

# **Part 3**

# **Attribute Coding**

## **Standards for Digital Line Graphs**

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3.10-21	7/95	3.11-19	7/95		
3.10-22	7/95	3.11-20	7/97		
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3. ATTRIBUTE CODING

This standard applies primarily to the collection of Digital Line Graphs (DLGs) from maps. Content standards for digital revision of maps and DLGs are defined in the Standards for 1:24,000-scale Digital Line Graphs and Quadrangle Maps.

Maps convey a great deal of information and representing real world features and relationships symbolically is not a simple process. Digitizing maps and encoding the resulting data using 7 digit attribute codes adds yet another level of interpretation. Since DLG collection is a map interpretation process, it is not possible to provide absolute rules and guidelines to account for all possible situations. This standard does, however, provide information that will allow reasonable decisions to be made about how to encode most of the information shown on the map. A certain amount of variability is unavoidable and, in fact, acceptable. While the goal is to limit variability as much as possible, it is just as important to understand that some questions will have more than one "correct" answer.

Some features on the maps will not be collected in the DLG. These fall into two main categories: features which have been shown on the map, but for which content requirements have changed over time, and features that were incorrectly shown on the map in the first place. Some features on the maps which seem anomalous, may, in fact, be just that and should not be collected. Therefore, map content must be evaluated based on current standards.

For example, piles, dolphins, stumps, or snags will appear on topographic editions originally compiled before 1961. These features are now required only on topographic-bathymetric editions and, therefore, are not collected when shown on topographic editions. With the expanded definition and use of built-up area tint, many features within built-up areas are not collected. Examples of anomalous features include sheep crossing, ship to shore telephone outlet, diabase dike, and mushroom sheds (which could be collected as general case building).

For some quadrangles, USGS has produced provisional edition maps. Map content generally is the same as for standard edition topographic maps, but modified symbolism and production procedures have been used to expedite completion of national large-scale topographic map coverage. The maps reflect a provisional rather than a finished appearance. For most map features and type, the original manuscripts which are prepared when the map is compiled from aerial photographs, including hand lettering, serve as the final copy for printing. The number of names and descriptive labels shown on provisional maps is different than that shown on standard

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editions. Symbolism and symbol sizes on provisional editions vary more than on standard editions.

For some quadrangles, USGS has produced orthophotomaps, rather than conventional standard edition topographic maps. An orthophotomap combines cartographic line map treatment of some features with a color enhanced photobase. Because the "Standards for Digital Line Graphs" assume conventional topographic maps as the graphic source for the collection of digital data, and relate the attribute codes to conventional publication symbols, additional image interpretation is involved in the collection of DLG Hydrography files from orthophotomaps. Nodes, lines, and areas collected from orthophotomaps must be attributed as though they had been symbolized conventionally. Separate plates showing single-line drainage, open water, and the extent of swamps will be provided to aid in this process. However, considerable image interpretation may be involved in determining the extent of vegetation. The orthophotomap symbolization of most features in the Roads and Trails; Railroads; Pipelines, Transmission Lines, and Miscellaneous Transportation Features; Boundaries; and U.S. Public Land Survey System categories is identical to that of conventional maps, so the orthophotomap source has a negligible impact on the collection of these categories.

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3.0 GENERAL PRINCIPLES

Part 3 is organized as follows. This section gives the general principles for collection of DLGs from maps. It is followed by a section for each of the categories which includes general principles for the category, general principles for each element type, a list of valid attribute codes, and individual coding descriptions. Please note that within the list of valid attribute codes, and within the individual coding descriptions, previously valid codes are included, but they are struck out to indicate that they are no longer in use.

It is essential to read the general principles for the entire Standard, and the general principles for the particular category to be collected. These contain critical information, including global rules that always apply unless a specific coding description indicates otherwise. The intent has been to include as much information as possible in the general principles, so that it would not be necessary to repeat the same information in every category or code description.

3.0.1 Coding Structure

Each attribute code identifies the general data category to which a feature belongs, as well as the specific nature of the feature. Codes also provide additional descriptive information. Many features are uniquely described by a single attribute code. Others may require two or more attribute codes for a complete description. Some elements may be unattributed.

If multiple attributes are needed to describe a feature, their ordering is significant only if ordering is necessary to indicate a relationship between two codes and avoid ambiguity. Code order is significant in the following situations:

- o Carrying contour that carries decimal fraction contour

The decimal fraction descriptive attribute code must follow the whole unit elevation parameter code with which it is associated. If the carrying contour carries multiple decimal fraction contours, then the appropriate decimal fraction attribute code must be repeated so that it follows each whole unit elevation parameter code with which it is associated.

- o Boundary monument number exceeding 4 digits

The boundary monument number must be encoded by repeating the monument number parameter code. The parameter code carrying the initial digits of the monument number must precede the parameter code carrying the final digits of the monument number.

- o Alphanumeric monument designators

The order of the alpha and numeric parameter attribute codes must be the same as that of the actual designator.

- o Control station or monument that falls on a State boundary

The State Federal Information Processing Standard (FIPS) code for the State on each side of the boundary must precede the county FIPS code for the county on that same side of the boundary.

- o Route designators

The route number must follow the descriptive attribute code for the route type with which it is associated.

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- o Alphanumeric route designators

The order of the alpha and numeric parameter attribute codes must be the same as that of the actual designator.

A DLG attribute code is composed of two distinct numeric fields: a 3 digit major code, the first two digits of which identify the data category to which the feature belongs; a third digit, which may be used to designate the interpretation of the minor code; and a 4 digit minor code, which specifically describes the feature.

#### 3.0.1.1 Major code description

The first two digits of the major code uniquely identify the data category to which the described element belongs. Table 3.0-1 lists currently used major codes and the categories they represent.

The third digit of the major code is used to designate the interpretation of the minor code in two ways:

- o if it is zero, the minor code numbers represent a description or classification of a specific feature, for example, 050 0300, which identifies a spring.
- o if it is not a zero, the minor code numbers have special interpretations as a parameter. The interpretation of each parameter code is given in each category. For example, 055 ---- is used to encode the value of a river mile mark.

#### 3.0.1.2 Minor code description

The first digit of the minor code of a nonparameter code is zero. The remaining three digits of a nonparameter code are used to classify specific features. The type of element described by a particular code can generally be determined from the value of these digits:

- o node: 001-099
- o area: 100-199
- o line: 200-299
- o single-point (degenerate line): 300-399
- o general purpose codes: 400-499
- o descriptive codes: 600-699

The general purpose codes are used on features that may be digitized as a node, area, degenerate line, or line depending on the size and position of the feature.

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Table 3.0-1  
Current Major Attribute Codes

Major code	Category
020	Hypsography
050	Hydrography
070	Vegetative Surface Cover
080	Non-Vegetative Features
090	Boundaries
150	Survey Control and Markers
170	Roads and Trails
180	Railroads
190	Pipelines, Transmission Lines, and Miscellaneous Transportation Features
200	Manmade Features
300	U.S. Public Land Survey System
600	Supplemental Codes for U.S. Public Land Survey System



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The descriptive codes are generally used with another code to qualify its meaning.

