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Introduction

The TIGER/Line[®] files are extracts, from the Census TIGER[®] (Topologically Integrated Geographic Encoding and Referencing) database, of selected geographic and cartographic information. They include files for all counties and statistically equivalent entities in the United States as well as files for Puerto Rico and the Island Areas.

The TIGER/Line files are released by county or statistically equivalent entity based on the latest available governmental unit boundaries. Since Census 2000 there have been changes in the universe of counties or statistically equivalent entities. In Colorado, Broomfield County was created from parts of Adams, Boulder, Jefferson, and Weld Counties. This change has resulted in the creation of a separate TIGER/Line file for Broomfield County, Colorado. In Virginia, the independent city of Clifton Forge changed its status to become Clifton Forge town and is now part of Alleghany County, Virginia; it appears in the Alleghany County, Virginia TIGER/Line file. Beginning with the 2002 TIGER/Line files, the U.S. Census Bureau no longer will produce a TIGER/Line file for the Midway Islands.

The vintage of each version of the TIGER/Line files is reflected in the name of the TIGER/Line file and not the version code. The year noted in the version of the TIGER/Line files normally represents the vintage of the boundaries in the file while the version code reflects the database extraction date for the TIGER/Line files.

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The TIGER/Line files contain *data only* and do not include display or mapping software. The TIGER/Line files are typically used in conjunction with geographic information system (GIS), or similar, software. The TIGER/Line files do not contain demographic data but do include the geographic entity codes which provide a link between the demographic data and the TIGER/Line files.

The U.S. Census Bureau first released the TIGER/Line files in 1988. Since that time, it has released several versions of the files, with each successive version being improved through increased editing and updating of address ranges and features. A brief discussion of the changes that occurred in the 2002 TIGER/Line files, UA Census 2000 TIGER/Line files, Census 2000 TIGER/Line files, and Redistricting Census 2000 TIGER/Line files are summarized below.

Changes to the 2002 TIGER/Line Files

2002 TIGER/Line Files

The U.S. Census Bureau has made major changes to the structure, field definitions, and contents for the 2002 TIGER/Line files. New record types have been added, two record types were deleted, and several record types were expanded and substantially revised. The U.S. Census Bureau has removed the 1990 geography from the 2002 TIGER/Line files replacing it with current geography. Also new for the 2002 TIGER/Line files is a permanent zero-cell (or node) identification number (TZID) for each node.

To improve the ability of data users to merge multiple counties, we are adding the state and county codes to those Record Type 1 records for the adjacent county. These are the Record Type 1 records that have the single-side source code (field name SIDE1) set, and until this version of the TIGER/Line files, all of the data elements for the side of the record "outside" the county have been blank. For those Record Type 1 records that comprise the boundary of the United States, all of the data elements for the side of the record "outside" the United States will continue to be blank. We also are making the TLIDs and TZIDs for these records the same so that the complete chain or zero-cell representing a segment of the boundary between two neighboring counties will have the same TLID or TZID code in both counties.

To avoid one of the major difficulties data users had last decade with the mixing of "current" state and county codes with decennial census tract and block numbers which are uniquely identified only by the decennial census state and county codes, the U.S. Census Bureau is continuing to provide Census 2000 codes on Record Type 1 even though the distribution unit for the 2002 TIGER/Line files is current county. Since some county boundaries may have changed in the years after Census 2000, the current boundaries may not match those used in Census 2000. Thus, it is possible that to fully match all the Census 2000 block numbers in a Census 2000 county a user will need to reference multiple "current" 2002 TIGER/Line files. An example of this is Broomfield County, Colorado which was created in 2001 from parts of four other Colorado counties. Data users also are cautioned that in some Record Type A records, the current state and county codes, when combined with the Census 2000 census tract and block numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes. The Census 2000 state, county, census tract, and census block codes all are found on Record Type S.

As part of a research project to upgrade the positional accuracy of TIGER data, the U.S. Census Bureau improved the street feature coordinates in a small number of counties. Improvements were made in Kent, New Castle, and Sussex Counties in Delaware; Seminole County in Florida; Cecil, Somerset and Talbot Counties in Maryland; Baltimore City in Maryland; Auglaize, Crawford, Defiance, Delaware, Fulton, Henry, Miami, Putnam, Richland, Van Wert, and Williams Counties in Ohio; and Hughes County in South Dakota.

The 2002 TIGER/Line files contain few, if any, updates to street features or address ranges from the Census 2000 versions of the TIGER/Line files. Some additional features may have been added in the 20 counties listed above where the U.S. Census Bureau improved the street feature coordinates. In a few instances some new features may appear, and address ranges could have been added or updated, to resolve challenges as part of the Census 2000 Count Question Resolution (CQR) Program.

New Record Types Added The U.S. Census Bureau has added four new record types to the post-Census 2000 TIGER/Line files—Record Types B, E, T, and U. Record Type B contains corrected geography from the CQR Program. Under CQR inaccurate boundaries of functioning governmental units were revised to reflect the boundaries in effect January 1, 2000. Record Type B includes only those polygons with corrected geography; it does not include all the polygons within the corrected entity. Data users who need to know what the Census 2000 boundary of the corrected entity should have been will need to apply the Record Type B change to Record Type S (which contains the Census 2000 geographic entities codes for each polygon). Census 2000 census tract and census block information appears on Record Type B for information purposes only. There are no corrections for census tracts or census blocks. Counties that do not contain corrected geography will not have a Record Type B.

Record Type E, which will not appear in the 2002 TIGER/Line files, will contain Economic Census geography. In future versions of the post-Census 2000 TIGER/Line files it will contain the geographic entity codes reflecting the boundaries of legal entities as used in an Economic Census.

Record Type T provides TIGER Zero-Cell ID (TZID) information; the new permanent zero-cell (node) identification numbers. The new TZIDs also appear on Record Type I providing the TZID for the start and end positions for each complete chain and a link between the complete chains in Record Type 1 and the new TZIDs.

Record Type U, which will not appear in the 2002 TIGER/Line files, will contain TIGER/Line ID overpass and underpass identification information. In future versions of the post-Census 2000 TIGER/Line files, Record Type U will provide information identifying those complete chains that are overpasses or underpasses and the order in which they cross another complete chain.

Record Types Deleted The U.S. Census Bureau has deleted two record types in the post-Census 2000 TIGER/Line files—Record Types 3 and 9. Record Type 3, which contained the 1990 geographic entity codes, was deleted as the U.S. Census Bureau has removed the 1990 census geography from the post-Census 2000 TIGER/Line files.

The purpose of Record Type 9 was to provide the linkage between a building—a Key Geographic Location (KGL)—that had its own ZIP+4 Add-On Code and the actual street number/street name for the building. It was deleted because the U.S. Census Bureau is required to suppress all single address-address ranges or basic street addresses to protect the confidentiality of individual addresses collected through census field operations as specified by Title 13 of the U.S. Code. Some of the information that was formerly in Record Type 9 will now be included in Record Type 7 in the 2002 TIGER/Line files.

Field Definition Changes On Record Type 1 the field names AIANHHL and AIANHHR were renamed AIANHHFPL and AIANHHFPR to agree with the field names used in the Census 2000 Summary Files.

On Record Type 5, the U.S. Census Bureau has added a VERSION field. As a result, Record Type 5 has expanded from 52 characters to 56 characters.

The U.S. Census Bureau has completely restructured Record Type A including rearranging the location of the data fields and expanding the record length from 98 characters in the Census 2000 versions of the TIGER/Line files to 210 characters in the post-Census 2000 TIGER/Line files. The 1990 geography that appeared in Record Type A for the Census 2000 versions of the TIGER/Line file has been removed and replaced by current geography. See Chapter 6 for the new record layout for Record Type A and Appendix C for information about field name changes.

On Record Type C, the AIANHHCE field was renamed AIANHH. The U.S. Census Bureau expanded the record length of Record Type C from 112 to 122 characters to accommodate two new fields. Reserved Space C1 (RS-C1) occupies columns 53 and 54 and Reserved Space C2 (RS-C2) occupies columns 55 through 62. The NAME field now occupies columns 63 through 122.

The U.S. Census Bureau has restructured Record Type I expanding it from 52 characters to 112 characters. See *Chapter 6* for the new record layout for Record Type I. Note that the TLID and FILE fields have reversed positions, the FILE field now occupies columns 6 through 10 and the TLID

field now occupies columns 11 through 20. The U.S. Census Bureau reversed the positions of the TLID and FILE fields on Record Type I to make these fields consistent with their locations in other Record Types.

Record Type P has expanded from 44 characters to 45 characters with the addition of a Perennial/Intermittent Water Flag (WATER). A WATER flag formerly appeared on Record Type S but has been relocated to Record Type P. The WATER field is the only way to determine if a polygon is land or water, and will now tell data users whether the U.S. Census Bureau considers the water to be perennial or intermittent.

Record Type R has expanded from 46 characters to 76 characters with the addition of three new fields. The Highest Possible TIGER Zero-Cell ID in range for Census File Identification Code (TZMAXID) field occupies columns 46 through 55; the Lowest Possible TIGER Zero-Cell ID in range for Census File Identification Code (TZMINID) field occupies columns 56 through 65; and the Current High TIGER Zero-Cell ID in range for Census File Identification Code (TZHIGHID) field occupies columns 66 through 75. The FILLER field has moved to column 76. The U.S. Census Bureau has renamed the MAXID field as TLMAXID, the MINID field as TLMINID, and the HIGHID field as TLHIGHID.

The U.S. Census Bureau has completely Restructured Record Type S including rearranging the location of the data fields and expanding the record length from 120 characters in the Census 2000 versions of the TIGER/Line files to 168 characters in the post-Census 2000 TIGER/Line files. See Chapter 6 for the new record layout for Record Type S and Appendix C for information about field name changes.

UA Census 2000 TIGER/Line Files

The major difference between the UA Census 2000 TIGER/Line files and the Census 2000 TIGER/Line files was that the UA Census 2000 TIGER/Line files contained the Census 2000 urban areas and Public Use Micro-data Areas (PUMAs). No record types were added or deleted between the Census 2000 TIGER/Line files and the UA Census 2000 TIGER/Line files. However, there were some field name and content changes.

Field Definition Changes On Record Type A the PUMA1 field was re-named PUMA5. It contained the PUMA codes from the 5% Census 2000 Public Use Microdata Area file. The UA90 and UR90 fields were combined and replaced by the Census Urban Area Code, 2000 with a field name of UA. The UA field occupied columns 81 through 85. Reserved Space 5 on Record Type A became Census Urbanized Area Code, 1990 with a field name of UA90. The Urban/Rural Indicator fields moved to Record Type S.

Two Field Descriptions changed on Record Type C. The Entity Type Code became the Entity Type Code/Urban Area Type Code field. The Census Urban Area Code/Urban Growth Area Code became the Census Urbanized Area Code, 1990/ Census Urban Area Code, 2000/ Urban Growth Area Code, 2000.

On Record Type S, Reserved Space 8 was replaced by two new fields. Occupying column 119 was the Urban/Rural Indicator, 2000 with a field name of UR. The Urban/Rural Indicator, 1990 occupied column 120 and had a field name of UR90.

Census 2000 TIGER/Line Files

The major difference between the Census 2000 and Redistricting Census 2000 versions of the TIGER/Line files was that the Census 2000 version of the TIGER/Line files included ZIP Code[®] Tabulation Areas (ZCTAs[™]) and the address ranges that appeared in the Census 2000 TIGER/Line files were based upon the addresses in the final Master Address File (MAF) used for tabulating Census 2000. The Redistricting Census 2000 TIGER/Line files did not include any information on ZCTAs and the address ranges, were based upon an earlier version of the Master Address File. The Census 2000 version of the TIGER/Line files contained all Census 2000 geographic entities except urban areas (2000) and Public Use Microdata Areas (PUMAs) (2000), which had not yet been delineated.

The U.S. Census Bureau did not add or delete any record types between the Redistricting Census 2000 and Census 2000 versions of the TIGER/Line files or change any field definitions.

How to Use This Documentation

The structure of this documentation is based on data content rather than record type content. For instance, information on addresses may appear in one section, but cross-references to other related sections also are included. In order to make the document easier to use as a reference, the text contains some repetition from section to section.

Chapter 1

Chapter 1 describes the basic concepts about the Census TIGER database and the TIGER/Line products. It discusses the topology in the Census TIGER database, the terminology used to describe the geographic data, and the record types that make up the TIGER/Line files. Chapter 1 also describes the Federal Information Processing Standard (FIPS) Spatial Data Transfer Standard (SDTS) nomenclature for geographic objects.

Chapter 2

Chapter 2 discusses the principle identification numbers forming the basis for record linkage discussed throughout the documentation.

Chapter 3

Chapter 3 discusses the attributes for the line, polygon, and landmark geographic objects.

Chapter 4

Chapter 4 defines the types of geographic entities and entity codes that appear in the TIGER/Line files. It also identifies the fundamental relationships among the different types of geographic entities.

Chapter 5

Chapter 5 summarizes the data quality aspects of the information in the Census TIGER database using the SDTS quality modules.

Chapter 6

Chapter 6 lists the contents of the TIGER/Line file record types and provides a detailed description of the data fields in each. Use Chapter 6

in conjunction with Chapters 3 and 4 to locate the positions of specific data fields in the TIGER/Line files.

How to Obtain Other Products and Information

If you purchased or downloaded the TIGER/Line files directly from the U.S. Census Bureau and need further information concerning the subject matter of the 2002 TIGER/Line files, contact the Geographic Products Management Branch, Geography Division, U.S. Census Bureau, Washington, DC 20233-7400. The telephone number is (301) 763-1128. The e-mail address is geo.tiger@census.gov. For information concerning the subject matter and contents of TIGER/Line files obtained from a source other than the U.S. Census Bureau, contact that source.

Chapter 1: Overview and Geographic Concepts

Overview

What Is TIGER®?

The U.S. Census Bureau's Census TIGER® System automates the mapping and related geographic activities required to support the decennial census and sample survey programs of the U.S. Census Bureau starting with the 1990 decennial census. The Census TIGER System provides support for the following:

- Creation and maintenance of a digital geographic database that includes complete coverage of the United States, Puerto Rico, the Virgin Islands of the United States, and the Pacific Island Areas
- Production of maps from the Census TIGER database for all U.S. Census Bureau enumeration and publication programs
- Ability to assign individual addresses to geographic entities and census blocks based on polygons formed by features such as roads and streams

The design of the Census TIGER database adapts the theories of topology, graph theory, and associated fields of mathematics to provide a disciplined, mathematical description for the geographic structure of the United States and its territories. The topological structure of the Census TIGER database defines the location and relationship of streets, rivers, railroads, and other features to each other and to the numerous geographic entities for which the U.S. Census Bureau tabulates data from its censuses and sample surveys. It is designed to ensure that there is no duplication of features or areas.

The building of the Census TIGER database involved a variety of encoding techniques such as automated map scanning, manual map digitizing, standard data keying, and sophisticated computer file matching. The goal was to provide automated access to, and retrieval of, relevant geographic information about the United States and its territories.

TIGER Database Extracts

In order for others to use the information in the Census TIGER data base in a geographic information system (GIS) or for other geographic applications, the U.S. Census Bureau releases periodic extracts of the database, including the TIGER/Line[®] files, to the public. Various versions of the TIGER/Line files have been released beginning with the 1990 TIGER/Line files. Recent releases of the TIGER/Line files include the Redistricting Census 2000 version of the TIGER/Line files which was the official version of the TIGER/Line files delivered to the official recipients under Public Law 94-171 and to redistricting officials in the District of Columbia and the Commonwealth of Puerto Rico. The Census 2000 version of the TIGER/Line files originally were produced to support the Census 2000 Summary File 1 (SF 1) data files. The U.S. Census Bureau released the UA Census 2000 version of the TIGER/Line files to support the Census 2000 Urban Areas Program.

Relationship of TIGER/Line to Census 2000 Statistical Data

What makes the TIGER extract products particularly valuable in the GIS environment and to the data user community is the ability to create a direct linkage between the Census 2000 decennial census data products or post-Census 2000 estimates program and the Census TIGER database extracts. The digital description in the TIGER database of the Nation's legal and statistical entities includes Federal Information Processing Standards (FIPS) codes and, for selected geographic entities, U.S. Census Bureau codes so entities can be easily matched and linked with the Census 2000 census data.

2002 TIGER/Line Files

The 2002 TIGER/Line files include files for all counties and statistically equivalent entities in the United States as well as files for Puerto Rico and the Island Areas.

The 2002 TIGER/Line files consist of line segments that represent physical features, and legal and statistical boundaries. The files consist of 19 separate record types, including the basic data record, the shape coordinate points (feature shape records), and geographic entity codes that can be used with

appropriate software to prepare maps. The TIGER/Line files do not contain demographic data but the geographic entity codes provide a link between the demographic data and the TIGER/Line files.

Related Files

Summary Files (SFs) provide Census 2000 statistical data for a wide range of subject headings and geographic entities compatible with the TIGER/Line[®] files. These files are available on the Internet and CD-ROM.

Census 2000 Redistricting Data Summary Files provide selected Census 2000 population data for small area geography (state, county, county subdivision, place, census tract, block group, and block) and are compatible with the TIGER/Line files. These files are available on the Internet and CD-ROM.

County-Based Files

The geographic coverage for a TIGER/Line file is a county or statistically equivalent entity. See Appendix A for a list of state and county codes and Chapter 4 for a description of counties and statistically equivalent entities. The county files have a coverage area based on the latest legal boundaries obtained in response to the U.S. Census Bureau's Boundary and Annexation Survey (BAS). Even though the Census TIGER database represents a seamless national file with no overlaps or gaps between parts, the county-based TIGER/Line files are designed to stand alone as an independent data set. The files can be combined to cover the whole Nation and its territories (see the *Single-Side Flags and County Boundaries* section in Chapter 3).

The Data Content of the TIGER/Line Files

The TIGER/Line files contain data describing three major types of features:

- **Line features**
 - 1) Roads
 - 2) Railroads
 - 3) Hydrography
 - 4) Miscellaneous transportation features and selected power lines and pipe lines
 - 5) Boundaries

- **Landmark features**
 - 1) Point landmarks such as schools and churches
 - 2) Area landmarks such as parks and cemeteries
- **Polygon features**
 - 1) Geographic entity codes for areas used to tabulate the Census 2000 statistical data and current geographic areas
 - 2) Locations of area landmarks

The line feature and polygon information form the majority of data in the TIGER/Line files. Some of the data describing the lines include coordinates, feature identifiers (names), feature classification codes, address ranges, and geographic entity codes. Chapter 3 details most of these data items; Chapter 4 defines the geographic entities and codes. The TIGER/Line files contain point and area labels that describe landmark features. These features provide locational references for field staff and map users.

Area landmarks consist of a feature name or label and feature type assigned to a polygon or group of polygons. Landmarks may overlap or refer to the same set of polygons. See Chapter 3 for more information on landmark data.

Topology and Spatial Objects in the TIGER/Line Files

Spatial Objects in the TIGER/Line Files

The Census TIGER database uses a collection of spatial objects, *points*, *lines*, and *polygons*, to model or describe real-world geography. The U.S. Census Bureau uses these spatial objects to represent features such as streets, and assigns attributes to these features to identify and describe specific features such as the 500 block of Market Street in Philadelphia, Pennsylvania.

The TIGER/Line files contain information about the spatial objects distributed over a series of record types. Users of the TIGER/Line files may need to link information from several record types to find all the attributes of interest that belong to one spatial object. The final section of this chapter includes a description of the record types.

Topology

Topology explains how points, lines, and areas relate to each other and is used as the foundation for organizing spatial objects in the Census TIGER database. The Census TIGER database uses points, lines, and areas to provide a disciplined, mathematical description of the features of the earth's surface. Spatial objects in the Census TIGER database are interrelated. A sequence of points define line segments, and line segments connect to define polygons.

Topology provides a basic language for describing geographic features. The Census TIGER database relates information to points or *0-cells*, lines or *1-cells*, and polygons or *2-cells*. The number preceding the cell identifies the dimensionality of the object; for instance, a line segment has a single dimension, length. Each of these objects builds on the others to form higher-level objects. The 0-cells form the end points of 1-cells. The 1-cells connect at 0-cells and form closed figures that partition space into polygons or 2-cells.

Terminology

The terms point, line segment, and polygon are familiar, but general terms that may have different meanings to data users working with a variety of different applications and data sets. The TIGER/Line file documentation uses the terminology from the Spatial Data Transfer Standard (SDTS).

Since the first release of the TIGER/Line files, the U.S. Geological Survey (USGS) has coordinated the development and release of the SDTS, now part of the Federal Information Processing Standards (FIPS). The SDTS specifies a series of terms and definitions for spatial objects.

Why use the SDTS terminology? Even though the TIGER/Line files do not follow the SDTS format, the TIGER/Line documentation will use these terms and definitions in order to promote a common language for describing geographic data and to facilitate the transition to the SDTS.

The spatial objects in TIGER/Line belong to the “Geometry and Topology” (GT) class of objects in SDTS. The definitions are from FIPS Publication 173, *Spatial Data Transfer Standard* (SDTS) (August 28, 1992) Section 2-2, “Classification and Intended Use of Objects,” pp. 11-20.

Node “A zero-dimensional object that is a topological junction of two or more links or chains, or an end point of a link or chain,” is a *node*.

Entity Point “A point used for identifying the location of point features (or areal features collapsed to a point), such as towers, buoys, buildings, places, etc.”

Complete Chain “A chain [a sequence of non-intersecting line segments] that explicitly references left and right polygons and start and end nodes.” The shape points combine with the nodes to form the segments that make a *complete chain*.

Network Chain “A chain that explicitly references start and end nodes and not left and right polygons.”

GT-Polygon “An area that is an atomic two-dimensional component of a *two-dimensional manifold*, [which is defined as] one and only one planar graph and its two-dimensional objects.” *GT-polygons* are elementary polygons that are mutually exclusive and completely exhaust the surface.

Spatial Objects

The spatial objects in the TIGER/Line files embody both geometry (coordinate location and shape) and topology (the relationship between points, line objects, and polygons) and therefore belong to the geometry and topology (GT) class of objects in the SDTS. In the SDTS, *nodes* represent point objects (0-cells) that identify the start and end position of lines or 1-dimensional objects (1-cells) called *chains*. The chains in the TIGER/Line® files are *complete chains* because they form polygon boundaries and intersect other chains only at nodes. Topological chains that do not contain polygon information are *network chains*. Data users may choose not to use the polygon or geographic entity codes and consider the TIGER/Line® files a source of network chain data.

Figure 1-1 illustrates the relationship between nodes and complete chains. The figure shows two complete chains forming a central road; a start and end node define each complete chain. Complete chains that meet at an intersection share the same node. As the figure suggests, complete chains may consist of one or more line segments that describe the shape and position of the complete chain. *Shape points* define the line segments and are not part of the topology of the TIGER/Line files. *Shape points* and the resulting *line segments* are attributes of the complete chains.

When complete chains link node to node and form a closed figure (a 2-cell), a *GT-polygon* results. The GT-polygon containing Friendship Park in Figure 1-1 is bounded by five complete chains that share five nodes. GT-polygons are elementary units; they are not subdivided into smaller polygons. The polygons completely encompass the area they represent and there is no gap or overlap between adjacent polygons. The geographic entities and area landmarks in the TIGER/Line files are associated with one, or a set of GT-polygons.

The TIGER/Line files contain point landmark data. Point landmarks are *entity points* that mark the location of points of interest and are not connected to complete chains or GT-polygons.

The following table summarizes the terms for spatial objects in the TIGER/Line files:

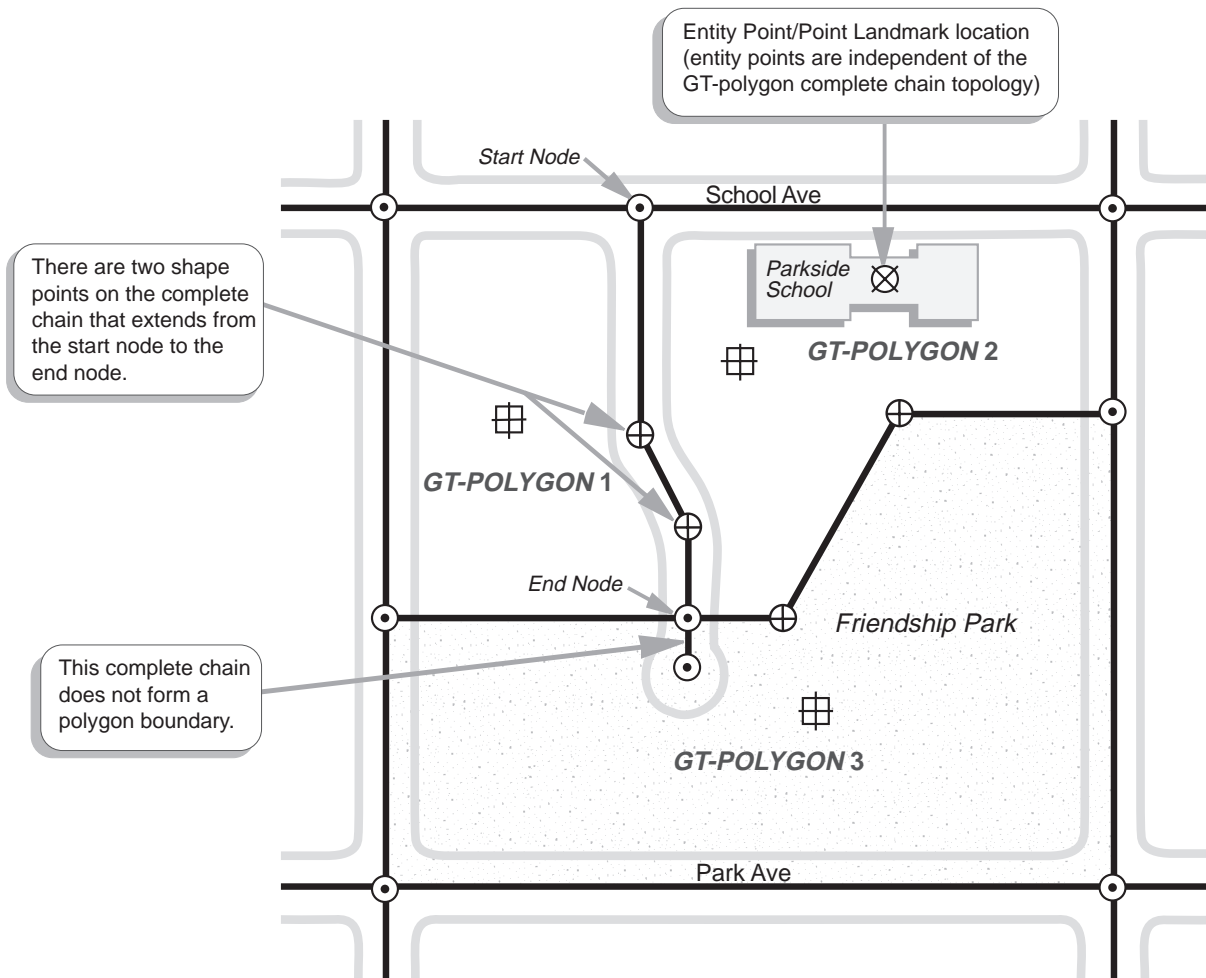
	<u>Point (0-cell)</u>	<u>Line (1-cell)</u>	<u>Polygon (2-cell)</u>
Topology	Node	Complete Chain or Network Chain	GT-polygon
Non-topology	Entity Point		
Attribute	Shape Point		







Features

The Census TIGER database uses the term *feature* to informally describe spatial objects more complex than nodes, complete chains, or GT-polygons. For instance, Main Street is a feature that may consist of a series of complete

Figure 1-1 **Basic TIGER/Line® File Topology**

The illustration below shows a generalized block that consists of three GT-polygons (GT stands for geometry and topology). The block contains a point landmark (Parkside School) inside GT-polygon 2 and an area landmark (Friendship Park) that is coextensive with GT-polygon 3.



