.NJT	RAT_ID	NOTES.RAT	ID
11	RELPOINT	NOTES.RAT	ID	RELPOINT.NJT	RAT_ID
12	RELPOINT	RELPOINT.NJT	FEATURE_ID	RELPOINT.PFT	ID

TABLE 29. Data Quality feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	DQYAREA	DQYAREA.AFT	FAC_ID	FAC	ID
2	DQYAREA	FAC	ID	DQYAREA.AFT	FAC_ID
3	DQYAREA	DQYAREA.AFT	ID	DQYAREA.NJT	FEATURE_ID
4	DQYAREA	DQYAREA.NJT	RAT_ID	NOTES.RAT	ID
5	DQYAREA	NOTES.RAT	ID	DQYAREA.NJT	RAT_ID
6	DQYAREA	DQYAREA.NJT	FEATURE_ID	DQYAREA.AFT	ID

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TABLE 30. Tile Reference feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	TILEREf	TILEREf.AFT	FAC_ID	FAC	ID
2	TILEREf	FAC	ID	TILEREf.AFT	FAC_ID

TABLE 31. Library Reference feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	LIBREF	LIBREF.LFT	EDG_ID	EDG	ID
2	LIBREF	EDG	ID	LIBREF.LFT	EDG_ID

b. Feature index tables and feature class attribute tables. Each library coverage except TILEREf, LIBREF and LIB shall contain one feature class attribute table and as many feature index tables as there are primitive types in the coverage. These tables can be used to enhance software performance when multiple feature tables are assigned to a single primitive table (see MIL-STD-2407). Note that because the FCA includes a variable length field definition, it must have an associated variable length index (designated FCX). Schema for the tables are provided in TABLES 32 and 33, and examples of the tables are provided in TABLES 34 and 35.

TABLE 32. Schema for feature class attribute table (FCA)

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
FCLASS	Feature class name	T,8,U
TYPE	Feature type (P-point, L-line, A-area, T-text, C-complex)	T,1,N
DESCR	Description	T,*,N

TABLE 33. Schema for feature index table (FIT)

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
PRIM_ID	Primitive ID (foreign key to primitive table)	I,1,N
TILE_ID*	Tile reference ID	S,1,N
FC_ID	Feature class ID (foreign key to FCA)	I,1,N
FEATURE_ID	Feature ID (foreign key to feature table)	I,1,N

*present in tiled coverages only

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TABLE 34. Example FCA

ID	FCLASS	TYPE	DESCR
1	LANDINGA	A	Landing areas
2	PIERA	A	Pier area
3	STRUCTRA	A	Structure areas
4	PIERL	L	Pier lines

TABLE 35. Example FIT

ID	PRIM_ID	TILE_ID	FC_ID	FEATURE_ID
1	356	4	4	112
2	130	3	4	112
3	87	2	4	112

c. Notes related attribute tables and notes join tables. Each non-BROWSE library coverage (except TILEREF and LIBREF) shall contain one notes related attribute table. Additionally, there shall be one notes join table for each feature class in these coverages. These tables allow marginal notes to be joined to all features to which they apply. For those notes that apply to the entire chart in general, the note shall be linked to the feature representing that chart in the Data Quality coverage. The notes join table shall be sorted in ascending order by FEATURE_ID. These are "product specific" VPF tables, not specifically identified in MIL-STD-2407. These tables are present only in coverages/feature classes that contain marginal notes. Schema for the tables are provided in TABLES 36 and 37, and examples of the tables are provided in TABLES 38 and 39.

TABLE 36. Schema for notes related attribute table

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
TEXT	Feature specific marginal notes	T,*,N

TABLE 37. Schema for notes join table

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
FEATURE_ID	ID of row in feature table related to a note	I,1,N
RAT_ID	ID of row in RAT containing note related to feature	I,1,N

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TABLE 38. Example notes related attribute table

ID	TEXT
1	Mariners are cautioned that depths in Sandy Channel are subject to...
2	No vessel may enter Wallops Island Gunnery Range when red flags are...
3	Anchoring within 200 meters of the Chesapeake Bay Bridge-Tunnel is...

TABLE 39. Example notes join table

ID	FEATURE_ID	RAT_ID
1	2	3
2	4	3
3	5	1
4	7	2
5	10	1
6	17	3

d. Value description tables. An integer or character value description table (VDT) relates to associated feature class tables within a coverage. There is no more than one of each kind of VDT per coverage. The VDT acts as a look-up table for feature class attributes that contain coded values. Schema for the VDT is presented in TABLE 40, and an example integer VDT is presented in TABLE 41.

TABLE 40. Schema for value description table

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
TABLE	Name of the feature table	T,12,N
ATTRIBUTE	Column name	T,10,N
VALUE	Unique value of attribute	T,5,N / S,1,N*
DESCRIPTION	Description of attribute	T,50,N

*T,5,N for CHAR.VDT; S,1,N for INT.VDT

TABLE 41. Example value description table (INT.VDT)

ID	TABLE	ATTRIBUTE	VALUE	DESCRIPTION
1	RELLINE.LFT	HQC	001	Index
2	RELPOINT.PFT	ACC	001	Accurate
3	RELPOINT.PFT	ELA	001	Accurate
4	RELPOINT.PFT	ELA	002	Approximate

e. Area join tables and line join tables. The Limits coverage in each non-BROWSE library shall contain an area or line join table for each area or line feature class. These tables establish the one-to-many feature-to-primitive relationship necessary to define compound features in the Limits coverage. In the absence of these tables, no compound features would be allowed. Schema for an area join table is provided in TABLE 42, and an example is provided in TABLE 43. Line join tables are constructed similarly using *.LFT_ID and EDG_ID columns in place of the *.AFT_ID and FAC_ID columns.

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TABLE 42. Schema for area join table

Column name	Column name description	Column definition
ID	Row identifier	I,1,P
*.AFT_ID	Area feature table ID	I,1,N
TILE_ID	Tile containing feature	S,1,N
FAC_ID	Foreign key to face table	I,1,N

TABLE 43. Example area join table

ID	*.AFT_ID	TILE_ID	FAC_ID
1	1	2	1
2	1	2	2
3	2	2	2
4	2	2	3

3.8.7 BROWSE coverage contents. In addition to feature classes, the BROWSE coverages must contain a feature class schema table and may contain a character value description table, feature class attribute table, feature index tables (for each valid primitive) and associated indexes. The LIB coverage contains an area join table. Appendix section 50 shows the valid set of tables and indexes for each coverage.

a. BROWSE feature class schema table. The FCS tables for the BROWSE coverages are presented in TABLES 44-45A.

TABLE 44. Country/Coastline feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	COAAREA	COAAREA.AFT	FAC_ID	FAC	ID
2	COAAREA	FAC	ID	COAAREA.AFT	FAC_ID
3	COALINE	COALINE.LFT	EDG_ID	EDG	ID
4	COALINE	EDG	ID	COALINE.LFT	EDG_ID
5	COAPOINT	COAPOINT.PFT	END_ID	END	ID
6	COAPOINT	END	ID	COAPOINT.PFT	END_ID

TABLE 45. Library Boundaries feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	LIBAREA	LIBAREA.AFT	ID	LIBAREA.AJT	LIBAREA.AFT_ID
2	LIBAREA	LIBAREA.AJT	FAC_ID	FAC	ID
3	LIBAREA	FAC	ID	LIBAREA.AJT	FAC_ID
4	LIBAREA	LIBAREA.AJT	LIBAREA.AFT_ID	LIBAREA.AFT	ID
5	LIBLINE	LIBLINE.LFT	EDG_ID	EDG	ID
6	LIBLINE	EDG	ID	LIBLINE.LFT	EDG_ID

TABLE 45A. Library Reference feature class schema table (FCS)

ID	FEATURE_CLASS	TABLE1	TABLE1_KEY	TABLE2	TABLE2_KEY
1	LIBREF	LIBREF.LFT	EDG_ID	EDG	ID
2	LIBREF	EDG	ID	LIBREF.LFT	EDG_ID

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b. BROWSE area join table. LIBAREA.AJT establishes the one-to-many feature-to-primitive relationship necessary to define compound features, just as the join tables defined in paragraph 3.8.6.e. It is structured as in TABLES 42 and 43 except that there is no TILE_ID column, since the BROWSE library is untiled.

3.8.8 Feature class-level record layout. All tables in the feature class level are stored in the appropriate coverage directory; primitives are stored in tile sub-directories in tiled coverages. Feature classes in the DNC contain sets of features that have similar attributes and have the same primitive type (there are no complex features). Feature classes having the same name in different libraries are generally composed of different sets of features and attributes; see Appendix section 30.

a. Feature tables. The feature tables implemented at the feature class level are point feature tables, line feature tables, area feature tables and text feature tables. All feature tables have the same structure and contain a row identifier column and one or more attribute columns. The DNC contains a number of different feature classes, each of which is represented by a feature table and a corresponding primitive table. The number of columns in each feature table varies with the number of attributes associated with the feature class. The attributes, attribute values, and attribute value definitions for each feature class are described in more detail in the data dictionary (Appendix section A.3-A.4). TABLE 46 presents the schema for all feature tables; an example feature table is found in TABLE 6. Valid feature tables by coverage for each library are listed in TABLES 61-65.

TABLE 46. Schema for feature tables

Column name	Column name description	Column definition
ID	Feature table primary key	I,1,P
ATTRIBUTE<n>	nth attribute	Any
[primitive]_ID	primitive ID	I,1,N

3.8.9 Primitive (and associated) tables. Primitives are the basic building blocks of the DNC. The primitives contained in the DNC are entity node, connected node, edge, face, and text. Associated tables that support definition of the primitives include the ring table (RNG), face bounding rectangle table (FBR) and edge bounding rectangle table (EBR).

a. Entity node primitive table. The DNC entity node primitive table is composed of four columns: the row identifier (which is a primary key), containing face (which is a foreign key to a face table, when present), first edge, and a column containing the x,y coordinate values of the entity node. The FIRST_EDGE column is always null and is included to provide compatibility with the connected node primitive table. The exact representation of the column names in the entity node tables for the DNC is shown in TABLE 47. An example entity node primitive table is shown in TABLE 48.

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TABLE 47. Schema for entity node primitive table

Column name	Column name description	Column definition
ID	Row identifier and primary key	I,1,P
CONTAINING_FACE	Face containing the entity point	I,1,N
FIRST_EDGE	Null	X,1,N
COORDINATE	Entity node coordinates	C,1,N

TABLE 48. Example of entity node primitive table (END)

ID	CONTAINING_FACE	FIRST_EDGE	COORDINATE
1	1	X	-7.893952,43.674712
2	3	X	-7.893897,43.673613
3	1	X	-7.843663,43.668391
-	-	-	-
n	n	X	x.xxxxxxx,y.yyyyyy

b. Connected node primitive table. The connected node primitive table is identical to the entity node primitive table. The CONTAINING_FACE column is always null and is included to maintain compatibility with the entity node primitive table. The schema and an example connected node primitive table are shown in TABLES 49 and 50.

TABLE 49. Schema for connected node primitive table

Column name	Column name description	Column definition
ID	Row identifier and primary key	I,1,P
CONTAINING_FACE	Null	X,1,N
FIRST_EDGE	Edge key (foreign key to the edge tables)	I,1,N
COORDINATE	Connected node coordinates	C,1,N

TABLE 50. Example of connected node primitive table (CND)

ID	CONTAINING_FACE	FIRST_EDGE	COORDINATE
1	X	1	-7.893952,43.674712
2	X	2	-7.893897,43.673613
3	X	3	-7.843663,43.668391
-	-	-	-
n	X	n	x.xxxxxxx,y.yyyyyy

c. Edge primitive table. Edge primitive tables in the DNC contain up to eight columns, depending on the topology level. The column

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names in the edge tables for the DNC are shown in TABLE 51. An example of an edge primitive table is shown in TABLE 52.

TABLE 51. Schema for edge primitive table

Column name	Column name description	Column definition
ID	The row id primary key	I,1,P
START_NODE	Start node (foreign key to the node primitive)	I,1,N
END_NODE	End node (foreign key to the node primitive)	I,1,N
RIGHT_FACE	Right face (foreign key to the face primitive)	K,1,N
LEFT_FACE	Left face (foreign key to the face primitive)	K,1,N
RIGHT_EDGE	Right edge from end node (foreign key to the edge primitive)	K,1,N
LEFT_EDGE	Left edge from start node (foreign key to the edge primitive)	K,1,N
COORDINATES	Edge coordinates	C,*,N

TABLE 52. Example of edge primitive table (EDG)

ID	START_NODE	END_NODE	RIGHT_FACE	LEFT_FACE	RIGHT_EDGE	LEFT_EDGE	COORDINATES
1	1	2	6,3,9	1,8,4	29,196,14	26,12,18	-10.0,45.0; 9.9,45.0; x.xx,y.yy
2	3	5	5,2,12	8,2,15	30,198,12	76,52,48	-7.7,43.59; -7.8,43.60; -7.9,43.70; x.xx,y.yy
-	-	-	-	-	-	-	-
n	n	n	n	n	n	n	x.xx,y.yy

d. Face primitive table. Face primitive tables in the DNC contain two columns: a face row identifier (primary key) and a ring key column, which is a foreign key to a ring primitive table. The face table identifies all faces present in a coverage. It is through the topologic link to a ring table that the relationship between a face, its associated edges, and other surrounding faces is made. The exact representation of the column names in the face tables for the DNC is shown in TABLE 53. An example of a face primitive table is shown in TABLE 54.

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TABLE 53. Schema for face primitive table

Column name	Column name description	Column definition
ID	Face row id primary key	I,1,P
RING_PTR	Foreign key to ring table	I,1,N

TABLE 54. Example of face table (FAC)

ID	RING_PTR
1	1
2	13
3	14
-	-
n	n

e. Ring table. The ring table contains a ring row identifier column, face column, and edge column. The first entry in the ring table for a particular face contains the outer ring of that face. Subsequent rings for the same face indicate internal rings within the outer ring. The exact representation of the column names in the ring tables for the DNC is shown in TABLE 55. An example of a ring primitive table is shown in TABLE 56.

TABLE 55. Schema for ring table

Column name	Column name description	Column definition
ID	The row ID	I,1,P
FACE_ID	Foreign key to face table	I,1,N
START_EDGE	Foreign key to edge table	I,1,N

TABLE 56. Example of ring table (RNG)

ID	FACE_ID	START_EDGE
1	1	[Null]
2	2	47
3	2	51
-	-	-
n	n	n

f. Edge and face bounding rectangle table. A minimum bounding rectangle record is required for each record in an edge or face primitive table. The schema for both the edge bounding rectangle table (EBR) and the face bounding rectangle table (FBR) is identical, and is shown in TABLE 57. An example EBR or FBR table is shown in TABLE 58.

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TABLE 57. Schema for edge and face bounding rectangle table

Column name	Column name description	Column definition
ID	Row identifier and primary key	I,1,P
XMIN	Minimum X coordinate	F,1,N
YMIN	Minimum Y coordinate	F,1,N
XMAX	Maximum X coordinate	F,1,N
YMAX	Maximum Y coordinate	F,1,N

TABLE 58. Example of edge or face bounding rectangle table

ID	XMIN	YMIN	XMAX	YMAX
2	10.98	13.55	14.90	20.99
3	1.95	10.00	3.32	28.66
4	34.88	2.47	63.85	12.67

g. Text primitive table. The text primitive table is composed of three columns: row identifier, text string and shape line (TABLE 59). The string column contains the actual text to be displayed. The shape line column contains the coordinate string which defines how the text shall be placed. An example of a text primitive table is presented in TABLE 60.

TABLE 59. Schema for text primitive table

Column name	Column name description	Column definition
ID	Text primary key	I,1,P
STRING	Text string	T,*,N
SHAPE_LINE	The shape line	C,*,N

TABLE 60. Example of text primitive table (TXT)

ID	STRING	SHAPE_LINE
1	Gulfport	-5.811609,43.562006
2	Long Beach	-8.574136,43.435287
-	-	-
18	Pass Christian	-6.835582,40.736553, -6.825007,40.846355
n	n	n

3.8.10 Non-BROWSE primitive tables. The area, line, point, and text primitive tables implemented in the non-BROWSE library coverages are indicated in TABLES 61-64, along with the valid feature tables.

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TABLE 61. HARBOR feature and primitive tables by coverage

Thematic Layer	Coverage Name	Feature Tables	Primitive Tables	Appendix Section
Cultural Landmarks	CUL	BUILDINGA.AFT INDUSTA.AFT LANDMRKA.AFT PARKA.AFT TRANSA.AFT FENCEL.LFT PARKL.LFT POWERL.LFT RAILRDL.LFT TRANSL.LFT AEROP.PFT BUILDNGP.PFT BUILTUPP.PFT COMMP.PFT INDUSTP.PFT LANDMRKP.PFT POWERP.PFT	FAC EDG CND END	30.2.1
Earth Cover	ECR	ECRAREA.AFT FORESHOA.AFT ADMINL.LFT BOUNDRYL.LFT COASTL.LFT FORESHOL.LFT FORESHOP.PFT ISLANDP.PFT ECRTEXT.TXT	FAC EDG CND END TXT	30.2.2
Environment	ENV	ENVAREA.AFT CURRDIAP.PFT CURRFLP.PFT TIDEP.PFT	FAC EDG CND END	30.2.3
Hydrography	HYD	HYDAREA.AFT HYDLINE.LFT BOTCHARP.PFT SOUNDP.PFT	FAC EDG CND END	30.2.4
Inland Waterways	IWY	CANALA.AFT LAKEA.AFT MISCIWYA.AFT RIVERA.AFT AQUEDCTL.LFT BARRIERL.LFT CANALL.LFT DAML.LFT RIVERL.LFT	FAC EDG CND	30.2.5

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TABLE 61. HARBOR feature and primitive tables by coverage - Continued.

Land Cover	LCR	EMBANKA.AFT ORCHARDA.AFT SNOWICEA.AFT TREEA.AFT VOLCANOA.AFT LCRLINE.LFT SNOWICEP.PFT TREETP.PFT	FAC EDG CND END	A.3.2.6
Limits	LIM	LIMBNDYA.AFT MARITIMA.AFT ROUTEA.AFT SEPARTNA.AFT SWEPTA.AFT DISTL.LFT FERRYL.LFT LIMBNDYL.LFT MARITIML.LFT ROUTE.LFT SEPARTNL.LFT SWEPTL.LFT LIMBNDYP.PFT MARITIMP.PFT ROUTE.PFT SEPARTNP.PFT	FAC EDG CND END	A.3.2.7
Aids to Navigation	NAV	SECTORA.AFT LEADINGL.LFT LIGHTSL.LFT BUOYBCNP.PFT LIGHTSP.PFT MARKERP.PFT	FAC EDG CND END	A.4.2.8
Obstructions	OBS	BRIDGEA.AFT BRIDGSPA.AFT DANGERA.AFT FISHHATA.AFT HAZARDA.AFT LOADINGA.AFT OBSTRUCA.AFT REEFA.AFT RUINSA.AFT BRIDGEL.LFT BRIDGSPL.LFT HAZARDL.LFT PIPELINL.LFT TUNNELL.LFT DANGERP.PFT HAZARDP.PFT LOADINGP.PFT OBSTRUCP.PFT RUINSP.PFT	FAC EDG CND END	A.3.2.9

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TABLE 61. HARBOR feature and primitive tables by coverage - Continued

Port Facilities	POR	LANDINGA.AFT PIERA.AFT STRUCTRA.AFT PIERL.LFT SEAWALLL.LFT STRUCTRL.LFT BERTHP.PFT CALLINP.PFT LANDINGP.PFT MOORINGP.PFT	FAC EDG CND END	A.3.2.10
Relief	REL	RELLINE.LFT RELPOINT.PFT	EDG CND END	A.3.2.11
Data Quality	DQY	DQYAREA.AFT	FAC EDG CND	A.3.2.12
Tile Reference	TILeref	TILeref.AFT	FAC EDG CND	A.3.2.13
Library Reference	LIBREF	LIBREF.LFT	EDG CND	A.3.2.14

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TABLE 62. APPROACH feature and primitive tables by coverage

Thematic Layer	Coverage Name	Feature Tables	Primitive Tables	Appendix Section
Cultural Landmarks	CUL	BUILDINGA.AFT INDUSTA.AFT LANDMRKA.AFT TRANSA.AFT POWERL.LFT RAILRDL.LFT TRANSL.LFT AEROP.PFT BUILDNGP.PFT BUILTUPP.PFT COMMP.PFT INDUSTP.PFT LANDMRKP.PFT	FAC EDG CND END	A.3.2.1
Earth Cover	ECR	ECRAREA.AFT FORESHOA.AFT ADMINL.LFT BOUNDRYL.LFT COASTL.LFT FORESHOL.LFT FORESHOP.PFT ISLANDP.PFT ECRTEXT.TXT	FAC EDG CND END TXT	A.3.2.2
Environment	ENV	ENVAREA.AFT CURRDIAP.PFT CURRFLP.PFT TIDEP.PFT	FAC EDG CND END	A.3.2.3
Hydrography	HYD	HYDAREA.AFT HYDLINE.LFT BOTCHARP.PFT SOUNDP.PFT	FAC EDG CND END	A.3.2.4
Inland Waterways	IWY	CANALA.AFT LAKEA.AFT MISCIWYA.AFT RIVERA.AFT AQUEDCTL.LFT BARRIERL.LFT CANALL.LFT DAML.LFT RIVERL.LFT	FAC EDG CND	A.3.2.5
Land Cover	LCR	EMBANKA.AFT ORCHARDA.AFT SNOWICEA.AFT TREEA.AFT VOLCANOA.AFT LCRLINE.LFT SNOWICEP.PFT TREP.PFT	FAC EDG CND END	A.3.2.6

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TABLE 62. APPROACH feature and primitive tables by coverage - Continued

Limits	LIM	LIMBNDYA.AFT MARITIMA.AFT ROUTEA.AFT SEPARTNA.AFT SWEPTA.AFT DISTL.LFT FERRYL.LFT LIMBNDYL.LFT MARITIML.LFT ROUTE.LFT SEPARTNL.LFT SWEPTL.LFT LIMBNDYP.PFT MARITIMP.PFT ROUTE.PFT SEPARTNP.PFT	FAC EDG CND END	A.3.2.7
Aids to Navigation	NAV	SECTORA.AFT LEADINGL.LFT BUOYBCNP.PFT LIGHTSP.PFT MARKERP.PFT	FAC EDG CND END	A.3.2.8
Obstructions	OBS	DANGERA.AFT HAZARDA.AFT LOADINGA.AFT OBSTRUCA.AFT REEFA.AFT RUINSA.AFT BRIDGEL.LFT BRIDGSPL.LFT HAZARDL.LFT PIPELINL.LFT TUNNELL.LFT DANGERP.PFT HAZARDP.PFT LOADINGP.PFT OBSTRUCP.PFT RUINSP.PFT	FAC EDG CND END	A.3.2.9
Port Facilities	POR	PIERA.AFT STRUCTRA.AFT PIERL.LFT SEAWALLL.LFT STRUCTRL.LFT CALLINP.PFT MOORINGP.PFT	FAC EDG CND END	A.3.2.10
Relief	REL	RELLINE.LFT RELPOINT.PFT	EDG CND END	A.3.2.11
Data Quality	DQY	DQYAREA.AFT	FAC EDG CND	A.3.2.12
Tile Reference	TILEREF	TILEREF.AFT	FAC EDG CND	A.3.2.13
Library Reference	LIBREF	LIBREF.LFT	EDG CND	A.3.2.14

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TABLE 63. COASTAL feature and primitive tables by coverage

Thematic Layer	Coverage Name	Feature Tables	Primitive Tables	Appendix Section
Cultural Landmarks	CUL	BUILDINGA.AFT INDUSTA.AFT LANDMRKA.AFT TRANSA.AFT POWERL.LFT RAILRDL.LFT TRANSL.LFT AEROP.PFT BUILDNGP.PFT BUILTUPP.PFT COMMP.PFT INDUSTP.PFT LANDMRKP.PFT	FAC EDG CND END	A.3.2.1
Earth Cover	ECR	ECRAREA.AFT FORESHOA.AFT ADMINL.LFT BOUNDRYL.LFT COASTL.LFT FORESHOL.LFT FORESHOP.PFT ISLANDP.PFT ECRTEXT.TXT	FAC EDG CND END TXT	A.3.2.2
Environment	ENV	ENVAREA.AFT CURRDIAP.PFT CURRFLP.PFT TIDEP.PFT	FAC EDG CND END	A.3.2.3
Hydrography	HYD	HYDAREA.AFT HYDLINE.LFT BOTCHARP.PFT SOUNDP.PFT	FAC EDG CND END	A.3.2.4
Inland Waterways	IWY	CANALA.AFT LAKEA.AFT MISCIWYA.AFT RIVERA.AFT AQUEDCTL.LFT BARRIERL.LFT CANALL.LFT DAML.LFT RIVERL.LFT	FAC EDG CND	A.3.2.5
Land Cover	LCR	EMBANKA.AFT SNOWICEA.AFT TREEA.AFT VOLCANOA.AFT LCRLINE.LFT SNOWICEP.PFT TREEP.PFT	FAC EDG CND END	A.3.2.6

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TABLE 63. COASTAL feature and primitive tables by coverage - Continued

Limits	LIM	LIMBNDYA.AFT MARITIMA.AFT ROUTEA.AFT SEPARTNA.AFT SWEPTA.AFT DISTL.LFT FERRYL.LFT LIMBNDYL.LFT MARITIML.LFT ROUTE.LFT SEPARTNL.LFT SWEPTL.LFT LIMBNDYP.PFT MARITIMP.PFT ROUTE.PFT SEPARTNP.PFT	FAC EDG CND END	A.3.2.7
Aids to Navigation	NAV	SECTORA.AFT LEADINGL.LFT BUOYBCNP.PFT LIGHTSP.PFT	FAC EDG CND END	A.3.2.8
Obstructions	OBS	DANGERA.AFT HAZARDA.AFT LOADINGA.AFT OBSTRUCA.AFT REEFA.AFT BRIDGEL.LFT HAZARDL.LFT PIPELINL.LFT TUNNELL.LFT DANGERP.PFT HAZARDP.PFT LOADINGP.PFT OBSTRUCP.PFT	FAC EDG CND END	A.3.2.9
Port Facilities	POR	PIERA.AFT STRUCTRA.AFT PIERL.LFT SEAWALLL.LFT STRUCTRL.LFT CALLINP.PFT	FAC EDG CND END	A.3.2.10
Relief	REL	RELLINE.LFT RELPOINT.PFT	EDG CND END	A.3.2.11
Data Quality	DQY	DQYAREA.AFT	FAC EDG CND	A.3.2.12
Tile Reference	TILEREFF	TILEREFF.AFT	FAC EDG CND	A.3.2.13
Library Reference	LIBREF	LIBREF.LFT	EDG CND	A.3.2.14

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TABLE 64. GENERAL feature and primitive tables by coverage

Thematic Layer	Coverage Name	Feature Tables	Primitive Tables	Appendix Section
Cultural Landmarks	CUL	LANDMRKA.AFT AEROP.PFT BUILTUPP.PFT COMMP.PFT	FAC EDG CND END	A.3.2.1
Earth Cover	ECR	ECRAREA.AFT FORESHOA.AFT ADMINL.LFT BOUNDRYL.LFT COASTL.LFT FORESHOL.LFT FORESHOP.PFT ISLANDP.PFT ECRTEXT.TXT	FAC EDG CND END TXT	A.3.2.2
Environment	ENV	ENVAREA.AFT	FAC EDG CND	A.3.2.3
Hydrography	HYD	HYDAREA.AFT HYDLINE.LFT BOTCHARP.PFT SOUNDP.PFT	FAC EDG CND END	A.3.2.4
Inland Waterways	IWY	CANALA.AFT LAKEA.AFT RIVERA.AFT CANALL.LFT DAML.LFT RIVERL.LFT	FAC EDG CND	A.3.2.5
Land Cover	LCR	SNOWICEA.AFT VOLCANOA.AFT	FAC EDG CND	A.3.2.6
Limits	LIM	LIMBNDYA.AFT MARITIMA.AFT ROUTEA.AFT SEPARTNA.AFT LIMBNDYL.LFT MARITIML.LFT ROUTE.LFT SEPARTNL.LFT LIMBNDYP.PFT MARITIMP.PFT ROUTE.PFT SEPARTNP.PFT	FAC EDG CND END	A.3.2.7
Aids to Navigation	NAV	BUOYBCNP.PFT LIGHTSP.PFT	END	A.3.2.8

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TABLE 64. GENERAL feature and primitive tables by coverage - Continued

Obstructions	OBS	DANGERA.AFT HAZARDA.AFT LOADINGA.AFT OBSTRUCA.AFT REEFA.AFT BRIDGEL.LFT HAZARDL.LFT PIPELINL.LFT TUNNELL.LFT DANGERP.PFT HAZARDP.PFT LOADINGP.PFT OBSTRUCP.PFT	FAC EDG CND END	A.3.2.9
Port Facilities	POR	SEAWALLL.LFT STRUCTRL.LFT	EDG CND	A.3.2.10
Relief	REL	RELPOINT.PFT	END	A.3.2.11
Data Quality	DQY	DQYAREA.AFT	FAC EDG CND	A.3.2.12
Tile Reference	TILeref	TILeref.AFT	FAC EDG CND	A.3.2.13
Library Reference	LIBREF	LIBREF.LFT	EDG CND	A.3.2.14

3.8.11 BROWSE primitive tables. The area, line, point and text primitive tables in the BROWSE library coverages are indicated in TABLE 65, along with the valid feature tables.

TABLE 65. BROWSE feature and primitive tables by coverage

Thematic layer	Coverage name	Feature table(s)	Primitive table(s)	Appendix section
Coastlines /Countries	COA	COAAREA.AFT COALINE.LFT COAPOINT.PFT	FAC EDG CND END	A.4.2.1
Library Boundaries	LIB	LIBAREA.AFT LIBLINE.LFT	FAC EDG CND	A.4.2.2
Library Reference	LIBREF	LIBREF.LFT	EDG CND	A.4.2.3

3.9 Cartographic considerations for DNC database.

3.9.1. Source. NIMA's series of nautical charts of varying scales will provide the fundamental source data set.

3.9.2. Compilation scale. The compilation scale will vary based on the corresponding Harbor, Approach and Coastal and General charts used in the conversion to the DNC.

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3.9.3. Minimum polygon size. The minimum polygon size depicted in the DNC product will conform to the criteria set forward in the Military Specifications for Harbor, Approach, and Coastal Charts (HAC), 31 August 1990.

3.9.4. Enhancement rules. Where contours are broken by a sounding value on the depth layer, the contour shall be connected regardless of the size of the gap.

3.10 Source map projections. The majority of the hardcopy map/charts were produced on the Mercator projection.

3.11 DNC projection. Regardless of the original map projection, all data captured from the hardcopy map/chart is converted to decimal degrees for the DNC.

3.12 Digital marginalia. Digital marginalia refers to the information that originally appeared in notes, tables, and graphs on the borders of the hardcopy map/chart sheets. For the DNC, this information is included in the Notes related attribute table in each coverage, joined to the feature(s) to which the information applies (see 3.8.6.c).

3.13 Symbology. Display symbology for use with the DNC is under development by NIMA and is defined in DRAFT MIL-PRF-89045, Mapping, Charting, and Geodesy Symbols for Digital Display.

3.14 Security.

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

3.14.2 Security classification of product. CD-ROM discs containing the DNC data are UNCLASSIFIED.

3.15 CD ROM labeling and packaging. CD ROM labeling, and labeling on the cardboard sleeve, or jewel case liner/information booklet, as applicable, shall be in accordance with the contract. Method of packaging (cardboard sleeve or jewel case) shall be as specified in the contract (see 5.1). References to figures below are applicable to DNCs available for unlimited distribution/public sale.

3.15.1 Product specific items. The following is a list of "variable by product" items shown on CD-ROM labeling and packaging, and the relevant information specific to the DNC.

- a. Product Description: Digital Nautical Chart (DNC™)
- b. DNC CDs shall show the VPF logo.
- c. Series: DNCD
- d. NIMA reference number format is DNCXXnnn00, where nnn represents the three digit DNC CD number.
- e. Copyright note: (year of production inserted)

©Copyright (add year) by the U.S. Government. No copyright claimed under title 17, U.S.C. Intellectual property rights on data may be subject to claims by other nations. Users intending to exploit and distribute data further should contact the appropriate U.S. or non-

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U.S. hydrographic authority with respect to such claims and U.S. copyright.

- f. NIMA Reference Number: First five digits are "DNCDX" and last three digits are three digit CD number, i.e., "016".

3.15.2 Volume identifier. This should be identical to the eleven characters of the Volume Identifier (first eleven characters of the ISO 9660 Volume Identifier (32 characters available)) written on the header of the disk (see MIL-HDBK-9660).

3.15.3. Information booklet. Information booklets shall be provided for each DNC CD. Labeling of the DNC information booklet covers shall be in accordance with the contract. When used in conjunction with the jewel case, the front cover of the information booklet also serves as the front cover of the case.

3.15.3.1 Introductory statement All DNC information booklets show the following standard introductory statement.

Introduction

The Digital Nautical Chart (DNC) provides worldwide databases of nautical information in Vector Product Format (VPF) contained on CD-ROM disks. The data content and coverage is intended to closely replicate NIMA's Harbor, Approach, Coastal, and General chart series. DNCs consist of data partitioned into HARBOR, APPROACH, COASTAL, and GENERAL libraries based upon the scale of the source charts. In addition, the BROWSE library provides a global overview of the DNC coverage. The product is supported by the NIMA Notice to Mariners (NTM) with information on the NAVINFONET. For access to this information, a DNC customer identification number is required. Send request for your customer ID number to Headquarters, NIMA, ATTN: ATCN.

This DNC was produced under DoD Specification MIL-PRF-89023, 19 December 1997.

3.15.3.2 Source Information Source information (library, charts, NTM number) shall be shown as illustrated in the following example:

Note: This DNC contains libraries A1509989 with U.S. 26328 plans A and B as sources, corrected through Notice to Mariners 36/94; COA15 with U.S. 26282, 26290, 26300 plan A, 26320 as sources, corrected through Notice to Mariners 36/94; GEN015 with 11005, 28004, 28300 as sources, corrected through Notice to Mariners 47/94.

3.15.3.3 User's Note All DNC information booklets show the following standard user's note.

USERS WITH QUESTIONS, CORRECTIONS, ADDITIONS, OR COMMENTS ABOUT THIS OR OTHER NIMA PRODUCTS OR SERVICES, PLEASE TELEPHONE THE NIMA CUSTOMER HELP DESK: 1-800-455-0899, COMMERCIAL 314-260-1236, OR DSN 490-1236, OR WRITE: DIRECTOR, NATIONAL IMAGERY AND MAPPING AGENCY, ATTN: SEII D-86, 4600 SANGAMORE ROAD, BETHESDA, MD 20816-5003.

3.15.3.4 Jewel case liner (back cover of case). Labeling of the DNC jewel case liner shall be in accordance with the contract.

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3.15.4 Cardboard sleeve mailer. If a cardboard mailing sleeve is specified in the contract, it shall be labeled in accordance with the contract.

4. VERIFICATION

4.1 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. When a first article inspection is required (see 3.1), it shall be examined as specified in 4.3.1, and tested as specified in 4.3.2.

4.3 Conformance inspection. Quality conformance inspection shall include the examination of 4.3.1 and the tests of 4.3.2.

4.3.1 Examination. The database shall be examined for compliance with the requirements specified in section 3. Unless a waiver has been granted non compliance with any of the specified requirements shall constitute cause for rejection.

4.3.2 Tests. A CD-ROM sample determined by the contracting officer shall be tested for compliance in the following areas:

- a. Data verification on a byte-for-byte basis of disc master from original (raw, prepared, or mastered) data.
- b. Data verification on a sector-by-sector basis of each disc master or son against a pressed surrogate using error-correction coding.
- c. ISO 9660 and ISO 10149 compliance.

4.4 Government furnished material. The contractor shall not duplicate, copy, or otherwise reproduce the MC&G material for purposes other than those necessary for performance of the contract.

4.5 Government property surplus. At the completion of performance of the contract, the contractor, as directed by the contracting officer, shall either destroy or return to the Government all government-furnished MC&G material not consumed in the performance of the contract.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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(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 DNC database is intended to support electronic chart display systems. It can be used as a background display for other geographic data. The DNC is intended for use by military and civilian branches of the government. At this time the DNC is a military-unique product because it is specifically intended to support the U. S. Navy requirements for digital navigation data to support the Navigation Sensor System Interface (NAVSSI). At this time DNC has not been approved for general navigational use by the International Maritime Organization (IMO). In addition, any material with foreign intellectual property interests used as source material for the DNC has not been authorized for release to the private sector.

6.1.2 Analysis limitation. Analytical use of DNC data at a scale greater than that of the original cartographic source nautical chart is not recommended.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).
- c. Packaging requirements (see 5.1).

6.3 Supersession. This section is not applicable to this specification.

6.4 Definitions. See MIL-STD-2407 section 3 for definitions of terms used in this document.

6.4.1 Acronyms.

ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
C3I	Command, Control, Communications, and Intelligence
CD-ROM	Compact Disc-Read Only Memory
CDRL	Contract Data Requirements List
CMAS	Circular Map Accuracy Standard
DNC	Digital Nautical Chart
DID	Data Item Description
DIGEST	Digital Geographic Exchange Standards
DoD	Department of Defense
DODISS	Department of Defense Index of Specifications and Standards
DOS	Disc Operating System
DPS	Digital Production System
DX90	Proposed IHO Standard for Digital Geographic Data Exchange
ECMA	European Computer Manufacturers Association
ESRI	Environmental Systems Research Institute, Inc.
FACC	Feature and Attribute Coding Catalog

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GEOREF	World Geographic Reference System
HAC	Harbor, Approach and Coastal charts
IEEE	Institute of Electrical and Electronics Engineers
IFACC	International Feature Attribute Code Catalog
IHO	International Hydrographic Organization
ISO	International Organization for Standardization
LMAS	Linear Map Accuracy Standard
MC&G	Mapping, Charting, and Geodesy
MCGT	Mapping, Charting and Geodesy Technology
MSL	Mean Sea Level
NIMA	National Imagery and Mapping Agency
NMAS	National Map Accuracy Standard
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Survey
PC	Personal Computer
QA	Quality Assurance
QC	Quality Control
QSTAGs	Quadripartite Standardization Agreements
RTCM	Radio Technical Commission for Maritime Services
SOP	Standard Operating Procedure
SP-52	IHO Publication SP-52, Provisional Specifications for Chart Content and Display Aspects of ECDIS
SOW	Statement of Work
STANAGs	NATO International Standardization Agreements
VPF	Vector Product Format
WGS	World Geodetic System

6.5 Subject term (key word) listing.

DNC
 FACC
 GEOREF
 GIS
 HAC
 hydrographic survey
 thematic layer
 WGS84

6.6 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.

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6.6.1 NATO Standardization Agreements (STANAGs)

STANAG 2211, "Geodetic Datums, Spheroids, Grids, and Cell References".

6.7 NIMA customer help desk. For questions concerning this or other NIMA products, services, or specifications, please telephone the NIMA Customer Help Desk at 1-800-455-0899, Commercial 314-260-1236, or DSN 490-1236.

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Appendix A

HARBOR, APPROACH, COASTAL and GENERAL DATA DICTIONARY

A.1. SCOPE.

A.1.1 Scope. This appendix is a mandatory part of the specification. The information contained herein is intended for compliance.

A.2. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

A.3. HARBOR, APPROACH, COASTAL and GENERAL DATA DICTIONARY

This data dictionary contains a description of the HARBOR, APPROACH, COASTAL and GENERAL (non-BROWSE) libraries. Included are the following: the name and description of each attribute, the attribute values (presented in value description tables) and feature classes valid for each cover age in each library. All values are taken from the specifications for the Digital Geographic Information Exchange Standard (DIGEST) Feature and Attribute Coding Catalog (FACC) Edition 1.1 (October 1992). Each row of every table is preceded by a non-VPF column containing codes identifying to which library(ies) the row applies. The codes are: H=HARBOR, A=APPROACH, C=COASTAL and G=GENERAL. An absence of codes (for example, in sections 30.2.12, 30.2.13 and 30.2.14) is equivalent to "HACG." The data dictionary for the BROWSE library is presented in Section 40 of this appendix.

A.3.1 Data dictionary organization. The coverages presented in the non-BROWSE libraries are Cultural Landmarks (CUL), Earth Cover (ECR), Environment (ENV), Hydrography (HYD), Inland Waterways (IWY), Land Cover (LCR), Limits (LIM), Aids to Navigation (NAV), Obstructions (OBS), Port Facilities (POR), Relief (REL), Data Quality (DQY), Tile Reference (TILEREF) and Library Reference (LIBREF). A brief description is provided for each coverage. The coverage description is followed by character value description tables (CHAR.VDT), feature code and attribute definitions, integer value description tables (INT.VDT), and feature table headers followed by supplemental tables that provide specific guidance for assigning the attribute values valid for that feature table. These supplemental tables are not VPF tables, but they provide detailed information necessary for correct feature attribution, including default values, allowable null and unknown values, and dependencies based on feature codes and other attribute values not found in any of the VPF tables. Of the VPF tables included in the data dictionary, the feature table headers provide the field definitions (field type, byte length and key type) for each of the attributes, along with any VDT or thematic index associations; the VDTs are look-up tables to associate the FACC codes used in the feature tables with their meanings. The textual feature and attribute definitions are taken directly from FACC, and are included as a convenience.

A.3.1.1 "Null" and "Unknown" attribute values. In cases where a feature has associated attributes whose values are null or unknown, a standard convention will be used to code the values. Null values will be assigned per VPF rules (see MIL-STD-2407, Table LVI):

<u>field type</u>	<u>null value</u>
S	bit pattern 10000000 00000000
I	bit pattern 10000000 00000000 00000000 00000000
F	NaN
T,n	"N/A"
D	blank-filled (20 characters)

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The supplemental tables following each feature table in this appendix contain specific guidance in coding unknown values for each attribute (coded and uncoded). Unknown values for coded attributes are only valid when they appear in the value description tables. Null attribute values will not be captured in the value description tables.

In this context, the meaning of "null" is generally equivalent to "not applicable." Within the DNC, null values will be used for attributes contained in a coverage but not valid for a particular feature, or attributes that are valid for a feature but are not applicable given the particular set of values assigned to other attributes of that feature. For example, the attributes that pertain to light characteristics (COL, EOL, LVN, MLR, PER) would all contain null values for a buoy (F_CODE = BC020) that is not lighted. The supplemental tables following each feature table in this appendix contain specific guidance on coding null values for each attribute (coded and uncoded).

A.3.1.2 Units of measure. Unless otherwise specified in the attribute definition, the values for all attributes that measure some form of distance (e.g., height, depth, width, etc.) will be in meters, except for LVN, MLR, ORC, and OR2 which are measured in nautical miles.

A.3.2 Non-BROWSE library coverages.

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A.3.2.1 Cultural Landmarks coverage This coverage contains primarily land features of human origin that are significant to marine navigation.

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CUL

a. Cultural Landmarks coverage glossary.

AREA FEATURES

AA010 Mine/Quarry An excavation made in the earth for the purpose of extracting natural deposits.

AB000 Disposal Site /Waste Pile An area for the collecting/depositing of refuse or discarded material.

AB010 Wrecking Yard /Scrap Yard An area or site engaged in the wrecking, dismantling, storage, or resale of discarded products.

AC000 Processing Plant /Treatment Plant A site used for changing or refining a particular material.

PRO Product Category Principal material involved or product resulting from activity at site.

AC030 Settling Basin /Sludge Pond A site where solid matter is precipitated from a liquid by evaporating or settling.

AD010 Power Plant The building(s) and equipment necessary for the generation of electric power.

AD030 Substation /Transformer Yard A facility, along a power line route, in which electric current is transformed and/or distributed.

AH010 Bastion/Rampart/Fortification A defensive wall built to defend a fort or other defensive work and sometimes equipped with guns.

AH050 Fortification A facility constructed for the military defense of a site.
NAM Name Any identifier or code.

AK040 Athletic Field An open area where sporting events, exercises, or games occur.
NAM Name Any identifier or code.

AK090 Fairgrounds An area where permanent facilities exist to hold outdoor fairs, circuses or exhibitions.
NAM Name Any identifier or code.

AK100 Golf Course An area of land laid out for the game of golf.
NAM Name Any identifier or code.

AK120 Park An area used for recreational or ornamental purposes.
NAM Name Any identifier or code.

AK160 Stadium/Amphitheater An arena for holding and viewing events.
NAM Name Any identifier or code.

AK180 Zoo/Safari Park An area with a collection of live animals usually for public display.
NAM Name Any identifier or code.

AL005 Animal Sanctuary A natural area set aside for the preservation and protection of wildlife.

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AL015 Building A relatively permanent structure, roofed and usually walled and designed for some particular use.

BFC Building Function Category Type or purpose of the building.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].

HWT House of Worship Type Type of house of worship used.

NAM Name Any identifier or code.

AL020 Built-Up Area An area containing a concentration of buildings and other structures.

AL030 Cemetery An area of land for burying the dead.

AM010 Depot (Storage) An area used for the storage of products or supplies.

AM030 Grain Elevator A tall structure, equipped for loading, unloading, processing and storing grain.

AM040 Mineral Pile A man-made heap of mining or quarrying products excluding waste materials.

PRO Product Category Principal material involved or product resulting from activity at site.

AM070 Tank A container used for the storage of liquids or gases.

PRO Product Category Principal material involved or product resulting from activity at site.

ZV2 Highest Z-Value Elevation above a given datum to the highest portion of the feature.

AN060 RR Yard/Marshalling Yard A system of tracks within defined limits, and associated features, provided for loading/unloading and assembling trains.

EXS Existence Category State or condition of the feature.

AQ116 Pumping Station A facility to move solids, liquids or gases by means of pressure or suction.

AT020 Early Warning Radar Site An installation utilizing long range radar to detect approaching aircraft or missiles.

GB005 Airport/Airfield A defined area of land or water (including any buildings, installations and equipment) prepared for the accommodation, landing and take-off of aircraft. The terms aerodrome and airfield are considered to be synonymous with the term airport.

APT Airfield Type Unique airfield type.

EXS Existence Category State or condition of the feature.

NAM Name Any identifier or code.

GB055 Runway A defined area, usually rectangular, used for the conventional landing and take-off of aircraft.

EXS Existence Category State or condition of the feature.

LINE FEATURES

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AK020 Amusement Park Attraction A large structure located in an Amusement Park.

SSC Structure Shape Category Geometric form, appearance, or configuration of the feature.

AK130 Race Track A course for racing.

NAM Name Any identifier or code.

AL070 Fence A man-made barrier of relatively light structure used as an enclosure or boundary.

AL260 Wall A solid man-made barrier of heavy material used as an enclosure or boundary or for protection.

AN010 Railroad A rail or set of parallel rails on which a train or tram runs.

EXS Existence Category State or condition of the feature.

LOC Location Category Status of feature relative to surrounding area or water.

RRC Railroad Categories The type of railroad system used to support various transportation uses.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

AP020 Interchange A connection designed to provide traffic access from one road to another.

EXS Existence Category State or condition of the feature.

AP030 Road An open way maintained for vehicular use.

EXS Existence Category State or condition of the feature.

AQ010 Aerial Cableway Lines /Ski Lift Lines Cables which are strung between elevated supports as part of a conveyor system on which cars, buckets, or other carrier units are suspended.

OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

AT030 Power Transmission Line A system of above ground wires, including their supports, which transmit electricity over distance.

OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

AT060 Telephone Line /Telegraph Line A system of above ground wires which transmit electrical signals over distance.

OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

GB055 Runway A defined area, usually rectangular, used for the conventional landing and take-off of aircraft.

EXS Existence Category State or condition of the feature.

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POINT FEATURES

AA010 Mine /Quarry An excavation made in the earth for the purpose of extracting natural deposits.

ACC Accuracy Category Accuracy of geographic position.

AD030 Substation /Transformer Yard A facility, along a power line route, in which electric current is transformed and/or distributed.

ACC Accuracy Category Accuracy of geographic position.

AF010 Chimney /Smokestack A vertical structure containing a passage or flue for discharging smoke and gases of combustion.

ACC Accuracy Category Accuracy of geographic position.

ZV2 Highest Z-Value Elevation above a given datum to the highest portion of the feature.

AF030 Cooling Tower A tower used to cool liquids.

ACC Accuracy Category Accuracy of geographic position.

AF040 Crane A machine for lifting, shifting, and lowering objects or materials by means of a swinging boom or with the lifting apparatus supported on an overhead track.

ACC Accuracy Category Accuracy of geographic position.

TUC Transportation Use Category Identifies the primary user, function, or authority of the transportation system.

USE Usage Use.

AF070 Flare Pipe An open ended pipe at which waste gases are burned.

ACC Accuracy Category Accuracy of geographic position.

LOC Location Category Status of the feature relative to surrounding area or water.

AH010 Bastion/Rampart/Fortification A defensive wall built to defend a fort or other defensive work and sometimes equipped with guns.

ACC Accuracy Category Accuracy of geographic position.

AH050 Fortification A facility constructed for the military defense of a site.

ACC Accuracy Category Accuracy of geographic position.

NAM Name Any identifier or code.

AJ050 Windmill A wind-driven system of vanes attached to a towerlike structure (excluding wind-generated power plants).

ACC Accuracy Category Accuracy of geographic position.

PRO Product Category Principal material involved or product resulting from activity at site.

AK020 Amusement Park Attraction A large structure located in an Amusement Park.

ACC Accuracy Category Accuracy of geographic position.

HGT Height Above Surface Level Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

SSC Structure Shape Category Geometric form, appearance, or configuration of the feature.

AK080 Drive-In Theater Screen A large outdoor screen for showing motion pictures.

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- ACC Accuracy Category** Accuracy of geographic position.
- AK160 Stadium /Amphitheater** An arena for holding and viewing events.
ACC Accuracy Category Accuracy of geographic position.
- AL015 Building** A relatively permanent structure, roofed and usually walled and designed for some particular use.
ACC Accuracy Category Accuracy of geographic position.
BFC Building Function Category Type or purpose of the building.
COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].
EXS Existence Category State or condition of the feature.
HWT House of Worship Type Type of house of worship used.
NAM Name Any identifier or code.
SST Sound Signal Type Type of audible signal.
STA Station Type Category (Maritime) Equipment or activity at site.
- AL018 Building Superstructure Addition** A supplemental portion of a building which rises from the roof but is not considered to be part of the general roof line.
ACC Accuracy Category Accuracy of geographic position.
BFC Building Function Category Type or purpose of the building.
HWT House of Worship Type Type of house of worship used.
SSR Structure Shape of Roof Roof shape.
- AL020 Built-Up Area** An area containing a concentration of buildings and other structures.
ACC Accuracy Category Accuracy of geographic position.
NAM Name Any identifier or code.
- AL025 Cairn** A heap of stones piled up as a memorial or a landmark.
ACC Accuracy Category Accuracy of geographic position.
- AL073 Flagstaff /Flagpole** A staff or pole on which a flag is raised.
ACC Accuracy Category Accuracy of geographic position.
- AL130 Monument** A structure erected or maintained as a memorial to a person or event.
ACC Accuracy Category Accuracy of geographic position.
NAM Name Any identifier or code.
SSC Structure Shape Category Geometric form, appearance, or configuration of the feature.
- AL240 Tower (Non-Communication)** A relatively tall structure which may be used for observation, support, or storage, etc.
ACC Accuracy Category Accuracy of geographic position.
COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].
- AM020 Grain Bin /Silo** An enclosed container, used for storing grain or fodder.
ACC Accuracy Category Accuracy of geographic position.
- AM030 Grain Elevator** A tall structure, equipped for loading, unloading, processing and storing grain.

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- ACC Accuracy Category** Accuracy of geographic position.
- AM070 Tank** A container used for the storage of liquids or gases.
ACC Accuracy Category Accuracy of geographic position.
COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].
ZV2 Highest Z-Value Elevation above a given datum to the highest portion of the feature.
- AM080 Water Tower** An elevated container and its supporting structure used to hold water.
ACC Accuracy Category Accuracy of geographic position.
- AQ020 Aerial Cableway Pylon /Ski Pylon** A tower supporting steel cables which convey cars, buckets, or other suspended carrier units.
ACC Accuracy Category Accuracy of geographic position.
- AQ060 Control Tower** A tower-like structure that houses the persons and equipment used to control the flow of air, rail, or marine traffic.
ACC Accuracy Category Accuracy of geographic position.
TUC Transportation Use Category Identifies the primary user, function, or authority of the transportation system.
- AQ080 Ferry Site** The point where a ferry takes on or discharges its load.
ACC Accuracy Category Accuracy of geographic position.
TUC Transportation Use Category Identifies the primary user, function, or authority of the transportation system.
- AQ110 Mooring Mast** A tower-like structure used to secure an airship.
ACC Accuracy Category Accuracy of geographic position.
- AQ116 Pumping Station** A facility to move solids, liquids or gases by means of pressure or suction.
ACC Accuracy Category Accuracy of geographic position.
- AT010 Disk /Dish** A concave object used for transmitting or receiving electronic signals.
ACC Accuracy Category Accuracy of geographic position.
- AT040 Power Transmission Pylon /Power Transmission Pole** A pylon or pole used to support a power transmission line.
ACC Accuracy Category Accuracy of geographic position.
- AT045 Radar Transmitter** A device for transmitting and receiving radar emissions.
ACC Accuracy Category Accuracy of geographic position.
SSC Structure Shape Category Geometric form, appearance, or configuration of the feature.
- AT050 Communication Building** A building in which communication signals are processed or controlled.
ACC Accuracy Category Accuracy of geographic position.
NST Navigation System Types Type of equipment or system used in electronic navigation.

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AT080 Communication Tower A relatively tall structure used for transmitting and/or receiving electronic communication signals.

ACC Accuracy Category Accuracy of geographic position.

BRF Broadcast Frequency Broadcast frequency of a communications device.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].

NST Navigation System Types Type of equipment or system used in electronic navigation.

GA020 Air Obstruction Light A light or lights marking an obstacle which constitutes a danger to air navigation.

ACC Accuracy Category Accuracy of geographic position.

OLQ Obstruction Light Quality Indicates whether single or multiple obstruction lights are present.

GA035 NAVAIDS (Aeronautical) Any visual or electronic device on the surface of the Earth which provides point-to-point guidance information or position data to aircraft in flight.

ACC Accuracy Category Accuracy of geographic position.

BRF Broadcast Frequency Broadcast frequency of a communications device.

EXS Existence Category State or condition of the feature.

MCA Morse Code Use with Navigation System Types (NST), Sound Signal (SST), Light Characteristics (CHA), or electronic beacon type.

NST Navigation System Types Type of equipment or system used in electronic navigation.

ORC Operating Range Category The range of the Navaid beyond which the capture of the signal is not completely assured.

GB005 Airport/Airfield A defined area of land or water (including any buildings, installations and equipment) prepared for the accommodation, landing and take-off of aircraft. The terms aerodrome and airfield are considered to be synonymous with the term airport.

ACC Accuracy Category Accuracy of geographic position.

APT Airfield Type Unique airfield type.

EXS Existence Category State or condition of the feature.

NAM Name Any identifier or code.

GB010 Airport Lighting Lights used to define and outline perimeters, runways, taxiways, etc, guide aircraft while on the ground, and to provide guidance to aircraft on approach for landing.

ACC Accuracy Category Accuracy of geographic position.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position [i.e. Q(6)+LF1, VQ G, L F1 (3+2)WR].

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TABLE 66. Cultural Landmarks character value description table

(Header length and byte order);\					
CHAR.VDT, Cultural Landmarks Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=T,5,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	BUILDNGA.AFT	F_CODE	AL015	Building
HAC	2	INDUSTA.AFT	F_CODE	AC000	Processing Plant /Treatment Plant
HAC	3	INDUSTA.AFT	F_CODE	AH050	Fortification
HA	4	INDUSTA.AFT	F_CODE	AK160	Stadium /Amphitheater
H	5	INDUSTA.AFT	F_CODE	AM040	Mineral Pile
HAC	6	INDUSTA.AFT	F_CODE	AM070	Tank
HAC	7	LANDMRKA.AFT	F_CODE	AA010	Mine /Quarry
H	8	LANDMRKA.AFT	F_CODE	AB000	Disposal Site /Waste Pile
HA	9	LANDMRKA.AFT	F_CODE	AB010	Wrecking Yard /Scrap Yard
H	10	LANDMRKA.AFT	F_CODE	AC030	Settling Basin /Sludge Pond
HAC	11	LANDMRKA.AFT	F_CODE	AD010	Power Plant
H	12	LANDMRKA.AFT	F_CODE	AD030	Substation /Transformer Yard
HA	13	LANDMRKA.AFT	F_CODE	AH010	Bastion /Rampart /Fortification
HAC	14	LANDMRKA.AFT	F_CODE	AL005	Animal Sanctuary
HA	16	LANDMRKA.AFT	F_CODE	AL030	Cemetery
H	17	LANDMRKA.AFT	F_CODE	AM010	Depot (Storage)
HAC	18	LANDMRKA.AFT	F_CODE	AM030	Grain Elevator
H	19	LANDMRKA.AFT	F_CODE	AQ116	Pumping Station
H	20	LANDMRKA.AFT	F_CODE	AT020	Early Warning Radar Site
H	21	PARKA.AFT	F_CODE	AK040	Athletic Field
H	22	PARKA.AFT	F_CODE	AK090	Fairgrounds
H	23	PARKA.AFT	F_CODE	AK100	Golf Course
H	24	PARKA.AFT	F_CODE	AK120	Park
H	25	PARKA.AFT	F_CODE	AK180	Zoo /Safari Park
H	26	TRANSA.AFT	F_CODE	AN060	RR Yard /Marshalling Yard
HAC	27	TRANSA.AFT	F_CODE	GB005	Airport /Airfield
HAC	28	TRANSA.AFT	F_CODE	GB055	Runway
H	29	FENCEL.LFT	F_CODE	AL070	Fence
H	30	FENCEL.LFT	F_CODE	AL260	Wall
H	31	PARKL.LFT	F_CODE	AK020	Amusement Park Attraction
H	32	PARKL.LFT	F_CODE	AK130	Race Track
HAC	33	POWERL.LFT	F_CODE	AQ010	Aerial Cableway Line /Ski Lift Line
HAC	34	POWERL.LFT	F_CODE	AT030	Power Transmission Line
HAC	35	POWERL.LFT	F_CODE	AT060	Telephone Line /Telegraph Line
HAC	36	RAILRDL.LFT	F_CODE	AN010	Railroad Track
H	37	TRANSL.LFT	F_CODE	AP020	Interchange
HAC	38	TRANSL.LFT	F_CODE	AP030	Road
HAC	39	TRANSL.LFT	F_CODE	GB055	Runway
HAC	40	AEROP.PFT	F_CODE	GA020	Air Obstruction Light
HACG	41	AEROP.PFT	F_CODE	GA035	NAVAIDS (Aeronautical)
HAC	42	AEROP.PFT	F_CODE	GB005	Airport /Airfield
HAC	43	AEROP.PFT	F_CODE	GB010	Airport Lighting
HAC	44	BUILDNGP.PFT	F_CODE	AL015	Building

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TABLE 66. Cultural Landmarks character value description table - Continued

HAC	45	BUILDNGP.PFT	F_CODE	AL018	Building Superstructure Addition
HA	47	COMP.PFT	F_CODE	AT050	Communication Building
HACG	48	COMP.PFT	F_CODE	AT080	Communication Tower
HAC	49	INDUSTP.PFT	F_CODE	AF010	Chimney /Smokestack
H	50	INDUSTP.PFT	F_CODE	AF040	Crane
HAC	51	INDUSTP.PFT	F_CODE	AF070	Flare Pipe
HAC	52	INDUSTP.PFT	F_CODE	AH050	Fortification
HAC	53	INDUSTP.PFT	F_CODE	AJ050	Windmill
H	54	INDUSTP.PFT	F_CODE	AK020	Amusement Park Attraction
HAC	55	INDUSTP.PFT	F_CODE	AL130	Monument
HAC	56	INDUSTP.PFT	F_CODE	AL240	Tower (Non-communication)
HAC	57	INDUSTP.PFT	F_CODE	AM070	Tank
HA	58	INDUSTP.PFT	F_CODE	AQ060	Control Tower
H	59	INDUSTP.PFT	F_CODE	AQ080	Ferry Site
HA	60	INDUSTP.PFT	F_CODE	AT045	Radar Transmitter
HAC	61	LANDMRKP.PFT	F_CODE	AA010	Mine /Quarry
H	62	LANDMRKP.PFT	F_CODE	AD030	Substation /Transformer Yard
HAC	63	LANDMRKP.PFT	F_CODE	AF030	Cooling Tower
HAC	64	LANDMRKP.PFT	F_CODE	AH010	Bastion /Rampart /Fortification
H	65	LANDMRKP.PFT	F_CODE	AK080	Drive-In Theater Screen
HA	66	LANDMRKP.PFT	F_CODE	AK160	Stadium /Amphitheater
HA	67	LANDMRKP.PFT	F_CODE	AL025	Cairn
H	68	LANDMRKP.PFT	F_CODE	AL073	Flagstaff /Flagpole
H	69	LANDMRKP.PFT	F_CODE	AM020	Grain Bin /Silo
HAC	70	LANDMRKP.PFT	F_CODE	AM030	Grain Elevator
HAC	71	LANDMRKP.PFT	F_CODE	AM080	Water Tower
HA	72	LANDMRKP.PFT	F_CODE	AQ110	Mooring Mast
H	73	LANDMRKP.PFT	F_CODE	AQ116	Pumping Station
HAC	74	LANDMRKP.PFT	F_CODE	AT010	Disk /Dish
H	75	POWERP.PFT	F_CODE	AQ020	Aerial Cableway Pylon /Ski Pylon
H	76	POWERP.PFT	F_CODE	AT040	Power Transmission Pylon /Power Transmission Pole

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TABLE 67. Cultural Landmarks integer value description table.