It has not been possible to maintain this structure completely, and changes in the standards have resulted in codes that no longer fit this scheme. Many node attribute codes apply to features that are collected as degenerate lines if they do not fall on a line. Most degenerate line codes apply to features that are collected as nodes if they happen to fall on a line. Some line or area codes are now used as general purpose codes and several general purpose codes are used for features that can only be collected as areas or only as lines. Throughout these standards, if under general principles or under the list of valid attribute codes, the standards say, for example, that there are no node codes, it does not mean that no nodes in the category are ever attributed; it simply means that there are no codes in the list of node attribute codes. Codes listed under other element types may apply to nodes.

Parameter codes are used when a minor code can legitimately assume a range of values, for example, water elevation or highway route number. The meaning of a parameter code is derived from the nonzero third digit of the major code. Parameters are both category and feature specific.

3.0.2 Coding Description

Each attribute coding description typically contains the following information:

- o The major and minor code and the code name.
- o A feature definition, which defines the feature by identifying which symbols represent the feature on the graphic, or provides a general description of the feature and its function, or both.
- o Labeling information, which defines how the feature will be collected based on how it is labeled on the graphic.
- o Delineation information, which defines any specific instructions dealing with how to delineate the feature (for example, where to place a degenerate line when digitizing a symbol).
- o Representation information, which defines how the feature will be represented in the digital file when certain conditions are met (for example, size criteria determining

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whether to digitize a specific feature as an area or a degenerate line).

- o Use of additional descriptive or parameter codes, which define any such codes that might be used in association with the feature.

When an attribute code is specifically referenced to a standard cartographic symbol, the symbol number is cited, immediately followed by a letter reference in parenthesis. Symbol number and letter references refer to specific National Mapping Program Technical Instructions as defined in Table 3.0-2.

### 3.0.3 How to Measure a Feature

It may be necessary to measure features shown on the map to determine if they meet collection criteria, and, if so, if they are to be collected as points, lines, or areas. Some small features shown on the map are not collected in the DLG, and other features shown to scale on the map, and previously collected as areas in the DLG, are now collected as degenerate lines.

Size criteria are given either in the category specific general principles, or in the individual coding descriptions. Size criteria may be given either in actual size on the ground, or in inches at map scale. In most cases the size criteria given assume 1:24,000-scale mapping, so some judgement must be used in applying the size criteria when collecting from 1:100,000-scale maps.

When measuring features, the following guidelines apply:

- o All measurements should be made from the outermost symbol edge to the opposite outermost symbol edge. In general, features are measured along the longest axis (length), or shortest axis (width).
- o Square features are measured along either axis.
- o Round features are measured across their diameter.
- o Irregular features are measured using the concept of the best-fitting rectangle. Using this concept, a rectangle is created around an irregularly shaped feature using the outermost edges of the feature to define the sides of the rectangle. (This rectangle is aligned however necessary to best fit the feature, rather than with the neatline.) Length is then measured using the longest axis of the rectangle, width is measured using the shortest axis of the

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Table 3.0-2  
Symbol References

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If the symbol number does not contain a decimal, and is followed by the letter reference "A" (for example, 207(A)), then the reference is:

Standards for 1:24,000- and 1:25,000-Scale Quadrangle Maps, Part 6: "Publication Symbols (Supplement)" - December 1981

If the symbol number contains a decimal, begins with the number 1, and is followed by the letter reference "B" (for example, 145.2(B)), then the reference is:

Standards for 1:100,000-Scale Quadrangle Maps, Part 4: "Publication Symbols" - May 1984

If the symbol number begins with the number 5 and is followed by the letter reference "C" (for example, 512.61(C)), then the reference is:

Standards for 1:24,000- and 1:25,000-Scale Quadrangle Maps, Part 5: "Publication Symbols" - May 1984\*

If symbol number contains 4 digits followed by a decimal and is followed by the letter reference "D" (for example, 2103.01(D)), then the reference is:

Standards for Provisional Edition Maps, 1:24,000- and 1:25,000-Scale, Part 2: "Compilation Symbols" - January 1982

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\*A revised version of this document was published in May 1994. However, the earlier version is referenced in this standard, because this standard applies to collection from maps; few, if any, DLGs will be collected from maps which use the May 1994 symbology. In addition, the 1984 document is in color, while the 1994 version is in black-and-white. If only the 1994 version is available, it can readily be used, since the numbers used to reference symbols have been maintained between versions. Although a few symbols which are no longer referenced in the 1994 version appear on the maps, their meaning can usually be determined either from context, or by referring to the Part 6 symbol.

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rectangle, and area is measured as the total area of the rectangle.

- o Size criteria are intended to be used as guidelines. It is assumed that the collector will develop a feel for when a feature is the appropriate size, rather than measuring each and every feature instance. It is understood that this means some features within a few mils of a certain size criteria will not be treated as specified in the standards. This is acceptable.
- o Variations in the size of standard symbols that can reasonably be assumed to be a result of the map scribing and reproduction process are ignored.

3.0.4 Where to Digitize Features

Determining where to digitize a feature can depend on the methods used to collect the data. Although it is desirable for the DLG categories to be vertically aligned, in some cases it would be prohibitive to enforce this requirement. Vertical alignment is the process by which features from one DLG category are represented by the same numeric coordinates as features from an overlapping DLG category. If all the DLG categories are collected at the same time, using heads-up digitizing, features that coincide should share numeric coordinates. This includes, for example, woods that follow a road. Rather than digitizing the woods by following the edge of the tint, the edge of the woods would be digitized using the same coordinates as the centerline of the road.

If it is not reasonable to collect the DLG categories as vertically aligned, then generally the features are collected as symbolized. For example, if the woods follow the casing of a road and the Vegetative Surface Cover DLG is being scanned, the resulting woods will not follow the centerline of the road.

Because many features are collected as centerlines or points in the DLG, and therefore occupy less space in the DLG than they do when symbolized on the map, it is often necessary to extend lines slightly, either to reach the centerpoint of point symbols, or to form unbroken outlines of areas. For example, when a cul-de-sac is shown at the end of a road, the digitized road line must be extended to the center of the cul-de-sac. Or if one side of a small park borders a road, that edge of the small park is digitized by following the centerline of the road; even though the lines that define the two adjoining sides of the small park end at the road casing on the graphic, they are extended to meet the centerline of the road in the DLG.

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3.0.4.1 Lines

Lines are digitized as centerlines. For many features, the symbol is a single line on the map, and the digitized centerline and the symbol are, for all practical purposes, the same. However, for most roads, multiple track railroads, and other features that are symbolized with casings, like racetracks and boardwalks, the centerline must be digitized by determining the center of the symbolized feature.

3.0.4.2 Areas

If the edge of an area feature, which is not shown by tint, is formed by another linear feature, the centerline of the linear feature is digitized as the outline of the area feature.

Area features shown with a tint, for example, woods, mines, and pits, are digitized by following the edge of the tint.

With the expanded use of built-up area, the existing tint may not match the new outline. If new built-up areas are digitized, delineate the edge by following the centerline of any bounding linear features as appropriate.

The appropriate attribute code is assigned only to the area point.

3.0.4.3 Degenerate Lines and Nodes

Degenerate lines and symbolized nodes are digitized in the center of the symbol, unless the coding description provides additional information.

3.0.5 Symbol Hierarchy and Symbol Suppression on the Map

Some symbols are suppressed on the map because of legibility constraints, but the features must still be collected in the DLG. This occurs most often with boundary lines (civil and reservation), Public Land Survey System (PLSS) lines, and outlines of features like cemeteries and small parks. It is important to understand the rules for when the symbols were suppressed on the map, since this affects how the features are coded in the DLG.