-  **Actual Street Curb Location**
-  **Node**—A zero-dimensional object that incorporates topology and geometry. Each marks the intersection or end point of a complete chain.
-  **Shape Point**—A zero-dimensional object that defines the curvature of a complete chain, but is not required to describe the topology of the complete chain (unlike nodes at intersections or end points).
-  **Point Landmark**—An entity point that identifies the location of a point landmark.
-  **Polygon Interior Points**—A point associated with, and inside of, a polygon.
-  **Complete Chain**—A one-dimensional object having topological and geometric characteristics.

chains with the same name. The Census TIGER database contains complete chains, but does not contain features or link complete chains to features.

Left- and Right-Side Data Fields

If one is standing on a complete chain at the *start node* facing the *end node*, data listed in the fields carrying a right qualifier would be found to the right of the complete chain. Notice the position of the start and end nodes for the road in the central section of Figure 1-1; the right-side of the complete chain corresponds to GT-polygon 1 and the left-side corresponds to GT-polygon 2. From the information contained in this basic record, data users can collect the complete chains necessary to construct intersecting polygons and features.

Single-Layer Topology

All spatial objects in the TIGER/Line files exist in a single data layer that includes roads, hydrography, railroads, boundary lines, and miscellaneous features; they are topologically linked. For instance, nodes mark the intersections of roads and rivers. Subsurface features such as tunnels or above surface features such as bridges also create nodes when they cross surface features even though there is no direct real-world connection.

Introduction to the TIGER/Line File Structure

The 2002 TIGER/Line files are extracts of selected information from the Census TIGER database, organized as topologically consistent networks. The records in these TIGER/Line files represent features traditionally found on a paper map. Each complete chain is classified by codes that describe the type of feature it represents.

The 2002 TIGER/Line files consist of 19 record types that collectively contain geographic information (attributes) such as address ranges and ZIP Codes[®] and their Add-On codes for street complete chains, names, feature classification codes, codes for legal and statistical entities, latitude/longitude coordinates of linear and point features, landmark features, area landmarks, and area and polygon boundaries. Some counties or statistically equivalent entities do not require all of the 19 record types and therefore have less than 19 files. If the types of data

contained in Record Types 4, 6, 7, 8, B, E, U, and Z are not appropriate for a given county or statistically equivalent entity, then the U.S. Census Bureau does not include files for those record types.

The file for each county (or statistically equivalent entity) is identified by the state and county FIPS code after the “tgr” in the file name (for example, tgr42107.rt1). The suffix is .rt*n* where *n* is the record type.

The TIGER/Line data dictionary in Chapter 6 contains a complete list of all the fields in the 19 record types. Separate chapters cross-list the fields by feature attribute and geographic entity type. The next section provides a summary of 2002 TIGER/Line file record types.

2002 TIGER/Line File Record Types

Record Type 1—Complete Chain Basic Data Record

Record Type 1 provides a single record for each unique complete chain in the TIGER/Line files. The basic data record contains the end nodes for the complete chain. This record also contains address ranges and ZIP Codes (for most areas of the country where a street name/house numbering system existed at the time of data extraction from the Census TIGER database) and the Census 2000 census geographic entity codes for each side of the complete chain. Additional feature identifier, address range, and ZIP Code data related to Record Type 1 are found on Record Types 4, 5, 6, and Z.

Record Type 2—Complete Chain Shape Coordinates

Record Type 2 provides an additional series of latitude and longitude coordinate values describing the shape of each complete chain in Record Type 1 that is not a straight line segment. That is, not all complete chains in Record Type 1 have shape points and therefore not all have an associated Record Type 2. Where a complete chain in Record Type 1 is not a straight line, Record Type 2 may have a many-to-one relationship with Record Type 1.

Record Type 4—Index to Alternate Feature Identifiers

Record Type 4 provides an index to alternate feature names associated with the complete chain (Record Type 1). A Record Type 4 will not exist for a Record Type 1 that has only one name. A complete chain can have more than one alternate name. Record Type 4 has a many-to-one relationship with Record Type 1 and a many-to-one relationship with Record Type 5.

Record Type 5—Complete Chain Feature Identifiers

Record Type 5 contains a list of all unique feature names for complete chains in the TIGER/Line files. Each name (or feature identifier) has an identification code number (FEAT). Record Type 5 has a one-to-many relationship with Record Type 4.

Record Type 6—Additional Address Range and ZIP Code Data

Record Type 6 provides additional address range information for a street complete chain when the information cannot be presented as a single address range (for example, the house/building numbers are not uniformly arranged to form an address range). Record Type 6 appears only for those counties that have address ranges and ZIP Code information in the Census TIGER database. There is no assurance that the address ranges provided on Record Type 6 will cover fewer addresses than the address ranges appearing on Record Type 1. Data users must use Record Type 6 to obtain the entire picture of the potential address ranges along a complete chain. The address ranges used for geocoding along corporate corridors and corporate offset limits appear only in Record Type 6. Record Type 6 can have a one-to-one or a many-to-one relationship with Record Types 1 and with Record Type Z.

Record Type 7—Landmark Features

Record Type 7 contains the area and point landmarks from the Census TIGER database. If Record Type 7 represents an area landmark rather than a point landmark, then a one-to-one relationship exists with Record Type 8. Some of the information that was formerly in Record Type 9 now is included in Record Type 7. If a county file has no landmarks Record Types 7 and 8 will not exist for that county.

Record Type 8—Polygons Linked to Area Landmarks

Record Type 8 links the polygon identification codes with the area landmark identification codes. If a county file does not have any area landmarks then there will not be a Record Type 7 or a Record Type 8 for that county. Record Type 8 can have a one-to-one, one-to-many, many-to-one, or many-to-many relationship with Record Type P.

Record Type A—Polygon Geographic Entity Codes: Current Geography

Record Type A contains a record for each polygon represented by Record Type P in the TIGER/Line files. The U.S. Census Bureau provides current (post-Census 2000) geographic entity codes—state, county, county subdivision, place, American Indian/Alaska Native Area/Hawaiian Home Land—on this record type.

Record Type B—Polygon Geographic Entity Codes: Corrections

Record Type B contains records for only those polygons with corrections. The U.S. Census Bureau provides corrected geographic entity codes from the Count Question Resolution (CQR) Program for state, county, county subdivision, place, and American Indian/Alaska Native Area/Hawaiian Home Land areas on this record type. A Record Type B will not exist in counties that do not contain corrected geography. The CENID and POLYID fields may be used to link Record Type B to Record Type S to determine which geographic entity code(s) were corrected.

Record Type C—Geographic Entity Names

Record Type C provides a unique list of all geographic codes, their associated name, and some entity attributes in a flat (nonhierarchical) file. It contains a *Data Year* field that may have four values: *2000* for geographic names and codes valid for Census 2000, *200n* (where *200n* is the year of extraction from the Census TIGER database) for geographic names and codes valid for the current year, CQR0 for geographic names and codes valid for corrected geography, or *blank* when the geographic names and codes for Census 2000, *200n*, and CQR0 are the same. Multiple records for

the same geographic entity show its change or correction over time. Record Type C is linked to other record types (1, A, B, E, and S) through geographic entity codes.

Record Type E—Polygon Geographic Entity Codes: Economic Census

Record Type E provides the basic geographic entity codes—state, county, county subdivision, place, American Indian/Alaska Native Area/Hawaiian Home Land— used in the Economic Census. Record Type E is linked to Record Type C through geographic entity codes.

Record Type H—TIGER/Line ID History

Record Type H provides the history of each TIGER/Line ID when complete chains (Record Type 1) are split or merged. Record Type H shows the TLIDs of the complete chains in existence after the split or prior to the merge.

Record Type I—Link Between Complete Chains and Polygons

Record Type I links Record Type 1, the complete chain basic data, to Record Type P, the polygon internal point. The Record Type I to Record Type 1 link (TLID) may be used to link complete chain attributes and other data record types (2, 4, 6, H, U, and Z) to each other. The Record Type I to Record Type P link (CENID and POLYID) may be used to link polygon attributes and other data record types (8, A, B, E, and S) to each other. Record Type I also serves as a link between the complete chain attributes on Record Type 1 and the TIGER Zero-Cell ID (TZID) information on Record Types T and U. Record Type I has a one-to-one relationship with Record Types 1, T, and U but a many-to-one relationship with Record Type P. When Record Type I is linked to a single-sided Record Type 1 (county boundary), it will provide only the left- or the right-polygon identifier.

Record Type P—Polygon Internal Point

There is a Record Type P for every polygon in the TIGER/Line files. Record Type P has a one-to-one relationship with Record types A and S and a one-to-many relationship with Record Type I and identifies the internal point coordinates for each polygon. See the *Internal Points* section in Chapter 3.

The TIGER/Line files include all complete chains and polygons in the Census TIGER database. The topology of the Census TIGER database ensures that a one-to-one relationship exists between the polygons constructed from Record Types 1 and 2 and Record Type P.

Record Type R—TIGER/Line ID Record Number Range

Record Type R contains the range of unique complete chain record numbers (TLIDs) and TIGER Zero-Cell IDs (TZIDs) assigned to a census file in a nationwide scheme. Record Type R has the lowest and the highest record numbers for the range. Numbers are assigned to complete chains or zero-cells beginning at the lowest value. The current number is the highest record number for the census file used.

Each TIGER/Line file consists of an entire county or statistically equivalent entity. In the Census TIGER database, the county or statistically equivalent entity may be split into many partitions. The U.S. Census Bureau assigns permanent record numbers to each of these partitions. These record numbers are found in Record Type R. Record Type R is not directly linked to any other record type.

Record Type S—Polygon Geographic Entity Codes: Census 2000

Record Type S contains a record for each polygon represented by Record Type P in the TIGER/Line files. The U.S. Census Bureau provides the Census 2000 geographic entity codes that identify polygons on this record type.

Record Type T—TIGER Zero-Cell ID

There is a Record Type T for every TIGER Zero-Cell ID (TZID) in the TIGER/Line files. Record Type T has a one-to-many relationship with Record Type I.

Record Type U—TIGER/Line ID Overpass/Underpass Identification

Record Type U provides information identifying those complete chains that are overpasses or underpasses and the order in which they cross

other complete chains. Record Type U has a one-to-one relationship with Record Type T, a many-to-one relationship with Record Type 1, and a one-to-many, many-to-one, or many-to-many relationship with Record Type I.

Record Type Z—ZIP+4® Codes

Record Type Z provides Postal +4 Add-On codes that make ZIP+4 codes out of the ZIP Codes on Type 1 and Type 6 records. Record Type Z has a one-to-one or many-to-one relationship with Record Type 1 and with Record Type 6.

The Relationship Between Spatial Objects and TIGER/Line Record Types

The TIGER/Line files do not have specific record types for each spatial object. Defining a complete chain requires information from Record Types 1, 2, and I. Record Types 1 and 2 alone describe the set of *network chains*. GT-polygons require the combined information of Record Types 1, 2, I, and P. See Chapter 3 for a discussion on how to link data using different types of spatial objects.

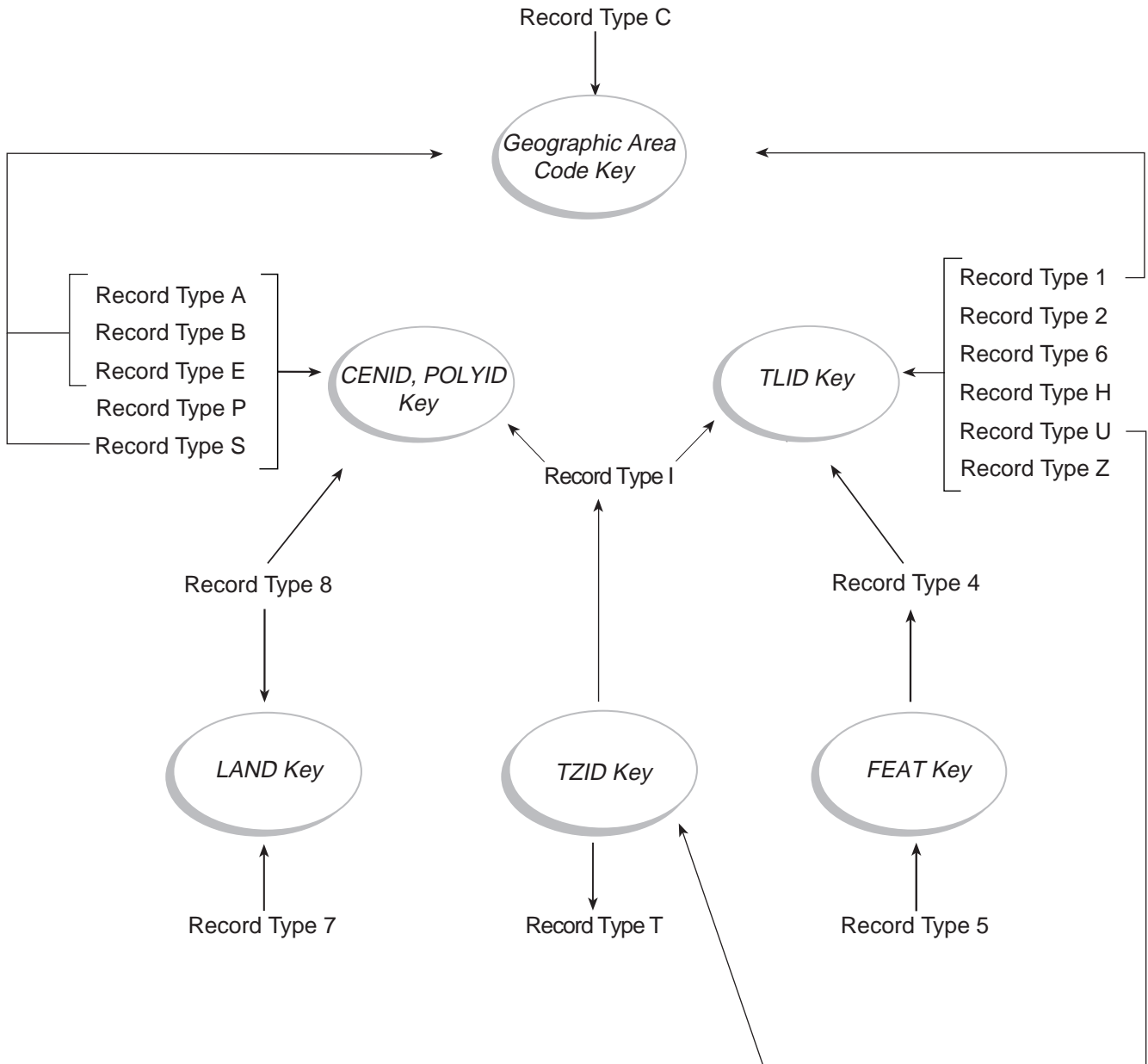
Linkages Between Record Types

All the record types except Record Type R contain fields (such as TLID, TZID, FEAT, CENID, POLYID, LAND, or a geographic entity code) that are used to link together data from the record types. Chapter 2 discusses the TLID, TZID, CENID, POLYID, and LAND identification codes in detail. Figure 1-2 shows the record linkage keys. When different record types have a common key with the same data, a linkage can be made between the records. Some of the links are direct, while others are indirect and require a connection through an intermediate record type. An entire TIGER/Line file can be navigated using the record linkage keys.

Linkages may be made to data external to a TIGER/Line file. Record Types 1 and S contain geographic entity code keys—the Census 2000 census geographic entity codes—that may be linked to the U.S. Census Bureau’s statistical data (the Census 2000 Redistricting data and the

several Summary Files or SFs). With geographic information systems for processing and display, data users can use the geographic entity codes to link data tabulations with the geographic data. For example, data users interested in linking the Census 2000 demographic data for census tracts to the census tract information in the TIGER/Line files should create a field in both files comprised of the state code, county code, and census tract number. This newly created field then serves as the link between the demographic data file(s) and the TIGER/Line file.

Figure 1-2 TIGER/Line® File Record Linkage Keys



Chapter 2: Version Code and Identification Numbers

The vintage of the TIGER/Line® files is reflected in its name, not in the version code. The year noted in the name of the TIGER/Line files, the 2002 TIGER/Line files for example, normally represents the vintage of the boundaries in the file while the version code reflects the creation date of the TIGER/Line files.

Version Code

The version code is a numeric code that uniquely identifies a record with a specific release version of the TIGER/Line files. All record types have a 4-character field for the version code.

The version code of the TIGER/Line files is assigned as “MMYY” which represents the month and year that the data in the file was extracted from the TIGER® database. This means that county files created for the same program are likely to have different version codes. Adjacent counties in a state may have different version codes if they were extracted at different points in time. This will make it easier for users to determine the latest version of the data if they have several versions of the TIGER/Line files for a county. The version codes for earlier releases of the TIGER/Line files are as follows:

1000 to 1100 — TIGER/Line Files, Redistricting Census 2000

0301 to 0801 — TIGER/Line Files, Census 2000

0302 to 0502 — TIGER/Line Files, UA Census 2000

TIGER/Line Identification Number (TLID)

The TIGER/Line files use a permanent 10-digit TIGER/Line record identification number (TLID) to uniquely identify a complete chain for the Nation.

TLID Codes

The 10-digit TLID will not exceed the value $2^{31} - 1$ (2,147,483,647) and will represent the same complete chain in all versions of this file, beginning with the TIGER/Line Precensus Files, 1990. The minimum value is 100,001. Topological changes to the complete chain will cause the TLIDs to change.

For instance, when updates split an existing complete chain, each of the new parts receives a new TLID; the old TLID is not reused. For those Record Type 1 records that are county boundaries (those records that have the single-side source code—SIDE1—set), the U.S. Census Bureau is making the TLIDs for these records the same so that the complete chain representing a segment of the boundary between two neighboring counties will have the same TLID code in both counties. To make the TLIDs for these complete chains identical in both files, the U.S. Census Bureau is replacing the original TLID of one of the line segments with the TLID from the other file.

Record Type R contains the range of unique complete chain record numbers assigned to a census file in a nationwide scheme. Record Type R has the lowest (minimum) and the highest (maximum) record numbers for the range. Permanent record numbers are assigned within each partition of the Census TIGER[®] database. Numbers are assigned to complete chains beginning at the minimum value and increasing the current value by one until it reaches the maximum value. For those complete chains that represent a segment of the boundary between two neighboring counties, the TLID will not appear in Record Type R for one of the counties. This occurs when the TLID for the complete chain is from the adjoining county and would be outside of the numeric range for this county. Users will need to reference Record Type R from that adjoining county for the Record Type R information for these TLIDs.

Record Type H shows the history of a particular TLID, whether combined or split, and its predecessors or successors. For those complete chains that represent a segment of the boundary between two neighboring counties, the complete history for a TLID may not appear in Record Type H for one of these counties. Where the TLID is from the adjoining county only the most current TLID history record will appear in a TIGER/Line file. Users will need to reference Record Type H from the adjoining county to find the entire history for that TLID.

TLID Record Locations

The TLID field appears in columns 6 through 15 of the following record types:

- Record Type 1
- Record Type 2
- Record Type 4
- Record Type 6
- Record Type Z

The TLID field appears in columns 11 through 20 of the following record types

- Record Type H
- Record Type I

In Record Type U, the TLID field appears in columns 22 through 31, 32 through 41, 42 through 51, and 52 through 61.

TLID Record Linkages

The TLID field provides a key for linking records containing primary attributes describing the complete chain or the geographic entity codes associated with the left and the right sides of the complete chain. Record Type I contains the key fields required to link the TLID and the GT-polygon identification fields, CENID and POLYID. Record Type I also contains the key fields required to link the TIGER zero-cell identification numbers (TZIDs) identifying the start node and end node of each complete chain to the TLID of that complete chain. See Figure 1-2 in Chapter 1.

TLID Sort Sequence

Each record type is a separate file. The records in each record type do not have an overall sort sequence. Data users may wish to sort the file by TLID in order to facilitate record linkages.

TIGER Zero-Cell Identification Number (TZID)

The post-Census 2000 TIGER/Line files use a permanent 10-digit TIGER zero-cell identification number (TZID) to uniquely identify a zero-cell (node) for the Nation.

TZID Codes

The 10-digit TZID will not exceed the value $2^{31} - 1$ (2,147,483,647) and will represent the same zero-cell in all versions of this file, beginning with the 2002 TIGER/Line. The minimum value is 100,001.

For those zero-cells along the boundary between two neighboring counties, the U.S. Census Bureau is making the TZIDs for these zero-cells the same so that the zero-cell will have the same TZID code in both counties. To make the TZIDs for these zero-cells identical in both files, the U.S. Census Bureau is replacing the original TZID of one of the zero-cells with the TZID from the other file.

Record Type R contains the range of unique zero-cell record numbers assigned to a census file in a nationwide scheme. Record Type R has the lowest (minimum) and the highest (maximum) record numbers for the range. Permanent record numbers are assigned within each partition of the Census TIGER database. Numbers are assigned to zero-cells beginning at the minimum value and increasing the current value by one until it reaches the maximum value. For those zero-cells along the boundary between two neighboring counties, the TZID will not appear in Record Type R for one of the counties. This occurs when the TZID for the zero-cell is from the adjoining county and would be outside of the numeric range for this county. Users will need to reference Record Type R from that adjoining county for the Record Type R information for these TZIDs.

TZID Record Locations

The TZID field appear in the following record types:

- Record Type I — Contains start and end TZIDs in columns 21 through 30 (start) and columns 31 through 40 (end)
- Record Type T — Appears in columns 11 through 20
- Record Type U — Appears in columns 11 through 20

TZID Record Linkages

The TZID field provides a key that can be used for sequentially linking complete chains. Record Type I contains the key fields required to link the start and end TZIDs to the TLID and the GT-polygon identification fields, CENID and POLYID. See Figure 1-2 in Chapter 1.

TZID Sort Sequence

Each record type is a separate file. The records in each record type do not have an overall sort sequence. Data users may wish to sort the file by TZID in order to facilitate record linkages.

User-Defined Changes to the TIGER/Line Files

TLID and TZID as Standard Identification Numbers

Users should store the record number and the version code associated with each complete chain and zero-cell in their local systems to ensure their ability to match records with earlier or later versions of the TIGER/Line files. The record and version numbers of each complete chain and zero-cell provide an important link to the corresponding complete chain and zero-cell in the Census TIGER database. This key will allow users to transfer new information from later U.S. Census Bureau TIGER/Line releases into their database, and to provide the U.S. Census Bureau with readily usable updates, should they wish to do so.

Feature Changes

Users should assign a new record number (TLID) to each new complete chain they create and a new record number (TZID) to each new zero-cell they create along with a version number with a value greater than 5000 in order to avoid duplicating a U.S. Census Bureau-assigned record number that may appear elsewhere in the national file. Users should create a new record for each new complete chain and zero-cell, including those formed when a new intersection splits an existing complete chain. If a complete chain has been assigned different feature identifiers, attributes, and/or coordinate positions without being merged with or split from another complete chain, it is a modified complete chain and does not need a new TLID. Users may wish to mark these changes; the U.S. Census Bureau will use this information to identify changes more quickly and accurately.

Users should assign a version code equal to 4999 for all deleted complete chain, zero-cell, and landmark records. This version code will allow the U.S. Census Bureau to positively identify all user deletions. Users may assign or reassign polygon and landmark identification numbers in any manner that uniquely identifies each within a file.

TIGER/Line Polygon Identification Numbers (CENID, POLYID)

The U.S. Census Bureau uses two fields, the census file identification code (CENID) and the polygon identification code (POLYID), to uniquely identify GT-polygons.

The CENID is a U.S. Census Bureau alphanumeric identifier used to uniquely number the GT-polygons within its TIGER partitions. Since the partitions may include only a portion of a county, the TIGER/Line files may contain multiple CENIDs.

The polygon identification number (POLYID) is a temporary number assigned to every polygon in the Census TIGER database. Although this number is part of the database design, it is a dynamic number and can change between different versions of the TIGER/Line files. The Census TIGER database does not contain permanent identifiers for GT-polygons as it does for complete chains. POLYID is unique only within CENID; in cases where a TIGER/Line file contains more than one CENID, the POLYID may not be unique within that file. Within each CENID, the value for the POLYID starts with “1” and increments sequentially until all polygons are numbered.

CENID and POLYID Codes

The CENID is a 5-character alphanumeric code. Record Type R contains a list of all valid CENIDs used in each county TIGER/Line file.

The POLYID code is an integer identification number, without leading zeros, applied to each GT-polygon. The POLYID with a value of 1 refers to the *universal polygon*, the polygon that refers to all space outside a county coverage area and is excluded from Record Types A, B, E, I, P, and S.

The range of POLYID numbers in a county file may contain gaps or skipped numbers resulting from the use of one partition (CENID) for more than one TIGER/Line county file. POLYID numbers also may duplicate in a single TIGER/Line[®] file as they are unique only within CENID. A single TIGER/Line file may contain CENID information from many other census files.

Either the CENIDL and POLYIDL, or CENIDR and POLYIDR fields in Record Type I will have a blank value where the complete chain is a county boundary.