{Header length and byte order};\					
INT.VDT, Cultural Landmarks Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HA	1	BUILDNGA.AFT	BFC	000	Unknown
HA	3	BUILDNGA.AFT	BFC	002	Government Building
HA	4	BUILDNGA.AFT	BFC	003	Capitol Building
HAC	5	BUILDNGA.AFT	BFC	004	Castle
HA	6	BUILDNGA.AFT	BFC	005	Government Administration Building
HA	7	BUILDNGA.AFT	BFC	006	Hospital
HA	8	BUILDNGA.AFT	BFC	007	House of Worship
HA	10	BUILDNGA.AFT	BFC	009	Museum
HA	11	BUILDNGA.AFT	BFC	010	Observatory
HA	12	BUILDNGA.AFT	BFC	011	Palace
HA	13	BUILDNGA.AFT	BFC	012	Police Station
HA	14	BUILDNGA.AFT	BFC	013	Prison
HA	15	BUILDNGA.AFT	BFC	014	Ranger Station
HA	16	BUILDNGA.AFT	BFC	015	School
HA	17	BUILDNGA.AFT	BFC	016	House
HA	18	BUILDNGA.AFT	BFC	017	Multi-Unit Dwelling
HA	19	BUILDNGA.AFT	BFC	018	Cemetery Building
HA	20	BUILDNGA.AFT	BFC	019	Farm Building
HA	21	BUILDNGA.AFT	BFC	020	Greenhouse
HA	22	BUILDNGA.AFT	BFC	021	Garage
HA	23	BUILDNGA.AFT	BFC	022	Watermill /Gristmill
HA	24	BUILDNGA.AFT	BFC	023	Wind Tunnel
HA	25	BUILDNGA.AFT	BFC	024	Warehouse
HA	26	BUILDNGA.AFT	BFC	025	Roundhouse
HA	27	BUILDNGA.AFT	BFC	026	R/R Storage /Repair Facility
HA	28	BUILDNGA.AFT	BFC	027	Depot Terminal
HA	29	BUILDNGA.AFT	BFC	028	Administration Building
HA	30	BUILDNGA.AFT	BFC	029	Aircraft Maintenance Shop
HA	31	BUILDNGA.AFT	BFC	030	Hangar
HA	32	BUILDNGA.AFT	BFC	031	Custom House
HA	33	BUILDNGA.AFT	BFC	033	Health Office
HA	34	BUILDNGA.AFT	BFC	035	Post Office
HA	35	BUILDNGA.AFT	BFC	036	Barracks /Dormitory
HA	36	BUILDNGA.AFT	BFC	037	Fire Station
HA	37	BUILDNGA.AFT	BFC	053	Bank
HA	38	BUILDNGA.AFT	BFC	059	R&D Lab /Research Facility
HA	39	BUILDNGA.AFT	BFC	061	Courthouse
HA	40	BUILDNGA.AFT	BFC	077	Harbor Master's Office
HA	41	BUILDNGA.AFT	BFC	083	Power Generation
HA	42	BUILDNGA.AFT	BFC	085	Newspaper Plant
HA	43	BUILDNGA.AFT	BFC	086	Telephone Exchange (Main)
HA	44	BUILDNGA.AFT	BFC	087	Auditorium

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TABLE 67. Cultural Landmarks integer value description table - Continued.

HA	45	BUILDNGA.AFT	BFC	088	Opera House
HA	46	BUILDNGA.AFT	BFC	089	Processing /Treatment
HA	47	BUILDNGA.AFT	BFC	090	Pumphouse
HA	48	BUILDNGA.AFT	BFC	095	Hotel
HA	49	BUILDNGA.AFT	BFC	096	Diplomatic Building
HA	50	BUILDNGA.AFT	BFC	999	Other
HA	51	BUILDNGA.AFT	HWT	000	Unknown
HA	52	BUILDNGA.AFT	HWT	002	Cathedral
HA	53	BUILDNGA.AFT	HWT	003	Chapel
HA	54	BUILDNGA.AFT	HWT	004	Church
HA	55	BUILDNGA.AFT	HWT	006	Minaret
HA	56	BUILDNGA.AFT	HWT	007	Monastery, Convent
HA	57	BUILDNGA.AFT	HWT	009	Mosque
HA	58	BUILDNGA.AFT	HWT	011	Pagoda
HA	59	BUILDNGA.AFT	HWT	014	Shrine
HA	60	BUILDNGA.AFT	HWT	015	Tabernacle
HA	61	BUILDNGA.AFT	HWT	016	Temple
HA	62	BUILDNGA.AFT	HWT	020	Synagogue
HA	63	BUILDNGA.AFT	HWT	021	Stupa
HA	64	BUILDNGA.AFT	HWT	022	Not Applicable
HAC	65	INDUSTA.AFT	PRO	000	Unknown
HAC	66	INDUSTA.AFT	PRO	013	Chemical
H	67	INDUSTA.AFT	PRO	017	Coal
H	68	INDUSTA.AFT	PRO	019	Coke
HAC	69	INDUSTA.AFT	PRO	038	Gas
HAC	70	INDUSTA.AFT	PRO	039	Gasoline
H	71	INDUSTA.AFT	PRO	046	Gravel
HAC	72	INDUSTA.AFT	PRO	067	Oil
H	73	INDUSTA.AFT	PRO	087	Salt
H	74	INDUSTA.AFT	PRO	088	Sand
H	75	INDUSTA.AFT	PRO	108	Stone
HAC	76	INDUSTA.AFT	PRO	116	Water
HAC	77	INDUSTA.AFT	PRO	999	Other
HAC	78	TRANSA.AFT	APT	001	Major Airfield
HAC	79	TRANSA.AFT	APT	002	Minor Airfield
HAC	80	TRANSA.AFT	APT	004	Seaplane Base
HAC	81	TRANSA.AFT	APT	009	Heliport
H	82	TRANSA.AFT	EXS	005	Under Construction
H	83	TRANSA.AFT	EXS	006	Abandoned /Disused
HAC	84	TRANSA.AFT	EXS	028	Operational
H	85	PARKL.LFT	SSC	000	Unknown
H	86	PARKL.LFT	SSC	025	Roller Coaster
HAC	87	POWERL.LFT	OWO	001	Feature crosses navigable water
HAC	88	RAILRDL.LFT	EXS	005	Under Construction
HAC	89	RAILRDL.LFT	EXS	006	Abandoned /Disused
H	90	RAILRDL.LFT	EXS	007	Destroyed
H	91	RAILRDL.LFT	EXS	008	Dismantled
HAC	92	RAILRDL.LFT	EXS	028	Operational
H	93	RAILRDL.LFT	LOC	004	Below Surface /Submerged / Underground
H	94	RAILRDL.LFT	LOC	008	On Ground Surface

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TABLE 67. Cultural Landmarks integer value description table - Continued.

H	95	RAILRDL.LFT	LOC	025	Suspended /Elevated Above Ground or Water Surface
HAC	96	RAILRDL.LFT	RRC	000	Unknown
HAC	97	RAILRDL.LFT	RRC	002	Car-Line
HAC	98	RAILRDL.LFT	RRC	003	Monorail
HAC	99	RAILRDL.LFT	RRC	008	Logging
H	100	RAILRDL.LFT	RRC	013	Marine Railroad
H	101	RAILRDL.LFT	RRC	014	Tramway
H	102	RAILRDL.LFT	RRC	015	Inclined Railway
HAC	103	RAILRDL.LFT	RRC	016	Main Line
HAC	104	RAILRDL.LFT	RRC	017	Branch Line
HAC	105	RAILRDL.LFT	RRC	021	Railroad in Road
H	106	RAILRDL.LFT	VRR	001	Above Surface /Does Not Cover (At High Water)
H	107	RAILRDL.LFT	VRR	004	Below Surface /Submerged
H	108	RAILRDL.LFT	VRR	008	Covers and Uncovers
H	109	RAILRDL.LFT	VRR	009	Not Applicable
HAC	110	TRANSL.LFT	EXS	028	Operational
HACG	111	AEROP.PFT	ACC	001	Accurate
HACG	112	AEROP.PFT	ACC	002	Approximate
HAC	113	AEROP.PFT	APT	001	Major Airfield
HAC	114	AEROP.PFT	APT	002	Minor Airfield
HAC	115	AEROP.PFT	EXS	028	Operational
HACG	116	AEROP.PFT	EXS	042	Continuous Operation
HACG	117	AEROP.PFT	NST	000	Unknown
HACG	118	AEROP.PFT	NST	017	NDB (Non-directional beacon)
HACG	119	AEROP.PFT	NST	019	RNG (Radio Range)
HAC	120	AEROP.PFT	OLQ	000	Unknown
HAC	121	AEROP.PFT	OLQ	001	One light present
HAC	122	AEROP.PFT	OLQ	002	Multiple lights present
HAC	123	BUILDNGP.PFT	ACC	001	Accurate
HAC	124	BUILDNGP.PFT	ACC	002	Approximate
HAC	125	BUILDNGP.PFT	BFC	000	Unknown
HAC	126	BUILDNGP.PFT	BFC	001	Fabrication Structure
HAC	127	BUILDNGP.PFT	BFC	002	Government Building
HAC	128	BUILDNGP.PFT	BFC	003	Capitol Building
HAC	129	BUILDNGP.PFT	BFC	004	Castle
HAC	130	BUILDNGP.PFT	BFC	005	Government Administration Building
HA	131	BUILDNGP.PFT	BFC	006	Hospital
HAC	132	BUILDNGP.PFT	BFC	007	House of Worship
HAC	133	BUILDNGP.PFT	BFC	008	Military Administration /Operations Building
HAC	134	BUILDNGP.PFT	BFC	009	Museum
HAC	135	BUILDNGP.PFT	BFC	010	Observatory
HAC	136	BUILDNGP.PFT	BFC	011	Palace
HAC	137	BUILDNGP.PFT	BFC	012	Police Station
HAC	138	BUILDNGP.PFT	BFC	013	Prison
HAC	139	BUILDNGP.PFT	BFC	014	Ranger Station
HAC	140	BUILDNGP.PFT	BFC	015	School
HAC	141	BUILDNGP.PFT	BFC	016	House
HAC	142	BUILDNGP.PFT	BFC	017	Multi-Unit Dwelling

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TABLE 67. Cultural Landmarks integer value description table - Continued.

HAC	143	BUILDNGP.PFT	BFC	018	Cemetery Building
HAC	144	BUILDNGP.PFT	BFC	019	Farm Building
HAC	145	BUILDNGP.PFT	BFC	020	Greenhouse
HAC	146	BUILDNGP.PFT	BFC	021	Garage
HAC	147	BUILDNGP.PFT	BFC	022	Watermill /Gristmill
HAC	148	BUILDNGP.PFT	BFC	023	Wind Tunnel
HAC	149	BUILDNGP.PFT	BFC	024	Warehouse
HAC	150	BUILDNGP.PFT	BFC	025	Roundhouse
HAC	151	BUILDNGP.PFT	BFC	026	R/R Storage /Repair Facility
HAC	152	BUILDNGP.PFT	BFC	027	Depot Terminal
HAC	153	BUILDNGP.PFT	BFC	028	Administration Building
HAC	154	BUILDNGP.PFT	BFC	029	Aircraft Maintenance Shop
HAC	155	BUILDNGP.PFT	BFC	030	Hangar
HA	156	BUILDNGP.PFT	BFC	031	Custom House
HA	157	BUILDNGP.PFT	BFC	033	Health Office
HA	158	BUILDNGP.PFT	BFC	035	Post Office
HAC	159	BUILDNGP.PFT	BFC	036	Barracks /Dormitory
HAC	160	BUILDNGP.PFT	BFC	037	Fire Station
HAC	161	BUILDNGP.PFT	BFC	053	Bank
HAC	162	BUILDNGP.PFT	BFC	059	R&D Lab /Research Facility
HAC	163	BUILDNGP.PFT	BFC	061	Courthouse
HA	164	BUILDNGP.PFT	BFC	077	Harbor Master's Office
HA	165	BUILDNGP.PFT	BFC	081	Maritime Station
HAC	166	BUILDNGP.PFT	BFC	082	Lighthouse
HAC	167	BUILDNGP.PFT	BFC	083	Power Generation
HAC	168	BUILDNGP.PFT	BFC	085	Newspaper Plant
HAC	169	BUILDNGP.PFT	BFC	086	Telephone Exchange (Main)
HAC	170	BUILDNGP.PFT	BFC	087	Auditorium
HAC	171	BUILDNGP.PFT	BFC	088	Opera House
HAC	172	BUILDNGP.PFT	BFC	089	Processing /Treatment
HAC	173	BUILDNGP.PFT	BFC	090	Pumphouse
HAC	174	BUILDNGP.PFT	BFC	095	Hotel
HAC	175	BUILDNGP.PFT	BFC	096	Diplomatic Building
HAC	176	BUILDNGP.PFT	BFC	999	Other
HAC	177	BUILDNGP.PFT	EXS	000	Unknown
HAC	178	BUILDNGP.PFT	EXS	005	Under Construction
HAC	179	BUILDNGP.PFT	EXS	006	Abandoned /Disused
HAC	180	BUILDNGP.PFT	EXS	007	Destroyed
HAC	181	BUILDNGP.PFT	HWT	000	Unknown
HAC	182	BUILDNGP.PFT	HWT	002	Cathedral
HAC	183	BUILDNGP.PFT	HWT	003	Chapel
HAC	184	BUILDNGP.PFT	HWT	004	Church
HAC	185	BUILDNGP.PFT	HWT	005	Marabout
HAC	186	BUILDNGP.PFT	HWT	006	Minaret
HAC	187	BUILDNGP.PFT	HWT	007	Monastery, Convent
HAC	188	BUILDNGP.PFT	HWT	009	Mosque
HAC	189	BUILDNGP.PFT	HWT	011	Pagoda
HAC	190	BUILDNGP.PFT	HWT	014	Shrine
HAC	191	BUILDNGP.PFT	HWT	015	Tabernacle
HAC	192	BUILDNGP.PFT	HWT	016	Temple
HAC	193	BUILDNGP.PFT	HWT	020	Synagogue
HAC	194	BUILDNGP.PFT	HWT	021	Stupa

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TABLE 67. Cultural Landmarks integer value description table - Continued.

HAC	195	BUILDNGP.PFT	HWT	022	Not Applicable
HAC	196	BUILDNGP.PFT	SSR	000	Unknown
HAC	197	BUILDNGP.PFT	SSR	040	Dome
HAC	198	BUILDNGP.PFT	SSR	051	with Steeple
HAC	199	BUILDNGP.PFT	SSR	077	with Cupola
HAC	200	BUILDNGP.PFT	SSR	079	with Tower
HAC	201	BUILDNGP.PFT	SSR	080	with Minaret
HA	202	BUILDNGP.PFT	SST	000	Unknown
HA	203	BUILDNGP.PFT	SST	001	Bell
HA	204	BUILDNGP.PFT	SST	002	Diaphone
HA	205	BUILDNGP.PFT	SST	003	Explosive Fog Signal
HA	206	BUILDNGP.PFT	SST	004	Gong
HA	207	BUILDNGP.PFT	SST	006	Horn
HA	208	BUILDNGP.PFT	SST	009	Siren
HA	209	BUILDNGP.PFT	SST	014	Whistle
HA	210	BUILDNGP.PFT	SST	015	Reed
HA	211	BUILDNGP.PFT	SST	016	None
HA	212	BUILDNGP.PFT	STA	000	Unknown
HA	213	BUILDNGP.PFT	STA	001	Coast Guard
HA	214	BUILDNGP.PFT	STA	002	Fireboat
HA	215	BUILDNGP.PFT	STA	003	Marine Police
HA	216	BUILDNGP.PFT	STA	004	Ice Signal
HA	217	BUILDNGP.PFT	STA	005	Lifeboat /Rescue
HA	218	BUILDNGP.PFT	STA	006	Port Control
HA	219	BUILDNGP.PFT	STA	011	Pilot
HA	220	BUILDNGP.PFT	STA	013	Signal
HA	221	BUILDNGP.PFT	STA	015	Storm Signal
HA	222	BUILDNGP.PFT	STA	017	Tide Signal
HA	223	BUILDNGP.PFT	STA	019	Time Signal
HA	224	BUILDNGP.PFT	STA	021	Weather Signal
HA	225	BUILDNGP.PFT	STA	022	Fog Signal
HA	226	BUILDNGP.PFT	STA	025	Semaphore
HA	227	BUILDNGP.PFT	STA	027	Tidal Current Signal
HA	228	BUILDNGP.PFT	STA	028	Marine Traffic Signal
HA	229	BUILDNGP.PFT	STA	029	Bridge Signal
HA	230	BUILDNGP.PFT	STA	030	Lock Signal
HA	231	BUILDNGP.PFT	STA	032	International Port Signals
HA	232	BUILDNGP.PFT	STA	033	Firing Practice Signal Station
HACG	233	BUILTUPP.PFT	ACC	001	Accurate
HACG	234	BUILTUPP.PFT	ACC	002	Approximate
HACG	235	COMP.PFT	ACC	001	Accurate
HACG	236	COMP.PFT	ACC	002	Approximate
HACG	237	COMP.PFT	NST	000	Unknown
HACG	238	COMP.PFT	NST	002	CONSOL
HACG	239	COMP.PFT	NST	003	DECCA
HACG	240	COMP.PFT	NST	007	LORAN
HACG	241	COMP.PFT	NST	008	OMEGA
HACG	242	COMP.PFT	NST	012	Radio
HA	243	COMP.PFT	NST	013	Radio Telephone
HACG	244	COMP.PFT	NST	015	TV
HACG	245	COMP.PFT	NST	016	Microwave
HA	246	COMP.PFT	NST	033	Radio Telegraph

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TABLE 67. Cultural Landmarks integer value description table - Continued.

HAC	247	INDUSTP.PFT	ACC	001	Accurate
HAC	248	INDUSTP.PFT	ACC	002	Approximate
HAC	249	INDUSTP.PFT	LOC	008	On Ground Surface
HAC	250	INDUSTP.PFT	LOC	022	Off Shore
HAC	251	INDUSTP.PFT	PRO	000	Unknown
HAC	252	INDUSTP.PFT	PRO	031	Electric
HAC	253	INDUSTP.PFT	PRO	999	Other
HAC	254	INDUSTP.PFT	SSC	000	Unknown
HAC	255	INDUSTP.PFT	SSC	012	Pyramid
H	256	INDUSTP.PFT	SSC	017	Spherical (Hemispherical)
H	257	INDUSTP.PFT	SSC	021	Artificial Mountain
H	258	INDUSTP.PFT	SSC	023	Ferris Wheel
HA	259	INDUSTP.PFT	SSC	060	Mast
HAC	260	INDUSTP.PFT	SSC	077	Arch
HA	261	INDUSTP.PFT	SSC	087	Dome
HA	262	INDUSTP.PFT	SSC	107	Tower
HA	263	INDUSTP.PFT	SSC	108	Scanner
HAC	264	INDUSTP.PFT	SSC	109	Obelisk
HAC	265	INDUSTP.PFT	SSC	999	Other
HA	266	INDUSTP.PFT	TUC	000	Unknown
H	267	INDUSTP.PFT	TUC	001	Both Road and Railroad
H	268	INDUSTP.PFT	TUC	003	Railroad
H	269	INDUSTP.PFT	TUC	004	Road
HA	270	INDUSTP.PFT	TUC	012	Marine
HA	271	INDUSTP.PFT	TUC	013	Air
H	272	INDUSTP.PFT	TUC	017	Pedestrian
H	273	INDUSTP.PFT	USE	132	Container
H	274	INDUSTP.PFT	USE	999	Other
HAC	275	LANDMRKP.PFT	ACC	001	Accurate
HAC	276	LANDMRKP.PFT	ACC	002	Approximate
H	277	POWERP.PFT	ACC	001	Accurate
H	278	POWERP.PFT	ACC	002	Approximate

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TABLE 68. Building area feature table.

HAC	{Header length and byte order};\ BUILDNGA.AFT, Building Area Feature Table; -; \ ID=I, 1, P, Row ID, -, -, :\ F_CODE=T, 5, N, FACC Code, CHAR.VDT, -, :\ BFC=S, 1, N, Building Function Category, INT.VDT, -, :\ COL=T, 10, N, Character of Light, -, -, :\ HWT=S, 1, N, House of Worship Type, INT.VDT, -, :\ NAM=T, 30, N, Name, -, -, :\ TILE_ID=S, 1, N, Tile Reference Identifier, -, BUILDNA1.ATI, :\ FAC_ID=I, 1, N, Face Primitive Foreign Key, -, BUILDNA2.ATI, ;;
-----	--

BUILDNGA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	AL015	Building	HAC
BFC	Building Function Category			<u>Applicable F_CODE</u>
	default	0	Unknown	AL015
		1	Fabrication Structures	AL015
		2	Government Building	AL015
		3	Capitol Building	AL015
		4	Castle	AL015
		5	Government Administra- tion Building	AL015
		6	Hospital	AL015
		7	House of Worship	AL015
		8	Military Administration /Operations Building	AL015
		9	Museum	AL015
		10	Observatory	AL015
		11	Palace	AL015
		12	Police Station	AL015
		13	Prison	AL015
		14	Ranger Station	AL015
		15	School	AL015
		16	House	AL015
		17	Multi-Unit Dwelling	AL015
		18	Cemetery Building	AL015
		19	Farm Building	AL015
		20	Greenhouse	AL015
		21	Garage	AL015
		22	Watermill /Gristmill	AL015
		23	Wind Tunnel	AL015
		24	Warehouse	AL015
		25	Roundhouse	AL015
		26	R/R Storage /Repair Facility	AL015
		27	Depot Terminal	AL015
		28	Administration Building	AL015
		29	Aircraft Maintenance Shop	AL015
		30	Hangar	AL015
		31	Custom House	AL015
		33	Health Office	AL015
		35	Post Office	AL015
		36	Barracks /Dormitory	AL015

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	37	Fire Station	AL015
	53	Bank	AL015
	59	R&D Lab /Research Facility	AL015
	61	Courthouse	AL015
	77	Harbor Master's Office	AL015
	83	Power Generation	AL015
	85	Newspaper Plant	AL015
	86	Telephone Exchange (Main)	AL015
	87	Auditorium	AL015
	88	Opera House	AL015
	89	Processing /Treatment	AL015
	90	Pumphouse	AL015
	95	Hotel	AL015
	96	Diplomatic Building	AL015
	999	Other	AL015
COL	Character of Light		
	default	"N/A"	Null (no light present) AL015
		"UNK"	Unknown AL015
		text string (e.g., "Fl R")	AL015
HWT	House of Worship	Type	
	0	Unknown	AL015
	2	Cathedral	AL015
	3	Chapel	AL015
	4	Church	AL015
	6	Minaret	AL015
	7	Monastery, Convent	AL015
	9	Mosque	AL015
	11	Pagoda	AL015
	14	Shrine	AL015
	15	Tabernacle	AL015
	16	Temple	AL015
	20	Synagogue	AL015
	21	Stupa	AL015
	default	22	Not Applicable AL015
NAM	Name		
	default	"UNK"	Unknown AL015
		text string (e.g., "Union Station")	AL015

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TABLE 69. Industry area feature table.

HAC	{Header length and byte order};\
HAC	INDUSTA.AFT, Industry Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,INDUSTA1.ATI,:\
HAC	NAM=T,30,N,Name,-,-,:\
HAC	PRO=S,1,N,Product Category,INT.VDT,-,-,:\
HAC	ZV2=I,1,N,Highest Z-Value,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,INDUSTA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,INDUSTA3.ATI,;\

INDUSTA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AC000	Processing Plant /Treatment Plant	HAC
		AH050	Fortification	HAC
		AK160	Stadium /Amphitheater	HA
		AM040	Mineral Pile	H
		AM070	Tank	HAC
NAM	Name	"N/A"	Null	<u>Applicable F CODE</u> AC000, AM040 AM070
	default	"UNK" text string (e.g., "Shea Stadium")	Unknown	AH050, AK160 AH050, AK160
PRO	Product Category	-32768	Null	AH050, AK160
	default	0	Unknown	AC000, AM040, AM070
		13	Chemical	AC000, AM070
		17	Coal	AM040
		19	Coke	AM040
		38	Gas	AM070
		39	Gasoline	AM070
		46	Gravel	AM040
		67	Oil	AC000, AM070
		87	Salt	AM040
		88	Sand	AM040
		108	Stone	AM040
		116	Water	AM070
		999	Other	AC000, AM040, AM070
ZV2	Highest Z-Value	-2147483648	Null	AC000, AH050, AK160, AM040
	default	99999	Unknown	AM070
		-400 to 11999	actual value (meters)	AM070

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TABLE 70. Landmark area feature table*.

HACG	{Header length and byte order};\ LANDMRKA.AFT, Landmark Area Feature Table; -;\ ID=I, 1, P, Row ID, -, -, :\ F_CODE=T, 5, N, FACC Code, CHAR.VDT, LANDMRA1.ATI, :\ TILE_ID=S, 1, N, Tile Reference Identifier, -, LANDMRA2.ATI, :\ FAC_ID=I, 1, N, Face Primitive Foreign Key, -, LANDMRA3.ATI, ;;
------	---

*the thematic index on F_CODE applies to the HAC libraries only

LANDMRKA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AA010	Mine /Quarry	HAC
		AB000	Disposal Site /Waste Pile	H
		AB010	Wrecking Yard /Scrap Yard	HA
		AC030	Settling Basin /Sludge Pond	H
		AD010	Power Plant	HAC
		AD030	Substation /Transformer Yard	H
		AH010	Bastion /Rampart /Fortification	HA
		AL005	Animal Sanctuary	HAC
		AL020	Built-Up Area	HACG
		AL030	Cemetery	HA
		AM010	Depot (Storage)	H
		AM030	Grain Elevator	HAC
		AQ116	Pumping Station	H
		AT020	Early Warning Radar Site	H

TABLE 71. Park area feature table.

H	{Header length and byte order};\ PARKA.AFT, Park Area Feature Table; -;\ ID=I, 1, P, Row ID, -, -, :\ F_CODE=T, 5, N, FACC Code, CHAR.VDT, PARKA1.ATI, :\ H NAM=T, 30, N, Name, -, -, :\ TILE_ID=S, 1, N, Tile Reference Identifier, -, PARKA2.ATI, :\ FAC_ID=I, 1, N, Face Primitive Foreign Key, -, PARKA3.ATI, ;;
---	---

PARKA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AK040	Athletic Field	H
		AK090	Fairgrounds	H
		AK100	Golf Course	H
		AK120	Park	H
		AK180	Zoo /Safari Park	H
NAM	Name default	"UNK"	Unknown	Applicable F_CODE AK040, AK090, AK100, AK120

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text string (e.g., "Central Park")

AK180
AK040, AK090,
AK100, AK120,
AK180TABLE 72. Transportation area feature table.

HAC	{Header length and byte order};\ TRANSA.AFT,Transportation Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,TRANSA1.ATI,;\
HAC	APT=S,1,N,Airfield Type,INT.VDT,-,-;\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HAC	NAM=T,30,N,Name,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,TRANSA2.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,TRANSA3.ATI,;;

TRANSA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	AN060	RR Yard /Marshalling Yard	H
		GB005	Airport /Airfield	HAC
		GB055	Runway	HAC
APT	Airfield Type	-32768	Null	<u>Applicable F_CODE</u> AN060, GB055
	default	1	Major Airfield	GB005
		2	Minor Airfield	GB005
		4	Seaplane Base	GB005
		9	Helicopter	GB005
EXS	Existence Category	5	Under Construction	AN060
		6	Abandoned /Disused	AN060
	default	28	Operational	AN060, GB005 GB055
NAM	Name	"N/A"	Null	AN060, GB055
	default	"UNK"	Unknown	GB005
		text string (e.g., "Dulles")		GB005

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TABLE 73. Fence line feature table.

H	{Header length and byte order};\ FENCEL.LFT,Fence Line Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,FENCEL1.LTI,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,FENCEL2.LTI,:\n EDG_ID=I,1,N,Edge Primitive Foreign Key,-,FENCEL3.LTI,;;
---	---

FENCEL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AL070	Fence	H
		AL260	Wall	H

TABLE 74. Park line feature table.

H	{Header length and byte order};\ PARKL.LFT,Park Line Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,PARKL1.LTI,:\n H NAM=T,30,N,Name,-,-,:\n H SSC=S,1,N,Structure Shape Category,INT.VDT,-,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,PARKL2.LTI,:\n EDG_ID=I,1,N,Edge Primitive Foreign Key,-,PARKL3.LTI,;;
---	---

PARKL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AK020	Amusement Park Attraction	H
		AK130	Race Track	H
NAM	Name			<u>Applicable F_CODE</u>
	default	"N/A"	Null	AK020
		"UNK"	Unknown	AK130
		text string (e.g., "Belmont Park")		AK130
SSC	Structure Shape Category			
	default	-32768	Null	AK130
		0	Unknown	AK020
		25	Roller Coaster	AK020

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TABLE 75. Power line feature table.

HAC	{Header length and byte order};\
HAC	POWERL.LFT,Power Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,POWERL1.LTI,;\
HAC	OHC=F,1,N,Overhead Clearance Category,-,-,;\
HAC	OWO=S,1,N,Over Water Obstruction,INT.VDT,-,;\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,POWERL2.LTI,;\
HAC	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,POWERL3.LTI,;;

POWERL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ010	Aerial Cableway Line /Ski Lift Line	HAC
		AT030	Power Transmission Line	HAC
		AT060	Telephone Line /Telegraph Line	HAC
OHC	Overhead Clearance Category			Applicable F_CODE
	default	0.0	Unknown	AQ010, AT030, AT060
		0.1 to 998.0	actual value to the nearest .1 meter	AQ010, AT030, AT060
OWO	Over Water Obstruction			
	default	1	Feature Crosses Navigable Water	AQ010, AT030, AT060

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TABLE 76. Railroad line feature table.

HAC	{Header length and byte order};\ RAILRDL.LFT,Railroad Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
H	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	LOC=S,1,N,Location Category,INT.VDT,-,:\
HAC	RRC=S,1,N,Railroad Categories,INT.VDT,-,:\
H	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,RAILRDL1.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,RAILRDL2.LTI,;\

RAILRDL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	AN010	Railroad Track	HAC
EXS	Existence Category			<u>Applicable F_CODE</u>
		5	Under Construction	AN010
		6	Abandoned /Disused	AN010
		7	Destroyed	AN010
		8	Dismantled	AN010
	default	28	Operational	AN010
LOC	Location Category			
		4	Below Surface /Submerged /Underground	AN010
	default	8	On Ground Surface	AN010
		25	Suspended /Elevated Above Ground or Water Surface	AN010
RRC	Railroad Categories			
	default	0	Unknown	AN010
		2	Car-Line	AN010
		3	Monorail	AN010
		8	Logging	AN010
		13	Marine Railroad	AN010
		14	Tramway	AN010
		15	Inclined Railway	AN010
		16	Main Line	AN010
		17	Branch Line	AN010
		21	Railroad in Road	AN010
VRR	Vertical Reference Category			
	default	1	Above Surface /Does Not Cover (At High Water)	AN010
		4	Below Surface /Submerged	AN010
		8	Covers and Uncovers	AN010
		9	Not Applicable	AN010

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TABLE 77. Transportation line feature table.

HAC	{Header length and byte order};\ TRANSL.LFT,Transportation Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,TRANSL1.LTI,:\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,TRANSL2.LTI,:\
HAC	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,TRANSL3.LTI,;\

TRANSL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AP020	Interchange	H
		AP030	Road	HAC
		GB055	Runway	HAC
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	28	Operational	AP020, AP030, GB055

TABLE 78. Aeronautical point feature table*.

HACG	{Header length and byte order};\ AEROP.PFT,Aeronautical Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,AEROP1.PTI,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
HAC	APT=S,1,N,Airfield Type,INT.VDT,-,:\
HACG	BRF=I,1,N,Broadcast Frequency,-,:\
HAC	COL=T,10,N,Character of Light,-,-,:\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HACG	MCA=T,5,N,Morse Code,-,-,:\
H	NAM=T,30,N,Name,-,-,:\
HACG	NST=S,1,N,Navigation System Types,INT.VDT,-,:\
HAC	OLQ=S,1,N,Obstruction Light Quality,INT.VDT,-,:\
HACG	ORC=S,1,N,Operating Range Category,-,-,:\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,AEROP2.PTI,:\
HACG	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,AEROP3.PTI,;\

*the thematic index on F_CODE applies to the HAC libraries only

AEROP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		GA020	Air Obstruction Light	HAC
		GA035	NAVAIDS (Aeronautical)	HACG
		GB005	Airport /Airfield	HAC
		GB010	Airport Lighting	HAC
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	GA020, GA035, GB005, GB010
		2	Approximate	GA020, GA035, GB005, GB010

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APT	Airfield Type	-32768	Null	GA020, GA035, GB010
	default	1	Major Airfield	GB005
		2	Minor Airfield	GB005
BRF	Broadcast Frequency	-2147483648	Null	GA020, GB005, GB010
	default	0	Unknown	GA035
		1 to 2147483647	actual value (hertz)	GA035
COL	Character of Light	"N/A"	Null	GA020, GA035, GB005
	default	"UNK"	Unknown	GB010
		text string (e.g., "F1 R")		GB010
EXS	Existence Category	-32768	Null	GA020, GB010
	default (GB005)	28	Operational	GB005
	default (GA035)	42	Continuous Operation	GA035
MCA	Morse Code	"N/A"	Null	GA020, GB005, GB010
	default	"UNK"	Unknown	GA035
		text string (e.g., "WH")		GA035
NAM	Name	"N/A"	Null	GA020, GA035, GB010
	default	"UNK"	Unknown	GB005
		text string (e.g., "Dulles")		GB005
NST	Navigation System Type	-32768	Null	GA020, GB005, GB010
	default	0	Unknown	GA035
		17	NDB (Non-directional beacon)	GA035
		19	RNG (Radio Range)	GA035
OLQ	Obstruction Light Quality	-32768	Null	GA035, GB005, GB010
	default	0	Unknown	GA020
		1	One light present	GA020
		2	Multiple lights present	GA020
ORC	Operating Range Category	-32768	Null	GA020, GB005, GB010
	default	0	Unknown	GA035
		1 to 1000	actual value (nautical miles)	GA035

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TABLE 79. Building point feature table.

	{Header length and byte order};\
HAC	BUILDNGP.PFT, Building Point Feature Table; -; \
	ID=I, 1, P, Row ID, -, -, : \
	F_CODE=T, 5, N, FACC Code, CHAR.VDT, BUILDNP1.PTI, : \
HAC	ACC=S, 1, N, Accuracy Category, INT.VDT, -, : \
HAC	BFC=S, 1, N, Building Function Category, INT.VDT, -, : \
HAC	COL=T, 10, N, Character of Light, -, -, : \
HAC	EXS=S, 1, N, Existence Category, INT.VDT, -, : \
HAC	HWT=S, 1, N, House of Worship Type, INT.VDT, -, : \
HAC	NAM=T, 30, N, Name, -, -, : \
HAC	SSR=S, 1, N, Structure Shape of Roof, INT.VDT, -, : \
HA	SST=S, 1, N, Sound Signal Type, INT.VDT, -, : \
HA	STA=S, 1, N, Station Type Category (Maritime), INT.VDT, -, : \
	TILE_ID=S, 1, N, Tile Reference Identifier, -, BUILDNP2.PTI, : \
	END_ID=I, 1, N, Entity Node Primitive Foreign Key, -, BUILDNP3.PTI, : ;

BUILDNGP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AL015	Building	HAC
		AL018	Building Superstructure Addition	HAC
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AL015, AL018
		2	Approximate	AL015, AL018
BFC	Building Function Category			
	default	0	Unknown	AL015, AL018
		1	Fabrication Structures	AL015
		2	Government Building	AL015, AL018
		3	Capitol Building	AL015, AL018
		4	Castle	AL015
		5	Government Administration Building	AL015, AL018
		6	Hospital	AL015
		7	House of Worship	AL015, AL018
		8	Military Administration /Operations Building	AL015
		9	Museum	AL015, AL018
		10	Observatory	AL015
		11	Palace	AL015, AL018
		12	Police Station	AL015
		13	Prison	AL015
		14	Ranger Station	AL015
		15	School	AL015, AL018
		16	House	AL015
		17	Multi-Unit Dwelling	AL015
		18	Cemetery Building	AL015
		19	Farm Building	AL015
		20	Greenhouse	AL015
		21	Garage	AL015
		22	Watermill /Gristmill	AL015
		23	Wind Tunnel	AL015
		24	Warehouse	AL015
		25	Roundhouse	AL015

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	26	R/R Storage /Repair Facility	AL015	
	27	Depot Terminal	AL015	
	28	Administration Building	AL015	
	29	Aircraft Maintenance Shop	AL015	
	30	Hangar	AL015	
	31	Custom House	AL015	
	33	Health Office	AL015	
	35	Post Office	AL015	
	36	Barracks /Dormitory	AL015	
	37	Fire Station	AL015	
	53	Bank	AL015	
	59	R&D Lab /Research Facility	AL015	
	61	Courthouse	AL015	
	77	Harbor Master's Office	AL015	
	81	Maritime Station	AL015	
	82	Lighthouse	AL015	
	83	Power Generation	AL015	
	85	Newspaper Plant	AL015	
	86	Telephone Exchange (Main)	AL015	
	87	Auditorium	AL015	
	88	Opera House	AL015	
	89	Processing /Treatment	AL015	
	90	Pumphouse	AL015	
	95	Hotel	AL015	
	96	Diplomatic Building	AL015	
	999	Other	AL015	
COL	Character of Light			
	"N/A"	Null	AL015	BFC=81, AL018
	default	"UNK"	Unknown	AL015 BFC<>81
		text string (e.g., "Fl R")		AL015 BFC<>81
EXS	Existence Category			
	-32768	Null	AL015	BFC=81, AL018
	default	0	Unknown	AL015 BFC<>81
		5	Under Construction	AL015 BFC<>81
		6	Abandoned /Disused	AL015 BFC<>81
		7	Destroyed	AL015 BFC<>81
HWT	House of Worship	Type		
	0	Unknown	AL015, AL018	
	2	Cathedral	AL015, AL018	
	3	Chapel	AL015, AL018	
	4	Church	AL015, AL018	
	5	Marabout	AL015	
	6	Minaret	AL015	
	7	Monastery, Convent	AL015, AL018	
	9	Mosque	AL015, AL018	
	11	Pagoda	AL015	
	14	Shrine	AL015	
	15	Tabernacle	AL015, AL018	
	16	Temple	AL015, AL018	
	20	Synagogue	AL015, AL018	

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		21	Stupa	AL015	
	default	22	Not Applicable	AL015, AL018	
NAM	Name				
		"N/A"	Null	AL018	
	default	"UNK"	Unknown	AL015	
		text string (e.g., "Union Station")		AL015	
SSR	Structure Shape of Roof				
		-32768	Null	AL015	
	default	0	Unknown	AL018	
		40	Dome	AL018	
		51	with Steeple	AL018	
		77	with Cupola	AL018	
		79	with Tower	AL018	
		80	with Minaret	AL018	
SST	Sound Signal Type				
	default	-32768	Null	AL015 BFC<>81, AL018	
		0	Unknown	AL015 BFC=81	
		1	Bell	AL015 BFC=81	
		2	Diaphone	AL015 BFC=81	
		3	Explosive Fog Signal	AL015 BFC=81	
		4	Gong	AL015 BFC=81	
		6	Horn	AL015 BFC=81	
		9	Siren	AL015 BFC=81	
		14	Whistle	AL015 BFC=81	
		15	Reed	AL015 BFC=81	
		16	None	AL015 BFC=81	
STA	Station Type Category (Maritime)				
	default	-32768	Null	AL015 BFC<>81, AL018	
		0	Unknown	AL015 BFC=81	
		1	Coast Guard	AL015 BFC=81	
		2	Fireboat	AL015 BFC=81	
		3	Marine Police	AL015 BFC=81	
		4	Ice Signal	AL015 BFC=81	
		5	Lifeboat /Rescue	AL015 BFC=81	
		6	Port Control	AL015 BFC=81	
		11	Pilot	AL015 BFC=81	
		13	Signal	AL015 BFC=81	
		15	Storm Signal	AL015 BFC=81	
		17	Tide Signal	AL015 BFC=81	
		19	Time Signal	AL015 BFC=81	
		21	Weather Signal	AL015 BFC=81	
		22	Fog Signal	AL015 BFC=81	
		25	Semaphore	AL015 BFC=81	
		27	Tidal Current Signal	AL015 BFC=81	
		28	Marine Traffic Signal	AL015 BFC=81	
		29	Bridge Signal	AL015 BFC=81	
		30	Lock Signal	AL015 BFC=81	
		32	International Port Signals	AL015 BFC=81	
		33	Firing Practice Signal Station	AL015 BFC=81	

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TABLE 80. Built-Up Area point feature table.

HACG	{Header length and byte order};\ BUILTUPP.PFT,Built-Up Area Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
HACG	NAM=T,30,N,Name,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BUILTUP1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,BUILTUP2.PTI,;;

BUILTUPP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AL020	Built-Up Area	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AL020
		2	Approximate	AL020
NAM	Name			
	default	"UNK"	Unknown	AL020
		text string (e.g., "Mayfield")		AL020

TABLE 81. Communications point feature table*.

HACG	{Header length and byte order};\ COMMP.PFT,Communications Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,COMMP1.PTI,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
HACG	BRF=I,1,N,Broadcast Frequency,-,:\
HACG	COL=T,10,N,Character of Light,-,-,:\
HACG	NST=S,1,N,Navigation System Types,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,COMMP2.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,COMMP3.PTI,;;

*the thematic index on F_CODE applies to the HA libraries only

COMMP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AT050	Communication Building	HA
		AT080	Communication Tower	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AT050, AT080
		2	Approximate	AT050, AT080
BRF	Broadcast Frequency			
		-2147483648	Null	AT050
	default	0	Unknown	AT080
		1 to 2147483647	actual value (hertz)	AT080
COL	Character of Light			
		"N/A"	Null	AT050
	default	"UNK"	Unknown	AT080

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text string (e.g., "Fl R")

AT080

NST	Navigation System Type			
	default	0	Unknown	AT050, AT080
		2	CONSOL	AT080
		3	DECCA	AT080
		7	LORAN	AT080
		8	OMEGA	AT080
		12	Radio	AT080
		13	Radio Telephone	AT050
		15	TV	AT080
		16	Microwave	AT080
		33	Radio Telegraph	AT050

TABLE 82. Industry point feature table.

	{Header length and byte order};\
HAC	INDUSTP.PFT,Industry Point Feature Table;-\
	ID=I,1,P,Row ID,-,-,\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,INDUSTP1.PTI,:\
HAC	ACC=S,1,N,Accuracy Category,INT.VDT,-,\
HAC	COL=T,10,N,Character of Light,-,-,\
H	HGT=I,1,N,Height Above Surface Level,-,-,\
HAC	LOC=S,1,N,Location Category,INT.VDT,-,\
HAC	NAM=T,30,N,Name,-,-,\
HAC	PRO=S,1,N,Product Category,INT.VDT,-,\
HAC	SSC=S,1,N,Structure Shape Category,INT.VDT,-,\
HA	TUC=S,1,N,Transportation Use Category,INT.VDT,-,\
H	USE=S,1,N,Usage,INT.VDT,-,\
HAC	ZV2=I,1,N,Highest Z-Value,-,-,\
	TILE_ID=S,1,N,Tile Reference Identifier,-,INDUSTP2.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,INDUSTP3.PTI,;\

INUDSTP

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		AF010	Chimney /Smokestack	HAC
		AF040	Crane	H
		AF070	Flare Pipe	HAC
		AH050	Fortification	HAC
		AJ050	Windmill	HAC
		AK020	Amusement Park	H
			Attraction	
		AL130	Monument	HAC
		AL240	Tower	HAC
			(Non-communication)	
		AM070	Tank	HAC
		AQ060	Control Tower	HA
		AQ080	Ferry Site	H
		AT045	Radar Transmitter	HA
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AF010, AF040, AF070, AH050, AJ050, AK020, AL130, AL240, AM070, AQ060, AQ080, AT045

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	2	Approximate	AF010, AF040, AF070, AH050, AJ050, AK020, AL130, AL240, AM070, AQ060, AQ080, AT045
COL	Character of Light		
	"N/A"	Null	AF010, AF040, AF070, AH050, AJ050, AK020, AL130, AQ060, AQ080, AT045
	default	"UNK" text string (e.g., "Fl R")	Unknown AL240, AM070 AL240, AM070
HGT	Height Above Surface Level		
	-2147483648	Null	AF010, AF040, AF070, AH050, AJ050, AL130, AL240, AM070, AQ060, AQ080, AT045
	default	0 1 to 2147483647	Unknown AK020
		actual value (meters)	AK020
LOC	Location Category		
	-32768	Null	AF010, AF040, AH050, AJ050, AK020, AL130, AL240, AM070, AQ060, AQ080 AT045
	default	8 22	On Ground Surface Off Shore AF070 AF070
NAM	Name		
	"N/A"	Null	AF010, AF040, AF070, AJ050, AK020, AL240, AM070, AQ060, AQ080, AT045
	default	"UNK" text string (e.g., "Fort Monroe")	Unknown AH050, AL130 AH050, AL130
PRO	Product Category		
	-32768	Null	AF010, AF040, AF070, AH050, AK020, AL130, AL240, AM070, AQ060, AQ080, AT045
	default	0 31 999	Unknown AJ050 Electric AJ050 Other AJ050
SSC	Structure Shape Category		

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	-32768	Null	AF010, AF040, AF070, AH050, AJ050, AL240, AM070, AQ060, AQ080
default	0	Unknown	AK020, AL130, AT045
	12	Pyramid	AL130
	17	Spherical (Hemispherical)	AK020
	21	Artificial Mountain	AK020
	23	Ferris Wheel	AK020
	60	Mast	AT045
	77	Arch	AL130
	87	Dome	AT045
	107	Tower	AT045
	108	Scanner	AT045
	109	Obelisk	AL130
	999	Other	AL130, AT045
TUC	Transportation Use Category		
	-32768	Null	AF010, AF070, AH050, AJ050, AK020, AL130, AL240, AM070, AT045
	default(AQ060, AQ080)	0	Unknown AQ060, AQ080
		1	Both Road and Railroad AQ080
		3	Railroad AQ080
		4	Road AQ080
	default(AF040)	12	Marine AF040, AQ060
		13	Air AQ060
		17	Pedestrian AQ080
USE	Usage		
	-32768	Null	AF010, AF070, AH050, AJ050, AK020, AL130, AL240, AM070, AQ060, AQ080, AT045
	default	132	Container AF040
		999	Other AF040
ZV2	Highest Z-Value		
	-2147483648	Null	AF040, AF070, AH050, AJ050, AK020, AL130, AL240, AQ060, AQ080, AT045
	default	99999	Unknown AF010, AM070
		-400 to 11999	actual value (meters) AF010, AM070

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TABLE 83. Landmark point feature table.

HAC	{Header length and byte order};\ LANDMRKP.PFT, Landmark Point Feature Table; -; \ ID=I, 1, P, Row ID, -, -, : \ F_CODE=T, 5, N, FACC Code, CHAR.VDT, LANDMRP1.PTI, : \ ACC=S, 1, N, Accuracy Category, INT.VDT, -, : \ TILE_ID=S, 1, N, Tile Reference Identifier, -, LANDMRP2.PTI, : \ END_ID=I, 1, N, Entity Node Primitive Foreign Key, -, LANDMRP3.PTI, ; ;
-----	---

LANDMRKP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AA010	Mine /Quarry	HAC
		AD030	Substation /Transformer Yard	H
		AF030	Cooling Tower	HAC
		AH010	Bastion /Rampart /Fortification	HAC
		AK080	Drive-In Theater Screen	H
		AK160	Stadium /Amphitheater	HA
		AL025	Cairn	HA
		AL073	Flagstaff /Flagpole	H
		AM020	Grain Bin /Silo	H
		AM030	Grain Elevator	HAC
		AM080	Water Tower	HAC
		AQ110	Mooring Mast	HA
		AQ116	Pumping Station	H
		AT010	Disk /Dish	HAC
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AA010, AD030, AF030, AH010, AK080, AK160, AL025, AL073, AM020, AM030, AM080, AQ110, AQ116, AT010
		2	Approximate	AA010, AD030, AF030, AH010, AK080, AK160, AL025, AL073, AM020, AM030, AM080, AQ110, AQ116, AT010

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TABLE 84. Power point feature table.

H	{Header length and byte order};\ POWERP.PFT,Power Point Feature Table;-;\
H	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,POWERP1.PTI,:\
	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,POWERP2.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,POWERP3.PTI,; ;

POWERP

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		AQ020	Aerial Cableway Pylon /Ski Pylon	H
		AT040	Power Transmission Pylon /Power Transmission Pole	H
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	AQ020, AT040,
		2	Approximate	AQ020, AT040

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A.3.2.2 Earth Cover coverage. This coverage contains topographic and hydrographic features including shorelines, islands and boundaries of significance to marine navigation.

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a. Earth Cover coverage glossary.

AREA FEATURES

BA020 Foreshore That part of the shore or beach which lies between the low water mark and the coastline/shoreline. The same condition may exist in non-contiguous off-shore areas.

MCC Material Composition Category Composition material, excluding surface material.

MCS Material Composition Secondary Secondary material composition of feature.

BA030 Island A body of land surrounded by water.

BA040 Water (Except Inland) An area of water which normally has tidal fluctuations.

DA010 Ground Surface Element The characteristics of the soil.

LINE FEATURES

BA010 Coastline /Shoreline The line where a land mass is in contact with a body of water.

ACC Accuracy Category Accuracy of geographic position.

SLT Shoreline Type Category The physical characteristic of the shoreline area.

BA020 Foreshore That part of the shore or beach which lies between the low water mark and the coastline/shoreline. The same condition may exist in non-contiguous off-shore areas.

FA000 Administrative Boundary A line of demarcation between controlled areas.

ACC Accuracy Category Accuracy of geographic position.

NM3 Name 3 Name of the political entity on one side of a boundary.

NM4 Name 4 Name of the political entity on the other side of the boundary.

USE Usage Use.

FA020 Armistice Line A line established by opposing political groups as a result of cessation of hostilities.

NM3 Name 3 Name of the political entity on one side of a boundary.

NM4 Name 4 Name of the political entity on the other side of the boundary.

FA040 Claim Line A limit of an area which is unilaterally claimed by one political group without consent or negotiation with another.

NM3 Name 3 Name of the political entity on one side of a boundary.

FA060 Defacto Boundary An existing line of separation not officially recognized by various governments.

NM3 Name 3 Name of the political entity on one side of a boundary.

NM4 Name 4 Name of the political entity on the other side of the boundary.

USE Usage Use.

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FA110 International Date Line A line generally coinciding with the 180th meridian, modified to avoid land, and designated as the place where each calendar day begins.

POINT FEATURES

BA020 Foreshore That part of the shore or beach which lies between the low water mark and the coastline/shoreline. The same condition may exist in non-contiguous off-shore areas.

MCC Material Composition Category Composition material, excluding surface material.

MCS Material Composition Secondary Secondary material composition of feature.

BA030 Island A body of land surrounded by water.

TEXT FEATURES

ZD040 Named Location A geographic place on the earth, not normally appearing as a feature on a map, but having a name that is required to be placed on a map.

NAM Name Any identifier or code.

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TABLE 85. Earth Cover character value description table.

{Header length and byte order};\					
CHAR.VDT, Earth Cover Character Value Description Table;-i\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=T,5,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;i					
HACG	1	ECRAREA.AFT	F_CODE	BA030	Island
HACG	2	ECRAREA.AFT	F_CODE	BA040	Water (Except Inland)
HACG	3	ECRAREA.AFT	F_CODE	DA010	Ground Surface Element
HACG	4	FORESHOA.AFT	F_CODE	BA020	Foreshore
HACG	5	ADMINL.LFT	F_CODE	FA000	Administrative Boundary
HACG	6	BOUNDRYL.LFT	F_CODE	FA020	Armistice Line
HACG	7	BOUNDRYL.LFT	F_CODE	FA040	Claim Line
HACG	8	BOUNDRYL.LFT	F_CODE	FA060	Defacto Boundary
HACG	9	BOUNDRYL.LFT	F_CODE	FA110	International Date Line
HACG	10	COASTL.LFT	F_CODE	BA010	Coastline /Shoreline
HACG	11	FORESHOL.LFT	F_CODE	BA020	Foreshore
HACG	12	FORESHOP.PFT	F_CODE	BA020	Foreshore
HACG	13	ISLANDP.PFT	F_CODE	BA030	Island
HACG	14	ECRTEXT.TFT	F_CODE	ZD040	Named Location

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TABLE 86. Earth Cover integer value description table

{Header length and byte order};\					
INT.VDT, Earth Cover Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=S,1,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-;:					
HAC	1	FORESHOA.AFT	MCC	000	Unknown
HAC	2	FORESHOA.AFT	MCC	008	Boulders
HAC	3	FORESHOA.AFT	MCC	016	Clay
HAC	4	FORESHOA.AFT	MCC	046	Gravel
HAC	5	FORESHOA.AFT	MCC	065	Mud
HAC	6	FORESHOA.AFT	MCC	084	Rock /Rocky
HAC	7	FORESHOA.AFT	MCC	088	Sand
HAC	8	FORESHOA.AFT	MCC	098	Shingle
HAC	9	FORESHOA.AFT	MCC	108	Stone
HAC	10	FORESHOA.AFT	MCS	000	Unknown
HAC	11	FORESHOA.AFT	MCS	046	Gravel
HAC	12	FORESHOA.AFT	MCS	065	Mud
HAC	13	FORESHOA.AFT	MCS	088	Sand
HAC	14	FORESHOA.AFT	MCS	098	Shingle
HAC	15	FORESHOA.AFT	MCS	108	Stone
HACG	16	ADMINL.LFT	ACC	001	Accurate
HACG	17	ADMINL.LFT	ACC	002	Approximate
HACG	18	ADMINL.LFT	ACC	005	Disputed
HACG	19	ADMINL.LFT	ACC	006	Undisputed
HACG	20	ADMINL.LFT	USE	023	International
HACG	21	ADMINL.LFT	USE	032	Insular
HACG	22	BOUNDRYL.LFT	USE	023	International
HACG	23	COASTL.LFT	ACC	001	Accurate
HACG	24	COASTL.LFT	ACC	002	Approximate
HACG	25	COASTL.LFT	SLT	000	Unknown
HACG	26	COASTL.LFT	SLT	006	Mangrove /Nipa
HACG	27	COASTL.LFT	SLT	008	Marsh, Swamp
HACG	28	COASTL.LFT	SLT	010	Rocky
HACG	29	COASTL.LFT	SLT	011	Rubble
HACG	30	COASTL.LFT	SLT	013	Sandy
HACG	31	COASTL.LFT	SLT	014	Stony, Shingly
HACG	32	COASTL.LFT	SLT	015	Other
HAC	33	FORESHOP.PFT	MCC	000	Unknown
HAC	34	FORESHOP.PFT	MCC	008	Boulders
HAC	35	FORESHOP.PFT	MCC	016	Clay
HAC	36	FORESHOP.PFT	MCC	046	Gravel
HAC	37	FORESHOP.PFT	MCC	065	Mud
HAC	38	FORESHOP.PFT	MCC	084	Rock /Rocky
HAC	39	FORESHOP.PFT	MCC	088	Sand
HAC	40	FORESHOP.PFT	MCC	098	Shingle
HAC	41	FORESHOP.PFT	MCC	108	Stone
HAC	42	FORESHOP.PFT	MCS	000	Unknown
HAC	43	FORESHOP.PFT	MCS	046	Gravel
HAC	44	FORESHOP.PFT	MCS	065	Mud

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TABLE 86. Earth Cover integer value description table - Continued.

HAC	45	FORESHOP.PFT	MCS	088	Sand
HAC	46	FORESHOP.PFT	MCS	098	Shingle
HAC	47	FORESHOP.PFT	MCS	108	Stone

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TABLE 87. Earth Cover area feature table.

HACG	{Header length and byte order};\ ECRAREA.AFT,Earth Cover Area Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,ECRAREA1.ATI,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,ECRAREA2.ATI,:\n FAC_ID=I,1,N,Face Primitive Foreign Key,-,ECRAREA3.ATI,;;
------	---

ECRAREA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		BA030	Island	HACG
		BA040	Water (Except Inland)	HACG
		DA010	Ground Surface Element	HACG

TABLE 88. Foreshore area feature table.

HACG	{Header length and byte order};\ FORESHOA.AFT,Foreshore Area Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\n HAC HAC MCC=S,1,N,Material Composition Category,INT.VDT,-,:\n MCS=S,1,N,Material Composition Secondary,INT.VDT,-,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,FORESHA1.ATI,:\n FAC_ID=I,1,N,Face Primitive Foreign Key,-,FORESHA2.ATI,;;
------	--

FORESHOA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		BA020	Foreshore	HACG
MCC	Material Composition Category			<u>Applicable F_CODE</u>
	default	0	Unknown	BA020
		8	Boulders	BA020
		16	Clay	BA020
		46	Gravel	BA020
		65	Mud	BA020
		84	Rock /Rocky	BA020
		88	Sand	BA020
		98	Shingle	BA020
		108	Stone	BA020
MCS	Material Composition Secondary			
	default	0	Unknown	BA020
		46	Gravel	BA020
		65	Mud	BA020
		88	Sand	BA020
		98	Shingle	BA020
		108	Stone	BA020

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TABLE 89. Administrative line feature table.

HACG	{Header length and byte order};\ ADMINL.LFT,Administrative Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,-,;\
HACG	NM3=T,30,N,Name 3,-,-,;\
HACG	NM4=T,30,N,Name 4,-,-,;\
HACG	USE=S,1,N,Usage,INT.VDT,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,ADMINL1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,ADMINL2.LTI,;;

ADMINL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FA000	Administrative Boundary	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
		1	Accurate	FA000
		2	Approximate	FA000
		5	Disputed	FA000
	default	6	Undisputed	FA000
NM3	Name 3			
	default	"UNK"	Unknown	FA000
		text string (e.g., "USA")		FA000
NM4	Name 4			
	default	"UNK"	Unknown	FA000
		text string (e.g., "Canada")		FA000
USE	Usage			
	default	23	International	FA000
		32	Insular	FA000

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TABLE 90. Boundary line feature table.

HACG	{Header length and byte order};\
HACG	BOUNDRYL.LFT,Boundary Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,BOUNDRL1.LTI,:\
HACG	NM3=T,30,N,Name 3,-,-,:\
HACG	NM4=T,30,N,Name 4,-,-,:\
HACG	USE=S,1,N,Usage,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BOUNDRL2.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,BOUNDRL3.LTI,;\

BOUNDRYL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		FA020	Armistice Line	HACG
		FA040	Claim Line	HACG
		FA060	Defacto Boundary	HACG
		FA110	International Date Line	HACG
NM3	Name 3			<u>Applicable F_CODE</u>
		"N/A"	Null	FA110
	default	"UNK"	Unknown	FA020, FA040, FA060
		text string (e.g., "USA")		FA020, FA040, FA060
NM4	Name 4			
		"N/A"	Null	FA040, FA110
	default	"UNK"	Unknown	FA020, FA060, FA020, FA060
		text string (e.g., "Canada")		
USE	Usage			
		"N/A"	Null	FA020, FA040, FA110
	default	23	International	FA060

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TABLE 91. Coastline line feature table.