PLSS lines have traditionally been suppressed if they coincide with another feature. This means that if a road, or pipeline, or railroad or boundary line follows a PLSS survey line, the survey line will not be shown on the map. If a PLSS survey line is not

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shown on the map due to coincidence with another feature, a line is digitized to complete the survey line.

Boundary lines (civil and reservation) often follow the centerlines of roads and the shorelines of lakes, streams, and oceans. The boundary lines generally are not suppressed. For roads, the lineweight of the boundary line symbol is reduced by one-half, so it may be seen. However, in some cases the boundary line may be dropped. If a boundary line has been dropped, a line is digitized, using a boundary closure line. See section 3.5.4, boundary closure line (090 0204) for additional information.

There is a hierarchy of boundary line symbolization (see section 3.5.1, Boundaries, General Principles, for more information).

The outlines of features, such as cemeteries, small parks, athletic fields, substations, etcetera, are often dropped because of legibility constraints. In these cases, an unattributed line is digitized to complete the outline.

3.0.6 Common Attribute Codes

In general, the meaning of an attribute code is unique to the feature it describes. There are, however, several exceptions.

3.0.6.1 Outside area (000 0000)

Each DLG provides a coherent description of that portion of the Earth's surface covered by a 1:24,000-scale, 7.5-minute cell, or a specific subdivision of another scale source. To maintain topological consistency and to facilitate the combination (integration) of multiple DLG's, the area outside the cell is specifically identified for each DLG. This area element, which must be the first area present in each data category, is assigned a single attribute code with major and minor codes both equal to zero.

3.0.6.2 Void area

→ This code is applied to the area beyond the national boundary. Digital data is normally not collected for any portion of Canada or Mexico shown on the graphic, and this code indicates that although features in a given category may exist, they have not been included in the digital file. Exceptions exist in the Hydrography category, when the national boundary is determined by a double-line drain, such as the Rio Grande. ←

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In the Hypsography category, this code is also used to identify an area where contours have been dropped due to mining activity and replaced by the disturbed surface pattern.

In the Boundaries category, there is no void area code. Instead, the codes for Canada (090 0197), Mexico (090 0198), and open water (090 0199) are used as appropriate. There is also no void area code in the U.S. Public Land Survey System category. Instead, the code for area outside the public domain (300 0114) is used.

The minor code for void area varies by category.

3.0.6.3 Processing line (XX0 0299)

The attribute code consisting of major code XX0, where XX are the two digits uniquely identifying the category, and a minor code of 0299 indicates that a digitized line has segmented the data within a file for processing. For example:

200 0299 - Processing line code for Manmade Features

When a file has more than 4,751 lines bounding an area, divide the area using a processing line so there are less than 4,751 lines in any given area. This processing line should not be connected to the neatline in most situations.

3.0.6.4 Photorevised features (XX0 0000)

Map features obtained by photorevision methods are printed in purple on 1:24,000- and 1:25,000-scale maps. Map features shown in purple are described by attribute codes from the appropriate category plus a code consisting of major code XX0, where XX are the two digits uniquely identifying the data category, and a minor code of zero. The photorevised code is the first entry in the "parameter attribute codes" list.

The decision to use the photorevised code is based on what is shown in purple. Use the following guidelines to apply the photorevised code:

The photorevised code is assigned to an area point if the label or fill for that area is shown in purple. For example, a new large park, indicated on the map by purple text, would be coded as follows:

090 0000 - photorevised feature  
091 00XX - State FIPS code

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092 0XXX - county FIPS code  
090 0150 - large park

The photorevised code does not apply in the following categories: Hypsography, Vegetative Surface Cover, Survey Control and Markers, and U.S. Public Land Survey System.

The photorevised code is generally used in conjunction with a primary code, and is used alone only when applied to an element that would otherwise be unattributed. For example, a boundary line added by photorevision would be coded as follows:

090 0000 - photorevised feature

The photorevised code is assigned to a linear feature if the feature is shown in purple. For example, a class 1 road where the road symbol is shown in purple would be coded as follows:

170 0000 - photorevised feature  
170 0201 - primary route, class 1

The presence of a purple label does not, in and of itself, necessitate the application of a photorevised code. For example, if a road is in standard colors but has a purple route shield, the road is not assigned the photorevised code. Likewise, if a building's label is in purple but the building is shown in black, the photorevised code is not applied.

The photorevised code is not assigned to a node except when the node represents a photorevised feature on the map. For example, a bridge abutment added by photorevision is digitized as a node and coded as follows:

170 0000 - photorevised feature  
170 0001 - bridge abutment

Generally, if a feature was added by photorevision methods, the symbology is the same as a standard symbol, except that the symbol is printed in purple. One exception is photorevised water bodies, which are all shown using USGS pattern 6.

3.0.7 How Names and Labels Affect the Codes

Many coding descriptions contain guidelines on how to use the text shown on the map to determine if the feature should be collected and how the feature should be coded. Text may include proper names ("Woodlawn Cemetery," for example) or generic labels ("Cemetery," for example). The need to use names and labels to determine how a

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feature should be coded occurs most often in the Manmade Features category, but does occasionally occur in other categories. It is not possible to give complete lists or usage conditions for all the labels that appear on USGS maps. Variations in labels may result from regional differences, for example, the use of "Wayside Park" in Wisconsin versus "Rest Area" in other States. Changes in the standards throughout the years account for other variations. For example, a "Swimming Pool" was always labeled until about 1970 when the requirement for a label was dropped. Other variations are the result of unique features that have "landmark" value. Short of looking at all 55,000 maps and documenting all of the labels, we are left with some less than complete rules.

Standard phrases are used in the coding descriptions to provide information about the names and labels. Each of those phrases is defined below. While it may appear complicated, in practice the phrases are easily understood and the definitions are needed only for occasional reference.

Note that some labels may be abbreviated. For example, "Radio Tower" may be shortened to "RTr," "Water Tank" may be shortened to "WT," and "Substation" may be shortened to "SubSta," if there is not enough space for the full label.

Appendix 3.0.A is an alphabetical listing of many of the names and labels that appear on quadrangle maps, and the attribute codes with which they are associated.

1. Must be labeled "text."

In this case, the code is determined based on the label. This occurs when the same symbol, but different labels, are used for several features. For the feature to be collected and described by a particular code, the label must exist and it must appear exactly as it appears within the quotes (see exception for spot labeling.) For example, under code 200 0311, the condition - Must be labeled "Drill Hole" - means that in order to assign the code 200 0311 (drill hole) to a degenerate line, the label on the map must be "Drill Hole." If a similar symbol is labeled "Dry Well" or "Injection Well," the feature cannot be coded with 200 0311. Another example is meander corner. The condition - Must be labeled "MC" - means that in order to assign the code 300 0004 to a node, the symbol must be labeled "MC."

Sometimes only "spot labeling," using either a singular or plural label, is used. Spot labeling, or the use of a plural label, satisfies the criteria that a feature must be labeled. For example, the label "Spring" has always been used, but in

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areas of numerous springs, not all springs get labeled. However, enough springs are labeled to recognize the rest as springs. This applies to other features, including wells, mining features (pits, strip mines, open pit mines, mine shafts, mine tunnel entrances, prospects), and tanks.