CENID and POLYID Record Locations

The CENID and POLYID fields appear in the following record types:

- Record Type 8 — Records exist only for area landmark GT-polygons
- Record Type A — Records exist for all GT-polygons
- Record Type B — Records exist for GT-polygons with Count Question Resolution changes
- Record Type E — Records exist for all Economic Census GT-polygons
- Record Type I — Contains left- and right-side CENIDs and POLYIDs associated with each complete chain
- Record Type P — Records exist for all GT-polygons
- Record Type R — Contains only CENID; Record Type R lists the minimum and maximum possible TLIDs and TZIDs, and the highest TLID and TZID from each census file (CENID) used to generate the current version of the TIGER/Line files.
- Record Type S — Records exist for all GT-polygons

CENID and POLYID Record Linkages

The TIGER/Line files use both the CENID and POLYID fields to link all of the polygon record types together (Record Types A, B, E, P, and S), to link the GT-polygons to the associated complete chains, and to link area landmarks to GT-polygons (see Figure 1-2, in Chapter 1).

The CENID and POLYID fields link the geographic area codes in Record Types A, B, E, and S to Record Type P which contains the coordinates for an internal point in the GT-polygon. The TIGER/Line files include a Type A and a Type S record for each Type P record.

Record Type I provides a link between the GT-polygon records and the record types containing complete chain attributes (Record Types 1, 2, 4, and 6). Each Type I record identifies a complete chain by TLID with a left- and right-side GT-polygon. Here CENIDL and POLYIDL contain the CENID and POLYID codes for the GT-polygon on the left side of the line. Likewise, CENIDR and POLYIDR contain the CENID and POLYID codes for the GT-polygon on the right side of the line. There is a Type I record for each Type 1 record. All CENID and POLYID codes appear in Record Type I.

To find all of the complete chains that form the boundary of a specific GT-polygon, search Record Type I for a match with either the left or the right CENID and POLYID. Where the left and the right CENID and POLYID codes are the same, the complete chain is internal to the GT-polygon (e.g., a dead-end street).

Record Type 8 provides a link between the GT-polygons and the landmark feature records. See the section, *TIGER/Line Landmark Identification Numbers*, in this chapter.

CENID and POLYID Sort Sequence

The POLYID codes appear in numeric sequence by alphanumeric CENID in Record Types A, B, E, P, and S. There is no systematic CENID or POLYID sequence in Record Type I.

TIGER/Line Landmark Identification Numbers (LAND)

The landmark feature identification number (LAND) is a 10-digit number that uniquely identifies both point and area landmarks within each county file. LAND is not a permanent number; the U.S. Census Bureau assigns LANDs each time a new version of the TIGER/Line files is produced. Within each county, LANDs are assigned beginning with “1” and are incremented sequentially until all features are numbered.

In rare situations, Record Type 7 may list the same LAND number more than once if the landmark has more than one feature name. Each name appears as a separate data record in Record Type 7. These data records describe the same landmark and have the same LAND. Overlapping landmarks (e.g., a pond located in a park) may cause more than one name to be assigned to a GT-polygon. However, overlapping landmarks are separate features with different LANDs.

LAND Codes

The LAND is an integer number that does not contain leading zeros. It is assigned during the extraction of the data and is not a permanent number. There may be gaps in the sequence of the LANDs in Record Type 7 because of the way this information is extracted.

LAND Record Locations

The LAND field appears in the following record types:

- Record Type 7 — Landmark attributes
- Record Type 8 — Linkage record containing the LAND and the CENID and POLYID fields

LAND Record Linkages

Record Type 8 links each area landmark's LAND with a CENID and POLYID. Each area landmark will have one or more Type 8 records that together identify all of the GT-polygons that make up the landmark.

LAND Sort Sequence

Record Type 7 and 8 contain records sorted in ascending order by LAND. In Record Type 8, each LAND is repeated for each GT-polygon covered by the area landmark.

Chapter 3: Attributes of Geographic Objects

Line Features

Line features consist of one or more complete chains that share common attributes such as feature identifiers, address ranges, and census feature class descriptions.

Feature Identifiers

The feature identification fields contain either a general type label or a specific proper name assigned to a complete chain that identifies the feature. Each complete chain that is a part of a named feature, such as US Highway 1, has the same feature identifier.

The TIGER/Line[®] files use several related data fields to provide a structured description of the feature identifier:

- Feature Direction Prefix (e.g., **N** Adams Ave)
- Feature Name (e.g., **US Highway 1**, *Jefferson St*)
- Feature Type (Roosevelt **Blvd**, Mangosteen **River**)
- Feature Direction Suffix (e.g., Providence St **NE**)

Most named street/highway features have a feature type. Numerous exceptions exist; for example, *Broadway* consists of a feature name with no type specified. Do not confuse feature types that form proper names with the census feature classification scheme. In the Census TIGER[®] database, feature names are assigned to line features independently of the census feature class codes (CFCCs) of the line features. For example, major airports usually have an express highway leading to the terminal area. This highway does not have an interstate highway name such as I-95, but may have the CFCC of an interstate highway (A11) because it has the same characteristics as an interstate highway (limited access with separated, multiple lanes).

The feature identifiers of line features that are roads may include either a direction prefix or suffix. Some may have both a direction prefix and suffix.

The feature name fields for line features that are roads may contain both a name and a feature type. For all hydrography and non-road features, the feature type will follow the feature name in the feature name field. In some instances, the feature type is commonly considered part of the name and is combined with the feature name in the TIGER/Line files to avoid confusion; for example, US Hwy 1. The Census TIGER System identifies *US Hwy* as a feature type used as a prefix to the name and *1* as the feature name. The feature types, such as US Highway, State Highway, and Interstate that normally precede the name appear in the name field.

Generic feature identifiers have a name listed in the names field, but do not have a feature type or direction. Some examples of generic names include ramp, power line, and reservoir. Generic feature identifiers are selectively added to features that do not have proper names. In most cases, complete chains without proper names have no feature identifier.

The TIGER/Line files do not support a data level above the complete chain that allows the construction of higher level objects (features). Complete chains with the same name may represent separate features; for example, a county may contain several Main Streets located in different geographic entities (e.g., towns or cities) scattered throughout the county.

The ability to group chains together to include the entire length of a street feature, such as US Route 66, depends on the uniqueness of the identifiers and the consistency of the feature identifiers along the length of the feature. The U.S. Census Bureau makes no guarantee that the complete chains have uniform names or contain all of the known feature identifiers. The U.S. Census Bureau has eliminated some alternate spellings in favor of the spelling confirmed by the ZIP+4 file of the U.S. Postal Service.

The census feature class codes (CFCCs) may vary for chains with the same feature identifier. For example, the most frequent CFCC for a state highway is A21, but the complete chains marking the location of State Highway 32 may have a CFCC of A11, A21, or A31 (see the *Census Feature Class Codes* section in this chapter).

The TIGER/Line file structure allows up to 4,996 feature identifiers for a complete chain. The primary feature identifier appears in Record Type 1. For street features, the primary feature identifier is usually the name most commonly associated with the address range. Up to five alternate feature identifiers are cross-referenced in each Type 4 record, and a single complete chain can have up to 999 Type 4 records. Alternate feature identifiers include highway designation numbers for named streets, former names, and alternate spellings where source material provided conflicting data.

Where the complete chain represents a limited access highway, the highway type and route designator, such as I-95, should ideally become the primary name, and the local designation, such as Cross County Expressway or Capital Beltway, should become the alternate name. However, this is not always true in the TIGER/Line files.

The primary and alternate feature identifiers can be independent of each other. There is no assurance that the same combination of primary and alternate feature identifiers will appear together in a sequence of complete chains. There also is no assurance that a feature identifier will consistently appear as the primary identifier; it might be recorded as an alternate feature identifier for some complete chains and a primary feature identifier for others. During TIGER improvement operations, the U.S. Census Bureau has taken steps to make the Interstate highway route designator the primary feature identifier for Interstate highways, and the common street name used in mail delivery the primary name on all other roads. The order of identifiers follows this hierarchy: Interstate highway, common name, US highway, state highway, county highway, with town and township road at the bottom of the list.

Record Type 5 contains a record for each feature identifier used as either a primary or an alternate name. The TIGER/Line files link the alternate names in Record Type 5 to Record Type 1 through the use of the alternate feature identification code index that forms Record Type 4. See the *Feature Identifier Record Linkage* section in this chapter.

Feature Identifier Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	FEDIRP	Feature Direction, Prefix
1	FENAME	Feature Name
1	FETYPE	Feature Type
1	FEDIRS	Feature Direction, Suffix
5	FEDIRP	Feature Direction, Prefix
5	FENAME	Feature Name
5	FETYPE	Feature Type
5	FEDIRS	Feature Direction, Suffix

Feature Identifier Codes

- *Direction (Prefix and Suffix)*

Direction consists of a 2-character abbreviation, left-justified in the data fields, and is used for road features only.

<i>Abbreviation</i>	<i>Explanation</i>
(blank)	No Direction
N	North, Norte
S	South, Sur
E	East, Este
W	West, Oeste
NE	Northeast, Norte Este, Nordeste
NW	Northwest, Norte Oeste, Noroeste
SE	Southeast, Sur Este, Sudeste
SW	Southwest, Sur Oeste, Sudoeste
NO	Norte Oeste, Northwest
SO	Sur Oeste, Southwest
O	Oeste, West
EX	Extended, Extension

- *Feature Names*

Feature names consist of a 30-character text string with words separated by blanks. Feature names contain upper- and lower-case characters. The feature name is truncated if it is over 30 characters long.

The U.S. Census Bureau uses the ISO 8859-1 character set, commonly referred to as Latin-1, to identify characters with diacritical marks. ISO 8859-1 is not ASCII or "extended ASCII," but rather ASCII compatible in that the first 127 character codes of ISO 8859-1 are identical to ASCII. ISO 8859-1 uses the space left vacant by ASCII in the 8-bit range to represent additional characters. The following 16 characters from the ISO 8859-1 may appear in the 2002 TIGER/Line files:

<i>Character</i>	<i>Name</i>	<i>ISO (dec, hex)</i>
Á	A-Acute Accent	193,c1
á	a-Acute Accent	225,e1
É	E-Acute Accent	201,c9
é	e-Acute Accent	233,e9
Í	I-Acute Accent	205,cd
í	i-Acute Accent	237,ed
Ñ	N-Tilde	209,d1
ñ	n-Tilde	241,f1
Ó	O-Acute Accent	211,d3
ó	o-Acute Accent	243,f3
Ú	U-Acute Accent	218,da
ú	u-Acute Accent	250,fa
Ü	U-Diaresis	220,dc
ü	u-Diaresis	252,fc
Å	A Ring	197,c5
å	a Ring	229,e5

The feature name field may contain abbreviations to represent some feature types. See *Appendix B—Standard Abbreviations*.

- *Feature Types*

The feature type field for road features consists of a 4-character text string. For all hydrography and non-road features, the feature type *will follow* the feature name in the feature name field. The abbreviations in *Appendix B—Standard Abbreviations* may appear in the feature type field or the feature name field.

Corporate Corridors and Corporate Offset Boundaries A corporate corridor is a narrow, linear part of an incorporated place (or in a few instances, another legal entity). The corporate corridor includes the street and/or right-of-way, or a portion of the street and/or right-of-way within the incorporated place. It excludes from the incorporated place those structures such as houses, apartments, or businesses that front along the street or road.

A corporate limit offset boundary exists where the incorporated place lies on one side of the street and may include all or part of the street or right-of-way, but excludes from the incorporated place, the structures located along that side of the street. See Figure 4-4 in Chapter 4.

To facilitate address coding, the Census TIGER database contains duplicate street name and address ranges on complete chains with a CFCC of F11 (nonvisible offset boundary of a legal entity) or F12 (nonvisible corridor boundary of a legal entity). The duplicate street names for the F11 and F12 features are on Record Type 5; the duplicate address ranges are on Record Type 6. Record Type 1 will not contain feature identifiers for complete chains with CFCCs of F11 or F12.

Feature Identifier Record Linkage

Record Type 4 provides the link required to find any alternate feature identifiers belonging to a complete chain. Record Type 4 cross-references each TLID with an Alternate Feature ID code (FEAT) assigned to each record in Record Type 5. Record Type 5 contains all feature identifiers including those that are used only as primary identifiers. However, only the FEATs for complete chains that have alternate feature identifiers appear in Record Type 4. Complete chains that have no alternate feature identifier will have no Type 4 record.

To find the alternate feature identifiers for a complete chain, begin by determining the TLID for the complete chain. Then search for this TLID in Record Type 4. If the complete chain has any alternate feature identifiers, Record Type 4 should provide at least one record.

Once found, the Record Type 4 entries will each contain from one to five FEAT numbers. The FEAT fields are blank when no further alternative identifiers exist. The first FEAT field (FEAT1) should always have a valid FEAT number. Finally, find the records in the Record Type 5 file that match the FEAT codes from Record Type 4. The TIGER/Line file provides a record sequence number (RTSQ) to uniquely identify multiple Type 4 records that might exist for one TLID. The RTSQ equals 1 for the first occurrence of a TLID in Record Type 4 and can reach a maximum of 999 for subsequent occurrences.

Even though Record Type 5 contains all feature identifiers, Record Type 4 contains only references for alternate feature identifiers. Data users cannot link all of the names in Record Type 5 to all of the associated complete chains in Record Type 1 by using Record Type 4.

Feature Identification Numbers Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	TLID	TIGER/Line® ID, Permanent Record Number
4	TLID	TIGER/Line® ID, Permanent Record Number
4	RTSQ	Record Sequence Number
4	FEAT1	Line Additional Name Identification Number, First
4	FEAT2	Line Additional Name Identification Number, Second
4	FEAT3	Line Additional Name Identification Number, Third
4	FEAT4	Line Additional Name Identification Number, Fourth
4	FEAT5	Line Additional Name Identification Number, Fifth
5	FEAT	Line Name Identification Number

Feature Identification Code The FEAT and sequenced FEAT data fields contain an 8-digit integer number (without leading zeros). A FEAT is assigned sequentially, beginning with 1, to each feature identifier in Record Type 5. The FEAT *is not* a permanent identification number.

TLID is the record identifier for the complete chain. See Chapter 2 for a full discussion of TLIDs.

Address Ranges and ZIP Codes[®]

The TIGER/Line files contain address ranges, not individual addresses. The term *address range* refers to the first possible structure number and the last possible structure number along a complete chain side relative to the direction in which the complete chain is coded. The address ranges in the TIGER/Line files are potential ranges that include the full range of possible structure numbers even though the actual structures might not exist.

The address numbers used to create the address ranges are commonly known as house number-street name style addresses. A house number-street name style address minimally consists of a structure number, street name, and a 5-digit ZIP Code; for example, 213 Main St 90210. In the TIGER/Line files, the ZIP Codes usually appear only on those complete chains that have address ranges identified. However, they may appear on some road features without the address ranges.

An address range also may have the full 9-digit ZIP Code that includes the USPS's 4-digit ZIP+4[®] Add-On code. The U.S. Census Bureau has added the Postal Add-On code to the Census TIGER database using an automated match to the USPS's ZIP+4 file. The codes in the TIGER/Line files are the street-level codes the USPS has assigned to address ranges. The USPS may assign more specific codes to companies and buildings, and to apartments, floors, or suites within buildings. Some address coding software that uses the USPS's ZIP+4 file may provide the more specific codes. However, the TIGER/Line files contain only the more general codes.

Usually the ZIP+4 Add-On code is not required to uniquely identify an address range. There are a few situations where a street name and address range legitimately appear more than once in the same 5-digit ZIP Code. Usually the USPS distinguishes these duplicates by using different postal station names. However, the Postal Add-On code will uniquely identify these cases. Puerto Rico is a special case because many addresses were uniquely assigned within an *urbanizacion* (a community or development)

and could duplicate another address in a different urbanization with the same 5-digit ZIP Code. To resolve this problem, the USPS added an additional line to the address to identify the urbanization. The 9-digit ZIP Code also may serve to uniquely identify these address ranges. We do not yet have all of these 9-digit ZIP Codes in the Census TIGER database.

Address Ranges

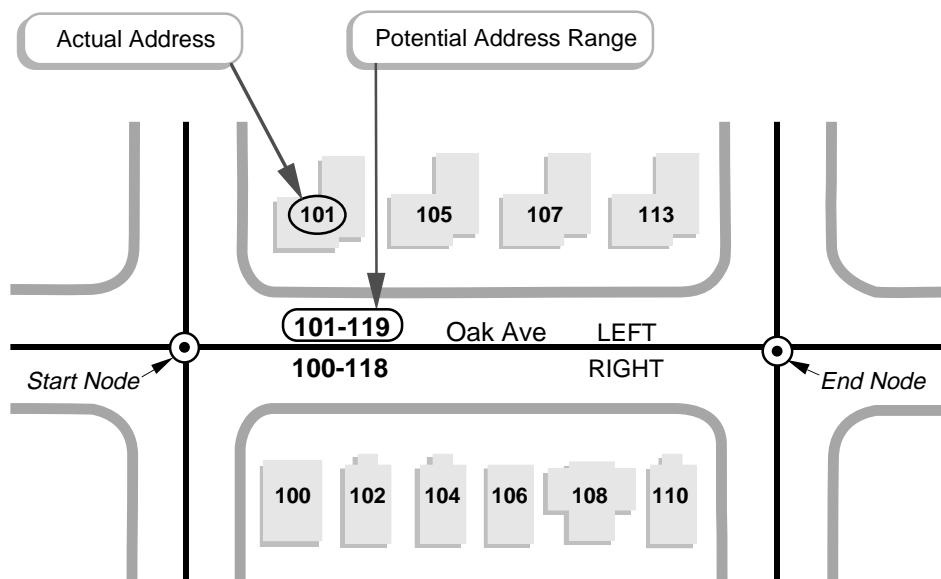
Complete chains in the TIGER/Line files have one end point labeled as the *start node* and the other end point labeled as the *end node*. The start and end nodes also are referred to as *from* and *to*. The start node always corresponds to the beginning of the complete chain identified by the start node coordinates FRLAT and FRLONG. The order of the addresses follows the sequence of the nodes on the complete chain; the nodes may not be related to the low to high orientation of the address range. The *start address* may be higher or lower than the *end address* for a complete chain. Structure numbers usually, but not always, systematically increase or decrease while moving along a street in a set direction from one complete chain to the next (see Figure 3-1).

Record Type 1 contains the initial address ranges for the left and the right sides of a complete chain. A complete chain side may have multiple address ranges. The TIGER/Line files use Record Type 6 to store any additional ranges as required. The Type 1 record will hold the ranges with the largest sequence of numbers. However, Record Type 6 may hold a significant number of additional ranges. Data users must use Record Type 6 to obtain the entire picture of the possible address ranges along a complete chain.

In Record Types 1 and 6, both the left- and the right-side address ranges have a start and an end address range field that can contain a maximum of 11-alphanumeric characters. The address range fields are right-justified. Each address range in the TIGER/Line files has only one parity. Only odd-numbered addresses are contained within an address range with odd start and end structure numbers. Likewise, only even-numbered addresses belong to an address range with even start and end structure numbers. The value zero is not used as a valid address range end value. Generally, the left and the right sides of a complete chain have opposite parities. If both

Figure 3-1 **TIGER/Line® Address Range Basics**

The TIGER/Line® files contain potential address ranges for city-style addresses. The complete chain (between the start node and the end node) in the diagram below has two address ranges; the left side has odd-numbered addresses and the right side has the complementary even-numbered addresses. Potential address ranges along a complete chain have values that encompass the addresses of existing structures, as well as those not yet built.



Record Type 1 contains separate data fields for both the start and end of each address range.

<i>Record Type 1</i>				<i>Address Range</i>			
				<i>Left side</i>		<i>Right Side</i>	
				<i>Start</i>	<i>End</i>	<i>Start</i>	<i>End</i>
RT	TLID	FENAME	FETYPE	FRADDL	TOADDL	FRADDR	TOADDR
1	0007654320	Oak	Ave	101	119	100	118

odd and even addresses exist on the same side of a complete chain, the TIGER/Line files provide both an even and an odd parity range for that side of the complete chain. One of the ranges appears in Record Type 1, while the other range appears separately in Record Type 6.

Some basic characteristics of address ranges are as follows:

- The TIGER/Line files generally contain only those house number-street name style address ranges used for mail delivery. They do not show rural route and post office box addresses. They may contain structure numbers assigned in select areas for use by local emergency services, but not for mail delivery. The TIGER/Line files do include address ranges and ZIP Codes in some small places where the USPS provides only post office box service, not street delivery. These address ranges represent the structure numbers collected during the 2000 census field operations, supplemented with addresses provided through local participant programs. Where these address ranges exist, they may be used to geocode a structure to the census block. These structure-number addresses may have ZIP Codes associated only with post office box addresses. The ZIP Codes represent the post office boxes. The address ranges in these areas do not have Postal Add-On codes since the USPS does not use them for street delivery.
- Gaps may exist between multiple ranges for a single complete chain. A gap may be significant, since any numbers missing from one complete chain may actually appear on another complete chain in the case of address anomalies such as *out-of-parity* or *out-of-sequence* addresses. The U.S. Census Bureau does not include any single address-address ranges in the TIGER/Line files including out-of-parity and out-of-sequence addresses. That is, when there is a single address that is "out of place" geographically (for example, across the street from all other odd addresses or three blocks away from all other 1200-series addresses), the U.S. Census Bureau will exclude that single address from *any* address range. Suppression of single address-address ranges is to protect the confidentiality of individual addresses collected through Census 2000 census field operations as specified by Title 13 of the U.S. Code.

- In a few rare cases, address ranges can include numbers with alphabetic characters. These characters help uniquely identify addresses within a county. For instance, certain unincorporated areas of Genesee County, Michigan add a letter G prefix to the address number. The characters are consistently placed within the address range field; for example, the letter G maintains a consistent column placement in the range G1 to G99.
- Address ranges exist only for street features, and in some cases, corporate corridor and corporate offset boundary features.
- Address ranges (consisting of a unique combination of structure number, ZIP Code, feature name, feature type, and directional) should not overlap; addresses should belong to only one range. The U.S. Census Bureau edits the address ranges to locate possible overlaps, but cannot guarantee that all possible overlap situations have been identified.
- Address ranges in the TIGER/Line files are usually associated with both the primary and alternate feature identifiers. *Caution:* Address range overlaps may occur if primary address ranges are linked to alternate feature identifiers that identify route numbers.

Some address systems use a hyphen to separate avenue numbers, private road designators, and grid cell numbers from the structure numbers; for example, *10-01 Reynolds St* uses a hyphen to separate the avenue number from the structure number.

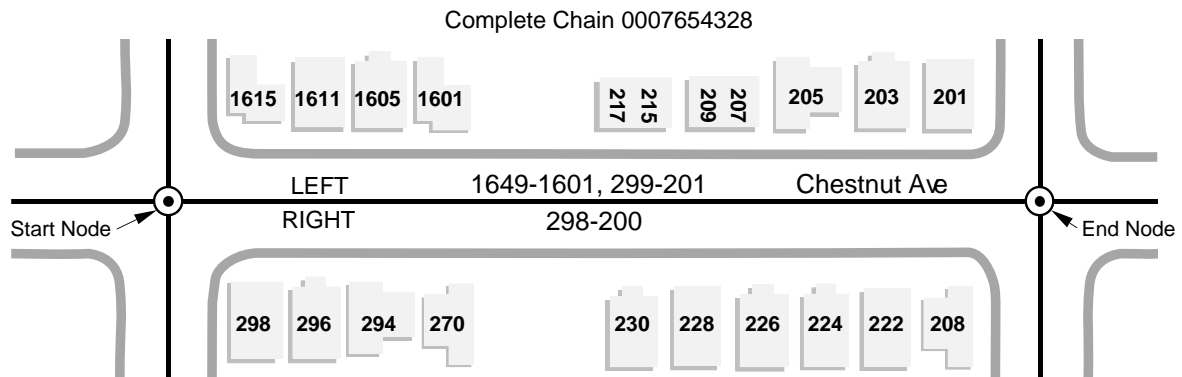
Imputed Address Ranges

Imputed address ranges occur during the process of updating the Census TIGER database when a new complete chain intersects an existing complete chain with address ranges. The intersection splits the existing complete chain and produces two new complete chains connected by a new node located at the intersection point. The update program divides the old address ranges among the two new complete chains and *imputes* the address range ends at the new node.

The impute process allocates either all or part of each original address range to each of the new complete chains in proportion to their lengths (see Figures 3-2 and 3-3). For each side of the original complete chain, the

Figure 3-2 **TIGER/Line® Address Range Imputes—Before Split**

The Census TIGER® data base uses impute flags to indicate that the one or both ends of an address range are based on calculations rather than known values. Imputed address situations generally occur when a complete chain with existing address ranges becomes split by a new complete chain. The illustration below shows the address ranges on Chestnut Ave before a split. All impute flags for this complete chain are set at zero. Figure 3-3 shows the address ranges after the split.

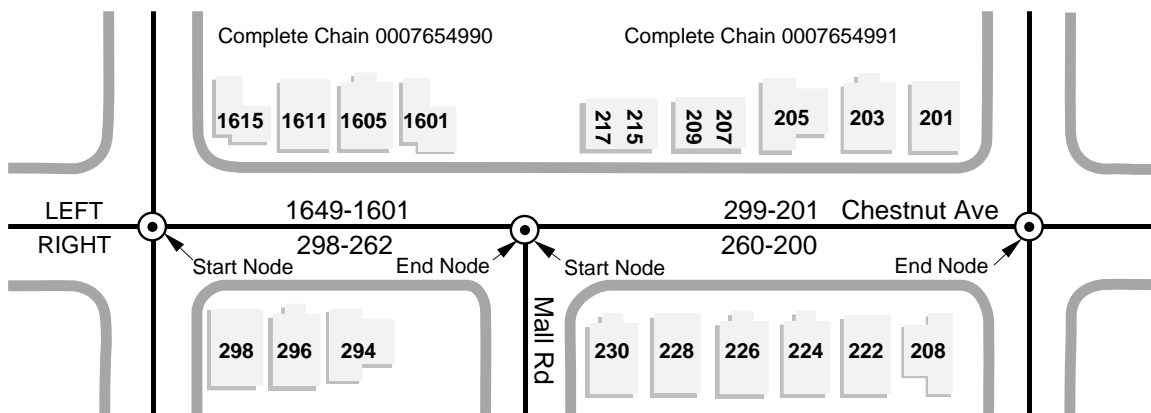


Record Type 1			Address Range				Impute Flags			
			Left side		Right side		Left side		Right side	
RT	TLID	FENAME	FRADDL	TOADDL	FRADDR	TOADDR	FRIADDL	TOIADDL	FRIADDR	TOIADDR
1	0007654328	Chestnut Ave	299	201	298	200	0	0	0	0

Record Type 6			Address Range				Impute Flags			
			Left side		Right side		Left side		Right side	
RT	TLID	RTSQ	FRADDL	TOADDL	FRADDR	TOADDR	FRIADDL	TOIADDL	FRIADDR	TOIADDR
6	0007654328	1	1649	1601			0	0		

Figure 3-3 **TIGER/Line® Address Range Imputes—After Split**

In the diagram below, Mall Rd has split the complete chain into two parts. Each part is assigned a new TIGER/Line® identification number (TLID) and the old number is deleted. The overall address range for each complete chain side (1649 to 201 on the left side and 298 to 200 on the right side) and the split points for each of these address ranges (approximately 1088 on the left side and 261 on the right side) are determined by the TIGER System. Address ranges that fall entirely above or below the split point belong to one of the two new complete chains and do not get an impute flag. The TIGER System divides those address ranges that contain the split point and assigns a part to each of the new complete chains.