HACG	{Header length and byte order};\ COASTL.LFT,Coastline Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
	SLT=S,1,N,Shoreline Type Category,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,COASTL1.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,COASTL2.LTI,;;

COASTL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA010	Coastline /Shoreline	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BA010
		2	Approximate	BA010
SLT	Shoreline Type Category			
	default	0	Unknown	BA010
		6	Mangrove /Nipa	BA010
		8	Marsh, Swamp	BA010
		10	Rocky	BA010
		11	Rubble	BA010
		13	Sandy	BA010
		14	Stony, Shingly	BA010
		15	Other	BA010

TABLE 92. Foreshore line feature table.

HACG	{Header length and byte order};\ FORESHOL.LFT,Foreshore Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,FORESHL1.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,FORESHL2.LTI,;;

FORESHOL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA020	Foreshore	HACG

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TABLE 93. Foreshore point feature table.

HACG	{Header length and byte order};\ FORESHOP.PFT,Foreshore Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HAC	MCC=S,1,N,Material Composition Category,INT.VDT,-,-,:\
HAC	MCS=S,1,N,Material Composition Secondary,INT.VDT,-,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,FORESHP1.PTI,:\
HAC	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,FORESHP2.PTI,;;

FORESHOP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA020	Foreshore	HACG
MCC	Material Composition Category			<u>Applicable F_CODE</u>
	default	0	Unknown	BA020
		8	Boulders	BA020
		16	Clay	BA020
		46	Gravel	BA020
		65	Mud	BA020
		84	Rock /Rocky	BA020
		88	Sand	BA020
		98	Shingle	BA020
		108	Stone	BA020
MCS	Material Composition Secondary			
	default	0	Unknown	BA020
		46	Gravel	BA020
		65	Mud	BA020
		88	Sand	BA020
		98	Shingle	BA020
		108	Stone	BA020

TABLE 94. Island point feature table.

HACG	{Header length and byte order};\ ISLANDP.PFT,Island Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,ISLANDP1.PTI,:\
HAC	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,ISLANDP2.PTI,;;

ISLANDP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA030	Island	HACG

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TABLE 95. Earth Cover text feature table.

HACG	{Header length and byte order};\ ECRTEXT.TFT,Earth Cover Text Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,ECRTEXT1.TTI,;\
HACG	TXT_ID=I,1,N,Text Primitive Foreign Key,-,ECRTEXT2.TTI,; ;

ECRTEXT

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	ZD040	Named Location	HACG
NAM	Name	text string (e.g., "Grand Banks")		<u>Applicable F_CODE</u> ZD040

A.3.2.3 Environment coverage. This coverage contains environmental characteristics relating to currents, tides and anomalies of significance to marine navigation.

- a. Environment coverage glossary.

AREA FEATURES

ZC040 Magnetic Disturbance Area A localized anomaly in the earth's magnetic field.

VAV Variation Anomaly Value The difference between the magnetic variation (MVC) of the disturbance area and the magnetic variation of the surrounding area.

Increment: 1 Degree

Limits: NA

Variance: NA

POINT FEATURES

BG010 Current Flow A designation or symbol on a map or chart indicating the flow direction of a current.

CRN Current Rate Minimum Minimum speed of current.

Increment: .1 Knot

Limits: NA

Variance: NA

CRX Current Rate Maximum Maximum speed of current.

Increment: .1 Knot

Limits: NA

Variance: NA

CUR Current Type Category The horizontal movement of a body of water.

DOF Direction of Flow Bearing of movement of direction of flow.

EXS Existence Category State or condition of the feature.

HS1 Current Information (1) Month of current appearance.

HS2 Current Information (2) Month of current disappearance, if different from HS1.

NAM Name Any identifier or code.

BG020 Tide Gauge An instrument for measuring the height of the tide.

BG030 Tide Data Point Place for which tabulated tidal stream data are given.

NAM Name Any identifier or code.

BG040 Current Diagram A graph or chartlet showing the average speed of the flood and ebb currents at different periods of the current cycle.

C80 Rate of Current Rate of current flow at high water.

Increment: .1 Knot

Limits: NA

Variance: NA

C81 Rate of Current (1) Rate of current flow 1 hour after high water.

Increment: .1 Knot

Limits: NA

Variance: NA

C82 Rate of Current (2) Rate of current flow 2 hours after high water.

Increment: .1 Knot

Limits: NA

Variance: NA

C83 Rate of Current (3) Rate of current flow 3 hours after high water.

Increment: .1 Knot

Limits: NA

Variance: NA

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C84 Rate of Current (4) Rate of current flow 4 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C85 Rate of Current (5) Rate of current flow 5 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C86 Rate of Current (6) Rate of current flow 6 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C87 Rate of Current (7) Rate of current flow 7 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C88 Rate of Current (8) Rate of current flow 8 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C89 Rate of Current (9) Rate of current flow 9 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C90 Rate of Current (10) Rate of current flow 10 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

C91 Rate of Current (11) Rate of current flow 11 hours after high water.
Increment: .1 Knot
Limits: NA
Variance: NA

D80 Direction of Current Direction of current flow at high water.
Increment: 1 Degree
Limits: Measured clockwise from True North.
Variance: NA

D81 Direction of Current (1) Direction of current flow 1 hour after high water.
Increment: 1 Degree
Limits: Measured clockwise from True North.
Variance: NA

D82 Direction of Current (2) Direction of current flow 2 hours after high water.
Increment: 1 Degree
Limits: Measured clockwise from True North.
Variance: NA

D83 Direction of Current (3) Direction of current flow 3 hours after high water.
Increment: 1 Degree
Limits: Measured clockwise from True North.
Variance: NA

D84 Direction of Current (4) Direction of current flow 4 hours after high water.
Increment: 1 Degree
Limits: Measured clockwise from True North.
Variance: NA

D85 Direction of Current (5) Direction of current flow 5 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D86 Direction of Current (6) Direction of current flow 6 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D87 Direction of Current (7) Direction of current flow 7 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D88 Direction of Current (8) Direction of current flow 8 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D89 Direction of Current (9) Direction of current flow 9 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D90 Direction of Current (10) Direction of current flow 10 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

D91 Direction of Current (11) Direction of current flow 11 hours after high water.

Increment: 1 Degree

Limits: Measured clockwise from True North.

Variance: NA

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TABLE 96. Environment character value description table.

{Header length and byte order};\					
CHAR.VDT, Environment Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-; ;					
HACG	1	ENVAREA.AFT	F_CODE	ZC040	Magnetic Disturbance Area
HAC	2	CURRDIAP.PFT	F_CODE	BG040	Current Diagram
HAC	3	CURRFLP.PFT	F_CODE	BG010	Current Flow
H	4	TIDEP.PFT	F_CODE	BG020	Tide Gauge
HAC	5	TIDEP.PFT	F_CODE	BG030	Tide Data Point

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TABLE 97. Environment integer value description table.

{Header length and byte order};\					
INT.VDT, Environment Integer Value Description Table;-i\					
ID=I,1,P,Row ID,-,-,\					
TABLE=T,12,N,Feature Class Table Name,-,-,\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,\					
VALUE=S,1,N,Attribute Value,-,-,\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;					
HAC	1	CURRFLP.PFT	CUR	000	Unknown
HAC	2	CURRFLP.PFT	CUR	001	Ebb
HAC	3	CURRFLP.PFT	CUR	002	Flood
HAC	4	CURRFLP.PFT	CUR	003	General
HAC	5	CURRFLP.PFT	CUR	005	Ocean
HAC	6	CURRFLP.PFT	EXS	001	Definite
HAC	7	CURRFLP.PFT	EXS	002	Doubtful
HAC	8	CURRFLP.PFT	HS1	000	Unknown /NA
HAC	9	CURRFLP.PFT	HS1	001	Jan
HAC	10	CURRFLP.PFT	HS1	002	Feb
HAC	11	CURRFLP.PFT	HS1	003	Mar
HAC	12	CURRFLP.PFT	HS1	004	Apr
HAC	13	CURRFLP.PFT	HS1	005	May
HAC	14	CURRFLP.PFT	HS1	006	Jun
HAC	15	CURRFLP.PFT	HS1	007	Jul
HAC	16	CURRFLP.PFT	HS1	008	Aug
HAC	17	CURRFLP.PFT	HS1	009	Sep
HAC	18	CURRFLP.PFT	HS1	010	Oct
HAC	19	CURRFLP.PFT	HS1	011	Nov
HAC	20	CURRFLP.PFT	HS1	012	Dec
HAC	21	CURRFLP.PFT	HS2	000	Unknown /NA
HAC	22	CURRFLP.PFT	HS2	001	Jan
HAC	23	CURRFLP.PFT	HS2	002	Feb
HAC	24	CURRFLP.PFT	HS2	003	Mar
HAC	25	CURRFLP.PFT	HS2	004	Apr
HAC	26	CURRFLP.PFT	HS2	005	May
HAC	27	CURRFLP.PFT	HS2	006	Jun
HAC	28	CURRFLP.PFT	HS2	007	Jul
HAC	29	CURRFLP.PFT	HS2	008	Aug
HAC	30	CURRFLP.PFT	HS2	009	Sep
HAC	31	CURRFLP.PFT	HS2	010	Oct
HAC	32	CURRFLP.PFT	HS2	011	Nov
HAC	33	CURRFLP.PFT	HS2	012	Dec

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TABLE 98. Environment area feature table.

HACG	{Header length and byte order};\ ENVAREA.AFT,Environment Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	VAV=S,1,N,Variation Anomaly Value,-,-,:\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,ENVAREA1.ATI,:\
HACG	FAC_ID=I,1,N,Face Primitive Foreign Key,-,ENVAREA2.ATI,;\

ENVAREA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	ZC040	Magnetic Disturbance Area	HACG
VAV	Variation Anomaly Value			<u>Applicable F_CODE</u>
	default	0	Unknown	ZC040
		1 to 360	actual value (degrees)	ZC040

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TABLE 99. Current Diagram point feature table.

HAC	{Header length and byte order};\
HAC	CURRDIAP.PFT,Current Diagram Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HAC	C80=F,1,N,Rate of Current,-,-,:\
HAC	C81=F,1,N,Rate of Current (1),-,-,:\
HAC	C82=F,1,N,Rate of Current (2),-,-,:\
HAC	C83=F,1,N,Rate of Current (3),-,-,:\
HAC	C84=F,1,N,Rate of Current (4),-,-,:\
HAC	C85=F,1,N,Rate of Current (5),-,-,:\
HAC	C86=F,1,N,Rate of Current (6),-,-,:\
HAC	C87=F,1,N,Rate of Current (7),-,-,:\
HAC	C88=F,1,N,Rate of Current (8),-,-,:\
HAC	C89=F,1,N,Rate of Current (9),-,-,:\
HAC	C90=F,1,N,Rate of Current (10),-,-,:\
HAC	C91=F,1,N,Rate of Current (11),-,-,:\
HAC	D80=S,1,N,Direction of Current,-,-,:\
HAC	D81=S,1,N,Direction of Current (1),-,-,:\
HAC	D82=S,1,N,Direction of Current (2),-,-,:\
HAC	D83=S,1,N,Direction of Current (3),-,-,:\
HAC	D84=S,1,N,Direction of Current (4),-,-,:\
HAC	D85=S,1,N,Direction of Current (5),-,-,:\
HAC	D86=S,1,N,Direction of Current (6),-,-,:\
HAC	D87=S,1,N,Direction of Current (7),-,-,:\
HAC	D88=S,1,N,Direction of Current (8),-,-,:\
HAC	D89=S,1,N,Direction of Current (9),-,-,:\
HAC	D90=S,1,N,Direction of Current (10),-,-,:\
HAC	D91=S,1,N,Direction of Current (11),-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,CURRDIP1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,CURRDIP2.PTI,; ;

CURRDIAP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BG040	Current Diagram	HAC
C80	Rate of Current			<u>Applicable F_CODE</u>
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C81	Rate of Current (1)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C82	Rate of Current (2)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C83	Rate of Current (3)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040

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C84	Rate of Current (4)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C85	Rate of Current (5)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C86	Rate of Current (6)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C87	Rate of Current (7)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C88	Rate of Current (8)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C89	Rate of Current (9)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C90	Rate of Current (10)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
C91	Rate of Current (11)			
	default	0.0	Unknown	BG040
		0.1 to 1000.0	actual value to the nearest .1 knot	BG040
D80	Direction of Current			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D81	Direction of Current (1)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D82	Direction of Current (2)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D83	Direction of Current (3)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D84	Direction of Current (4)			

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	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D85	Direction of Current (5)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D86	Direction of Current (6)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D87	Direction of Current (7)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D88	Direction of Current (8)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D89	Direction of Current (9)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D90	Direction of Current (10)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040
D91	Direction of Current (11)			
	default	0	Unknown	BG040
		1 to 360	actual value (degrees)	BG040

TABLE 100. Current Flow point feature table.

HAC	{Header length and byte order};\
HAC	CURRFLP.PFT,Current Flow Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HAC	CRN=F,1,N,Current Rate Minimum,-,-;\
HAC	CRX=F,1,N,Current Rate Maximum,-,-;\
HAC	CUR=S,1,N,Current Type Category,INT.VDT,-,-;\
HAC	DOF=S,1,N,Direction of Flow,-,-;\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HAC	HS1=S,1,N,Current Information (1),INT.VDT,-,-;\
HAC	HS2=S,1,N,Current Information (2),INT.VDT,-,-;\
HAC	NAM=T,30,N,Name,-,-;\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,CURRFLP1.PTI,;\
HAC	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,CURRFLP2.PTI,; ;

CURRFLP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BG010	Current Flow	HAC
CRN	Current Rate Minimum			<u>Applicable F_CODE</u>
	default	0.0	Unknown	BG010
		0.1 to 1000.0	actual value to the nearest .1 knot	BG010

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CRX	Current Rate Maximum			
	default	0.0	Unknown	BG010
		0.1 to 1000.0	actual value to the nearest .1 knot	BG010
CUR	Current Type Category			
	default	0	Unknown	BG010
		1	Ebb	BG010
		2	Flood	BG010
		3	General	BG010
		5	Ocean	BG010
DOF	Direction of Flow			
	default	0	Unknown	BG010
		1 to 360	actual value (degrees)	BG010
EXS	Existence Category			
	default	1	Definite	BG010
		2	Doubtful	BG010
HS1	Current Information (1)			
	default	0	Unknown /NA	BG010
		1	Jan	BG010
		2	Feb	BG010
		3	Mar	BG010
		4	Apr	BG010
		5	May	BG010
		6	Jun	BG010
		7	Jul	BG010
		8	Aug	BG010
		9	Sep	BG010
		10	Oct	BG010
		11	Nov	BG010
	12	Dec	BG010	
HS2	Current Information (2)			
	default	0	Unknown /NA	BG010
		1	Jan	BG010
		2	Feb	BG010
		3	Mar	BG010
		4	Apr	BG010
		5	May	BG010
		6	Jun	BG010
		7	Jul	BG010
		8	Aug	BG010
		9	Sep	BG010
		10	Oct	BG010
	11	Nov	BG010	
NAM	Name			
	default	"UNK"	Unknown	BG010
		text string (e.g., "Gulf Stream")		BG010

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TABLE 101. Tide point feature table*.

HAC	{Header length and byte order};\ TIDEP.PFT,Tide Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,TIDEP1.PTI,;\
HAC	NAM=T,30,N,Name,-,-;\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,TIDEP2.PTI,;\
HAC	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,TIDEP3.PTI,; ;

*the thematic index on F_CODE applies to the H library only

TIDEP

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BG020	Tide Gauge	H
		BG030	Tide Data Point	HAC
NAM	Name	"N/A"	Null	<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BG020
		text string (e.g., "Point Mugu")		BG030

A.3.2.4 Hydrography coverage. This coverage contains hydrographic features including depths, bottom characteristics, etc., of significance to marine navigation.

a. Hydrography coverage glossary.

AREA FEATURES

BE010 Depth Curve A navigational safety line indicating that no sounding of a lesser depth exists seaward of the line, but greater depths may occur on the shallow side of the line.

ACC Accuracy Category Accuracy of geographic position.

CVH Depth Curve or Contour Value High The maximum value of a depth curve polygon.

CVL Depth Curve or Contour Value Low The minimum value of a depth curve polygon.

LINE FEATURES

BE010 Depth Curve A navigational safety line indicating that no sounding of a lesser depth exists seaward of the line, but greater depths may occur on the shallow side of the line.

ACC Accuracy Category Accuracy of geographic position.

CRV Depth Curve or Contour Value A specified value assigned to a particular depth curve or contour.

POINT FEATURES

BE020 Sounding A measured water depth or spot depth which has been reduced to chart datum.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDH Hydrographic Drying Height The height of the feature, which tidal waters cover and uncover, referenced to a specified vertical datum.

Increment: .1 Meter

Limits: From the specified vertical datum to the exposed portion of the foreshore.

Variance: NA

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

SND Sounding Category Condition of depth.

SVC Sounding Velocity Indicates type of correction that has been added to, or subtracted from instrument reading to obtain correct depth.

VAL Value Numeric value. (Used for year.)

BF010 Bottom Characteristics Designations used on surveys and charts to indicate the consistency, color and classification of the sea floor, as determined by sampling methods.

CSM Secondary Material Characteristics Characteristics of secondary material composition of feature. **MCC Material Composition Category** Composition material, excluding surface material.

MCS Material Composition Secondary Secondary material composition of feature.

MCU Material Composition Underlying Underlying material composition of feature.

PSC Physical Surface Characteristics Principal characteristic(s) of the surface.

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UMC Underlying Material Characteristics Characteristics of underlying material.

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TABLE 102. Hydrography character value description table.

{Header length and byte order};\					
CHAR.VDT, Hydrography Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-; ;					
HACG	1	HYDAREA.AFT	F_CODE	BE010	Depth Curve
HACG	2	HYDLINE.LFT	F_CODE	BE010	Depth Curve
HACG	3	BOTCHARP.PFT	F_CODE	BF010	Bottom Characteristics
HACG	4	SOUNDP.PFT	F_CODE	BE020	Sounding

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TABLE 103. Hydrography integer value description table.

{Header length and byte order};\					
INT.VDT, Hydrography Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,;\					
TABLE=T,12,N,Feature Class Table Name,-,-,;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,;\					
VALUE=S,1,N,Attribute Value,-,-,;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;i					
HACG	1	HYDAREA.AFT	ACC	001	Accurate
HACG	2	HYDAREA.AFT	ACC	002	Approximate
HACG	3	HYDLINE.LFT	ACC	001	Accurate
HACG	4	HYDLINE.LFT	ACC	002	Approximate
HACG	5	BOTCHARP.PFT	CSM	000	Unknown
HACG	6	BOTCHARP.PFT	CSM	001	Broken
HACG	7	BOTCHARP.PFT	CSM	002	Coarse
HACG	8	BOTCHARP.PFT	CSM	003	Decayed
HACG	9	BOTCHARP.PFT	CSM	004	Fine
HACG	10	BOTCHARP.PFT	CSM	005	Gritty
HACG	11	BOTCHARP.PFT	CSM	006	Hard
HACG	12	BOTCHARP.PFT	CSM	007	Rotten
HACG	13	BOTCHARP.PFT	CSM	008	Soft
HACG	14	BOTCHARP.PFT	CSM	009	Sticky
HACG	15	BOTCHARP.PFT	CSM	010	Stiff
HACG	16	BOTCHARP.PFT	CSM	011	Streaky
HACG	17	BOTCHARP.PFT	CSM	012	Tenacious
HACG	18	BOTCHARP.PFT	CSM	013	Uneven
HACG	19	BOTCHARP.PFT	CSM	017	Calcareous
HACG	20	BOTCHARP.PFT	CSM	018	Flinty
HACG	21	BOTCHARP.PFT	CSM	019	Glacial
HACG	22	BOTCHARP.PFT	CSM	020	Ground
HACG	23	BOTCHARP.PFT	CSM	021	Large
HACG	24	BOTCHARP.PFT	CSM	022	Rocky
HACG	25	BOTCHARP.PFT	CSM	023	Small
HACG	26	BOTCHARP.PFT	CSM	024	Speckled
HACG	27	BOTCHARP.PFT	CSM	025	Varied
HACG	28	BOTCHARP.PFT	CSM	026	Volcanic
HACG	29	BOTCHARP.PFT	CSM	027	Medium
HACG	30	BOTCHARP.PFT	MCC	000	Unknown
HACG	31	BOTCHARP.PFT	MCC	004	Ash
HACG	32	BOTCHARP.PFT	MCC	008	Boulders
HACG	33	BOTCHARP.PFT	MCC	012	Chalk
HACG	34	BOTCHARP.PFT	MCC	014	Cinders
HACG	35	BOTCHARP.PFT	MCC	015	Cirripedia
HACG	36	BOTCHARP.PFT	MCC	016	Clay
HACG	37	BOTCHARP.PFT	MCC	018	Cobble
HACG	38	BOTCHARP.PFT	MCC	024	Coral
HACG	39	BOTCHARP.PFT	MCC	025	Coral Head
HACG	40	BOTCHARP.PFT	MCC	028	Diatoms
HACG	41	BOTCHARP.PFT	MCC	036	Foraminifera
HACG	42	BOTCHARP.PFT	MCC	037	Fucus
HACG	43	BOTCHARP.PFT	MCC	041	Globigerina
HACG	44	BOTCHARP.PFT	MCC	045	Grass /Thatch

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TABLE 103. Hydrography integer value description table - Continued.

HACG	45	BOTCHARP.PFT	MCC	046	Gravel
HACG	46	BOTCHARP.PFT	MCC	048	Ground
HACG	47	BOTCHARP.PFT	MCC	052	Lava
HACG	48	BOTCHARP.PFT	MCC	058	Madrepores
HACG	49	BOTCHARP.PFT	MCC	059	Manganese
HACG	50	BOTCHARP.PFT	MCC	061	Marl
HACG	51	BOTCHARP.PFT	MCC	063	Mattes
HACG	52	BOTCHARP.PFT	MCC	065	Mud
HACG	53	BOTCHARP.PFT	MCC	066	Mussels
HACG	54	BOTCHARP.PFT	MCC	069	Ooze
HACG	55	BOTCHARP.PFT	MCC	070	Oysters
HACG	56	BOTCHARP.PFT	MCC	073	Pebbles
HACG	57	BOTCHARP.PFT	MCC	075	Polyzoa
HACG	58	BOTCHARP.PFT	MCC	078	Pteropods
HACG	59	BOTCHARP.PFT	MCC	079	Pumice
HACG	60	BOTCHARP.PFT	MCC	080	Quartz
HACG	61	BOTCHARP.PFT	MCC	081	Radiolaria
HACG	62	BOTCHARP.PFT	MCC	084	Rock /Rocky
HACG	63	BOTCHARP.PFT	MCC	088	Sand
HACG	64	BOTCHARP.PFT	MCC	090	Schist
HACG	65	BOTCHARP.PFT	MCC	092	Scoria
HACG	66	BOTCHARP.PFT	MCC	093	Sea-Tangle
HACG	67	BOTCHARP.PFT	MCC	094	Seaweed
HACG	68	BOTCHARP.PFT	MCC	096	Shells
HACG	69	BOTCHARP.PFT	MCC	098	Shingle
HACG	70	BOTCHARP.PFT	MCC	099	Silt
HACG	71	BOTCHARP.PFT	MCC	105	Spicules
HACG	72	BOTCHARP.PFT	MCC	106	Sponge
HACG	73	BOTCHARP.PFT	MCC	108	Stone
HACG	74	BOTCHARP.PFT	MCC	111	Tufa
HACG	75	BOTCHARP.PFT	MCS	000	Unknown
HACG	76	BOTCHARP.PFT	MCS	004	Ash
HACG	77	BOTCHARP.PFT	MCS	008	Boulders
HACG	78	BOTCHARP.PFT	MCS	012	Chalk
HACG	79	BOTCHARP.PFT	MCS	014	Cinders
HACG	80	BOTCHARP.PFT	MCS	015	Cirripedia
HACG	81	BOTCHARP.PFT	MCS	016	Clay
HACG	82	BOTCHARP.PFT	MCS	018	Cobble
HACG	83	BOTCHARP.PFT	MCS	024	Coral
HACG	84	BOTCHARP.PFT	MCS	025	Coral Head
HACG	85	BOTCHARP.PFT	MCS	028	Diatoms
HACG	86	BOTCHARP.PFT	MCS	036	Foraminifera
HACG	87	BOTCHARP.PFT	MCS	037	Fucus
HACG	88	BOTCHARP.PFT	MCS	041	Globigerina
HACG	89	BOTCHARP.PFT	MCS	045	Grass /Thatch
HACG	90	BOTCHARP.PFT	MCS	046	Gravel
HACG	91	BOTCHARP.PFT	MCS	048	Ground
HACG	92	BOTCHARP.PFT	MCS	052	Lava
HACG	93	BOTCHARP.PFT	MCS	058	Madrepores

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TABLE 103. Hydrography integer value description table - Continued.

HACG	94	BOTCHARP.PFT	MCS	059	Manganese
HACG	95	BOTCHARP.PFT	MCS	061	Marl
HACG	96	BOTCHARP.PFT	MCS	063	Mattes
HACG	97	BOTCHARP.PFT	MCS	065	Mud
HACG	98	BOTCHARP.PFT	MCS	066	Mussels
HACG	99	BOTCHARP.PFT	MCS	069	Ooze
HACG	100	BOTCHARP.PFT	MCS	070	Oysters
HACG	101	BOTCHARP.PFT	MCS	073	Pebbles
HACG	102	BOTCHARP.PFT	MCS	075	Polyzoa
HACG	103	BOTCHARP.PFT	MCS	078	Pteropods
HACG	104	BOTCHARP.PFT	MCS	079	Pumice
HACG	105	BOTCHARP.PFT	MCS	080	Quartz
HACG	106	BOTCHARP.PFT	MCS	081	Radiolaria
HACG	107	BOTCHARP.PFT	MCS	084	Rock /Rocky
HACG	108	BOTCHARP.PFT	MCS	088	Sand
HACG	109	BOTCHARP.PFT	MCS	090	Schist
HACG	110	BOTCHARP.PFT	MCS	092	Scoria
HACG	111	BOTCHARP.PFT	MCS	093	Sea-Tangle
HACG	112	BOTCHARP.PFT	MCS	094	Seaweed
HACG	113	BOTCHARP.PFT	MCS	096	Shells
HACG	114	BOTCHARP.PFT	MCS	098	Shingle
HACG	115	BOTCHARP.PFT	MCS	099	Silt
HACG	116	BOTCHARP.PFT	MCS	105	Spicules
HACG	117	BOTCHARP.PFT	MCS	106	Sponge
HACG	118	BOTCHARP.PFT	MCS	108	Stone
HACG	119	BOTCHARP.PFT	MCS	111	Tufa
HACG	120	BOTCHARP.PFT	MCU	000	Unknown
HACG	121	BOTCHARP.PFT	MCU	004	Ash
HACG	122	BOTCHARP.PFT	MCU	008	Boulders
HACG	123	BOTCHARP.PFT	MCU	012	Chalk
HACG	124	BOTCHARP.PFT	MCU	014	Cinders
HACG	125	BOTCHARP.PFT	MCU	015	Cirripecta
HACG	126	BOTCHARP.PFT	MCU	016	Clay
HACG	127	BOTCHARP.PFT	MCU	018	Cobble
HACG	128	BOTCHARP.PFT	MCU	024	Coral
HACG	129	BOTCHARP.PFT	MCU	025	Coral Head
HACG	130	BOTCHARP.PFT	MCU	028	Diatoms
HACG	131	BOTCHARP.PFT	MCU	036	Foraminifera
HACG	132	BOTCHARP.PFT	MCU	037	Fucus
HACG	133	BOTCHARP.PFT	MCU	041	Globigerina
HACG	134	BOTCHARP.PFT	MCU	045	Grass /Thatch
HACG	135	BOTCHARP.PFT	MCU	046	Gravel
HACG	136	BOTCHARP.PFT	MCU	048	Ground
HACG	137	BOTCHARP.PFT	MCU	052	Lava
HACG	138	BOTCHARP.PFT	MCU	058	Madrepores
HACG	139	BOTCHARP.PFT	MCU	059	Manganese
HACG	140	BOTCHARP.PFT	MCU	061	Marl
HACG	141	BOTCHARP.PFT	MCU	063	Mattes
HACG	142	BOTCHARP.PFT	MCU	065	Mud

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TABLE 103. Hydrography integer value description table - Continued.

HACG	143	BOTCHARP.PFT	MCU	066	Mussels
HACG	144	BOTCHARP.PFT	MCU	069	Ooze
HACG	145	BOTCHARP.PFT	MCU	070	Oysters
HACG	146	BOTCHARP.PFT	MCU	073	Pebbles
HACG	147	BOTCHARP.PFT	MCU	075	Polyzoa
HACG	148	BOTCHARP.PFT	MCU	078	Pteropods
HACG	149	BOTCHARP.PFT	MCU	079	Pumice
HACG	150	BOTCHARP.PFT	MCU	080	Quartz
HACG	151	BOTCHARP.PFT	MCU	081	Radiolaria
HACG	152	BOTCHARP.PFT	MCU	084	Rock /Rocky
HACG	153	BOTCHARP.PFT	MCU	088	Sand
HACG	154	BOTCHARP.PFT	MCU	090	Schist
HACG	155	BOTCHARP.PFT	MCU	092	Scoria
HACG	156	BOTCHARP.PFT	MCU	093	Sea-Tangle
HACG	157	BOTCHARP.PFT	MCU	094	Seaweed
HACG	158	BOTCHARP.PFT	MCU	096	Shells
HACG	159	BOTCHARP.PFT	MCU	098	Shingle
HACG	160	BOTCHARP.PFT	MCU	099	Silt
HACG	161	BOTCHARP.PFT	MCU	105	Spicules
HACG	162	BOTCHARP.PFT	MCU	106	Sponge
HACG	163	BOTCHARP.PFT	MCU	108	Stone
HACG	164	BOTCHARP.PFT	MCU	111	Tufa
HACG	165	BOTCHARP.PFT	PSC	000	Unknown
HACG	166	BOTCHARP.PFT	PSC	001	Broken
HACG	167	BOTCHARP.PFT	PSC	002	Coarse
HACG	168	BOTCHARP.PFT	PSC	003	Decayed
HACG	169	BOTCHARP.PFT	PSC	004	Fine
HACG	170	BOTCHARP.PFT	PSC	005	Gritty
HACG	171	BOTCHARP.PFT	PSC	006	Hard
HACG	172	BOTCHARP.PFT	PSC	007	Rotten
HACG	173	BOTCHARP.PFT	PSC	008	Soft
HACG	174	BOTCHARP.PFT	PSC	009	Sticky
HACG	175	BOTCHARP.PFT	PSC	010	Stiff
HACG	176	BOTCHARP.PFT	PSC	011	Streaky
HACG	177	BOTCHARP.PFT	PSC	012	Tenacious
HACG	178	BOTCHARP.PFT	PSC	013	Uneven
HACG	179	BOTCHARP.PFT	PSC	017	Calcareous
HACG	180	BOTCHARP.PFT	PSC	018	Flinty
HACG	181	BOTCHARP.PFT	PSC	019	Glacial
HACG	182	BOTCHARP.PFT	PSC	020	Ground
HACG	183	BOTCHARP.PFT	PSC	021	Large
HACG	184	BOTCHARP.PFT	PSC	022	Rocky
HACG	185	BOTCHARP.PFT	PSC	023	Small
HACG	186	BOTCHARP.PFT	PSC	024	Speckled
HACG	187	BOTCHARP.PFT	PSC	025	Varied
HACG	188	BOTCHARP.PFT	PSC	026	Volcanic
HACG	189	BOTCHARP.PFT	PSC	027	Medium
HACG	190	BOTCHARP.PFT	PSC	028	Springs in Seabed
HACG	191	BOTCHARP.PFT	PSC	029	Mobile Bottom

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TABLE 103. Hydrography integer value description table - Continued.

HACG	192	BOTCHARP.PFT	UMC	000	Unknown
HACG	193	BOTCHARP.PFT	UMC	001	Broken
HACG	194	BOTCHARP.PFT	UMC	002	Coarse
HACG	195	BOTCHARP.PFT	UMC	003	Decayed
HACG	196	BOTCHARP.PFT	UMC	004	Fine
HACG	197	BOTCHARP.PFT	UMC	005	Gritty
HACG	198	BOTCHARP.PFT	UMC	006	Hard
HACG	199	BOTCHARP.PFT	UMC	007	Rotten
HACG	200	BOTCHARP.PFT	UMC	008	Soft
HACG	201	BOTCHARP.PFT	UMC	009	Sticky
HACG	202	BOTCHARP.PFT	UMC	010	Stiff
HACG	203	BOTCHARP.PFT	UMC	011	Streaky
HACG	204	BOTCHARP.PFT	UMC	012	Tenacious
HACG	205	BOTCHARP.PFT	UMC	013	Uneven
HACG	206	BOTCHARP.PFT	UMC	017	Calcareous
HACG	207	BOTCHARP.PFT	UMC	018	Flinty
HACG	208	BOTCHARP.PFT	UMC	019	Glacial
HACG	209	BOTCHARP.PFT	UMC	020	Ground
HACG	210	BOTCHARP.PFT	UMC	021	Large
HACG	211	BOTCHARP.PFT	UMC	022	Rocky
HACG	212	BOTCHARP.PFT	UMC	023	Small
HACG	213	BOTCHARP.PFT	UMC	024	Speckled
HACG	214	BOTCHARP.PFT	UMC	025	Varied
HACG	215	BOTCHARP.PFT	UMC	026	Volcanic
HACG	216	BOTCHARP.PFT	UMC	027	Medium
HACG	217	SOUNDP.PFT	ACC	001	Accurate
HACG	218	SOUNDP.PFT	ACC	002	Approximate
HACG	219	SOUNDP.PFT	ACC	003	Doubtful
HACG	220	SOUNDP.PFT	DAT	026	Information as of _____
HACG	221	SOUNDP.PFT	EXS	001	Definite
HACG	222	SOUNDP.PFT	EXS	002	Doubtful
HACG	223	SOUNDP.PFT	EXS	003	Reported
HACG	224	SOUNDP.PFT	SND	001	Drying Heights
HACG	225	SOUNDP.PFT	SND	002	No Bottom Found
HACG	226	SOUNDP.PFT	SND	009	Slant
HACG	227	SOUNDP.PFT	SND	010	Ordinary
HACG	228	SOUNDP.PFT	SND	999	Other
HACG	229	SOUNDP.PFT	SVC	000	Unknown
HACG	230	SOUNDP.PFT	SVC	001	Echo Sounder Calibrated at 4800 ft/sec Uncorrected
HACG	231	SOUNDP.PFT	SVC	002	Echo Sounder Calibrated at 1500 m/sec Uncorrected
HACG	232	SOUNDP.PFT	SVC	003	Mathews Tables (NP 139) Corrected
HACG	233	SOUNDP.PFT	SVC	004	SVM Corrected
HACG	234	SOUNDP.PFT	SVC	005	Other Calibration

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TABLE 104. Hydrography area feature table.

HACG	{Header length and byte order};\ HYDAREA.AFT,Hydrography Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,;\
HACG	CVH=F,1,N,Depth Curve or Contour Value High,-,-,;\
HACG	CVL=F,1,N,Depth Curve or Contour Value Low,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,HYDAREA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,HYDAREA2.ATI,;;

HYDAREA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BE010	Depth Curve	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BE010
		2	Approximate	BE010
CVH	Depth Curve or Contour Value High			
	default	99999.0	Unknown	BE010
		0.0 - 10000.0	actual value to the nearest .1 meter	BE010
CVL	Depth Curve or Contour Value Low			
	default	99999.0	Unknown	BE010
		0.0 - 10000.0	actual value to the nearest .1 meter	BE010

TABLE 105. Hydrography line feature table.

HACG	{Header length and byte order};\ HYDLINE.LFT,Hydrography Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,;\
HACG	CRV=F,1,N,Depth Curve or Contour Value,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,HYDLINE1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,HYDLINE2.LTI,;;

HYDLINE

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BE010	Depth Curve	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BE010
		2	Approximate	BE010
CRV	Depth Curve or Contour Value			
	default	99999.0	Unknown	BE010
		0.0 - 10000.0	actual value to the nearest .1 meter	BE010

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TABLE 106. Bottom Characteristics point feature table.

HACG	{Header length and byte order};\
HACG	BOTCHARP.PFT,Bottom Characteristics Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	CSM=S,1,N,Secondary Material Characteristic,INT.VDT,-,-,:\
HACG	MCC=S,1,N,Material Composition Category,INT.VDT,-,-,:\
HACG	MCS=S,1,N,Material Composition Secondary,INT.VDT,-,-,:\
HACG	MCU=S,1,N,Material Composition Underlying,INT.VDT,-,-,:\
HACG	PSC=S,1,N,Physical Surface Characteristics,INT.VDT,-,-,:\
HACG	UMC=S,1,N,Underlying Material Characteristics,INT.VDT,-,-,:\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,BOTCHAP1.PTI,:\
HACG	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,BOTCHAP2.PTI,;;

BOTCHARP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BF010	Bottom Characteristics	HACG
CSM	Secondary Material Characteristics			<u>Applicable F_CODE</u>
	default	0	Unknown	BF010
		1	Broken	BF010
		2	Coarse	BF010
		3	Decayed	BF010
		4	Fine	BF010
		5	Gritty	BF010
		6	Hard	BF010
		7	Rotten	BF010
		8	Soft	BF010
		9	Sticky	BF010
		10	Stiff	BF010
		11	Streaky	BF010
		12	Tenacious	BF010
		13	Uneven	BF010
		17	Calcareous	BF010
		18	Flinty	BF010
		19	Glacial	BF010
		20	Ground	BF010
		21	Large	BF010
		22	Rocky	BF010
		23	Small	BF010
		24	Speckled	BF010
		25	Varied	BF010
		26	Volcanic	BF010
		27	Medium	BF010
MCC	Material Composition Category			
	default	0	Unknown	BF010
		4	Ash	BF010
		8	Boulders	BF010
		12	Chalk	BF010
		14	Cinders	BF010
		15	Cirripedia	BF010
		16	Clay	BF010
		18	Cobble	BF010

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24	Coral	BF010
25	Coral Head	BF010
28	Diatoms	BF010
36	Foraminifera	BF010
37	Fucus	BF010
41	Globigerina	BF010
45	Grass /Thatch	BF010
46	Gravel	BF010
48	Ground	BF010
52	Lava	BF010
58	Madrepores	BF010
59	Manganese	BF010
61	Marl	BF010
63	Mattes	BF010
65	Mud	BF010
66	Mussels	BF010
69	Ooze	BF010
70	Oysters	BF010
73	Pebbles	BF010
75	Polyzoa	BF010
78	Pteropods	BF010
79	Pumice	BF010
80	Quartz	BF010
81	Radiolaria	BF010
84	Rock /Rocky	BF010
88	Sand	BF010
90	Schist	BF010
92	Scoria	BF010
93	Sea-Tangle	BF010
94	Seaweed	BF010
96	Shells	BF010
98	Shingle	BF010
99	Silt	BF010
105	Spicules	BF010
106	Sponge	BF010
108	Stone	BF010
111	Tufa	BF010

MCS

Material Composition Secondary

default	0	Unknown	BF010
	4	Ash	BF010
	8	Boulders	BF010
	12	Chalk	BF010
	14	Cinders	BF010
	15	Cirripedia	BF010
	16	Clay	BF010
	18	Cobble	BF010
	24	Coral	BF010
	25	Coral Head	BF010
	28	Diatoms	BF010
	36	Foraminifera	BF010
	37	Fucus	BF010
	41	Globigerina	BF010
	45	Grass /Thatch	BF010
	46	Gravel	BF010
	48	Ground	BF010
	52	Lava	BF010
	58	Madrepores	BF010
	59	Manganese	BF010

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61	Marl	BF010
63	Mattes	BF010
65	Mud	BF010
66	Mussels	BF010
69	Ooze	BF010
70	Oysters	BF010
73	Pebbles	BF010
75	Polyzoa	BF010
78	Pteropods	BF010
79	Pumice	BF010
80	Quartz	BF010
81	Radiolaria	BF010
84	Rock /Rocky	BF010
88	Sand	BF010
90	Schist	BF010
92	Scoria	BF010
93	Sea-Tangle	BF010
94	Seaweed	BF010
96	Shells	BF010
98	Shingle	BF010
99	Silt	BF010
105	Spicules	BF010
106	Sponge	BF010
108	Stone	BF010
111	Tufa	BF010

MCU

Material Composition Underlying
default

0	Unknown	BF010
4	Ash	BF010
8	Boulders	BF010
12	Chalk	BF010
14	Cinders	BF010
15	Cirripedia	BF010
16	Clay	BF010
18	Cobble	BF010
24	Coral	BF010
25	Coral Head	BF010
28	Diatoms	BF010
36	Foraminifera	BF010
37	Fucus	BF010
41	Globigerina	BF010
45	Grass /Thatch	BF010
46	Gravel	BF010
48	Ground	BF010
52	Lava	BF010
58	Madrepores	BF010
59	Manganese	BF010
61	Marl	BF010
63	Mattes	BF010
65	Mud	BF010
66	Mussels	BF010
69	Ooze	BF010
70	Oysters	BF010
73	Pebbles	BF010
75	Polyzoa	BF010
78	Pteropods	BF010
79	Pumice	BF010
80	Quartz	BF010
81	Radiolaria	BF010

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	84	Rock /Rocky	BF010
	88	Sand	BF010
	90	Schist	BF010
	92	Scoria	BF010
	93	Sea-Tangle	BF010
	94	Seaweed	BF010
	96	Shells	BF010
	98	Shingle	BF010
	99	Silt	BF010
	105	Spicules	BF010
	106	Sponge	BF010
	108	Stone	BF010
	111	Tufa	BF010
PSC		Physical Surface Characteristics	
	default	0 Unknown	BF010
		1 Broken	BF010
		2 Coarse	BF010
		3 Decayed	BF010
		4 Fine	BF010
		5 Gritty	BF010
		6 Hard	BF010
		7 Rotten	BF010
		8 Soft	BF010
		9 Sticky	BF010
		10 Stiff	BF010
		11 Streaky	BF010
		12 Tenacious	BF010
		13 Uneven	BF010
		17 Calcareous	BF010
		18 Flinty	BF010
		19 Glacial	BF010
		20 Ground	BF010
		21 Large	BF010
		22 Rocky	BF010
		23 Small	BF010
		24 Speckled	BF010
		25 Varied	BF010
		26 Volcanic	BF010
		27 Medium	BF010
		28 Springs in Seabed	BF010
		29 Mobile Bottom	BF010
UMC		Underlying Material Characteristics	
	default	0 Unknown	BF010
		1 Broken	BF010
		2 Coarse	BF010
		3 Decayed	BF010
		4 Fine	BF010
		5 Gritty	BF010
		6 Hard	BF010
		7 Rotten	BF010
		8 Soft	BF010
		9 Sticky	BF010
		10 Stiff	BF010
		11 Streaky	BF010
		12 Tenacious	BF010
		13 Uneven	BF010
		17 Calcareous	BF010

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18	Flinty	BF010
19	Glacial	BF010
20	Ground	BF010
21	Large	BF010
22	Rocky	BF010
23	Small	BF010
24	Speckled	BF010
25	Varied	BF010
26	Volcanic	BF010
27	Medium	BF010

TABLE 107. Soundings point feature table.

HACG	{Header length and byte order};\
HACG	SOUNDP.PFT,Soundings Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,-;\
HACG	DAT=S,1,N,Date,INT.VDT,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HACG	HDH=F,1,N,Hydrographic Drying Height,-,-;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HACG	SND=S,1,N,Sounding Category,INT.VDT,-,-;\
HACG	SVC=S,1,N,Sounding Velocity,INT.VDT,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,SOUNDP1.PTI,;\
HACG	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,SOUNDP2.PTI,;;

SOUNDP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BE020	Sounding	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BE020
		2	Approximate	BE020
		3	Doubtful	BE020
DAT	Date			
	default	26	Information as of ____	BE020
EXS	Existence Category			
	default	1	Definite	BE020
		2	Doubtful	BE020
		3	Reported	BE020
HDH	Hydrographic Drying Height			
	default	NaN	Null	BE020 HDH<>NaN
		0.0	Unknown	BE020 HDP=NaN
		0.1 to 1000.0	actual value to the nearest .1 meter	BE020 HDP=NaN
HDP	Hydrographic Depth			
	default	NaN	Null	BE020 HDH<>NaN
		0.0	Unknown	BE020 HDH=NaN
		0.1 to 12000.0	actual value to the nearest .1 meter	BE020 HDH=NaN

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SND	Sounding Category			
		1	Drying Heights	BE020
		2	No Bottom Found	BE020
		9	Slant	BE020
	default	10	Ordinary	BE020
		999	Other	BE020
SVC	Sounding Velocity			
	default	0	Unknown	BE020
		1	Echo Sounder Calibrated at 4800 ft/sec Uncorrected	BE020
		2	Echo Sounder Calibrated at 1500 m/sec Uncorrected	BE020
		3	Mathews Tables (NP 139) Corrected	BE020
		4	SVM Corrected	BE020
		5	Other Calibration	BE020
VAL	Value	0	Unknown	BE020
	default	1 to 32767	actual value (year)	BE020

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A.3.2.5 Inland Waterways coverage. This coverage contains inland hydrographic features including canals, rivers, dams and locks of significance to marine navigation.

a. Inland Waterways coverage glossary.

AREA FEATURES

BH020 Canal A man-made or improved natural waterway used for transportation.

EXS Existence Category State or condition of the feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

HYC Hydrological Category Identifies the annual water content of the feature.

NAM Name Any identifier or code.

RPA Required Port Access An indication that water feature is used for access to a required port.

WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.

BH080 Lake /Pond An body of water surrounded by land.

HYC Hydrological Category Identifies the annual water content of the feature.

NAM Name Any identifier or code.

RPA Required Port Access An indication that water feature is used for access to a required port.

BH090 Land Subject to Inundation An area periodically covered by flood water, excluding tidal waters

BH130 Reservoir A man-made open enclosure or area formed for the storage of water.

NAM Name Any identifier or code.

BH140 River /Stream A natural flowing watercourse.

ACC Accuracy Category Accuracy of geographic position.

HYC Hydrological Category Identifies the annual water content of the feature.

NAM Name Any identifier or code.

RPA Required Port Access An indication that water feature is used for access to a required port.

SLT Shoreline Type Category The physical characteristic of the shoreline area.

BH155 Salt Evaporator Shallow pools, normally man-made, used for the natural evaporation of water for the collection of salt.

EXS Existence Category State or condition of the feature.

BI030 Lock An enclosure with a pair or series of gates used for raising or lowering vessels as they pass from one water level to another.

NAM Name Any identifier or code.

WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.

LINE FEATURES

BH010 Aqueduct A pipe or artificial channel designed to transport water from a remote source, usually by gravity.

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- LOC Location Category** Status of feature relative to surrounding area or water.
- OHC Overhead Clearance Category** The least distance between the traveled way and any obstruction vertically above it.
- OWO Over Water Obstruction** Indicates the presence of an obstruction over an area of navigable water.
- BH020 Canal** A man-made or improved natural waterway used for transportation.
- EXS Existence Category** State or condition of the feature.
- NAM Name** Any identifier or code.
- WID Width** A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.
- BH120 Rapids** A place in a stream or river where the current is swift and the surface is usually broken by boulders and rocks.
- BH140 River /Stream** A natural flowing watercourse.
- HYC Hydrological Category** Identifies the annual water content of the feature.
- NAM Name** Any identifier or code.
- BH180 Waterfall** A vertical or nearly vertical descent of water.
- NAM Name** Any identifier or code.
- BH210 Inland Shoreline** The land-water boundary for all inland hydrographic features having shorelines, Lake /Pond (BH080) or Island (BA030), except for left and right banks of River /Stream (BH140) and Canals (BH020).
- ACC Accuracy Category** Accuracy of geographic position.
- AHC Associated Hydrographic Category** The annual water content of the associate hydrographic feature as defined by the Inland Shoreline.
- SLT Shoreline Type Category** The physical characteristic of the shoreline area.
- BI020 Dam /Weir** A permanent barrier across a watercourse used to impound water or to control its flow.
- NAM Name** Any identifier or code.
- USE Usage** Use.
- BI040 Sluice Gate** A gate used to regulate the flow of water.
- EXS Existence Category** State or condition of the feature.

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TABLE 108. Inland Waterways character value description table.

{Header length and byte order};\					
CHAR.VDT, Inland Waterways Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-;:					
HACG	1	CANALA.AFT	F_CODE	BH020	Canal
HACG	2	LAKEA.AFT	F_CODE	BH080	Lake /Pond
HA	3	LAKEA.AFT	F_CODE	BH130	Reservoir
HAC	4	MISCIWYA.AFT	F_CODE	BH090	Land Subject to Inundation
HAC	5	MISCIWYA.AFT	F_CODE	BH155	Salt Evaporator
HAC	6	MISCIWYA.AFT	F_CODE	BI030	Lock
HACG	7	RIVERA.AFT	F_CODE	BH140	River /Stream
HAC	8	AQUEDCTL.LFT	F_CODE	BH010	Aqueduct
HAC	9	BARRIERL.LFT	F_CODE	BH120	Rapids
HAC	10	BARRIERL.LFT	F_CODE	BH180	Waterfall
H	11	BARRIERL.LFT	F_CODE	BI040	Sluice Gate
HACG	12	CANALL.LFT	F_CODE	BH020	Canal
HACG	13	DAML.LFT	F_CODE	BI020	Dam /Weir
HACG	14	RIVERL.LFT	F_CODE	BH140	River /Stream
HACG	15	RIVERL.LFT	F_CODE	BH210	Inland Shoreline

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TABLE 109. Inland Waterways integer value description table.

{Header length and byte order};\					
INT.VDT, Inland Waterways Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=S,1,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-;					
HACG	1	CANALA.AFT	EXS	006	Abandoned /Disused
HACG	2	CANALA.AFT	EXS	032	Navigable
HACG	3	CANALA.AFT	HYC	003	Dry
HACG	4	CANALA.AFT	HYC	008	Perennial /Permanent
HACG	5	CANALA.AFT	RPA	000	Unknown
HACG	6	CANALA.AFT	RPA	001	Access Required
HACG	7	CANALA.AFT	RPA	002	Access Not Required
HACG	8	LAKEA.AFT	HYC	008	Perennial /Permanent
HACG	9	LAKEA.AFT	RPA	000	Unknown
HACG	10	LAKEA.AFT	RPA	001	Access Required
HACG	11	LAKEA.AFT	RPA	002	Access Not Required
HAC	12	MISCIWYA.AFT	EXS	000	Unknown
HAC	13	MISCIWYA.AFT	EXS	045	Natural
HAC	14	MISCIWYA.AFT	EXS	046	Man-made
HACG	15	RIVERA.AFT	ACC	001	Accurate
HACG	16	RIVERA.AFT	ACC	002	Approximate
HACG	17	RIVERA.AFT	HYC	008	Perennial /Permanent
HACG	18	RIVERA.AFT	RPA	000	Unknown
HACG	19	RIVERA.AFT	RPA	001	Access Required
HACG	20	RIVERA.AFT	RPA	002	Access Not Required
HACG	21	RIVERA.AFT	SLT	000	Unknown
HACG	22	RIVERA.AFT	SLT	006	Mangrove /Nipa
HACG	23	RIVERA.AFT	SLT	008	Marsh, Swamp
HACG	24	RIVERA.AFT	SLT	010	Rocky
HACG	25	RIVERA.AFT	SLT	011	Rubble
HACG	26	RIVERA.AFT	SLT	013	Sandy
HACG	27	RIVERA.AFT	SLT	014	Stony, Shingly
HACG	28	RIVERA.AFT	SLT	015	Other
HAC	29	AQUEOCTL.LFT	LOC	000	Unknown
HAC	30	AQUEDCTL.LFT	LOC	004	Below Surface /Submerged / Underground
HAC	31	AQUEDCTL.LFT	LOC	008	On Ground Surface
HAC	32	AQUEDCTL.LFT	LOC	025	Suspended /Elevated Above Ground or Water Surface
HAC	33	AQUEDCTL.LFT	OWO	001	Feature crosses navigable water
H	34	BARRIERL.LFT	EXS	050	Non-Tidal
HACG	35	CANALL.LFT	EXS	032	Navigable
HACG	36	DAML.LFT	USE	000	Unknown
HAC	37	DAML.LFT	USE	131	Flood Barrage
HACG	38	DAML.LFT	USE	999	Other
HACG	39	RIVERL.LFT	ACC	001	Accurate
HACG	40	RIVERL.LFT	ACC	002	Approximate
HACG	41	RIVERL.LFT	AHC	001	Perennial

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TABLE 109. Inland Waterways integer value description table - Continued.

HACG	42	RIVERL.LFT	AHC	002	Intermittent
HACG	43	RIVERL.LFT	AHC	003	Ephemeral
HAC	44	RIVERL.LFT	HYC	006	Non-Perennial /Intermittent /Fluctuating
HACG	45	RIVERL.LFT	HYC	008	Perennial /Permanent
HACG	46	RIVERL.LFT	SLT	000	Unknown
HACG	47	RIVERL.LFT	SLT	006	Mangrove /Nipa
HACG	48	RIVERL.LFT	SLT	008	Marsh, Swamp
HACG	49	RIVERL.LFT	SLT	010	Rocky
HACG	50	RIVERL.LFT	SLT	011	Rubble
HACG	51	RIVERL.LFT	SLT	013	Sandy
HACG	52	RIVERL.LFT	SLT	014	Stony, Shingly
HACG	53	RIVERL.LFT	SLT	015	Other

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TABLE 110. Canal area feature table.

	{Header length and byte order};\
HACG	CANALA.AFT, Canal Area Feature Table; -;\
	ID=I, 1, P, Row ID, -, -;\
	F_CODE=T, 5, N, FACC Code, CHAR.VDT, -, -;\
HACG	EXS=S, 1, N, Existence Category, INT.VDT, -, -;\
HACG	HDP=F, 1, N, Hydrographic Depth, -, -;\
HACG	HYC=S, 1, N, Hydrological Category, INT.VDT, -, -;\
HACG	NAM=T, 30, N, Name, -, -;\
HACG	RPA=S, 1, N, Required Port Access, INT.VDT, -, -;\
HACG	WID=I, 1, N, Width, -, -;\
	TILE_ID=S, 1, N, Tile Reference Identifier, -, CANAL1.ATI, :;\
	FAC_ID=I, 1, N, Face Primitive Foreign Key, -, CANAL2.ATI, :;

CANALA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH020	Canal	HACG
EXS	Existence Category	6	Abandoned /Disused	<u>Applicable F_CODE</u> BH020
	default	32	Navigable	BH020
HDP	Hydrographic Depth	0.0	Unknown	BH020
	default	0.1 to 12000.0	actual value to the nearest .1 meter	BH020
HYC	Hydrological Category	3	Dry	BH020
	default	8	Perennial /Permanent	BH020
NAM	Name	"UNK"	Unknown	BH020
	default	text string (e.g., "Panama Canal")		BH020
RPA	Required Port Access	0	Unknown	BH020
	default	1	Access Required	BH020
		2	Access Not Required	BH020
WID	Width	0	Unknown	BH020
	default	1 to 2147483647	actual value (meters)	BH020

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TABLE 111. Lake area feature table*.

HACG	{Header length and byte order};\ LAKEA.AFT,Lake Area Feature Table;-i\ ID=I,1,P,Row ID,-,:\ F_CODE=T,5,N,FACC Code,CHAR.VDT,LAKEA1.ATI,:\ HACG HYC=S,1,N,Hydrological Category,INT.VDT,-,:\ HACG NAM=T,30,N,Name,-,:\ HACG RPA=S,1,N,Required Port Access,INT.VDT,-,:\ TILE_ID=S,1,N,Tile Reference Identifier,-,LAKEA2.ATI,:\ FAC_ID=I,1,N,Face Primitive Foreign Key,-,LAKEA3.ATI,;
------	---

*the thematic index on F_CODE applies to the HA libraries only

LAKEA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH080 BH130	Lake /Pond Reservoir	HACG HA
HYC	Hydrological Category	-32768 default 8	Null Perennial /Permanent	<u>Applicable F_CODE</u> BH130 BH080
NAM	Name	default "UNK" text string (e.g., "Lake Wobegon")	Unknown	BH080, BH130 BH080, BH130
RPA	Required Port Access	-32768 default 0 1 2	Null Unknown Access Required Access Not Required	BH130 BH080 BH080 BH080

TABLE 112. Miscellaneous Inland Waterways area feature table.

HAC	{Header length and byte order};\ MISCIWYA.AFT,Miscellaneous Inland Waterways Area Feature Table;-i\ ID=I,1,P,Row ID,-,:\ F_CODE=T,5,N,FACC Code,CHAR.VDT,MISCIWA1.ATI,:\ HAC EXS=S,1,N,Existence Category,INT.VDT,-,:\ HAC NAM=T,30,N,Name,-,:\ HAC WID=I,1,N,Width,-,:\ TILE_ID=S,1,N,Tile Reference Identifier,-,MISCIWA2.ATI,:\ FAC_ID=I,1,N,Face Primitive Foreign Key,-,MISCIWA3.ATI,;
-----	---

MISCIWYA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH090 BH155 BI030	Land Subject to Inundation Salt Evaporator Lock	HAC HAC HAC
EXS	Existence Category	-32768	Null	<u>Applicable F_CODE</u> BH090, BI030

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	default	0	Unknown	BH155
		45	Natural	BH155
		46	Man-made	BH155
NAM	Name	"N/A"	Null	BH090, BH155
	default	"UNK"	Unknown	BI030
		text string (e.g., "Lock 32")		BI030
WID	Width	-2147483648	Null	BH090, BH155
		0	Unknown	BI030
		1 to 2147483647 actual value (meters)		BI030

TABLE 113. River area feature table.

HACG	{Header length and byte order};\
HACG	RIVERA.AFT,River Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,-;\
HACG	HYC=S,1,N,Hydrological Category,INT.VDT,-,-;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	RPA=S,1,N,Required Port Access,INT.VDT,-,-;\
HACG	SLT=S,1,N,Shoreline Type Category,INT.VDT,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,RIVERA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,RIVERA2.ATI,;;

RIVERA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH140	River /Stream	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BH140
		2	Approximate	BH140
HYC	Hydrological Category			
	default	8	Perennial /Permanent	BH140
NAM	Name			
	default	"UNK"	Unknown	BH140
		text string (e.g., "Lazy River")		BH140
RPA	Required Port Access			
	default	0	Unknown	BH140
		1	Access Required	BH140
		2	Access Not Required	BH140
SLT	Shoreline Type Category			
	default	0	Unknown	BH140
		6	Mangrove /Nipa	BH140
		8	March, Swamp	BH140
		10	Rocky	BH140
		11	Rubble	BH140
		13	Sandy	BH140
		14	Stony, Shingly	BH140

TABLE 114. Aqueduct line feature table.

HAC	{Header length and byte order};\
HAC	AQUEDCTL.LFT,Aqueduct Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,;\
HAC	LOC=S,1,N,Location Category,INT.VDT,-,-,;\
HAC	OHC=F,1,N,Overhead Clearance Category,-,-,;\
HAC	OWO=S,1,N,Over Water Obstruction,INT.VDT,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,AQUEDCL1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,AQUEDCL2.LTI,;;

AQUEDCTL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BH010	Aqueduct	HAC
LOC	Location Category			<u>Applicable F_CODE</u>
	default	0	Unknown	BH010
		4	Below Surface / Submerged /Underground	BH010
		8	On Ground Surface	BH010
		25	Suspended /Elevated Above Ground or Water Surface	BH010
OHC	Overhead Clearance Category			
		NaN	Null	BH010
	default	0.0	Unknown	LOC=4 or 8 BH010 LOC=0
		0.1 to 998.0	actual value to the nearest .1 meter	BH010 LOC=25
OWO	Over Water Obstruction			
		-32768	Null	BH010
	default	1	Feature crosses navigable water	LOC=4 or 8 BH010 LOC=0 or 25

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TABLE 115. Barrier line feature table.

HAC	{Header length and byte order};\ BARRIERL.LFT,Barrier Line Feature Table;-;\
H	ID=I,1,P,Row ID,-,-:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,BARRIEL1.LTI,:\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	NAM=T,30,N,Name,-,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,BARRIEL2.LTI,:\
HAC	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,BARRIEL3.LTI,;\

BARRIERL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BH120	Rapids	HAC
		BH180	Waterfall	HAC
		BI040	Sluice Gate	H
EXS	Existence Category			<u>Applicable F_CODE</u>
		-32768	Null	BH120, BH180
	default	50	Non-Tidal	BI040
NAM	Name			
		"N/A"	Null	BH120, BI040
	default	"UNK"	Unknown	BH180
		text string (e.g., "Angel Falls")		BH180

TABLE 116. Canal line feature table.