2. Generally labeled "text."

This means that the feature is generally labeled with the label shown within the quotes. This condition can be modified with the conditions "includes (list of labels)," "may be unlabeled" or "may be named":

If the condition "includes (list of labels)" appears, it means that labels other than that shown within the quotes might be found on the map and that a feature shown with similar labels should be collected and given the appropriate code. This list cannot be considered exhaustive, but provides guidelines for classifying features labeled with something different from the standard label.

If the condition "may be unlabeled" appears, it means that not every occurrence of the symbol is labeled. For example, "Athletic Field" is a common label, but not all athletic fields are labeled. Athletic fields that are associated with schools and are delineated by a running track, which is a universally recognized shape, are not labeled. If the feature is unlabeled, but there is no doubt about what the feature is, it should be collected and given the appropriate code.

If the condition "may be named" appears, it means that the feature is generally labeled using the text found within the quotes, but in some cases, the feature may be named. For example, a cemetery is generally labeled "Cemetery," but a proper name such as "Greenridge Cemetery" may be used.

3. Generally named, but may be labeled.

This means that the feature is generally described with a proper name, but in some cases, the feature may be labeled. A nonexhaustive list of generic terms that can be coded with the code being described is included. For example, institutions are generally identified with a proper name as in "Tuscon Medical Center," "Tuscon General Hospital," "Oak Valley Sanitarium," "Wesley Willows Nursing Home," "Mayo Clinic," and sometimes with a more generic term like "State Hospital." Medical center, hospital, sanitarium, nursing home, and clinic are all terms that designate a health care complex.

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4. Common labels include

This means that there is no label that has been generally used and some judgement will be required to classify the feature. For example, historical monuments have quite often been labeled and named to indicate the historical event that is being commemorated. "Treaty Oak," "Historical Marker," "Historical Monument," "Shrine," "Meade Pyramid," "Monument," "Carranza Memorial," and "Yorktown Monument" are all names or labels that have appeared on USGS maps. These can all be classified as structures that commemorate people or past events and should be collected and attributed with code 200 0301 (historical marker).

3.0.8 Record of Attribute Codes

This standard was first issued in January 1980 as "Computer Files and Attribute Codes for Digital Line Graphs." Since January 1980, the standards have been periodically modified to accommodate changes in requirements, to correct errors, improve organization, and clarify meaning.

Table 3.0-3 lists the chronological history of the standards starting with the original version and each subsequent change notice or complete revision.

Appendix 3.0.B lists every code that has been used since the "Standards for Digital Line Graphs" were issued in January 1985.

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Table 3.0-3  
History of Standards Documentation

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Computer Files and Attribute Codes for Digital Line Graphs

Issued	1/80
Complete Revision	2/82

Draft Standards for Digital Line Graph (Hydrography only)

Issued	2/83
Complete Revision	11/83

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Issued	1/85
Change Notice 1	1/86
Change Notice 2	3/86
Change Notice 3	5/86
Change Notice 4	6/86
Change Notice 5	6/87
Change Notice 6	4/88
Change Notice 7	1/90
Complete Revision	10/90
Change Notice 1	10/91
Change Notice 2	5/93
Change Notice 3	4/94
Draft for Implementation	5/94
Complete Revision	7/95
Change Notice	7/97
Change Notice	7/98



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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

APPENDIX 3.0.A

Feature Labels and Associated Attribute Codes

## Standards for Digital Line Graphs

### Part 3: Attribute Coding

#### Appendix 3.0.A - Feature Labels and Associated Attribute Codes

The following alphabetical listing of many of the names and labels that appear on quadrangle maps, and the attribute codes with which they are associated, is only intended to direct the user to the appropriate coding description. The specific named or labeled feature must then be evaluated against that description to determine whether or not it meets the collection criteria, and how it is to be collected.

In this list, each feature label is associated with only one attribute code; the coding description, or the general principles for that category, may identify additional codes which also must be applied. For feature labels that indicate the need for a descriptive code, this list directs the user to the descriptive code, rather than the node, area, line, single-point, or general purpose attribute code. Generally the coding description for the descriptive code will unambiguously direct the user to the appropriate "feature" code. For example, the feature label "Airway Beacon" is associated with the navigation code (200 0629). The navigation code description says that the code is used to describe a tower (200 0305) used for navigation. In a few cases, though, either the feature symbol or the remainder of the label must be used to determine the "feature" code. For example, the feature label "Dry" is associated with the dry code (050 0614), but that coding description simply says that the code describes any feature labeled "Dry," or symbolized as dry.

Standards for Digital Line Graphs

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
4WD	170 0213	Road, Class 5, Four-wheel Drive
Abandoned	190 0602	Abandoned
Aboveground	190 0603	Aboveground
Academy	200 0101	School Campus
Aerial Tramway	190 0207	Aerial Tramway
Agriculture Inspect. Station	170 0403	Weigh Station
Air Traffic Control Tower	200 0626	Control
Airboat Trail	050 0210	Airboat Trail
Airway Beacon	200 0629	Navigation
Alkali	050 0615	Mineral or Hot
Alkali Flat	050 0100	Alkali Flat
Alpine Slide	200 0212	Recreational Slide
AM	300 0010	Amended Monument
Amphitheater	200 0411	Amphitheater
Amusement Park	200 0453	Recreation Area, Public Use Area
Antenna	200 0625	Communication
AP	300 0009	Angle Point
Approximate	300 0201	Approximate Position
Approximate Boundary	090 0201	Indefinite or Approximate Boundary
Aqueduct	050 0415	Aqueduct or Pipeline
Archeological Site	200 0452	Archeological Site, Ruin, or Indian Mound
Arena	200 0457	Arena
Armory	200 0458	Armory
Artesian Well	050 0302	Flowing Well
Artillery Range	200 0184	Firing Range
Athletic Field	200 0122	Athletic Field
Auditorium	200 0419	Auditorium

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Feature label	Code	Code name
Auto Test Track	200 0183	Proving Ground
Ball Park	200 0122	Athletic Field
Beacon	200 0629	Navigation
Bicycle Trail	170 0211	Trail
Boardwalk	200 0201	Boardwalk
Bobsled Run	200 0212	Recreational Slide
Boulder	050 0630	Boulder
Brick Kiln	200 0310	Kiln
Burner	200 0306	Burner or Stack
Cable Area	050 0121	Obstruction Area in Water Area
Cable-Pipeline Area	050 0121	Obstruction Area in Water Area
Camp	200 0453	Recreation Area, Public Use Area
Campground	200 0449	Campground
Campsite	200 0316	Campsite
Capitol	200 0413	Capitol
Catfish Farm	050 0106	Aquaculture Pond
Cemetery	200 0420	Cemetery
Charcoal Kiln	200 0310	Kiln
Charcoal Oven	200 0310	Kiln
Check	050 0409	Gate
Children's Home	200 0103	Orphanage Complex
Chimney	200 0306	Burner or Stack
Church	200 0100	Church Complex
City Hall	200 0407	City Hall or Town Hall
Clarification Pond	050 0107	Industrial Water Impoundment
Clay	200 0611	Clay
Clinic	200 0102	Health Care Complex
Clinic	200 0408	Hospital