Record Type 1			Address Range				Impute Flags			
Complete Chain 0007654990			Left side		Right side		Left side		Right side	
RT	TLID	FENAME	FRADDL	TOADDL	FRADDR	TOADDR	FRIADDL	TOIADDL	FRIADDR	TOIADDR
1	0007654990	Chestnut Ave	1649	1601	298	262	0	0	0	1

Record Type 1			Address Range				Impute Flags			
Complete Chain 0007654991			Left side		Right side		Left side		Right side	
RT	TLID	FENAME	FRADDL	TOADDL	FRADDR	TOADDR	FRIADDL	TOIADDL	FRIADDR	TOIADDR
1	0007654991	Chestnut Ave	299	201	260	200	0	0	1	0

process considers all address ranges appearing on each side and determines the overall low and high address. The process assumes the addresses are evenly distributed over the length of the complete chain, and applies the proportion of complete chain lengths to the overall address ranges to calculate a split point address for each side. Address ranges that fall entirely above or below the split point address are moved intact to one of the new complete chains. The process divides any address ranges that contain the split point address and allocates each part to one of the new complete chains. The new address range ends created from the split are imputed values and have an impute flag.

Some intermediate address range ends also may carry the impute flag. These address range ends fall between the overall high and low address for complete chain sides that have more than one address range. The impute flags on these range ends often mark splits created by adding different nine-digit ZIP Codes to parts of the original address range. These impute flags are not significant and should be disregarded.

The impute flags identify address ranges that have been through the impute process. Each record in the TIGER/Line files contains four separate 1-character impute flag fields, one for each address range end.

ZIP Codes

The ZIP Code is an attribute of the address ranges. The TIGER/Line files have a five-character ZIP Code field containing a numeric code with leading zeros. Both the left- and right-side address ranges share the ZIP Code that appears in the same Type 1 or Type 6 record. Each address range belonging to a complete chain can have a different ZIP Code.

Where ZIP Code boundaries follow a street, the complete chain may have different left- and right-side ZIP Codes, or different ZIP Codes along its length. Because the Census TIGER database identifies only one ZIP Code for each address range record, address ranges with different ZIP Codes must appear in separate records. The address range(s) with one ZIP Code will appear in Record Type 1, and the address range(s) with the other ZIP Code(s) will appear in Record Type 6. For example, one complete chain making up Duke Street is a ZIP Code boundary; the left-side range 1-99 has a ZIP Code of 12345, and the right-side range 2-98 has a ZIP Code of

54321. The range 1-99 with a ZIP Code of 12345 will appear in Record Type 1, and the right-side range fields will be blank. The range 2-98 with a ZIP Code of 54321 will appear in Record Type 6, and the left-side range fields will be blank.

If the complete chain had additional address ranges with a ZIP Code of either 12345 or 54321, these additional address ranges would appear with one of the existing ranges or as additional Type 6 records. For example, a right-side range of 150-198 with a ZIP Code of 12345 could appear on the Type 1 record with the left-side range of 1-99. However, a right-side range of 150-198 with a ZIP Code of 54321 could not appear on the Type 6 record with the range 2-98. Instead, the range would have to appear in a second Type 6 record. Since the ZIP Codes in the TIGER/Line file relate to mail delivery along addressed streets, they are not true area features. It is possible that a polygon may contain addresses associated with more than one delivery ZIP Code.

Postal Add-On Code

The TIGER/Line files have a 4-character Postal ZIP+4 Add-On code which is located on Record Type Z. Record Type Z may link to a left- or right-side address range in Record Type 1 or in Record Type 6. By using the TLID fields, data users can match the Postal +4 Add-On codes on Record Type Z to an address range in either Record Type 1 or Record Type 6. If the Record Sequence Number (RTSQ) field on Record Type 6 contains a 0, the Postal +4 Add-On codes apply to the address ranges in Record Type 1. If the RTSQ field contains a number greater than 0, the Postal +4 Add-On codes apply to the address ranges in the Record Type 6 that have the identical RTSQ value. The first two characters of the Postal +4 Add-On code indicate the USPS sector code; the last two characters represent the USPS segment code.

As stated earlier, the U.S. Census Bureau used an automated match process to assign the Add-On codes to the address ranges in the Census TIGER database. The match utilized only the street type records from the ZIPMOVE and ZIP+4 files. These records identify a single Add-On code for a range of addresses. The ZIP+4 file also contains company and high-rise building records that supply specific codes to companies, buildings,

and floors or suites within buildings. The U.S. Census Bureau did not match these codes to the Census TIGER database because it was not practical to add all of the building features to the Census TIGER database. Also, it was not feasible to split the address ranges for individual building-level codes.

The match process attempted to relate the 5-digit ZIP Code, street name identifier, and address ranges for each feature in the Census TIGER database to the corresponding street type record in the USPS ZIPMOVE file, which identifies all 5-digit ZIP Code changes for the previous five years. If an address range (or portion thereof) in the Census TIGER database matched a range in the ZIPMOVE file, the U.S. Census Bureau then compared the range to the USPS ZIP+4 file. If the address range matched the ZIP+4 file, then the ZIP Code for that address range was updated in the Census TIGER database. If the address range in the Census TIGER database was not an exact match the address range in the ZIP+4 file the Census Bureau assigned a zero to the ZIP+4 field(s) in the Census TIGER database indicating that a match was attempted, but the address ranges did not match.

Where successful, the process added the Postal +4 Add-On codes to the address ranges in the Census TIGER database. There are multiple Postal ZIP+4 Add-On codes associated with a single address range in the TIGER/Line files. The reason for this is that the U.S. Census Bureau does not include any single address-address ranges in the TIGER/Line files. Suppression of single address-address ranges is to protect the confidentiality of individual addresses as specified by Title 13 of the U.S. Code. To avoid creating single address-address ranges the U.S. Census Bureau does not split address ranges where a Postal +4 Add-On code covers only part of the address range. Rather, the TIGER/Line files include multiple Postal +4 Add-On codes for an address range. The Postal +4 Add-On codes may appear on more than one complete chain. This results because the potential address ranges used by the U.S. Census Bureau differ from those used by the USPS, and because the U.S. Census Bureau recognizes complete chain breaks and intersections not recognized by the USPS.

Address Information Methodology

Census 2000 and Post-Census 2000 Address Ranges

For all Census 2000 and post-Census 2000 versions of the TIGER/Line files the source for the address range information is the Master Address File (MAF). The MAF is a list of all living quarters nationwide along with their geographic locations. The MAF is maintained through partnerships with the U.S. Postal Service (USPS), with Federal, State, regional, and local agencies, and with the private sector. U.S. Census Bureau staff updated and supplemented the MAF with address information provided by census programs such as the TIGER Improvement Program (TIP) and the Local Update of Census Addresses (LUCA) in which local and tribal governments provided address updates as well as through Census 2000 field operations.

As part of the TIGER Improvement Program (TIP) local governments were provided address range "clusters" from the USPS ZIP+4 file that failed to geocode to the Census TIGER database. Using local sources and expertise, participants annotated maps derived from the TIGER database to correct errors and add missing streets, street names, address ranges, and/or ZIP Codes. U.S. Census Bureau staff then incorporated participant updates and corrections into the TIGER database, thus enabling the address clusters to geocode. In areas not participating in TIP, U.S. Census Bureau staff researched the clusters and made corrections.

The U.S. Census Bureau periodically receives updated information from the USPS which it matches against the MAF. In situations where addresses fail to geocode to the TIGER database, U.S. Census Bureau geographic staff research the addresses and make the necessary updates and corrections to enable the addresses to geocode.

In late 1999, the U.S. Census Bureau initiated a process to compare the addresses in the MAF to existing address ranges in the Census TIGER database and to create or modify the TIGER address ranges where necessary. This automated program matched field verified MAF address/collection block relationships to address ranges on either primary or

alternative feature names in the Census TIGER database. The program eliminated potential address ranges in the Census TIGER database that conflicted with the address/collection block number relationships from the MAF, and built potential ranges around the new MAF-based actual address ranges. When discrepancies occurred between the MAF and Census TIGER, the MAF was deemed to be more accurate because of address information obtained through local partnership programs.

This automated match shifted address range ends along complete chains, flipped address ranges from one side of a complete chain to the other to correct parity reversals, and expanded potential ranges for each complete chain. In cases where MAF-verified addresses resulted in orientation or parity reversals along a complete chain, or out-of-sequence addresses, the address ranges were accepted as verified exceptions and were not adjusted. The address match also combined the actual MAF and potential Census TIGER address ranges into the largest possible potential range(s) for each complete chain side. It retained high and low address range ends and discarded intermediate address range breaks at the end of the process. This closed coverage gaps, and provided full potential address ranges in Census TIGER. This was done to facilitate geocoding new or commercial addresses.

No single address-address ranges appear in the TIGER/Line files including out-of-parity and out-of-sequence addresses.. Suppression of single address-address ranges is to protect the confidentiality of individual addresses collected through census field operations as specified by Title 13 of the U.S. Code. As a result, any single address that is "out of place" geographically (that is, across the street from all other even addresses or several blocks away from all other addresses in that address series) will not appear in *any* address range in the TIGER/Line® files. For example, address 709 Main Street is in the middle of the even-side of the 700 block of Main Street and will be suppressed because it is a single address-address range. The following addresses ranges for the 700 block of Main Street will appear in the TIGER/Line files: 700-798 Main Street, 701-707 Main Street, and 711-799 Main Street. Based on the information provided data users cannot tell where 709 Main Street is located.

Both primary and alternate feature identifiers can be used in geocoding, but great care should be used with the alternate identifiers. In the case of corporate corridors and corporate limit offset boundaries, the alternate address linked to the boundary should be used for geocoding rather than the primary range linked to the street (see the *Corporate Corridors and Corporate Limit Offset Boundaries* section in this chapter).

Address Range Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	FRADDL	Start Address, Left
1	TOADDL	End Address, Left
1	FRADDR	Start Address, Right
1	TOADDR	End Address, Right
6	FRADDL	Start Address, Left
6	TOADDL	End Address, Left
6	FRADDR	Start Address, Right
6	TOADDR	End Address, Right

Impute Flag Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	FRIADDL	Start Imputed Address Flag, Left
1	TOIADDL	End Imputed Address Flag, Left
1	FRIADDR	Start Imputed Address Flag, Right
1	TOIADDR	End Imputed Address Flag, Right
6	FRIADDL	Start Imputed Address Flag, Left
6	TOIADDL	End Imputed Address Flag, Left
6	FRIADDR	Start Imputed Address Flag, Right
6	TOIADDR	End Imputed Address Flag, Right

ZIP Code® Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	ZIPL	ZIP Code®, Left
1	ZIPR	ZIP Code®, Right
6	ZIPL	ZIP Code®, Left
6	ZIPR	ZIP Code®, Right
Z	ZIP4L	+4 Postal Add-On Code, Left
Z	ZIP4R	+4 Postal Add-On Code, Right

Address Ranges and Impute Flag Codes

Address Ranges

- Numeric characters or a mixture of numeric and alphabetic characters (maximum of 11 characters).
- Address range fields are blank when no address range is available. Both the *start* and *end* address range fields are blank, or both have non-zero values.

Impute Flags (*1-character numeric code*)

- *blank*— No address range available
- 0— Not imputed
- 1— Imputed

ZIP Codes

See the U.S. Postal Service (USPS) Publication 65, *National Five-Digit ZIP Code® and Post Office Directory* for a list of valid 5-digit ZIP Codes. The 2002 TIGER/Line files may not contain all delivery ZIP Codes and may contain some non-delivery ZIP Codes. The distribution of ZIP Codes in the TIGER/Line files may not reflect the exact USPS ZIP Code service area.

Limitations

Users of the address ranges in the TIGER/Line files should check for address range overlaps, gaps, odd/even reversals, and other situations that may be incorrect. While the U.S. Census Bureau continues to edit for, and correct these situations, it is possible that some still exist.

Corporate Corridors and Corporate Limit Offset Boundaries

A corporate corridor is a narrow, linear part of an incorporated place (or in a few instances, another legal entity). The corporate corridor includes the street and/or right-of-way, or a portion of the street and/or right-of-way within the incorporated place. It excludes from the incorporated place those structures such as houses, apartments, or businesses that front along the street or road.

A corporate limit offset boundary exists where the incorporated place lies on one side of the street and may include all or part of the street and/or right-of-way, but not the structures located on that side of the street. See the *Places* section in Chapter 4.

To facilitate the coding of addresses to the correct geographic entity, the Census TIGER database contains duplicate street name and address ranges on complete chains with a CFCC of F11 (nonvisible offset boundary of legal entity) or F12 (nonvisible corporate corridor of legal entity). The duplicate street names for the F11 and F12 features are on Record Type 5; the duplicate address ranges are on Record Type 6. Complete chains with CFCCs of F11 or F12 will not contain the duplicate names or address ranges in Record Type 1. Record Type 1 does not indicate that the street or right-of-way lies within a corporate corridor or offset boundary. Therefore, the address ranges lie outside the corporate corridor or offset boundary and are encoded on either side of these lines. Data users planning to geocode addresses in areas with these boundary types must identify the duplicate feature identifiers and ranges from Record Types 5 and 6 (the names and address ranges for CFCC F11 and F12 features), locate the street feature with those ranges, and remove the street feature's address ranges and geographic codes from the geocoding process.

Record Linkages

The TIGER/Line files store address range information in two record types. Record Type 1 contains the basic complete chain attributes, including one basic address range. Record Type 6 stores the additional ranges when the complete chain has more than one range on one or both sides.

The TLID field links Record Types 1 and 6. Since a complete chain can have more than one set of address ranges, multiple Type 6 records can exist with the same TLID. The TIGER/Line files distinguish these records with a record sequence number (RTSQ). All Type 6 records that have the same TLID appear sequentially in the file even though the records are not sorted by TLID. The TIGER/Line files do not contain a field indicating whether a Type 6 record exists for a specific TLID; the user must scan any existing records in Record Type 6 for a TLID match.

Boundaries of Geographic Entities

The TIGER/Line files store geographic codes as either a polygon or complete chain attribute. In the case of state and county level geography, and some other entities, the codes appear in both complete chain and polygon record types. Refer to Chapter 4 for descriptions of geographic entities, and to Chapter 6 for the data dictionary that describes the record type fields.

Record Linkages and Boundary Extraction

The codes assigned to the complete chain belong to the areas referenced by the left and the right sides of a complete chain. Only those features that have different geographic codes on the left and the right sides of a line become boundary features. Information from multiple TIGER/Line data fields is required to uniquely identify the boundary of some geographic entities. For instance, both the census block and census tract codes are required to identify a block boundary. Block 1011 in census tract 2101 could neighbor block 1011 in census tract 2998. Data users who have combined TIGER/Line files should include the Census 2000 state or statistically equivalent entity and Census 2000 county or statistically equivalent entity codes to extract Census 2000 census tract boundaries. In some Record Type A records, the current state and county, when combined with the Census 2000 census tract and block numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes.

The extraction of boundary features from polygon attribute codes requires making a link between the polygon and the complete chain data records, then identifying the features with different left- and right-side geographic codes. For a description of the record linkage process, see the *Polygon Features* section in this chapter.

Boundary rings consist of multiple complete chains that are sequentially linked together and connected to form a closed ring. The process of linking all of the boundary complete chains that outline the same geographic entity requires the extraction of all complete chains that have that entity's code on

either the left or the right side (but not both). Linking the chains together will form a polygon; each polygon may represent one of the GT-polygons described in Record Types A, P, and S, or a collection of these GT-polygons.

Record Type B contains corrected geography from the Count Question Resolution (CQR) Program, but only for those polygons with corrected geography. It does not include all the polygons within the corrected entity. Data users will need to compare the geographic entity codes on Record Type B against those appearing in Record Type S to identify which codes were corrected. Record Type S reflects the geographic entities as tabulated for Census 2000; those users requiring the corrected geographic entities must use the information from both Record Type S and Record Type B. Data users can either apply the Record Type B change to Record Type S or identify all polygons associated with the geographic entity using Record Type S and then add or remove polygons based on the information in Record Type B.

Caution: Some types of geographic areas must end at a county/file boundary while others can continue into adjoining counties/files. For example, minor civil divisions (MCDs) stop at a county boundary, whereas incorporated places can exist in several counties (See the *Record Linkages/Feature Chaining* section in this chapter).

Single-Side Flags and County Boundaries

The 2002 TIGER/Line files use the January 1, 2002 counties or statistically equivalent entities as the basis for the file coverage area. County boundary features are duplicated between adjoining pairs of counties so that each file is complete. The TIGER/Line file identifies these complete chains with a 1-character, single-side segment flag in the SIDE1 field of Record Type 1. However, the complete chains that constitute the boundary features contain only the geographic entity codes and address ranges relevant to each county-based TIGER/Line file. The geographic entity codes are blanked out on the outside edge of the county, even though some of these fields must normally have a non-blank code. The exception is that, in the post-Census 2000 TIGER/Line files, the state and county codes for the adjacent county will appear on these Record Type 1 records to improve the ability of data users to merge multiple counties. For those Record Type

1 records that comprise the boundary of the United States, all of the data elements for the side of the record "outside" the United States will continue to be blank. The U.S. Census Bureau also is making the TLIDs and TZIDs for the county boundary records the same so that the complete chain representing a segment of the boundary between two neighboring counties will have the same TLID and TZID code in both counties.

When combining several TIGER/Line files to form a state or regional data set, the data user will need to eliminate duplicate boundary lines. Because each one of the duplicate boundary complete chains has either the left- or right-side geographic entity codes and address ranges, the elimination process will need to combine the codes and address ranges from both lines.

The same situation applies to the polygon identification codes. Record Type I contains CENIDs and POLYIDs for GT-polygons within the county. If the GT-polygon is in the adjacent county, the CENID and POLYID fields are blank.

Single-Side Flag Record Location

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	SIDE1	Single-Side Complete Chain Code

Single-Side Flag Codes

1— The complete chain is a county boundary; either the left or the right side is blank
blank— The complete chain is not a county boundary; neither left nor right side is blank

Census Feature Class Codes (CFCCs)

A census feature class code (CFCC) is used to identify the most noticeable characteristic of a feature. The CFCC is applied only once to a chain or landmark with preference given to classifications that cover features that are visible to an observer and a part of the ground transportation network. Thus, a road that also is the boundary of a town would have a CFCC describing its road characteristics, not its boundary characteristics.

The CFCC, as used in the TIGER/Line files, is a three-character code. The first character is a letter describing the feature class; the second character is a number describing the major category; and the third character is a number describing the minor category.

Some street features in the 2002 TIGER/Line files that normally would be classified as "A" class features may now be coded with a "P" instead of the "A" to indicate that the feature is a "provisional" feature. The numeric portion of the CFCC still classifies the street as if an "A" were preceding it. Provisional features are those streets that were added from reference sources or other programs in preparation for Census 2000, but were not field verified by census staff during field operations or through the use of aerial photography or imagery. As these features are verified in future operations the provisional flag will be removed for subsequent TIGER/Line file releases. Features that still have the provisional flag at the time the U.S. Census Bureau assigned the Census 2000 tabulation block numbers were not held as Census 2000 tabulation block boundaries.

Feature Class A, Road

The U.S. Census Bureau uses the term *divided* to refer to a road with opposing traffic lanes separated by any size median, and *separated* to refer to lanes that are represented in the Census TIGER database as two distinct complete chains.

The term, *rail line in center*, indicates that a rail line shares the road right-of-way. The rail line may follow the center of the road or be directly next to the road; representation is dependent upon the available source used during the update. The rail line can represent a railroad, a streetcar line, or other carline.

Primary Highway With Limited Access Interstate highways and some toll highways are in this category (A1) and are distinguished by the presence of interchanges. These highways are accessed by way of ramps and have multiple lanes of traffic. The opposing traffic lanes are divided by a median strip. The TIGER/Line files may depict these opposing traffic lanes as two distinct lines in which case, the road is called *separated*.

Primary Highway With Limited Access (*cont.*)

CFCC	Description
A11	Primary road with limited access or interstate highway, unseparated
A12	Primary road with limited access or interstate highway, unseparated, in tunnel
A13	Primary road with limited access or interstate highway, unseparated, underpassing
A14	Primary road with limited access or interstate highway, unseparated, with rail line in center
A15	Primary road with limited access or interstate highway, separated
A16	Primary road with limited access or interstate highway, separated, in tunnel
A17	Primary road with limited access or interstate highway, separated, underpassing
A18	Primary road with limited access or interstate highway, separated, with rail line in center

Primary Road Without Limited Access This category (A2) includes nationally and regionally important highways that do not have limited access as required by category A1. It consists mainly of US highways, but may include some state highways and county highways that connect cities and larger towns. A road in this category must be hard-surface (concrete or asphalt). It has intersections with other roads, may be divided or undivided, and have multi-lane or single-lane characteristics.

CFCC	Description
A21	Primary road without limited access, US highways, unseparated
A22	Primary road without limited access, US highways, unseparated, in tunnel
A23	Primary road without limited access, US highways, unseparated, underpassing
A24	Primary road without limited access, US highways, unseparated, with rail line in center
A25	Primary road without limited access, US highways, separated
A26	Primary road without limited access, US highways, separated, in tunnel
A27	Primary road without limited access, US highways, separated, underpassing
A28	Primary road without limited access, US highways, separated, with rail line in center

Secondary and Connecting Road This category (A3) includes mostly state highways, but may include some county highways that connect smaller towns, subdivisions, and neighborhoods. The roads in this category generally are smaller than roads in Category A2, must be hard-

surface (concrete or asphalt), and are usually undivided with single-lane characteristics. These roads usually have a local name along with a route number and intersect with many other roads and driveways.

CFCC	Description
A31	Secondary and connecting road, state highways, unseparated
A32	Secondary and connecting road, state highways, unseparated, in tunnel
A33	Secondary and connecting road, state highways, unseparated, underpassing
A34	Secondary and connecting road, state highways, unseparated, with rail line in center
A35	Secondary and connecting road, state highways, separated
A36	Secondary and connecting road, state highways, separated, in tunnel
A37	Secondary and connecting road, state and county highways, separated, underpassing
A38	Secondary and connecting road, state and county highway, separated, with rail line in center

Local, Neighborhood, and Rural Road A road in this category (A4) is used for local traffic and usually has a single lane of traffic in each direction. In an urban area, this is a neighborhood road and street that is not a thoroughfare belonging in categories A2 or A3. In a rural area, this is a short-distance road connecting the smallest towns; the road may or may not have a state or county route number. Scenic park roads, unimproved or unpaved roads, and industrial roads are included in this category. Most roads in the Nation are classified as A4 roads.

CFCC	Description
A41	Local, neighborhood, and rural road, city street, unseparated
A42	Local, neighborhood, and rural road, city street, unseparated, in tunnel
A43	Local, neighborhood, and rural road, city street, unseparated, underpassing
A44	Local, neighborhood, and rural road, city street, unseparated, with rail line in center
A45	Local, neighborhood, and rural road, city street, separated
A46	Local, neighborhood, and rural road, city street, separated, in tunnel
A47	Local, neighborhood, and rural road, city street, separated, underpassing
A48	Local, neighborhood, and rural road, city street, separated, with rail line in center

Vehicular Trail A road in this category (A5) is usable only by four-wheel drive vehicles, is usually a one-lane dirt trail, and is found almost exclusively in very rural areas. Sometimes the road is called a fire road or

logging road and may include an abandoned railroad grade where the tracks have been removed. Minor, unpaved roads usable by ordinary cars and trucks belong in category A4, not A5.

CFCC	Description
A51	Vehicular trail, road passable only by 4WD vehicle, unseparated
A52	Vehicular trail, road passable only by 4WD vehicle, unseparated, in tunnel
A53	Vehicular trail, road passable only by 4WD vehicle, unseparated, underpassing

Road with Special Characteristics This category (A6) includes roads, portions of a road, intersections of a road, or the ends of a road that are parts of the vehicular highway system and have separately identifiable characteristics.

CFCC	Description
A60	Special road feature, major category used when the minor category could not be determined
A61	Cul-de-sac, the closed end of a road that forms a loop or turn-around
A62	Traffic circle, the portion of a road or intersection of roads forming a roundabout
A63	Access ramp, the portion of a road that forms a cloverleaf or limited-access interchange
A64	Service drive, the road or portion of a road that provides access to businesses, facilities, and rest areas along a limited-access highway; this frontage road may intersect other roads and be named
A65	Ferry crossing, the representation of a route over water that connects roads on opposite shores; used by ships carrying automobiles or people

Road as Other Thoroughfare A road in this category (A7) is not part of the vehicular highway system. It is used by bicyclists or pedestrians, and is typically inaccessible to mainstream motor traffic except for private-owner and service vehicles. This category includes foot and hiking trails located on park and forest land, as well as stairs or walkways that follow a road right-of-way and have names similar to road names.

CFCC	Description
A70	Other thoroughfare, major category used when the minor category could not be determined
A71	Walkway or trail for pedestrians, usually unnamed
A72	Stairway, stepped road for pedestrians, usually unnamed
A73	Alley, road for service vehicles, usually unnamed, located at the rear of buildings and property

Road as Other Thoroughfare *(cont.)*

CFCC	Description
A74	Driveway or service road, usually privately owned and unnamed, used as access to residences, trailer parks, and apartment complexes, or as access to logging areas, oil rigs, ranches, farms, and park lands

Feature Class B, Railroad

Railroad Main Line A railroad in this category is the primary track that provides service between destinations. A main line track often carries the name of the owning and operating railroad company.