HACG	{Header length and byte order};\ CANALL.LFT,Canal Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HACG	NAM=T,30,N,Name,-,-,:\
HACG	WID=I,1,N,Width,-,-,:\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,CANALL1.LTI,:\
HACG	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,CANALL2.LTI,;\

CANALL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BH020	Canal	HACG
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	32	Navigable	BH020
NAM	Name			
	default	"UNK"	Unknown	BH020
		text string (e.g., "Panama Canal")		BH020
WID	Width			
	default	0	Unknown	BH020
		1 to 2147483647	actual value (meters)	BH020

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TABLE 117. Dam line feature table.

HACG	{Header length and byte order};\ DAML.LFT,Dam Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-, -:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-, -:\
HACG	NAM=T,30,N,Name,-, -, -:\
HACG	USE=S,1,N,Usage,INT.VDT,-, -:\
	TILE_ID=S,1,N,Tile Reference Identifier,-, DAML1.LTI, :\ EDG_ID=I,1,N,Edge Primitive Foreign Key,-, DAML2.LTI, :;

DAML

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BI020	Dam /Weir	HACG
NAM	Name			<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BI020
		text string (e.g., "Hoover Dam")		BI020
USE	Usage			
	default	0	Unknown	BI020
		131	Flood Barrage	BI020
		999	Other	BI020

TABLE 118. River line feature table.

HACG	{Header length and byte order};\ RIVERL.LFT,River Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-, -:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,RIVERL1.LTI, :\ ACC=S,1,N,Accuracy Category,INT.VDT,-, -:\
HACG	AHC=S,1,N,Associated Hydrographic Category,INT.VDT,-, -:\
HACG	HYC=S,1,N,Hydrological Category,INT.VDT,-, -:\
HACG	NAM=T,30,N,Name,-, -, -:\
HACG	SLT=S,1,N,Shoreline Type Category,INT.VDT,-, -:\
	TILE_ID=S,1,N,Tile Reference Identifier,-, RIVERL2.LTI, :\ EDG_ID=I,1,N,Edge Primitive Foreign Key,-, RIVERL3.LTI, :;

RIVERL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH140	River /Stream	HACG
		BH210	Inland Shoreline	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	-32768	Null	BH140
		1	Accurate	BH210
		2	Approximate	BH210
AHC	Associated Hydrographic Category			
	default	-32768	Null	BH140
		1	Perennial	BH210
		2	Intermittent	BH210

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		3	Ephemeral	BH210
HYC	Hydrological Category			
		-32768	Null	BH210
		6	Non-Perennial / Intermittent / Fluctuating	BH140
	default	8	Perennial /Permanent	BH140
NAM	Name			
		"N/A"	Null	BH210
	default	"UNK"	Unknown	BH140
		text string (e.g., "Lazy River")		BH140
SLT	Shoreline Type Category			
		-32768	Null	BH140
	default	0	Unknown	BH210
		6	Mangrove /Nipa	BH210
		8	Marsh, Swamp	BH210
		10	Rocky	BH210
		11	Rubble	BH210
		13	Sandy	BH210
		14	Stony, Shingly	BH210
		15	Other	BH210

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A.3.2.6 Land Cover coverage. This coverage contains topographic features including glaciers, trees, swamps and marshes of significance to marine navigation.

a. Land Cover coverage glossary.

AREA FEATURES

BH095 Marsh /Swamp A saturated area, at times covered with water, supporting vegetation which may include trees.

EXS Existence Category State or condition of the feature.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BJ030 Glacier A large mass of snow and ice moving slowly down a slope or valley from above the snowline.

BJ065 Ice Shelf A sheet of thick ice, with level or undulating surface, attached to the land but most mostly afloat which is bounded on the seaward side by an Ice Cliff (BJ040).

BJ100 Snow Field /Ice Field A large area permanently covered by snow or ice over land or water.

SIC Snow /Ice Category Indicates the composition of the feature.

BJ110 Tundra A prairie-like region in the Arctic and Subarctic zones which sustains a growth of low vegetation.

DB090 Embankment /Fill A raised long mound of earth or other material.

USE Usage Use.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

DB170 Sand Dune /Sand Hills Ridges or hills of sand.

DB180 Volcano A mountain or hill, often conical, formed around a vent in the earth's crust through which molten rock, ash, or gases are or have been expelled.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

LOC Location Category Status of feature relative to surrounding area or water.

NAM Name Any identifier or code.

VAL Value Numeric value. (Used for year.)

EA030 Nursery A place where shrubs, flowers, plants and trees are grown for transplanting, seed or grafting.

EA040 Orchard /Plantation An area covered by systematic plantings of trees which yield fruits, nuts or other products.

EA050 Vineyards An area covered by the systematic planting of grape vines.

EC030 Trees Woody-perennial plants having a self-supporting main stem or trunk.

EXS Existence Category State or condition of the feature.

TRE Tree Category Type of tree coverage.

VEG Vegetation Characteristics Type of plant or plantings.

LINE FEATURES

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DB090 Embankment /Fill A raised long mound of earth or other material.
USE Usage Use.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

POINT FEATURES

BJ060 Ice Peak /Nunatak A rocky peak projecting above a surrounding ice field that may be perpetually covered with ice.

HGT Height Above Surface Level Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

EC030 Trees Woody-perennial plants having a self-supporting main stem or trunk.

EXS Existence Category State or condition of the feature.

TRE Tree Category Type of tree coverage.

VEG Vegetation Characteristics Type of plant or plantings.

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TABLE 119. Land Cover character value description table.

{Header length and byte order};\					
CHAR.VDT, Land Cover Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=T,5,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	EMBANKA.AFT	F_CODE	BH095	Marsh /Swamp
HAC	2	EMBANKA.AFT	F_CODE	DB090	Embankment /Fill
HAC	3	EMBANKA.AFT	F_CODE	DB170	Sand Dune /Sand Hills
HA	4	ORCHARDA.AFT	F_CODE	EA030	Nursery
HA	5	ORCHARDA.AFT	F_CODE	EA040	Orchard /Plantation
HA	6	ORCHARDA.AFT	F_CODE	EA050	Vineyards
HAC	7	SNOWICEA.AFT	F_CODE	BJ030	Glacier
HACG	8	SNOWICEA.AFT	F_CODE	BJ065	Ice Shelf
HACG	9	SNOWICEA.AFT	F_CODE	BJ100	Snowfield /Icefield
HACG	10	SNOWICEA.AFT	F_CODE	BJ110	Tundra
HAC	11	TREEA.AFT	F_CODE	EC030	Trees
HACG	12	VOLCANOA.AFT	F_CODE	DB180	Volcano
HAC	13	LCRLINE.LFT	F_CODE	DB090	Embankment /Fill
HAC	14	SNOWICEP.PFT	F_CODE	BJ060	Ice Peak/ Nunatak
HAC	15	TREEP.PFT	F_CODE	EC030	Trees

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TABLE 120. Land Cover integer value description table.

{Header length and byte order};\					
INT.VDT, Land Cover Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	EMBANKA.AFT	EXS	051	Tidal /Tidal Fluctuation
HAC	2	EMBANKA.AFT	USE	000	Unknown
HAC	3	EMBANKA.AFT	USE	127	as a Causeway
HAC	4	EMBANKA.AFT	VRR	000	Unknown
HAC	5	EMBANKA.AFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HAC	6	EMBANKA.AFT	VRR	008	Covers and Uncovers
HAC	7	EMBANKA.AFT	VRR	009	Not Applicable
HACG	8	SNOWICEA.AFT	SIC	000	Unknown
HACG	9	SNOWICEA.AFT	SIC	001	Snow
HACG	10	SNOWICEA.AFT	SIC	002	Ice
HAC	11	TREEA.AFT	EXS	030	Not Isolated
HAC	12	TREEA.AFT	TRE	000	Unknown
HAC	13	TREEA.AFT	TRE	001	Deciduous
HAC	14	TREEA.AFT	TRE	002	Evergreen
HAC	15	TREEA.AFT	TRE	003	MIXE"d
HAC	16	TREEA.AFT	VEG	000	Unknown
HAC	17	TREEA.AFT	VEG	011	Casuarina
HAC	18	TREEA.AFT	VEG	012	Coniferous
HAC	19	TREEA.AFT	VEG	016	Nipa Palm
HAC	20	TREEA.AFT	VEG	017	Palm
HAC	21	TREEA.AFT	VEG	018	Filao
HAC	22	TREEA.AFT	VEG	019	Mangrove
HAC	23	TREEA.AFT	VEG	029	Eucalyptus
HAC	24	TREEA.AFT	VEG	038	Cypress
HAC	25	TREEA.AFT	VEG	999	Other
HACG	26	VOLCANOA.AFT	DAT	026	Information as of ____
HACG	27	VOLCANOA.AFT	EXS	001	Definite
HACG	28	VOLCANOA.AFT	EXS	002	Doubtful
HACG	29	VOLCANOA.AFT	EXS	003	Reported
HACG	30	VOLCANOA.AFT	LOC	004	Below Surface /Submerged / Underground
HAC	31	LCRLINE.LFT	USE	000	Unknown
HAC	32	LCRLINE.LFT	USE	069	Levee /Dike
HAC	33	LCRLINE.LFT	USE	127	as a Causeway
HAC	34	LCRLINE.LFT	VRR	000	Unknown
HAC	35	LCRLINE.LFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HAC	36	LCRLINE.LFT	VRR	008	Covers and Uncovers
HAC	37	LCRLINE.LFT	VRR	009	Not Applicable
HAC	38	TREEP.PFT	EXS	031	Isolated
HAC	39	TREEP.PFT	TRE	000	Unknown
HAC	40	TREEP.PFT	TRE	001	Deciduous
HAC	41	TREEP.PFT	TRE	002	Evergreen

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TABLE 120. Land Cover integer value description table - Continued.

HAC	42	TREEP.PFT	TRE	003	MiXE"d
HAC	43	TREEP.PFT	VEG	000	Unknown
HAC	44	TREEP.PFT	VEG	011	Casuarina
HAC	45	TREEP.PFT	VEG	012	Coniferous
HAC	46	TREEP.PFT	VEG	016	Nipa Palm
HAC	47	TREEP.PFT	VEG	017	Palm
HAC	48	TREEP.PFT	VEG	018	Filao
HAC	49	TREEP.PFT	VEG	029	Eucalyptus

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TABLE 121. Embankment area feature table.

HAC	{Header length and byte order};\ EMBANKA.AFT,Embankment Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,EMBANKA1.ATI,:\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	USE=S,1,N,Usage,INT.VDT,-,:\
HAC	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,EMBANKA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,EMBANKA3.ATI,;\

EMBANKA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BH095	Marsh /Swamp	HAC
		DB090	Embankment /Fill	HAC
		DB170	Sand Dune /Sand Hills	HAC
EXS	Existence Category			<u>Applicable F_CODE</u>
		-32768	Null	DB090, DB170
	default	51	Tidal /Tidal Fluctuation	BH095
USE	Usage			
		-32768	Null	BH095, DB170
	default	0	Unknown	DB090
		127	as a Causeway	DB090
VRR	Vertical Reference Category			
		-32768	Null	DB170
	default	0	Unknown	BH095, DB090
		1	Above Surface /Does Not Cover (At High Water)	BH095, DB090
		8	Covers and Uncovers	BH095, DB090
		9	Not Applicable	BH095, DB090

TABLE 122. Orchard area feature table.

HA	{Header length and byte order};\ ORCHARDA.AFT,Orchard Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,ORCHARA1.ATI,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,ORCHARA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,ORCHARA3.ATI,;\

ORCHARDA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		EA030	Nursery	HA
		EA040	Orchard /Plantation	HA
		EA050	Vineyards	HA

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TABLE 123. Snow/Ice area feature table.

HACG	{Header length and byte order};\
HACG	SNOWICEA.AFT,Snow/Ice Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,SNOWICA1.ATI,:\
	SIC=S,1,N,Snow /Ice Category,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,SNOWICA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,SNOWICA3.ATI,;;

SNOWICEA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BJ030	Glacier	HAC
		BJ065	Ice Shelf	HACG
		BJ100	Snowfield /Icefield	HACG
		BJ110	Tundra	HACG
SIC	Snow /Ice Category			<u>Applicable F_CODE</u>
		-32768	Null	BJ030, BJ065, BJ110
	default	0	Unknown	BJ110
		1	Snow	BJ100
		2	Ice	BJ100

TABLE 124. Tree area feature table.

HAC	{Header length and byte order};\
HAC	TREEA.AFT,Tree Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	TRE=S,1,N,Tree Category,INT.VDT,-,:\
HAC	VEG=S,1,N,Vegetation Characteristics,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,TREEA1.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,TREEA2.ATI,;;

TREEA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		EC030	Trees	HAC
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	30	Not Isolated	EC030
TRE	Tree Category			
	default	0	Unknown	EC030
		1	Deciduous	EC030
		2	Evergreen	EC030
		3	MiXEd	EC030
VEG	Vegetation Characteristics			
	default	0	Unknown	EC030
		11	Casuarina	EC030
		12	Coniferous	EC030

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16	Nipa Palm	EC030
17	Palm	EC030
18	Filao	EC030
19	Mangrove	EC030
29	Eucalyptus	EC030
38	Cypress	EC030
999	Other	EC030

TABLE 125. Volcano area feature table.

HACG	{Header length and byte order};\
HACG	VOLCANOA.AFT,Volcano Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	DAT=S,1,N,Date Category,INT.VDT,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HACG	LOC=S,1,N,Location /Origin Category,INT.VDT,-,-;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,VOLCANA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,VOLCANA2.ATI,;;

VOLCANOA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	DB180	Volcano	HACG
DAT	Date			<u>Applicable F_CODE</u>
	default	26	Information as of ____	DB180
EXS	Existence Category			
	default	1	Definite	DB180
		2	Doubtful	DB180
		3	Reported	DB180
LOC	Location Category			
	default	4	Below Surface /Submerged /Underground	DB180
NAM	Name			
	default	"UNK"	Unknown	DB180
		text string (e.g., "Wye Seamount")		DB180
VAL	Value			
	default	0	Unknown	DB180
		1 to 32767	actual value (year)	DB180

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TABLE 126. Land Cover line feature table.

HAC	{Header length and byte order};\ LCRLINE.LFT, Land Cover Line Feature Table; -; \ ID=I, 1, P, Row ID, -, -, :\ F_CODE=T, 5, N, FACC Code, CHAR.VDT, -, :\ HAC USE=S, 1, N, Usage, INT.VDT, -, :\ HAC VRR=S, 1, N, Vertical Reference Category, INT.VDT, -, :\ TILE_ID=S, 1, N, Tile Reference Identifier, -, LCRLINE1.LTI, :\ EDG_ID=I, 1, N, Edge Primitive Foreign Key, -, LCRLINE2.LTI, ;;
-----	--

LCRLINE

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	DB090	Embankment /Fill	HAC
USE	Usage			<u>Applicable F_CODE</u>
	default	0	Unknown	DB090
		69	Levee /Dike	DB090
		127	as a Causeway	DB090
VRR	Vertical Reference Category			
	default	0	Unknown	DB090
		1	Above Surface /Does Not Cover (At High Water)	DB090
		8	Covers and Uncovers	DB090
		9	Not Applicable	DB090

TABLE 127. Snow/Ice point feature table.

HAC	{Header length and byte order};\ SNOWICEP.PFT, Snow/Ice Point Feature Table; -; \ ID=I, 1, P, Row ID, -, -, :\ F_CODE=T, 5, N, FACC Code, CHAR.VDT, -, :\ HAC HGT=I, 1, N, Height Above Surface Level, -, -, :\ TILE_ID=S, 1, N, Tile Reference Identifier, -, SNOWICP1.PTI, :\ END_ID=I, 1, N, Entity Node Primitive Foreign Key, -, SNOWICP2.PTI, ;;
-----	--

SNOWICEP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BJ060	Ice Peak /Nunatak	HAC
HGT	Height Above Surface Level			<u>Applicable F_CODE</u>
	default	0	Unknown	BJ060
		1 to 2147483647	actual value (meters)	BJ060

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TABLE 128. Tree point feature table.

HAC	{Header length and byte order};\ TREET.PFT,Tree Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HAC	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HAC	TRE=S,1,N,Tree Category,INT.VDT,-,:\
HAC	VEG=S,1,N,Vegetation Characteristics,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,TREET1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,TREET2.PTI,; ;

TREET

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	EC030	Trees	HAC
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	31	Isolated	EC030
TRE	Tree Category			
	default	0	Unknown	EC030
		1	Deciduous	EC030
		2	Evergreen	EC030
		3	MixE"d	EC030
VEG	Vegetation Characteristics			
	default	0	Unknown	EC030
		11	Casuarina	EC030
		12	Coniferous	EC030
		16	Nipa Palm	EC030
		17	Palm	EC030
		18	Filao	EC030
		29	Eucalyptus	EC030

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LIM

A.3.2.7 Limits coverage. This coverage contains limits of significance to marine navigation.

a. Limits coverage glossary.

AREA FEATURES

- BB010 Anchorage** An area of water where vessels anchor or may anchor.
COD Certainty of Delineation Indicates knowledge of the feature's limits or information.
MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.
NAM Name Any identifier or code.
TIM Time Attribute The time, expressed in hours of duration, for which an activity is permitted.
- FC021 Maritime Limit Boundary** A line where on either side certain activities or factors of significance to navigation and/or operation apply.
COD Certainty of Delineation Indicates knowledge of the feature's limits or information.
EXS Existence Category State or condition of the feature.
MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.
NAM Name Any identifier or code.
OPS Operational Status Indicates whether or not the feature is in operation.
PBV Pilot Boarding Vehicle The method by which pilots are transferred to and from ships using pilot services.
PRO Product Category Principal material involved or product resulting from activity at site.
TXT Text Attribute Narrative or other description.
- FC031 Maritime Area** Area in which certain activities or factors of significance to navigation and/or operation apply.
ATN Aids to Navigation Indicates whether a feature is marked or unmarked by an aid to navigation.
COD Certainty of Delineation Indicates knowledge of the feature's limits or information.
DAN Description of Aids to Navigation Textual description of aids to navigation marking a feature, eg. "Marked by buoys".
DAT Date Date of report or activity.
EXS Existence Category State or condition of the feature.
HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.
IAS IMO Approval Status Status of International Maritime Organization approval.
MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.
MAS Maintenance Status Indicates whether the feature is maintained.
TSP Traffic Scheme Part Component of the traffic routing system.
VAL Value Numeric value. (Used for year.)
WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.
WPC Work in Progress Category Type of work in progress.
- FC036 Restricted Area** An area in which certain aspects of navigation are restricted.
MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

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PRO Product Category Principal material involved or product resulting from activity at site.

TXT Text Attribute Narrative or other description.

USE Usage Use.

FC041 Traffic Separation Scheme (TSS) A routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

IAS IMO Approval Status Status of International Maritime Organization approval.

TSP Traffic Scheme Part Component of the traffic routing system.

FC165 Route (Maritime) A track or lane established for the safe passage of ships.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

RTT Route Intended Use Intended use of the route.

FC170 Safety Fairway A route established for the safe passage of vessels through offshore oil and gas fields and minefields.

WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.

FC177 Swept Area An area of water cleared by a wire drag to ensure an area is free of navigational dangers.

DAT Date Date of report or activity.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

GB070 Seaplane Landing /Seaplane Take-Off Area A designated portion of water outlined by visual surface markings.

EXS Existence Category State or condition of the feature.

OPS Operational Status Indicates whether or not the feature is in operation.

LINE FEATURES

AQ070 Ferry Crossing A route in a body of water where a ferry crosses from one shoreline to another.

FER Ferry Type Indicates whether or not ferry travels along cables.

BB010 Anchorage An area of water where vessels anchor or may anchor.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

NAM Name Any identifier or code.

TIM Time Attribute The time, expressed in hours of duration, for which an activity is permitted.

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FC021 Maritime Limit Boundary A line where on either side certain activities or factors of significance to navigation and/or operation apply.

BRG Bearing of Object The bearing of an object from an observer (on any point along the line) towards the object or feature, expressed in degrees and tenths (i.e. 003.0 degrees).

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

DRP Description of Reference Point Description of the feature(s) which form a Leading Line or Clearing Line.

EXS Existence Category State or condition of the feature.

LAF Line Associated Features The type and /or number of features associated with a Leading or Clearing Line.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

MBL Maritime Boundary Limit A line where on either side certain activities or factors of significance to navigation or operations apply.

NAM Name Any identifier or code.

OPS Operational Status Indicates whether or not the feature is in operation.

PBV Pilot Boarding Vehicle The method by which pilots are transferred to and from ships using pilot services.

PRO Product Category Principal material involved or product resulting from activity at site.

TXT Text Attribute Narrative or other description.

FC031 Maritime Area Area in which certain activities or factors of significance to navigation and/or operation apply.

ATN Aids to Navigation Indicates whether a feature is marked or unmarked by an aid to navigation.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

DAN Description of Aids to Navigation Textual description of aids to navigation marking a feature, eg. "Marked by buoys".

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

IAS IMO Approval Status Status of International Maritime Organization approval.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

MAS Maintenance Status Indicates whether the feature is maintained.

TSP Traffic Scheme Part Component of the traffic routing system.

VAL Value Numeric value. (Used for year.)

WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.

WPC Work in Progress Category Type of work in progress.

FC036 Restricted Area An area in which certain aspects of navigation are restricted.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

PRO Product Category Principal material involved or product resulting from activity at site.

TXT Text Attribute Narrative or other description.

USE Usage Use.

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FC041 Traffic Separation Scheme (TSS) A routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

IAS IMO Approval Status Status of International Maritime Organization approval.

TSP Traffic Scheme Part Component of the traffic routing system.

FC100 Measured Distance Line A course whose length has been accurately measured and is used in conjunction with ranges ashore. It is used by vessels to calibrate logs, engine revolution counters, etc., and determine speed.

BRR Bearing and Reciprocal Category True course of a vessel in .1 degree increments, when proceeding along a track or route, followed by its reciprocal bearing (ie. 053.1-232.9).

LOR Length of Range Length of range, in nautical miles, established by aids to navigation on the shore.

UNI Units Category Identifies the unit of measure.

FC130 Radar Reference Line A line shown on a chart in proximity to a shipping route, along which ships are guided by a traffic control center located in a radar station.

BRR Bearing and Reciprocal Category True course of a vessel in .1 degree increments, when proceeding along a track or route, followed by its reciprocal bearing (ie. 053.1-232.9).

FC165 Route (Maritime) A track or lane established for the safe passage of ships.

ATN Aids to Navigation Indicates whether a feature is marked or unmarked by an aid to navigation.

BRR Bearing and Reciprocal Category True course of a vessel in .1 degree increments, when proceeding along a track or route, followed by its reciprocal bearing (ie. 053.1-232.9).

BRS Bearing From Seaward True course of a vessel when proceeding from seaward along a track or course.

DAN Description of Aids to Navigation Textual description of aids to navigation marking a feature, eg. "Marked by buoys".

DRP Description of Reference Point Description of the feature(s) which form a Leading Line or Clearing Line.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

NAM Name Any identifier or code.

RTT Route Intended Use Intended use of the route.

FC170 Safety Fairway A route established for the safe passage of vessels through offshore oil and gas fields and minefields.

WID Width A measurement of the shorter of two linear axes on the horizontal plane. For a square feature, measure either axis.

FC177 Swept Area An area of water cleared by a wire drag to ensure an area is free of navigational dangers.

DAT Date Date of report or activity.

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HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

GB070 Seaplane Landing /Seaplane Take-Off Area A designated portion of water outlined by visual surface markings.

EXS Existence Category State or condition of the feature.

OPS Operational Status Indicates whether or not the feature is in operation.

POINT FEATURES

BB010 Anchorage An area of water where vessels anchor or may anchor.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

NAM Name Any identifier or code.

TIM Time Attribute The time, expressed in hours of duration, for which an activity is permitted.

FC021 Maritime Limit Boundary A line where on either side certain activities or factors of significance to navigation and/or operation apply.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

NAM Name Any identifier or code.

PBV Pilot Boarding Vehicle The method by which pilots are transferred to and from ships using pilot services.

FC031 Maritime Area Area in which certain activities or factors of significance to navigation and/or operation apply.

EXS Existence Category State or condition of the feature.

IAS IMO Approval Status Status of International Maritime Organization approval.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

MAS Maintenance Status Indicates whether the feature is maintained.

TSP Traffic Scheme Part Component of the traffic routing system.

FC036 Restricted Area An area in which certain aspects of navigation are restricted.

MAC Maritime Area Category Area in which certain activities or factors of significance to navigation or operations apply.

TXT Text Attribute Narrative or other description.

FC041 Traffic Separation Scheme (TSS) A routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.

DOF Direction of Flow Bearing of movement or direction of flow.

IAS IMO Approval Status Status of International Maritime Organization approval.

TSP Traffic Scheme Part Component of the traffic routing system.

FC165 Route (Maritime) A track or lane established for the safe passage of ships.

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DOF Direction of Flow Bearing of movement of direction of flow.

RTT Route Intended Use Intended use of the route.

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TABLE 129. Limits character value description table.

{Header length and byte order};\					
CHAR.VDT, Limits Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=T,5,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	LIMBNDYA.AFT	F_CODE	BB010	Anchorage
HACG	2	LIMBNDYA.AFT	F_CODE	FC021	Maritime Limit Boundary
HACG	3	LIMBNDYA.AFT	F_CODE	FC036	Restricted Area
HACG	4	MARITIMA.AFT	F_CODE	FC031	Maritime Area
HACG	5	ROUTEA.AFT	F_CODE	FC165	Route (Maritime)
HACG	6	SEPARTNA.AFT	F_CODE	FC041	Traffic Separation Scheme (TSS)
HAC	7	SEPARTNA.AFT	F_CODE	FC170	Safety Fairway
HA	8	SEPARTNA.AFT	F_CODE	GB070	Seaplane Landing /Sea-plane Take-Off Area
HAC	9	SWEPTA.AFT	F_CODE	FC177	Swept Area
HAC	10	DISTL.LFT	F_CODE	FC100	Measured Distance Line
HAC	11	DISTL.LFT	F_CODE	FC130	Radar Reference Line
HAC	12	FERRYL.LFT	F_CODE	AQ070	Ferry Crossing
HAC	13	LIMBNDYL.LFT	F_CODE	BB010	Anchorage
HACG	14	LIMBNDYL.LFT	F_CODE	FC021	Maritime Limit Boundary
HACG	15	LIMBNDYL.LFT	F_CODE	FC036	Restricted Area
HACG	16	MARITIML.LFT	F_CODE	FC031	Maritime Area
HACG	17	ROUTE.LFT	F_CODE	FC165	Route (Maritime)
HACG	18	SEPARTNL.LFT	F_CODE	FC041	Traffic Separation Scheme (TSS)
HAC	19	SEPARTNL.LFT	F_CODE	FC170	Safety Fairway
HA	20	SEPARTNL.LFT	F_CODE	GB070	Seaplane Landing /Sea-plane Take-Off Area
HAC	21	SWEPTL.LFT	F_CODE	FC177	Swept Area
HAC	22	LIMBNDYP.PFT	F_CODE	BB010	Anchorage
HACG	23	LIMBNDYP.PFT	F_CODE	FC021	Maritime Limit Boundary
HACG	24	LIMBNDYP.PFT	F_CODE	FC036	Restricted Area
HACG	25	MARITIMP.PFT	F_CODE	FC031	Maritime Area
HACG	26	ROUTE.PFT	F_CODE	FC165	Route (Maritime)
HACG	27	SEPARTNP.PFT	F_CODE	FC041	Traffic Separation Scheme (TSS)

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TABLE 130. Limits integer value description table.

{Header length and byte order};\					
INT.VDT, Limits Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HACG	1	LIMBNDYA.AFT	COD	001	Limits and Info Known
HACG	2	LIMBNDYA.AFT	COD	002	Limits and Info Unknown
HACG	3	LIMBNDYA.AFT	EXS	045	Natural
HACG	4	LIMBNDYA.AFT	EXS	046	Man-made
HACG	5	LIMBNDYA.AFT	MAC	000	Unknown
HAC	6	LIMBNDYA.AFT	MAC	011	Anchorage (general)
HAC	7	LIMBNDYA.AFT	MAC	012	Anchoring Berths
HAC	8	LIMBNDYA.AFT	MAC	013	Explosive Anchorage
HAC	9	LIMBNDYA.AFT	MAC	014	Large Vessel /Deepwater /Deep Draft
HACG	10	LIMBNDYA.AFT	MAC	015	Anchoring Prohibited
HAC	11	LIMBNDYA.AFT	MAC	016	Quarantine Anchorage
HAC	12	LIMBNDYA.AFT	MAC	017	Reserved Anchorage
HAC	13	LIMBNDYA.AFT	MAC	019	Tanker Anchorage
HACG	14	LIMBNDYA.AFT	MAC	020	Submarine Cable Area
HACG	15	LIMBNDYA.AFT	MAC	021	Pipeline Area
HACG	16	LIMBNDYA.AFT	MAC	022	Fishing Prohibited
HACG	17	LIMBNDYA.AFT	MAC	023	Cable and Pipeline Area
HAC	18	LIMBNDYA.AFT	MAC	024	Turning Area /Swinging Circle
HA	19	LIMBNDYA.AFT	MAC	025	Spoil Area /Spoil Ground
HACG	20	LIMBNDYA.AFT	MAC	026	Unsurveyed Area
HAC	21	LIMBNDYA.AFT	MAC	027	Submarine Exercise Area
HAC	22	LIMBNDYA.AFT	MAC	028	Mine Laying Practice Area
HAC	23	LIMBNDYA.AFT	MAC	029	Firing Danger Area
HACG	24	LIMBNDYA.AFT	MAC	030	Dumping Ground for Hazardous Materials
HACG	25	LIMBNDYA.AFT	MAC	031	Incineration Area
HACG	26	LIMBNDYA.AFT	MAC	032	Oil Field
HACG	27	LIMBNDYA.AFT	MAC	033	Gas Field
HACG	28	LIMBNDYA.AFT	MAC	035	Explosive Dumping Ground
HACG	29	LIMBNDYA.AFT	MAC	037	Safety Zone
HAC	30	LIMBNDYA.AFT	MAC	042	Precautionary Area
HACG	31	LIMBNDYA.AFT	MAC	043	Areas to be Avoided
HA	32	LIMBNDYA.AFT	MAC	044	Degaussing Range
HAC	33	LIMBNDYA.AFT	MAC	045	Outfall Area
HAC	34	LIMBNDYA.AFT	MAC	046	Intake Area
HACG	35	LIMBNDYA.AFT	MAC	048	Pilot Boarding Area
HA	36	LIMBNDYA.AFT	MAC	049	Cargo Transshipment Area
HAC	37	LIMBNDYA.AFT	MAC	053	Seaplane Anchorage
HAC	38	LIMBNDYA.AFT	MAC	054	Time Limited Anchorage
HAC	39	LIMBNDYA.AFT	MAC	055	Fairway
HA	40	LIMBNDYA.AFT	MAC	056	Fish Trap Area
HA	41	LIMBNDYA.AFT	MAC	057	Marine Farm
HA	42	LIMBNDYA.AFT	MAC	058	Dredging Area

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TABLE 130. Limits integer value description table - Continued.

HAC	43	LIMBNDYA.AFT	MAC	061	Sewer Area
HACG	44	LIMBNDYA.AFT	MAC	999	Other
HACG	45	LIMBNDYA.AFT	OPS	001	Operational
HACG	46	LIMBNDYA.AFT	OPS	002	Non-Operational
HACG	47	LIMBNDYA.AFT	PBV	000	Unknown
HACG	48	LIMBNDYA.AFT	PBV	001	By boat
HACG	49	LIMBNDYA.AFT	PBV	002	By helicopter
HACG	50	LIMBNDYA.AFT	PRO	000	Unknown
HACG	51	LIMBNDYA.AFT	PRO	003	Ammunition
HACG	52	LIMBNDYA.AFT	PRO	013	Chemical
HACG	53	LIMBNDYA.AFT	PRO	033	Explosives
HACG	54	LIMBNDYA.AFT	PRO	038	Gas
HACG	55	LIMBNDYA.AFT	PRO	039	Gasoline
HACG	56	LIMBNDYA.AFT	PRO	067	Oil
HACG	57	LIMBNDYA.AFT	PRO	082	Radioactive Material
HACG	58	LIMBNDYA.AFT	PRO	116	Water
HACG	59	LIMBNDYA.AFT	PRO	130	None
HACG	60	LIMBNDYA.AFT	USE	000	Unknown
HACG	61	LIMBNDYA.AFT	USE	051	Telegraph
HACG	62	LIMBNDYA.AFT	USE	052	Telephone
HACG	63	LIMBNDYA.AFT	USE	053	Power
HACG	64	LIMBNDYA.AFT	USE	999	Other
HACG	65	MARITIMA.AFT	ATN	001	Marked
HACG	66	MARITIMA.AFT	ATN	002	Unmarked
HACG	67	MARITIMA.AFT	COD	001	Limits and Info Known
HACG	68	MARITIMA.AFT	COD	002	Limits and Info Unknown
HACG	69	MARITIMA.AFT	DAT	026	Information as of ____
HACG	70	MARITIMA.AFT	EXS	001	Definite
HACG	71	MARITIMA.AFT	EXS	003	Reported
HACG	72	MARITIMA.AFT	IAS	001	Approved
HACG	73	MARITIMA.AFT	IAS	002	Not Approved
HACG	74	MARITIMA.AFT	MAC	000	Unknown
HACG	75	MARITIMA.AFT	MAC	002	Dredged Channel /Dredged Area
HACG	76	MARITIMA.AFT	MAC	004	Mine Danger Area
HACG	77	MARITIMA.AFT	MAC	005	Prohibited Shipping Area /Entry
HACG	78	MARITIMA.AFT	MAC	009	Works in Progress Area
HACG	79	MARITIMA.AFT	MAC	040	Roundabout Zone (TSS)
HACG	80	MARITIMA.AFT	MAC	041	Inshore Traffic Zone (TSS)
HACG	81	MARITIMA.AFT	MAS	001	Maintained
HACG	82	MARITIMA.AFT	MAS	002	Not Maintained
HACG	83	MARITIMA.AFT	TSP	003	Separation Zone Area
HACG	84	MARITIMA.AFT	WPC	000	Unknown
HACG	85	MARITIMA.AFT	WPC	001	Land Reclamation
HAC	86	MARITIMA.AFT	WPC	002	Construction of Structures
HACG	87	ROUTEA.AFT	HDI	009	Depth Known by Other Than Wire
HACG	88	ROUTEA.AFT	HDI	012	Depth Unknown
HACG	89	ROUTEA.AFT	RTT	000	Unknown
HAC	90	ROUTEA.AFT	RTT	004	Deep Water Route
HACG	91	ROUTEA.AFT	RTT	011	Two Way Route

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TABLE 130. Limits integer value description table - Continued.

HA	92	SEPARTNA.AFT	EXS	001	Definite
HACG	93	SEPARTNA.AFT	IAS	001	Approved
HACG	94	SEPARTNA.AFT	IAS	002	Not Approved
HA	95	SEPARTNA.AFT	OPS	001	Operational
HA	96	SEPARTNA.AFT	OPS	002	Non-Operational
HACG	97	SEPARTNA.AFT	TSP	003	Separation Zone Area
HACG	98	SEPARTNA.AFT	TSP	006	Inbound Area
HACG	99	SEPARTNA.AFT	TSP	007	Outbound Area
HAC	100	SWEPTA.AFT	DAT	026	Information as of _____
HAC	101	DISTL.LFT	UNI	000	Unknown
HAC	102	DISTL.LFT	UNI	001	Meters
HAC	103	DISTL.LFT	UNI	011	Nautical Miles
HAC	104	DISTL.LFT	UNI	022	Feet
HAC	105	DISTL.LFT	UNI	023	Kilometers
HAC	106	DISTL.LFT	UNI	024	Yards
HAC	107	FERRYL.LFT	FER	001	With Cables /Chains
HAC	108	FERRYL.LFT	FER	002	Without Cables /Chains
HACG	109	LIMBNDYL.LFT	COD	001	Limits and Info Known
HACG	110	LIMBNDYL.LFT	COD	002	Limits and Info Unknown
HACG	111	LIMBNDYL.LFT	EXS	045	Natural
HACG	112	LIMBNDYL.LFT	EXS	046	Man-made
HAC	113	LIMBNDYL.LFT	LAF	000	Unknown
HAC	114	LIMBNDYL.LFT	LAF	001	One Object (Other Than a Directional Light)
HAC	115	LIMBNDYL.LFT	LAF	002	Directional Light
HAC	116	LIMBNDYL.LFT	LAF	003	Two or More Lights
HAC	117	LIMBNDYL.LFT	LAF	004	Two or More Beacons
HAC	118	LIMBNDYL.LFT	LAF	005	2 or More Objects (Other Than 2 Lights or 2 Beacons)
HAC	119	LIMBNDYL.LFT	LAF	006	Measured Distance Markers
HACG	120	LIMBNDYL.LFT	MAC	000	Unknown
HAC	121	LIMBNDYL.LFT	MAC	011	Anchorage (general)
HAC	122	LIMBNDYL.LFT	MAC	012	Anchoring Berths
HAC	123	LIMBNDYL.LFT	MAC	013	Explosive Anchorage
HAC	124	LIMBNDYL.LFT	MAC	014	Large Vessel /Deepwater /Deep Draft
HACG	125	LIMBNDYL.LFT	MAC	015	Anchoring Prohibited
HAC	126	LIMBNDYL.LFT	MAC	016	Quarantine Anchorage
HAC	127	LIMBNDYL.LFT	MAC	017	Reserved Anchorage
HAC	128	LIMBNDYL.LFT	MAC	019	Tanker Anchorage
HACG	129	LIMBNDYL.LFT	MAC	020	Submarine Cable Area
HACG	130	LIMBNDYL.LFT	MAC	021	Pipeline Area
HACG	131	LIMBNDYL.LFT	MAC	023	Cable and Pipeline Area
HAC	132	LIMBNDYL.LFT	MAC	024	Turning Area /Swinging Circle
HA	133	LIMBNDYL.LFT	MAC	025	Spoil Area /Spoil Ground
HACG	134	LIMBNDYL.LFT	MAC	026	Unsurveyed Area
HAC	135	LIMBNDYL.LFT	MAC	027	Submarine Exercise Area
HAC	136	LIMBNDYL.LFT	MAC	028	Mine Laying Practice Area
HAC	137	LIMBNDYL.LFT	MAC	029	Firing Danger Area

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TABLE 130. Limits integer value description table - Continued.

HACG	138	LIMBNDYL.LFT	MAC	030	Dumping Ground for Hazardous Materials
HACG	139	LIMBNDYL.LFT	MAC	031	Incineration Area
HACG	140	LIMBNDYL.LFT	MAC	032	Oil Field
HACG	141	LIMBNDYL.LFT	MAC	033	Gas Field
HACG	142	LIMBNDYL.LFT	MAC	035	Explosive Dumping Ground
HACG	143	LIMBNDYL.LFT	MAC	037	Safety Zone
HAC	144	LIMBNDYL.LFT	MAC	042	Precautionary Area
HACG	145	LIMBNDYL.LFT	MAC	043	Areas to be Avoided
HA	146	LIMBNDYL.LFT	MAC	044	Degaussing Range
HAC	147	LIMBNDYL.LFT	MAC	045	Outfall Area
HAC	148	LIMBNDYL.LFT	MAC	046	Intake Area
HACG	149	LIMBNDYL.LFT	MAC	048	Pilot Boarding Area
HA	150	LIMBNDYL.LFT	MAC	049	Cargo Transshipment Area
HAC	151	LIMBNDYL.LFT	MAC	053	Seaplane Anchorage
HAC	152	LIMBNDYL.LFT	MAC	054	Time Limited Anchorage
HAC	153	LIMBNDYL.LFT	MAC	055	Fairway
HA	154	LIMBNDYL.LFT	MAC	056	Fish Trap Area
HA	155	LIMBNDYL.LFT	MAC	057	Marine Farm
HA	156	LIMBNDYL.LFT	MAC	058	Dredging Area
HAC	157	LIMBNDYL.LFT	MAC	061	Sewer Area
HACG	158	LIMBNDYL.LFT	MAC	999	Other
HACG	159	LIMBNDYL.LFT	MBL	000	Unknown
HA	160	LIMBNDYL.LFT	MBL	001	Colregs Demarcation Line
H	161	LIMBNDYL.LFT	MBL	002	Customs Boundary
H	162	LIMBNDYL.LFT	MBL	004	Harbor Limit
HACG	163	LIMBNDYL.LFT	MBL	006	Territorial Waters-Limit of Sovereignty
HACG	164	LIMBNDYL.LFT	MBL	007	Territorial Waters Baseline
HAC	165	LIMBNDYL.LFT	MBL	013	Clearing Line
HACG	166	LIMBNDYL.LFT	OPS	001	Operational
HACG	167	LIMBNDYL.LFT	OPS	002	Non-Operational
HACG	168	LIMBNDYL.LFT	PBV	000	Unknown
HACG	169	LIMBNDYL.LFT	PBV	001	By boat
HACG	170	LIMBNDYL.LFT	PBV	002	By helicopter
HACG	171	LIMBNDYL.LFT	PRO	000	Unknown
HACG	172	LIMBNDYL.LFT	PRO	003	Ammunition
HACG	173	LIMBNDYL.LFT	PRO	013	Chemical
HACG	174	LIMBNDYL.LFT	PRO	033	Explosives
HACG	175	LIMBNDYL.LFT	PRO	038	Gas
HACG	176	LIMBNDYL.LFT	PRO	039	Gasoline
HACG	177	LIMBNDYL.LFT	PRO	067	Oil
HACG	178	LIMBNDYL.LFT	PRO	082	Radioactive Material
HACG	179	LIMBNDYL.LFT	PRO	116	Water
HACG	180	LIMBNDYL.LFT	PRO	130	None
HACG	181	LIMBNDYL.LFT	USE	000	Unknown
HACG	182	LIMBNDYL.LFT	USE	051	Telegraph
HACG	183	LIMBNDYL.LFT	USE	052	Telephone
HACG	184	LIMBNDYL.LFT	USE	053	Power

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TABLE 130. Limits integer value description table - Continued.

HACG	185	LIMBNDYL.LFT	USE	999	Other
HACG	186	MARITIML.LFT	ATN	001	Marked
HACG	187	MARITIML.LFT	ATN	002	Unmarked
HACG	188	MARITIML.LFT	COD	001	Limits and Info Known
HACG	189	MARITIML.LFT	COD	002	Limits and Info Unknown
HACG	190	MARITIML.LFT	DAT	026	Information as of ____
HACG	191	MARITIML.LFT	EXS	001	Definite
HACG	192	MARITIML.LFT	EXS	003	Reported
HACG	193	MARITIML.LFT	IAS	001	Approved
HACG	194	MARITIML.LFT	IAS	002	Not Approved
HACG	195	MARITIML.LFT	MAC	000	Unknown
HACG	196	MARITIML.LFT	MAC	002	Dredged Channel /Dredged Area
HACG	197	MARITIML.LFT	MAC	004	Mine Danger Area
HACG	198	MARITIML.LFT	MAC	005	Prohibited Shipping Area /Entry
HACG	199	MARITIML.LFT	MAC	009	Works in Progress Area
HACG	200	MARITIML.LFT	MAC	040	Roundabout Zone (TSS)
HACG	201	MARITIML.LFT	MAC	041	Inshore Traffic Zone (TSS)
HACG	202	MARITIML.LFT	MAS	001	Maintained
HACG	203	MARITIML.LFT	MAS	002	Not Maintained
HACG	204	MARITIML.LFT	TSP	002	Outer Boundary
HACG	205	MARITIML.LFT	WPC	000	Unknown
HACG	206	MARITIML.LFT	WPC	001	Land Reclamation
HACG	207	MARITIML.LFT	WPC	002	Construction of Structures
HACG	208	ROUTE.LFT	ATN	001	Marked
HACG	209	ROUTE.LFT	ATN	002	Unmarked
HACG	210	ROUTE.LFT	EXS	000	Unknown
HACG	211	ROUTE.LFT	EXS	022	One Way
HACG	212	ROUTE.LFT	EXS	023	Two Way
HACG	213	ROUTE.LFT	HDI	009	Depth Known by Other Than Wire
HACG	214	ROUTE.LFT	HDI	012	Depth Unknown
HACG	215	ROUTE.LFT	RTT	000	Unknown
HACG	216	ROUTE.LFT	RTT	002	Recommended Track for Other Than Deep Draft Vessels
HACG	217	ROUTE.LFT	RTT	003	Recommended Track for Deep Draft Vessels
HACG	218	ROUTE.LFT	RTT	005	Transit Route
HA	219	SEPARTNL.LFT	EXS	001	Definite
HACG	220	SEPARTNL.LFT	IAS	001	Approved
HACG	221	SEPARTNL.LFT	IAS	002	Not Approved
HA	222	SEPARTNL.LFT	OPS	001	Operational
HA	223	SEPARTNL.LFT	OPS	002	Non-Operational
HACG	224	SEPARTNL.LFT	TSP	002	Outer Boundary
HACG	225	SEPARTNL.LFT	TSP	004	Separation Zone Line
HAC	226	SWEPTL.LFT	DAT	026	Information as of ____
HAC	227	LIMBNDYP.PFT	COD	001	Limits and Info Known
HAC	228	LIMBNDYP.PFT	COD	002	Limits and Info Unknown
HAC	229	LIMBNDYP.PFT	MAC	000	Unknown
HAC	230	LIMBNDYP.PFT	MAC	011	Anchorage (general)
HAC	231	LIMBNDYP.PFT	MAC	012	Anchoring Berths

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TABLE 130. Limits integer value description table - Continued.

HAC	232	LIMBNDYP.PFT	MAC	013	Explosive Anchorage
HAC	233	LIMBNDYP.PFT	MAC	014	Large Vessel /Deepwater /Deep Draft
HACG	234	LIMBNDYP.PFT	MAC	015	Anchoring Prohibited
HAC	235	LIMBNDYP.PFT	MAC	016	Quarantine Anchorage
HAC	236	LIMBNDYP.PFT	MAC	017	Reserved Anchorage
HAC	237	LIMBNDYP.PFT	MAC	019	Tanker Anchorage
HACG	238	LIMBNDYP.PFT	MAC	022	Fishing Prohibited
HACG	239	LIMBNDYP.PFT	MAC	037	Safety Zone
HACG	240	LIMBNDYP.PFT	MAC	043	Areas to be Avoided
HACG	241	LIMBNDYP.PFT	MAC	048	Pilot Boarding Area
HAC	242	LIMBNDYP.PFT	MAC	053	Seaplane Anchorage
HAC	243	LIMBNDYP.PFT	MAC	054	Time Limited Anchorage
HACG	244	LIMBNDYP.PFT	MAC	999	Other
HACG	245	LIMBNDYP.PFT	PBV	000	Unknown
HACG	246	LIMBNDYP.PFT	PBV	001	By boat
HACG	247	LIMBNDYP.PFT	PBV	002	By helicopter
HACG	248	MARITIMP.PFT	EXS	001	Definite
HACG	249	MARITIMP.PFT	EXS	003	Reported
HACG	250	MARITIMP.PFT	IAS	001	Approved
HACG	251	MARITIMP.PFT	IAS	002	Not Approved
HACG	252	MARITIMP.PFT	MAC	000	Unknown
HACG	253	MARITIMP.PFT	MAC	002	Dredged Channel /Dredged Area
HACG	254	MARITIMP.PFT	MAC	004	Mine Danger Area
HACG	255	MARITIMP.PFT	MAC	005	Prohibited Shipping Area /Entry
HACG	256	MARITIMP.PFT	MAC	040	Roundabout Zone (TSS)
HACG	257	MARITIMP.PFT	MAS	001	Maintained
HACG	258	MARITIMP.PFT	TSP	001	Arrow
HACG	259	MARITIMP.PFT	TSP	005	Separation Zone Point
HACG	260	ROUTE.PFT	RTT	000	Unknown
HACG	261	ROUTE.PFT	RTT	013	Recommended Direction of Traffic Flow
HACG	262	SEPARTNP.PFT	IAS	001	Approved
HACG	263	SEPARTNP.PFT	IAS	002	Not Approved
HACG	264	SEPARTNP.PFT	TSP	001	Arrow

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TABLE 131. Limit Boundaries area feature table.

HACG	{Header length and byte order};\
HACG	LIMBNDYA.AFT,Limit Boundaries Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,LIMBNDAL.ATI,:\
HACG	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,;\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,;\
HACG	NAM=T,70,N,Name,-,-;\
HACG	OPS=S,1,N,Operational Status,INT.VDT,-,;\
HACG	PBV=S,1,N,Pilot Boarding Vehicle,INT.VDT,-,;\
HACG	PRO=S,1,N,Product Category,INT.VDT,-,;\
HAC	TIM=S,1,N,Time Attribute,-,-;\
HACG	TXT=T,255,N,Text Attribute,-,-;\
HACG	USE=S,1,N,Usage,INT.VDT,-,;;

LIMBNDYA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB010	Anchorage	HAC
		FC021	Maritime Limit Boundary	HACG
		FC036	Restricted Area	HACG
COD	Certainty of Delineation			<u>Applicable F_CODE</u>
		-32768	Null	FC036
	default	1	Limits and Info Known	BB010, FC021
		2	Limits and Info Unknown	FC021
EXS	Existence Category			
		-32768	Null	BB010, FC036
		45	Natural	FC021
	default	46	Man-Made	FC021
MAC	Maritime Area Category			
	default (FC021, 0		Unknown	FC021, FC036
	FC036)			
	default (BB010)	11	Anchorage (general)	BB010
		12	Anchoring Berths	BB010
		13	Explosive Anchorage	BB010
		14	Large Vessel /Deepwater	BB010
			/Deep Draft	
		15	Anchoring Prohibited	FC036
		16	Quarantine Anchorage	BB010
		17	Reserved Anchorage	BB010
		19	Tanker Anchorage	BB010
		20	Submarine Cable Area	FC036
		21	Pipeline Area	FC036
		22	Fishing Prohibited	FC036
		23	Cable and Pipeline Area	FC036
		24	Turning Area /Swinging	FC021
			Circle	
		25	Spoil Area /Spoil Ground	FC021
		26	Unsurveyed Area	FC021
		27	Submarine Exercise Area	FC021
		28	Mine Laying Practice	FC021
			Area	
		29	Firing Danger Area	FC021

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	30	Dumping Ground for Hazardous Materials	FC021
	31	Incineration Area	FC021
	32	Oil Field	FC021
	33	Gas Field	FC021
	35	Explosive Dumping Ground	FC021
	37	Safety Zone	FC036
	42	Precautionary Area	FC021
	43	Areas to be Avoided	FC036
	44	Degaussing Range	FC021
	45	Outfall Area	FC036
	46	Intake Area	FC036
	48	Pilot Boarding Area	FC021
	49	Cargo Transshipment Area	FC021
	53	Seaplane Anchorage	BB010
	54	Time Limited Anchorage	BB010
	55	Fairway	FC021
	56	Fish Trap Area	FC021
	57	Marine Farm	FC021
	58	Dredging Area	FC021
	61	Sewer Area	FC036
	999	Other	FC021, FC036
NAM	Name		
		"N/A"	Null
	default	"UNK"	Unknown
		text string (e.g., "Anchorage C-1")	BB010, FC021
OPS	Operational Status		
		-32768	Null
	default	1	Operational
		2	Non-Operational
PBV	Pilot Boarding Vehicle		
	default	-32768	Null
		0	Unknown
		1	By boat
		2	By helicopter
PRO	Product Category		
		-32768	Null
	default (FC036)	0	Unknown
		3	Ammunition
		13	Chemical
		33	Explosives
		38	Gas
		39	Gasoline
		67	Oil
		82	Radioactive Material
		116	Water
	default (FC021)	130	None
TIM	Time Attribute		
	default	-32768	Null
		0	Unknown
		1 to 999	actual value (hours)

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TXT	Text Attribute			
		"N/A"	Null	BB010
	default	"None"	No textual information	FC021, FC036
		text string		FC021, FC036
USE	Usage			
	default	-32768	Null	BB010, FC021, FC036
		0	Unknown	MAC<>20 or 23 FC036
		51	Telegraph	MAC=20 or 23 FC036
		52	Telephone	MAC=20 or 23 FC036
		53	Power	MAC=20 or 23 FC036
		999	Other	MAC=20 or 23 FC036
				MAC=20 or 23

TABLE 132. Maritime area feature table.

HACG	{Header length and byte order};\ MARITIMA.AFT,Maritime Area Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	ATN=S,1,N,Aids to Navigation,INT.VDT,-,-;\
HACG	COD=S,1,N,Certainty of Delineation,INT.VDT,-,-;\
HACG	DAN=T,255,N,Description of Aids to Navigation,-,-;\
HACG	DAT=S,1,N,Date,INT.VDT,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HACG	IAS=S,1,N,IMO Approval Status,INT.VDT,-,-;\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,-;\
HACG	MAS=S,1,N,Maintenance Status,INT.VDT,-,-;\
HACG	TSP=S,1,N,Traffic Scheme Part,INT.VDT,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
HACG	WID=I,1,N,Width,-,-;\
HACG	WPC=S,1,N,Work in Progress Category,INT.VDT,-,-; ;

MARITIMA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC031	Maritime Area	HACG
ATN	Aids to Navigation			<u>Applicable F_CODE</u>
		1	Marked	FC031
	default	2	Unmarked	FC031
COD	Certainty of Delineation			
	default	1	Limits and Info Known	FC031
		2	Limits and Info Unknown	FC031
DAN	Description of Aids to Navigation			
	default	"N/A"	Null	FC031 ATN=2
		"UNK"	Unknown	FC031 ATN=1
		text string		FC031 ATN=1

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DAT	Date				
	default	26	Information as of ____	FC031	
EXS	Existence Category				
	default	1	Definite	FC031	
		3	Reported	FC031	
HDP	Hydrographic Depth				
	default	NaN	Null	FC031	MAC<>2
		0.0	Unknown	FC031	MAC=2
		0.1 to 12000.0	actual value to the nearest .1 meter	FC031	MAC=2
IAS	IMO Approval Status				
	default	1	Approved	FC031	
		2	Not Approved	FC031	
MAC	Maritime Area Category				
	default	0	Unknown	FC031	
		2	Dredged Channel /Dredged Area	FC031	
		4	Mine Danger Area	FC031	
		5	Prohibited Shipping Area /Entry	FC031	
		9	Works in Progress Area	FC031	
		40	Roundabout Zone (TSS)	FC031	
		41	Inshore Traffic Zone (TSS)	FC031	
MAS	Maintenance Status				
	default	1	Maintained	FC031	
		2	Not Maintained	FC031	
TSP	Traffic Scheme Part				
	default	-32768	Null	FC031	MAC<>40 or 41
		3	Separation Zone Area	FC031	MAC=40 or 41
VAL	Value				
	default	0	Unknown	FC031	
		1 to 32767	actual value (year)	FC031	
WID	Width				
	default	-2147483648	Null	FC031	MAC<>2
		0	Unknown	FC031	MAC=2
		1 to 2147483647	actual value (meters)	FC031	MAC=2
WPC	Work in Progress Category				
	default	0	Unknown	FC031	
		1	Land Reclamation	FC031	
		2	Construction of Structures	FC031	

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TABLE 133. Route area feature table.

HACG	{Header length and byte order};\ ROUTEA.AFT,Route Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,-;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HACG	RTT=S,1,N,Route Intended Use,INT.VDT,-,-;\

ROUTEA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		FC165	Route (Maritime)	HACG
HDI	Hydrographic Depth /Height Information			<u>Applicable F_CODE</u>
	default	9	Depth Known by Other Than Wire	FC165
		12	Depth Unknown	FC165
HDP	Hydrographic Depth			
	default	0.0	Unknown	FC165
		0.1 to 12000.0	actual value to the nearest .1 meter	FC165
RTT	Route Intended Use			
	default	0	Unknown	FC165
		4	Deep Water Route	FC165
		11	Two Way Route	FC165

TABLE 134. Separation area feature table*.

HACG	{Header length and byte order};\ SEPARTNA.AFT,Separation Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,SEPARTNA.ATI,;\
HA	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HACG	IAS=S,1,N,IMO Approval Status,INT.VDT,-,-;\
HA	OPS=S,1,N,Operational Status,INT.VDT,-,-;\
HACG	TSP=S,1,N,Traffic Scheme Part,INT.VDT,-,-;\
HAC	WID=I,1,N,Width,-,-;\

*the thematic index on F_CODE applies to the HAC libraries only

SEPARTNA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		FC041	Traffic Separation Scheme (TSS)	HACG
		FC170	Safety Fairway	HAC
		GB070	Seaplane Landing /Seaplane Take-Off Area	HA
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	-32768	Null	FC041, FC170
		1	Definite	GB070

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IAS	IMO Approval Status	-32768	Null	FC170, GB070
	default	1	Approved	FC041
		2	Not Approved	FC041
OPS	Operational Status	-32768	Null	FC041, FC170
	default	1	Operational	GB070
		2	Non-Operational	GB070
TSP	Traffic Scheme Part	-32768	Null	FC170, GB070
	default	3	Separation Zone Area	FC041
		6	Inbound Area	FC041
		7	Outbound Area	FC041
WID	Width	-2147483648	Null	FC041, GB070
	default	0	Unknown	FC170
		1 to 2147483647	actual value (meters)	FC170

TABLE 135. Swept area feature table.

HAC	{Header length and byte order};\ SWEPTA.AFT,Swept Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HAC	DAT=S,1,N,Date,INT.VDT,-,-,:\
HAC	HDP=F,1,N,Hydrographic Depth,-,-,:\
HAC	VAL=S,1,N,Value,-,-,;\

SWEPTA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	FC177	Swept Area	HAC
DAT	Date	26	Information as of ____	<u>Applicable F_CODE</u> FC177
HDP	Hydrographic Depth	0.0	Unknown	FC177
	default	0.1 to 12000.0	actual value to the nearest .1 meter	FC177
VAL	Value	0	Unknown	FC177
	default	1 to 32767	actual value (year)	FC177

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TABLE 136. Distance line feature table.

HAC	{Header length and byte order};\ DISTL.LFT,Distance Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,DISTL1.LTI,;\
HAC	BRR=T,11,N,Bearing and Reciprocal Category,-,-,;\
HAC	LOR=S,1,N,Length of Range,-,-,;\
HAC	UNI=S,1,N,Units Category,INT.VDT,-,; ;

DISTL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC100	Measured Distance Line	HAC
		FC130	Radar Reference Line	HAC
BRR	Bearing and Reciprocal Category default	"UNK"	Unknown	<u>Applicable F_CODE</u> FC100, FC130
		text string (e.g., "90.1-270.1")		FC100, FC130
LOR	Length of Range default	-32768	Null	FC130
		0	Unknown	FC100
		1 to 32767	actual value	FC100
UNI	Units Category default	-32768	Null	FC130
		0	Unknown	FC100
		1	Meters	FC100
		11	Nautical Miles	FC100
		22	Feet	FC100
		23	Kilometers	FC100
		24	Yards	FC100

TABLE 137. Ferry line feature table.

HAC	{Header length and byte order};\ FERRYL.LFT,Ferry Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HAC	FER=S,1,N,Ferry Type,INT.VDT,-,; ;

FERRYL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ070	Ferry Crossing	HAC
FER	Ferry Type default	1	With Cables /Chains	<u>Applicable F_CODE</u> AQ070
		2	Without Cables /Chains	AQ070

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TABLE 138. Limit Boundaries line feature table.