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
College	200 0101	School Campus
Community Center	200 0414	Community Center
Compressor Station	190 0406	Pumping Station or Compressor Station
Continental Divide	020 0207	Watershed Divide
Control Tower	200 0626	Control
Convent	200 0100	Church Complex
Conveyor	200 0200	Conveyor
Cooling Pond	050 0107	Industrial Water Impoundment
Cooling Tower	200 0627	Cooling
Coral	050 0636	Coral
Corral	200 0447	Corral
Correctional Institution	200 0104	Prison Compound
Country Club	200 0123	Golf Course
County Fairgrounds	200 0445	Fairgrounds
Courthouse	200 0405	Courthouse
Covered	170 0624	Covered Bridge
Cranberry Bog	050 0114	Cranberry Bog
Crayfish Farm	050 0106	Aquaculture Pond
Customs	200 0412	Customs Building
Customs House	200 0412	Customs Building
Dam	050 0406	Dam or Weir
Daybeacon	200 0629	Navigation
Debris Basin	050 0105	Inundation Area
Detention Center	200 0104	Prison Compound
Dewatering Area	050 0105	Inundation Area
Diversion Weir	050 0406	Dam or Weir
Double-Decked	170 0612	Double-Decked
Drag Strip	200 0214	Drag strip, Racetrack, or Raceway

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Dredge Tailings	200 0163	Tailings
Dredged Area	050 0424	Spoil Area, Dredged Area, or Dump Area
Drill Hole	200 0311	Drill Hole
Drive-in Theater	200 0126	Drive-in Theater
Dry	050 0614	Dry
Drydock	050 0123	Drydock Chamber
Duck Pond	050 0119	Duck Pond
Dump Site Area	050 0424	Spoil Area, Dredged Area, or Dump Area
Dump Area	050 0424	Spoil Area, Dredged Area, or Dump Area
Elevated	050 0602	Overpassing
Elevated	050 0603	Elevated
Elevated	170 0614	Elevated
Elevated	180 0609	Elevated
Elevator	200 0462	Grain Elevator
Equestrian Area	200 0122	Athletic Field
Experimental Farm	200 0182	Experimental Farm
Fairgrounds	200 0445	Fairgrounds
Falls	050 0401	Falls
Feedlot	200 0181	Feedlot or Stockyard
Filtration Bed	050 0124	Filtration Pond
Filtration Pond	050 0124	Filtration Pond
Fire Station	200 0417	Firehouse
Fire Tower	200 0614	Lookout
Fish Farm	050 0106	Aquaculture Pond
Fish Hatchery	050 0106	Aquaculture Pond
Fish Ladder	050 0425	Fish Ladder
Flood	050 0409	Gate
Floodwall	200 0203	Sea Wall

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Flowing Well	050 0302	Flowing Well
Flume	050 0416	Flume
Fly Ash Pond	050 0107	Industrial Water Impoundment
Foot Trail	170 0211	Trail
Fort	200 0450	Fort
Foul Area	050 0125	Foul Ground
Foul Ground	050 0125	Foul Ground
Friary	200 0100	Church Complex
Fumarole	050 0304	Geyser
Gas Field	200 0424	Well Field
Gas Platform	200 0426	Oil or Gas Platform
Gas Vent	050 0304	Geyser
Gate	170 0004	Gate
Geyser	050 0304	Geyser
Golf Club	200 0123	Golf Course
Golf Course	200 0123	Golf Course
Grain Elevator	200 0462	Grain Elevator
Grange Hall	200 0461	Grange Hall
Grave	200 0420	Cemetery
Gravel	050 0632	Gravel
Gravel	200 0609	Gravel
Guzzler	200 0314	Guzzler
Head	050 0409	Gate
HES	300 0101	Homestead Entry Survey
Historical Marker	200 0301	Historical Marker
Historical Monument	200 0301	Historical Marker
Holiday Area	050 0426	Holiday Area
Hospital	200 0408	Hospital

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Part 3: Attribute Coding

Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Hot	050 0615	Mineral or Hot
Hydroelectric Plant	190 0402	Hydroelectric Plant
Incinerator	200 0306	Burner or Stack
Indefinite	090 0202	Disputed Boundary
Indefinite Boundary	090 0201	Indefinite or Approximate Boundary
Indian Allotment	300 0113	Indian Allotment
Indian Mound	200 0452	Archeological Site, Ruin, or Indian Mound
Industrial Site	200 0162	Refinery or Industrial Site
Industrial Waste Pond	050 0107	Industrial Water Impoundment
Institute	200 0101	School Campus
Intake	050 0415	Aqueduct or Pipeline
Intake	050 0405	Intake
Jeep Trail	170 0213	Road, Class 5, Four-wheel Drive
Kennel Club	200 0127	Raceway Complex
Launch Complex	190 0405	Launch Complex
Library	200 0418	Library
Light	200 0629	Navigation
Lime Kiln	200 0310	Kiln
Lock	050 0407	Lock Chamber
Lookout	200 0614	Lookout
Luge Run	200 0212	Recreational Slide
Marina	200 0140	Marina
MC	300 0004	Meander Corner
Measuring Station	190 0408	Measuring Station or Valve Station
Medical Center	200 0102	Health Care Complex
Medical Center	200 0408	Hospital
Memorial	200 0416	Memorial

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 Part 3: Attribute Coding  
 Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Microwave	200 0625	Communication
Mine	200 0428	Open Pit Mine
Mine Danger Area	050 0126	Mine Danger Area
Mine Dump	200 0427	Mine Dump
Mineral	050 0615	Mineral or Hot
Minnow Pond	050 0106	Aquaculture Pond
Mobile Home Park	200 0105	Mobile Home Park
Monastery	200 0100	Church Complex
Monorail	190 0208	Monorail
Monument	200 0301	Historical Marker
Mud Pot	050 0304	Geyser
Mud	050 0634	Mud
Museum	200 0415	Museum
No Data	050 0426	Holiday Area
Nuclear	190 0607	Nuclear
Nursing Home	200 0102	Health Care Complex
Nursing Home	200 0408	Hospital
Observatory	200 0460	Observatory
Oil and Gas Field	200 0424	Well Field
Oil and Gas Platform	200 0426	Oil or Gas Platform
Oil Field	200 0424	Well Field
Oil Platform	200 0426	Oil or Gas Platform
Oil Sump	200 0165	Oil Sump or Sludge Pit
Old Railroad Grade	170 0605	Old Railroad Grade
Open Pit Mine	200 0428	Open Pit Mine
Orphanage	200 0103	Orphanage Complex
Orphanage	200 0459	Orphanage

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Overlook	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Pack Trail	170 0211	Trail
Park	090 0136	Large Park (city, county, or private)
Park	090 0151	Small Park (city, county, or private)
Penstock	050 0417	Penstock
Percolator Basin	050 0105	Inundation Area
Petroglyph	200 0452	Archeological Site, Ruin, or Indian Mound
Picnic Area	200 0454	Picnic Area
Pictograph	200 0452	Archeological Site, Ruin, or Indian Mound
Pipeline	190 0201	Pipeline
Pipeline Area	050 0121	Obstruction Area in Water Area
Pipeline Obstruction Area	050 0121	Obstruction Area in Water Area
Pipeline Canal	050 0414	Ditch or Canal
Pistol Range	200 0184	Firing Range
Pit	200 0432	Pit, Unconsolidated Material
Platform	200 0426	Oil or Gas Platform
Polo Field	200 0122	Athletic Field
Port of Entry	200 0455	Port of Entry
Post Office	200 0406	Post Office
Power Plant	190 0400	Power Station or Plant
Power Station	190 0400	Power Station or Plant
Prison	200 0104	Prison Compound
Prison	200 0409	Prison
Prison Camp	200 0104	Prison Compound
Prison Farm	200 0104	Prison Compound