CFCC	Description
B11	Railroad main track, not in tunnel or underpassing
B12	Railroad main track, in tunnel
B13	Railroad main track, underpassing

Railroad Spur A railroad in this category is the track that leaves the main track, ending in an industrial park, factory, or warehouse area, or forming a siding along the main track.

CFCC	Description
B21	Railroad spur track, not in tunnel or underpassing
B22	Railroad spur track, in tunnel
B23	Railroad spur track, underpassing

Railroad Yard A railroad yard track has parallel tracks that form a working area for the railroad company. Train cars and engines are repaired, switched, and dispatched from a yard.

CFCC	Description
B31	Railroad yard track, not in tunnel or underpassing
B32	Railroad yard track, in tunnel
B33	Railroad yard track, underpassing

Railroad with Special Characteristics A railroad or portions of a railroad track that are parts of the railroad system and have separately identifiable characteristics.

CFCC	Description
B40	Railroad ferry crossing, the representation of a route over water used by ships carrying train cars to connecting railroads on opposite shores. These are primarily located on the Great Lakes.

Railroad as Other Thoroughfare A rail line that is not part of the railroad system. This category is for a specialized rail line or railway that is typically inaccessible to mainstream railroad traffic.

CFCC	Description
B50	Other rail line; major category used alone when the minor category could not be determined
B51	Carline, a track for streetcars, trolleys, and other mass transit rail systems; used when the carline is not part of the road right-of-way
B52	Cog railroad, incline railway, or logging tram

Feature Class C, Miscellaneous Ground Transportation

Miscellaneous Ground Transportation With Category Unknown Source materials do not allow determination of the miscellaneous ground transportation category.

CFCC	Description
C00	Miscellaneous ground transportation, not road or railroad; major and minor categories unknown

Pipeline Enclosed pipe, carrying fluid or slurry, situated above ground, or in special conditions, below ground when marked by a cleared right-of-way and signage.

CFCC	Description
C10	Pipeline; major category used alone

Power Transmission Line High voltage electrical line, on towers, situated on cleared right-of-way.

CFCC	Description
C20	Power transmission line; major category used alone

Miscellaneous Ground Transportation With Special Characteristics

A portion of a ground transportation system that has separately identifiable characteristics. This category is for specialized transportation, usually confined to a local area, that is separate from other ground transportation.

CFCC	Description
C30	Other ground transportation that is not a pipeline or a power transmission line; major category used alone when minor category could not be determined
C31	Aerial tramway, monorail, or ski lift

Feature Class D, Landmark

Landmark is the general name given to a cartographic (or locational) landmark or a land-use area. A cartographic landmark is identified for use by an enumerator while working in the field. A land-use area is identified in order to minimize enumeration efforts in uninhabited areas or areas where human access is restricted.

Landmark With Category Unknown Source materials do not allow determination of the landmark category.

CFCC	Description
D00	Landmark; major and minor categories unknown

Military Installation Base, yard, or depot used by the U.S. Army, Navy, Air Force, Marines, the Coast Guard, or the National Guard. With the exception of the Coast Guard which is administered by the Department of Transportation, and the National Guard which is administered by states, these areas are administered by the U.S. Department of Defense.

CFCC	Description
D10	Military installation or reservation; major category used alone

Multihousehold or Transient Quarters

CFCC	Description
D20	Multihousehold or transient quarters; major category used alone when the minor category could not be determined
D21	Apartment building or complex
D22	Rooming or boarding house
D23	Trailer court or mobile home park
D24	Marina
D25	Crew-of-vessel area
D26	Housing facility for workers
D27	Hotel, motel, resort, spa, hostel, YMCA, or YWCA
D28	Campground
D29	Shelter or mission

Custodial Facility This category includes institutions that have personnel such as guards, nurses, and caretakers to preserve the welfare of those individuals resident in the facility.

Custodial Facility (*cont.*)

CFCC	Description
D30	Custodial facility; major category used alone when the minor category could not be determined
D31	Hospital
D32	Halfway house
D33	Nursing home, retirement home, or home for the aged
D34	County home or poor farm
D35	Orphanage
D36	Jail or detention center
D37	Federal penitentiary, state prison, or prison farm

Educational or Religious Institution

CFCC	Description
D40	Educational or religious institution; major category used alone when the minor category could not be determined
D41	Sorority or fraternity
D42	Convent or monastery
D43	Educational institution, including academy, school, college, and university
D44	Religious institution, including church, synagogue, seminary, temple, and mosque

Transportation Terminal The facility where transportation equipment is stored, the destination for travel on the transportation system, or the intermodal connection facility between transportation systems.

CFCC	Description
D50	Transportation terminal; major category used alone when the minor category could not be determined
D51	Airport or airfield
D52	Train station
D53	Bus terminal
D54	Marine terminal
D55	Seaplane anchorage
D57	Airport—Statistical Representation used as part of urban area delineation where major airports are contiguous with urban areas

Employment Center This category includes locations with high-density employment.

CFCC	Description
D60	Employment center; major category used alone when the minor category could not be determined
D61	Shopping center or major retail center

Employment Center (*cont.*)

CFCC	Description
D62	Industrial building or industrial park
D63	Office building or office park
D64	Amusement center
D65	Government center
D66	Other employment center

Tower

CFCC	Description
D70	Tower; major category used alone when minor category could not be determined
D71	Lookout tower

Open Space This category contains areas of open space with no inhabitants, or with inhabitants restricted to known sites within the area.

CFCC	Description
D80	Open space; major category used alone when the minor category could not be determined
D81	Golf course
D82	Cemetery
D83	National Park Service land
D84	National forest or other Federal land
D85	State or local park or forest

Special Purpose Landmark This category includes landmarks not otherwise classified.

CFCC	Description
D90	Special purpose landmark; major category used alone when the minor category could not be determined
D91	Post office
D92	Urbanizacion, an identifiable community development in Puerto Rico
D93	Fire Department
D94	Police Station
D95	Library
D96	City/Town Hall

Feature Class E, Physical Feature

Physical Feature With Category Unknown Source materials do not allow determination of the physical feature category.

CFCC	Description
E00	Physical feature, tangible but not transportation or hydrographic; major and minor categories unknown

Fence This category describes a fence that separates property. For example, a fence around a military reservation or prison separates the reservation from civilian land. Thus, a fence line is a property line marked by a fence.

CFCC	Description
E10	Fence line locating a visible and permanent fence between separately identified property

Topographic Feature This category refers to topographical features that may be used as boundaries or as a reference for an area. The Census TIGER database contains topographic features used to define the limits of statistical entities in locations where no other visible feature can be identified.

E20	Topographic feature; major category used when the minor category could not be determined
E21	Ridge line, the line of highest elevation of a linear mountain
E22	Mountain peak, the point of highest elevation of a mountain
E23	Island, identified by name
E24	Levee, an embankment, as of earth or concrete, used to prevent a river or other body of water from overflowing

Feature Class F, Nonvisible Features

Nonvisible features are used to delimit tabulation entities, property areas, and legal and administrative entities. The U.S. Census Bureau separately identifies nonvisible boundaries only when they do not follow a visible feature such as a road, stream, or ridge line.

Nonvisible Boundary With Classification Unknown or Not Elsewhere Classified

CFCC	Description
F00	Nonvisible boundary; major and minor categories unknown

Nonvisible Legal Entity Boundary

CFCC	Description
F10	Nonvisible current boundary of a legally defined entity
F11	Offset boundary of a current legally defined entity
F12	Corridor boundary of a current legally defined entity
F13	Nonvisible superseded 2000 legal boundary
F14	Nonvisible superseded 1990 legal boundary
F15	Nonvisible superseded 1990 legal count question resolution boundary
F16	Nonvisible superseded legal boundary, that was current at the time of the 1997 Economic Census
F17	Nonvisible current State Legislative District boundary
F18	Nonvisible current Congressional District boundary
F19	Nonvisible superseded 2000 legal count question resolution boundary

Nonvisible Features for Database Topology This category contains various types of nonvisible lines used to maintain the topology in the Census TIGER database.

CFCC	Description
F20	Nonvisible feature for database topology; major category used when the minor category could not be determined
F21	Automated feature extension to lengthen existing physical feature
F22	Irregular feature extension, determined manually, to lengthen existing physical feature
F23	Closure extension to complete database topological closure between extremely close features (used to close small gaps between complete chains and create polygons to improve block labeling on cartographic products)
F24	Nonvisible separation line used with corporate offset and corridor boundaries
F25	Nonvisible centerline of area enclosed by a corporate corridor boundary

Point-to-Point Line

CFCC	Description
F30	Point-to-point line, follows a line of sight and should not cross any visible feature; for example, from the end of a road to a mountain peak

Property Line

CFCC	Description
F40	Property line, nonvisible boundary of either public or private lands, e.g., a park boundary

ZIP Code® Tabulation Boundary

CFCC	Description
F52	ZIP Code® tabulation area boundary, used in delineating ZIP Code® Tabulation Areas

Nonvisible Statistical Boundary

CFCC	Description
F70	Statistical boundary; major category used when the minor category could not be determined
F71	Superseded tabulation boundary
F72	Superseded tabulation boundary
F73	Internal U.S. Census Bureau use
F74	Superseded tabulation boundary
F80	Nonvisible other tabulation boundary; major category used when the minor category could not be determined
F81	School district boundary
F82	Internal U.S. Census Bureau use
F83	Census 2000 collection block boundary; used to hold Census 2000 collection block boundaries not represented by existing physical features
F84	Census 2000 statistical area boundary; used to hold Census 2000 statistical area boundaries not represented by existing physical features
F85	Census 2000 tabulation block boundary; used to hold Census 2000 tabulation block boundaries not represented by existing physical features
F86	Internal U.S. Census Bureau use
F87	Oregon urban growth area boundary
F88	Current statistical area boundary

Feature Class G, U.S. Census Bureau Usage

The U.S. Census Bureau uses this feature class for internal programs.

Feature Class H, Hydrography

Basic Hydrography This category includes shorelines of all water regard-less of the classification of the water itself.

CFCC	Description
H00	Water feature, classification unknown or not elsewhere classified
H01	Shoreline of perennial water feature
H02	Shoreline of intermittent water feature

Naturally Flowing Water Features

CFCC	Description
H11	Perennial stream or river
H12	Intermittent stream, river, or wash
H13	Braided stream or river

Man-Made Channel to Transport Water These features are used for purposes such as transportation, irrigation, or navigation.

CFCC	Description
H21	Perennial canal, ditch, or aqueduct
H22	Intermittent canal, ditch, or aqueduct

Inland Body of Water

CFCC	Description
H30	Lake or pond; major category used when the minor category could not be determined
H31	Perennial lake or pond
H32	Intermittent lake or pond

Man-Made Body of Water

CFCC	Description
H40	Reservoir; major category used when the minor category could not be determined
H41	Perennial reservoir
H42	Intermittent reservoir

Seaward Body of Water

CFCC	Description
H50	Bay, estuary, gulf, sound, sea, or ocean; major category used when the minor category could not be determined
H51	Bay, estuary, gulf, or sound
H53	Sea or ocean

Body of Water in a Man-Made Excavation

CFCC	Description
H60	Gravel pit or quarry filled with water

Nonvisible Definition Between Water Bodies

The U.S. Census Bureau digitizes nonvisible definition boundaries to separate named water areas; for instance, an artificial boundary is drawn to separate a named river from the connecting bay.

CFCC	Description
H70	Nonvisible water area definition boundary; used to separate named water areas and as the major category when the minor category could not be determined
H71	USGS closure line; used as a maritime shoreline
H72	Census water center line; computed to use as a median positional boundary
H73	Census water boundary, international in waterways or at 10-mile limit; used as an area measurement line
H74	Census water boundary separating inland from coastal or Great Lakes; used as an area measurement line
H75	Census water boundary separating coastal water from territorial sea at the 3-mile limit; used as an area measurement line

Special Water Feature Includes area covered by glaciers or snow fields.

CFCC	Description
H80	Special water feature; major category used when the minor category could not be determined
H81	Glacier

Feature Class P, Provisional Features

The U.S. Census Bureau has created a new CFCC type that may appear on street features only. Some streets that normally would be classified as "A" class features may be coded with a "P" instead of the "A" to indicate that the feature is a "provisional" feature. Provisional features are those streets that were added from reference sources or other programs in preparation for Census 2000, but were not field verified by census staff during field operations or through the use of aerial photography or imagery. As these features are verified in future operations the provisional flag will be removed for subsequent TIGER/Line releases. The numeric portion of the CFCC still classifies the street as if an "A" were preceding it.

Feature Class X, Not Yet Classified

Classification Unknown or Not Elsewhere Classified

CFCC	Description
X00	Feature not yet classified

All complete chains and landmarks have a code representing their census feature class. Only those GT-polygons associated with an area landmark have a CFCC. Most CFCCs in the feature classification scheme apply only to complete chains. In a few instances, the same feature code may apply to complete chains as well as to point and area landmarks.

Only those features required for census operational purposes are classified and inserted into the Census TIGER database. Therefore, not all features in a county will appear in the TIGER/Line files. Since features are classified with only a single code, a road that also is a boundary will have only the CFCC of a road even though a CFCC for a boundary exists in the classification scheme.

CFCC Record Location

Record Type	Field Name	Description
1	CFCC	Code assigned to the complete chain
7	CFCC	Code assigned to a point or area landmark

Points Describing the Complete Chain

The TIGER/Line files describe the spatial/geometric position and shape of a complete chain using shape points and nodes; see the section entitled *Topology* in Chapter 1. Latitude and longitude coordinate fields identify the shape points and nodes.

Nodes

Nodes are topological objects that mark the end location of each complete chain. Every chain has two nodes, a *start node* and an *end node* (using the Spatial Data Transfer Standard, or SDTS, terminology). The order of the nodes establishes the left and the right sides of the line and sets the sequencing order for the shape points. The node coordinates are stored in

Record Type 1. The post-Census 2000 TIGER/Line files contain permanent node identification numbers. The TIGER ID Start Permanent Zero-Cell Number (TZIDS) and TIGER ID End Permanent Zero-Cell Number (TZIDE) appear on Record Types I and T.

Shape Points

The U.S. Census Bureau uses the term *shape points* to describe the non-topological points that describe the position and shape of a chain. Shape points exist only where required; straight-line complete chains require no shape points. Shape points are associated only with one complete chain and are listed in order from *start node* to *end node*. The TIGER/Line files store shape points in Record Type 2 and link them to the nodes in Record Type 1 using the TLID. The shape points for a chain can fill several Type 2 records.

Coordinates for Nodes and Shape Points

Coordinates are decimal degrees expressed in Federal Information Processing Standard (FIPS) notation, where a positive latitude represents the Northern Hemisphere and a negative longitude represents the Western Hemisphere. All coordinates are expressed as a signed integer with six decimal places of precision implied (see the section, *Positional Accuracy*, in Chapter 5).

<i>Actual</i>	<i>TIGER/Line File</i>
Latitude 15 Deg. S to 72 Deg. N	-15000000 to +72000000
Longitude 64 Deg. W to 131 Deg. E	-64000000 to -180000000 +179999999 to +131000000

For the 48 contiguous states, the District of Columbia, Alaska, Puerto Rico, and the Virgin Islands, the coordinates in the 1995 and later versions of the TIGER/Line files are in the North American Datum of 1983 (NAD83). For Hawaii and the Pacific Island Areas, the Census Bureau used a variety of sources for building the original digital file in the late 1980s. Neither the specific identities of each of these sources nor their datums were recorded. The information that does exist for this operation indicates that the current USGS topographic quadrangles and/or Defense Department maps were typically, though not necessarily exclusively, used as sources. These would have been based on local datums, however, the U.S. Census Bureau does

not have information specifically identifying these datums. Such information was not needed for Census Bureau mapping operations when the TIGER database was created for these areas.

Coordinate Values

All nodes have non-zero coordinates within the range specified in the *Coordinates for Nodes and Shape Points* section on the previous page. Shape point coordinates are expressed in the same manner. However, unused Record Type 2 fields are zero-filled and begin with a “+” sign.

Record Locations for Nodes and Shape Point Coordinates

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	FRLONG	Start Longitude
1	FRLAT	Start Latitude
1	TOLONG	End Longitude
1	TOLAT	End Latitude
2	LONG1	Point 1, Longitude
2	LAT1	Point 1, Latitude
2	LONG2	Point 2, Longitude
2	LAT2	Point 2, Latitude
2	LONG3	Point 3, Longitude
2	LAT3	Point 3, Latitude
⋮	⋮	⋮
2	LONG10	Point 10, Longitude
2	LAT10	Point 10, Latitude

Record Linkages/Feature Chaining

Plotting a complete chain requires using the nodes from Record Type 1 and all of the shape point records in Record Type 2 with the same TLID, if any. Plot the start node first, then search Record Type 2 for any matching records. If there is a match, the record will contain from 1 to 10 shape points. If all 10-point fields are filled with non-zero values, there may be an additional matching Type 2 record. Type 2 records are not sorted by TLID, but all records with the same TLID should appear together in sequence by the record sequence number (RTSQ). Plot the shape points from all Type 2 records and end the complete chain by plotting the end node.

Street features may consist of multiple complete chains that are sequentially linked together. Linking all of the features with the same name requires the extraction of all Type 1 and Type 2 records with the same feature identifiers in Record Types 1 and 5.

Boundary generation requires the extraction of all features that have different left and right geographic codes. The placement of the complete chains into a boundary-ring sequence requires a procedure to match the end of one complete chain to the beginning or end of the next complete chain. The complete chains will probably not have the same *to-from* or *start-end* orientation down the length of the street or boundary. Therefore, the procedure must reverse the order of the nodes and shape points that form some complete chains to achieve a correct and consistent sequence of nodes and shape points. Use the permanent zero-cell numbers, TZIDS and TZIDE, appearing on Record Type I to search for and identify the ends of the adjoining complete chain(s).

Polygon Features

The TIGER/Line files contain identification and geographic codes for each GT-polygon in the Census TIGER database. These GT-polygons are the smallest areas identified in the TIGER/Line files. Geographic entities and area landmarks have specific identification codes and form more complex polygons. The TIGER/Line files link these features to GT-polygons, but do not directly identify the more complex polygons.

GT-polygons are building blocks that form features. They are not features and do not have their own feature name or CFCC. However, GT-polygons may be a part of many area landmark features that have their own feature name and CFCC.

GT-polygons have unique GT-polygon identification codes (CENID and POLYID), a set of geographic entity codes, and an internal point location. Refer to Chapter 2 for more information on GT-polygon identification codes and Chapter 4 for a description of the geographic entities in the TIGER/Line files.

Information and record linkage keys for GT-polygons are distributed over several record types:

- Record Type P — provides the GT-polygon internal point location
- Record Type I — links GT-polygons to complete chains
- Record Type 8 — links GT-polygons to area landmarks
- Record Type A — provides the Current geographic entity codes and areas
- Record Type B — provides the corrected geographic entity codes and areas
- Record Type E — provides the Economic Census geographic entity codes and areas
- Record Type S — provides Census 2000 geographic entity codes and areas

Updates to the Census TIGER database include new street and boundary complete chains that create new GT-polygons. Thus, each version of the TIGER/Line files will have a single, unique set of GT-polygons, each with a corresponding Record Type A, S, and P. The CENID and POLYID identification codes link records together, but are not permanent GT-polygon identification codes.

Geographic Entity Codes

Geographic entity codes can be attributes of a set of polygons, a complete chain, or both. Refer to Chapter 6 for the data dictionary that describes the record type fields and to Chapter 4 for descriptions of geographic areas. The geographic entity codes also provide the link between the TIGER/Line files and demographic data. To link the demographic data for census tracts for example, to the census tract boundaries in the TIGER/Line files, create a geographic identification field in both files comprised of the concatenated state code, county code, and census tract number.

Identifying Polygons as Land or Water

The U.S. Census Bureau uses the Perennial/Intermittent Water Flag (WATER) on Record Type P to identify whether a GT-polygon is land or water, and further identifying water polygons as perennial or intermittent water. If the GT-polygon is land the WATER flag is blank. A WATER flag with a value of 1 identifies a GT-Polygon as perennial water while a WATER flag with a value of 2 identifies a GT-Polygon as intermittent water.

Internal Points

The internal point is a point location within each GT-polygon that is unique to that GT-polygon. The TIGER/Line files exclude the internal points from the node-complete chain-polygon topology; do not confuse the internal point with a centroid. In a polygon with an irregular shape, such as a doughnut or crescent shape, the true centroid could fall outside the polygon. Unlike true centroids, the internal points should always fall within the GT-polygon or on the GT-polygon boundary.

Some of the GT-polygons (approximately a dozen nationwide) are so small that the internal point may be identical to a point on one of the lines bounding the GT-polygon, or identical to one of the nodes. Depending upon the precision of a particular software or hardware system, the data user may find the internal point outside the correct GT-polygon, or find that a GT-polygon may contain two internal points.

Changes to the shape and location of complete chains forming polygon boundaries will change the polygon internal point coordinates even though the topology of the polygon remains the same. Such changes complicate the matching, using internal point coordinates, of polygons from different versions of the TIGER/Line files.

All internal points have non-zero coordinates. Coordinates are expressed in standard FIPS PUB 70 notation. See the *Coordinates for Nodes and Shape Points* section in this chapter.

GT-Polygon Internal Point Coordinates Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
P	POLYLONG	Polygon Internal Point Longitude
P	POLYLAT	Polygon Internal Point Latitude

Record Linkages

The topological network of complete chains divides the surface area of geographic entities into GT-polygons. There is a one-to-one relationship between the GT-polygons constructed from Record Types 1 and 2 and those appearing in Record Type P. In constructing the GT-polygons from

Record Types 1 and 2, users are cautioned to be sure their software has the necessary coordinate precision and does not snap together complete chains that are merely close.

Record Type I provides a direct link from each complete chain in the TIGER/Line file to its adjoining GT-polygons. It contains the TLID and the polygon identification codes for each side of the GT-polygon. Record Type I facilitates the transfer of polygon geographic codes to the complete chain, but also provides the link back from polygon to complete chain. In this case, finding all complete chains associated with a GT-polygon is more difficult. The procedure involves searching every Type I record to locate all instances where a CENID and POLYID appear on either the left or the right side of a complete chain.

Area landmarks also must link to the GT-polygons in order to establish their geographic location. Record Type 8 provides the link from GT-polygon to area landmark. See the *Area Landmark Locations* section in this chapter.

Landmark Features

The U.S. Census Bureau includes landmarks in the Census TIGER database for locating special features and to help enumerators during field operations. Some of the more common landmark types include airports, cemeteries, parks, and educational facilities.

The U.S. Census Bureau added landmark features on an as-needed-basis and made no attempt to ensure that all instances of a particular feature were included. The absence of a landmark does not mean that the living quarters, e.g., hospitals and group quarters associated with the landmark were excluded from the Census 2000 enumeration. The address list used for the census was maintained apart from the landmark data.

A landmark can be either a point, line, or area type. In some cases, the Census TIGER database permits a choice of types. For instance, an airport or airfield might appear as a point, line, or area; the approach depends on the size of the feature and the depiction of the feature in the source document.

Line features such as airfields could appear as one or more complete chains; they are not identified in the landmark record types. See the *Point, Line, and Area Landmark CFCCs* section in this chapter to identify the possible codes that could appear as complete chains.

In addition to landmark data, the TIGER/Line files contain the CFCCs and names for bodies of water including ponds, lakes, oceans, and the area covered by large streams represented as double-line drainage. Not all water areas are identified as landmarks. Data users must use the WATER field on Record Type P to identify if a GT-polygon is land or water. See Chapter 4 for a complete description of census blocks covering land and water.

Landmark and water features can overlap. The most common situation is a park or other special land-use feature that includes a lake or pond. In this case, the GT-polygon covered by the lake or pond belongs to a water landmark feature and a park landmark feature. Other kinds of landmarks can overlap as well. Area landmarks can contain point landmarks; these are not linked in the TIGER/Line files.

Record Type 7 contains point and area landmarks. Most but not all water areas are identified as an area landmark whether named or not. The other landmarks may be identified only by a census feature class code and may not have a name. During the extraction of this data, the U.S. Census Bureau assigned a temporary landmark identification number (LAND) to each landmark record. Record Type 8 uses the LAND to link the area landmark records in Record Type 7 to the GT-polygons. Record Type 7 and Record Type 8 exist only when the county file contains landmark features or water features.

Point, Line, and Area Landmark CFCCs

All landmarks have a CFCC. In the Census TIGER database the CFCCs of the complete chains forming the polygon boundary are independent of the CFCCs assigned to the area landmark or the water feature filling the polygon.

Landmark CFCC Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
7	CFCC	Code assigned to point and area landmarks

Landmark CFCC Codes

<i>CFCC</i>	<i>Description</i>	<i>Point</i>	<i>Line</i>	<i>Area</i>
D00	Landmark feature, classification unknown, or not elsewhere classified	P	L	A
D10	Military installation	P	–	A
D20	Multihousehold and transient quarters	P	–	A
D21	Apartment building or complex	P	–	A
D22	Rooming or boarding house	P	–	–
D23	Trailer court or mobile home park	P	–	A
D24	Marina	P	–	A
D25	Crew-of-vessel area	P	–	–
D26	Housing facility for workers	P	–	A
D27	Hotel, motel, resort, spa, YMCA, or YWCA	P	–	A
D28	Campground	P	–	A
D29	Shelter or mission	P	–	A
D30	Custodial facility	P	–	A
D31	Hospital	P	–	A
D32	Halfway house	P		
D33	Nursing home, retirement home, or home for the aged	P	–	A
D34	County home or poor farm	P	–	A
D35	Orphanage	P	–	A
D36	Jail or detention center	P	–	A
D37	Federal penitentiary, state prison, or prison farm	P	–	A
D40	Educational or religious institution	P	–	A
D41	Sorority or fraternity	P	–	–
D42	Convent or monastery	P	–	A
D43	Educational institution	P	–	A
D44	Religious institution	P	–	A
D50	Transportation terminal	P	L	A
D51	Airport or airfield	P	L	A
D52	Train station	P	–	A
D53	Bus terminal	P	–	A
D54	Marine terminal	P	–	A
D55	Seaplane anchorage	P	–	A
D57	Airport—Statistical Representation used as part of urban area delineation	–	–	A

Landmark CFCC Codes (cont.)