HACG	{Header length and byte order};\
HACG	LIMBNDYL.LFT,Limit Boundaries Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,LIMBNDL1.LTI,;\
HAC	BRG=F,1,N,Bearing of Object,-,-;\
HACG	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
HAC	DRP=T,30,N,Description of Reference Point,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,;\
HAC	LAF=S,1,N,Line Associated Features,INT.VDT,-,;\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,;\
HACG	MBL=S,1,N,Maritime Boundary Limit,INT.VDT,-,;\
HACG	NAM=T,70,N,Name,-,-;\
HACG	OPS=S,1,N,Operational Status,INT.VDT,-,;\
HACG	PBV=S,1,N,Pilot Boarding Vehicle,INT.VDT,-,;\
HACG	PRO=S,1,N,Product Category,INT.VDT,-,;\
HAC	TIM=S,1,N,Time Attribute,-,-;\
HACG	TXT=T,255,N,Text Attribute,-,-;\
HACG	USE=S,1,N,Usage,INT.VDT,-,; ;

LIMBNDYL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code			
		BB010	Anchorage	HAC
		FC021	Maritime Limit Boundary	HACG
		FC036	Restricted Area	HACG
BRG	Bearing of Object			<u>Applicable F_CODE</u>
	default	NaN	Null	BB010, FC036, FC021 MBL<>13
		0.1 to 360.0	actual value to nearest .1 degree	FC021 MBL=13
COD	Certainty of Delineation			
		-32768	Null	FC021 MBL<>-32768, FC036
	default	1	Limits and Info Known	BB010, FC021 MBL=-32768
		2	Limits and Info Unknown	FC021 MBL=-32768
DRP	Description of Reference Point			
	default	"N/A"	Null	BB010, FC036, FC021 MBL<>13
		"UNK"	Unknown	FC021 MBL=13
		text string		FC021 MBL=13
EXS	Existence Category			
		-32768	Null	BB010, FC021 MBL<>-32768, FC036
		45	Natural	FC021 MBL=-32768
	default	46	Man-made	FC021 MBL=-32768

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LAF	Line Associated Features			
	default	-32768	Null	BB010, FC021 MBL<>13, FC036
		0	Unknown	FC021 MBL=13
		1	One Object (Other Than a Directional Light)	FC021 MBL=13
		2	Directional Light	FC021 MBL=13
		3	Two or More Lights	FC021 MBL=13
		4	Two or More Beacons	FC021 MBL=13
	5	2 or More Objects (Other Than 2 Lights or 2 Beacons)	FC021 MBL=13	
	6	Measured Distance Markers	FC021 MBL=13	
MAC	Maritime Area Category			
		-32768	Null	FC021 MBL<>-32768
	default	0	Unknown	FC021 MBL=-32768, FC036
	default (FC021,FC036)			
	default (BB010)	11	Anchorage (general)	BB010
		12	Anchoring Berths	BB010
		13	Explosive Anchorage	BB010
		14	Large Vessel /Deepwater /Deep Draft	BB010
		15	Anchoring Prohibited	FC036
		16	Quarantine Anchorage	BB010
		17	Reserved Anchorage	BB010
		19	Tanker Anchorage	BB010
		20	Submarine Cable Area	FC036
		21	Pipeline Area	FC036
		22	Fishing Prohibited	FC036
		23	Cable and Pipeline Area	FC036
		24	Turning Area /Swinging Circle	FC021 MBL=-32768
		25	Spoil Area /Spoil Ground	FC021 MBL=-32768
		26	Unsurveyed Area	FC021 MBL=-32768
		27	Submarine Exercise Area	FC021 MBL=-32768
		28	Mine Laying Practice Area	FC021 MBL=-32768
		29	Firing Danger Area	FC021 MBL=-32768
		30	Dumping Ground for Hazardous Materials	FC021 MBL=-32768
		31	Incineration Area	FC021 MBL=-32768
		32	Oil Field	FC021 MBL=-32768
		33	Gas Field	FC021 MBL=-32768
		35	Explosive Dumping Ground	FC021 MBL=-32768
		37	Safety Zone	FC036
		42	Precautionary Area	FC021

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				MBL=-32768
	43	Areas to be Avoided		FC036
	44	Degaussing Range		FC021
				MBL=-32768
	45	Outfall Area		FC036
	46	Intake Area		FC036
	48	Pilot Boarding Area		FC021
				MBL=-32768
	49	Cargo Transshipment Area		FC021
				MBL=-32768
	53	Seaplane Anchorage		BB010
	54	Time Limited Anchorage		BB010
	55	Fairway		FC021
				MBL=-32768
	56	Fish Trap Area		FC021
				MBL=-32768
	57	Marine Farm		FC021
				MBL=-32768
	58	Dredging Area		FC021
				MBL=-32768
	61	Sewer Area		FC036
	999	Other		FC021
				MBL=-32768
				FC036
MBL	Maritime Boundary Limit			
	default	-32768	Null	BB010, FC021 MAC<>-32768, FC036
		0	Unknown	FC021
		1	Colregs Demarcation Line	MAC=-32768
		2	Customs Boundary	FC021
		4	Harbor Limit	MAC=-32768
		6	Territorial Waters- Limit of Sovereignty	FC021
		7	Territorial Waters	MAC=-32768
			Baseline	FC021
		13	Clearing Line	MAC=-32768
				FC021
				MAC=-32768
NAM	Name			
		"N/A"	Null	FC036, FC021
	default	"UNK"	Unknown	MBL<>-32768 BB010, FC021
	text string (e.g., "Anchorage C-1")			MBL=-32768 BB010, FC021 MBL=-32768
OPS	Operational Status			
		-32768	Null	BB010, FC036, FC021
	default	1	Operational	MBL<>-32768 FC021
		2	Non-Operational	MBL=-32768 FC021

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MBL=-32768

PBV	Pilot Boarding Vehicle			
	default	-32768	Null	BB010, FC021 MAC<>48, FC036
		0	Unknown	FC021 MAC=48
		1	By boat	FC021 MAC=48
		2	By helicopter	FC021 MAC=48
PRO	Product Category			
	default	-32768	Null	BB010, FC021 MBL<>-32768
	default (FC036)	0	Unknown	FC036
		3	Ammunition	FC021 MBL=-32768
		13	Chemical	FC021 MBL=-32768,
		33	Explosives	FC036 FC021 MBL=-32768
		38	Gas	FC036
		39	Gasoline	FC036
		67	Oil	FC036
		82	Radioactive Material	FC021 MBL=-32768,
		116	Water	FC036
default (FC021)	130	None	FC036 FC021 MBL=-32768, FC036	
TIM	Time Attribute			
	default	-32768	Null	FC021, FC036 BB010 MAC<>54
		0	Unknown	BB010 MAC=54
		1 to 999	actual value (hours)	BB010 MAC=54
TXT	Text Attribute			
	default	"N/A"	Null	BB010
		"None"	No textual information	FC021, FC036
		text string		FC021, FC036
USE	Usage			
	default	-32768	Null	BB010, FC021, FC036 MAC<>20 or 23
		0	Unknown	FC036 MAC=20 or 23
		51	Telegraph	FC036 MAC=20 or 23
		52	Telephone	FC036 MAC=20 or 23
		53	Power	FC036 MAC=20 or 23
	999	Other	FC036 MAC=20 or 23	

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TABLE 139. Maritime line feature table.

HACG	{Header length and byte order};\
HACG	MARITIML.LFT,Maritime Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	ATN=S,1,N,Aids to Navigation,INT.VDT,-,-;\
HACG	COD=S,1,N,Certainty of Delineation,INT.VDT,-,-;\
HACG	DAN=T,255,N,Description of Aids to Navigation,-,-;\
HACG	DAT=S,1,N,Date,INT.VDT,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HACG	IAS=S,1,N,IMO Approval Status,INT.VDT,-,-;\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,-;\
HACG	MAS=S,1,N,Maintenance Status,INT.VDT,-,-;\
HACG	TSP=S,1,N,Traffic Scheme Part,INT.VDT,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
HACG	WID=I,1,N,Width,-,-;\
HACG	WPC=S,1,N,Work in Progress Category,INT.VDT,-,-; ;

MARITIML

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC031	Maritime Area	HACG
ATN	Aids to Navigation			<u>Applicable F_CODE</u>
		1	Marked	FC031
	default	2	Unmarked	FC031
COD	Certainty of Delineation			
	default	1	Limits and Info Known	FC031
		2	Limits and Info Unknown	FC031
DAN	Description of Aids to Navigation			
	default	"N/A"	Null	FC031 ATN=2
		"UNK"	Unknown	FC031 ATN=1
		text string		FC031 ATN=1
DAT	Date			
	default	26	Information as of ____	FC031
EXS	Existence Category			
	default	1	Definite	FC031
		3	Reported	FC031
HDP	Hydrographic Depth			
	default	NaN	Null	FC031 MAC<>2
		0.0	Unknown	FC031 MAC=2
		0.1 to 12000.0	actual value to the nearest .1 meter	FC031 MAC=2
IAS	IMO Approval Status			
	default	1	Approved	FC031
		2	Not Approved	FC031
MAC	Maritime Area Category			
	default	0	Unknown	FC031

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		2	Dredged Channel / Dredged Area	FC031
		4	Mine Danger Area	FC031
		5	Prohibited Shipping Area /Entry	FC031
		9	Works in Progress Area	FC031
		40	Roundabout Zone (TSS)	FC031
		41	Inshore Traffic Zone (TSS)	FC031
MAS	Maintenance Status			
	default	1	Maintained	FC031
		2	Not Maintained	FC031
TSP	Traffic Scheme Part			
	default	-32768	Null	FC031 MAC<>40 or 41
		2	Outer Boundary	FC031 MAC=40 or 41
VAL	Value			
	default	0	Unknown	FC031
		1 to 32767	actual value (year)	FC031
WID	Width			
	default	-2147483648	Null	FC031 MAC<>2
		0	Unknown	FC031 MAC=2
		1 to 2147483647	actual value (meters)	FC031 MAC=2
WPC	Work in Progress Category			
	default	0	Unknown	FC031
		1	Land Reclamation	FC031
		2	Construction of Structures	FC031

TABLE 140. Route line feature table.

HACG	{Header length and byte order};\
HACG	ROUTE.LFT,Route Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	ATN=S,1,N,Aids to Navigation,INT.VDT,-,-,:\
HACG	BRR=T,11,N,Bearing and Reciprocal Category,-,-,:\
HACG	BRS=F,1,N,Bearing From Seaward,-,-,:\
HACG	DAN=T,255,N,Description of Aids to Navigation,-,-,:\
HACG	DRP=T,30,N,Description of Reference Point,-,-,:\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-,:\
HACG	HDI=S,1,N,Hydrographic Depth /Height,INT.VDT,-,-,:\
HACG	HDP=F,1,N,Hydrographic Depth,-,-,:\
HACG	NAM=T,70,N,Name,-,-,:\
HACG	RTT=S,1,N,Route Intended Use,INT.VDT,-,-,;\

ROUTE.L

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC165	Route (Maritime)	HACG

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				<u>Applicable F CODE</u>
ATN	Aids to Navigation			
		1	Marked	FC165
	default	2	Unmarked	FC165
BRR	Bearing and Reciprocal Category			
	default	"UNK"	Unknown	FC165
		text string (e.g., "90.1-270.1")		FC165
BRS	Bearing from Seaward			
	default	0.0	Unknown	FC165
		0.1 to 360.0	actual value to nearest .1 degree	FC165
DAN	Description of Aids to Navigation			
	default	"N/A"	Null	FC165 ATN=2
		"UNK"	Unknown	FC165 ATN=1
		text string		FC165 ATN=1
DRP	Description of Reference Point			
	default	"UNK"	Unknown	FC165
		text string		FC165
EXS	Existence Category			
	default	0	Unknown	FC165
		22	One Way	FC165
		23	Two Way	FC165
HDI	Hydrographic Depth /Height Information			
		9	Depth Known by Other Than Wire	FC165
	default	12	Depth Unknown	FC165
HDP	Hydrographic Depth			
	default	0.0	Unknown	FC165
		0.1 to 12000.0	actual value to the nearest .1 meter	FC165
NAM	Name			
	default	"UNK"	Unknown	FC165
		text string		FC165
RTT	Route Intended Use			
	default	0	Unknown	FC165
		2	Recommended Track for Other Than Deep Draft Vessels	FC165
		3	Recommended Track for Deep Draft Vessels	FC165
		5	Transit Route	FC165

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TABLE 141. Separation line feature table*.

HACG	{Header length and byte order};\
HACG	SEPARTNL.LFT, Separation Line Feature Table; -; \
	ID=I, 1, P, Row ID, -, -, : \
	F_CODE=T, 5, N, FACC Code, CHAR.VDT, SEPARTL1.LTI, : \
HA	EXS=S, 1, N, Existence Category, INT.VDT, -, : \
HACG	IAS=S, 1, N, IMO Approval Status, INT.VDT, -, : \
HA	OPS=S, 1, N, Operational Status, INT.VDT, -, : \
HACG	TSP=S, 1, N, Traffic Scheme Part, INT.VDT, -, : \
HAC	WID=I, 1, N, Width, -, -, : ;

*the thematic index on F_CODE applies to the HAC libraries only

SEPARTNL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		FC041	Traffic Separation Scheme (TSS)	HACG
		FC170	Safety Fairway	HAC
		GB070	Seaplane Landing / Seaplane Take-Off Area	HA
EXS	Existence Category			<u>Applicable F_CODE</u>
		-32768	Null	FC041, FC170
	default	1	Definite	GB070
IAS	IMO Approval Status			
		-32768	Null	FC170, GB070
	default	1	Approved	FC041
		2	Not Approved	FC041
OPS	Operational Status			
		-32768	Null	FC041, FC170
	default	1	Operational	GB070
		2	Non-Operational	GB070
TSP	Traffic Scheme Part			
		-32768	Null	FC170, GB070
		2	Outer Boundary	FC041
	default	4	Separation Zone Line	FC041
WID	Width			
		-2147483648	Null	FC041, GB070
	default	0	Unknown	FC170
		1 to 2147483647	actual value (meters)	FC170

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TABLE 142. Swept line feature table.

HAC	{Header length and byte order};\ SWEPTL.LFT,Swept Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HAC	DAT=S,1,N,Date,INT.VDT,-,;\
HAC	HDP=F,1,N,Hydrographic Depth,-,-,;\
HAC	VAL=S,1,N,Value,-,-,;

SWEPTL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC177	Swept Area	HAC
DAT	Date	26	Information as of ____	<u>Applicable F_CODE</u> FC177
HDP	Hydrographic Depth	0.0	Unknown	FC177
	default	0.1 to 12000.0	actual value to the nearest .1 meter	FC177
VAL	Value	0	Unknown	FC177
	default	1 to 32767	actual value (year)	FC177

TABLE 143. Limit Boundaries point feature table.

HACG	{Header length and byte order};\ LIMBNDYP.PFT,Limit Boundaries Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,LIMBNDP1.PTI,;\
HACG	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,;\
HACG	NAM=T,70,N,Name,-,-,;\
HACG	PBV=S,1,N,Pilot Boarding Vehicle,INT.VDT,-,;\
HACG	TIM=S,1,N,Time Attribute,-,-,;\
HACG	TXT=T,255,N,Text Attribute,-,-,;\
HACG	TILE_ID=S,1,N,Tile Reference Identifier,-,LIMBNDP2.PTI,;\
HACG	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,LIMBNDP3.PTI,;;

LIMBNDYP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB010	Anchorage	HAC
		FC021	Maritime Limit Boundary	HACG
		FC036	Restricted Area	HACG
COD	Certainty of Delineation	-32768	Null	<u>Applicable F_CODE</u> FC021, FC036
	default	1	Limits and Info Known	BB010
		2	Limits and Info Unknown	BB010
MAC	Maritime Area Category			

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	default (FC021, 0 FC036)		Unknown	FC021, FC036
	default (BB010)	11	Anchorage (general)	BB010
		12	Anchoring Berths	BB010
		13	Explosive Anchorage	BB010
		14	Large Vessel /Deepwater /Deep Draft	BB010
		15	Anchoring Prohibited	FC036
		16	Quarantine Anchorage	BB010
		17	Reserved Anchorage	BB010
		19	Tanker Anchorage	BB010
		22	Fishing Prohibited	FC036
		37	Safety Zone	FC036
		43	Areas to be Avoided	FC036
		48	Pilot Boarding Area	FC021
		53	Seaplane Anchorage	BB010
		54	Time Limited Anchorage	BB010
		999	Other	FC021, FC036
NAM	Name			
			"N/A"	Null
	default		"UNK"	Unknown
			text string (e.g., "Anchorage C-1")	FC036 BB010, FC021 BB010, FC021
PBV	Pilot Boarding Vehicle			
	default	-32768		Null
		0		BB010, FC021 MAC<>48, FC036
		1	Unknown	FC021 MAC=48
		2	By boat	FC021 MAC=48
			By helicopter	FC021 MAC=48
TIM	Time Attribute			
	default	-32768		Null
		0		FC021, FC036 BB010 MAC<>54
		1 to 999	Unknown	BB010 MAC=54
			actual value (hours)	BB010 MAC=54
TXT	Text Attribute			
			"N/A"	Null
	default		"None"	No textual information
			text string	BB010, FC021 FC036 FC036

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TABLE 144. Maritime point feature table.

HACG	{Header length and byte order};\
HACG	MARITIMP.PFT,Maritime Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-,:\
HACG	IAS=S,1,N,IMO Approval Status,INT.VDT,-,-,:\
HACG	MAC=S,1,N,Maritime Area Category,INT.VDT,-,-,:\
HACG	MAS=S,1,N,Maintenance Status,INT.VDT,-,-,:\
HACG	TSP=S,1,N,Traffic Scheme Part,INT.VDT,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,MARITIP1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,MARITIP2.PTI,; ;

MARITIMP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC031	Maritime Area	HACG
EXS	Existence Category			<u>Applicable F_CODE</u>
	default	1	Definite	FC031
		3	Reported	FC031
IAS	IMO Approval Status			
	default	1	Approved	FC031
		2	Not Approved	FC031
MAC	Maritime Area Category			
	default	0	Unknown	FC031
		2	Dredged Channel / Dredged Area	FC031
		4	Mine Danger Area	FC031
		5	Prohibited Shipping Area /Entry	FC031
		40	Roundabout Zone (TSS)	FC031
MAS	Maintenance Status			
	default	1	Maintained	FC031
TSP	Traffic Scheme Part			
	default	-32768	Null	FC031 MAC<>40
		1	Arrow	FC031 MAC=40
		5	Separation Zone Point	FC031 MAC=40

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TABLE 145. Route point feature table.

HACG	{Header length and byte order};\
HACG	ROUTE.PFT,Route Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	DOF=S,1,N,Direction of Flow,-,-,:\
HACG	RTT=S,1,N,Route Intended Use,INT.VDT,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,ROUTE1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,ROUTE2.PTI,;;

ROUTE.P

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC165	Route (Maritime)	HACG
DOF	Direction of Flow			<u>Applicable F_CODE</u>
	default	0	Unknown	FC165
		1 to 360	actual value (degrees)	FC165
RTT	Route Intended Use			
	default	0	Unknown	FC165
		13	Recommended Direction of Traffic Flow	FC165

TABLE 146. Separation point feature table.

HACG	{Header length and byte order};\
HACG	SEPARTNP.PFT,Separation Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HACG	DOF=S,1,N,Direction of Flow,-,-,:\
HACG	IAS=S,1,N,IMO Approval Status,INT.VDT,-,-,:\
HACG	TSP=S,1,N,Traffic Scheme Part,INT.VDT,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,SEPART1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,SEPART2.PTI,;;

SEPARTNP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	FC041	Traffic Separation Scheme (TSS)	HACG
DOF	Direction of Flow			<u>Applicable F_CODE</u>
		1 to 360	actual value (degrees)	FC041
IAS	IMO Approval Status			
	default	1	Approved	FC041
		2	Not Approved	FC041
TSP	Traffic Scheme Part			
	default	1	Arrow	FC041

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A.3.2.8 Aids to Navigation coverage. This coverage contains navigational aids, such as buoys, beacons, etc., of significance to marine navigation.

a. Aids to Navigation coverage glossary.

AREA FEATURES

BC060 Light Sector A sector defined by bearings from seaward within which a light shows a specified character or color, or is obscured.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position (e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR).

LSA Light Sector Angle Angular limits of light visibility. Limits of sectors and arcs of visibility are arranged clockwise and shall be given from seaward toward the light.

NAM Name Any identifier or code.

LINE FEATURES

BC040 Light A specially constructed device which displays a luminous or lighted aid to navigation.

HLT Hydrographic Light Type The type of light used for marine navigation.

BC100 Leading Line A track line which passes through one or more (usually two) clearly defined objects, along which a vessel can safely travel.

BRG Bearing of Object The bearing of an object from an observer (on any point along the line) towards the object or feature, expressed in degrees and tenths (i.e. 003.0 degrees).

DRP Description of Reference Point Description of the feature(s) which form a Leading Line or Clearing Line.

LAF Line Associated Features The type and /or number of features associated with a Leading or Clearing Line.

POINT FEATURES

AL050 Display Sign A large self supported upright panel used to convey visual information.

USE Usage Use.

BC010 Beacon A fixe"d visual or electronic aid to navigation.

ACC Accuracy Category Accuracy of geographic position.

BRF Broadcast Frequency Broadcast frequency of a communications device.

BR2 Broadcast Frequency (2) The frequency in kilohertz (kHz) on which a station broadcasts (second occurrence).

Increment: 1 Kilohertz (KHz)

Limits: NA

Variance: NA

CCC Color Code Category Color of the sea floor, light, buoy, structure, etc.

NAM Name Any identifier or code.

NST Navigation System Types Type of equipment or system used in electronic navigation.

NS2 Navigation System Types (2) The type of radio navigational aid employed (Second occurrence).

ORC Operating Range Category The range of the Navaid beyond which the capture of the signal is not completely assured.

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OR2 Operating Range Category (2) The maximum distance at which the associated RA2 can be used accurately.

Increment: 1 Nautical Mile

Limits: NA

Variance: NA

REF Radar Reflector Attribute Indicates whether or not a radar reflector is attached to, or connected with, a feature.

SST Sound Signal Type Type of audible signal.

TMC Top Mark Characteristic The characteristic shape secured at the top of a buoy or beacon to aid identification.

TXT Text Attribute Narrative or other description.

BC020 Buoy A floating object, other than a lightship, moored or anchored to the bottom and serving as an aid to navigation.

BRF Broadcast Frequency Broadcast frequency of a communications device.

BR2 Broadcast Frequency (2) The frequency in kilohertz (kHz) on which a station broadcasts (second occurrence).

Increment: 1 Kilohertz (KHz)

Limits: NA

Variance: NA

BTC Beacon/Buoy Type Category Type buoy or beacon.

CCC Color Code Category Color of the sea floor, light, buoy, structure, etc.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position (e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR).

EOL Elevation of Light The elevation of a light.

Increment: 1 Meter

Limits: Measured from mean sea level to the focal plane of the light.

Variance: NA

LVN Light Range, Nominal The luminous range when the meteorological range is ten sea miles.

MLR Multiple Light Ranges A set of two numbers, light ranges at a light expressed in nautical miles, separated by a slash (/) if only two visibilities exist, or by a dash (-) separating the greatest and least visibilities if 3 or more exist.

NAM Name Any identifier or code.

NST Navigation System Types Type of equipment or system used in electronic navigation.

NS2 Navigation System Types (2) The type of radio navigational aid employed (Second occurrence).

PER Period of Light The time occupied by an entire cycle of intervals of light and eclipse.

REF Radar Reflector Attribute Indicates whether or not a radar reflector is attached to, or connected with, a feature.

SSC Structure Shape Category Geometric form, appearance, or configuration of the feature.

SST Sound Signal Type Type of audible signal.

TMC Top Mark Characteristic The characteristic shape secured at the top of a buoy or beacon to aid identification.

TXT Text Attribute Narrative or other description.

BC040 Light A specially constructed device which displays a luminous or lighted aid to navigation.

ACC Accuracy Category Accuracy of geographic position.

BRF Broadcast Frequency Broadcast frequency of a communications device.

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BR2 Broadcast Frequency (2) The frequency in kilohertz (kHz) on which a station broadcasts (second occurrence).

Increment: 1 Kilohertz (KHz)

Limits: NA

Variance: NA

CCC Color Code Category Color of the sea floor, light, buoy, structure, etc.

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position (e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR).

EOL Elevation of Light The elevation of a light.

Increment: 1 Meter

Limits: Measured from mean sea level to the focal plane of the light.

Variance: NA

HLT Hydrographic Light Type The type of light used for marine navigation.

IAC IALA Aid Category Whether a navigational aid conforms to the IALA system of navigational aids.

LVN Light Range, Nominal The luminous range when the meteorological range is ten sea miles.

MLR Multiple Light Ranges A set of two numbers, light ranges at a light expressed in nautical miles, separated by a slash (/) if only two visibilities exist, or by a dash (-) separating the greatest and least visibilities if 3 or more exist.

NAM Name Any identifier or code.

NST Navigation System Types Type of equipment or system used in electronic navigation.

NS2 Navigation System Types (2) The type of radio navigational aid employed (Second occurrence).

PER Period of Light The time occupied by an entire cycle of intervals of light and eclipse.

REF Radar Reflector Attribute Indicates whether or not a radar reflector is attached to, or connected with, a feature.

SST Sound Signal Type Type of audible signal.

TMC Top Mark Characteristic The characteristic shape secured at the top of a buoy or beacon to aid identification.

TXT Text Attribute Narrative or other description.

BC055 Marker A colored (usually white) mark on a cliff, rock, wall, etc., which is a conspicuous landmark for marine navigation.

BC070 Light Vessel /Lightship A distinctively marked manned vessel anchored or moored at a defined point to serve as an aid to navigation.

BRF Broadcast Frequency Broadcast frequency of a communications device.

BR2 Broadcast Frequency (2) The frequency in kilohertz (kHz) on which a station broadcasts (second occurrence).

Increment: 1 Kilohertz (KHz)

Limits: NA

Variance: NA

COL Character of Light Any identifier comprised of the class, number and color(s) of flashes or occultations, of a light or lights at one geographic position (e.g. Q(6)+L F1, VQ G, L F1 (3+2)WR).

EOL Elevation of Light The elevation of a light.

Increment: 1 Meter

Limits: Measured from mean sea level to the focal plane of the light.

Variance: NA

LVN Light Range, Nominal The luminous range when the meteorological range is ten sea miles.

MLR Multiple Light Ranges A set of two numbers, light ranges at a light expressed in nautical miles, separated by a slash (/) if only two visibilities exist, or by a dash (-) separating the greatest and least visibilities if 3 or more exist.

NAM Name Any identifier or code.

NST Navigation System Types Type of equipment or system used in electronic navigation.

NS2 Navigation System Types (2) The type of radio navigational aid employed (Second occurrence).

PER Period of Light The time occupied by an entire cycle of intervals of light and eclipse.

REF Radar Reflector Attribute Indicates whether or not a radar reflector is attached to, or connected with, a feature.

SST Sound Signal Type Type of audible signal.

TXT Text Attribute Narrative or other description.

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TABLE 147. Aids to Navigation character value description table.

{Header length and byte order};\					
CHAR.VDT, Aids to Navigation Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-; ;					
HAC	1	SECTORA.AFT	F_CODE	BC060	Light Sector
HAC	2	LEADINGL.LFT	F_CODE	BC100	Leading Line
H	3	LIGHTSL.LFT	F_CODE	BC040	Light
HACG	4	BUOYBCNP.PFT	F_CODE	BC010	Beacon
HACG	5	BUOYBCNP.PFT	F_CODE	BC020	Buoy
HACG	6	BUOYBCNP.PFT	F_CODE	BC070	Light Vessel /Lightship
HACG	7	LIGHTSP.PFT	F_CODE	BC040	Light
H	8	MARKERP.PFT	F_CODE	AL050	Display Sign
HA	9	MARKERP.PFT	F_CODE	BC055	Marker

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TABLE 148. Aids to Navigation integer value description table.

{Header length and byte order};\					
INT.VDT, Aids to Navigation Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	LEADINGL.LFT	LAF	000	Unknown
HAC	2	LEADINGL.LFT	LAF	001	One Object (Other Than a Directional Light
HAC	3	LEADINGL.LFT	LAF	002	Directional Light
HAC	4	LEADINGL.LFT	LAF	003	Two or More Lights
HAC	5	LEADINGL.LFT	LAF	004	Two or More Beacons
HAC	6	LEADINGL.LFT	LAF	005	2 or More Objects (Other Than 2 Lights or 2 Beacons)
HAC	7	LEADINGL.LFT	LAF	007	Directional Radiobeacon
HAC	8	LEADINGL.LFT	LAF	008	Moire Effect Light
H	9	LIGHTSL.LFT	HLT	004	Strip Light
HACG	10	BUOYBCNP.PFT	ACC	001	Accurate
HACG	11	BUOYBCNP.PFT	ACC	002	Approximate
HACG	12	BUOYBCNP.PFT	ACC	003	Doubtful
HAC	13	BUOYBCNP.PFT	BTC	000	Unknown
HACG	14	BUOYBCNP.PFT	BTC	004	Large Navigational Buoy (LANBY)
HACG	15	BUOYBCNP.PFT	BTC	006	Light Float
HACG	16	BUOYBCNP.PFT	BTC	007	Mooring
HACG	17	BUOYBCNP.PFT	BTC	010	Ocean Data Acquisition System (ODAS)
HACG	18	BUOYBCNP.PFT	BTC	035	Articulated Lights
HAC	19	BUOYBCNP.PFT	CCC	000	Unknown
HAC	20	BUOYBCNP.PFT	CCC	001	Black (B)
HAC	21	BUOYBCNP.PFT	CCC	002	Blue (Bu)
HAC	22	BUOYBCNP.PFT	CCC	003	Brown (Br)
HAC	23	BUOYBCNP.PFT	CCC	004	Gray (Gy)
HAC	24	BUOYBCNP.PFT	CCC	005	Green (G)
HAC	25	BUOYBCNP.PFT	CCC	009	Orange (Or)
HAC	26	BUOYBCNP.PFT	CCC	012	Red (R)
HAC	27	BUOYBCNP.PFT	CCC	014	Violet (Vi)
HAC	28	BUOYBCNP.PFT	CCC	015	White (W)
HAC	29	BUOYBCNP.PFT	CCC	019	Yellow (Y)
HAC	30	BUOYBCNP.PFT	CCC	020	Red & White (RW)
HAC	31	BUOYBCNP.PFT	CCC	021	Red & Green (RG)
HAC	32	BUOYBCNP.PFT	CCC	022	Red & Black (RB)
HAC	33	BUOYBCNP.PFT	CCC	023	Red-Green-Red (RGR)
HAC	34	BUOYBCNP.PFT	CCC	024	Green & White (GW)
HAC	35	BUOYBCNP.PFT	CCC	025	Green & Red (GR)
HAC	36	BUOYBCNP.PFT	CCC	026	Green & Black (GB)
HAC	37	BUOYBCNP.PFT	CCC	027	Green-Red-Green (GRG)
HAC	38	BUOYBCNP.PFT	CCC	028	Green-Yellow-Black (GYB)
HAC	39	BUOYBCNP.PFT	CCC	029	Yellow & Black (YB)
HAC	40	BUOYBCNP.PFT	CCC	030	Yellow-Black-Yellow (YBY)
HAC	41	BUOYBCNP.PFT	CCC	031	Yellow & Red (YR)

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TABLE 148. Aids to Navigation integer value description table - Continued.

HAC	42	BUOYBCNP.PFT	CCC	032	Yellow & Green (YG)
HAC	43	BUOYBCNP.PFT	CCC	033	Yellow-Red-White (YRW)
HAC	44	BUOYBCNP.PFT	CCC	034	Black & Yellow (BY)
HAC	45	BUOYBCNP.PFT	CCC	035	Black-Yellow-Black (BYB)
HAC	46	BUOYBCNP.PFT	CCC	036	Black-Red-Black (BRB)
HAC	47	BUOYBCNP.PFT	CCC	037	Black & White (BW)
HAC	48	BUOYBCNP.PFT	CCC	038	Black & Red (BR)
HAC	49	BUOYBCNP.PFT	CCC	039	Black & Green (BG)
HAC	50	BUOYBCNP.PFT	CCC	040	White & Red (WR)
HAC	51	BUOYBCNP.PFT	CCC	041	White & Orange (W Or)
HAC	52	BUOYBCNP.PFT	CCC	042	White & Green (WG)
HAC	53	BUOYBCNP.PFT	CCC	043	White & Black (WB)
HAC	54	BUOYBCNP.PFT	CCC	044	White & Yellow (WY)
HAC	55	BUOYBCNP.PFT	CCC	045	White-Red-Green (WRG)
HAC	56	BUOYBCNP.PFT	CCC	046	White-Green-White (WGW)
HACG	57	BUOYBCNP.PFT	NST	000	Unknown
HACG	58	BUOYBCNP.PFT	NST	001	Circular Radiobeacon (RC)
HACG	59	BUOYBCNP.PFT	NST	004	Radio Direction Finding
HACG	60	BUOYBCNP.PFT	NST	005	Directional Radiobeacon (RD)
HACG	61	BUOYBCNP.PFT	NST	010	Racon (Radar Responder Beacon)
HACG	62	BUOYBCNP.PFT	NST	017	NDB (Non-Directional Beacon)
HACG	63	BUOYBCNP.PFT	NST	041	Rotating Loop Radiobeacon
HACG	64	BUOYBCNP.PFT	NST	045	Radar Station (Ra)
HACG	65	BUOYBCNP.PFT	NST	051	Radiobeacon, Type Unknown (R Bn)
HACG	66	BUOYBCNP.PFT	NST	052	None
HACG	67	BUOYBCNP.PFT	NST	053	QTG Station (R)
HACG	68	BUOYBCNP.PFT	NST	054	Ramark (Ramark)
HACG	69	BUOYBCNP.PFT	NS2	000	Unknown
HACG	70	BUOYBCNP.PFT	NS2	001	Circular Radiobeacon (RC)
HACG	71	BUOYBCNP.PFT	NS2	004	Radio Direction Finding
HACG	72	BUOYBCNP.PFT	NS2	005	Directional Radiobeacon (RD)
HACG	73	BUOYBCNP.PFT	NS2	010	Racon (Radar Responder Beacon)
HACG	74	BUOYBCNP.PFT	NS2	017	NDB (Non- Directional Beacon)
HACG	75	BUOYBCNP.PFT	NS2	041	Rotating Loop Radiobeacon
HACG	76	BUOYBCNP.PFT	NS2	045	Radar Station (Ra)
HACG	77	BUOYBCNP.PFT	NS2	051	Radiobeacon, Type Unknown (R Bn)
HACG	78	BUOYBCNP.PFT	NS2	052	None
HACG	79	BUOYBCNP.PFT	NS2	053	QTG Station (R)
HACG	80	BUOYBCNP.PFT	NS2	054	Ramark (Ramark)
HAC	81	BUOYBCNP.PFT	REF	001	Radar Reflector Present
HAC	82	BUOYBCNP.PFT	REF	002	Radar Reflector Absent
HACG	83	BUOYBCNP.PFT	SSC	000	Unknown
HACG	84	BUOYBCNP.PFT	SSC	001	Barrel, Ton
HACG	85	BUOYBCNP.PFT	SSC	006	Conical /Peaked /NUN
HACG	86	BUOYBCNP.PFT	SSC	007	Cylindrical (Upright) /CAN
HACG	87	BUOYBCNP.PFT	SSC	010	Pillar, Spindle
HACG	88	BUOYBCNP.PFT	SSC	016	Spar

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TABLE 148. Aids to Navigation integer value description table - Continued.

HACG	89	BUOYBCNP.PFT	SSC	017	Spherical (Hemispherical)
HACG	90	BUOYBCNP.PFT	SSC	073	Superbuoy
HACG	91	BUOYBCNP.PFT	SSC	085	Diamond-Shaped Buoy
HACG	92	BUOYBCNP.PFT	SSC	999	Other
HAC	93	BUOYBCNP.PFT	SST	000	Unknown
HAC	94	BUOYBCNP.PFT	SST	001	Bell
HAC	95	BUOYBCNP.PFT	SST	002	Diaphone
HAC	96	BUOYBCNP.PFT	SST	003	Explosive Fog Signal
HAC	97	BUOYBCNP.PFT	SST	004	Gong
HAC	98	BUOYBCNP.PFT	SST	006	Horn
HAC	99	BUOYBCNP.PFT	SST	009	Siren
HAC	100	BUOYBCNP.PFT	SST	014	Whistle
HAC	101	BUOYBCNP.PFT	SST	015	Reed
HAC	102	BUOYBCNP.PFT	SST	016	None
HAC	103	BUOYBCNP.PFT	TMC	000	Unknown
HAC	104	BUOYBCNP.PFT	TMC	001	East Mark (2 cones base together)
HAC	105	BUOYBCNP.PFT	TMC	002	Isolated Danger (2 balls)
HAC	106	BUOYBCNP.PFT	TMC	003	North Mark (2 cones pointing up)
HAC	107	BUOYBCNP.PFT	TMC	006	Special (X)
HAC	108	BUOYBCNP.PFT	TMC	008	South Mark (2 cones pointing down)
HAC	109	BUOYBCNP.PFT	TMC	009	West Mark (2 cones points together)
HAC	110	BUOYBCNP.PFT	TMC	015	Ball Over Cone
HAC	111	BUOYBCNP.PFT	TMC	016	Cone Over Ball
HAC	112	BUOYBCNP.PFT	TMC	017	Broom Point Up
HAC	113	BUOYBCNP.PFT	TMC	018	Perch
HAC	114	BUOYBCNP.PFT	TMC	019	Diamond
HAC	115	BUOYBCNP.PFT	TMC	021	Cone, Point Upwards
HAC	116	BUOYBCNP.PFT	TMC	022	Cone (Point Downwards)
HAC	117	BUOYBCNP.PFT	TMC	023	Upright Cross
HAC	118	BUOYBCNP.PFT	TMC	025	Can (Open)
HAC	119	BUOYBCNP.PFT	TMC	026	Can (Filled)
HAC	120	BUOYBCNP.PFT	TMC	027	Ball (Open)
HAC	121	BUOYBCNP.PFT	TMC	028	Ball (Filled)
HAC	122	BUOYBCNP.PFT	TMC	029	Can Over Ball (Open)
HAC	123	BUOYBCNP.PFT	TMC	030	Cross Over Ball (Open)
HAC	124	BUOYBCNP.PFT	TMC	031	Diamond Over Ball (Filled)
HAC	125	BUOYBCNP.PFT	TMC	032	Double Cone, Points Apart (Open)
HAC	126	BUOYBCNP.PFT	TMC	033	None
HACG	127	LIGHTSP.PFT	ACC	001	Accurate
HACG	128	LIGHTSP.PFT	ACC	002	Approximate
HACG	129	LIGHTSP.PFT	ACC	003	Doubtful
HAC	130	LIGHTSP.PFT	CCC	000	Unknown
HAC	131	LIGHTSP.PFT	CCC	001	Black (B)
HAC	132	LIGHTSP.PFT	CCC	002	Blue (Bu)
HAC	133	LIGHTSP.PFT	CCC	003	Brown (Br)

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TABLE 148. Aids to Navigation integer value description table - Continued.

HAC	134	LIGHTSP.PFT	CCC	004	Gray (Gy)
HAC	135	LIGHTSP.PFT	CCC	005	Green (G)
HAC	136	LIGHTSP.PFT	CCC	009	Orange (Or)
HAC	137	LIGHTSP.PFT	CCC	012	Red (R)
HAC	138	LIGHTSP.PFT	CCC	014	Violet (Vi)
HAC	139	LIGHTSP.PFT	CCC	015	White (W)
HAC	140	LIGHTSP.PFT	CCC	019	Yellow (Y)
HAC	141	LIGHTSP.PFT	CCC	020	Red & White (RW)
HAC	142	LIGHTSP.PFT	CCC	021	Red & Green (RG)
HAC	143	LIGHTSP.PFT	CCC	022	Red & Black (RB)
HAC	144	LIGHTSP.PFT	CCC	023	Red-Green-Red (RGR)
HAC	145	LIGHTSP.PFT	CCC	024	Green & White (GW)
HAC	146	LIGHTSP.PFT	CCC	025	Green & Red (GR)
HAC	147	LIGHTSP.PFT	CCC	026	Green & Black (GB)
HAC	148	LIGHTSP.PFT	CCC	027	Green-Red-Green (GRG)
HAC	149	LIGHTSP.PFT	CCC	028	Green-Yellow-Black (GYB)
HAC	150	LIGHTSP.PFT	CCC	029	Yellow & Black (YB)
HAC	151	LIGHTSP.PFT	CCC	030	Yellow-Black-Yellow (YBY)
HAC	152	LIGHTSP.PFT	CCC	031	Yellow & Red (YR)
HAC	153	LIGHTSP.PFT	CCC	032	Yellow & Green (YG)
HAC	154	LIGHTSP.PFT	CCC	033	Yellow-Red-White (YRW)
HAC	155	LIGHTSP.PFT	CCC	034	Black & Yellow (BY)
HAC	156	LIGHTSP.PFT	CCC	035	Black-Yellow-Black (BYB)
HAC	157	LIGHTSP.PFT	CCC	036	Black-Red-Black (BRB)
HAC	158	LIGHTSP.PFT	CCC	037	Black & White (BW)
HAC	159	LIGHTSP.PFT	CCC	038	Black & Red (BR)
HAC	160	LIGHTSP.PFT	CCC	039	Black & Green (BG)
HAC	161	LIGHTSP.PFT	CCC	040	White & Red (WR)
HAC	162	LIGHTSP.PFT	CCC	041	White & Orange (W Or)
HAC	163	LIGHTSP.PFT	CCC	042	White & Green (WG)
HAC	164	LIGHTSP.PFT	CCC	043	White & Black (WB)
HAC	165	LIGHTSP.PFT	CCC	044	White & Yellow (WY)
HAC	166	LIGHTSP.PFT	CCC	045	White-Red-Green (WRG)
HAC	167	LIGHTSP.PFT	CCC	046	White-Green-White (WGW)
HACG	168	LIGHTSP.PFT	HLT	000	Unknown
HACG	169	LIGHTSP.PFT	HLT	001	Sectored Light
HACG	170	LIGHTSP.PFT	HLT	002	Other
HACG	171	LIGHTSP.PFT	HLT	003	Moire Effect Light
HACG	172	LIGHTSP.PFT	HLT	005	Occasional
HAC	173	LIGHTSP.PFT	IAC	000	Unknown
HAC	174	LIGHTSP.PFT	IAC	001	Non-IALA Aid
HAC	175	LIGHTSP.PFT	IAC	002	IALA Aid
HACG	176	LIGHTSP.PFT	NST	000	Unknown
HACG	177	LIGHTSP.PFT	NST	001	Circular Radiobeacon (RC)
HACG	178	LIGHTSP.PFT	NST	004	Radio Direction Finding
HACG	179	LIGHTSP.PFT	NST	005	Directional Radiobeacon (RD)
HACG	180	LIGHTSP.PFT	NST	010	Racon (Radar Responder Beacon)
HACG	181	LIGHTSP.PFT	NST	017	NDB (Non-Directional Beacon)
HACG	182	LIGHTSP.PFT	NST	041	Rotating Loop Radiobeacon

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TABLE 148. Aids to Navigation integer value description table - Continued.

HACG	183	LIGHTSP.PFT	NST	045	Radar Station (Ra)
HACG	184	LIGHTSP.PFT	NST	051	Radiobeacon, Type Unknown (R Bn)
HACG	185	LIGHTSP.PFT	NST	052	None
HACG	186	LIGHTSP.PFT	NST	053	QTG Station (R)
HACG	187	LIGHTSP.PFT	NST	054	Ramark (Ramark)
HACG	188	LIGHTSP.PFT	NS2	000	Unknown
HACG	189	LIGHTSP.PFT	NS2	001	Circular Radiobeacon (RC)
HACG	190	LIGHTSP.PFT	NS2	004	Radio Direction Finding
HACG	191	LIGHTSP.PFT	NS2	005	Directional Radiobeacon (RD)
HACG	192	LIGHTSP.PFT	NS2	010	Racon (Radar Responder Beacon)
HACG	193	LIGHTSP.PFT	NS2	017	NDB (Non-Directional Beacon)
HACG	194	LIGHTSP.PFT	NS2	041	Rotating Loop Radiobeacon
HACG	195	LIGHTSP.PFT	NS2	045	Radar Station (Ra)
HACG	196	LIGHTSP.PFT	NS2	051	Radiobeacon, Type Unknown (R Bn)
HACG	197	LIGHTSP.PFT	NS2	052	None
HACG	198	LIGHTSP.PFT	NS2	053	QTG Station (R)
HACG	199	LIGHTSP.PFT	NS2	054	Ramark (Ramark)
HAC	200	LIGHTSP.PFT	REF	001	Radar Reflector Present
HAC	201	LIGHTSP.PFT	REF	002	Radar Reflector Absent
HAC	202	LIGHTSP.PFT	SST	000	Unknown
HAC	203	LIGHTSP.PFT	SST	001	Bell
HAC	204	LIGHTSP.PFT	SST	002	Diaphone
HAC	205	LIGHTSP.PFT	SST	003	Explosive Fog Signal
HAC	206	LIGHTSP.PFT	SST	004	Gong
HAC	207	LIGHTSP.PFT	SST	006	Horn
HAC	208	LIGHTSP.PFT	SST	009	Siren
HAC	209	LIGHTSP.PFT	SST	014	Whistle
HAC	210	LIGHTSP.PFT	SST	015	Reed
HAC	211	LIGHTSP.PFT	SST	016	None
HAC	212	LIGHTSP.PFT	TMC	000	Unknown
HAC	213	LIGHTSP.PFT	TMC	001	East Mark (2 cones base together)
HAC	214	LIGHTSP.PFT	TMC	002	Isolated Danger (2 balls)
HAC	215	LIGHTSP.PFT	TMC	003	North Mark (2 cones pointing up)
HAC	216	LIGHTSP.PFT	TMC	006	Special (X)
HAC	217	LIGHTSP.PFT	TMC	008	South Mark (2 cones pointing down)
HAC	218	LIGHTSP.PFT	TMC	009	West Mark (2 cones points together)
HAC	219	LIGHTSP.PFT	TMC	015	Ball Over Cone
HAC	220	LIGHTSP.PFT	TMC	016	Cone Over Ball
HAC	221	LIGHTSP.PFT	TMC	017	Broom Point Up
HAC	222	LIGHTSP.PFT	TMC	018	Perch
HAC	223	LIGHTSP.PFT	TMC	019	Diamond
HAC	224	LIGHTSP.PFT	TMC	021	Cone, Point Upwards
HAC	225	LIGHTSP.PFT	TMC	022	Cone (Point Downwards)
HAC	226	LIGHTSP.PFT	TMC	023	Upright Cross

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TABLE 148. Aids to Navigation integer value description table - Continued.

HAC	227	LIGHTSP.PFT	TMC	025	Can (Open)
HAC	228	LIGHTSP.PFT	TMC	026	Can (Filled)
HAC	229	LIGHTSP.PFT	TMC	027	Ball (Open)
HAC	230	LIGHTSP.PFT	TMC	028	Ball (Filled)
HAC	231	LIGHTSP.PFT	TMC	029	Can Over Ball (Open)
HAC	232	LIGHTSP.PFT	TMC	030	Cross Over Ball (Open)
HAC	233	LIGHTSP.PFT	TMC	031	Diamond Over Ball (Filled)
HAC	234	LIGHTSP.PFT	TMC	032	Double Cone, Points Apart (Open)
HAC	235	LIGHTSP.PFT	TMC	033	None
H	236	MARKERP.PFT	USE	000	Unknown
H	237	MARKERP.PFT	USE	057	Marine

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TABLE 149. Sector area feature table.

HAC	{Header length and byte order};\ SECTORA.AFT,Sector Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HAC	COL=T,10,N,Character of Light,-,-,;\
HAC	LSA=T,11,N,Light Sector Angle,-,-,;\
HAC	NAM=T,30,N,Name,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,SECTORA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,SECTORA2.ATI,;;

SECTORA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BC060	Light Sector	HAC
COL	Character of Light			<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BC060
		text string (e.g., "F1 R")		BC060
LSA	Light Sector Angle			
	default	"UNK"	Unknown	BC060
		text string (e.g., "90.1-270.1")		BC060
NAM	Name			
	default	"UNK"	Unknown	BC060
		text string (e.g., "Nubble Light")		BC060

TABLE 150. Leading line feature table.

HAC	{Header length and byte order};\ LEADINGL.LFT,Leading Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HAC	BRG=F,1,N,Bearing of Object,-,-,;\
HAC	DRP=T,30,N,Description of Reference Point,-,-,;\
HAC	LAF=S,1,N,Line Associated Features,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LEADINL1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,LEADINL2.LTI,;;

LEADINGL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BC100	Leading Line	HAC
BRG	Bearing of Object			<u>Applicable F_CODE</u>
		0.1 to 360.0	actual value to nearest .1 degree	BC100
DRP	Description of Reference Point			
	default	"UNK"	Unknown	BC100
		text string		BC100
LAF	Line Associated Features			

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default	0	Unknown	BC100
	1	One Object (Other Than a Directional Light)	BC100
	2	Directional Light	BC100
	3	Two or More Lights	BC100
	4	Two or More Beacons	BC100
	5	Two or More Objects (Other Than 2 Lights or Two Beacons)	BC100
	7	Directional Radiobeacon	BC100
	8	Moire Effect Light	BC100

TABLE 151. Lights line feature table.

H	{Header length and byte order};\ LIGHTSL.LFT,Lights Line Feature Table;-;\
H	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
H	HLT=S,1,N,Hydrographic Light Type,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LIGHTSL1.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,LIGHTSL2.LTI,;\

LIGHTSL

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BC040	Light	H
HLT	Hydrographic Light Type			<u>Applicable F_CODE</u>
	default	4	Strip Light	BC040

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TABLE 152. Buoy/Beacon point feature table.

	{Header length and byte order};\
HACG	BUOYBCNP.PFT,Buoy/Beacon Point Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,BUOYBCP1.PTI,;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,;\
HACG	BRF=I,1,N,Broadcast Frequency,-,-;\
HACG	BR2=I,1,N,Broadcast Frequency (2),-,-;\
HACG	BTC=S,1,N,Beacon/Buoy Type Category,INT.VDT,-,;\
HAC	CCC=S,1,N,Color Code Category,INT.VDT,-,;\
HACG	COL=T,10,N,Character of Light,-,-;\
HAC	EOL=S,1,N,Elevation of Light,-,-;\
HACG	LVN=S,1,N,Light Range Nominal,-,-;\
HACG	MLR=T,10,N,Multiple Light Ranges,-,-;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	NST=S,1,N,Navigation System Types,INT.VDT,-,;\
HACG	NS2=S,1,N,Navigation System Types (2),INT.VDT,-,;\
HACG	ORC=S,1,N,Operating Range Category,-,-;\
HACG	OR2=S,1,N,Operating Range Category (2),-,-;\
HACG	PER=F,1,N,Period of Light,-,-;\
HAC	REF=S,1,N,Radar Reflector Attribute,INT.VDT,-,;\
HACG	SSC=S,1,N,Structure Shape Category,INT.VDT,-,;\
HAC	SST=S,1,N,Sound Signal Type,INT.VDT,-,;\
HAC	TMC=S,1,N,Topmark Characteristic,INT.VDT,-,;\
HACG	TXT=T,255,N,Text Attribute,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BUOYBCP2.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,BUOYBCP3.PTI,; ;

BUOYBCNP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BC010	Beacon	HACG
		BC020	Buoy	HACG
		BC070	Light Vessel /Lightship	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
		-32768	Null	BC020, BC070
	default	1	Accurate	BC010
		2	Approximate	BC010
		3	Doubtful	BC010
BRF	Broadcast Frequency			
	default	-2147483648	Null	BC010 NST=52, BC020 NST=52, BC070 NST=52
		0	Unknown	BC010 NST<>52, BC020 NST<>52, BC070 NST<>52
		1 to 2147483647	actual value (hertz)	BC010 NST<>52, BC020 NST<>52, BC070 NST<>52
BR2	Broadcast Frequency (2)			
	default	-2147483648	Null	BC010 NS2=52, BC020 NS2=52, BC070 NS2=52

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	0	Unknown	BC010 NS2<>52, BC020 NS2<>52, BC070 NS2<>52
	1 to 2147483647 actual value (hertz)		BC010 NS2<>52, BC020 NS2<>52, BC070 NS2<>52
BTC	Beacon /Buoy Type Category		
	-32768	Null	BC010, BC070
default	0	Unknown	BC020
	4	Large Navigational Buoy (LANBY)	BC020
	6	Light Float	BC020
	7	Mooring	BC020
	10	Ocean Data Acquisition System (ODAS)	BC020
	35	Articulated Lights	BC020
CCC	Color Code Category		
	-32768	Null	BC070
default	0	Unknown	BC010, BC020
	1	Black (B)	BC010, BC020
	2	Blue (Bu)	BC010, BC020
	3	Brown (Br)	BC010, BC020
	4	Gray (Gy)	BC010, BC020
	5	Green (G)	BC010, BC020
	9	Orange (Or)	BC010, BC020
	12	Red (R)	BC010, BC020
	14	Violet (Vi)	BC010, BC020
	15	White (W)	BC010, BC020
	19	Yellow (Y)	BC010, BC020
	20	Red & White (RW)	BC010, BC020
	21	Red & Green (RG)	BC010, BC020
	22	Red & Black (RB)	BC010, BC020
	23	Red-Green-Red (RGR)	BC010, BC020
	24	Green & White (GW)	BC010, BC020
	25	Green & Red (GR)	BC010, BC020
	26	Green & Black (GB)	BC010, BC020
	27	Green-Red-Green (GRG)	BC010, BC020
	28	Green-Yellow-Black (GYB)	BC010, BC020
	29	Yellow & Black (YB)	BC010, BC020
	30	Yellow-Black-Yellow (YBY)	BC010, BC020
	31	Yellow & Red (YR)	BC010, BC020
	32	Yellow & Green (YG)	BC010, BC020
	33	Yellow-Red-White (YRW)	BC010, BC020
	34	Black & Yellow (BY)	BC010, BC020
	35	Black-Yellow-Black (BYB)	BC010, BC020
	36	Black-Red-Black (BRB)	BC010, BC020
	37	Black & White (BW)	BC010, BC020
	38	Black & Red (BR)	BC010, BC020
	39	Black & Green (BG)	BC010, BC020
	40	White & Red (WR)	BC010, BC020
	41	White & Orange (W Or)	BC010, BC020
	42	White & Green (WG)	BC010, BC020
	43	White & Black (WB)	BC010, BC020
	44	White & Yellow (WY)	BC010, BC020
	45	White-Red-Green (WRG)	BC010, BC020
	46	White-Green-White (GWG)	BC010, BC020

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COL	Character of Light			
	default	"N/A"	Null	BC010, BC020 (unlighted)
		"UNK"	Unknown	BC020 (lighted), BC070
		text string (e.g., "Fl R")		BC020 (lighted), BC070
EOL	Elevation of Light			
	default	-32768	Null	BC010, BC020 COL="N/A"
		0	Unknown	BC020 COL<>"N/A", BC070
		1 to 1000	actual value (meters)	BC020 COL<>"N/A", BC070
LVN	Light Range Nominal			
	default	-32768	Null	BC010, BC020 COL="N/A"
		0	Unknown	BC020 COL<>"N/A", BC070
		1 to 1000	actual value (nautical miles)	BC020 COL<>"N/A", BC070
MLR	Multiple Light Ranges			
	default	"N/A"	Null	BC010, BC020 (<2 lights), BC070
		"UNK"	Unknown	(<2 lights), BC020 (>1 light), BC070
		text string (nautical miles)	(>1 light) BC020 (>1 light), BC070 (>1 light)	
NAM	Name			
	default	"UNK"	Unknown	BC010, BC020, BC070
		text string (e.g., "Chesapeake")		BC010, BC020, BC070
NST	Navigation System Types			
		0	Unknown	BC010, BC020, BC070
		1	Circular Radiobeacon (RC)	BC010, BC020, BC070
		4	Radio Direction Finding	BC010, BC020, BC070
		5	Directional Radiobeacon	BC010, BC020,

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		(RD)	BC070	
	10	Racon (Radar Responder Beacon)	BC010, BC020, BC070	
	17	NDB (Non-Directional Beacon)	BC010, BC020, BC070	
	41	Rotating Loop Radiobeacon	BC010, BC020, BC070	
	45	Radar Station (Ra)	BC010, BC020, BC070	
	51	Radiobeacon, Type Unknown (R Bn)	BC010, BC020, BC070	
default	52	None	BC010, BC020, BC070	
	53	QTG Station (R)	BC010, BC020, BC070	
	54	Ramark (Ramark)	BC010, BC020, BC070	
NS2	Navigation System Types (2)			
	0	Unknown	BC010, BC020, BC070	
	1	Circular Radiobeacon (RC)	BC010, BC020, BC070	
	4	Radio Direction Finding	BC010, BC020, BC070	
	5	Directional Radiobeacon (RD)	BC010, BC020, BC070	
	10	Racon (Radar Responder Beacon)	BC010, BC020, BC070	
	17	NDB (Non-Directional Beacon)	BC010, BC020, BC070	
	41	Rotating Loop Radiobeacon	BC010, BC020, BC070	
	45	Radar Station (Ra)	BC010, BC020, BC070	
	51	Radiobeacon, Type Unknown (R Bn)	BC010, BC020, BC070	
default	52	None	BC010, BC020, BC070	
	53	QTG Station (R)	BC010, BC020, BC070	
	54	Ramark (Ramark)	BC010, BC020, BC070	
ORC	Operating Range Category			
	default	-32768	Null	BC010 NST=52, BC020, BC070
		0	Unknown	BC010 NST<>52, BC020, BC070
		1 to 1000	actual value (nautical miles)	BC010 NST<>52, BC020, BC070
OR2	Operating Range Category (2)			
	default	-32768	Null	BC010 NS2=52, BC020, BC070
		0	Unknown	BC010 NS2<>52, BC020, BC070
		1 to 1000	actual value (nautical miles)	BC010 NS2<>52, BC020, BC070

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PER	Period of Light			
	default	NaN	Null	BC010, BC020 COL="N/A"
		0.0	Unknown	BC020 COL<>"N/A", BC070
		0.1 to 1000.0	actual value to the nearest .1 second	BC020 COL<>"N/A", BC070
REF	Radar Reflector Attribute			
	1		Radar Reflector Present	BC010, BC020, BC070
	default	2	Radar Reflector Absent	BC010, BC020, BC070
SSC	Structure Shape Category			
	-32768		Null	BC010, BC070
	default	0	Unknown	BC020
		1	Barrel, Ton	BC020
		6	Conical /Peaked /NUN	BC020
		7	Cylindrical (Upright) /CAN	BC020
		10	Pillar, Spindle	BC020
		16	Spar	BC020
		17	Spherical (Hemispherical)	BC020
		73	Superbuoy	BC020
		85	Diamond-Shaped Buoy	BC020
	999	Other	BC020	
SST	Sound Signal Type			
	0		Unknown	BC010, BC020, BC070
	1		Bell	BC010, BC020, BC070
	2		Diaphone	BC010, BC020, BC070
	3		Explosive Fog Signal	BC010, BC020, BC070
	4		Gong	BC010, BC020, BC070
	6		Horn	BC010, BC020, BC070
	9		Siren	BC010, BC020, BC070
	14		Whistle	BC010, BC020, BC070
	15		Reed	BC010, BC020, BC070
	default	16	None	BC010, BC020, BC070
TMC	Topmark Characteristic			
	-32768		Null	BC070
	0		Unknown	BC010, BC020
	1		East Mark (2 cones base together)	BC010, BC020

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	2	Isolated Danger (2 balls)		BC010, BC020
	3	North Mark (2 cones pointing up)		BC010, BC020
	6	Special (X)		BC010, BC020
	8	South Mark (2 cones pointing down)		BC010, BC020
	9	West Mark (2 cones points together)		BC010, BC020
	15	Ball Over Cone		BC010, BC020
	16	Cone Over Ball		BC010, BC020
	17	Broom Point Up		BC010, BC020
	18	Perch		BC010, BC020
	19	Diamond		BC010, BC020
	21	Cone, Point Upwards		BC010, BC020
	22	Cone (Point Downwards)		BC010, BC020
	23	Upright Cross		BC010, BC020
	25	Can (Open)		BC010, BC020
	26	Can (Filled)		BC010, BC020
	27	Ball (Open)		BC010, BC020
	28	Ball (Filled)		BC010, BC020
	29	Can Over Ball (Open)		BC010, BC020
	30	Cross Over Ball (Open)		BC010, BC020
	31	Diamond Over Ball (Filled)		BC010, BC020
	32	Double Cone, Points Apart (Open)		BC010, BC020
	default	33	None	BC010, BC020
TXT	Text Attribute			
	default	"None"	No textual information	BC010, BC020, BC070
			text string	BC010, BC020, BC070

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TABLE 153. Lights point feature table.