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Private	170 0610	Privately Operated or Restricted Use
Private	180 0612	Private
Proving Ground	200 0183	Proving Ground
Public Use Area	200 0453	Recreation Area, Public Use Area
Pumping Station	050 0404	Pumping Station
Pumping Station	190 0406	Pumping Station or Compressor Station
Quarry	200 0429	Quarry
Racetrack	200 0127	Raceway Complex
Racetrack	200 0214	Drag Strip, Racetrack, or Raceway
Raceway Complex	200 0127	Raceway Complex
Raceway	200 0214	Drag Strip, Racetrack, or Raceway
Radio Facility	200 0433	Radio or Television Facility
Radio	200 0625	Communication
Range	200 0625	Communication
Rapid Transit	180 0610	Rapid Transit
Rapids	050 0400	Rapids
Reclaimed Strip Mine	200 0438	Reclaimed Area
Recreation Area	200 0453	Recreation Area, Public Use Area
Recreational Slide	200 0212	Recreational Slide
Refinery	200 0162	Refinery or Industrial Site
Relay	200 0625	Communication
Repeater	200 0625	Communication
Rest Area	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Restricted	170 0610	Privately Operated or Restricted Use
Retarding Basin	050 0105	Inundation Area
Retreat	200 0100	Church Complex
Rifle Range	200 0184	Firing Range

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Part 3: Attribute Coding

Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Riser	050 0303	Riser
Roadside Park	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Rock	050 0633	Rock
Rock Wall	200 0202	Wall
Rodeo Grounds	200 0446	Rodeo Grounds
Ruin	200 0452	Archeological Site, Ruin, or Indian Mound
Salt Evaporator	050 0104	Salt Evaporator
Salt	050 0608	Salt
Sand	050 0631	Sand
Sand	200 0610	Sand
Sanitarium	200 0102	Health Care Complex
Sanitarium	200 0408	Hospital
School	200 0101	School Campus
Seaplane Landing Area	190 0410	Seaplane Landing Area
Seaplane Ramp	190 0409	Seaplane Ramp
Seawall	200 0203	Sea Wall
Seminary	200 0100	Church Complex
Service Area	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Service Facility	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Service Plaza	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Settling Basin	050 0107	Industrial Water Impoundment
Sewage Disposal Plant	200 0421	Sewage Disposal Plant
Sewage Disposal Pond	050 0109	Sewage Disposal Pond

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Sewerline	200 0209	Sewerline
Shell	050 0635	Shell
Shoal	050 0117	Shoal
Shooting Range	200 0184	Firing Range
Shopping Center	200 0124	Shopping Center
Shrimp Farm	050 0106	Aquaculture Pond
Shrine	200 0301	Historical Marker
Silo	200 0425	Tank
Siphon	050 0418	Siphon
Skeet Range	200 0184	Firing Range
Ski Area	200 0120	Ski Area
Ski Lift	190 0209	Ski Lift
Slag Dump	200 0427	Mine Dump
Sludge Pit	200 0165	Oil Sump or Sludge Pit
Sluice	050 0409	Gate
Soda Evaporator	050 0118	Soda Evaporator
Speedway	200 0127	Raceway Complex
Speedway	200 0214	Drag Strip, Racetrack, or Raceway
Spoil Area	050 0424	Spoil Area, Dredged Area, or Dump Area
Spreading Ground	050 0105	Inundation Area
Spring	050 0300	Spring
Stack	200 0306	Burner or Stack
Stadium	200 0456	Stadium
Standpipe	200 0425	Tank
State Capitol	200 0413	Capitol
State Fairgrounds	200 0445	Fairgrounds
Steam Vent	050 0304	Geyser
Stockyard	200 0181	Feedlot or Stockyard

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Part 3: Attribute Coding

Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Storage Bin	200 0425	Tank
Stream Disappears	050 0003	Sink
Strip Mine	200 0430	Strip Mine
Submerged	050 0612	Submerged or Sunken
Submerged	200 0617	Submerged
Substation	190 0401	Substation
Sulphur	050 0615	Mineral or Hot
Sunken	050 0612	Submerged or Sunken
Swimming Pool	200 0451	Swimming Pool
Tailings	200 0163	Tailings
Tailings Pond	050 0110	Tailings Pond
Tank	200 0425	Tank
Telephone	190 0203	Telephone Line
Tennessee Valley Divide	020 0207	Watershed Divide
Tidal	050 0409	Gate
Tidal Gage	050 0403	Gaging Station
Tide Gage	050 0403	Gaging Station
Tire Proving Ground	200 0183	Proving Ground
Toll Road	170 0609	Toll
Town Hall	200 0407	City Hall or Town Hall
Township Hall	200 0407	City Hall or Town Hall
Trailer Park	200 0105	Mobile Home Park
Tramway	190 0207	Aerial Tramway
Trick Tank	200 0314	Guzzler
Tunnel	050 0604	Tunnel
U.S. Survey	300 0112	U.S. Survey
Under Construction	050 0607	Under Construction
Under Construction	170 0603	Under Construction

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Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
Under Construction	190 0601	Under Construction
<del>Under Construction</del>	<del>200 0602</del>	<del>Under Construction</del>
Underground	050 0601	Underground
University	200 0101	School Campus
US Government	180 0613	US Government
Valve Station	190 0408	Measuring Station or Valve Station
Vantage Point	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Village Hall	200 0407	City Hall or Town Hall
Viewpoint	170 0223	Road in Service Facility, Rest Area, or Viewpoint
Von Schmidt Line	090 0203	Historical Line
Water	200 0604	Water
Water Filtration Plant	200 0422	Waterworks
Water Intake	050 0405	Water Intake
Water Tank	200 0425	Tank
Water Tunnel	050 0415	Aqueduct or Pipeline
Watercress Pond	050 0106	Aquaculture Pond
Waterworks	200 0422	Waterworks
Waterworks Intake	050 0405	Water Intake
WC	300 0007	Witness Corner
Weigh Station	170 0403	Weigh Station
Weir	050 0406	Dam or Weir
Well	050 0301	Nonflowing Well
Well	200 0307	Well
Wild Animal Park	200 0125	Zoo
Wind Generator	200 0317	Wind Generator
WP	300 0008	Witness Point

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Appendix 3.0.A - Feature Labels and Associated Attribute Codes

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Feature label	Code	Code name
WT	200 0425	Tank
Yacht Club	200 0140	Marina
Zoo	200 0125	Zoo
Zoological Park	200 0125	Zoo

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

APPENDIX 3.0.B

Comprehensive List of Attribute Codes

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

The following listing gives the number and name for every code that has been used since the Standards for Digital Line Graphs were issued in January 1985. (Codes consistent with the current scheme that were deleted prior to January 1985 are included when known.) For codes added since January 1985, the date they were added is indicated. For codes that have been deleted, the date they were deleted is indicated.