<i>CFCC</i>	<i>Description</i>	<i>Point</i>	<i>Line</i>	<i>Area</i>
D60	Employment center	P	–	A
D61	Shopping center or major retail center	P	–	A
D62	Industrial building or industrial park	P	–	A
D63	Office building or office park	P	–	A
D64	Amusement center	P	–	A
D65	Government center	P	–	A
D66	Other employment center	P	–	A
D70	Tower	P	–	–
D71	Lookout tower	P	–	–
D80	Open space	–	–	A
D81	Golf course	P	–	A
D82	Cemetery	P	–	A
D83	National Park Service area	P	–	A
D84	National forest or other federal land	P	–	A
D85	State or local park or forest	P	–	A
D90	Special purpose landmark	P	–	A
D91	Post office	P	–	A
D92	<i>Urbanizacion</i> , an identifiable community development in Puerto Rico	P	–	A
E22	Mountain peak, the point of highest elevation of a mountain	P	–	–
E23	Island	P	L	A
H00	Water feature, classification unknown, or not elsewhere classified	P	L	A
H11	Perennial stream or river	–	L	A
H12	Intermittent stream, river, or wash	–	L	A
H13	Braided stream or river	–	L	A
H21	Perennial canal, ditch, or aqueduct	–	L	A
H22	Intermittent canal, ditch, or aqueduct	–	L	A
H31	Perennial lake or pond	–	–	A
H32	Intermittent lake or pond	–	–	A

Landmark CFCC Codes (cont.)

CFCC	Description	Point	Line	Area
H41	Perennial reservoir	-	-	A
H42	Intermittent reservoir	-	-	A
H50	Bay, estuary gulf, sound, sea, or ocean	-	-	A
H51	Bay, estuary gulf, or sound	-	-	A
H53	Sea, or ocean	-	-	A
H60	Gravel pit or quarry filled with water	-	-	A
H80	Special water feature	-	-	A
H81	Glacier	-	-	A

Landmark Feature Names

The TIGER/Line files contain an optional 30-character text string used to identify the proper name of the landmark feature or water area. The text string includes upper- and lower-case characters. The feature name may carry an imbedded feature type (e.g., River, Military Reservation, Garden, Park, and Lake). The U.S. Census Bureau has not standardized or edited the feature types or names for landmarks in the Census TIGER database in all areas.

The U.S. Census Bureau does not guarantee that the landmarks or water areas are consistently identified in the TIGER/Line files. Area landmarks added to the Census TIGER database in different update actions with the same name and CFCC will produce separate landmark records in the TIGER/Line files. The landmark records may contain variant spellings of the feature name or different CFCCs even though they refer to the same feature. These differences could result in the fragmentation of a large landmark. For instance, a water body could have the name Lake Redmand with a CFCC of H31, while another part could have the same name, but a CFCC of H30, and still a third part could have the name York County Reservoir. Because area landmarks can overlap, it is possible, although not likely, for one polygon to belong to several landmarks.

Area landmarks and water area labels can have alternate names. Each feature name will appear as a separate Type 7 record, but each record will have the same LAND. Type 7 Records with the same LAND will have the

same landmark or water area label. Each unique combination of primary and alternate names becomes a separate landmark record even though the primary name and the CFCCs match the adjoining landmark features.

The TIGER/Line files do not show all water bodies as landmark records. Using Record Type 7 (area landmarks) and Record Type 8 (polygons linked to area landmarks) will not necessarily provide all water areas. Record Type P contains a Perennial/Intermittent Water Flag (WATER) to identify polygons associated with water bodies. Perennial water bodies are identified with a value of 1 in the WATER field and intermittent water bodies are identified with a value of 2 in the WATER field.

Landmark Feature Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
7	LANAME	Landmark name

Landmark Feature Name Codes The LANAME field may include any ASCII text string. The fields can be blank where the feature is unnamed.

Point Landmark Locations

The TIGER/Line files identify the location of point landmarks with a single coordinate point. The presence of coordinate data in Record Type 7 distinguishes point landmarks from area landmarks that have blank coordinate fields.

Coordinates Coordinates are expressed in standard FIPS PUB 70 notation. For additional information, see the *Coordinates for Nodes and Shape Points* section in this chapter.

Point Landmark Coordinate Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
7	LALONG	Longitude
7	LALAT	Latitude

Coordinate Values All point landmarks have non-zero coordinates within the range specified above. The coordinate fields for area landmarks are blank-filled.

Area Landmark Locations

To find the location of each area landmark, link the basic landmark description in Record Type 7 to all of the elementary polygons that belong to the landmark. Record Type 8 serves as a bridge between these two record types. The TIGER/Line files provide a Type 8 record for each polygon linked to a specific landmark. Polygons belonging to multiple landmarks appear once for each landmark. The TIGER/Line files use the LAND and the polygon identification codes (CENID and POLYID) to actually make the link. See Chapter 2 for a description of the LAND, CENID, and POLYID codes and fields.

Locate the polygons for an area landmark by searching Record Type 8 for all of the CENIDs and POLYIDs with the specified LAND. Record Type 8 is in LAND sort sequence. Once the polygons are linked to the area landmark, use Record Type I to locate the complete chains that form the landmark's polygon boundaries. Record Type I contains a record for all complete chains and identifies the polygons located on either side of the complete chains.

The search procedure must look for all instances of Record Type I and evaluate the left- and right-side polygon identifiers for a possible match. Data users may need to eliminate complete chains that are internal to the polygon and landmark, depending on the application.

Chapter 4: Geographic Entities

Overview

The 2002 TIGER/Line® files contain the boundaries of legal and statistical entities. Some boundaries of the legal entities contained in the 2002 TIGER/Line files are those reported to the U.S. Census Bureau to be legally in effect on January 1, 2000 while others are updated boundaries. It is important to note that the boundary information in the TIGER/Line files for both legal and statistical entities are for U.S. Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

The legal entities shown in the files are:

- States and their statistical equivalents—Census 2000, current, and corrected
- Counties and their statistical equivalents—Census 2000, current, and corrected
- Minor civil divisions (MCDs) —Census 2000, current, and corrected
- Subbarrios (Puerto Rico only)—Census 2000, current, and corrected
- Consolidated cities—Census 2000, current, and corrected
- Incorporated places—Census 2000, current, and corrected
- American Indian reservations (both federally and state-recognized)—Census 2000, current, and corrected
- American Indian trust lands—Census 2000, current, and corrected
- American Indian tribal subdivisions—Census 2000, current, and corrected
- Alaska Native Regional Corporations—Census 2000 and corrected
- Hawaiian home lands—Census 2000 and corrected
- Oregon urban growth areas—Census 2000 only
- Congressional districts—Census 2000 only
- Voting districts—Census 2000 only
- State legislative districts—Census 2000 only
- School districts—Census 2000 and current

The statistical entities included in the files are:

- Census areas (statistical county equivalents in Alaska)—Census 2000, current, and corrected
- Census county divisions and unorganized territories (statistical county subdivisions)—Census 2000; current for unorganized territories only
- Census designated places (statistical place equivalents)—Census 2000; current in Hawaii, Guam, Northern Mariana Islands, and Puerto Rico; and corrected in Hawaii only

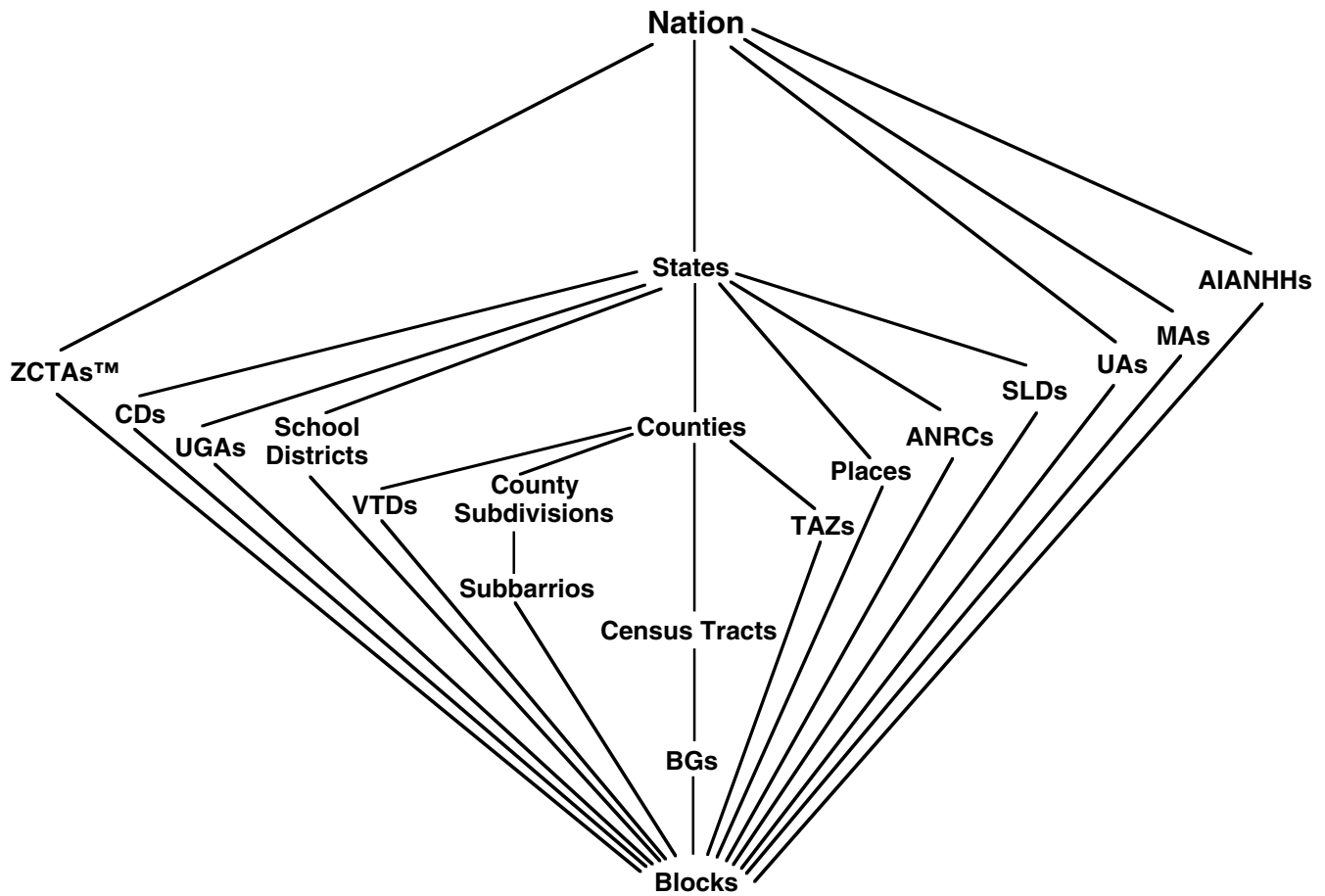
- Place (balance) entities (statistical place equivalents within consolidated cities)—Census 2000 and current
- American Indian/Alaska Native statistical areas—Census 2000 and corrected
 - 1) Alaska Native village statistical areas
 - 2) Tribal designated statistical areas
 - 4) Oklahoma tribal statistical areas
 - 5) State designated American Indian statistical areas
- Census tracts—Census 2000 only
- Census block groups—Census 2000 only
- Census blocks—Census 2000 and current suffix for Census 2000 block number
- Urban areas
 - 1) Urbanized areas—Census 2000 only
 - 2) Urban clusters—Census 2000 only
- Metropolitan areas:
 - 1) Consolidated metropolitan statistical areas—Census 2000 only
 - 2) Metropolitan statistical areas—Census 2000 only
 - 3) Primary metropolitan statistical areas—Census 2000 only
 - 4) New England County Metropolitan areas—Census 2000 only
- Traffic analysis zones—Census 2000 only
- ZIP Code[®] Tabulation Areas (ZCTAs)—Census 2000 only
- Public Use Microdata Areas—Census 2000 only

Geographic entities tabulated by the U.S. Census Bureau generally are hierarchical; Figure 4-1 shows the progression of geographic areas from the Nation to the block level. See Appendix G for a count of legal and statistical entities.

The TIGER/Line files identify geographic areas using the Federal Information Processing Standard (FIPS) codes or U.S. Census Bureau-assigned codes. The TIGER/Line files depict geographic areas in two ways:

- The assignment of codes to the left and the right sides of the complete chains (Record Type 1)
- The identification of codes that belong to each GT-polygon (Record Types A, B, E, and S)

Figure 4-1 Hierarchical Relationship of Geographic Entities



- AIANHH: American Indian area/Alaska Native area/Hawaiian home land
- ANRC: Alaska Native Regional Corporation
- BG: Block Group
- CD: Congressional District
- MA: Metropolitan Area
- SLD: State Legislative District
- TAZ: Traffic Analysis Zone
- UA: Urban Area
- UGA: Urban Growth Area
- VTD: Voting District
- ZCTA™: ZIP Code® Tabulation Area

The TIGER/Line files identify some geographic entities in both the complete chain and polygon records for certain boundary vintages. This chapter provides detailed information on the record types and fields for the geographic entities.

Boundary and Area Changes

The boundaries identified as current for some legal areas are updated boundaries collected since Census 2000 as part of the U.S. Census Bureau's Boundary and Annexation Survey (BAS). The boundaries of all federally recognized American Indian Reservations and off-reservation trust lands, tribal subdivisions, states and their statistical equivalents, all counties and their statistical equivalents, all minor civil divisions (MCDs), and all incorporated places are those that were legally in effect as of the latest BAS. This may vary by county record or the date of extraction from the Census TIGER® database. In some Record Type A records, the current state and county, when combined with the Census 2000 census tract and block numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes.

For all other legal entities and nearly all statistical areas, the boundaries shown are those in effect at the time of Census 2000 whether the data are identified as Census 2000 or current. Because unorganized territories and census designated places (CDPs) occupy the same level of geography as legal MCDs and incorporated places, updates to the legal boundaries may affect the current boundaries for some of these entities, including the elimination of some of the statistical entities. With the exception of Hawaii, Guam, the Northern Mariana Islands, and Puerto Rico, which do not have any incorporated places, CDPs do not appear on Record Type A—Current Geography. All CDPs appear in Record Types 1 and S—Census 2000 Geography.

The boundaries identified as corrected are updated boundaries generally resulting from the Census 2000 Count Question Resolution (CQR) Program. Where the Census Bureau placed a jurisdictional boundary of a functioning governmental unit in the wrong location for Census 2000, the corrected boundaries show the location of the governmental unit legally in effect on January 1, 2000.

Since the release of the Census 2000 versions of the TIGER/Line files, the U.S. Census Bureau has shifted and reshaped some line features including the lines forming some boundaries. These changes involved the realignment of complete chains associated with a legal or statistical area boundary. The shape and area of the Census 2000 geographic entities portrayed in the 2002 TIGER/Line files may differ from their portrayal in the Census 2000 versions of the TIGER/Line files, but the inventory of Census 2000 tabulation entities remains the same. Changes in the shape and location of complete chains will change the polygon internal point locations. See the *Internal Points* section in Chapter 3.

Codes for Entities

Appendix A is a list of FIPS state and county codes. A list of valid codes and names for other legal entities does not appear in the documentation for the TIGER/Line files.

The TIGER/Line files include Record Type C which lists the geographic codes and names plus some attribute data (FIPS 55 class code, census place description code, legal/statistical area description code, and entity type) for certain entities. The codes and names are identified as Census 2000, current, corrected, or all three. The *FIPS Code, Name, and/or Attribute Data Applicable Year* field (field name DATAYR) may have four values: *2000* for Census 2000 geographic names and codes, *200n* (where *200n* is the year of extraction from the Census TIGER database) for geographic names and codes valid for the current year, *CQR0* for geographic names and codes valid for corrected geography, or *blank* when the geographic names and codes for Census 2000, *200n*, and *CQR0* are the same.

The U.S. Census Bureau maintains the FIPS codes for states and counties. The U.S. Geological Survey (USGS) maintains the FIPS 55 codes. Information about FIPS 55 codes is available from USGS's Geographic Names Section at (703) 648-4544. Refer to the Internet World Wide Web site of FIPS codes for more information. The URL for FIPS codes is <http://www.census.gov/geo/www/fips/fips.html>.

The FIPS publications include:

- *FIPS PUB 5-2*, Codes for the Identification of the States, the District of Columbia and the Outlying Areas of the United States, and Associated Areas

- *FIPS PUB 6-4*, Counties and Equivalent Entities of the United States, Its Possessions, and Associated Areas
- *FIPS PUB 8-6*, Metropolitan Areas (Including MSAs, CMSAs, PMSAs, and NECMAs)
- *FIPS PUB 55-3*, Codes for Named Populated Places, Primary County Divisions, and Other Locational Entities of the United States, Puerto Rico, and the Outlying Areas

The U.S. Census Bureau uses the codes in FIPS PUB 55-3 to identify both legal and statistical entities for county subdivisions, places, and American Indian areas/Alaska Native areas/Hawaiian home lands. FIPS PUB 55-3 includes many more entity records than those for which the U.S. Census Bureau tabulates data. The FIPS 55 codes are state-based. American Indian reservations, off-reservation trust land areas, American Indian tribal subdivisions, Oklahoma tribal statistical areas, State designated American Indian statistical areas, and/or tribal designated statistical areas in more than one state will have a different FIPS 55 code for each state portion of the single American Indian entity.

Entity Type Codes

The U.S. Census Bureau uses the Entity Type Code field on Record Type C to identify what type of legal or statistical entity the record, including its FIPS or Census code (American Indian areas/Alaska Native areas/Hawaiian home lands only) and name references. For example, the FIPS codes for both places and county subdivisions appear in the FIPS PUB 55-3 Code field. The Entity Type Code field identifies whether the FIPS code references a place, consolidated city, county subdivision, Alaska Native Regional Corporation, American Indian/Alaska Native Area/Hawaiian home land, or American Indian tribal subdivision.

Entity Type Codes

<i>Code</i>	<i>Geographic Entity Type</i>
A	Consolidated City
C	County or Statistically Equivalent Entity
G	New Consolidated City
I	American Indian/Alaska Native Area /Hawaiian Home Land except for Alaska Native Regional Corporation
J	Metropolitan Area
L	Subbarrio
M	County Subdivision

Entity Type Codes (cont.)

Code	Geographic Entity Type
O	Urban Area, Census 2000
P	Place
S	State or Statistically Equivalent Entity
T	Census Tract
U	Urbanized Area, 1990
V	Voting District
W	Alaska Native Regional Corporation
X	American Indian Tribal Subdivision
Y	Oregon Urban Growth Area
3	Unified School District
4	Secondary School District
5	Elementary School District

Names for Entities

The TIGER/Line files contain not only the codes for geographic entities, but also the geographic entity names. Record Type C links the geographic entity codes appearing in a TIGER/Line file to the name of the geographic entity associated with that code. Multiple records for the same geographic entity may appear in a TIGER/Line file. The *FIPS Code, Name, and/or Attribute Data Applicable Year* field (field name DATAYR) identifies the names and codes as Census 2000, 200n (where 200n is the year of extraction from the Census TIGER database), CQR0, or all three. Refer to the section on *Codes for Entities* in this chapter for information on the four possible DATAYR values.

Geographic Entities

American Indian Areas, Alaska Native Areas, and Hawaiian Home Lands (AIANA/HHL)

There are both legal and statistical American Indian, Alaska Native, and native Hawaiian entities for which the U.S. Census Bureau provides data. The legal entities consist of federally recognized American Indian reservations and off-reservation trust land areas, the tribal subdivisions that can divide these entities, state recognized American Indian reservations, Alaska Native Regional Corporations (ANRCs), and Hawaiian home lands (HHLs). The statistical entities are Alaska Native village statistical areas (ANVSAs), Oklahoma tribal statistical areas (OTSAs), tribal desig-

nated statistical areas (TDSAs), and state designated American Indian statistical areas (SDAISAs). Tribal subdivisions can exist within the statistical Oklahoma tribal statistical areas.

In all cases, these areas are mutually exclusive in that no American Indian, Alaska Native, or Hawaiian home land can overlap another tribal entity, except for tribal subdivisions, which subdivide some American Indian entities, and Alaska Native village statistical areas (ANVSAs), which exist within Alaska Native Regional Corporations (ANRCs). In some cases where more than one tribe claims jurisdiction over an area, the U.S. Census Bureau creates a joint use area as a separate entity to define this area of dual claims.

The American Indian areas, Alaska Native areas, and Hawaiian home lands (AIANA/HHLs) are represented in the TIGER/Line files by a 5-character numeric FIPS code field, a 4-character numeric census code field (except for American Indian Tribal subdivisions which have a 3-character numeric census code field), and a single alphabetic character American Indian/Hawaiian home land trust land indicator field. FIPS codes are assigned in alphabetical sequence within state; because of this the FIPS code is different in each state for American Indian entities in more than one state. The census codes are assigned in alphabetical order nationwide, except that joint use areas appear at the end of the code range. The U.S. Census Bureau assigns the 3-character American Indian tribal subdivision code alphabetically in order and unique within each reservation, associated off-reservation trust land, and Oklahoma tribal statistical area (OTSA). The TIGER/Line files use multiple fields to identify the legal and statistical AIANA/HHLs:

Legal Entities

- *Alaska Native Regional Corporations (ANRCs)* are corporate entities organized to conduct both business and nonprofit affairs for Alaska Natives pursuant to the Alaska Native Claims Settlement Act of 1972 (Public Law 92-203). Twelve ANRCs are geographic entities that cover most of the state of Alaska (the Annette Islands Reserve, an American Indian reservation, is excluded from any ANRC). A thirteenth ANRC represents Alaska Natives who do not live in Alaska and do not identify with any of the 12 corporations. The U.S. Census Bureau does not provide data for this ANRC because it has no geographic extent and

it does not appear in the TIGER/Line files. ANRC boundaries have been legally established. The U.S. Census Bureau offers representatives of the 12 nonprofit ANRCs the opportunity to review and update the ANRC boundaries.

- *American Indian reservations—Federal (federal AIRs)* are areas that have been set aside by the United States for the use of tribes, the exterior boundaries of which are more particularly defined in the final tribal treaties, agreements, executive orders, federal statutes, secretarial orders, or judicial determinations. The U.S. Census Bureau recognizes federal reservations as territory over which American Indian tribes have primary governmental authority. These entities are known as colonies, communities, pueblos, rancherias, ranches, reservations, reserves, villages, Indian communities, and Indian villages. The Bureau of Indian Affairs maintains a list of federally recognized tribal governments. The U.S. Census Bureau contacts representatives of American Indian tribal governments to identify the boundaries for federal reservations. Federal reservations may cross state, county, county subdivision, and place boundaries.
- *American Indian reservations—State (state AIRs)* are reservations established by some state governments for tribes recognized by the state. A governor-appointed state liaison provides the names and boundaries for state recognized American Indian reservations to the U.S. Census Bureau. State reservations may cross county, county subdivision, and place boundaries.
- *American Indian tribal subdivisions* are administrative subdivisions of federally recognized American Indian reservations, off-reservation trust land, or Oklahoma tribal statistical areas (OTSAs). Tribal subdivisions are known as areas, chapters, communities, or districts. These entities are internal units of self-government or administration that serve social, cultural, and/or economic purposes for the American Indians on the reservations, off-reservation trust lands, or OTSAs. The U.S. Census Bureau obtains the boundary and name information for tribal subdivisions from tribal governments.

- *American Indian trust lands* are areas for which the United States holds title in trust for the benefit of a tribe (tribal trust land) or for an individual Indian (individual trust land). Trust lands can be alienated or encumbered only by the owner with the approval of the Secretary of the Interior or his/her authorized representative. Trust lands may be located on or off a reservation. The U.S. Census Bureau recognizes and tabulates data for reservations and off-reservation trust lands because American Indian tribes have primary governmental authority over these lands. Primary tribal governmental authority generally is not attached to tribal lands located off the reservation until the lands are placed in trust. In U.S. Census Bureau data tabulations, off-reservation trust lands always are associated with a specific federally recognized reservation and/or tribal government. A tribal government appointed liaison provides the name and boundaries of their trust lands. The U.S. Census Bureau does not identify fee land (or land in fee simple status) or restricted fee lands as specific geographic categories and they are not identified in the TIGER/Line files.

Trust lands are assigned the same code as the reservation with which they are associated. Trust lands associated with tribes that do not have a reservation are assigned codes based on tribal name. In the TIGER/Line files, a letter code—"T" for tribal and "I" for individual—appears in a separate field and identifies off-reservation trust lands.

- *Hawaiian Home Lands (HHLs)* are areas held in trust for native Hawaiians by the state of Hawaii, pursuant to the Hawaiian Homes Commission Act of 1920, as amended. Based on a compact between the federal government and the new state of Hawaii in 1959, the Hawaii Admission Act vested land title and responsibility for the program with the state. However, a Hawaiian home land is not a governmental unit; rather, a home land is a tract of land, with a legally defined boundary, that is owned by the state, which, as authorized by the Act, it may lease to one or more native Hawaiians for residential, agricultural, commercial, industrial, pastoral, and any other activities authorized by state law. The U.S. Census Bureau obtains the names and boundaries for Hawaiian home lands from state officials. The names of the home lands are based on the traditional *ahupua'a* names of the Crown and government lands of the Kingdom of Hawai'i from which the lands were designated, or from the local name for an area.

- *Joint use areas*, as applied to any American Indian area/Alaska Native area by the U.S. Census Bureau, means an area that is administered jointly and/or claimed by two or more American Indian tribes. The U.S. Census Bureau designates both legal and statistical joint use areas as unique geographic entities for the purpose of presenting statistical data.