	{Header length and byte order};\
HACG	LIGHTSP.PFT,Lights Point Feature Table;-;\
	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,;\
HACG	ACC=I,1,N,Accuracy Category,INT.VDT,-,-,;\
HACG	BRF=I,1,N,Broadcast Frequency,-,-,;\
HACG	BR2=I,1,N,Broadcast Frequency (2),-,-,;\
HAC	CCC=S,1,N,Color Code Category,INT.VDT,-,-,;\
HACG	COL=T,10,N,Character of Light,-,-,;\
HAC	EOL=S,1,N,Elevation of Light,-,-,;\
HACG	HLT=S,1,N,Hydrographic Light Type,INT.VDT,-,-,;\
HAC	IAC=S,1,N,IALA Aid Category,INT.VDT,-,-,;\
HACG	LVN=S,1,N,Light Range Nominal,-,-,;\
HACG	MLR=T,10,N,Multiple Light Ranges,-,-,;\
HACG	NAM=T,30,N,Name,-,-,;\
HACG	NST=S,1,N,Navigation System Types,INT.VDT,-,-,;\
HACG	NS2=S,1,N,Navigation System Types (2),INT.VDT,-,-,;\
HACG	PER=F,1,N,Period of Light,-,-,;\
HAC	REF=S,1,N,Radar Reflector Attribute,INT.VDT,-,-,;\
HAC	SST=S,1,N,Sound Signal Type,INT.VDT,-,-,;\
HAC	TMC=S,1,N,Topmark Characteristic,INT.VDT,-,-,;\
HACG	TXT=T,255,N,Text Attribute,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LIGHTSP1.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,LIGHTSP2.PTI,;;

LIGHTSP

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	BC040	Light	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BC040
		2	Approximate	BC040
		3	Doubtful	BC040
BRF	Broadcast Frequency			
	default	-2147483648	Null	BC040 NST=52
		0	Unknown	BC040 NST<>52
		1 to 2147483647	actual value (hertz)	BC040 NST<>52
BR2	Broadcast Frequency (2)			
	default	-2147483648	Null	BC040 NS2=52
		0	Unknown	BC040 NS2<>52
		1 to 2147483647	actual value (hertz)	BC040 NS2<>52
CCC	Color Code Category			
	default	0	Unknown	BC040
		1	Black (B)	BC040
		2	Blue (Bu)	BC040
		3	Brown (Br)	BC040
		4	Gray (Gy)	BC040
		5	Green (G)	BC040
		9	Orange (Or)	BC040
		12	Red (R)	BC040
		14	Violet (Vi)	BC040

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	15	White (W)	BC040
	19	Yellow (Y)	BC040
	20	Red & White (RW)	BC040
	21	Red & Green (RG)	BC040
	22	Red & Black (RB)	BC040
	23	Red-Green-Red (RGR)	BC040
	24	Green & White (GW)	BC040
	25	Green & Red (GR)	BC040
	26	Green & Black (GB)	BC040
	27	Green-Red-Green (GRG)	BC040
	28	Green-Yellow-Black (GYB)	BC040
	29	Yellow & Black (YB)	BC040
	30	Yellow-Black-Yellow (YBY)	BC040
	31	Yellow & Red (YR)	BC040
	32	Yellow & Green (YG)	BC040
	33	Yellow-Red-White (YRW)	BC040
	34	Black & Yellow (BY)	BC040
	35	Black-Yellow-Black (BYB)	BC040
	36	Black-Red-Black (BRB)	BC040
	37	Black & White (BW)	BC040
	38	Black & Red (BR)	BC040
	39	Black & Green (BG)	BC040
	40	White & Red (WR)	BC040
	41	White & Orange (W Or)	BC040
	42	White & Green (WG)	BC040
	43	White & Black (WB)	BC040
	44	White & Yellow (WY)	BC040
	45	White-Red-Green (WRG)	BC040
	46	White-Green-White (GWG)	BC040
COL	Character of Light		
	default	"UNK" Unknown	BC040
		text string (e.g., "Fl R")	BC040
EOL	Elevation of Light		
	default	0 Unknown	BC040
		1 to 1000 actual value (meters)	BC040
HLT	Hydrographic Light Type		
	default	0 Unknown	BC040
		1 Sectored Light	BC040
		2 Other	BC040
		3 Moire Effect Light	BC040
		5 Occasional	BC040
IAC	IALA Aid Category		
	default	0 Unknown	BC040
		1 Non-IALA Aid	BC040
		2 IALA Aid	BC040
LVN	Light Range Nominal		
	default	0 Unknown	BC040
		1 to 1000 actual value	BC040
		(nautical miles)	
MLR	Multiple Light Ranges		
	default	"N/A" Null	BC040
			(<2 lights)
		"UNK" Unknown	BC040
			(>1 light)

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		text string (nautical miles)	BC040 (>1 light)
NAM	Name		
	default	"UNK" Unknown	BC040
		text string (e.g., "Nubble Light")	BC040
NST	Navigation System Types		
		0 Unknown	BC040
		1 Circular Radiobeacon (RC)	BC040
		4 Radio Direction Finding	BC040
		5 Directional Radiobeacon (RD)	BC040
		10 Racon (Radar Responder Beacon)	BC040
		17 NDB (Non-Directional Beacon)	BC040
		41 Rotating Loop Radiobeacon	BC040
		45 Radar Station (Ra)	BC040
		51 Radiobeacon, Type Unknown (R Bn)	BC040
	default	52 None	BC040
		53 QTG Station (R)	BC040
		54 Ramark (Ramark)	BC040
NS2	Navigation System Types (2)		
		0 Unknown	BC040
		1 Circular Radiobeacon (RC)	BC040
		4 Radio Direction Finding	BC040
		5 Directional Radiobeacon (RD)	BC040
		10 Racon (Radar Responder Beacon)	BC040
		17 NDB (Non-Directional Beacon)	BC040
		41 Rotating Loop Radiobeacon	BC040
		45 Radar Station (Ra)	BC040
		51 Radiobeacon, Type Unknown (R Bn)	BC040
	default	52 None	BC040
		53 QTG Station (R)	BC040
		54 Ramark (Ramark)	BC040
PER	Period of Light		
	default	0.0 Unknown	BC040
		0.1 to 1000.0 actual value to the nearest .1 second	BC040
REF	Radar Reflector Attribute		
		1 Radar Reflector Present	BC040
	default	2 Radar Reflector Absent	BC040
SST	Sound Signal Type		
		0 Unknown	BC040
		1 Bell	BC040

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	2	Diaphone	BC040
	3	Explosive Fog Signal	BC040
	4	Gong	BC040
	6	Horn	BC040
	9	Siren	BC040
	14	Whistle	BC040
	15	Reed	BC040
default	16	None	BC040
TMC	Topmark Characteristic		
	0	Unknown	BC040
	1	East Mark (2 cones base together)	BC040
	2	Isolated Danger (2 balls)	BC040
	3	North Mark (2 cones pointing up)	BC040
	6	Special (X)	BC040
	8	South Mark (2 cones pointing down)	BC040
	9	West Mark (2 cones points together)	BC040
	15	Ball Over Cone	BC040
	16	Cone Over Ball	BC040
	17	Broom Point Up	BC040
	18	Perch	BC040
	19	Diamond	BC040
	21	Cone, Point Upwards	BC040
	22	Cone (Point Downwards)	BC040
	23	Upright Cross	BC040
	25	Can (Open)	BC040
	26	Can (Filled)	BC040
	27	Ball (Open)	BC040
	28	Ball (Filled)	BC040
	29	Can Over Ball (Open)	BC040
	30	Cross Over Ball (Open)	BC040
	31	Diamond Over Ball (Filled)	BC040
	32	Double Cone, Points Apart (Open)	BC040
default	33	None	BC040
TXT	Text Attribute		
default	"None"	No textual information	BC040
	text string		BC040

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TABLE 154. Marker point feature table*.

HA	{Header length and byte order};\ MARKERP.PFT,Marker Point Feature Table;-;\
H	ID=I,1,P,Row ID,-,-,:\
H	F_CODE=T,5,N,FACC Code,CHAR.VDT,MARKERP1.PTI,:\
HA	USE=S,1,N,Usage,INT.VDT,-,:\
HA	TILE_ID=S,1,N,Tile Reference Identifier,-,MARKERP2.PTI,:\
HA	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,MARKERP3.PTI,;\

*the thematic index on F_CODE applies to the H library only

MARKERP

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	AL050	Display Sign	H
		BC055	Marker	HA
USE	Usage	-32768	Null	<u>Applicable F_CODE</u> BC055
	default	0	Unknown	AL050
		57	Marine	AL050

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OBS

A.3.2.9 Obstructions coverage. This coverage contains wrecks, offshore installations and obstructions of significance to marine navigation. Feature attributes beyond those normally needed for navigation are included to support specialized Navy requirements.

a. Obstructions coverage glossary.

AREA FEATURES

AL200 Ruins The deteriorated remains of an unspecified structure.

HDH Hydrographic Drying Height The height of the feature, which tidal waters cover and uncover, referenced to a specified vertical datum.

Increment: .1 Meter

Limits: From the specified vertical datum to the tallest part of the feature.

Variance: NA

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

HGT Height Above Surface Level Distance measured from the lowest point of the base at ground or water level (downhill side/downstream side) to the tallest point of the feature.

LOC Location Category Status of feature relative to surrounding area or water.

NAM Name Any identifier or code.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

AQ040 Bridge /Overpass /Viaduct A man-made structure spanning and providing passage over a body of water, road, railroad, depression, or other obstacles.

BOT Bridge Opening Type The type of structure or mechanism by which a portion of a bridge is moved to allow passage of a vessel.

BSC Bridge /Bridge Superstructure Category Structural design characteristics.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

MVC Maximum Vertical Clearance The greatest distance between the traveled way and any obstruction vertically above it.

NAM Name Any identifier or code.

OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

SHC Safe Horizontal Clearance Minimum safe horizontal distance between adjacent bridge support structures on either side of a navigable channel passing under the bridge.

VAL Value Numeric value. (Used for year.)

AQ045 Bridge Span A section of the bridge deck between successive supports such as pillars, piers, or abutments.

BSM Bridge Span Mobility Identifies bridge spans that move in some manner to allow passage underneath the bridge span.

BB110 Fish Traps /Fish Weirs A fence or enclosure set in water to catch fish.

BB170 Offshore Loading Facility A facility located offshore for loading and unloading cargo.

NAM Name Any identifier or code.

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BB180 Oyster Bed /Mussel Bed A place in shallow water where oysters and mussels breed and may be cultivated.

BC080 Perches /Stakes A small marker used to identify channels or to mark dangers such as rocks, shoals, etc.

BD000 Underwater Danger /Underwater Hazard A known underwater object or area, known to be dangerous to surface navigation.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

SFC Sea Floor Feature Category Type of object or area on the sea floor or below the water surface.

SOH Severity of Hazard Severity of hazard.

TXT Text Attribute Narrative or other description.

VAL Value Numeric value. (Used for year.)

BD010 Breakers Waves which break over off-lying shoals or near the shore.

BD020 Crib A framework structure submerged or above water used to support pipelines, sewer lines, or outfalls.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD030 Discolored Water An area of sea water having a color distinctly different from the surrounding water.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

BD040 Eddies Circular movements of water running contrary to the main current.

BD050 Foul Ground A region of comparatively shallow water strewn with rocks, boulders, coral, wreckage, or other obstructions, making it unsuitable for anchoring, grounding, or ground fishing.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

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HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

BD060 Kelp /Seaweed A large seaweed.

BD080 Overfalls /Tide Rips Short, breaking waves occurring when a current passes over a shoal or other submarine obstruction or meets a contrary current or wind. Tide rips occur when one or more of the currents are tidal.

NAM Name Any identifier or code.

BD100 Pile /Piling /Post A long, heavy timber or section of steel, concrete, etc., forced into the earth to serve as a support, as for a pier.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD120 Reef A rocky or coral elevation at or near enough to the surface of the sea to be a danger to surface navigation.

ACC Accuracy Category Accuracy of geographic position.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDH Hydrographic Drying Height The height of the feature, which tidal waters cover and uncover, referenced to a specified vertical datum.

Increment: .1 Meter

Limits: From the specified vertical datum to the tallest part of the feature.

Variance: NA

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

MCC Material Composition Category Composition.material, excluding surface material.

NAM Name Any identifier or code.

SOH Severity of Hazard Severity of hazard.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD140 Snags /Stumps A stem or a trunk of a tree below the surface of water.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD180 Wreck The ruined remains of a vessel.

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COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

LOC Location Category Status of feature relative to surrounding area or water.

SOH Severity of Hazard Severity of hazard to surface navigation.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BH050 Fish Hatchery /Fish Farm /Marine Farm An enclosure of water used for the breeding and/or rearing of fish.

LINE FEATURES

AQ040 Bridge /Overpass /Viaduct A man-made structure spanning and providing passage over a body of water, road, railroad, depression, or other obstacles.

BOT Bridge Opening Type The type of structure or mechanism by which a portion of a bridge is moved to allow passage of a vessel.

BSC Bridge /Bridge Superstructure Category Structural design characteristics.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

MVC Maximum Vertical Clearance The greatest distance between the traveled way and any obstruction vertically above it.

NAM Name Any identifier or code.

OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

SHC Safe Horizontal Clearance Minimum safe horizontal distance between adjacent bridge support structures on either side of a navigable channel passing under the bridge.

TUC Transportation Use Category The mode of transportation associated with the feature.

VAL Value Numeric value. (Used for year.)

AQ045 Bridge Span A section of the bridge deck between successive supports such as pillars, piers, or abutments.

BSM Bridge Span Mobility Identifies bridge spans that move in some manner to allow passage underneath the bridge span.

AQ113 Pipeline /Pipe A tube for the conveyance of solids, liquids or gases.

DEP Depth Below Surface Level Distance measured from the highest point at surface level to the lowest point of the feature below the surface. Recorded values are positive numbers.

EXS Existence Category State or condition of the feature.

HSB Height Above Sea Bottom Distance along a vertical plane.

Increment: .1 Meter

Limits: From the sea bottom to the highest point of the feature.

Variance: NA

LOC Location Category Status of feature relative to surrounding area or water.

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OHC Overhead Clearance Category The least distance between the traveled way and any obstruction vertically above it.

OWO Over Water Obstruction Indicates the presence of an obstruction over an area of navigable water.

PLT Pipeline Type Identifies function of pipeline.

PRO Product Category Principal material involved or product resulting from activity at site.

AQ130 Tunnel An underground or underwater passage, open at both ends, and usually containing a road or railroad.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

NAM Name Any identifier or code.

TUC Transportation Use Category The mode of transportation associated with the feature.

AT005 Cable An insulated wire, or group of wires formed into one continuous strand, located under ground or under water.

EXS Existence Category State or condition of the feature.

LOC Location Category Status of feature relative to surrounding area or water.

USE Usage Use.

BB100 Fish Stakes Poles or stakes placed in shallow water to catch fish.

BB170 Offshore Loading Facility A facility located offshore for loading and unloading cargo.

NAM Name Any identifier or code.

BD010 Breakers Waves which break over off-lying shoals or near the shore.

POINT FEATURES

AL200 Ruins The deteriorated remains of an unspecified structure.

HDH Hydrographic Drying Height The height of the feature, which tidal waters cover and uncover, referenced to a specified vertical datum.

Increment: .1 Meter

Limits: From the specified vertical datum to the tallest part of the feature.

Variance: NA

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

LOC Location Category Status of feature relative to surrounding area or water.

NAM Name Any identifier or code.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB105 Fishing Harbor A harbor that is primarily utilized by fishing vessels.

BB170 Offshore Loading Facility A facility located offshore for loading and unloading cargo.

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CHA Light Characteristic Category The sequence, grouping, and distinctive character of a light.

NAM Name Any identifier or code.

USE Usage Use.

BB180 Oyster Bed /Mussel Bed A place in shallow water where oysters and mussels breed and may be cultivated.

BC080 Perches /Stakes A small marker used to identify channels or to mark dangers such as rocks, shoals, etc.

BD000 Underwater Danger /Underwater Hazard A known underwater object or area, known to be dangerous to surface navigation.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

SFC Sea Floor Feature Category Type of object or area on the sea floor or below the water surface.

SOH Severity of Hazard Severity of hazard.

TXT Text Attribute Narrative or other description.

VAL Value Numeric value. (Used for year.)

BD010 Breakers Waves which break over off-lying shoals or near the shore.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

BD020 Crib A framework structure submerged or above water used to support pipelines, sewer lines, or outfalls.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD030 Discolored Water An area of sea water having a color distinctly different from the surrounding water.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

BD040 Eddies Circular movements of water running contrary to the main current.

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BD050 Foul Ground A region of comparatively shallow water strewn with rocks, boulders, coral, wreckage, or other obstructions, making it unsuitable for anchoring, grounding, or ground fishing.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

BD060 Kelp /Seaweed A large seaweed.

BD080 Overfalls /Tide Rips Short, breaking waves occurring when a current passes over a shoal or other submarine obstruction or meets a contrary current or wind. Tide rips occur when one or more of the currents are tidal.

BD100 Pile /Piling /Post A long, heavy timber or section of steel, concrete, etc., forced into the earth to serve as a support, as for a pier.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD110 Platform A flat surface raised above the sea, as a working stage for conducting offshore operations.

CHA Light Characteristic Category The sequence, grouping, and distinctive character of a light.

NAM Name Any identifier or code.

NST Navigation System Types Type of equipment or system used in electronic navigation.

SST Sound Signal Type The type of audible signal.

BD130 Rock An isolated rocky formation or a single large stone above or below the water surface.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDH Hydrographic Drying Height The height of the feature, which tidal waters cover and uncover, referenced to a specified vertical datum.

Increment: .1 Meter

Limits: From the specified vertical datum to the tallest part of the feature.

Variance: NA

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

MCC Material Composition Category Composition material, excluding surface material.

NAM Name Any identifier or code.

SOH Severity of Hazard Severity of hazard.

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VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD140 Snags /Stumps A stem or a trunk of a tree below the surface of water.

ACC Accuracy Category Accuracy of geographic position.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BD180 Wreck The ruined remains of a vessel.

ACC Accuracy Category Accuracy of geographic position.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

DAT Date Date of report or activity.

EXS Existence Category State or condition of the feature.

HDI Hydrographic Depth /Height Information Information about the accuracy or availability of depth or uncovering height of a feature.

HDP Hydrographic Depth Depth measured from the sounding datum down to the top or surface of the feature. Recorded values are positive numbers.

LOC Location Category Status of feature relative to surrounding area or water.

SOH Severity of Hazard Severity of hazard.

VAL Value Numeric value. (Used for year.)

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

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TABLE 155. Obstructions character value description table.

{Header length and byte order};\					
CHAR.VDT, Obstructions Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-;:					
H	1	BRIDGEA.AFT	F_CODE	AQ040	Bridge /Overpass /Viaduct
H	2	BRIDGSPA.AFT	F_CODE	AQ045	Bridge Span
HACG	3	DANGERA.AFT	F_CODE	BD030	Discolored Water
HACG	4	DANGERA.AFT	F_CODE	BD050	Foul Ground
HAC	5	DANGERA.AFT	F_CODE	BD100	Pile /Piling /Post
HAC	6	DANGERA.AFT	F_CODE	BD140	Snags /Stumps
H	7	FISHHATA.AFT	F_CODE	BH050	Fish Hatchery /Fish Farm /Marine Farm
HACG	8	HAZARDA.AFT	F_CODE	BD000	Underwater Danger /Under-water Hazard
HAC	9	HAZARDA.AFT	F_CODE	BD020	Crib
HA	10	HAZARDA.AFT	F_CODE	BD180	Wreck
HACG	11	LOADINGA.AFT	F_CODE	BB170	Offshore Loading Facility
HA	12	OBSTRUCA.AFT	F_CODE	BB110	Fish Traps /Fish Weirs
HAC	13	OBSTRUCA.AFT	F_CODE	BB180	Oyster Bed /Mussel Bed
HAC	14	OBSTRUCA.AFT	F_CODE	BC080	Perches /Stakes
HACG	15	OBSTRUCA.AFT	F_CODE	BD010	Breakers
HAC	16	OBSTRUCA.AFT	F_CODE	BD040	Eddies
HACG	17	OBSTRUCA.AFT	F_CODE	BD060	Kelp /Seaweed
HAC	18	OBSTRUCA.AFT	F_CODE	BD080	Overfalls /Tide Rips
HACG	19	REEFA.AFT	F_CODE	BD120	Reef
HA	20	RUINSA.AFT	F_CODE	AL200	Ruins
HACG	21	BRIDGEL.LFT	F_CODE	AQ040	Bridge /Overpass /Viaduct
HA	22	BRIDGSPL.LFT	F_CODE	AQ045	Bridge Span
HACG	23	HAZARDL.LFT	F_CODE	AT005	Cable
HA	24	HAZARDL.LFT	F_CODE	BB100	Fish Stakes
HACG	25	HAZARDL.LFT	F_CODE	BD010	Breakers
HACG	26	PIPELINL.LFT	F_CODE	AQ113	Pipeline /Pipe
HAC	27	TUNNELL.LFT	F_CODE	AQ130	Tunnel
HACG	28	TUNNELL.LFT	F_CODE	BB170	Offshore Loading Facility
HACG	29	DANGERP.PFT	F_CODE	BD010	Breakers
HACG	30	DANGERP.PFT	F_CODE	BD030	Discolored Water
HACG	31	DANGERP.PFT	F_CODE	BD050	Foul Ground
HAC	32	DANGERP.PFT	F_CODE	BD100	Pile /Piling /Post
HAC	33	DANGERP.PFT	F_CODE	BD140	Snags /Stumps
HACG	34	HAZARDP.PFT	F_CODE	BD000	Underwater Danger /Under-water Hazard
HAC	35	HAZARDP.PFT	F_CODE	BD020	Crib

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TABLE 155. Obstructions character value description table - Continued.

HACG	36	HAZARDP.PFT	F_CODE	BD130	Rock
HACG	37	HAZARDP.PFT	F_CODE	BD180	Wreck
HACG	38	LOADINGP.PFT	F_CODE	BB170	Offshore Loading Facility
HACG	39	LOADINGP.PFT	F_CODE	BD110	Platform
HAC	40	OBSTRUCP.PFT	F_CODE	BB105	Fishing Harbor
HAC	41	OBSTRUCP.PFT	F_CODE	BB180	Oyster Bed /Mussel Bed
HAC	42	OBSTRUCP.PFT	F_CODE	BC080	Perches /Stakes
HAC	43	OBSTRUCP.PFT	F_CODE	BD040	Eddies
HACG	44	OBSTRUCP.PFT	F_CODE	BD060	Kelp /Seaweed
HAC	45	OBSTRUCP.PFT	F_CODE	BD080	Overfalls /Tide Rips
HA	46	RUINSP.PFT	F_CODE	AL200	Ruins

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TABLE 156. Obstructions integer value description table.

{Header length and byte order};\					
INT.VDT, Obstructions Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;:					
H	1	BRIDGEA.AFT	BOT	000	Unknown
H	2	BRIDGEA.AFT	BOT	004	Draw /Bascule
H	3	BRIDGEA.AFT	BOT	010	Swing
H	4	BRIDGEA.AFT	BOT	011	Lift
H	5	BRIDGEA.AFT	BOT	012	Retractable
H	6	BRIDGEA.AFT	BOT	013	Not Applicable /FixE"d
H	7	BRIDGEA.AFT	BSC	000	Unknown
H	8	BRIDGEA.AFT	BSC	001	Arch
H	9	BRIDGEA.AFT	BSC	002	Cantilever
H	10	BRIDGEA.AFT	BSC	003	Deck
H	11	BRIDGEA.AFT	BSC	005	Floating Bridge /Pontoon
H	12	BRIDGEA.AFT	BSC	006	Girder
H	13	BRIDGEA.AFT	BSC	008	Truss
H	14	BRIDGEA.AFT	BSC	009	Suspension
H	15	BRIDGEA.AFT	BSC	012	Transporter
H	16	BRIDGEA.AFT	BSC	015	Slab
H	17	BRIDGEA.AFT	BSC	016	Stringer (Beam)
H	18	BRIDGEA.AFT	BSC	999	Other
H	19	BRIDGEA.AFT	DAT	026	Information as of _____
H	20	BRIDGEA.AFT	EXS	005	Under Construction
H	21	BRIDGEA.AFT	EXS	007	Destroyed
H	22	BRIDGEA.AFT	EXS	028	Operational
H	23	BRIDGEA.AFT	OWO	001	Feature Crosses Navigable Water
H	24	BRIDGEA.AFT	OWO	002	Feature Does Not Cross Navigable Water
H	25	BRIDGSPA.AFT	BSM	001	Movable Span
HACG	26	DANGERA.AFT	ACC	001	Accurate
HACG	27	DANGERA.AFT	ACC	002	Approximate
HACG	28	DANGERA.AFT	ACC	003	Doubtful
HACG	29	DANGERA.AFT	DAT	026	Information as of _____
HACG	30	DANGERA.AFT	EXS	001	Definite
HACG	31	DANGERA.AFT	EXS	002	Doubtful
HACG	32	DANGERA.AFT	EXS	003	Reported
HACG	33	DANGERA.AFT	HDI	009	Depth Known by Other Than Wire
HACG	34	DANGERA.AFT	HDI	012	Depth Unknown
HAC	35	DANGERA.AFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HAC	36	DANGERA.AFT	VRR	004	Below Surface /Submerged
HAC	37	DANGERA.AFT	VRR	008	Covers and Uncovers
HACG	38	HAZARDA.AFT	ACC	001	Accurate
HACG	39	HAZARDA.AFT	ACC	002	Approximate
HACG	40	HAZARDA.AFT	ACC	003	Doubtful
HA	41	HAZARDA.AFT	COD	002	Limits and Info Unknown
HACG	42	HAZARDA.AFT	DAT	026	Information as of _____

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TABLE 156. Obstructions integer value description table - Continued.

HACG	43	HAZARDA.AFT	EXS	001	Definite
HACG	44	HAZARDA.AFT	EXS	002	Doubtful
HACG	45	HAZARDA.AFT	EXS	003	Reported
HACG	46	HAZARDA.AFT	HDI	009	Depth Known by Other Than Wire
HACG	47	HAZARDA.AFT	HDI	010	Depth Known by Wire Drag
HA	48	HAZARDA.AFT	HDI	011	Depth Unknown but Safe to Depth Shown
HACG	49	HAZARDA.AFT	HDI	012	Depth Unknown
HAC	50	HAZARDA.AFT	HDI	015	Not Applicable
HA	51	HAZARDA.AFT	LOC	004	Below Surface /Submerged /Underground
HA	52	HAZARDA.AFT	LOC	013	Hull Showing
HA	53	HAZARDA.AFT	LOC	014	Masts Showing
HA	54	HAZARDA.AFT	LOC	020	Funnel Showing
HA	55	HAZARDA.AFT	LOC	021	Superstructure Showing
HA	56	HAZARDA.AFT	LOC	028	Masts and Funnel Showing
HACG	57	HAZARDA.AFT	SFC	001	Unknown obstruction
HACG	58	HAZARDA.AFT	SFC	002	Other
HACG	59	HAZARDA.AFT	SFC	003	Fish Haven
HACG	60	HAZARDA.AFT	SOH	001	Dangerous
HACG	61	HAZARDA.AFT	SOH	002	Non-Dangerous
HA	62	HAZARDA.AFT	VRR	000	Unknown
HAC	63	HAZARDA.AFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HA	64	HAZARDA.AFT	VRR	002	Awash at Sounding Datum
HAC	65	HAZARDA.AFT	VRR	004	Below Surface /Submerged
HAC	66	HAZARDA.AFT	VRR	008	Covers and Uncovers
HACG	67	REEFA.AFT	ACC	001	Accurate
HACG	68	REEFA.AFT	ACC	002	Approximate
HACG	69	REEFA.AFT	ACC	003	Doubtful
HACG	70	REEFA.AFT	COD	001	Limits and Info Known
HACG	71	REEFA.AFT	COD	002	Limits and Info Unknown
HACG	72	REEFA.AFT	DAT	026	Information as of ____
HACG	73	REEFA.AFT	EXS	001	Definite
HACG	74	REEFA.AFT	EXS	002	Doubtful
HACG	75	REEFA.AFT	EXS	003	Reported
HACG	76	REEFA.AFT	HDI	009	Depth Known by Other Than Wire
HACG	77	REEFA.AFT	HDI	012	Depth Unknown
HACG	78	REEFA.AFT	HDI	013	Uncovering Height Known
HACG	79	REEFA.AFT	HDI	014	Uncovering Height Unknown
HACG	80	REEFA.AFT	MCC	000	Unknown
HACG	81	REEFA.AFT	MCC	024	Coral
HACG	82	REEFA.AFT	MCC	084	Rock /Rocky
HACG	83	REEFA.AFT	SOH	001	Dangerous
HACG	84	REEFA.AFT	SOH	002	Non-Dangerous
HACG	85	REEFA.AFT	VRR	000	Unknown
HACG	86	REEFA.AFT	VRR	002	Awash at Sounding Datum
HACG	87	REEFA.AFT	VRR	004	Below Surface /Submerged
HACG	88	REEFA.AFT	VRR	008	Covers and Uncovers

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TABLE 156. Obstructions integer value description table - Continued.

HA	89	RUINSA.AFT	HDI	009	Depth Known by Other Than Wire
HA	90	RUINSA.AFT	HDI	010	Depth Known by Wire Drag
HA	91	RUINSA.AFT	HDI	012	Depth Unknown
H	92	RUINSA.AFT	HDI	015	Not Applicable
HA	93	RUINSA.AFT	LOC	008	On Ground Surface
HA	94	RUINSA.AFT	LOC	022	Off-Shore
HA	95	RUINSA.AFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HA	96	RUINSA.AFT	VRR	004	Below Surface /Submerged
HA	97	RUINSA.AFT	VRR	008	Covers and Uncovers
HA	98	RUINSA.AFT	VRR	009	Not Applicable
HACG	99	BRIDGEL.LFT	BOT	000	Unknown
HACG	100	BRIDGEL.LFT	BOT	004	Draw /Bascule
HACG	101	BRIDGEL.LFT	BOT	010	Swing
HACG	102	BRIDGEL.LFT	BOT	011	Lift
HACG	103	BRIDGEL.LFT	BOT	012	Retractable
HACG	104	BRIDGEL.LFT	BOT	013	Not Applicable /FixE"d
HACG	105	BRIDGEL.LFT	BSC	000	Unknown
HACG	106	BRIDGEL.LFT	BSC	001	Arch
HACG	107	BRIDGEL.LFT	BSC	002	Cantilever
HACG	108	BRIDGEL.LFT	BSC	003	Deck
HACG	109	BRIDGEL.LFT	BSC	005	Floating Bridge /Pontoon
HACG	110	BRIDGEL.LFT	BSC	006	Girder
HACG	111	BRIDGEL.LFT	BSC	008	Truss
HACG	112	BRIDGEL.LFT	BSC	009	Suspension
HACG	113	BRIDGEL.LFT	BSC	012	Transporter
HACG	114	BRIDGEL.LFT	BSC	015	Slab
HACG	115	BRIDGEL.LFT	BSC	016	Stringer (beam)
HACG	116	BRIDGEL.LFT	BSC	999	Other
HACG	117	BRIDGEL.LFT	DAT	026	Information as of ____
HACG	118	BRIDGEL.LFT	EXS	005	Under Construction
HACG	119	BRIDGEL.LFT	EXS	028	Operational
HACG	120	BRIDGEL.LFT	OWO	001	Feature Crosses Navigable Water
HA	121	BRIDGEL.LFT	TUC	000	Unknown
HA	122	BRIDGEL.LFT	TUC	001	Both Road and Railroad
HA	123	BRIDGEL.LFT	TUC	003	Railroad
HA	124	BRIDGEL.LFT	TUC	004	Road
HA	125	BRIDGEL.LFT	TUC	017	Pedestrian
HA	126	BRIDGSPL.LFT	BSM	001	Movable Span
HACG	127	HAZARDL.LFT	EXS	006	Abandoned /Disused
HACG	128	HAZARDL.LFT	EXS	028	Operational
HACG	129	HAZARDL.LFT	LOC	004	Below Surface /Submerged /Underground
HACG	130	HAZARDL.LFT	USE	000	Unknown
HACG	131	HAZARDL.LFT	USE	051	Telegraph
HACG	132	HAZARDL.LFT	USE	052	Telephone
HACG	133	HAZARDL.LFT	USE	053	Power
HAC	134	PIPELINL.LFT	EXS	000	Unknown
HAC	135	PIPELINL.LFT	EXS	005	Under Construction

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TABLE 156. Obstructions integer value description table - Continued.

HACG	136	PIPELINL.LFT	EXS	006	Abandoned /Disused
HACG	137	PIPELINL.LFT	EXS	028	Operational
HAC	138	PIPELINL.LFT	EXS	999	Other
HACG	139	PIPELINL.LFT	LOC	000	Unknown
HAC	140	PIPELINL.LFT	LOC	008	On Ground Surface
HACG	141	PIPELINL.LFT	LOC	017	Sunken /On Sea Bottom
HACG	142	PIPELINL.LFT	LOC	023	Below Sea Bottom
HACG	143	PIPELINL.LFT	LOC	024	Suspended or Elevated Above Sea Bottom
HAC	144	PIPELINL.LFT	LOC	025	Suspended /Elevated Above Ground or Water Surface
HAC	145	PIPELINL.LFT	OWO	001	Feature Crosses Navigable Water
HAC	146	PIPELINL.LFT	OWO	002	Feature Does Not Cross Navigable Water
HACG	147	PIPELINL.LFT	PLT	000	Unknown
HACG	148	PIPELINL.LFT	PLT	001	Transport
HAC	149	PIPELINL.LFT	PLT	002	Outfall
HAC	150	PIPELINL.LFT	PLT	003	Intake
HACG	151	PIPELINL.LFT	PRO	000	Unknown
HACG	152	PIPELINL.LFT	PRO	013	Chemical
HACG	153	PIPELINL.LFT	PRO	038	Gas
HACG	154	PIPELINL.LFT	PRO	039	Gasoline
HACG	155	PIPELINL.LFT	PRO	067	Oil
HAC	156	PIPELINL.LFT	PRO	095	Sewage
HACG	157	PIPELINL.LFT	PRO	116	Water
HACG	158	PIPELINL.LFT	PRO	999	Other
HAC	159	TUNNELL.LFT	TUC	000	Unknown
HAC	160	TUNNELL.LFT	TUC	001	Both Road and Railroad
HAC	161	TUNNELL.LFT	TUC	003	Railroad
HAC	162	TUNNELL.LFT	TUC	004	Road
HAC	163	TUNNELL.LFT	TUC	037	Aqueduct
HAC	164	TUNNELL.LFT	TUC	038	Canal
HACG	165	DANGERP.PFT	ACC	001	Accurate
HACG	166	DANGERP.PFT	ACC	002	Approximate
HACG	167	DANGERP.PFT	ACC	003	Doubtful
HACG	168	DANGERP.PFT	DAT	026	Information as of ____
HACG	169	DANGERP.PFT	EXS	001	Definite
HACG	170	DANGERP.PFT	EXS	002	Doubtful
HACG	171	DANGERP.PFT	EXS	003	Reported
HACG	172	DANGERP.PFT	HDI	009	Depth Known by Other Than Wire
HAC	173	DANGERP.PFT	HDI	010	Depth Known by Wire Drag
HACG	174	DANGERP.PFT	HDI	012	Depth Unknown
HAC	175	DANGERP.PFT	HDI	015	Not Applicable
HAC	176	DANGERP.PFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HAC	177	DANGERP.PFT	VRR	004	Below Surface /Submerged
HAC	178	DANGERP.PFT	VRR	008	Covers and Uncovers
HACG	179	HAZARDP.PFT	ACC	001	Accurate
HACG	180	HAZARDP.PFT	ACC	002	Approximate

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TABLE 156. Obstructions integer value description table - Continued.

HACG	181	HAZARDP.PFT	ACC	003	Doubtful
HA	182	HAZARDP.PFT	COD	001	Limits and Info Known
HA	183	HAZARDP.PFT	COD	002	Limits and Info Unknown
HACG	184	HAZARDP.PFT	DAT	026	Information as of ____
HACG	185	HAZARDP.PFT	EXS	001	Definite
HACG	186	HAZARDP.PFT	EXS	002	Doubtful
HACG	187	HAZARDP.PFT	EXS	003	Reported
HACG	188	HAZARDP.PFT	HDI	009	Depth Known by Other Than Wire
HACG	189	HAZARDP.PFT	HDI	010	Depth Known by Wire Drag
HACG	190	HAZARDP.PFT	HDI	011	Depth Unknown but Safe to Depth Shown
HACG	191	HAZARDP.PFT	HDI	012	Depth Unknown
HACG	192	HAZARDP.PFT	HDI	013	Uncovering Height Known
HACG	193	HAZARDP.PFT	HDI	014	Uncovering Height Unknown
HACG	194	HAZARDP.PFT	HDI	015	Not Applicable
HACG	195	HAZARDP.PFT	LOC	004	Below Surface /Submerged /Underground
HACG	196	HAZARDP.PFT	LOC	013	Hull Showing
HACG	197	HAZARDP.PFT	LOC	014	Masts Showing
HACG	198	HAZARDP.PFT	LOC	020	Funnel Showing
HACG	199	HAZARDP.PFT	LOC	021	Superstructure Showing
HACG	200	HAZARDP.PFT	LOC	028	Masts and Funnel Showing
HACG	201	HAZARDP.PFT	MCC	000	Unknown
HACG	202	HAZARDP.PFT	MCC	024	Coral
HACG	203	HAZARDP.PFT	MCC	084	Rock /Rocky
HACG	204	HAZARDP.PFT	SFC	001	Unknown obstruction
HACG	205	HAZARDP.PFT	SFC	002	Other
HACG	206	HAZARDP.PFT	SFC	003	Fish Haven
HACG	207	HAZARDP.PFT	SFC	004	Well
HACG	208	HAZARDP.PFT	SFC	005	Submerged Production Platform
HACG	209	HAZARDP.PFT	SOH	001	Dangerous
HACG	210	HAZARDP.PFT	SOH	002	Non-Dangerous
HACG	211	HAZARDP.PFT	VRR	000	Unknown
HACG	212	HAZARDP.PFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HACG	213	HAZARDP.PFT	VRR	002	Awash at Sounding Datum
HACG	214	HAZARDP.PFT	VRR	004	Below Surface /Submerged
HACG	215	HAZARDP.PFT	VRR	008	Covers and Uncovers
HACG	216	LOADINGP.PFT	CHA	021	Lighted
HACG	217	LOADINGP.PFT	CHA	023	Unlighted
HACG	218	LOADINGP.PFT	NST	000	Unknown
HACG	219	LOADINGP.PFT	NST	010	Racon (Radar Responder Beacon)
HACG	220	LOADINGP.PFT	NST	052	None
HACG	221	LOADINGP.PFT	NST	054	Ramark (Ramark)
HACG	222	LOADINGP.PFT	NST	999	Other
HAC	223	LOADINGP.PFT	SST	000	Unknown
HAC	224	LOADINGP.PFT	SST	001	Bell
HAC	225	LOADINGP.PFT	SST	002	Diaphone
HAC	226	LOADINGP.PFT	SST	003	Explosive Fog Signal

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TABLE 156. Obstructions integer value description table - Continued.

HAC	227	LOADINGP.PFT	SST	004	Gong
HAC	228	LOADINGP.PFT	SST	006	Horn
HAC	229	LOADINGP.PFT	SST	009	Siren
HAC	230	LOADINGP.PFT	SST	014	Whistle
HAC	231	LOADINGP.PFT	SST	015	Reed
HAC	232	LOADINGP.PFT	SST	016	None
HACG	233	LOADINGP.PFT	USE	000	Unknown
HACG	234	LOADINGP.PFT	USE	133	Single Point Mooring
HACG	235	LOADINGP.PFT	USE	999	Other
HA	236	RUINSP.PFT	HDI	009	Depth Known by Other Than Wire
HA	237	RUINSP.PFT	HDI	010	Depth Known by Wire Drag
HA	238	RUINSP.PFT	HDI	012	Depth Unknown
HA	239	RUINSP.PFT	HDI	015	Not Applicable
HA	240	RUINSP.PFT	LOC	008	On Ground Surface
HA	241	RUINSP.PFT	LOC	022	Off-Shore
HA	242	RUINSP.PFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HA	243	RUINSP.PFT	VRR	004	Below Surface /Submerged
HA	244	RUINSP.PFT	VRR	008	Covers and Uncovers
HA	245	RUINSP.PFT	VRR	009	Not Applicable

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TABLE 157. Bridge area feature table.

H	{Header length and byte order};\ BRIDGEA.AFT,Bridge Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
H	BOT=S,1,N,Bridge Opening Type,INT.VDT,-,-;\
H	BSC=S,1,N,Bridge /Bridge Superstructure Category,INT.VDT,-,-;\
H	DAT=S,1,N,Date,INT.VDT,-,-;\
H	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
H	MVC=F,1,N,Maximum Vertical Clearance,-,-;\
H	NAM=T,30,N,Name,-,-;\
H	OHC=F,1,N,Overhead Clearance Category,-,-;\
H	OWO=S,1,N,Over Water Obstruction,INT.VDT,-,-;\
H	SHC=F,1,N,Safe Horizontal Clearance,-,-;\
H	VAL=S,1,N,Value,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BRIDGEA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,BRIDGEA2.ATI,;;

BRIDGEA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ040	Bridge /Overpass /Viaduct	H
BOT	Bridge Opening Type			<u>Applicable F_CODE</u>
	default	0	Unknown	AQ040
		4	Draw /Bascule	AQ040
		10	Swing	AQ040
		11	Lift	AQ040
		12	Retractable	AQ040
		13	Not Applicable /FixE"d	AQ040
BSC	Bridge /Bridge Superstructure Category			
	default	0	Unknown	AQ040
		1	Arch	AQ040
		2	Cantilever	AQ040
		3	Deck	AQ040
		5	Floating Bridge /Pontoon	AQ040
		6	Girder	AQ040
		8	Truss	AQ040
		9	Suspension	AQ040
		12	Transporter	AQ040
		15	Slab	AQ040
		16	Stringer	AQ040
	999	Other	AQ040	
DAT	Date			
	default	26	Information as of ____	AQ040
EXS	Existence Category	5	Under Construction	AQ040
		7	Destroyed	AQ040
	default	28	Operational	AQ040
MVC	Maximum Vertical Clearance			
	default	0.0	Unknown	AQ040
		0.1 to		AQ040

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20000000.0 actual value to
nearest .1 meter

NAM	Name			
	default	"UNK"	Unknown	AQ040
		text string (e.g., "Wilson Bridge")		AQ040
OHC	Overhead Clearance Category			
	default	0.0	Unknown	AQ040
		0.1 to	actual value to	AQ040
		998.0	nearest .1 meter	
OWO	Over Water Obstruction			
	default	1	Feature Crosses	AQ040
			Navigable Water	
		2	Feature Does Not Cross	AQ040
			Navigable Water	
SHC	Safe Horizontal Clearance			
	default	0.0	Unknown	AQ040
		0.1 to	actual value to	AQ040
		1000.0	nearest .1 meter	
VAL	Value			
	default	0	Unknown	AQ040
		1 to 32767	actual value (year)	AQ040

TABLE 158. Bridge Span area feature table.

H	{Header length and byte order};\ BRIDGSPA.AFT,Bridge Span Area Feature Table;-;\
H	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
H	BSM=S,1,N,Bridge Span Mobility,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BRIDGSA1.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,BRIDGSA2.ATI,;\

BRIDGSPA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ045	Bridge Span	H
BSM	Bridge Span Mobility			<u>Applicable F_CODE</u>
	default	1	Movable Span	AQ045

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TABLE 159. Danger area feature table.

HACG	{Header length and byte order};\ DANGERA.AFT,Danger Area Feature Table;-;\ ID=I,1,P,Row ID,-,-,:\ F_CODE=T,5,N,FACC Code,CHAR.VDT,DANGERA1.ATI,:\ ACC=S,1,N,Accuracy Category,INT.VDT,-,:\ DAT=S,1,N,Date,INT.VDT,-,:\ EXS=S,1,N,Existence Category,INT.VDT,-,:\ HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,:\ HDP=F,1,N,Hydrographic Depth,-,-,:\ VAL=S,1,N,Value,-,-,:\ VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\ TILE_ID=S,1,N,Tile Reference Identifier,-,DANGERA2.ATI,:\ FAC_ID=I,1,N,Face Primitive Foreign Key,-,DANGERA3.ATI,;;
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DANGERA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BD030	Discolored Water	HACG
		BD050	Foul Ground	HACG
		BD100	Pile /Piling /Post	HAC
		BD140	Snags /Stumps	HAC
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BD030, BD050, BD100, BD140
		2	Approximate	BD030, BD050, BD100, BD140
		3	Doubtful	BD030, BD050, BD100, BD140
DAT	Date			
	default	26	Information as of ____	BD030, BD050, BD100, DB140
EXS	Existence Category			
	default	1	Definite	BD030, BD050, BD100, BD140
		2	Doubtful	BD030, BD050, BD100, BD140
		3	Reported	BD030, BD050, BD100, BD140
HDI	Hydrographic Depth /Height Information			
		-32768	Null	BD030, BD100, BD140
		9	Depth Known by Other Than Wire	BD050
	default	12	Depth Unknown	BD050
HDP	Hydrographic Depth			
		NaN	Null	BD030, BD100, BD140
	default	0.0	Unknown	BD050
		0.1 to	actual value to	BD050

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		12000.0	the nearest .1 meter	
VAL	Value			
	default	0	Unknown	BD030, BD050, BD100, BD140
		1 to 32767	actual value (year)	BD030, BD050, BD100, BD140
VRR	Vertical Reference Category			
	default	-32768	Null	BD030, BD050
		1	Above Surface /Does Not Cover (At High Water)	BD100, BD140
		4	Below Surface /Submerged	BD100, BD140
		8	Covers and Uncovers	BD100, BD140

TABLE 160. Fish Hatchery area feature table.

H	<pre>{Header length and byte order};\ FISHHATA.AFT,Fish Hatchery Area Feature Table;-;\ ID=I,1,P,Row ID,-,-,:\ F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\ TILE_ID=S,1,N,Tile Reference Identifier,-, FISHHAA1.ATI,:\ FAC_ID=I,1,N,Face Primitive Foreign Key,-, FISHHAA2.ATI,;;</pre>
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FISHHATA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BH050	Fish Hatchery /Fish Farm H /Marine Farm	

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TABLE 161. Hazard area feature table*.

HACG	{Header length and byte order};\
HACG	HAZARDA.AFT,Hazard Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,HAZARDA1.ATI,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,;\
HA	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
HACG	DAT=S,1,N,Date,INT.VDT,-,;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,;\
HACG	HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HA	LOC=S,1,N,Location Category,INT.VDT,-,;\
HACG	SFC=S,1,N,Sea Floor Feature Category,INT.VDT,-,;\
HACG	SOH=S,1,N,Severity of Hazard,INT.VDT,-,;\
HACG	TXT=T,255,N,Text Attribute,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
HAC	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,HAZARDA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,HAZARDA3.ATI,;\

*the thematic index on F_CODE applies to the HAC libraries only

HAZARDA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BD000	Underwater Danger /Underwater Hazard	HACG
		BD020	Crib	HAC
		BD180	Wreck	HA
ACC	Accuracy Category			<u>Applicable F_CODE</u>
		-32768	Null	BD180
	default	1	Accurate	BD000, BD020
		2	Approximate	BD000, BD020
		3	Doubtful	BD000, BD020
COD	Certainty of Delineation			
		-32768	Null	BD000, BD020
	default	2	Limits and Info Unknown	BD180
DAT	Date			
		-32768	Null	BD180
	default	26	Information as of ____	BD000, BD020
EXS	Existence Category			
		-32768	Null	BD180
	default	1	Definite	BD000, BD020
		2	Doubtful	BD000, BD020
		3	Reported	BD000, BD020
HDI	Hydrographic Depth /Height Information			
		9	Depth Known by Other Than Wire	BD000, BD020 VRR=4, BD180 VRR=4
		10	Depth Known by	BD000, BD180

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		Wire Drag	VRR=4
	11	Depth Unknown but Safe to Depth Shown	BD180, VRR=4
default	12	Depth Unknown	BD000, BD020 VRR=4, BD180 VRR=4
	15	Not Applicable	BD020 VRR<>4, BD180 VRR<>4
HDP	Hydrographic Depth		
	NaN	Null	BD020 VRR<>4, BD180 VRR<>4
default	0.0	Unknown	BD000, BD020 VRR=4, BD180 VRR=4
	0.1 to 12000.0	actual value to the nearest .1 meter	BD000, BD020 VRR=4, BD180 VRR=4
LOC	Location Category		
	-32768	Null	BD000, BD020
default	4	Below Surface / Submerged /Underground	BD180
	13	Hull Showing	BD180
	14	Masts Showing	BD180
	20	Funnel Showing	BD180
	21	Superstructure Showing	BD180
	28	Masts and Funnel Showing	BD180
SFC	Sea Floor Feature Category		
	-32768	Null	BD020, BD180
default	1	Unknown Obstruction	BD000
	2	Other	BD000
	3	Fish Haven	BD000
SOH	Severity of Hazard		
	-32768	Null	BD020
default	1	Dangerous	BD000, BD180
	2	Non-Dangerous	BD000, BD180
TXT	Text Attribute		
	"N/A"	Null	BD020, BD180
default	"None"	No textual information	BD000
	text string		BD000
VAL	Value		
	-32768	Null	BD180
default	0	Unknown	BD000, BD020
	1 to 32767	actual value (year)	BD000, BD020
VRR	Vertical Reference Category		
	-32768	Null	BD000
	0	Unknown	BD180
	1	Above Surface /Does Not Cover (At High Water)	BD020, BD180
	2	Awash at Sounding Datum	BD180
default	4	Below Surface / Submerged	BD020, BD180

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Covers and Uncovers

BD020, BD180

TABLE 162. Loading area feature table.

HACG	{Header length and byte order};\ LOADINGA.AFT,Loading Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
	NAM=T,30,N,Name,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LOADINA1.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,LOADINA2.ATI,; ;

LOADINGA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB170	Offshore Loading Facility	HACG
NAM	Name			<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BB170
		text string (e.g., "Arco B")		BB170

TABLE 163. Obstruction area feature table.

HACG	{Header length and byte order};\ OBSTRUCA.AFT,Obstruction Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,OBSTRUA1.ATI,:\
	NAM=T,30,N,Name,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,OBSTRUA2.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,OBSTRUA3.ATI,; ;

OBSTRUCA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB110	Fish Traps /Fish Weirs	HA
		BB180	Oyster Bed /Mussel Bed	HAC
		BC080	Perches /Stakes	HAC
		BD010	Breakers	HACG
		BD040	Eddies	HAC
		BD060	Kelp /Seaweed	HACG
		BD080	Overfalls /Tide Rips	HAC
NAM	Name			<u>Applicable F_CODE</u>
		"N/A"	Null	BB110, BB180, BC080, BD010, BD040, BD060
	default	"UNK"	Unknown	BD080
		text string (e.g., "Machias Falls")		BD080

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TABLE 164. Reef area feature table.

HACG	{Header length and byte order};\ REEFA.AFT,Reef Area Feature Table;-;\ ID=I,1,P,Row ID,-,-;\ F_CODE=T,5,N,FACC Code,CHAR.VDT,-;\ ACC=S,1,N,Accuracy Category,INT.VDT,-;\ COD=S,1,N,Certainty of Delineation,INT.VDT,-;\ DAT=S,1,N,Date,INT.VDT,-;\ EXS=S,1,N,Existence Category,INT.VDT,-;\ HDH=F,1,N,Hydrographic Drying Height,-,-;\ HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-;\ HDP=F,1,N,Hydrographic Depth,-,-;\ MCC=S,1,N,Material Composition Category,INT.VDT,-;\ NAM=T,30,N,Name,-,-;\ SOH=S,1,N,Severity of Hazard,INT.VDT,-;\ VAL=S,1,N,Value,-,-;\ VRR=S,1,N,Vertical Reference Category,INT.VDT,-;\ TILE_ID=S,1,N,Tile Reference Identifier,-,REEFA1.ATI;\ FAC_ID=I,1,N,Face Primitive Foreign Key,-,REEFA2.ATI;;
------	--

REEFA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BD120	Reef	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	BD120
		2	Approximate	BD120
		3	Doubtful	BD120
COD	Certainty of Delineation			
	default	1	Limits and Info Known	BD120
		2	Limits and Info Unknown	BD120
DAT	Date			
	default	26	Information as of ____	BD120
EXS	Existence Category			
	default	1	Definite	BD120
		2	Doubtful	BD120
		3	Reported	BD120
HDH	Hydrographic Drying Height			
	default	NaN	Null	BD120 VRR<>8
		0.0	Unknown	BD120 VRR=8
		0.1 to 1000.0	actual value to the nearest .1 meter	BD120 VRR=8
HDI	Hydrographic Depth /Height Information			
	default	9	Depth Known by Other Than Wire	BD120 VRR<>8
		12	Depth Unknown	BD120 VRR<>8
		13	Uncovering Height Known	BD120 VRR<>4
		14	Uncovering Height Unknown	BD120 VRR<>4

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HDP	Hydrographic Depth	NaN	Null	BD120 VRR<>4
	default	0.0	Unknown	BD120 VRR=4
		0.1 to 12000.0	actual value to the nearest .1 meter	BD120 VRR=4
MCC	Material Composition Category	0	Unknown	BD120
	default	24	Coral	BD120
		84	Rock /Rocky	BD120
NAM	Name	"UNK"	Unknown	BD120
	default	text string (e.g., "Avon Reef")		BD120
SOH	Severity of Hazard	1	Dangerous	BD120
	default	2	Non-Dangerous	BD120
VAL	Value	0	Unknown	BD120
	default	1 to 32767	actual value (year)	BD120
VRR	Vertical Reference Category	0	Unknown	BD120
		2	Awash at Sounding Datum	BD120
	default	4	Below Surface /Submerged	BD120
		8	Covers and Uncovers	BD120

TABLE 165. Ruins area feature table.

HA	{Header length and byte order};\
	RUINSA.AFT,Ruins Area Feature Table;-\
	ID=I,1,P,Row ID,-,-,:\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
H	HDH=F,1,N,Hydrographic Drying Height,-,-,:\
HA	HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,-,:\
HA	HDP=F,1,N,Hydrographic Depth,-,-,:\
H	HGT=I,1,N,Height Above Surface Level,-,-,:\
HA	LOC=S,1,N,Location Category,INT.VDT,-,-,:\
H	NAM=T,30,N,Name,-,-,:\
HA	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,RUINSA1.ATI,:\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,RUINSA2.ATI,;\

RUINSA

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	AL200	Ruins	HA
HDH	Hydrographic Drying Height	NaN	Null	<u>Applicable F_CODE</u> AL200 VRR<>8
	default	0.0	Unknown	AL200 VRR=8
		0.1 to 1000.0	actual value to the nearest .1 meter	AL200 VRR=8
HDI	Hydrographic Depth /Height Information			

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	9	Depth Known by Other Than Wire	AL200 VRR=4
	10	Depth Known by Wire Drag	AL200 VRR=4
default	12	Depth Unknown	AL200 VRR=4
	15	Not Applicable	AL200 VRR<>4
HDP	Hydrographic Depth		
	NaN	Null	AL200 VRR<>4
default	0.0	Unknown	AL200 VRR=4
	0.1 to 12000.0	actual value to the nearest .1 meter	AL200 VRR=4
HGT	Height Above Surface Level		
default	-2147483648	Null	AL200 VRR<>1 or 9
	0	Unknown	AL200 VRR=1 or 9
	1 to 2147483647	actual value (meters)	AL200 VRR=1 or 9
LOC	Location Category		
	8	On Ground Surface	AL200
default	22	Off-Shore	AL200
NAM	Name		
default	"UNK"	Unknown	AL200
	text string (e.g., "Marchet Ruins")		AL200
VRR	Vertical Reference Category		
	1	Above Surface /Does Not Cover (At High Water)	AL200 LOC=22
default	4	Below Surface / Submerged	AL200 LOC=22
	8	Covers and Uncovers	AL200 LOC=22
	9	Not Applicable	AL200 LOC=8

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TABLE 166. Bridge line feature table.

HACG	{Header length and byte order};\ BRIDGEL.LFT,Bridge Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HACG	BOT=S,1,N,Bridge Opening Type,INT.VDT,-,;\
HACG	BSC=S,1,N,Bridge /Bridge Superstructure Category,INT.VDT,-,;\
HACG	DAT=S,1,N,Date,INT.VDT,-,;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,;\
HACG	MVC=F,1,N,Maximum Vertical Clearance,-,-;\
HA	NAM=T,30,N,Name,-,-;\
HACG	OHC=F,1,N,Overhead Clearance Category,-,-;\
HACG	OWO=S,1,N,Over Water Obstruction,INT.VDT,-,;\
HACG	SHC=F,1,N,Safe Horizontal Clearance,-,-;\
HA	TUC=S,1,N,Transportation Use Category,INT.VDT,-,;\
HACG	VAL=S,1,N,Value,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,BRIDGEL1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,BRIDGEL2.LTI,;;

BRIDGEL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ040	Bridge /Overpass /Viaduct	HACG
BOT	Bridge Opening Type			<u>Applicable F_CODE</u>
	default	0	Unknown	AQ040
		4	Draw /Bascule	AQ040
		10	Swing	AQ040
		11	Lift	AQ040
		12	Retractable	AQ040
		13	Not Applicable /FixE"d	AQ040
BSC	Bridge /Bridge Superstructure Category			
	default	0	Unknown	AQ040
		1	Arch	AQ040
		2	Cantilever	AQ040
		3	Deck	AQ040
		5	Floating Bridge /Pontoon	AQ040
		6	Girder	AQ040
		8	Truss	AQ040
		9	Suspension	AQ040
		12	Transporter	AQ040
		15	Slab	AQ040
		16	Stringer (beam)	AQ040
		999	Other	AQ040
DAT	Date			
	default	26	Information as of ____	AQ040
EXS	Existence Category			
		5	Under Construction	AQ040
	default	28	Operational	AQ040
MVC	Maximum Vertical Clearance			
	default	0.0	Unknown	AQ040

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		0.1 to 2000000.0	actual value to nearest .1 meter	AQ040
NAM	Name			
	default	"UNK"	Unknown	AQ040
		text string (e.g., "Wilson Bridge")		AQ040
OHC	Overhead Clearance Category			
	default	0.0	Unknown	AQ040
		0.1 to 998.0	actual value to nearest .1 meter	AQ040
OWO	Over Water Obstruction			
	default	1	Feature Crosses Navigable Water	AQ040
SHC	Safe Horizontal Clearance			
	default	0.0	Unknown	AQ040
		0.1 to 1000.0	actual value to nearest .1 meter	AQ040
TUC	Transportation Use Category			
	default	0	Unknown	AQ040
		1	Both Road and Railroad	AQ040
		3	Railroad	AQ040
		4	Road	AQ040
		17	Pedestrian	AQ040
VAL	Value			
	default	0	Unknown	AQ040
		1 to 32767	actual value (year)	AQ040

TABLE 167. Bridge Span line feature table.

HA	{Header length and byte order};\ BRIDGSPL.LFT,Bridge Span Line Feature Table;-;\ ID=I,1,P,Row ID,-,-;\ F_CODE=T,5,N,FACC Code,CHAR.VDT,-;\ HA
HA	BSM=S,1,N,Bridge Span Mobility,INT.VDT,-;\ TITLE_ID=S,1,N,Tile Reference Identifier,-,BRIDGSL1.LTI;\ EDG_ID=I,1,N,Edge Primitive Foreign Key,-,BRIDGSL2.LTI; ;

BRIDGSPL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ045	Bridge Span	HA
BSM	Bridge Span Mobility			<u>Applicable F_CODE</u>
	default	1	Movable Span	AQ045

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TABLE 168. Hazard line feature table.

HACG	{Header length and byte order};\
HACG	HAZARDL.LFT,Hazard Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,HAZARDL1.LTI,:\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,:\
HACG	LOC=S,1,N,Location Category,INT.VDT,-,:\
HACG	USE=S,1,N,Usage,INT.VDT,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,HAZARDL2.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,HAZARDL3.LTI,;\

HAZARDL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AT005	Cable	HACG
		BB100	Fish Stakes	HA
		BD010	Breakers	HACG
EXS	Existence Category			Applicable F_CODE
		-32768	Null	BB100, BD010
		6	Abandoned /Disused	AT005
	default	28	Operational	AT005
LOC	Location Category			
		-32768	Null	BB100, BD010
	default	4	Below Surface / Submerged /Underground	AT005
USE	Usage			
		-32768	Null	BB100, BD010
	default	0	Unknown	AT005
		51	Telegraph	AT005
		52	Telephone	AT005
		53	Power	AT005

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TABLE 169. Pipeline line feature table.