→ This standard primarily addresses collection of DLGs from graphics and therefore does not describe all codes which are used during digital revision. However, all possible DLG-3 codes are included in this comprehensive listing. Codes followed by an asterisk (\*) only apply to single edition USGS/Forest Service quadrangles. Codes followed by a pound sign (#) only apply to limited update digital revisions. ←

Individual parameter code values generally are not included in this list. However, some specific values of the origin of survey parameter code (306 00xx) which no longer appear in the appropriate appendix have been included. We recognize that other parameter codes may have specific values which are no longer valid, and therefore should also be included. Such values may be added to the listing at a later date if resources permit.

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Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
020 0000	Photorevised feature Deleted 07/95
020 0100	Void area Added 06/87
020 0200	Contour (index or intermediate)
020 0201	Carrying contour
020 0202	Supplementary contour
020 0203	Continuation contour Deleted 10/90
020 0204	Amended contour Deleted 07/95
020 0205	Bathymetric contour (primary, index or intermediate)
020 0206	Depth curve Deleted 03/88, Added 07/95
020 0207	Watershed divide
020 0208	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
020 0209#	Obsolete contour Added 05/94
020 0210	Supplementary bathymetric contour Added 07/95
020 0299	Processing line Added 10/90
020 0300	Spot elevation, less than third order, ground level
020 0301	Spot elevation, less than third order, not at ground level, and not on bridge Added 06/87, Deleted 07/95
020 0302	Spot elevation, less than third order, on bridge Added 05/94
020 0303	Sounding Added 07/95
020 0600	Decimal fraction of 0.0 feet or meters
020 0601	Decimal fraction of 0.1 feet or meters
020 0602	Decimal fraction of 0.2 feet or meters
020 0603	Decimal fraction of 0.3 feet or meters
020 0604	Decimal fraction of 0.4 feet or meters
020 0605	Decimal fraction of 0.5 feet or meters
020 0606	Decimal fraction of 0.6 feet or meters
020 0607	Decimal fraction of 0.7 feet or meters
020 0608	Decimal fraction of 0.8 feet or meters
020 0609	Decimal fraction of 0.9 feet or meters

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
020 0610	Approximate
020 0611	Depression
020 0612	Glacier or snow field
020 0613	Underwater
020 0614	Best estimate of contour elevation value Added 03/86, Deleted 07/95
020 0615	Fill Added 05/94, Deleted 07/95
020 0616	Rise (inside a depression) Added 07/95
021 ----	Elevation, whole feet, greater than 9999
022 ----	Elevation, whole feet, 9999 or less
023 ----	Elevation, whole feet below datum
024 ----	Elevation, whole meters
025 ----	Elevation, whole meters below datum
026 ----	Major category associated with spot height not at ground elevation Added 06/87, Deleted 05/94
029 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
050 0000	Photorevised feature
050 0001	Upper origin
050 0002	Upper origin at water body
050 0003	Sink
050 0004	Entering water body
050 0005	Exiting water body
050 0100	Alkali flat
050 0101	Reservoir
050 0102	Covered reservoir
050 0103	Glacier or permanent snow field
050 0104	Salt Evaporator
050 0105	Inundation area
050 0106	Aquaculture pond
050 0107	Industrial water impoundment
050 0108	Area to be submerged
050 0109	Sewage disposal pond
050 0110	Tailings pond
050 0111	Marsh, wetland, swamp, or bog
050 0112	Mangrove area
050 0113	Rice field Deleted 07/95
050 0114	Cranberry bog
050 0115	Flat (tidal, sand, gravel, mud, etcetera)
050 0116	Bay, estuary, gulf, ocean, or sea
050 0117	Shoal
050 0118	Soda evaporator
050 0119	Duck pond
050 0120	Void area Added 06/87
050 0121	Obstruction area in water area Added 10/90
050 0122	Gut Added 07/95
050 0123	Drydock chamber Added 07/95
050 0124	Filtration pond Added 07/95
050 0125	Foul ground Added 07/95
050 0126	Mine danger area Added 07/95

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Number	Name
050 0200	Shoreline
050 0201	Manmade shoreline
050 0202	Closure line
050 0203	Indefinite shoreline
050 0204	Apparent limit Deleted 07/95
050 0205	Outline of a Carolina bay
050 0206	Limiting danger line
050 0207	Apparent shoreline Added 10/90
050 0208	Sounding datum Added 10/90
050 0209	Low-water line Added 10/90
050 0210	Airboat trail Added 07/95
050 0299	Processing line Added 10/90
050 0300	Spring
050 0301	Nonflowing well
050 0302	Flowing well
050 0303	Riser
050 0304	Geyser
050 0305	Windmill
050 0306	Cistern Added 06/86, Deleted 07/95
050 0400	Rapids
050 0401	Falls
050 0402	Gravel pit or quarry filled with water Deleted 07/95
050 0403	Gaging station
050 0404	Pumping station
050 0405	Water intake
050 0406	Dam or weir
050 0407	Lock chamber
050 0408	Spillway
050 0409	Gate
050 0410	Rock
050 0411	Crevasse
050 0412	Stream
050 0413	Braided stream Deleted 05/94, Added 07/95

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
050 0414	Ditch or canal
050 0415	Aqueduct or pipeline
050 0416	Flume
050 0417	Penstock
050 0418	Siphon
050 0419	Channel
050 0420	Wash
050 0421	Lake or pond
050 0422	Reef
050 0423	Sand in open water
050 0424	Spoil area, dredged area, or dump area
050 0425	Fish ladder Added 06/86
050 0426	Holiday area Added 06/87
050 0601	Underground
050 0602	Overpassing
050 0603	Elevated
050 0604	Tunnel
050 0605	Right bank
050 0606	Left bank
050 0607	Under construction
050 0608	Salt
050 0609	Unsurveyed
050 0610	Intermittent
050 0611	Abandoned or discontinued Deleted 05/94
050 0612	Submerged or sunken
050 0613	Wooded Deleted 10/90
050 0614	Dry
050 0615	Mineral or hot
050 0616	Navigable - transportation Deleted 07/95
050 0617	Underpassing
050 0618#	Earthen construction Deleted 05/94, for use during collection from graphics Now valid only for use during limited update digital revision
050 0619	Interpolated elevation Added 10/90, Deleted 07/95
050 0620	Decimal fraction of 0.0 feet or meters Added 07/95

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Standards for Digital Line Graphs  
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Number	Name
050 0621	Decimal fraction of 0.1 feet or meters Added 06/87
050 0622	Decimal fraction of 0.2 feet or meters Added 06/87
050 0623	Decimal fraction of 0.3 feet or meters Added 06/87
050 0624	Decimal fraction of 0.4 feet or meters Added 06/87
050 0625	Decimal fraction of 0.5 feet or meters Added 06/87
050 0626	Decimal fraction of 0.6 feet or meters Added 06/87
050 0627	Decimal fraction of 0.7 feet or meters Added 06/87
050 0628	Decimal fraction of 0.8 feet or meters Added 06/87
050 0629	Decimal fraction of 0.9 feet or meters Added 06/87
050 0630	Boulders Added 05/94
050 0631	Sand Added 05/94
050 0632	Gravel Added 05/94
050 0633	Rock (flat or reef) Added 05/94
050 0634	Mud Added 05/94
050 0635	Shell Added 05/94
050 0636	Coral Added 05/94
050 0637	Tide Added 07/95
050 0639	Undredged Added 07/95
051 ----	Water surface elevation, whole feet, 9999 or less
052 ----	Water surface elevation, whole meters
053 ----	Angle of rotation Deleted 04/93
054 ----	Water surface elevation, whole feet, greater than 9999
055 ----	River mile mark