Statistical Entities

- *Alaska Native village statistical areas (ANVSAs)* represent the densely settled portion of Alaska Native villages (ANVs). The ANVs constitute associations, bands, clans, communities, groups, tribes, or villages recognized pursuant to the Alaska Native Claims Settlement Act of 1972 (Public Law 92-203). Because ANVs do not have boundaries that are easily locatable, the U.S. Census Bureau does not delimit ANVs for the purpose of presenting statistical data. Instead, the U.S. Census Bureau presents statistical data for ANVSAs which represent the settled portion of ANVs. ANVSAs are delineated or reviewed by officials of the ANV or, if no ANV official chose to participate in the delineation process, officials of the Alaska Native Regional Corporation (ANRC) in which the ANV is located. An ANVSA may not overlap the boundary of another ANVSA, an American Indian reservation, or a tribal designated statistical area (TDSA).
- *Joint use areas*, as applied to any American Indian area/Alaska Native area by the U.S. Census Bureau, means an area that is administered jointly and/or claimed by two or more American Indian tribes. The U.S. Census Bureau designates both legal and statistical joint use areas as unique geographic entities for the purpose of presenting statistical data.
- *Oklahoma tribal statistical areas (OTSAs)* are statistical entities identified and delineated by the U.S. Census Bureau in consultation with federally recognized American Indian tribes that do not currently have a reservation, but once had a reservation in Oklahoma. The boundary of an OTSA will be that of the former reservation in Oklahoma, except where modified by agreements with neighboring tribes for statistical data presentation purposes.
- *State designated American Indian statistical areas (SDAISAs)* are statistical entities for state recognized American Indian tribes that do not have a state recognized land base (reservation). SDAISAs are identified and

delineated for the U.S. Census Bureau by a state liaison identified by the governor's office in each state. SDAISAs generally encompass a compact and contiguous area that contains a concentration of people who identify with a state recognized American Indian tribe and in which there is structured or organized tribal activity. A SDAISA may not be located in more than one state unless the tribe is recognized by both states, and it may not include area within an American Indian reservation, off-reservation trust land, Alaska Native village statistical area (ANVSA), tribal designated statistical area (TDSA), or Oklahoma tribal statistical area (OTSA).

- *Tribal designated statistical areas (TDSAs)* are statistical entities identified and delineated for the U.S. Census Bureau by federally recognized American Indian tribes that do not currently have a federally recognized land base (reservation or off-reservation trust land). A TDSA generally encompasses a compact and contiguous area that contains a concentration of individuals who identify with a federally recognized American Indian tribe and in which there is structured or organized tribal activity. A TDSA may be located in more than one state, but it may not include area within an American Indian reservation, off-reservation trust land, Alaska Native village statistical area (ANVSA), or Oklahoma tribal statistical area (OTSA).

Current Geography The boundaries identified as current on Record Type A for some federally recognized American Indian Reservations, off-reservation trust lands, and tribal subdivisions are updated boundaries collected since Census 2000 as part of the Census Bureau's BAS. For all other legal entities and nearly all statistical areas, the boundaries shown are those in effect at the time of Census 2000 whether the data are identified as Census 2000 or current. Because OTSAs, SDAISAs, and TDSAs occupy the same level of geography as federally recognized American Indian Reservations and off-reservation trust lands, updates to the legal boundaries may affect the current boundaries for some of these entities.

AIANA/HHL Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	AIANHHFPL	FIPS 55 Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000 Left
1	AIANHHFPR	FIPS 55 Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000 Right
1	AIHHTLIL	American Indian/Hawaiian Home Land Trust Land Indicator, 2000 Left
1	AIHHTLIR	American Indian/Hawaiian Home Land Trust Land Indicator, 2000 Right
A	AIANHHFPCU	FIPS 55 Code (American Indian/Alaska Native Area/Hawaiian Home Land), Current
A	AIANHHCU	Census Code (American Indian/Alaska Native Area/Hawaiian Home Land), Current
A	AIHHTLICU	American Indian/Hawaiian Home Land Trust Land Indicator, Current
A	ANRCCU	FIPS 55 Code (ANRC), Current
A	AITSECU	Census Code (American Indian Tribal Subdivision), Current
A	AITSCU	FIPS 55 Code (American Indian Tribal Subdivision), Current
B	AIANHHFPCQ	FIPS 55 Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000 CQR
B	AIANHHCQ	Census Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000 CQR
B	AIHHTLICQ	American Indian/Hawaiian Home Land Trust Land Indicator, 2000 CQR
B	AITSECCQ	Census Code (American Indian Tribal Subdivision), 2000 CQR
B	AITSCQ	FIPS 55 Code (American Indian Tribal Subdivision), 2000 CQR
B	ANRCCQ	FIPS 55 Code (ANRC), 2000 CQR
C	FIPS	FIPS PUB 55-3 Code
C	FIPSCC	FIPS 55 Class Code
C	LSADC	Legal/Statistical Area Description
C	ENTITY	Entity Type Code
C	AIANHH	Census American Indian/Alaska Native Area / Hawaiian Home Land Code
C	AITSCE	Census American Indian Tribal Subdivision Code
C	NAME	Name of Geographic Area

AIANA/HHL Code Record Locations (*cont.*)

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
S	AIANHHFP	FIPS 55 Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000
S	AIANHH	Census Code (American Indian/Alaska Native Area/Hawaiian Home Land), 2000
S	AIHHTLI	American Indian /Hawaiian Home Land Trust Land Indicator, 2000
S	ANRC	FIPS 55 Code (ANRC), 2000
S	AITSC	FIPS 55 Code (American Indian Tribal Subdivision), 2000
S	AIT	FIPS 55 Code (American Indian Tribal Subdivision), 2000

AIANA/HHL Codes Record Type C shows one record for each AIANA/HHL entity by year. Also, refer to FIPS PUB 55-3 for a list of valid codes and entity names. The type of AIANA/HHL area can be identified either by the census code or by the FIPS 55 class code on each entity record in Record Type C. The range of census codes allocated to each AIANA/HHL and the valid FIPS 55 class code(s) associated with each are as follows:

<i>Type</i>	<i>Census Code Range</i>	<i>Valid FIPS 55 Class</i>
Federal AIR	0001 to 4999	D1, D2, D3
Hawaiian Home Land	5000 to 5499	F1
OTSA	5500 to 5999	D6
ANVSA	6000 to 7999	E1, E2, E6
TDSA	8000 to 8999	D6
State AIR	9000 to 9499	D4
SDAISA	9500 to 9998	D9

<i>Type</i>	<i>Trust Land Indicator</i>
Hawaiian Home Land	H
Individual Trust Land	I
Tribal Trust Land	T

Block Groups (BGs)

Block groups are clusters of blocks within the same census tract having the same first digit of their 4-digit census block number. For example, blocks 3001, 3002, 3003, . . . , 3999 in census tract 1210.02 belong to BG 3. Census 2000 BGs generally contain between 600 and 3,000 people, with

an optimum size of 1,500 people. Most BGs were delineated by local participants in the U.S. Census Bureau's Participant Statistical Areas Program. The U.S. Census Bureau delineated BGs only where a local or tribal government declined to participate or where the U.S. Census Bureau could not identify a potential local participant.

A BG usually covers a contiguous area. Each census tract contains at least one BG and BGs are uniquely numbered within census tract. Within the standard census geographic hierarchy BGs never cross county or census tract boundaries, but may cross the boundaries of county subdivisions, places, urban areas, voting districts, congressional districts, and American Indian/Alaska Native areas/Hawaiian home lands. Under the Census 2000 American Indian/Alaska Native area/Hawaiian home land census geographic hierarchy, census tracts and BGs are defined within American Indian entities and can cross state and county boundaries. These are commonly referred to as tribal BGs.

BGs have a valid range of 0 through 9. BGs beginning with a 0 generally are in coastal and Great Lakes water and territorial seas. Rather than extending a census tract boundary into the Great Lakes or out to the three-mile territorial sea limit, the U.S. Census Bureau delineated some census tract boundaries along the shoreline or just offshore. The U.S. Census Bureau assigned a default census tract number of 0000 and BG of 0 to the offshore areas not included in regularly numbered census tract areas.

In decennial census data tabulations, a block group may be split to present data for every unique combination of county subdivision, place, voting district, congressional district, American Indian area/Alaska Native area/Hawaiian home land shown in the data tabulation products.

Block Group Number Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
S	BLKGRP	Census Block Group, 2000

All polygons have a non-blank BG number. The left- and right-side complete chain block numbers should not be blank except where they are located along the outside edge of the county boundary. The TIGER/Line files do not contain codes for areas outside the county file.

Census Blocks

Census blocks are statistical areas bounded on all sides by visible features such as streets, roads, streams, and railroad tracks, and by nonvisible boundaries such as city, town, township, and county limits, and short imaginary extensions of streets and roads. Generally census blocks are small in area; for example, a block in a city bounded by streets. However, census blocks in remote areas may be large and irregular and contain hundreds of square miles. All territory in the United States, Puerto Rico, and the Island Areas have block numbers. Blocks are composed of one or more GT-polygons; that is, several GT-polygons can share the same block number. See Figures 4-2 and 4-3.

Tabulation blocks, used in Census 2000 data products, never cross county or census tract boundaries. Nor do they cross the boundaries of any entity for which the U.S. Census Bureau tabulates data including American Indian areas, Alaska Native areas, Hawaiian home lands, congressional districts, county subdivisions, military installations, national parks and monuments, places, state legislative districts, urbanized areas, urban clusters, school districts, voting districts, or ZIP Code Tabulation Areas (ZCTAs).

Census Block Numbers Census 2000 tabulation blocks are numbered uniquely within each state/county/census tract with a four-digit census block number. The U.S. Census Bureau created the tabulation block numbers immediately before beginning its Census 2000 data tabulation process, thereby eliminating block suffixes for Census 2000. The first digit of the tabulation block number identifies the block group.

Current Geography To accommodate changes in legal entity boundaries occurring after January 1, 2000, the U.S. Census Bureau assigns a current alphabetic suffix for a Census 2000 block number. The current suffixes for Census 2000 block numbers, which appear on Record Type A, are not permanent and will change with each annual cycle of current block suffixing. Data users are cautioned that in some Record Type A records, the current state and county codes, when combined with the Census 2000 census tract and block numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes. The Census 2000 state, county, census tract, and census block codes all are found on Record

Figure 4-2 *Geographic Relationships—Small Area Statistical Entities*

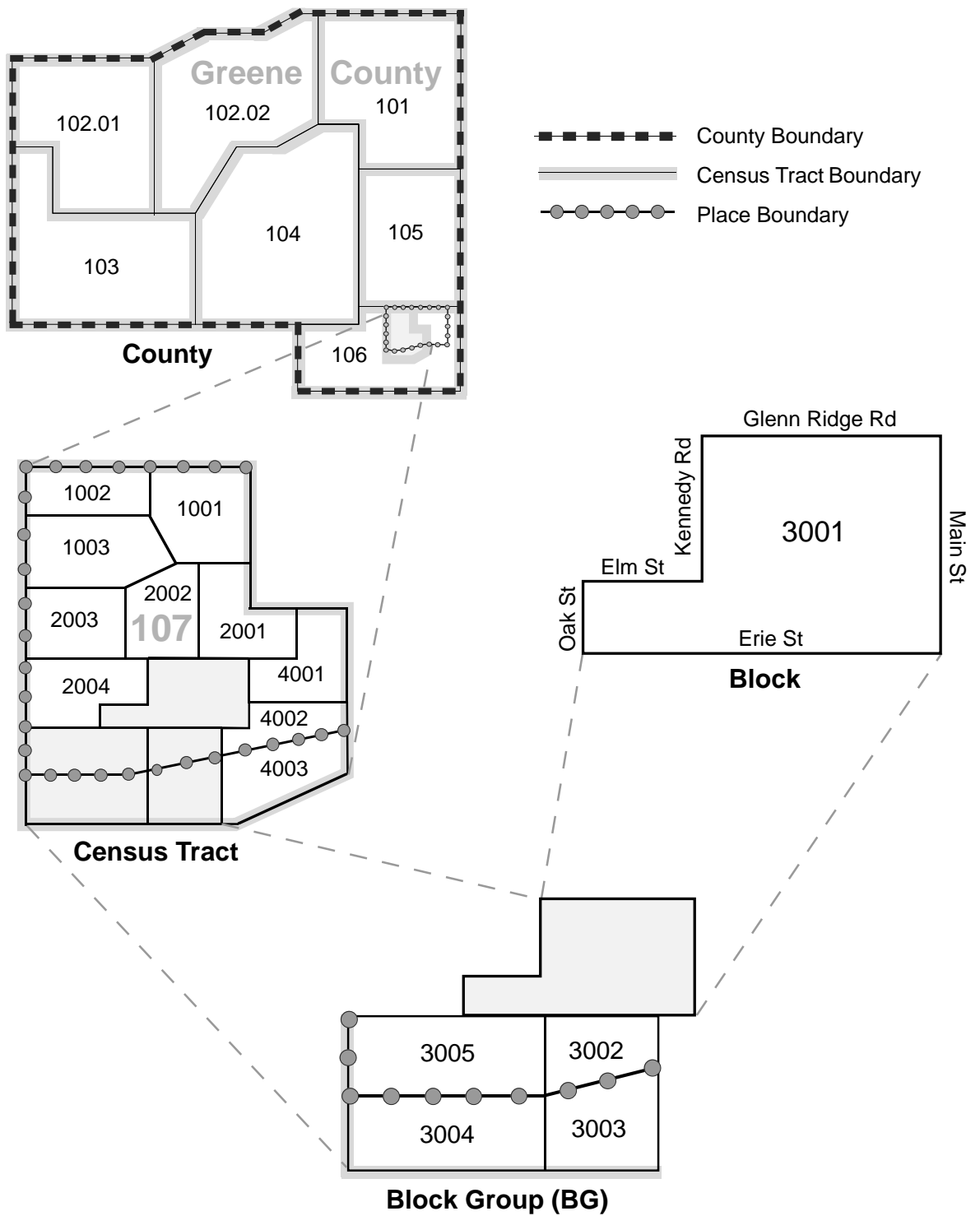
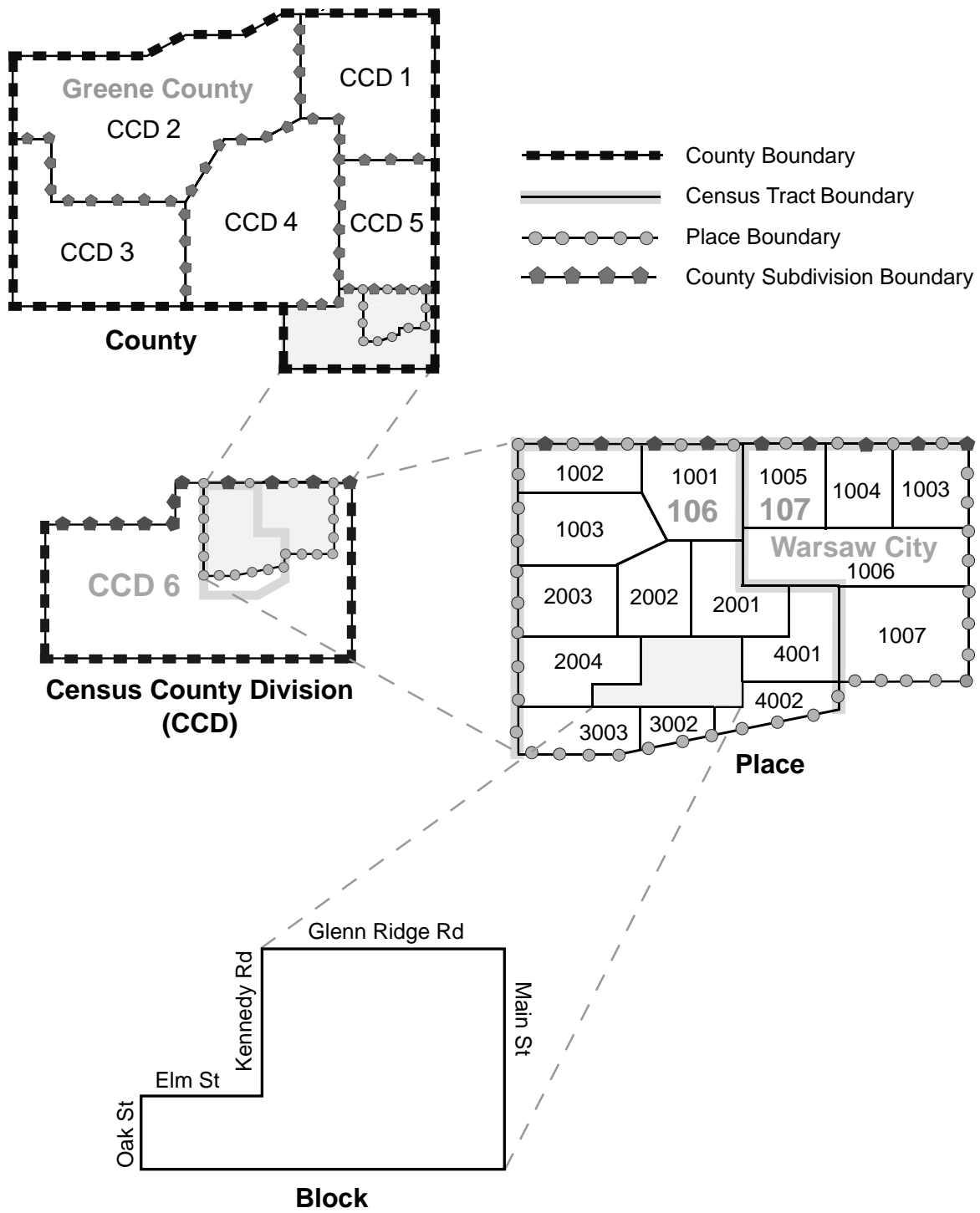


Figure 4-3 *Geographic Relationships—Legal and Statistical Entities*



Type S. Since the distribution unit for the 2002 TIGER/Line files is current county, it is possible that to fully match all the Census 2000 blocks numbers in a Census 2000 county a user will need to reference multiple current 2002 TIGER/Line files.

Water Blocks The U.S. Census Bureau introduced a different method for identifying the water areas of census blocks for Census 2000. For Census 2000, water area located completely within the boundary of a single land block has the same block number as that land block. Water area that touches more than one land block is assigned a unique block number not associated with any adjacent land block. The U.S. Census Bureau assigned water block numbers beginning with the block group number followed by "999 " and preceding in descending order. For example, in block group 3, the block numbers assigned to water areas that border multiple land blocks are 3999, 3998, 3997, and so forth. In some block groups, the numbering of land blocks used enough of the available tabulation block numbers to reach beyond the 900 range within the block group. For this reason, and because some land blocks include water (ponds and small lakes), no conclusions about whether or not a block is all land or all water can be made by looking at the Census 2000 block numbers. Data users must use the WATER field on Record Type P to determine if the GT-polygon is land or water. The WATER field has three values, blank for land, 1 for perennial water, or 2 for intermittent water.

Census Block Number Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	BLOCKL	Census Block Number, 2000 Left
1	BLOCKR	Census Block Number, 2000 Right
A	BLOCK	Census Block Number, 2000
A	BLOCKSUFUCU	Current Suffix for Census 2000 Block Number
B	BLOCKCQ	Census Block Number, 2000 CQR
S	BLOCK	Census Block Number, 2000

Census Block Codes

Census 2000 Tabulation Blocks

- Block Group Number 0 to 9—First character
- 000 to 999—Second, third, and fourth characters

Current Suffix for Census 2000 Block Number

- A to Z—Codes for Current Suffix for Census 2000 Block Numbers

Census 2000 block information appears on Record Type B—Corrected Geography for information purposes only. There are no corrections for census blocks. All polygons have a non-blank 4-digit Census 2000 block number. The left- and right-side complete chain block numbers are not blank except where they are located along the outside edge of the county. The TIGER/Line files do not contain geographic codes for the area outside of the county file. The TIGER/Line files identify boundary complete chains by placing a 1 in the single-side segment field in Record Type 1.

Census Tracts

Census tracts are small, relatively permanent statistical subdivisions of a county (or statistical equivalent of a county), and were defined by local participants as part of the U.S. Census Bureau's Participant Statistical Areas Program. The U.S. Census Bureau delineated the census tracts in situations where no local participant existed or where local or tribal governments declined to participate. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of decennial census data.

Census tracts generally have a population size between 1,500 and 8,000 people, with an optimum size of 4,000 people. When first delineated, census tracts are designed to be homogeneous with respect to population characteristics, economic status, and living conditions. The spatial size of census tracts varies widely depending on the density of settlement. Census tract boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from census to census. However, physical changes in street patterns caused by highway construction, new development, and so forth, may require boundary revisions. In addition, census tracts occasionally are split due to population growth, or combined as a result of substantial population decline.

Census tract boundaries generally follow visible and identifiable features. Census tract boundaries may follow legal boundaries, such as minor civil division (MCD) or incorporated place boundaries, in some states and situations to allow for census tract-to-governmental unit relationships

where the governmental boundaries tend to remain unchanged between censuses. State and county boundaries are always census tract boundaries in the standard census geographic hierarchy. Under the Census 2000 American Indian/Alaska Native area/Hawaiian home land census geographic hierarchy, tribal census tracts are defined within American Indian entities and can cross state and county boundaries.

In a few rare instances, a census tract may consist of discontinuous areas. These discontinuous areas may occur where the census tracts are coextensive with all or parts of legal entities that are themselves discontinuous.

Census Tract Numbering Census tract numbers have a 4-digit basic number and may have an optional 2-digit suffix; for example, 1457.02. Census tract numbers range from 0001 to 9999 and are unique within a county or equivalent area. The U.S. Census Bureau reserved the census tract numbering range of 9400 to 9499 for use by American Indian area participants in situations where an American Indian entity crosses county or state lines. See the section on *Census Tracts in American Indian Areas* below for further information. The U.S. Census Bureau assigned a default census tract number of 0000 to some coastal and Great Lakes water and territorial sea rather than extend the census tract boundary into the Great Lakes or out to the three-mile limit. By closing off some census tracts along the shoreline or just offshore and assigning the default census tract to the offshore water areas, the U.S. Census Bureau provides complete census tract coverage of water areas in territorial seas and the Great Lakes. Census tract suffixes may range from .01 to .98. For Census 2000, the U.S. Census Bureau did not identify separate crews-of-vessels census tracts; the crews-of-vessels population is part of the Census 2000 census tract identified as associated with the homeport of the vessel. See the section on *Crews-of-Vessels* later in this chapter for further information.

The U.S. Census Bureau uses suffixes to help identify census tract changes for comparison purposes. Local participants have an opportunity to review the existing census tracts before each census. If local participants split a census tract, the split parts usually retain the basic number, but receive different suffixes. In a few counties, local participants request major changes to, and renumber, the census tracts. Changes to individual census tract boundaries usually do not result in census tract numbering changes.

In printed reports and on mapping products, the U.S. Census Bureau uses a decimal point (.) to separate the basic number from the suffix. However, in the TIGER/Line files and Summary File (SF) data products, the decimal point is implied. The basic number and the suffix appear together in a single 6-character field in Record Types 1, A, B, and S. A basic number smaller than 1000 will contain leading zeros (for example, 002502). Leading zeros are shown on machine-readable products, but are not shown in printed reports or on census maps.

The TIGER/Line files use the right-most two characters in the census tract field for the suffix. Where a census tract suffix does not exist, the suffix is zero filled in machine-readable products, but blank in printed reports and on census maps. Suffixes smaller than 10 have a leading zero. For example, census tract 0077.01 is shown as 007701 in the TIGER/Line files.

Census Tract "Name" The 2002 TIGER/Line files contain the census tract numbers formatted to display as they appear on U.S. Census Bureau printed reports and on mapping products. That is, in the census tract "name" the leading and trailing zeros in the census tract number are omitted and the decimal point appears in those census tract numbers with a suffix. For example, census tract 000302 has a census tract "name" of 3.02 and the "name" for census tract 020800 is 208. Data users will find the census tract numbers formatted to display as a "name" on Record Type C. The census tract number appears in the Census Voting District Code/ Census Tract Code field (field name VTDTRACT) and the census tract "name" appears in the Name of Geographic Area field. To distinguish between the voting district codes and census tract codes in the VTDTRACT field, users should use the Entity Type Code field on Record Type C. Census tract numbers have an entity type code of "T."

Current Geography Census tract boundaries follow legal county boundaries as of January 1, 2000. Because there have been state and/or county boundary changes since 2000, data users are cautioned that in some Record Type A records the current state and county codes, when combined with the Census 2000 census tract numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes. The Census 2000 state, county, and census tract codes all are found on Record Type S.

Census Tracts in American Indian Areas The U.S. Census Bureau reserved the census tract numbering range of 9400 to 9499 for use by American Indian area participants in situations where an American Indian entity crosses county or state boundaries. Under the Census 2000 American Indian/Alaska Native area/Hawaiian home land census geographic hierarchy, the U.S. Census Bureau tabulates census tract data within federally recognized American Indian reservations and off-reservation trust lands ignoring state and county boundaries. These are commonly referred to as tribal census tracts. Not all tribal census tracts are numbered in the 9400 to 9499 census tract numbering range. Under the Census 2000 American Indian/Alaska Native area/Hawaiian home land census geographic hierarchy the U.S. Census Bureau identifies all census tracts on federally recognized American Indian reservations and off-reservation trust lands as tribal census tracts.

Relationship to Other Geographic Entities Within the standard census geographic hierarchy, census tracts never cross state or county boundaries, but may cross the boundaries of county subdivisions, places, urban areas, voting districts, congressional districts, and American Indian/Alaska Native areas/Hawaiian home lands. Under the Census 2000 American Indian/Alaska Native area/Hawaiian home land census geographic hierarchy, tribal census tracts are defined within American Indian entities and cross state and county boundaries.

Census Tract Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	TRACTL	Census Tract Code, 2000 Left
1	TRACTR	Census Tract Code, 2000 Right
A	TRACT	Census Tract, 2000
B	TRACTCQ	Census Tract, 2000 CQR
C	ENTITY	Entity Type Code
C	VTDTRACT	Census Voting District Code/Census Tract Code
C	NAME	Name of Geographic Area
S	TRACT	Census Tract, 2000

Census Tract Codes

0001 to 9989—Basic number range for census tracts

0000—Default basic number for census tracts

01 to 98—Suffix codes for census tracts

00—Suffix code for census tracts without a suffix

Census 2000 census tract information appears on Record Type B—Corrected Geography for information purposes only. There are no corrections for census tracts. All polygons have a non-blank census tract basic number. The left- and right-side complete chain census tract numbers are not blank except where they are located along the outside edge of the county boundary. The TIGER/Line files do not contain geographic codes for the area outside of the county file. The TIGER/Line files identify the boundary complete chains by placing a 1 in the single-side segment field in Record Type 1.

Congressional Districts

Congressional districts are the 435 areas from which people are elected to the U.S. House of Representatives. After the apportionment of congressional seats among the states, based on census population counts, each state is responsible for establishing congressional districts for the purpose of electing representatives. Each congressional district is to be as equal in population to all other congressional districts in a state as practicable.