HACG	{Header length and byte order};\ PIPELINL.LFT,Pipeline Line Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-;\
HACG	DEP=F,1,N,Depth Below Surface Level,-,-;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,-;\
HAC	HSB=F,1,N,Height Above Sea Bottom,-,-;\
HACG	LOC=S,1,N,Location Category,INT.VDT,-,-;\
HAC	OHC=F,1,N,Overhead Clearance Category,-,-;\
HAC	OWO=S,1,N,Over Water Obstruction,INT.VDT,-,-;\
HACG	PLT=S,1,N,Pipeline Type,INT.VDT,-,-;\
HACG	PRO=S,1,N,Product Category,INT.VDT,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,PIPELIL1.LTI,;\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,PIPELIL2.LTI,;;

PIPELINL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AQ113	Pipeline /Pipe	HACG
DEP	Depth Below Surface Level			<u>Applicable F_CODE</u>
	default	NaN	Null	AQ113 LOC<>23
		0.0	Unknown	AQ113 LOC=23
		0.1 to 2000000000.0	actual value to nearest .1 meter	AQ113 LOC=23
EXS	Existence Category			
	default	0	Unknown	AQ113
		5	Under Construction	AQ113
		6	Abandoned /Disused	AQ113
		28	Operational	AQ113
		999	Other	AQ113
HSB	Height Above Sea Bottom			
	default	NaN	Null	AQ113 LOC<>24
		0.0	Unknown	AQ113 LOC=24
		0.1 to 2000000000.0	actual value to nearest .1 meter	AQ113 LOC=24
LOC	Location Category			
	default	0	Unknown	AQ113
		8	On Ground Surface	AQ113
		17	Sunken /On Sea Bottom	AQ113
		23	Below Sea Bottom	AQ113
		24	Suspended or Elevated Above Sea Bottom	AQ113
		25	Suspended /Elevated Above Ground or Water Surface	AQ113
OHC	Overhead Clearance Category			
	default	NaN	Null	AQ113 LOC<>25
		0.0	Unknown	AQ113 LOC=25
		0.1 to 998.0	actual value to nearest .1 meter	AQ113 LOC=25

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OWO	Over Water Obstruction			
	default	1	Feature Crosses Navigable Water	AQ113
		2	Feature Does Not Cross Navigable Water	AQ113
PLT	Pipeline Type			
	default	0	Unknown	AQ113
		1	Transport	AQ113
		2	Outfall	AQ113
		3	Intake	AQ113
PRO	Product Category			
	default	0	Unknown	AQ113
		13	Chemical	AQ113
		38	Gas	AQ113
		39	Gasoline	AQ113
		67	Oil	AQ113
		95	Sewage	AQ113
		116	Water	AQ113
	999	Other	AQ113	

TABLE 170. Tunnel line feature table*.

HACG	{Header length and byte order};\
HAC	TUNNELL.LFT,Tunnel Line Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,TUNNELL1.LTI,:\
HACG	HDP=F,1,N,Hydrographic Depth,-,-,:\
HAC	NAM=T,30,N,Name,-,-,:\
HAC	TUC=S,1,N,Transportation Use Category,INT.VDT,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,TUNNELL2.LTI,:\
	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,TUNNELL3.LTI,;\

*the thematic index on F_CODE applies to the HAC libraries only

TUNNELL

Column	Description	Value	Value Meaning	Applicable Libs.	
F_CODE	FACC Code	AQ130	Tunnel	HAC	
		BB170	Offshore Loading Facility	HACG	
HDP	Hydrographic Depth	NaN	Null	<u>Applicable F_CODE</u> BB170	
		default	0.0	Unknown	AQ130
			0.1 to 12000.0	actual value to nearest .1 meter	AQ130
NAM	Name	default	"UNK"	AQ130, BB170	
			text string (e.g., "Harbor Tunnel")	AQ130, BB170	
TUC	Transportation Use Category	-32768	Null	BB170	
		default	0	Unknown	AQ130
			1	Both Road and Railroad	AQ130

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3	Railroad	AQ130
4	Road	AQ130
37	Aqueduct	AQ130
38	Canal	AQ130

TABLE 171. Danger point feature table.

HACG	{Header length and byte order};\ DANGERP.PFT,Danger Point Feature Table;-;\ ID=I,1,P,Row ID,-,-,:\ F_CODE=T,5,N,FACC Code,CHAR.VDT,DANGERP1.PTI,:\ HACG ACC=S,1,N,Accuracy Category,INT.VDT,-,:\ HACG DAT=S,1,N,Date,INT.VDT,-,:\ HACG EXS=S,1,N,Existence Category,INT.VDT,-,:\ HACG HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,:\ HACG HDP=F,1,N,Hydrographic Depth,-,-,:\ HACG VAL=S,1,N,Value,-,-,:\ HAC VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\ TITLE_ID=S,1,N,Tile Reference Identifier,-,DANGERP2.PTI,:\ END_ID=I,1,N,Entity Node Primitive Foreign Key,-,DANGERP3.PTI,;;
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DANGERP

Column	Description	Value	Value Meaning	Applicable Libs.					
F_CODE	FACC Code	BD010	Breakers	HACG					
		BD030	Discolored Water	HACG					
		BD050	Foul Ground	HACG					
		BD100	Pile /Piling /Post	HAC					
		BD140	Snags /Stumps	HAC					
		ACC	Accuracy Category	default	1	Accurate	<u>Applicable F_CODE</u> BD010, BD030, BD050, BD100, BD140		
2	Approximate			BD010, BD030, BD050, BD100, BD140					
3	Doubtful			BD010, BD030, BD050, BD100, BD140					
DAT	Date			default	26	Information as of ____	BD010, BD030, BD050, BD100, BD140		
				EXS	Existence Category	default	1	Definite	BD010, BD030, BD050, BD100, BD140
						2	Doubtful	BD010, BD030, BD050, BD100, BD140	
3	Reported	BD010, BD030, BD050, BD100, BD140							

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HDI	Hydrographic Depth /Height Information			
	default	-32768	Null	BD010, BD030, BD100
		9	Depth Known by Other Than Wire	BD050, BD140 VRR=4
		10	Depth Known by Wire Drag	BD140 VRR=4
		12	Depth Unknown	BD050, BD140 VRR=4
	15	Not Applicable	BD140 VRR<>4	
HDP	Hydrographic Depth			
	default	NaN	Null	BD010, BD030, BD100, BD140 VRR<>4
		0.0	Unknown	BD050, BD140 VRR=4
	0.1 to 12000.0	actual value to the nearest .1 meter	BD050, BD140 VRR=4	
VAL	Value			
	default	0	Unknown	BD010, BD030, BD050, BD100, BD140
		1 to 32767	actual value (year)	BD010, BD030, BD050, BD100, BD140
VRR	Vertical Reference Category			
	default	-32768	Null	BD010, BD030, BD050
		1	Above Surface /Does Not Cover (At High Water)	BD100, BD140
		4	Below Surface / Submerged	BD100, BD140
	8	Covers and Uncovers	BD100, BD140	

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TABLE 172. Hazard point feature table.

HACG	{Header length and byte order};\
HACG	HAZARDP.PFT,Hazard Point Feature Table;-;\
	ID=I,1,P,Row ID,-,-;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,HAZARDP1.PTI,;\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,;\
HA	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
HACG	DAT=S,1,N,Date,INT.VDT,-,;\
HACG	EXS=S,1,N,Existence Category,INT.VDT,-,;\
HACG	HDH=F,1,N,Hydrographic Drying Height,-,-;\
HACG	HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,;\
HACG	HDP=F,1,N,Hydrographic Depth,-,-;\
HACG	LOC=S,1,N,Location Category,INT.VDT,-,;\
HACG	MCC=S,1,N,Material Composition Category,INT.VDT,-,;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	SFC=S,1,N,Sea Floor Feature Category,INT.VDT,-,;\
HACG	SOH=S,1,N,Severity of Hazard,INT.VDT,-,;\
HACG	TXT=T,255,N,Text Attribute,-,-;\
HACG	VAL=S,1,N,Value,-,-;\
HACG	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,HAZARDP2.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,HAZARDP3.PTI,; ;

HAZARDP

Column	Description	Value	Value Meaning	Applicable Libs.	
F_CODE	FACC Code	BD000	Underwater Danger /Underwater Hazard	HACG	
		BD020	Crib	HAC	
		BD130	Rock	HACG	
		BD180	Wreck	HACG	
ACC	Accuracy Category	default	1	Accurate	<u>Applicable F_CODE</u> BD000, BD020, BD130, BD180
			2	Approximate	BD000, BD020, BD130, BD180
			3	Doubtful	BD000, BD020, BD130, BD180
COD	Certainty of Delineation	-32768	Null	BD000, BD020, BD130	
		1	Limits and Info Known	BD180	
		default	2	Limits and Info Unknown	BD180
DAT	Date	default	26	Information as of ____	BD000, BD020, BD130, BD180
EXS	Existence Category	default	1	Definite	BD000, BD020, BD130, BD180
			2	Doubtful	BD000, BD020, BD130, BD180
			3	Reported	BD000, BD020,

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HDH	Hydrographic Drying Height				
	default	NaN	Null	BD000, BD020, BD130 VRR<>8, BD180	
		0.0	Unknown	BD130 VRR=8	
		0.1 to 1000.0	actual value to the nearest .1 meter	BD130 VRR=8	
HDI	Hydrographic Depth /Height Information				
		9	Depth Known by Other Than Wire	BD000, BD020 VRR=4, BD130 VRR=4, BD180 VRR=4	
		10	Depth Known by Wire Drag	BD000, BD130 VRR=4, BD180 VRR=4	
		11	Depth Unknown but Safe to Depth Shown	BD180 VRR=4	
	default	12	Depth Unknown	BD000, BD020 VRR=4, BD130 VRR=4, BD180 VRR=4	
		13	Uncovering Height Known	BD130 VRR=8	
		14	Uncovering Height Unknown	BD130 VRR=8	
		15	Not Applicable	BD020 VRR<>4, BD130 VRR=0 or 2, BD180 VRR<>4	
	HDP	Hydrographic Depth			
			NaN	Null	BD020 VRR<>4, BD130 VRR<>4 BD180 VRR<>4
default		0.0	Unknown	BD000, BD020 VRR=4, BD130 VRR=4, BD180 VRR=4	
		0.1 to 12000.0	actual value to the nearest .1 meter	BD000, BD020 VRR=4, BD130 VRR=4, BD180 VRR=4	
LOC	Location Category				
		-32768	Null	BD000, BD020, BD130	
	default	4	Below Surface / Submerged /Underground	BD180	
		13	Hull Showing	BD180	
		14	Masts Showing	BD180	
		20	Funnel Showing	BD180	
		21	Superstructure Showing	BD180	
	28	Masts and Funnel Showing	BD180		
MCC	Material Composition Category				
		-32768	Null	BD000, BD020, BD180	

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	default	0	Unknown	BD130
		24	Coral	BD130
		84	Rock /Rocky	BD130
NAM	Name	"N/A"	Null	BD000, BD020, BD180
	default	"UNK"	Unknown	BD130
		text string (e.g., "Smith Rock")		BD130
SFC	Sea Floor Feature Category	-32768	Null	BD020, BD130, BD180
	default	1	Unknown obstruction	BD000
		2	Other	BD000
		3	Fish Haven	BD000
		4	Well	BD000
		5	Submerged Production Platform	BD000
SOH	Severity of Hazard	-32768	Null	BD020
	default	1	Dangerous	BD000, BD130, BD180
		2	Non-Dangerous	BD000, BD130, BD180
TXT	Text Attribute	"N/A"	Null	BD020, BD130, BD180
	default	"None"	No textual information	BD000
		text string		BD000
VAL	Value			
	default	0	Unknown	BD000, BD020, BD130, BD180
		1 to 32767	actual value (year)	BD000, BD020, BD130, BD180
VRR	Vertical Reference Category	-32768	Null	BD000
		0	Unknown	BD130, BD180
		1	Above Surface /Does Not Cover (At High Water)	BD020, BD180
		2	Awash at Sounding Datum	BD130, BD180
	default	4	Below Surface /Submerged	BD020, BD130, BD180
		8	Covers and Uncovers	BD020, BD130, BD180

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TABLE 173. Loading point feature table.

HACG	{Header length and byte order};\
HACG	LOADINGP.PFT,Loading Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-;\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,LOADINP1.PTI,;\
HACG	CHA=S,1,N,Light Characteristic Category,INT.VDT,-,-;\
HACG	NAM=T,30,N,Name,-,-;\
HACG	NST=S,1,N,Navigation System Types,INT.VDT,-,-;\
HAC	SST=S,1,N,Sound Signal Type,INT.VDT,-,-;\
HACG	USE=S,1,N,Usage,INT.VDT,-,-;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LOADINP2.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,LOADINP3.PTI,;;

LOADINGP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB170	Offshore Loading Facility	HACG
		BD110	Platform	HACG
CHA	Light Characteristic Category			<u>Applicable F_CODE</u>
	default	21	Lighted	BB170, BD110
		23	Unlighted	BB170, BD110
NAM	Name			
	default	"UNK"	Unknown	BB170, BD110
		text string (e.g., "Arco B")		BB170, BD110
NST	Navigation System Types			
		-32768	Null	BB170
		0	Unknown	BD110
		10	Racon (Radar Responder Beacon)	BD110
	default	52	None	BD110
		54	Ramark (Ramark)	BD110
		999	Other	BD110
SST	Sound Signal Type			
		-32768	Null	BB170
		0	Unknown	BD110
		1	Bell	BD110
		2	Diaphone	BD110
		3	Explosive Fog Signal	BD110
		4	Gong	BD110
		6	Horn	BD110
		9	Siren	BD110
		14	Whistle	BD110
		15	Reed	BD110
	default	16	None	BD110
USE	Usage			
		-32768	Null	BD110
	default	0	Unknown	BB170
		133	Single Point Mooring	BB170
		999	Other	BB170

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TABLE 174. Obstruction point feature table*.

HACG	{Header length and byte order};\ OBSTRUCP.PFT,Obstruction Point Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,OBSTRUP1.PTI,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,OBSTRUP2.PTI,:\n END_ID=I,1,N,Entity Node Primitive Foreign Key,-,OBSTRUP3.PTI,;;
------	--

*the thematic index on F_CODE applies to the HAC libraries only

OBSTRUCP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB105	Fishing Harbor	HAC
		BB180	Oyster Bed /Mussel Bed	HAC
		BC080	Perches /Stakes	HAC
		BD040	Eddies	HAC
		BD060	Kelp /Seaweed	HACG
		BD080	Overfalls /Tide Rips	HAC

TABLE 175. Ruins point feature table.

HA	{Header length and byte order};\ RUINSP.PFT,Ruins Point Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\n H HDH=F,1,N,Hydrographic Drying Height,-,-,:\n HA HDI=S,1,N,Hydrographic Depth /Height Information,INT.VDT,-,:\n HA HDP=F,1,N,Hydrographic Depth,-,-,:\n HA LOC=S,1,N,Location Category,INT.VDT,-,:\n H NAM=T,30,N,Name,-,-,:\n HA VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,RUINSP1.PTI,:\n END_ID=I,1,N,Entity Node Primitive Foreign Key,-,RUINSP2.PTI,;;
----	--

RUINSP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		AL200	Ruins	HA
HDH	Hydrographic Drying Height			<u>Applicable F_CODE</u>
	default	NaN	Null	AL200 VRR<>8
		0.0	Unknown	AL200 VRR=8
		0.1 to 1000.0	actual value to the nearest .1 meter	AL200 VRR=8
HDI	Hydrographic Depth /Height Information			
		9	Depth Known by Other Than Wire	AL200 VRR=4
		10	Depth Known by Wire Drag	AL200 VRR=4
	default	12	Depth Unknown	AL200 VRR=4
		15	Not Applicable	AL200 VRR<>4
HDP	Hydrographic Depth			
	default	NaN	Null	AL200 VRR<>4
		0.0	Unknown	AL200 VRR=4

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0.1 to 12000.0 actual value to
the nearest .1 meter

AL200 VRR=4

LOC	Location Category				
		8	On Ground Surface	AL200	
	default	22	Off-Shore	AL200	
NAM	Name				
	default	"UNK"	Unknown	AL200	
		text string (e.g., "Marchet Ruins")		AL200	
VRR	Vertical Reference Category				
		1	Above Surface /Does Not Cover (At High Water)	AL200	LOC=22
	default	4	Below Surface /Submerged	AL200	LOC=22
		8	Covers and Uncovers	AL200	LOC=22
		9	Not Applicable	AL200	LOC=8

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POR

A.3.2.10 Port Facilities coverage. This coverage contains hydrographic features including breakwaters, piers and seawalls of significance to marine navigation.

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POR

a. Port Facilities coverage glossary.

AREA FEATURES

BB040 Breakwater /Groyne A structure which protects a harbor or beach from forces of the sea.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB090 Drydock A structure, providing support for a vessel, which has a means of removing water so that the bottom of the vessel can be exposed.

LOC Location Category Status of feature relative to surrounding area or water.

NAM Name Any identifier or code.

BB115 Gridiron A flat frame, usually of parallel timber baulks, erected on the foreshore so that a vessel may dry out on it for painting or repair at low water.

BB140 Jetty A man-made barrier built out into, or in the water, primarily to restrain or direct currents and waves.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB150 Landing Place A place on shore where landing from the sea is possible.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

EXS Existence Category State or condition of the feature.

BB190 Pier /Wharf /Quay A structure primarily used as berthing places for vessels.

NAM Name Any identifier or code.

USE Usage Use.

BB220 Ramp (Maritime) A partially submerged hard surfaced area on a shoreline for launching and retrieving vessels or vehicles.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

LINE FEATURES

BB040 Breakwater /Groyne A structure which protects a harbor or beach from forces of the sea.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB140 Jetty A man-made barrier built out into, or in the water, primarily to restrain or direct currents and waves.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB190 Pier /Wharf /Quay A structure primarily used as berthing places for vessels.

NAM Name Any identifier or code.

USE Usage Use.

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BB220 Ramp (Maritime) A partially submerged hard surfaced area on a shoreline for launching and retrieving vessels or vehicles.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

BB230 Seawall A structure built to protect the shore from erosion.

BB240 Slipway /Patent Slip An prepared slope for launching and recovering vessels.

NAM Name Any identifier or code.

VRR Vertical Reference Category Relative location referenced to sounding datum, unless otherwise indicated.

POINT FEATURES

BB020 Berth The place where a ship lies when secured to a pier, wharf, dolphin(s) or dock. It may be a designated place away from the coastline.

BER Berth Identifier The designated number or letter used to identify this feature.

BB030 Bollard A post on a wharf used for fastening mooring lines.

BB050 Calling-In Point A specified point some distance from the harbor at which a vessel navigator notifies the harbor authority of his ship's position.

DF1 Direction of Traffic - 1 Direction of traffic, first occurrence.
Increment: 1 Degree

Limits: NA

Variance: NA

DF2 Direction of Traffic - 2 Direction of traffic, second occurrence.

Increment: 1 Degree

Limits: NA

Variance: NA

DF3 Direction of Traffic - 3 Direction of traffic, third occurrence.

Increment: 1 Degree

Limits: NA

Variance: NA

DF4 Direction of Traffic - 4 Direction of traffic, fourth occurrence.

Increment: 1 Degree

Limits: NA

Variance: NA

NAM Name Any identifier or code.

BB080 Dolphin A post or group of posts used for mooring, warping a ship, or as an aid to navigation.

BB150 Landing Place A place on shore where landing from the sea is possible.

COD Certainty of Delineation Indicates knowledge of the feature's limits or information.

EXS Existence Category State or condition of the feature.

BB160 Mooring Ring A metal ring attached to a structure and used to secure a vessel.

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TABLE 176. Port Facilities character value description table.

{Header length and byte order};\					
CHAR.VDT, Port Facilities Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-;\					
TABLE=T,12,N,Feature Class Table Name,-,-;\					
ATTRIBUTE=T,10,N,Attribute Name,-,-;\					
VALUE=T,5,N,Attribute Value,-,-;\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-; ;					
H	1	LANDINGA.AFT	F_CODE	BB150	Landing Place
HA	2	PIERA.AFT	F_CODE	BB090	Drydock
HAC	3	PIERA.AFT	F_CODE	BB190	Pier /Wharf /Quay
HAC	4	STRUCTRA.AFT	F_CODE	BB040	Breakwater /Groyne
H	5	STRUCTRA.AFT	F_CODE	BB115	Gridiron
HA	6	STRUCTRA.AFT	F_CODE	BB140	Jetty
H	7	STRUCTRA.AFT	F_CODE	BB220	Ramp (Maritime)
HAC	8	PIERL.LFT	F_CODE	BB190	Pier /Wharf /Quay
H	9	PIERL.LFT	F_CODE	BB240	Slipway /Patent Slip
HACG	10	SEAWALLL.LFT	F_CODE	BB230	Seawall
HACG	11	STRUCTRL.LFT	F_CODE	BB040	Breakwater /Groyne
HACG	12	STRUCTRL.LFT	F_CODE	BB140	Jetty
H	13	STRUCTRL.LFT	F_CODE	BB220	Ramp (Maritime)
H	14	BERTHP.PFT	F_CODE	BB020	Berth
HAC	15	CALLINP.PFT	F_CODE	BB050	Calling-In Point
H	16	LANDINGP.PFT	F_CODE	BB150	Landing Place
H	17	MOORINGP.PFT	F_CODE	BB030	Bollard
HA	18	MOORINGP.PFT	F_CODE	BB080	Dolphin
H	19	MOORINGP.PFT	F_CODE	BB160	Mooring Ring

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TABLE 177. Port Facilities integer value description table.

{Header length and byte order};\					
INT.VDT, Port Facilities Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
H	1	LANDINGA.AFT	COD	001	Limits and Info Known
H	2	LANDINGA.AFT	EXS	045	Natural
HA	3	PIERA.AFT	LOC	015	On Water Surface /Floating
HA	4	PIERA.AFT	LOC	030	Non-Floating
HAC	5	PIERA.AFT	USE	000	Unknown
HAC	6	PIERA.AFT	USE	119	Berthing of vessels
HAC	7	PIERA.AFT	USE	120	Recreational
HAC	8	STRUCTRA.AFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HAC	9	STRUCTRA.AFT	VRR	004	Below Surface /Submerged
HAC	10	STRUCTRA.AFT	VRR	008	Covers and Uncovers
HAC	11	PIERL.LFT	USE	000	Unknown
HAC	12	PIERL.LFT	USE	119	Berthing of vessels
HAC	13	PIERL.LFT	USE	120	Recreational
H	14	PIERL.LFT	VRR	001	Above Surface /Does Not Cover (At High Water)
H	15	PIERL.LFT	VRR	004	Below Surface /Submerged
H	16	PIERL.LFT	VRR	008	Covers and Uncovers
HACG	17	STRUCTRL.LFT	VRR	001	Above Surface /Does Not Cover (At High Water)
HACG	18	STRUCTRL.LFT	VRR	004	Below Surface /Submerged
HACG	19	STRUCTRL.LFT	VRR	008	Covers and Uncovers
H	20	LANDINGP.PFT	COD	001	Limits and Info Known
H	21	LANDINGP.PFT	COD	002	Limits and Info Unknown
H	22	LANDINGP.PFT	EXS	000	Unknown
H	23	LANDINGP.PFT	EXS	045	Natural
H	24	LANDINGP.PFT	EXS	046	Man-made

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TABLE 178. Landing area feature table.

H	{Header length and byte order};\ LANDINGA.AFT,Landing Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
H	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
H	EXS=S,1,N,Existence Category,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LANDINA1.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,LANDINA2.ATI,;;

LANDINGA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB150	Landing Place	H
COD	Certainty of Delineation	default	Limits and Info Known	<u>Applicable F_CODE</u> BB150
EXS	Existence Category	default	Natural	BB150

TABLE 179. Pier area feature table*.

HAC	{Header length and byte order};\ PIERA.AFT,Pier Area Feature Table;-;\
	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,PIERA1.ATI,;\
HA	LOC=S,1,N,Location Category,INT.VDT,-,;\
HA	NAM=T,30,N,Name,-,-,;\
HAC	USE=S,1,N,Usage,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,PIERA2.ATI,;\
	FAC_ID=I,1,N,Face Primitive Foreign Key,-,PIERA3.ATI,;;

*the thematic index on F_CODE applies to the HA libraries only

PIERA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB090	Drydock	HA
		BB190	Pier /Wharf /Quay	HAC
LOC	Location Category	-32768	Null	<u>Applicable F_CODE</u> BB190
		15	On Water Surface	BB090
		default	/Floating	
		30	Non-Floating	BB090
NAM	Name	default	Unknown	BB090, BB190
			text string (e.g., "Long Wharf")	BB090, BB190
USE	Usage	-32768	Null	BB090
		default	Unknown	BB190
		119	Berthing of Vessels	BB190

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Recreational

BB190

TABLE 180. Structure area feature table*

HAC	{Header length and byte order};\ STRUCTRA.AFT,Structure Area Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,STRUCTA1.ATI,:\
HAC	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,STRUCTA2.ATI,:\
HAC	FAC_ID=I,1,N,Face Primitive Foreign Key,-,STRUCTA3.ATI,;\

*the thematic index on F_CODE applies to the HA libraries only

STRUCTRA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB040	Breakwater /Groyne	HAC
		BB115	Gridiron	H
		BB140	Jetty	HA
		BB220	Ramp (Maritime)	H
VRR	Vertical Reference Category			<u>Applicable F_CODE</u>
		-32768	Null	BB115
	default	1	Above Surface /Does Not Cover (At High Water)	BB040, BB140, BB220
		4	Below Surface / Submerged	BB040, BB140, BB220
		8	Covers and Uncovers	BB040, BB140, BB220

TABLE 181. Pier line feature table*

HAC	{Header length and byte order};\ PIERL.LFT,Pier Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,PIERL1.LTI,:\
HAC	NAM=T,30,N,Name,-,-,:\
HAC	USE=S,1,N,Usage,INT.VDT,-,:\
HAC	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,PIERL2.LTI,:\
HAC	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,PIERL3.LTI,;\

*the thematic index on F_CODE applies to the H library only

PIERL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB190	Pier /Wharf /Quay	HAC
		BB240	Slipway /Patent Slip	H
NAM	Name			<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BB190, BB240
		text string (e.g., "Long Wharf")		BB190, BB240
USE	Usage			
		-32768	Null	BB240

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default	0	Unknown	BB190
	119	Berthing of Vessels	BB190
	120	Recreational	BB190
VRR	Vertical Reference Category		
	-32768	Null	BB190
default	1	Above Surface /Does Not Cover (At High Water)	BB240
	4	Below Surface /	BB240
	8	Submerged Covers and Uncovers	BB240

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TABLE 182. Seawall line feature table.

HACG	{Header length and byte order};\ SEAWALLL.LFT,Seawall Line Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,SEAWALL1.LTI,:\n EDG_ID=I,1,N,Edge Primitive Foreign Key,-,SEAWALL2.LTI,;;
------	---

SEAWALLL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB230 Seawall		HACG

TABLE 183. Structure line feature table.

HACG	{Header length and byte order};\ STRUCTRL.LFT,Structure Line Feature Table;-;\n ID=I,1,P,Row ID,-,-,:\n F_CODE=T,5,N,FACC Code,CHAR.VDT,STRUCTL1.LTI,:\n HACG	VRR=S,1,N,Vertical Reference Category,INT.VDT,-,:\n TILE_ID=S,1,N,Tile Reference Identifier,-,STRUCTL2.LTI,:\n EDG_ID=I,1,N,Edge Primitive Foreign Key,-,STRUCTL3.LTI,;;
------	---	--

STRUCTRL

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB040	Breakwater /Groyne	HACG
		BB140	Jetty	HACG
		BB220	Ramp (Maritime)	H
VRR	Vertical Reference Category			<u>Applicable F_CODE</u>
	default	1	Above Surface /Does Not Cover (At High Water)	BB040, BB140, BB220
		4	Below Surface / Submerged	BB040, BB140, BB220
		8	Covers and Uncovers	BB040, BB140, BB220

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TABLE 184. Berth point feature table.

H	{Header length and byte order};\ BERTHP.PFT,Berth Point Feature Table;-;\
H	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
H	BER=T,25,N,Berth Identifier,-,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-, BERTHP1.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-, BERTHP2.PTI,; ;

BERTHP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB020	Berth	H
BER	Berth Identifier			<u>Applicable F_CODE</u>
	default	"UNK"	Unknown	BB020
		text string (e.g., "Berth A")		BB020

TABLE 185. Calling In point feature table.

HAC	{Header length and byte order};\ CALLINP.PFT,Calling In Point Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,;\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
HAC	DF1=S,1,N,Direction of Traffic - 1,-,-,;\
HAC	DF2=S,1,N,Direction of Traffic - 2,-,-,;\
HAC	DF3=S,1,N,Direction of Traffic - 3,-,-,;\
HAC	DF4=S,1,N,Direction of Traffic - 4,-,-,;\
HAC	NAM=T,30,N,Name,-,-,;\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-, CALLINP1.PTI,;\
HAC	END_ID=I,1,N,Entity Node Primitive Foreign Key,-, CALLINP2.PTI,; ;

CALLINP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB050	Calling-In Point	HAC
DF1	Direction of Traffic - 1			<u>Applicable F_CODE</u>
	default	0	Unknown	BB050
		1 to 360	actual value (degrees)	BB050
DF2	Direction of Traffic - 2			
	default	0	Unknown	BB050
		1 to 360	actual value (degrees)	BB050
DF3	Direction of Traffic - 3			
	default	0	Unknown	BB050
		1 to 360	actual value (degrees)	BB050
DF4	Direction of Traffic - 4			
	default	0	Unknown	BB050
		1 to 360	actual value (degrees)	BB050

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NAM	Name			
	default	"UNK"	Unknown	BB050
		text string		BB050

TABLE 186. Landing point feature table.

H	{Header length and byte order};\ LANDINGP.PFT,Landing Point Feature Table;-;\
	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,;\
H	COD=S,1,N,Certainty of Delineation,INT.VDT,-,;\
H	EXS=S,1,N,Existence Category,INT.VDT,-,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,LANDINP1.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,LANDINP2.PTI,;;

LANDINGP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BB150	Landing Place	H
COD	Certainty of Delineation			<u>Applicable F_CODE</u>
		1	Limits and Info Known	BB150
	default	2	Limits and Info Unknown	BB150
EXS	Existence Category			
	default	0	Unknown	BB150
		45	Natural	BB150
		46	Man-made	BB150

TABLE 187. Mooring point feature table*.

HA	{Header length and byte order};\ MOORINGP.PFT,Mooring Point Feature Table;-;\
	ID=I,1,P,Row ID,-,-,;\
	F_CODE=T,5,N,FACC Code,CHAR.VDT,MOORINP1.PTI,;\
	TILE_ID=S,1,N,Tile Reference Identifier,-,MOORINP2.PTI,;\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,MOORINP3.PTI,;;

*the thematic index on F_CODE applies to the H library only

MOORINGP

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code			
		BB030	Bollard	H
		BB080	Dolphin	HA
		BB160	Mooring Ring	H

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REL

A.3.2.11 Relief coverage. This coverage contains features that directly depict land elevation information, including contours and spot elevations, of significance to marine navigation.

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REL

a. Relief coverage glossary.

LINE FEATURES

CA010 Contour Line (Land) A line connecting points having the same vertical datum value.

HQC Hypsography Portrayal Category Type of line shown.

ZV2 Highest Z-Value Elevation above a given datum to the highest portion of the feature.

POINT FEATURES

CA030 Spot Elevation A designated location with an elevation value relative to a vertical datum.

ACC Accuracy Category Accuracy of geographic position.

ELA Elevation Accuracy Indicates whether the ZV2 value is accurately known.

ZV2 Highest Z-Value Elevation above a given datum to the highest portion of the feature.

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TABLE 188. Relief character value description table.

{Header length and byte order};\					
CHAR.VDT, Relief Character Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=T,5,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	RELLINE.LFT	F_CODE	CA010	Contour Line (Land)
HACG	2	RELPOINT.PFT	F_CODE	CA030	Spot Elevation

TABLE 189. Relief integer value description table.

{Header length and byte order};\					
INT.VDT, Relief Integer Value Description Table;-;\					
ID=I,1,P,Row ID,-,-,:\					
TABLE=T,12,N,Feature Class Table Name,-,-,:\					
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\					
VALUE=S,1,N,Attribute Value,-,-,:\					
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\					
HAC	1	RELLINE.LFT	HQC	001	Index
HAC	2	RELLINE.LFT	HQC	002	Intermediate
HAC	3	RELLINE.LFT	HQC	003	Supplementary (1/2)
HAC	4	RELLINE.LFT	HQC	004	Form Lines
HAC	5	RELLINE.LFT	HQC	007	Index Approximate
HAC	6	RELLINE.LFT	HQC	012	Intermediate Approximate
HAC	7	RELLINE.LFT	HQC	013	Supplementary Approximate
HACG	8	RELPOINT.PFT	ACC	001	Accurate
HACG	9	RELPOINT.PFT	ACC	002	Approximate
HACG	10	RELPOINT.PFT	ELA	001	Accurate
HACG	11	RELPOINT.PFT	ELA	002	Approximate

TABLE 190. Relief line feature table.

HAC	{Header length and byte order};\
HAC	RELLINE.LFT,Relief Line Feature Table;-;\
HAC	ID=I,1,P,Row ID,-,-,:\
HAC	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,-,:\
HAC	HQC=S,1,N,Hypsography Portrayal Category,INT.VDT,-,-,:\
HAC	ZV2=I,1,N,Highest Z Value,-,-,:\
HAC	TILE_ID=S,1,N,Tile Reference Identifier,-,RELLINE1.LTI,;\
HAC	EDG_ID=I,1,N,Edge Primitive Foreign Key,-,RELLINE2.LTI,;\

RELLINE

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	CA010	Contour Line (Land)	HAC
HQC	Hypsography Portrayal Category			<u>Applicable F_CODE</u>
		1	Index	CA010
	default	2	Intermediate	CA010
		3	Supplementary (1 /2)	CA010
		4	Form Lines	CA010
		7	Index Approximate	CA010
		12	Intermediate Approximate	CA010

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REL

		13	Supplementary Approximate	CA010
ZV2	Highest Z-Value default	99999 -400 to 11999	Unknown actual value (meters)	CA010 CA010

TABLE 191. Relief point feature table.

HACG	{Header length and byte order};\ RELPOINT.PFT, Relief Point Feature Table;-;\
HACG	ID=I,1,P,Row ID,-,-,:\
HACG	F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
HACG	ACC=S,1,N,Accuracy Category,INT.VDT,-,:\
HACG	ELA=S,1,N,Elevation Accuracy,INT.VDT,-,:\
HACG	ZV2=I,1,N,Highest Z Value,-,-,:\
	TILE_ID=S,1,N,Tile Reference Identifier,-,RELPOIT1.PTI,:\
	END_ID=I,1,N,Entity Node Primitive Foreign Key,-,RELPOIT2.PTI,; ;

RELPOINT

<u>Column</u>	<u>Description</u>	<u>Value</u>	<u>Value Meaning</u>	<u>Applicable Libs.</u>
F_CODE	FACC Code	CA030	Spot Elevation	HACG
ACC	Accuracy Category			<u>Applicable F_CODE</u>
	default	1	Accurate	CA030
		2	Approximate	CA030
ELA	Elevation Accuracy			
	default	1	Accurate	CA030
		2	Approximate	CA030
ZV2	Highest Z-Value	-400 to 11999	actual value (meters)	CA030

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DQY

A.3.2.12 Data Quality coverage. This coverage contains information about the source data, the measured accuracy of the DNC data, and lengthy textual information found in marginal notes of the source charts.

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DQY

a. Data Quality area attribute definitions.

SOURCE_ID Chart Identifier The five digit code that uniquely identifies a DMA nautical chart.

NAME Chart Name The common textual identifier of the chart, usually consisting of a hydrographic feature reference (e.g., "Hampton Roads" or "Cape May to Cape Hatteras").

COMP_DATE First Edition Date The date of original chart compilation (chart edition 1).

EDITION Chart Edition Number The chart edition number.

PRINT_DATE Chart Edition Date The chart edition date.

SCALE Chart Scale The denominator of the chart scale expressed as a fraction.

REF_LAT Reference Latitude The latitude noted on the chart to which the chart scale is referenced.

ABS_HORIZ_ACC Absolute Horizontal Accuracy The absolute horizontal accuracy in meters.

ABS_VERT_ACC Absolute Vertical Accuracy The absolute vertical accuracy in meters.

DATUM Hydrographic Datum The chart hydrographic datum.

LINEAGE Chart Lineage Available information as to the source of the chart data, including dates, device (sounder) used and type of positioning (e.g. GPS).

SOURCE_INFO General Source Information Any pertinent information regarding the source chart not included in any other attribute.

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DQY

TABLE 192. Data Quality area feature table.

```

{Header length and byte order};\
DQYAREA.AFT, Data Quality Area Feature Table;-;\
ID=I,1,P,Row ID,-,-;\
SOURCE_ID=I,1,N,Chart Identifier,-,-;\
NAME=T,40,N,Chart Name,-,-;\
COMP_DATE=D,1,N,First Edition Date,-,-;\
EDITION=S,1,N,Chart Edition Number,-,-;\
PRINT_DATE=D,1,N,Chart Edition Date,-,-;\
SCALE=I,1,N,Chart Scale,-,-;\
REF_LAT=F,1,N,Reference Latitude,-,-;\
ABS_HORIZ_ACC=I,1,N,Absolute Horizontal Accuracy,-,-;\
ABS_VERT_ACC=I,1,N,Absolute Vertical Accuracy,-,-;\
DATUM=T,40,N,Hydrographic Datum,-,-;\
LINEAGE=T,100,N,Chart Lineage,-,-;\
SOURCE_INFO=T,100,N,General Source Information,-,-;\
TILE_ID=S,1,N,Tile Reference Identifier,-,DQYAREA1.ATI,;\
FAC_ID=I,1,N,Face Primitive Foreign Key,-,DQYAREA2.ATI,;

```

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Appendix A

TILEREF LIBREF

A.3.2.13 Tile Reference coverage. This coverage contains an area feature layer that identifies the tiles used to subdivide the library (see section 3.7.3.d).

TABLE 193. Tile Reference area feature table.

```
{Header length and byte order};\
TILEREF.AFT, Tile Reference Area Feature Table;-;\
ID=I,1,P,Row ID,-,-;\
TILE_NAME=T,8,N,Tile Name,-,-;\
FAC_ID=I,1,N,Face Primitive Foreign Key,-,-; ;
```

A.3.14 Library Reference coverage. This coverage contains a small scale depiction of the library for use in determining a reference position (see section 3.7.3.d).

TABLE 194. Library Reference line feature table.

```
{Header length and byte order};\
LIBREF.LFT, Library Reference Line Feature Table;-;\
ID=I,1,P,Row ID,-,-;\
EDG_ID=I,1,N,Edge Primitive Foreign Key,-,-; ;
```

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A.4. BROWSE DATA DICTIONARY

The data dictionary contains a description of all feature tables in a coverage for the BROWSE library. The BROWSE data dictionary presented in this section contain the name and description of each attribute, attribute values, and explanatory notes for each feature table.

A.4.1 Data dictionary organization. The coverages presented in the BROWSE library are Coastlines /Countries (COA), Library Boundaries (LIB) and Library Reference (LIBREF). A brief description is provided for each coverage. The coverage description is followed by a schema table for each feature class.

A.4.1.1 "Null" and "Unknown" attribute values. See section A.3.1.1.

A.4.2 BROWSE library coverages.

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COA

A.4.2.1 Coastlines /Countries coverage. This coverage contains coastlines, international boundaries and major ports at a global scale. The coastlines and countries in this coverage are identical to those in the Political Oceans (PO) coverage of the Digital Chart of the World (DCW) Browse library, which are derived from World Data Bank II (WDB2) data. The built-up area points are ports of size "large" from the World Port Index.

- a. Coastlines /Countries coverage glossary.

AREA FEATURES

BA040 Water (Except Inland) An area of water which normally has tidal fluctuations.

FA001 Administrative Area An area controlled by administrative authority.
NAM Name Any identifier or code.

LINE FEATURES

BA010 Coastal Shoreline The line where a land mass is in contact with a body of water.

FA000 Administrative Boundary A line of demarcation between controlled areas.

AL020 Built-Up Area An area containing a concentration of buildings and other structures.

NAM Name Any identifier or code.

TABLE 195. Coastlines /Countries character value description table

{Header Length};\ CHAR.VDT, Coastlines /Countries Character Value Description Table;-;\				
ID=P,1,P,Row ID,-,-,:\				
TABLE=T,12,N,Feature Class Table Name,-,-,:\				
ATTRIBUTE=T,10,N,Attribute Name,-,-,:\				
VALUE,T,5,N,Attribute Value,-,-,:\				
DESCRIPTION=T,50,N,Attribute Value Description,-,-,;\				
1	COAAREA.AFT	F_CODE	BA040	Water (Except Inland)
2	COAAREA.AFT	F_CODE	FA001	Administrative Area
3	COALINE.LFT	F_CODE	BA010	Coastline/Shoreline
4	COALINE.LFT	F_CODE	FA000	Administrative Boundary
5	COAPOINT.PFT	F_CODE	AL020	Built-Up Area

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COA

TABLE 196. Coastlines /Countries area feature table.

```
(Header length and byte order);\
COAAREA.AFT, Coastlines/countries Area Feature Table;-;\
ID=I,1,P,Row ID,-,-,:\
F_CODE=T,5,N,FACC Code,CHAR.VDT,COAAREA1.ATI,:\
NAM=T,30,N,Name,-,-,:\
FAC_ID=I,1,N,Face Primitive Foreign Key,-,COAAREA2.ATI,;;
```

COAAREA

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA040	Water (Except Inland)	Browse
		FA001	Administrative Area	Browse
NAM	Name	"N/A"	Null	<u>Applicable F_CODE</u> BA040
		text string (e.g., "Canada")		FA001

TABLE 197. Coastlines /Countries line feature table.

```
(Header length and byte order);\
COALINE.LFT, Coastlines/countries Line Feature Table;-;\
ID=I,1,P,Row ID,-,-,:\
F_CODE=T,5,N,FACC Code,CHAR.VDT,COALINE1.LTI,:\
EDG_ID=I,1,N,Edge Primitive Foreign Key,-,COALINE2.LTI,;;
```

COALINE

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	BA010	Coastline /Shoreline	Browse
		FA000	Administrative Boundary	Browse

TABLE 198. Coastlines /Countries point feature table.

```
(Header length and byte order);\
COAPOINT.PFT, Coastlines/countries Point Feature Table;-;\
ID=I,1,P,Row ID,-,-,:\
F_CODE=T,5,N,FACC Code,CHAR.VDT,-,:\
NAM=T,30,N,Name,-,-,:\
END_ID=I,1,N,Entity Node Primitive Foreign Key,-,COAPOIT1.PTI,;;
```

COAPOINT

Column	Description	Value	Value Meaning	Applicable Libs.
F_CODE	FACC Code	AL020	Built-Up Area	Browse
NAM	Name	text string (e.g., "New York")		<u>Applicable F_CODE</u> AL020

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LIB

A.4.2.2 Library Boundaries coverage. This coverage includes the geographical area boundaries for each library in that particular CD-ROM (varies for each CD-ROM). The CD-ROM outline will be represented as a line feature; each library extent will be shown as an area feature.

a. Library Boundaries area attribute definitions.

LIB_TYPE Library Type A single character code representing library type: "A" = APPROACH, "C" = COASTAL, "G" = GENERAL, "H" = HARBOR.

LIB_NUMBER Library Identification Number The five- or eight-character code that uniquely identifies a DNC library.

LIB_NAME Library Name The common textual identifier of the library.

NTM Notice to Mariners The Notice to Mariners number to which the source for the entire library has been updated.

NTM_DATE Notice to Mariners Date The date of the Notice to Mariners to which the source for the entire library has been updated.

b. Library Boundaries line attribute definitions.

DISC_NUMBER Disc Identification Number The two digit code that uniquely identifies a DNC CD-ROM disc. The CD-ROM boundary line defines the extent of the DNCXX database where XX represents the disc number.

TABLE 199. Library Boundaries area feature table.

```
(Header length and byte order);\
LIBAREA.AFT,Library Boundaries Area Feature Table;-;\
ID=I,1,P,Row ID,-,-,:\
LIB_TYPE=T,1,N,Library Type,-,-,:\
LIB_NUMBER=T,8,N,Library Identification Name,-,-,:\
LIB_NAME=T,40,N,Library Name,-,-,:\
NTM=T,5,N,Notice to Mariners,-,-,:\
NTM_DATE=D,1,N,Notice to Mariners Date,-,-,;
```

TABLE 200. Library Boundaries line feature table.

```
(Header length and byte order);\
LIBLINE.LFT,Library Boundaries Line Feature Table;-;\
ID=I,1,P,Row ID,-,-,:\
DISC_NUMBER=S,1,N,Disc Identification Number,-,-,:\
EDG_ID=I,1,N,Edge Primitive Foreign Key,-,-,:\
```

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LIBREF

A.4.2.3 Library Reference coverage. This coverage contains a small scale depiction of the library for use in determining a reference position (see section 3.7.3.d).

TABLE 201. Library Reference line feature table.

{Header length and byte order};\ LIBREF.LFT, Library Reference Line Feature Table;-;\ ID=I,1,P,Row ID,-,-;\ EDG_ID=I,1,N,Edge Primitive Foreign Key,-,-;;
--

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A.5. DNC TREE STRUCTURE

The following table lists the directory structure and file content of the DNC. Note that a particular geographic area included in a given library may not contain data to support all the allowable feature classes. Placeholders (XXX...) are used to represent the location-specific portion of the database, library and primitive directory names. See paragraph 3.4.5.b for the primitive directory (tile) naming conventions, paragraph 3.5.1.a for database naming conventions, and paragraph 3.5.2.a for those of the library directories. Because the BROWSE library and the TILEREF and LIBREF coverages are not tiled, their primitive files are contained in the coverage directories.

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TABLE 202. DNC directory structure and file content.

Database Directory	DNCXX/		LAT		
Library Directory	HXXXXXXXX/		CAT		
Coverage Directory	CUL/	DHT	GRT	CAT	
	FCS	PARKL1.LTI	BUILTUP1.NTI	FCS	FORESHP1.NTI
	FCA	PARKL2.LTI	BUILTUP2.NTI	FCA	FORESHP2.NTI
	FCX	PARKL3.LTI	COMMP.PFT	FCX	ISLANDP.PFT
	BUILDNGA.AFT	PARKL.NJT	COMMP1.PTI	ECRAREA.AFT	ISLANDP1.PTI
	BUILDNA1.ATI	PARKL1.NTI	COMMP2.PTI	ECRAREA1.ATI	ISLANDP2.PTI
	BUILDNA2.ATI	PARKL2.NTI	COMMP3.PTI	ECRAREA2.ATI	ISLANDP.NJT
	BUILDNGA.NJT	POWERL.LFT	COMMP.NJT	ECRAREA3.ATI	ISLANDP1.NTI
	BUILDNA1.NTI	POWERL1.LTI	COMMP1.NTI	ECRAREA.NJT	ISLANDP2.NTI
	BUILDNA2.NTI	POWERL2.LTI	COMMP2.NTI	ECRAREA1.NTI	ECRTEXT.TFT
	INDUSTA.AFT	POWERL3.LTI	INDUSTP.PFT	ECRAREA2.NTI	ECRTEXT1.TTI
	INDUSTA1.ATI	POWERL.NJT	INDUSTP1.PTI	FORESHOA.AFT	ECRTEXT2.TTI
	INDUSTA2.ATI	POWERL1.NTI	INDUSTP2.PTI	FOESHA1.ATI	ECRTEXT.NJT
	INDUSTA3.ATI	POWERL2.NTI	INDUSTP3.PTI	FOESHA2.ATI	ECRTEXT1.NTI
	INDUSTA.NJT	RAILRDL.LFT	INDUSTP.NJT	FOESHOA.NJT	ECRTEXT2.NTI
	INDUSTA1.NTI	RAILRDL1.LTI	INDUSTP1.NTI	FOESHA1.NTI	FAC.FIT
	INDUSTA2.NTI	RAILRDL2.LTI	INDUSTP2.NTI	FOESHA2.NTI	FACFIT1.FTI
	LANDMRKA.AFT	RAILRDL.NJT	LANDMRKP.PFT	ADMINL.LFT	FACFIT2.FTI
	LANDMRA1.ATI	RAILRDL1.NTI	LANDMRP1.PTI	ADMINL1.LTI	EDG.FIT
	LANDMRA2.ATI	RAILRDL2.NTI	LANDMRP2.PTI	ADMINL2.LTI	EDGFIT1.FTI
	LANDMRA3.ATI	TRANSL.LFT	LANDMRP3.PTI	ADMINL.NJT	EDGFIT2.FTI
	LANDMRKA.NJT	TRANSL1.LTI	LANDMRKP.NJT	ADMINL1.NTI	END.FIT
	LANDMRA1.NTI	TRANSL2.LTI	LANDMRP1.NTI	ADMINL2.NTI	ENDFIT1.FTI
	LANDMRA2.NTI	TRANSL3.LTI	LANDMRP2.NTI	BOUNDRYL.LFT	ENDFIT2.FTI
	PARKA.AFT	TRANSL.NJT	POWERP.PFT	BOUNDRL1.LTI	TXT.FIT
	PARKA1.ATI	TRANSL1.NTI	POWERP1.PTI	BOUNDRL2.LTI	TXTFIT1.FTI
	PARKA2.ATI	TRANSL2.NTI	POWERP2.PTI	BOUNDRL3.LTI	TXTFIT2.FTI
	PARKA3.ATI	AEROP.PFT	POWERP3.PTI	BOUNDRYL.NJT	NOTES.RAT
	PARKA.NJT	AEROP1.PTI	POWERP.NJT	BOUNDRL1.NTI	NOTES.RAX
	PARKA1.NTI	AEROP2.PTI	POWERP1.NTI	BOUNDRL2.NTI	CHAR.VDT
	PARKA2.NTI	AEROP3.PTI	POWERP2.NTI	COASTL.LFT	INT.VDT
	TRANSA.AFT	AEROP.NJT	FAC.FIT	COASTL1.LTI	
	TRANSA1.ATI	AEROP1.NTI	FACFIT1.FTI	COASTL2.LTI	
	TRANSA2.ATI	AEROP2.NTI	FACFIT2.FTI	COASTL.NJT	
	TRANSA3.ATI	BUILDNGP.PFT	EDG.FIT	COASTL1.NTI	
	TRANSA.NJT	BUILDNP1.PTI	EDGFIT1.FTI	COASTL2.NTI	
	TRANSA1.NTI	BUILDNP2.PTI	EDGFIT2.FTI	FORESHOL.LFT	
	TRANSA2.NTI	BUILDNP3.PTI	END.FIT	FORESHL1.LTI	
	FENCEL.LFT	BUILDNGP.NJT	ENDFIT1.FTI	FORESHL2.LTI	
	FENCEL1.LTI	BUILDNP1.NTI	ENDFIT2.FTI	FORESHOL.NJT	
	FENCEL2.LTI	BUILDNP2.NTI	NOTES.RAT	FORESHL1.NTI	
	FENCEL3.LTI	BUILTUPP.PFT	NOTES.RAX	FORESHL2.NTI	
	FENCEL.NJT	BUILTUP1.PTI	CHAR.VDT	FORESHOP.PFT	
	FENCEL1.NTI	BUILTUP2.PTI	INT.VDT	FORESHP1.PTI	
	FENCEL2.NTI	BUILTUPP.NJT		FORESHP2.PTI	
	PARKL.LFT			FORESHOP.NJT	
Primitive Directory	FAC			FAC	TXT
	FBR			FBR	TXX
	FSI			FSI	
XXXXXXXX/ (tile name)	RNG			RNG	
	EDG			EDG	
	EBR			EBR	
	EDX			EDX	
	ESI			ESI	
	END			END	
	NSI			NSI	
	CND			CND	

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Database Directory	DNCXX/				
		DHT	LAT		
Library Directory	HXXXXXXXXX/				
	LHT	GRT	CAT		
Coverage Directory	ENV/ FCS FCA FCX ENVAREA.AFT ENVAREA1.ATI ENVAREA2.ATI ENVAREA.NJT ENVAREA1.NTI ENVAREA2.NTI CURRDIP.PFT CURRDIP1.PTI CURRDIP2.PTI CURRDIP.NJT CURRDIP1.NTI CURRDIP2.NTI CURRFLP.PFT CURRFLP1.PTI CURRFLP2.PTI CURRFLP.NJT CURRFLP1.NTI CURRFLP2.NTI TIDEP.PFT TIDEP1.PTI TIDEP2.PTI TIDEP3.PTI TIDEP.NJT TIDEP1.NTI TIDEP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	HYD/ FCS FCA FCX HYDAREA.AFT HYDAREA1.ATI HYDAREA2.ATI HYDAREA.NJT HYDAREA1.NTI HYDAREA2.NTI HYDLINE.LFT HYDLINE1.LTI HYDLINE2.LTI HYDLINE.NJT HYDLINE1.NTI HYDLINE2.NTI BOTCHARP.PFT BOTCHAP1.PTI BOTCHAP2.PTI BOTCHARP.NJT BOTCHAP1.NTI BOTCHAP2.NTI SOUNDP.PFT SOUNDP1.PTI SOUNDP2.PTI SOUNDP.NJT SOUNDP1.NTI SOUNDP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	IWY/ FCS FCA FCX CANALA.AFT CANALA1.ATI CANALA2.ATI CANALA.NJT CANALA1.NTI CANALA2.NTI LAKEA.AFT LAKEA1.ATI LAKEA2.ATI LAKEA3.ATI LAKEA.NJT LAKEA1.NTI LAKEA2.NTI MISCIWYA.AFT MISCIWA1.ATI MISCIWA2.ATI MISCIWA3.ATI MISCIWYA.NJT MISCIWA1.NTI MISCIWA2.NTI RIVERA.AFT RIVERA1.ATI RIVERA2.ATI RIVERA.NJT RIVERA1.NTI RIVERA2.NTI AQUEDCTL.LFT AQUEDCL1.LTI AQUEDCL2.LTI AQUEDCTL.NJT AQUEDCL1.NTI AQUEDCL2.NTI BARRIERL.LFT BARRIERL1.LTI BARRIERL2.LTI BARRIERL3.LTI BARRIERL.NJT BARRIERL1.NTI BARRIERL2.NTI CANALL.LFT CANALL1.LTI CANALL2.LTI CANALL.NJT CANALL1.NTI	CANALL2.NTI DAML.LFT DAML1.LTI DAML2.LTI DAML.NJT CANALA2.ATI CANALA.NJT RIVERL.LFT RIVERL1.LTI RIVERL2.LTI RIVERL3.LTI RIVERL.NJT RIVERL1.NTI RIVERL2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	LCR/ FCS FCA FCX EMBANKA.AFT EMBANKA1.ATI EMBANKA2.ATI EMBANKA3.ATI EMBANKA.NJT EMBANKA1.NTI EMBANKA2.NTI ORCHARDA.AFT ORCHARA1.ATI ORCHARA2.ATI ORCHARA3.ATI ORCHARDA.NJT ORCHARA1.NTI ORCHARA2.NTI SNOWICEA.AFT SNOWICA1.ATI SNOWICA2.ATI SNOWICA3.ATI SNOWICEA.NJT SNOWICA1.NTI SNOWICA2.NTI TREEA.AFT TREEA1.ATI TREEA2.ATI TREEA.NJT TREEA1.NTI TREEA2.NTI VOLCANOA.AFT VOLCANOA1.ATI VOLCANOA2.ATI VOLCANOA.NJT VOLCANOA1.NTI VOLCANOA2.NTI LCRLINE.LFT LCRLINE1.LTI LCRLINE2.LTI LCRLINE.NJT LCRLINE1.NTI LCRLINE2.NTI SNOWICEP.PFT SNOWICP1.PTI SNOWICP2.PTI SNOWICEP.NJT SNOWICP1.NTI
Primitive Directory	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI END CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	
XXXXXXXXX/ (tile name)					

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Database Directory	DNCXX/		DHT	LAT	
Library Directory	HXXXXXXXX/		LHT	GRT	CAT
Coverage Directory	LCR/ (Cont.)	LIM/			NAV/
	SNOWICP2.NTI	FCS	DISTL1.NTI	SEPARTL3.JTI	FCS
	TREEP.PFT	FCA	DISTL2.NTI	SWEPTL.LFT	FCA
	TREEP1.PTI	FCX	DISTL.LJT	SWEPTL.NJT	FCX
	TREEP2.PTI	LIMBNDYA.AFT	DISTL1.JTI	SWEPTL1.NTI	SECTORA.AFT
	TREEP.NJT	LIMBNDYA.ATI	DISTL2.JTI	SWEPTL2.NTI	SECTORA1.ATI
	TREEP1.NTI	LIMBNDYA.NJT	DISTL3.JTI	SWEPTL.LJT	SECTORA2.ATI
	TREEP2.NTI	LIMBNDYA.NTI	FERRYL.LFT	SWEPTL1.JTI	SECTORA.NJT
	FAC.FIT	LIMBNDYA2.NTI	FERRYL.NJT	SWEPTL2.JTI	SECTORA1.NTI
	FACFIT1.FTI	LIMBNDYA.AJT	FERRYL1.NTI	SWEPTL3.JTI	SECTORA2.NTI
	FACFIT2.FTI	LIMBNDYA1.JTI	FERRYL2.NTI	LIMBNDYP.PFT	LEADINGL.LFT
	EDG.FIT	LIMBNDYA2.JTI	FERRYL.LJT	LIMBNDP1.PTI	LEADINL1.LTI
	EDGFIT1.FTI	LIMBNDYA3.JTI	FERRYL1.JTI	LIMBNDP2.PTI	LEADINL2.LTI
	EDGFIT2.FTI	MARITIMA.AFT	FERRYL2.JTI	LIMBNDP3.PTI	LEADINGL.NJT
	END.FIT	MARITIMA.NJT	FERRYL3.JTI	LIMBNDYP.NJT	LEADINL1.NTI
	ENDFIT1.FTI	MARITIA1.NTI	LIMBNDYL.LFT	LIMBNDP1.NTI	LEADINL2.NTI
	ENDFIT2.FTI	MARITIA2.NTI	LIMBNDL1.LTI	LIMBNDP2.NTI	LIGHTSL.LFT
	NOTES.RAT	MARITIMA.AJT	LIMBNDYL.NJT	MARITIMP.PFT	LIGHTSL1.LTI
	NOTES.RAX	MARITIA1.JTI	LIMBNDL1.NTI	MARITIP1.PTI	LIGHTSL2.LTI
	CHAR.VDT	MARITIA2.JTI	LIMBNDL2.NTI	MARITIP2.PTI	LIGHTSL.NJT
	INT.VDT	MARITIA3.JTI	LIMBNDYL.LJT	MARITIMP.NJT	LIGHTSL1.NTI
		ROUTEA.AFT	LIMBNDL1.JTI	MARITIP1.NTI	LIGHTSL2.NTI
		ROUTEA.NJT	LIMBNDL2.JTI	MARITIP2.NTI	BUOYBCNP.PFT
		ROUTEA1.NTI	LIMBNDL3.JTI	ROUTE.PFT	BUOYBCP1.PTI
		ROUTEA2.NTI	MARITIML.LFT	ROUTE.PTI	BUOYBCP2.PTI
		ROUTEA.AJT	MARITIML.NJT	ROUTE.PTI	BUOYBCP3.PTI
		ROUTEA1.JTI	MARITIL1.NTI	ROUTE.NJT	BUOYBCNP.NJT
		ROUTEA2.JTI	MARITIL2.NTI	ROUTE.PTI	BUOYBCP1.NTI
		ROUTEA3.JTI	MARITIML.LJT	ROUTE.PTI	BUOYBCP2.NTI
		SEPARTNA.AFT	MARITIL1.JTI	SEPARTNP.PFT	LIGHTSP.PFT
		SEPARTA1.ATI	MARITIL2.JTI	SEPARTP1.PTI	LIGHTSP1.PTI
		SEPARTNA.NJT	MARITIL3.JTI	SEPARTP2.PTI	LIGHTSP2.PTI
		SEPARTA1.NTI	ROUTE.LFT	SEPARTNP.NJT	LIGHTSP.NJT
		SEPARTA2.NTI	ROUTE.NJT	SEPARTP1.NTI	LIGHTSP1.NTI
		SEPARTNA.AJT	ROUTE1.NTI	SEPARTP2.NTI	LIGHTSP2.NTI
		SEPARTA1.JTI	ROUTE2.NTI	FAC.FIT	MARKERP.PFT
		SEPARTA2.JTI	ROUTE.LJT	FACFIT1.FTI	MARKERP1.PTI
		SEPARTA3.JTI	ROUTE1.JTI	FACFIT2.FTI	MARKERP2.PTI
		SWEPTA.AFT	ROUTE2.JTI	EDG.FIT	MARKERP3.PTI
		SWEPTA.NJT	ROUTE3.JTI	EDGFIT1.FTI	MARKERP.NJT
		SWEPTA1.NTI	SEPARTNL.LFT	EDGFIT2.FTI	MARKERP1.NTI
		SWEPTA2.NTI	SEPARTL1.LTI	END.FIT	MARKERP2.NTI
		SWEPTA.AJT	SEPARTNL.NJT	ENDFIT1.FTI	FAC.FIT
		SWEPTA1.JTI	SEPARTL1.NTI	ENDFIT2.FTI	FACFIT1.FTI
		SWEPTA2.JTI	SEPARTL2.NTI	NOTES.RAT	FACFIT2.FTI
		SWEPTA3.JTI	SEPARTNL.LJT	NOTES.RAX	EDG.FIT
		DISTL.LFT	SEPARTL1.JTI	CHAR.VDT	EDGFIT1.FTI
		DISTL1.LTI	SEPARTL2.JTI	INT.VDT	EDGFIT2.FTI
		DISTL.NJT			END.FIT
Primitive Directory		FAC			FAC
		FBR			FBR
		FSI			FSI
XXXXXXXX/ (tile name)		RNG			RNG
		EDG			EDG
		EBR			EBR
		EDX			EDX
		ESI			ESI
		END			END
		NSI			NSI
		CND			CND

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Appendix A

Database Directory	DNCXX/			
		DHT	LAT	
Library Directory	HXXXXXXXXX/			
		LHT	GRT	CAT
Coverage Directory	NAV/ (Cont.)	OBS/		POR/
	ENDFIT1.FTI	FCS	REEFA.AFT	DANGERP3.PTI
	ENDFIT2.FTI	FCA	REEFA1.ATI	DANGERP.NJT
	NOTES.RAT	FCX	REEFA2.ATI	DANGERP1.NTI
	NOTES.RAX	BRIDGEA.AFT	REEFA.NJT	DANGERP2.NTI
	CHAR.VDT	BRIDGEA1.ATI	REEFA1.NTI	HAZARDP.PFT
	INT.VDT	BRIDGEA2.ATI	REEFA2.NTI	HAZARDP1.PTI
		BRIDGEA.NJT	RUINSA.AFT	HAZARDP2.PTI
		BRIDGEA1.NTI	RUINSA1.ATI	HAZARDP3.PTI
		BRIDGEA2.NTI	RUINSA2.ATI	HAZARDP.NJT
		BRIDGSPA.AFT	RUINSA.NJT	HAZARDP1.NTI
		BRIDGSA1.ATI	RUINSA1.NTI	HAZARDP2.NTI
		BRIDGSA2.ATI	RUINSA2.NTI	LOADINGP.PFT
		BRIDGSPA.NJT	BRIDGEL.LFT	LOADINP1.PTI
		BRIDGSA1.NTI	BRIDGEL1.LTI	LOADINP2.PTI
		BRIDGSA2.NTI	BRIDGEL2.LTI	LOADINP3.PTI
		DANGERA.AFT	BRIDGEL.NJT	LOADINGP.NJT
		DANGERA1.ATI	BRIDGEL1.NTI	LOADINP1.NTI
		DANGERA2.ATI	BRIDGEL2.NTI	LOADINP2.NTI
		DANGERA3.ATI	BRIDGSP.LFT	OBSTRUCP.PFT
		DANGERA.NJT	BRIDGSL1.LTI	OBSTRUP1.PTI
		DANGERA1.NTI	BRIDGSL2.LTI	OBSTRUP2.PTI
		DANGERA2.NTI	BRIDGSP.NJT	OBSTRUP3.PTI
		FISHHATA.AFT	BRIDGSL1.NTI	OBSTRUCP.NJT
		FISHHAA1.ATI	BRIDGSL2.NTI	OBSTRUP1.NTI
		FISHHAA2.ATI	HAZARDL.LFT	OBSTRUP2.NTI
		FISHHATA.NJT	HAZARDL1.LTI	RUINSP.PFT
		FISHHAA1.NTI	HAZARDL2.LTI	RUINSP1.PTI
		FISHHAA2.NTI	HAZARDL3.LTI	RUINSP2.PTI
		HAZARDA.AFT	HAZARDL.NJT	RUINSP.NJT
		HAZARDA1.ATI	HAZARDL1.NTI	RUINSP1.NTI
		HAZARDA2.ATI	HAZARDL2.NTI	RUINSP2.NTI
		HAZARDA3.ATI	PIPELINL.LFT	FAC.FIT
		HAZARDA.NJT	PIPELIL1.LTI	FACFIT1.FTI
		HAZARDA1.NTI	PIPELIL2.LTI	FACFIT2.FTI
		HAZARDA2.NTI	PIPELINL.NJT	EDG.FIT
		LOADINGA.AFT	PIPELIL1.NTI	EDGFIT1.FTI
		LOADINA1.ATI	PIPELIL2.NTI	EDGFIT2.FTI
		LOADINA2.ATI	TUNNELL.LFT	END.FIT
		LOADINGA.NJT	TUNNELL1.LTI	ENDFIT1.FTI
		LOADINA1.NTI	TUNNELL2.LTI	ENDFIT2.FTI
		LOADINA2.NTI	TUNNELL3.LTI	NOTES.RAT
		OBSTRUCA.AFT	TUNNELL.NJT	NOTES.RAX
		OBSTRUA1.ATI	TUNNELL1.NTI	CHAR.VDT
		OBSTRUA2.ATI	TUNNELL2.NTI	INT.VDT
		OBSTRUA3.ATI	DANGERP.PFT	
		OBSTRUCA.NJT	DANGERP1.PTI	
		OBSTRUA1.NTI	DANGERP2.PTI	
		OBSTRUA2.NTI		
				FCS
				FCA
				FCX
				LANDINGA.AFT
				LANDINA1.ATI
				LANDINA2.ATI
				LANDINGA.NJT
				LANDINA1.NTI
				LANDINA2.NTI
				PIERA.AFT
				PIERA1.ATI
				PIERA2.ATI
				PIERA3.ATI
				PIERA.NJT
				PIERA1.NTI
				PIERA2.NTI
				STRUCTRA.AFT
				STRUCTA1.ATI
				STRUCTA2.ATI
				STRUCTA3.ATI
				STRUCTRA.NJT
				STRUCTA1.NTI
				STRUCTA2.NTI
				PIERL.LFT
				PIERL1.LTI
				PIERL2.LTI
				PIERL3.LTI
				PIERL.NJT
				PIERL1.NTI
				PIERL2.NTI
				SEAWALL.LFT
				SEAWALL1.LTI
				SEAWALL2.LTI
				SEAWALL.NJT
				SEAWALL1.NTI
				SEAWALL2.NTI
				STRUCTRL.LFT
				STRUCTL1.LTI
				STRUCTL2.LTI
				STRUCTL3.LTI
				STRUCTRL.NJT
				STRUCTL1.NTI
				STRUCTL2.NTI
				BERTHP.PFT
				BERTHP1.PTI
				BERTHP2.PTI
				BERTHP.NJT
				BERTHP1.NTI
Primitive Directory		FAC		FAC
		FBR		FBR
		FSI		FSI
		RNG		RNG
		EDG		EDG
		EBR		EBR
		EDX		EDX
		ESI		ESI
		END		END
		NSI		NSI
		CND		CND
	XXXXXXXXX/ (tile name)			

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Database Directory	DNCXX/				
		DHT	LAT		
Library Directory	HXXXXXXXXX/				
		LHT	GRT	CAT	
Coverage Directory	POR/ (Cont.)	REL/	DQY/	TILEREF/	LIBREF/
	BERTHP2.NTI	FCS	FCS	FCS	FCS
	CALLINP.PFT	FCA	FCA	TILEREF.AFT	LIBREF.LFT
	CALLINP1.PTI	FCX	FCX	FAC	EDG
	CALLINP2.PTI	RELLINE.LFT	DQYAREA.AFT	FBR	EBR
	CALLINP.NJT	RELLINE1.LTI	DQYAREA1.ATI	FSI	EDX
	CALLINP1.NTI	RELLINE2.LTI	DQYAREA2.ATI	RNG	ESI
	CALLINP2.NTI	RELLINE.NJT	DQYAREA.NJT	EDG	CND
	LANDINGP.PFT	RELLINE1.NTI	DQYAREA1.NTI	EBR	
	LANDINP1.PTI	RELLINE2.NTI	DQYAREA2.NTI	EDX	
	LANDINP2.PTI	RELPOINT.PFT	FAC.FIT	ESI	
	LANDINGP.NJT	RELPOINT1.PTI	FACFIT1.FTI	CND	
	LANDINP1.NTI	RELPOINT2.PTI	FACFIT2.FTI		
	LANDINP2.NTI	RELPOINT.NJT	NOTES.RAT		
	MOORINGP.PFT	RELPOINT1.NTI	NOTES.RAX		
	MOORINP1.PTI	RELPOINT2.NTI			
	MOORINP2.PTI	EDG.FIT			
	MOORINP3.PTI	EDGFIT1.FTI			
	MOORINGP.NJT	EDGFIT2.FTI			
	MOORINP1.NTI	END.FIT			
	MOORINP2.NTI	ENDFIT1.FTI			
	FAC.FIT	ENDFIT2.FTI			
	FACFIT1.FTI	NOTES.RAT			
	FACFIT2.FTI	NOTES.RAX			
	EDG.FIT	CHAR.VDT			
	EDGFIT1.FTI	INT.VDT			
	EDGFIT2.FTI				
	END.FIT				
	ENDFIT1.FTI				
	ENDFIT2.FTI				
	NOTES.RAT				
	NOTES.RAX				
	CHAR.VDT				
	INT.VDT				
Primitive Directory		EDG	FAC		
		EBR	FBR		
		EDX	FSI		
XXXXXXXXX/ (tile name)		ESI	RNG		
		END	EDG		
		NSI	EBR		
		CND	EDX		
			ESI		
			CND		

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Database Directory	DNCXX/		LAT	
	DHT			
Library Directory	AXXXXXXX/			
Coverage Directory	LHT	GRT	CAT	
	CUL/		ECR/	
	FCS	TRANSL1.NTI	FCS	ISLANDP1.PTI
	FCA	TRANSL2.NTI	FCA	ISLANDP2.PTI
	FCX	AEROP.PFT	FCX	ISLANDP.NJT
	BUILDNGA.AFT	AEROP1.PTI	ECRAREA.AFT	ISLANDP1.NTI
	BUILDNA1.ATI	AEROP2.PTI	ECRAREA1.ATI	ISLANDP2.NTI
	BUILDNA2.ATI	AEROP3.PTI	ECRAREA2.ATI	ECRTEXT.TFT
	BUILDNGA.NJT	AEROP.NJT	ECRAREA3.ATI	ECRTEXT1.TTI
	BUILDNA1.NTI	AEROP1.NTI	ECRAREA.NJT	ECRTEXT2.TTI
	BUILDNA2.NTI	AEROP2.NTI	ECRAREA1.NTI	ECRTEXT.NJT
	INDUSTA.AFT	BUILDNGP.PFT	ECRAREA2.NTI	ECRTEXT1.NTI
	INDUSTA1.ATI	BUILDNP1.PTI	FORESHOA.AFT	ECRTEXT2.NTI
	INDUSTA2.ATI	BUILDNP2.PTI	FOESHA1.ATI	FAC.FIT
	INDUSTA3.ATI	BUILDNP3.PTI	FOESHA2.ATI	FACFIT1.FTI
	INDUSTA.NJT	BUILDNGP.NJT	FOESHOA.NJT	FACFIT2.FTI
	INDUSTA1.NTI	BUILDNP1.NTI	FOESHA1.NTI	EDG.FIT
	INDUSTA2.NTI	BUILDNP2.NTI	FOESHA2.NTI	EDGFIT1.FTI
	LANDMRKA.AFT	BUILTUPP.PFT	ADMINL.LFT	EDGFIT2.FTI
	LANDMRA1.ATI	BUILTUP1.PTI	ADMINL1.LTI	END.FIT
	LANDMRA2.ATI	BUILTUP2.PTI	ADMINL2.LTI	ENDFIT1.FTI
	LANDMRA3.ATI	BUILTUPP.NJT	ADMINL.NJT	ENDFIT2.FTI
	LANDMRKA.NJT	BUILTUP1.NTI	ADMINL1.NTI	TXT.FIT
	LANDMRA1.NTI	BUILTUP2.NTI	ADMINL2.NTI	TXTFIT1.FTI
	LANDMRA2.NTI	COMP.PFT	BOUNDRL.LFT	TXTFIT2.FTI
	TRANSA.AFT	COMMP1.PTI	BOUNDRL1.LTI	NOTES.RAT
	TRANSA1.ATI	COMMP2.PTI	BOUNDRL2.LTI	NOTES.RAX
	TRANSA2.ATI	COMMP3.PTI	BOUNDRL3.LTI	CHAR.VDT
	TRANSA3.ATI	COMMP.NJT	BOUNDRYL.NJT	INT.VDT
	TRANSA.NJT	COMMP1.NTI	BOUNDRL1.NTI	
	TRANSA1.NTI	COMMP2.NTI	BOUNDRL2.NTI	
	TRANSA2.NTI	INDUSTP.PFT	COASTL.LFT	
	POWERL.LFT	INDUSTP1.PTI	COASTL1.LTI	
	POWERL1.LTI	INDUSTP2.PTI	COASTL2.LTI	
	POWERL2.LTI	INDUSTP3.PTI	COASTL.NJT	
	POWERL3.LTI	INDUSTP.NJT	COASTL1.NTI	
	POWERL.NJT	INDUSTP1.NTI	COASTL2.NTI	
	POWERL1.NTI	INDUSTP2.NTI	FORESHOL.LFT	
	POWERL2.NTI	LANDMRKP.PFT	FORESHL1.LTI	
	RAILRDL.LFT	LANDMRP1.PTI	FORESHL2.LTI	
	RAILRDL1.LTI	LANDMRP2.PTI	FORESHOL.NJT	
	RAILRDL2.LTI	LANDMRP3.PTI	FORESHL1.NTI	
	RAILRDL.NJT	LANDMRKP.NJT	FORESHL2.NTI	
	RAILRDL1.NTI	LANDMRP1.NTI	FORESHOP.PFT	
	RAILRDL2.NTI	LANDMRP2.NTI	FORESHP1.PTI	
	TRANSL.LFT	FAC.FIT	FORESHP2.PTI	
	TRANSL1.LTI	FACFIT1.FTI	FORESHOP.NJT	
	TRANSL2.LTI	FACFIT2.FTI	FORESHP1.NTI	
	TRANSL3.LTI	EDG.FIT	FORESHP2.NTI	
	TRANSL.NJT		ISLANDP.PFT	
Primitive Directory	FAC		FAC	TXT
	FBR		FBR	TXX
	FSI		FSI	
XXXXXXX/ (tile name)	RNG		RNG	
	EDG		EDG	
	EBR		EBR	
	EDX		EDX	
	ESI		ESI	
	END		END	
	NSI		NSI	
	CND		CND	

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Appendix A

Database Directory	DNCXX/		DHT	LAT		
Library Directory	AXXXXXXX/					
Coverage Directory	LCR/	LIM/	LHT	GRT	CAT	
	(Cont.)	FCS		DISTL1.NTI	SEPARTL3.JTI	NAV/ FCS
	TREEP.PFT	FCA		DISTL2.NTI	SWEPTL.LFT	FCA
	TREEP1.PTI	FCX		DISTL.LJT	SWEPTL.NJT	FCX
	TREEP2.PTI	LIMBNDYA.AFT		DISTL1.JTI	SWEPTL1.NTI	SECTORA.AFT
	TREEP.NJT	LIMBNDYA1.ATI		DISTL2.JTI	SWEPTL2.NTI	SECTORA1.ATI
	TREEP1.NTI	LIMBNDYA.NJT		DISTL3.JTI	SWEPTL.LJT	SECTORA2.ATI
	TREEP2.NTI	LIMBNDYA1.NTI		FERRYL.LFT	SWEPTL1.JTI	SECTORA.NJT
	FAC.FIT	LIMBNDYA2.NTI		FERRYL.NJT	SWEPTL2.JTI	SECTORA1.NTI
	FACFIT1.FTI	LIMBNDYA.AJT		FERRYL1.NTI	SWEPTL3.JTI	SECTORA2.NTI
	FACFIT2.FTI	LIMBNDYA1.JTI		FERRYL2.NTI	LIMBNDYP.PFT	LEADINL.LFT
	EDG.FIT	LIMBNDYA2.JTI		FERRYL.LJT	LIMBNDP1.PTI	LEADINL1.LTI
	EDGFIT1.FTI	LIMBNDYA3.JTI		FERRYL1.JTI	LIMBNDP2.PTI	LEADINL2.LTI
	EDGFIT2.FTI	MARITIMA.AFT		FERRYL2.JTI	LIMBNDP3.PTI	LEADINL.NJT
	END.FIT	MARITIMA.NJT		FERRYL3.JTI	LIMBNDYP.NJT	LEADINL1.NTI
	ENDFIT1.FTI	MARITIA1.NTI		LIMBNDYL.LFT	LIMBNDP1.NTI	LEADINL2.NTI
	ENDFIT2.FTI	MARITIA2.NTI		LIMBNDL1.LTI	LIMBNDP2.NTI	BUOYBCNP.PFT
	NOTES.RAT	MARITIA.AJT		LIMBNDYL.NJT	MARITIMP.PFT	BUOYBCP1.PTI
	NOTES.RAX	MARITIA1.JTI		LIMBNDL1.NTI	MARITIP1.PTI	BUOYBCP2.PTI
	CHAR.VDT	MARITIA2.JTI		LIMBNDL2.NTI	MARITIP2.PTI	BUOYBCP3.PTI
	INT.VDT	MARITIA3.JTI		LIMBNDYL.LJT	MARITIMP.NJT	BUOYBCNP.NJT
		ROUTEA.AFT		LIMBNDL1.JTI	MARITIP1.NTI	BUOYBCP1.NTI
		ROUTEA.NJT		LIMBNDL2.JTI	MARITIP2.NTI	BUOYBCP2.NTI
		ROUTEA1.NTI		LIMBNDL3.JTI	ROUTE.PFT	LIGHTSP.PFT
		ROUTEA2.NTI		MARITIML.LFT	ROUTE.PTI	LIGHTSP1.PTI
		ROUTEA.AJT		MARITIML.NJT	ROUTE.PTI	LIGHTSP2.PTI
		ROUTEA1.JTI		MARITIL1.NTI	ROUTE.NJT	LIGHTSP.NJT
		ROUTEA2.JTI		MARITIL2.NTI	ROUTE1.NTI	LIGHTSP1.NTI
		ROUTEA3.JTI		MARITIML.LJT	ROUTE2.NTI	LIGHTSP2.NTI
		SEPARTNA.AFT		MARITIL1.JTI	SEPARTNP.PFT	MARKERP.PFT
		SEPARTA1.ATI		MARITIL2.JTI	SEPARTP1.PTI	MARKERP1.PTI
		SEPARTNA.NJT		MARITIL3.JTI	SEPARTP2.PTI	MARKERP2.PTI
		SEPARTA1.NTI		ROUTE.LFT	SEPARTNP.NJT	MARKERP.NJT
		SEPARTA2.NTI		ROUTE.NJT	SEPARTP1.NTI	MARKERP1.NTI
		SEPARTNA.AJT		ROUTE1.NTI	SEPARTP2.NTI	MARKERP2.NTI
		SEPARTA1.JTI		ROUTE2.NTI	FAC.FIT	FAC.FIT
		SEPARTA2.JTI		ROUTE.LJT	FACFIT1.FTI	FACFIT1.FTI
		SEPARTA3.JTI		ROUTE1.JTI	FACFIT2.FTI	FACFIT2.FTI
		SWEPTA.AFT		ROUTE2.JTI	EDG.FIT	EDG.FIT
		SWEPTA.NJT		ROUTE3.JTI	EDGFIT1.FTI	EDGFIT1.FTI
		SWEPTA1.NTI		SEPARTNL.LFT	EDGFIT2.FTI	EDGFIT2.FTI
		SWEPTA2.NTI		SEPARTL1.LTI	END.FIT	END.FIT
		SWEPTA.AJT		SEPARTNL.NJT	ENDFIT1.FTI	ENDFIT1.FTI
		SWEPTA1.JTI		SEPARTL1.NTI	ENDFIT2.FTI	ENDFIT2.FTI
		SWEPTA2.JTI		SEPARTL2.NTI	NOTES.RAT	NOTES.RAT
		SWEPTA3.JTI		SEPARTNL.LJT	NOTES.RAX	NOTES.RAX
		DISTL.LFT		SEPARTL1.JTI	CHAR.VDT	CHAR.VDT
		DISTL1.LTI		SEPARTL2.JTI	INT.VDT	INT.VDT
		DISTL.NJT				
Primitive Directory		FAC				FAC
		FBR				FBR
		FSI				FSI
XXXXXXX/ (tile name)		RNG				RNG
		EDG				EDG
		EBR				EBR
		EDX				EDX
		ESI				ESI
		END				END
		NSI				NSI
		CND				CND

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Appendix A

Database Directory	DNCXX/		LAT		
	DHT				
Library Directory	AXXXXXXX/				
Coverage Directory	LHT	GRT	CAT		
	OBS/			POR/	
	FCS	BRIDGSPL.LFT	OBSTRUCP.PFT	FCS	FAC.FIT
	FCA	BRIDGSL1.LTI	OBSTRUP1.PTI	FCA	FACFIT1.FTI
	FCX	BRIDGSL2.LTI	OBSTRUP2.PTI	FCX	FACFIT2.FTI
	DANGERA.AFT	BRIDGSPL.NJT	OBSTRUP3.PTI	PIERA.AFT	EDG.FIT
	DANGERA1.ATI	BRIDGSL1.NTI	OBSTRUCP.NJT	PIERA1.ATI	EDGFIT1.FTI
	DANGERA2.ATI	BRIDGSL2.NTI	OBSTRUP1.NTI	PIERA2.ATI	EDGFIT2.FTI
	DANGERA3.ATI	HAZARDL.LFT	OBSTRUP2.NTI	PIERA3.ATI	END.FIT
	DANGERA.NJT	HAZARDL1.LTI	RUINSP.PFT	PIERA.NJT	ENDFIT1.FTI
	HAZARDA1.NTI	HAZARDL2.LTI	RUINSP1.PTI	PIERA1.NTI	ENDFIT2.FTI
	DANGERA2.NTI	HAZARDL3.LTI	RUINSP2.PTI	PIERA2.NTI	NOTES.RAT
	HAZARDA.AFT	HAZARDL.NJT	RUINSP.NJT	STRUCTRA.AFT	NOTES.RAX
	HAZARDA1.ATI	HAZARDL1.NTI	RUINSP1.NTI	STRUCTA1.ATI	CHAR.VDT
	HAZARDA2.ATI	HAZARDL2.NTI	RUINSP2.NTI	STRUCTA2.ATI	INT.VDT
	HAZARDA3.ATI	PIPELINL.LFT	FAC.FIT	STRUCTA3.ATI	
	HAZARDA.NJT	PIPELIL1.LTI	FACFIT1.FTI	STRUCTRA.NJT	
	HAZARDA1.NTI	PIPELIL2.LTI	FACFIT2.FTI	STRUCTA1.NTI	
	HAZARDA2.NTI	PIPELINL.NJT	EDG.FIT	STRUCTA2.NTI	
	LOADINGA.AFT	PIPELIL1.NTI	EDGFIT1.FTI	PIERL.LFT	
	LOADINA1.ATI	PIPELIL2.NTI	EDGFIT2.FTI	PIERL1.LTI	
	LOADINA2.ATI	TUNNELL.LFT	END.FIT	PIERL2.LTI	
	LOADINGA.NJT	TUNNELL1.LTI	ENDFIT1.FTI	PIERL.NJT	
	LOADINA1.NTI	TUNNELL2.LTI	ENDFIT2.FTI	PIERL1.NTI	
	LOADINA2.NTI	TUNNELL3.LTI	NOTES.RAT	PIERL2.NTI	
	OBSTRUCA.AFT	TUNNELL.NJT	NOTES.RAX	SEAWALLL.LFT	
	OBSTRUA1.ATI	TUNNELL1.NTI	CHAR.VDT	SEAWALL1.LTI	
	OBSTRUA2.ATI	TUNNELL2.NTI	INT.VDT	SEAWALL2.LTI	
	OBSTRUA3.ATI	DANGERP.PFT		SEAWALLL.NJT	
	OBSTRUCA.NJT	DANGERP1.PTI		SEAWALL1.NTI	
	OBSTRUA1.NTI	DANGERP2.PTI		SEAWALL2.NTI	
	OBSTRUA2.NTI	DANGERP3.PTI		STRUCTRL.LFT	
	REEFA.AFT	DANGERP.NJT		STRUCTL1.LTI	
	REEFA1.ATI	DANGERP1.NTI		STRUCTL2.LTI	
	REEFA2.ATI	DANGERP2.NTI		STRUCTL3.LTI	
	REEFA.NJT	HAZARDP.PFT		STRUCTRL.NJT	
	REEFA1.NTI	HAZARDP1.PTI		STRUCTL1.NTI	
	REEFA2.NTI	HAZARDP2.PTI		STRUCTL2.NTI	
	RUINSA.AFT	HAZARDP3.PTI		CALLINP.PFT	
	RUINSA1.ATI	HAZARDP.NJT		CALLINP1.PTI	
	RUINSA2.ATI	HAZARDP1.NTI		CALLINP2.PTI	
	RUINSA.NJT	HAZARDP2.NTI		CALLINP.NJT	
	RUINSA1.NTI	LOADINGP.PFT		CALLINP1.NTI	
	RUINSA2.NTI	LOADINP1.PTI		CALLINP2.NTI	
	BRIDGEL.LFT	LOADINP2.PTI		MOORINGP.PFT	
	BRIDGEL1.LTI	LOADINP3.PTI		MOORINP1.PTI	
	BRIDGEL2.LTI	LOADINGP.NJT		MOORINP2.PTI	
	BRIDGEL.NJT	LOADINP1.NTI		MOORINGP.NJT	
	BRIDGEL1.NTI	LOADINP2.NTI		MOORINP1.NTI	
	BRIDGEL2.NTI			MOORINP2.NTI	
Primitive Directory	FAC			FAC	
	FBR			FBR	
	FSI			FSI	
XXXXXXX/ (tile name)	RNG			RNG	
	EDG			EDG	
	EBR			EBR	
	EDX			EDX	
	ESI			ESI	
	END			END	
	NSI			NSI	
	CND			CND	

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Appendix A

Database Directory	DNCXX/			
Library Directory	DHT		LAT	
Library Directory	AXXXXXXX/			
Library Directory	LHT	GRT	CAT	
Coverage Directory	REL/ FCS FCA FCX RELLINE.LFT RELLINE1.LTI RELLINE2.LTI RELLINE.NJT RELLINE1.NTI RELLINE2.NTI RELPOINT.PFT RELPOINT1.PTI RELPOINT2.PTI RELPOINT.NJT RELPOINT1.NTI RELPOINT2.NTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	DQY/ FCS FCA FCX DQYAREA.AFT DQYAREA1.ATI DQYAREA2.ATI DQYAREA.NJT DQYAREA1.NTI DQYAREA2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI NOTES.RAT NOTES.RAX	TILEREF/ FCS TILEREF.AFT FAC FBR FSI RNG EDG EBR EDX ESI CND	LIBREF/ FCS LIBREF.LFT EDG EBR EDX ESI CND
Primitive Directory XXXXXXX/ (tile name)	EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI CND		

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Appendix A

Database Directory	DNCXX/		LAT	
	DHT			
Library Directory	COAXX/			
	LHT	GRT	CAT	
Coverage Directory	CUL/			ECR/
	FCS	TRANSL1.NTI	EDGFIT2.FTI	FCS
	FCA	TRANSL2.NTI	END.FIT	FCA
	FCX	AEROP.PFT	ENDFIT1.FTI	FCX
	BUILDNGA.AFT	AEROP1.PTI	ENDFIT2.FTI	ECRAREA.AFT
	BUILDNA1.ATI	AEROP2.PTI	NOTES.RAT	ECRAREA1.ATI
	BUILDNA2.ATI	AEROP3.PTI	NOTES.RAX	ECRAREA2.ATI
	BUILDNGA.NJT	AEROP.NJT	CHAR.VDT	ECRAREA3.ATI
	BUILDNA1.NTI	AEROP1.NTI	INT.VDT	ECRAREA.NJT
	BUILDNA2.NTI	AEROP2.NTI		ECRAREA1.NTI
	INDUSTA.AFT	BUILDNGP.PFT		ECRAREA2.NTI
	INDUSTA1.ATI	BUILDNP1.PTI		FORESHOA.AFT
	INDUSTA2.ATI	BUILDNP2.PTI		FOESHA1.ATI
	INDUSTA3.ATI	BUILDNP3.PTI		FOESHA2.ATI
	INDUSTA.NJT	BUILDNGP.NJT		FOESHOA.NJT
	INDUSTA1.NTI	BUILDNP1.NTI		FOESHA1.NTI
	INDUSTA2.NTI	BUILDNP2.NTI		FOESHA2.NTI
	LANDMRKA.AFT	BUILTUPP.PFT		ADMINL.LFT
	LANDMRA1.ATI	BUILTUP1.PTI		ADMINL1.LTI
	LANDMRA2.ATI	BUILTUP2.PTI		ADMINL2.LTI
	LANDMRA3.ATI	BUILTUPP.NJT		ADMINL.NJT
	LANDMRKA.NJT	BUILTUP1.NTI		ADMINL1.NTI
	LANDMRA1.NTI	BUILTUP2.NTI		ADMINL2.NTI
	LANDMRA2.NTI	COMP.PFT		BOUNDRYL.LFT
	TRANSA.AFT	COMP1.PTI		BOUNDRL1.LTI
	TRANSA1.ATI	COMP2.PTI		BOUNDRL2.LTI
	TRANSA2.ATI	COMP.NJT		BOUNDRL3.LTI
	TRANSA3.ATI	COMP1.NTI		BOUNDRYL.NJT
	TRANSA.NJT	COMP2.NTI		BOUNDRL1.NTI
	TRANSA1.NTI	INDUSTP.PFT		BOUNDRL2.NTI
	TRANSA2.NTI	INDUSTP1.PTI		COASTL.LFT
	POWERL.LFT	INDUSTP2.PTI		COASTL1.LTI
	POWERL1.LTI	INDUSTP3.PTI		COASTL2.LTI
	POWERL2.LTI	INDUSTP.NJT		COASTL.NJT
	POWERL3.LTI	INDUSTP1.NTI		COASTL1.NTI
	POWERL.NJT	INDUSTP2.NTI		COASTL2.NTI
	POWERL1.NTI	LANDMRKP.PFT		FORESHOL.LFT
	POWERL2.NTI	LANDMRP1.PTI		FORESHL1.LTI
	RAILRDL.LFT	LANDMRP2.PTI		FORESHL2.LTI
	RAILRDL1.LTI	LANDMRP3.PTI		FORESHOL.NJT
	RAILRDL2.LTI	LANDMRKP.NJT		FORESHL1.NTI
	RAILRDL.NJT	LANDMRP1.NTI		FORESHL2.NTI
	RAILRDL1.NTI	LANDMRP2.NTI		FORESHOP.PFT
	RAILRDL2.NTI	FAC.FIT		FORESHP1.PTI
	TRANSL.LFT	FACFIT1.FTI		FORESHP2.PTI
	TRANSL1.LTI	FACFIT2.FTI		FORESHOP.NJT
	TRANSL2.LTI	EDG.FIT		FORESHP1.NTI
TRANSL3.LTI	EDGFIT1.FTI		FORESHP2.NTI	
TRANSL.NJT			ISLANDP.PFT	
Primitive Directory	FAC		FAC	TXT
	FBR		FBR	TXX
	FSI		FSI	
	RNG		RNG	
	EDG		EDG	
	EBR		EBR	
	EDX		EDX	
	ESI		ESI	
	END		END	
	NSI		NSI	
	CND		CND	
XXXX/ (tile name)				

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Database Directory	DNCXX/				
	DHT		LAT		
Library Directory	COAXX/				
	LHT		GRT	CAT	
Coverage Directory	ENV/ FCS FCA FCX ENVAREA.AFT ENVAREA1.ATI ENVAREA2.ATI ENVAREA.NJT ENVAREA1.NTI ENVAREA2.NTI CURRDIAP.PFT CURRDIP1.PTI CURRDIP2.PTI CURRDIAP.NJT CURRDIP1.NTI CURRDIP2.NTI CURRFLP.PFT CURRFLP1.PTI CURRFLP2.PTI CURRFLP.NJT CURRFLP1.NTI CURRFLP2.NTI TIDEP.PFT TIDEP1.PTI TIDEP2.PTI TIDEP.NJT TIDEP1.NTI TIDEP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	HYD/ FCS FCA FCX HYDAREA.AFT HYDAREA1.ATI HYDAREA2.ATI HYDAREA.NJT HYDAREA1.NTI HYDAREA2.NTI HYDLINE.LFT HYDLINE1.LTI HYDLINE2.LTI HYDLINE.NJT HYDLINE1.NTI HYDLINE2.NTI BOTCHARP.PFT BOTCHAP1.PTI BOTCHAP2.PTI BOTCHARP.NJT BOTCHAP1.NTI BOTCHAP2.NTI SOUNDP.PFT SOUNDP1.PTI SOUNDP2.PTI SOUNDP.NJT SOUNDP1.NTI SOUNDP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	IWY/ FCS FCA FCX CANALA.AFT CANALA1.ATI CANALA2.ATI CANALA.NJT CANALA1.NTI CANALA2.NTI LAKEA.AFT LAKEA1.ATI LAKEA2.ATI LAKEA.NJT LAKEA1.NTI LAKEA2.NTI MISCIWYA.AFT MISCIWA1.ATI MISCIWA2.ATI MISCIWA3.ATI MISCIWYA.NJT MISCIWA1.NTI MISCIWA2.NTI RIVERA.AFT RIVERA1.ATI RIVERA2.ATI RIVERA.NJT RIVERA1.NTI RIVERA2.NTI AQUEDCTL.LFT AQUEDCL1.LTI AQUEDCL2.LTI AQUEDCTL.NJT AQUEDCL1.NTI AQUEDCL2.NTI BARRIERL.LFT BARRIEL1.LTI BARRIEL2.LTI BARRIEL3.LTI BARRIERL.NJT BARRIEL1.NTI BARRIEL2.NTI CANALL.LFT CANALL1.LTI CANALL2.LTI CANALL.NJT CANALL1.NTI CANALL2.NTI DAML.LFT	DAML1.LTI DAML2.LTI DAML.NJT DAML1.NTI DAML2.NTI RIVERL.LFT RIVERL1.LTI RIVERL2.LTI RIVERL3.LTI RIVERL.NJT RIVERL1.NTI RIVERL2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	LCR/ FCS FCA FCX EMBANKA.AFT EMBANKA1.ATI EMBANKA2.ATI EMBANKA3.ATI EMBANKA.NJT EMBANKA1.NTI EMBANKA2.NTI SNOWICEA.AFT SNOWICA1.ATI SNOWICA2.ATI SNOWICA3.ATI SNOWICEA.NJT SNOWICA1.NTI SNOWICA2.NTI TREEA.AFT TREEA1.ATI TREEA2.ATI TREEA.NJT TREEA1.NTI TREEA2.NTI VOLCANOA.AFT VOLCANA1.ATI VOLCANA2.ATI VOLCANOA.NJT VOLCANA1.NTI VOLCANA2.NTI LCRLINE.LFT LCRLINE1.LTI LCRLINE2.LTI LCRLINE.NJT LCRLINE1.NTI LCRLINE2.NTI SNOWICEP.PFT SNOWICP1.PTI SNOWICP2.PTI SNOWICEP.NJT SNOWICP1.NTI SNOWICP2.NTI TREP.PFT TREP1.PTI TREP2.PTI TREP.NJT TREP1.NTI TREP2.NTI FAC.FIT
Primitive Directory	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	

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Database Directory	DNCXX/			
		DHT	LAT	
Library Directory	COAXX/			
	LHT	GRT	CAT	
Coverage Directory	LCR/ (Cont.)	LIM/		NAV/
	FACFIT1.FTI	FCS	DISTL1.NTI	SEPARTL3.JTI
	FACFIT2.FTI	FCA	DISTL2.NTI	SWEPTL.LFT
	EDG.FIT	FCX	DISTL.LJT	SWEPTL.NJT
	EDGFIT1.FTI	LIMBNDYA.AFT	DISTA1.JTI	SWEPTL1.NTI
	EDGFIT2.FTI	LIMBNDYA.ATI	DISTA2.JTI	SWEPTL2.NTI
	END.FIT	LIMBNDYA.NJT	DISTA3.JTI	SWEPTL.LJT
	ENDFIT1.FTI	LIMBNDYA.NTI	FERRYL.LFT	SWEPTL1.JTI
	ENDFIT2.FTI	LIMBNDYA2.NTI	FERRYL.NJT	SWEPTL2.JTI
	NOTES.RAT	LIMBNDYA.AJT	FERRYL1.NTI	SWEPTL3.JTI
	NOTES.RAX	LIMBNDYA1.JTI	FERRYL2.NTI	LIMBNDYP.PFT
	CHAR.VDT	LIMBNDYA2.JTI	FERRYL.LJT	LIMBNDP1.PTI
	INT.VDT	LIMBNDYA3.JTI	FERRYL1.JTI	LIMBNDP2.PTI
		MARITIMA.AFT	FERRYL2.JTI	LIMBNDP3.PTI
		MARITIMA.NJT	FERRYL3.JTI	LIMBNDYP.NJT
		MARITIA1.NTI	LIMBNDYL.LFT	LIMBNDP1.NTI
		MARITIA2.NTI	LIMBNDYL1.LTI	LIMBNDP2.NTI
		MARITIMA.AJT	LIMBNDYL.NJT	MARITIMP.PFT
		MARITIA1.JTI	LIMBNDL1.NTI	MARITIP1.PTI
		MARITIA2.JTI	LIMBNDL2.NTI	MARITIP2.PTI
		MARITIA3.JTI	LIMBNDYL.LJT	MARITIMP.NJT
		ROUTEA.AFT	LIMBNDL1.JTI	MARITIP1.NTI
		ROUTEA.NJT	LIMBNDL2.JTI	MARITIP2.NTI
		ROUTEA1.NTI	LIMBNDL3.JTI	ROUTE.PFT
		ROUTEA2.NTI	MARITIML.LFT	ROUTE.P1.PTI
		ROUTEA.AJT	MARITIML.NJT	ROUTE.P2.PTI
		ROUTEA1.JTI	MARITIL1.NTI	ROUTE.NJT
		ROUTEA2.JTI	MARITIL2.NTI	ROUTE.P1.NTI
		ROUTEA3.JTI	MARITIML.LJT	ROUTE.P2.NTI
		SEPARTNA.AFT	MARITIL1.JTI	SEPARTNP.PFT
		SEPARTA1.ATI	MARITIL2.JTI	SEPARTP1.PTI
		SEPARTNA.NJT	MARITIL3.JTI	SEPARTP2.PTI
		SEPARTA1.NTI	ROUTE.LFT	SEPARTNP.NJT
		SEPARTA2.NTI	ROUTE.NJT	SEPARTP1.NTI
		SEPARTNA.AJT	ROUTE.L1.NTI	SEPARTP2.NTI
		SEPARTA1.JTI	ROUTE.L2.NTI	FAC.FIT
		SEPARTA2.JTI	ROUTE.LJT	FACFIT1.FTI
		SEPARTA3.JTI	ROUTE.L1.JTI	FACFIT2.FTI
		SWEPTA.AFT	ROUTE.L2.JTI	EDG.FIT
		SWEPTA.NJT	ROUTE.L3.JTI	EDGFIT1.FTI
		SWEPTA1.NTI	SEPARTNL.LFT	EDGFIT2.FTI
		SWEPTA2.NTI	SEPARTL1.LTI	END.FIT
		SWEPTA.AJT	SEPARTNL.NJT	ENDFIT1.FTI
		SWEPTA1.JTI	SEPARTL1.NTI	ENDFIT2.FTI
		SWEPTA2.JTI	SEPARTL2.NTI	NOTES.RAT
		SWEPTA3.JTI	SEPARTNL.LJT	NOTES.RAX
		DISTL.LFT	SEPARTL1.JTI	CHAR.VDT
		DISTL1.LTI	SEPARTL2.JTI	INT.VDT
		DISTL.NJT		
Primitive Directory		FAC		FAC
		FBR		FBR
		FSI		FSI
		RNG		RNG
		EDG		EDG
		EBR		EBR
		EDX		EDX
		ESI		ESI
		END		END
		NSI		NSI
		CND		CND
	XXXX/ (tile name)			

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Appendix A

Database Directory	DNCXX/		LAT	
	DHT			
Library Directory	COAXX/			
	LHT	GRT	CAT	
Coverage Directory	OBS/			POR/
	FCS	PIPELINL.LFT	END.FIT	FCS
	FCA	PIPELIL1.LTI	ENDFIT1.FTI	FCA
	FCX	PIPELIL2.LTI	ENDFIT2.FTI	FCX
	DANGERA.AFT	PIPELINL.NJT	NOTES.RAT	PIERA.AFT
	DANGERA1.ATI	PIPELIL1.NTI	NOTES.RAX	PIERA1.ATI
	DANGERA2.ATI	PIPELIL2.NTI	CHAR.VDT	PIERA2.ATI
	DANGERA3.ATI	TUNNELL.LFT	INT.VDT	PIERA.NJT
	DANGERA.NJT	TUNNELL1.LTI		PIERA1.NTI
	DANGERA1.NTI	TUNNELL2.LTI		PIERA2.NTI
	DANGERA2.NTI	TUNNELL3.LTI		STRUCTRA.AFT
	HAZARDA.AFT	TUNNELL.NJT		STRUCTA1.ATI
	HAZARDA1.ATI	TUNNELL1.NTI		STRUCTA2.ATI
	HAZARDA2.ATI	TUNNELL2.NTI		STRUCTRA.NJT
	HAZARDA3.ATI	DANGERP.PFT		STRUCTA1.NTI
	HAZARDA.NJT	DANGERP1.PTI		STRUCTA2.NTI
	HAZARDA1.NTI	DANGERP2.PTI		PIERL.LFT
	HAZARDA2.NTI	DANGERP3.PTI		PIERL1.LTI
	LOADINGA.AFT	DANGERP.NJT		PIERL2.LTI
	LOADINA1.ATI	DANGERP1.NTI		PIERL.NJT
	LOADINA2.ATI	DANGERP2.NTI		PIERL1.NTI
	LOADINGA.NJT	HAZARDP.PFT		PIERL2.NTI
	LOADINA1.NTI	HAZARDP1.PTI		SEAWALL.LFT
	LOADINA2.NTI	HAZARDP2.PTI		SEAWALL1.LTI
	OBSTRUCA.AFT	HAZARDP3.PTI		SEAWALL2.LTI
	OBSTRUA1.ATI	HAZARDP.NJT		SEAWALL.NJT
	OBSTRUA2.ATI	HAZARDP1.NTI		SEAWALL1.NTI
	OBSTRUA3.ATI	HAZARDP2.NTI		SEAWALL2.NTI
	OBSTRUCA.NJT	LOADINGP.PFT		STRUCTRL.LFT
	OBSTRUA1.NTI	LOADINP1.PTI		STRUCTL1.LTI
	OBSTRUA2.NTI	LOADINP2.PTI		STRUCTL2.LTI
	REEFA.AFT	LOADINP3.PTI		STRUCTL3.LTI
	REEFA1.ATI	LOADINGP.NJT		STRUCTRL.NJT
	REEFA2.ATI	LOADINP1.NTI		STRUCTL1.NTI
	REEFA.NJT	LOADINP2.NTI		STRUCTL2.NTI
	REEFA1.NTI	OBSTRUCP.PFT		CALLINP.PFT
	REEFA2.NTI	OBSTRUP1.PTI		CALLINP1.PTI
	BRIDGEL.LFT	OBSTRUP2.PTI		CALLINP2.PTI
	BRIDGEL1.LTI	OBSTRUP3.PTI		CALLINP.NJT
	BRIDGEL2.LTI	OBSTRUCP.NJT		CALLINP1.NTI
	BRIDGEL.NJT	OBSTRUP1.NTI		CALLINP2.NTI
	BRIDGEL1.NTI	OBSTRUP2.NTI		FAC.FIT
	BRIDGEL2.NTI	FAC.FIT		FACFIT1.FTI
	HAZARDL.LFT	FACFIT1.FTI		FACFIT2.FTI
	HAZARDL1.LTI	FACFIT2.FTI		EDG.FIT
	HAZARDL2.LTI	EDG.FIT		EDGFIT1.FTI
	HAZARDL.NJT	EDGFIT1.FTI		EDGFIT2.FTI
HAZARDL1.NTI	EDGFIT2.FTI		END.FIT	
HAZARDL2.NTI			ENDFIT1.FTI	
Primitive Directory	FAC			FAC
	FBR			FBR
	FSI			FSI
	RNG			RNG
	EDG			EDG
	EBR			EBR
	EDX			EDX
	ESI			ESI
	END			END
	NSI			NSI
CND			CND	

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Database Directory	DNCXX/			
Library Directory	COAXX/		DHT	LAT
Coverage Directory	REL/	DQY/	TILEREf/	LIBREF/
	FCS	FCS	FCS	FCS
	FCA	FCA	TILEREf.AFT	LIBREF.LFT
	FCX	FCX	FAC	EDG
	RELLINE.LFT	DQYAREA.AFT	FBR	EBR
	RELLINE1.LTI	DQYAREA1.ATI	FSI	EDX
	RELLINE2.LTI	DQYAREA2.ATI	RNG	ESI
	RELLINE.NJT	DQYAREA.NJT	EDG	CND
	RELLINE1.NTI	DQYAREA1.NTI	EBR	
	RELLINE2.NTI	DQYAREA2.NTI	EDX	
	RELPOINT.PFT	FAC.FIT	ESI	
	RELPOINT1.PTI	FACFIT1.FTI	CND	
	RELPOINT2.PTI	FACFIT2.FTI		
	RELPOINT.NJT	NOTES.RAT		
	RELPOINT1.NTI	NOTES.RAX		
	RELPOINT2.NTI			
	EDG.FIT			
	EDGFIT1.FTI			
	EDGFIT2.FTI			
	END.FIT			
	ENDFIT1.FTI			
	ENDFIT2.FTI			
	NOTES.RAT			
	NOTES.RAX			
	CHAR.VDT			
	INT.VDT			
Primitive Directory	EDG	FAC		
	EBR	FBR		
	EDX	FSI		
XXXX/ (tile name)	ESI	RNG		
	END	EDG		
	NSI	EBR		
	CND	EDX		
		ESI		
		CND		

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Database Directory	DNCXX/				
		DHT	LAT		
Library Directory	GENXX/				
	LHT	GRT		CAT	
Coverage Directory	CUL/ FCS FCA FCX LANDMRKA.AFT LANDMRA1.ATI LANDMRA2.ATI LANDMRKA.NJT LANDMRA1.NTI LANDMRA2.NTI AEROP.PFT AEROP1.PTI AEROP2.PTI AEROP.NJT AEROP1.NTI AEROP2.NTI BUILTUPP.PFT BUILTUP1.PTI BUILTUP2.PTI BUILTUPP.NJT BUILTUP1.NTI BUILTUP2.NTI COMMP.PFT COMMP1.PTI COMMP2.PTI COMMP.NJT COMMP1.NTI COMMP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	ECR/ FCS FCA FCX ECRAREA.AFT ECRAREA1.ATI ECRAREA2.ATI ECRAREA3.ATI ECRAREA.NJT ECRAREA.NTI ECRAREA2.NTI FORESHOA.AFT FORESHA1.ATI FORESHA2.ATI FORESHA.NJT FORESHOA.NJT FORESHA1.NTI FORESHA2.NTI ADMINL.LFT ADMINL1.LTI ADMINL2.LTI ADMINL.NJT ADMINL1.NTI ADMINL2.NTI BOUNDRYL.LFT BOUNDRL1.LTI BOUNDRL2.LTI BOUNDRL3.LTI BOUNDRYL.NJT BOUNDRL1.NTI BOUNDRL2.NTI COASTL.LFT COASTL1.LTI COASTL2.LTI COASTL.NJT COASTL1.NTI COASTL2.NTI FORESHOL.LFT FORESHL1.LTI FORESHL2.LTI FORESHOL.NJT FORESHL1.NTI FORESHL2.NTI FORESHOP.PFT FORESHP1.PTI FORESHP2.PTI FORESHOP.NJT FORESHP1.NTI FORESHP2.NTI	ISLANDP.PFT ISLANDP1.PTI ISLANDP2.PTI ISLANDP.NJT ISLANDP1.NTI ISLANDP2.NTI ECRTEXT.TFT ECRTEXT1.TTI ECRTEXT2.TTI ECRTEXT.NJT ECRTEXT1.NTI ECRTEXT2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI TXT.FIT TXTFIT1.FTI TXTFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	ENV/ FCS FCA FCX ENVAREA.AFT ENVAREA1.ATI ENVAREA2.ATI ENVAREA.NJT ENVAREA1.NTI ENVAREA2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT	HYD/ FCS FCA FCX HYDAREA.AFT HYDAREA1.ATI HYDAREA2.ATI HYDAREA.NJT HYDAREA1.NTI HYDAREA2.NTI HYDLINE.LFT HYDLINE1.LTI HYDLINE2.LTI HYDLINE.NJT HYDLINE1.NTI HYDLINE2.NTI BOTCHARP.PFT BOTCHAP1.PTI BOTCHAP2.PTI BOTCHARP.NJT BOTCHAP1.NTI BOTCHAP2.NTI SOUNDP.PFT SOUNDP1.PTI SOUNDP2.PTI SOUNDP.NJT SOUNDP1.NTI SOUNDP2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT
Primitive Directory	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND	TXT TXX	FAC FBR FSI RNG EDG EBR EDX ESI CND	FAC FBR FSI RNG EDG EBR EDX ESI END NSI CND
XXXX/ (tile name)					

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Database Directory	DNCXX/		LAT		
	DHT		LAT		
Library Directory	GENXX/				
Coverage Directory	LHT		GRT	CAT	
	IWY/		LCR/	LIM/	
	FCS	CHAR.VDT	FCS	FCS	MARITIL2.NTI
	FCA	INT.VDT	FCA	FCA	MARITIML.LJT
	FCX		FCX	FCX	MARITIL1.JTI
	CANALA.AFT		SNOWICEA.AFT	LIMBNDYA.AFT	MARITIL2.JTI
	CANALA1.ATI		SNOWICA1.ATI	LIMBNDYA1.ATI	MARITIL3.JTI
	CANALA2.ATI		SNOWICA2.ATI	LIMBNDYA.NJT	ROUTE.LFT
	CANALA.NJT		SNOWICA3.ATI	LIMBNDYA1.NTI	ROUTE.NJT
	CANALA1.NTI		SNOWICEA.NJT	LIMBNDYA2.NTI	ROUTE1.NTI
	CANALA2.NTI		SNOWICA1.NTI	LIMBNDYA.AJT	ROUTE2.NTI
	LAKEA.AFT		SNOWICA2.NTI	LIMBNDYA1.JTI	ROUTE.LJT
	LAKEA1.ATI		VOLCANOA.AFT	LIMBNDYA2.JTI	ROUTE1.JTI
	LAKEA2.ATI		VOLCANOA1.ATI	LIMBNDYA3.JTI	ROUTE2.JTI
	LAKEA.NJT		VOLCANOA2.ATI	MARITIMA.AFT	ROUTE3.JTI
	LAKEA1.NTI		VOLCANOA.NJT	MARITIMA.NJT	SEPARTNL.LFT
	LAKEA2.NTI		VOLCANOA1.NTI	MARITIA1.NTI	SEPARTNL.NJT
	RIVERA.AFT		VOLCANOA2.NTI	MARITIA2.NTI	SEPARTL1.NTI
	RIVERA1.ATI		FAC.FIT	MARITIMA.AJT	SEPARTL2.NTI
	RIVERA2.ATI		FACFIT1.FTI	MARITIA1.JTI	SEPARTNL.LJT
	RIVERA.NJT		FACFIT2.FTI	MARITIA2.JTI	SEPARTL1.JTI
	RIVERA1.NTI		NOTES.RAT	MARITIA3.JTI	SEPARTL2.JTI
	RIVERA2.NTI		NOTES.RAX	ROUTEA.AFT	SEPARTL3.JTI
	CANALL.LFT		CHAR.VDT	ROUTEA.NJT	LIMBNDYP.PFT
	CANALL1.LTI		INT.VDT	ROUTEA1.NTI	LIMBNDP1.PTI
	CANALL2.LTI			ROUTEA2.NTI	LIMBNDP2.PTI
	CANALL.NJT			ROUTEA.AJT	LIMBNDP3.PTI
	CANALL1.NTI			ROUTEA1.JTI	LIMBNDYP.NJT
	CANALL2.NTI			ROUTEA2.JTI	LIMBNDP1.NTI
	DAML.LFT			ROUTEA3.JTI	LIMBNDP2.NTI
	DAML1.LTI			SEPARTNA.AFT	MARITIMP.PFT
	DAML2.LTI			SEPARTNA.NJT	MARITIP1.PTI
	DAML.NJT			SEPARTA1.NTI	MARITIP2.PTI
	DAML1.NTI			SEPARTA2.NTI	MARITIMP.NJT
	DAML2.NTI			SEPARTNA.AJT	MARITIP1.NTI
	RIVERL.LFT			SEPARTA1.JTI	MARITIP2.NTI
	RIVERL1.LTI			SEPARTA2.JTI	ROUTE.PFT
	RIVERL2.LTI			SEPARTA3.JTI	ROUTE1.PTI
	RIVERL3.LTI			LIMBNDYL.LFT	ROUTE2.PTI
	RIVERL.NJT			LIMBNDL1.LTI	ROUTE.NJT
	RIVERL1.NTI			LIMBNDYL.NJT	ROUTE1.NTI
	RIVERL2.NTI			LIMBNDL1.NTI	ROUTE2.NTI
	FAC.FIT			LIMBNDL2.NTI	SEPARTNP.PFT
	FACFIT1.FTI			LIMBNDYL.LJT	SEPARTP1.PTI
	FACFIT2.FTI			LIMBNDL1.JTI	SEPARTP2.PTI
	EDG.FIT			LIMBNDL2.JTI	SEPARTNP.NJT
	EDGFIT1.FTI			LIMBNDL3.JTI	SEPARTP1.NTI
	EDGFIT2.FTI			MARITIML.LFT	SEPARTP2.NTI
	NOTES.RAT			MARITIML.NJT	FAC.FIT
	NOTES.RAX			MARITIL1.NTI	
Primitive Directory	FAC		FAC	FAC	
	FBR		FBR	FBR	
	FSI		FSI	FSI	
XXXX/ (tile name)	RNG		RNG	RNG	
	EDG		EDG	EDG	
	EBR		EBR	EBR	
	EDX		EDX	EDX	
	ESI		ESI	ESI	
	CND		CND	END	
				NSI	
				CND	

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Database Directory	DNCXX/				
	DHT		LAT		
Library Directory	GENXX/				
	LHT		GRT		CAT
Coverage Directory	LIM/ (Cont.)	NAV/	OBS/		
	FACFIT1.FTI	FCS	FCS	PIPELIL2.LTI	NOTES.RAX
	FACFIT2.FTI	FCA	FCA	PIPELINL.NJT	CHAR.VDT
	EDG.FIT	FCX	FCX	PIPELIL1.NTI	INT.VDT
	EDGFIT1.FTI	BUOYBCNP.PFT	DANGERA.AFT	PIPELIL2.NTI	
	EDGFIT2.FTI	BUOYBCP1.PTI	DANGERA1.ATI	TUNNELL.LFT	
	END.FIT	BUOYBCP2.PTI	DANGERA2.ATI	TUNNELL1.LTI	
	ENDFIT1.FTI	BUOYBCP3.PTI	DANGERA3.ATI	TUNNELL2.LTI	
	ENDFIT2.FTI	BUOYBCNP.NJT	DANGERA.NJT	TUNNELL.NJT	
	NOTES.RAT	BUOYBCP1.NTI	DANGERA1.NTI	TUNNELL1.NTI	
	NOTES.RAX	BUOYBCP2.NTI	DANGERA2.NTI	TUNNELL2.NTI	
	CHAR.VDT	LIGHTSP.PFT	HAZARDA.AFT	DANGERP.PFT	
	INT.VDT	LIGHTSP1.PTI	HAZARDA1.ATI	DANGERP1.PTI	
		LIGHTSP2.PTI	HAZARDA2.ATI	DANGERP2.PTI	
		LIGHTSP.NJT	HAZARDA.NJT	DANGERP3.PTI	
		LIGHTSP1.NTI	HAZARDA1.NTI	DANGERP.NJT	
		LIGHTSP2.NTI	HAZARDA2.NTI	DANGERP1.NTI	
		END.FIT	LOADINGA.AFT	DANGERP2.NTI	
		ENDFIT1.FTI	LOADINA1.ATI	HAZARDP.PFT	
		ENDFIT2.FTI	LOADINA2.ATI	HAZARDP1.PTI	
		NOTES.RAT	LOADINGA.NJT	HAZARDP2.PTI	
		NOTES.RAX	LOADINA1.NTI	HAZARDP3.PTI	
		CHAR.VDT	LOADINA2.NTI	HAZARDP.NJT	
		INT.VDT	OBSTRUCA.AFT	HAZARDP1.NTI	
			OBSTRUA1.ATI	HAZARDP2.NTI	
			OBSTRUA2.ATI	LOADINGP.PFT	
			OBSTRUCA.NJT	LOADINP1.PTI	
			OBSTRUA1.NTI	LOADINP2.PTI	
			OBSTRUA2.NTI	LOADINP3.PTI	
			REEFA.AFT	LOADINGP.NJT	
			REEFA1.ATI	LOADINP1.NTI	
			REEFA2.ATI	LOADINP2.NTI	
			REEFA.NJT	OBSTRUCP.PFT	
			REEFA1.NTI	OBSTRUP1.PTI	
			REEFA2.NTI	OBSTRUP2.PTI	
			BRIDGEL.LFT	OBSTRUCP.NJT	
			BRIDGEL1.LTI	OBSTRUP1.NTI	
			BRIDGEL2.LTI	OBSTRUP2.NTI	
			BRIDGEL.NJT	FAC.FIT	
			BRIDGEL1.NTI	FACFIT1.FTI	
			BRIDGEL2.NTI	FACFIT2.FTI	
			HAZARDL.LFT	EDG.FIT	
			HAZARDL1.LTI	EDGFIT1.FTI	
			HAZARDL2.LTI	EDGFIT2.FTI	
			HAZARDL.NJT	END.FIT	
			HAZARDL1.NTI	ENDFIT1.FTI	
			HAZARDL2.NTI	ENDFIT2.FTI	
			PIPELINL.LFT	NOTES.RAT	
			PIPELIL1.LTI		
Primitive Directory		END	FAC		
		NSI	FBR		
			FSI		
			RNG		
			EDG		
			EBR		
			EDX		
			ESI		
			END		
			NSI		
			CND		
	XXXX/ (tile name)				

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Database Directory	DNCXX/				
Library Directory	DHT		LAT		
Library Directory	GENXX/				
Library Directory	LHT	GRT	CAT		
Coverage Directory	POR/ FCS FCA FCX SEAWALL.LFT SEAWALL1.LTI SEAWALL2.LTI SEAWALL.NJT SEAWALL1.NTI SEAWALL2.NTI STRUCTRL.LFT STRUCTL1.LTI STRUCTL2.LTI STRUCTL3.LTI STRUCTRL.NJT STRUCTL1.NTI STRUCTL2.NTI EDG.FIT EDGFIT1.FTI EDGFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	REL/ FCS FCA FCX RELPOINT.PFT RELPOINT1.PTI RELPOINT2.PTI RELPOINT.NJT RELPOINT1.NTI RELPOINT2.NTI END.FIT ENDFIT1.FTI ENDFIT2.FTI NOTES.RAT NOTES.RAX CHAR.VDT INT.VDT	DQY/ FCS FCA FCX DQYAREA.AFT DQYAREA1.ATI DQYAREA2.ATI DQYAREA.NJT DQYAREA1.NTI DQYAREA2.NTI FAC.FIT FACFIT1.FTI FACFIT2.FTI NOTES.RAT NOTES.RAX	TILEREF/ FCS TILEREF.AFT FAC FBR FSI RNG EDG EBR EDX ESI CND	LIBREF/ FCS LIBREF.LFT EDG EBR EDX ESI CND
Primitive Directory XXXX/ (tile name)	EDG EBR EDX ESI CND	END NSI	FAC FBR FSI RNG EDG EBR EDX ESI CND		

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Database Directory	DNCXX/		
Library Directory	BROWSE/		CAT
Coverage Directory	COA/	LIB/	LIBREF/
	FCS	FCS	FCS
	FCA	LIBAREA.AFT	LIBREF.LFT
	FCX	LIBAREA.AJT	EDG
	COAAREA.AFT	LIBAREA1.JTI	EBR
	COAAREA1.ATI	LIBAREA2.JTI	EDX
	COAAREA2.ATI	LIBLINE.LFT	ESI
	COALINE.LFT	FAC	CND
	COALINE1.LTI	FBR	
	COALINE2.LTI	FSI	
	COAPOINT.PFT	RNG	
	COAPOIT1.PTI	EDG	
	CHAR.VDT	EBR	
	FAC	EDX	
	FBR	ESI	
	FSI	CND	
	RNG		
	EDG		
	EBR		
	EDX		
	ESI		
	END		
	NSI		
	CND		
	FAC.FIT		
	EDG.FIT		
	END.FIT		

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Concluding Material

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