The congressional districts in effect at the time of Census 2000 are those of the 106th Congress, whose session began in January 1999. The 103rd Congressional Districts remained in effect through Census 2000, except where a state initiative or a court-ordered redistricting required a change. Six states redistricted for the 104th Congress (Georgia, Louisiana, Maine, Minnesota, South Carolina, and Virginia), five states redistricted for the 105th Congress (Florida, Georgia, Kentucky, Louisiana, and Texas), and three states (New York, North Carolina, and Virginia) redistricted for the 106th Congress. In North Carolina the "1998 Congressional Plan A" was used for the 1998 congressional elections. It was created in response to a court ruling which held the 1997 plan, "97 House/Senate Plan A," unconstitutional. The Supreme Court has since reversed that lower court ruling and the "1998 Congressional Plan A" was used for the 2000 North Carolina

congressional elections. The 106th Congressional Districts appearing in the 2002 TIGER/Line files for North Carolina are the "97 House/Senate Plan A" Congressional Districts. The 108th Congress will be the first to reflect reapportionment and redistricting based on Census 2000 data.

Congressional districts are identified by a 2-character numeric FIPS code. The 2002 TIGER/Line files contain fields for the current, the 106th, and the 108th Congressional Districts. Congressional districts are numbered uniquely within state. The fields for the 108th Congressional Districts and the current congressional districts are blank.

Congressional District Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
A	CDCU	Congressional District Code, Current
S	CD106	Congressional District Code, 106 th
S	CD108	Congressional District Code, 108 th

Congressional District Codes—106th Congress

- 01 to 52—Congressional district codes
- 00—*At large* (single district for state)
- 98—Nonvoting delegate
- 99—Area with no representative in Congress

Counties and Statistically Equivalent Entities

The primary legal divisions of most states are termed "counties." In Louisiana, these divisions are known as "parishes." In Alaska, which has no counties, the statistically equivalent entities are the organized "boroughs," "city and boroughs," "municipality," and "census areas;" the latter are delineated cooperatively for statistical purposes by the State of Alaska and the U.S. Census Bureau. In four states (Maryland, Missouri, Nevada, and Virginia), there are one or more incorporated places that are independent of any county organization and thus constitute primary divisions of their states. These incorporated places are known as "independent cities" and are treated as statistically equivalent entities for purposes of data presentation. The District of Columbia has no primary divisions, and the entire area is considered a statistically equivalent entity for purposes of data presentation. The U.S. Census Bureau treats the following entities

as statistical equivalents of counties for purposes of data presentation: municipios in Puerto Rico; Islands in the U.S. Virgin Islands; and a variety of entities in the Pacific Island Areas.

The TIGER/Line files contain several 3-character numeric fields identifying the FIPS county code for Census 2000. Each individual TIGER/Line file contains state and county code fields to uniquely identify its records. See Appendix A for a list of FIPS codes for county and statistically equivalent entities.

Current Geography Since Census 2000, there have been two changes to the universe of county or statistically equivalent entities. In Colorado, Broomfield County was created from parts of Adams, Boulder, Jefferson, and Weld Counties. The independent city of Clifton Forge, Virginia changed its status to become Clifton Forge town and is now part of Alleghany County, Virginia. The 2002 TIGER/Line files are based on the boundaries of the counties or statistical equivalent entities based on the latest available governmental unit boundaries. In some Record Type A records, the current state and county, when combined with the Census 2000 census tract and block numbers, create nonexistent geographic areas. To avoid nonexistent geographic areas, it is important not to mix Census 2000 geographic codes with the current geographic codes. The Census 2000 state, county, census tract, and census block codes all are found on Record Type S.

County and Statistically Equivalent Entity Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	COUNTYL	FIPS County Code, 2000 Left
1	COUNTYR	FIPS County Code, 2000 Right
A	COUNTYCU	FIPS County Code, Current
B	COUNTYCQ	FIPS County Code, 2000 CQR
C	COUNTY	FIPS County Code
C	FIPSCC	FIPS 55 Class Code
C	LSADC	Legal/Statistical Area Description
C	ENTITY	Entity Type Code
C	NAME	Name of Geographic Area
E	COUNTYEC	FIPS County Code, Economic Census
S	COUNTY	FIPS County Code, 2000

All polygons have a non-blank county code. To improve the ability of data users to merge multiple counties, the U.S. Census Bureau has added the state and county codes to those Record Type 1 records of the adjacent county (these are the Record Type 1 records that have a 1 in the single-side segment field). The 2002 TIGER/Line files are the first version of the TIGER/Line files to include the county code for the side of the record "outside" the county. The left- and right-side complete chain county codes are not blank except where they are located along the outside edge of the boundary of the United States.

County Subdivisions

County subdivisions are the primary divisions of counties and their statistical equivalents for the reporting of decennial census data. They include census county divisions, census subareas, minor civil divisions, and unorganized territories. The TIGER/Line files contain a 5-character numeric FIPS code field for county subdivisions. They use a single field to identify the two functional types (legal and statistical) of county subdivisions. Record Type C contains all valid codes and entity names.

Legal Entities

Minor Civil Divisions (MCDs)

- MCDs are the primary governmental or administrative divisions of a county in many states. MCDs represent many different kinds of legal entities with a wide variety of governmental and/or administrative functions. MCDs are variously designated as American Indian reservations, assessment districts, boroughs, election districts, gores, grants, locations, magisterial districts, parish governing authority districts, plantations, precincts, purchases, road districts, supervisor's districts, towns, and townships. The U.S. Census Bureau recognizes MCDs in 28 states, Puerto Rico, and the Island Areas. The District of Columbia has no primary divisions, and the District of Columbia is considered equivalent to an MCD for statistical purposes.
- In some states, all or some incorporated places are not part of any MCD. These places also serve as primary legal subdivisions and have a unique FIPS MCD code that is the same as the FIPS place code. The TIGER/Line files will show the same FIPS 55 code in the county subdivision field and the place field. In other states, incorporated places are part of

the MCDs in which they are located, or the pattern is mixed—some incorporated places are independent of MCDs and others are included within one or more MCDs.

- The MCDs in 12 states (Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin) also serve as general -purpose local governments that generally can perform the same governmental functions as incorporated places. The U.S. Census Bureau presents data for these MCDs in all data products in which it provides data for places.
- In New York and Maine, American Indian reservations (AIRs) exist outside the jurisdiction of any town (MCD) and thus also serve as the statistical equivalent of MCDs for purposes of data presentation.

Statistical Entities

Census County Divisions (CCDs)

CCDs are areas delineated by the U.S. Census Bureau, in cooperation with state officials and local officials for statistical purposes. CCDs have no legal function and are not governmental units. CCD boundaries usually follow visible features and in most cases, coincide with census tract boundaries. The name of each CCD is based on a place, county, or well-known local name that identifies its location. CCDs exist where:

- 1) There are no legally established minor civil divisions (MCDs).
- 2) The legally established MCDs do not have governmental or administrative purposes.
- 3) The boundaries of the MCDs change frequently.
- 4) The MCDs are not generally known to the public.

CCDs have been established for the following 21 states:

Alabama	Hawaii	Oregon
Arizona	Idaho	South Carolina
California	Kentucky	Tennessee
Colorado	Montana	Texas
Delaware	Nevada	Utah
Florida	New Mexico	Washington
Georgia	Oklahoma	Wyoming

Census Subareas

Census subareas are statistical subdivisions of boroughs, city and boroughs, municipalities, and census areas, the statistical equivalent entities for counties in Alaska. The state of Alaska and the U.S. Census Bureau cooperatively delineate the census subareas to serve as the statistical equivalents of MCDs. Census subareas were first used in the 1980 census.

Unorganized Territories (UTs)

The U.S. Census Bureau defines unorganized territories in 10 minor civil division (MCD) states where portions of counties are not included in any legally established MCD or incorporated place. The U.S. Census Bureau recognizes such separate pieces of territory as one or more separate county subdivisions for census purposes. It assigns each unorganized territory a descriptive name, followed by the designation "unorganized territory" and a county subdivision code. Unorganized territories were first reported in the 1960 census. The following states have unorganized territories:

Arkansas	Minnesota
Indiana	North Carolina
Iowa	North Dakota
Louisiana	Ohio
Maine	South Dakota

Current Geography The boundaries identified as current for MCDs are updated boundaries collected since Census 2000 as part of the U.S. Census Bureau's Boundary and Annexation Survey. Because unorganized territories occupy the same level of geography as legal MCDs, updates to the MCD boundaries may affect the current boundaries of the unorganized territories, including the elimination of some of the Census 2000 unorganized territories. For all other statistical county subdivision entities, the boundaries shown are those in effect at the time of Census 2000 whether the data are identified as Census 2000 or current.

County Subdivision Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	COUSUBL	FIPS 55 Code (County Subdivision), 2000 Left
1	COUSUBR	FIPS 55 Code (County Subdivision), 2000 Right
A	COUSBCU	FIPS 55 Code (County Subdivision), Current
B	COUSBCQ	FIPS 55 Code (County Subdivision), 2000 CQR

County Subdivision Code Record Locations (cont.)

Record Type	Field Name	Description
C	FIPSCC	FIPS 55 Class Code
C	PLACEDC	Place Description Code
C	LSADC	Legal/Statistical Area Description
C	ENTITY	Entity Type Code
C	NAME	Name of Geographic Area
E	COUSUBEC	FIPS 55 Code (County Subdivision), Economic Census
S	COUSUB	FIPS 55 Code (County Subdivision), 2000

The U.S. Census Bureau assigns a default county subdivision code of 00000 in some coastal and Great Lakes water where county subdivisions do not extend into the Great Lakes or out to the three-mile limit.

Crews-of-Vessels

Crews-of-vessels refers to the population on military (including Coast Guard) and merchant ships; they do not include the inhabitants of house-boats or marinas. For Census 2000, the U.S. Census Bureau is not delineating separate crews-of-vessels census tracts or blocks. Instead it is assigning the crews-of-vessels population to the land block identified as being associated with the home-port of the vessel. A point landmark, with the census feature class code (CFCC) of D25, appears in the TIGER/Line files indicating within which Census 2000 tabulation block(s) the crews-of-vessels population is assigned.

Metropolitan Areas (MAs)

Metropolitan areas (MAs) are designated and defined by the U.S. Office of Management and Budget (OMB), following a set of official standards that are published in a *Federal Register* Notice. These standards were developed by the interagency Metropolitan Area Standards Review Committee, with the aim of producing definitions that are as consistent as possible for all MAs nationwide.

The general concept of an MA is one of a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. Some MAs are defined around two or more nuclei. Each MA must contain either a place with a minimum population of 50,000 or a U.S. Census Bureau defined urbanized area and

a total MA population of at least 100,000 (75,000 in New England). An MA contains one or more central counties and may include one or more outlying counties that have close economic and social relationships with the central county. An outlying county must have a specified level of commuting to the central counties and also must meet certain standards regarding metropolitan character, such as population density, urban population, and population growth. In New England, MAs consist of cities and towns rather than whole counties.

The territory, population, and housing units in MAs are referred to as "metropolitan." The metropolitan category is subdivided into "inside central city" and "outside central city." The territory, population, and housing units located outside MAs are referred to as "nonmetropolitan." The metropolitan and nonmetropolitan classification cuts across the other hierarchies; for example, there is generally both urban and rural territory within both metropolitan and nonmetropolitan areas.

There are three types of metropolitan areas. If a metropolitan area has a total population of less than 1,000,000, the area is designated a Metropolitan Statistical Area (MSA). Metropolitan areas with a population of 1,000,000 or greater qualify for designation as a Consolidated Metropolitan Statistical Area (CMSA) that is composed of smaller Primary Metropolitan Statistical Areas (PMSAs). This designation is not automatic; the OMB solicits local opinion to designate CMSAs and their component PMSAs. In New England, there also is an alternative county-based definition of MSAs known as the New England County Metropolitan Areas (NECMAs).

The TIGER/Line files contain three different 4-character numeric fields to identify the FIPS code for each metropolitan area or NECMA and to differentiate CMSAs and MSAs from PMSAs. The FIPS codes are from FIPS PUB 8. If the metropolitan area is a CMSA then a value exists in the MSACMSA field identifying the CMSA and the value in the PMSA field identifies the PMSA. A blank PMSA field indicates the code in the MSACMSA field is for the MSA. The NECMA code appears in the NECMA field. Record Type C uses a single metropolitan area field to identify CMSAs, MSAs, PMSAs, and NECMAs. The Legal/Statistical Area Description code identifies the type of metropolitan area.

Metropolitan Area Central Cities In each metropolitan statistical area (MSA) and consolidated metropolitan statistical area (CMSA), the largest place and, in some cases, additional places are designated as "central cities" under the official standards. A few primary metropolitan statistical areas (PMSAs) do not have central cities. The largest central city and, in some cases, up to two additional central cities are included in the title of the MA; there also are central cities that are not included in an MA title. An MA central city does not include any part of that place that extends outside the MA boundary.

Consolidated Metropolitan Statistical Areas (CMSAs) and Primary Metropolitan Statistical Areas (PMSAs) If an area that qualifies as an MA has more than one million people, primary metropolitan statistical areas (PMSAs) may be defined within it. PMSAs consist of a county or cluster of counties (cities and towns in New England) that demonstrates very strong internal economic and social links, in addition to close ties to other portions of the larger area. When PMSAs are established, the larger MA of which they are component parts is designated a consolidated metropolitan statistical area (CMSA). CMSAs and PMSAs are established only where local governments favor such a designation for a large MA.

Metropolitan Statistical Areas (MSAs) Metropolitan statistical areas (MSAs) are MAs that are not closely associated with other MAs. These areas typically are surrounded by nonmetropolitan counties (county subdivisions in New England).

New England County Metropolitan Areas (NECMAs) New England county metropolitan areas (NECMAs) are defined as a county-based alternative to the city and town based New England MSAs and CMSAs. The NECMA defined for an MSA or CMSA includes:

- The county containing the first-named city in that MSA/CMSA title (this county may include the first-named cities of other MSAs/CMSAs as well.
- Each additional county having at least half its population in the MSAs/CMSAs whose first-named cities are in the previously identified county. NECMAs are not identified for individual PMSAs.

Metropolitan Area Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
A	MSACMSACU	FIPS Consolidated Metropolitan Statistical Area/ Metropolitan Statistical Area Code, Current
A	PMSACU	FIPS Primary Metropolitan Statistical Area Code,
A	NECMACU	FIPS New England County Metropolitan Statistical Area Code, Current
C	MA	Metropolitan Area Code
C	LSADC	Legal/Statistical Area Description
C	ENTITY	Entity Type Code
C	NAME	Name of Geographic Area
S	MSACMSA	FIPS Consolidated Metropolitan Statistical Area/ Metropolitan Statistical Area Code, 2000
S	PMSA	FIPS Primary Metropolitan Statistical Area Code, 2000
S	NECMA	FIPS New England County Metropolitan Statistical Area Code, 2000

Metropolitan Area Codes Metropolitan areas are identified using the 4-character numeric FIPS codes. Record Type C in the TIGER/Line files contains all the valid Census 2000 codes and entity names for CMSAs, MSAs, PMSAs, and NECMAs.

Places

The TIGER/Line files use a single field to identify places that are legal entities, and places that are statistical entities. The FIPS place code uniquely identifies a place within a state. If place names are duplicated within a state and they represent distinctly different areas, a separate code is assigned to each place name alphabetically by primary county in which each place is located, or if both places are in the same county, alphabetically by their legal descriptions (for example, "city" before "village").

Legal Entities

Consolidated Cities

A consolidated government is a unit of local government for which the functions of an incorporated place and its county or minor civil division (MCD) have merged. The legal aspects of this action may result in both the primary incorporated place and the county or MCD continuing to exist as legal entities, even though the county or MCD performs few or

no governmental functions and has few or no elected officials. Where this occurs, and where one or more other incorporated places in the county or MCD continue to function as separate governments, even though they have been included in the consolidated government, the primary incorporated place is referred to as a "consolidated city." The U.S. Census Bureau classifies the separately incorporated places within the consolidated city as place entities and creates a separate place (balance) record for the portion of the consolidated city not within any other place. Refer to the section on *Consolidated City (Balance) Portions* below for additional information. Consolidated cities are represented in the TIGER/Line files by a 5-character numeric FIPS code. Record Type C has the complete list of valid codes and entity names.

Incorporated Places

Incorporated places are those reported to the U.S. Census Bureau as legally in existence as of the latest Boundary and Annexation (BAS) Survey, under the laws of their respective states. An incorporated place is established to provide governmental functions for a concentration of people as opposed to a minor civil division, which generally is created to provide services or administer an area without regard, necessarily, to population. Places may extend across county and county subdivision boundaries. An incorporated place can be a city, city and borough, borough, municipality, town, village, or rarely, undesignated. But, for census purposes, incorporated places exclude:

- The boroughs in Alaska (treated as statistical equivalents of counties)
- Towns in the New England States, New York, and Wisconsin (treated as MCDs)
- The boroughs in New York (treated as MCDs)
- The *balance* portions of consolidated cities (statistical equivalents of incorporated places)
- The *incorporated places known as "independent cities" in Maryland, Missouri, Nevada, and Virginia* (treated as statistical equivalents of counties)

Statistical Entities

Census Designated Places (CDPs)

CDPs are delineated for the decennial census as the statistical counterparts of incorporated places. CDPs are delineated to provide data for settled concentrations of population that are identifiable by name but are not

legally incorporated under the laws of the state in which they are located. The boundaries usually are defined in cooperation with local or tribal officials. These boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place or a other legal entity boundary, have no legal status, nor do these places have officials elected to serve traditional municipal functions. CDP boundaries may change from one decennial census to the next with changes in the settlement pattern; a CDP with the same name as in an earlier census does not necessarily have the same boundary. There are no population size requirements for CDPs for Census 2000.

Hawaii is the only state that has no incorporated places recognized by the U.S. Census Bureau. All places shown in the Census 2000 data products for Hawaii are CDPs. By agreement with the State of Hawaii, the U.S. Census Bureau does not show data separately for the city of Honolulu, which is coextensive with Honolulu County. In Puerto Rico, which also does not have incorporated places, the U.S. Census Bureau recognizes only CDPs. The CDPs in Puerto Rico are called *comunidades* or *zonas urbanas*. Guam and the Northern Mariana Islands also have only CDPs.

Since CDPs are valid only for the presentation of decennial census data, CDPs appear on Record Types 1 and S, but not in Record Type A which contains current geography. The exception is in Hawaii, Puerto Rico, Guam, and the Northern Mariana Islands which have only CDPs. In these states and statistically equivalent entities CDPs appear in Record Types 1, A, and S.

Consolidated City (Balance) Portions

Consolidated city (balance) portions refer to the areas of a consolidated city not included in another incorporated place. For example, Columbus city, GA, is a consolidated city that includes the separately incorporated municipality of Bibb City town. The area of the consolidated city that is not in Bibb City town is assigned to Columbus city (balance). The name always includes the “(balance)” identifier.

Dependent and Independent Places Depending on the state, incorporated places are either dependent within, or independent of, county subdivisions, or there is a mixture of dependent and independent places in the

state. Dependent places are part of the county subdivision; the county subdivision code of the place is the same as that of the underlying county subdivision(s), but is different from the FIPS place code. Independent places are separate from the adjoining county subdivisions and have their own county subdivision code (or codes if the place lies in multiple counties). These places also serve as primary county subdivisions. The TIGER/Line files will show the same FIPS 55 code in the FIPS county subdivision code field and the FIPS place code field for independent places. The only exception is if the place is independent of the MCDs in a state in which the FIPS MCD codes are in the 90000 range. Then, the FIPS MCD and FIPS place codes will differ. CDPs and balance portions of consolidated cities (Class C8) always are dependent within county subdivisions.

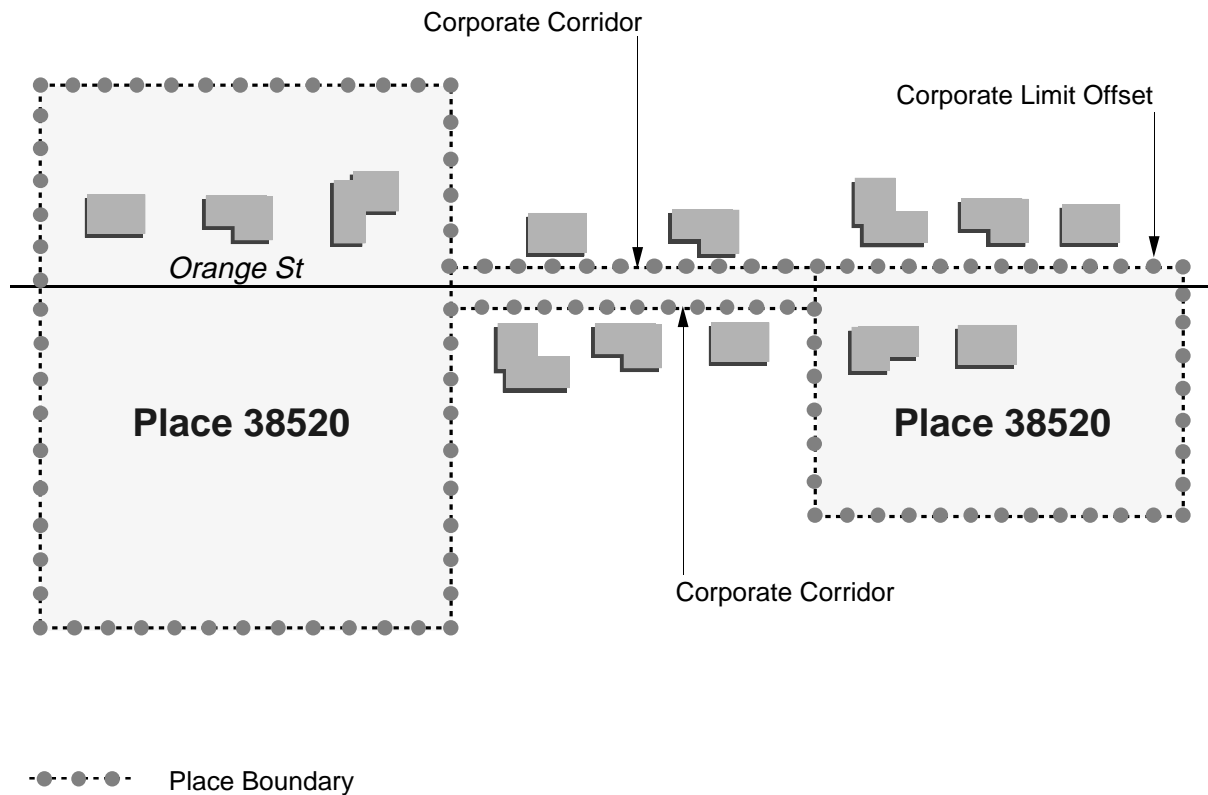
Corporate Corridors and Offset Corporate Boundaries A corporate corridor is a narrow, linear part of an incorporated place (or in a very few instances, another legal entity). The corporate corridor includes the street and/or right-of-way, or a portion of the street and/or right-of-way within the incorporated place. It excludes from the incorporated place those structures such as houses, apartments, or businesses, that front along the street or road; see Figure 4-4.

A corporate limit offset boundary exists where the incorporated place lies on only one side of the street, and may include all or part of the street and/or the right-of-way. It does not include the houses or land that adjoin the side of the street with the corporate limit offset boundary. It is possible to have two or more corporate limit offset boundaries in the same street or right-of-way. Corporate limit offset boundaries use the same map symbology as non-offset boundaries. Figure 4-4 depicts corporate corridors and corporate offset limits.

To facilitate address coding, the street name and address ranges are generally duplicated on complete chains with a CFCC of F11 (offset boundary of a legal entity) or F12 (corridor boundary of a legal entity). The duplicate street names for the F11 and F12 features are on Record Type 5 and the duplicate address ranges are on Record Type 6. However, Record Type 1 will not indicate that the street or right-of-way lies within a corporate corridor or offset boundary, or that the address ranges lie outside, and are encoded on either side, of the corporate corridor or offset boundary.

Figure 4-4 Corporate Corridors—Overview

This diagram, using symbology typical of a census map, shows a corporate corridor linking the two larger areas of Place 38520 (shading has been added to highlight the actual area within the corporate limits). Part of the corporate limit along Orange St is an offset boundary. A corporate limit offset covers only one side of the street or right-of-way, not the entire street or right-of-way, as is the case with a corporate corridor.



When data users find duplicate address ranges where one of the duplicates is on a complete chain with a CFCC of F11 or F12, they should use this address range for address geocoding rather than the range on the street feature that has a CFCC beginning with A (see Figure 4-5). Likewise, use the street name and address ranges on the related street feature (CFCC beginning with A) for mapping or vehicle routing.

Current Geography The boundaries identified as current for incorporated places are updated boundaries collected since Census 2000 as part of the U.S. Census Bureau's Boundary and Annexation Survey. Because CDPs occupy the same level of geography as legal incorporated places, updates to the incorporated place boundaries may affect the current boundaries of the CDPs, including the elimination of some of the Census 2000 CDPs. Since CDPs are valid only for the presentation of decennial census data, CDPs appear on Record Types 1 and S, but not in Record Type A which contains current geography. The exception is in Hawaii, Puerto Rico, Guam, and the Northern Mariana Islands which have only CDPs. In these states and statistically equivalent entities CDPs appear in Record Types 1, A, and S.

Incorporated Place/CDP Code Record Locations

<i>Record Type</i>	<i>Field Name</i>	<i>Description</i>
1	PLACEL	FIPS 55 Code (Place/CDP), 2000 Left
1	PLACER	FIPS 55 Code (Place/CDP), 2000 Right
A	CONCITCU	FIPS 55 Code (Consolidated City), Current
A	PLACECU	FIPS 55 Code (Incorporated Place), Current
B	CONCITCQ	FIPS 55 Code (Consolidated City), 2000 CQR
B	PLACECQ	FIPS 55 Code (Incorporated Place), 2000 CQR
C	FIPS	FIPS PUB 55-3 Code
C	FIPSCC	FIPS 55 Class Code
C	PLACEDC	Place Description Code
C	LSADC	Legal/Statistical Area Description
C	ENTITY	Entity Type Code
C	NAME	Name of Geographic Area
E	CONCITEC	FIPS 55 Code (Consolidated City), Economic Census
E	PLACEEC	FIPS 55 Code (Economic Census Place), Economic Census
S	CONCIT	FIPS 55 Code (Consolidated City), 2000
S	PLACE	FIPS 55 Code (Incorporated Place/CDP), 2000