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
056 ----	Water surface elevation, whole feet below datum
057 ----	Water surface elevation, whole meters below datum
058 0000	Best estimate of classification or position Deleted 07/95
059 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

Standards for Digital Line Graphs  
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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
070 0101	Woods or brushwood
070 0102	Scrub
070 0103	Orchard or plantation
070 0104	Vineyard
070 0105	Scattered trees
070 0106	Void area Added 06/87
070 0200	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
070 0201	Edge of surface cover at built-up, house-omission, or urban area Deleted 06/87
070 0299	Processing line Added 10/90
078 0000	Best estimate of position or classification Deleted 07/95
079 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
080 0000	Photorevised feature
080 0100	Glacial moraine
080 0101	Gravel area
080 0102	Sand area
080 0103	Shifting sand or dune area Deleted 07/95
080 0104	Lava
080 0105	Void area Added 06/87
080 0200	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
080 0299	Processing line Added 10/90
080 0300	Located surface feature Added 06/86, Deleted 07/95
088 0000	Best estimate of position or classification Deleted 07/95
089 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
090 0000	Photorevised feature
090 0001	Boundary monument
090 0002	Boundary turning point Deleted before 1/85
090 0100	Civil township, district, precinct, or barrio
090 0101	Incorporated city, village, town, borough, or hamlet
090 0103	National park
090 0104	National forest
090 0105	National wildlife area
090 0106	National wilderness area
090 0107	Indian reservation
090 0108	Military reservation
090 0109	Nonmilitary government reservation Deleted before 1/85
090 0110	Federal prison
090 0111	Miscellaneous Federal reservation
090 0112*	Non-National Forest System lands Added 07/95
090 0113	Land grant Deleted before 1/85
090 0114*	Forest Administration Area Added 07/95
090 0115*	Forest Service Ranger District Added 07/95
090 0116*	Land owned by Forest Service but outside of proclamation boundary Added 07/95
090 0129	Miscellaneous State reservation
090 0130	State park
090 0131	State wildlife area
090 0132	State forest
090 0133	State prison
090 0134	Miscellaneous county reservation
090 0135	Ahupuaa (Hawaii) Added 10/90
090 0136	Hawaiian homestead Added 10/90
090 0150	Large park (city, county, or private)
090 0151	Small park (city, county, or private)
090 0197	Canada
090 0198	Mexico

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Number	Name
090 0199	Open water Added 10/90
090 0200	Approximate boundary Deleted before 1/85
090 0201	Indefinite or approximate boundary
090 0202	Disputed boundary
090 0203	Historical line
090 0204	Boundary closure line
090 0299	Processing line Added 10/90
090 0301	Reference monument for boundary point
091 00--	State or State equivalent FIPS code
092 0---	County or county equivalent FIPS code
093 00--	Civil township or civil township equivalent FIPS code, first two digits Added 10/90
094 0---	Civil township or civil township equivalent FIPS code, last three digits Added 10/90
095 ----	Monument number
096 XXYY	Alphabetic portion of any monument number Added 06/87
098 0000	Best estimate of classification or position Added 06/87, Deleted 07/95
099 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Number	Name
000 0000	Outside area
150 0100	Void area Added 06/87
150 0200	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
150 0300	Horizontal control station, third order or better, permanent mark
150 0301	Horizontal and vertical control station, third order or better
150 0302	Horizontal control station, vertical angle bench mark (VABM)
150 0303	Horizontal control station, checked spot elevation
150 0310	Vertical control station, third order or better, tablet
150 0311	Vertical control station, recoverable mark, third order or better, no tablet
150 0320	Boundary monument, third order or better, tablet
150 0321	Boundary monument, third order or better, no tablet
150 0330	Reference monument Deleted 07/95
150 0331	U.S. mineral or location monument Deleted 07/95
150 0332	Other control point Deleted 07/95
150 0601	Decimal fraction of 0.1 feet or meters
150 0602	Decimal fraction of 0.2 feet or meters
150 0603	Decimal fraction of 0.3 feet or meters
150 0604	Decimal fraction of 0.4 feet or meters
150 0605	Decimal fraction of 0.5 feet or meters
150 0606	Decimal fraction of 0.6 feet or meters
150 0607	Decimal fraction of 0.7 feet or meters
150 0608	Decimal fraction of 0.8 feet or meters
150 0609	Decimal fraction of 0.9 feet or meters
151 ----	State or State equivalent FIPS code
152 ----	County or county equivalent FIPS code
153 ----	Elevation, whole feet, 9999 or less
154 ----	Elevation, whole meters
155 ----	Elevation, whole feet below datum Added 10/91
156 ----	Elevation, whole feet greater than 9999
157 ----	Elevation, whole meters below datum Added 10/91
159 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Number	Name
000 0000	Outside area
170 0000	Photorevised feature
170 0001	Bridge abutment
170 0002	Tunnel portal
170 0004	Gate
170 0005	Cul-de-sac
170 0006	Dead end Deleted 07/95
170 0007	Drawbridge Added 04/86
170 0008*	Road block, berm, or barrier Added 07/95
170 0100	Void area Added 06/87
170 0201	Primary route, class 1, symbol undivided
170 0202	Primary route, class 1, symbol divided by centerline
170 0203	Primary route, class 1, divided, lanes separated
170 0204	Primary route, class 1, one way, other than divided highway
170 0205	Secondary route, class 2, symbol undivided
170 0206	Secondary route, class 2, symbol divided by centerline
170 0207	Secondary route, class 2, symbol divided, lanes separated
170 0208	Secondary route, class 2, one way, other than divided highway
170 0209	Road, class 3, symbol undivided
170 0210	Road, class 4
170 0211	Trail
170 0212	Road, class 5, four-wheel-drive
170 0213	Footbridge
170 0214	Road ferry crossing
170 0215	Perimeter of parking area Deleted 05/94
170 0216	Arbitrary line extension Deleted 07/95
170 0217	Road, class 3, symbol divided by centerline
170 0218	Road, class 3, symbol divided, lanes separated
170 0219	Road, class 4, one way Added 06/87
170 0220	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
170 0221	Road, class 3, one way Added 06/87
170 0222	Road in transition Added 10/90

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Number	Name
170 0223	Road in service facility, rest area, or viewpoint Added 07/95
170 0224*	Light-duty road, gravel (Class 3B) Added 07/95
170 0225*	Light-duty road, dirt (Class 3C) Added 07/95
170 0226*	Light-duty road, paved (Class 3A) Added 07/95
170 0299	Processing line Added 10/90
170 0300*	Trailhead Added 07/95
170 0401	Traffic circle
170 0402	Ramp in interchange
170 0403	Tollgate
170 0404	Weigh station
170 0405	Nonstandard section of road Added 06/86
170 0406	Covered bridge Added 10/90, Deleted 10/91
170 0600	Historical Deleted 01/86
170 0601	In tunnel
170 0602	Overpassing, on bridge (except drawbridge)
170 0603	Under construction
170 0604	Under construction, classification unknown Deleted 05/94
170 0605	Labeled "Old Railroad Grade"
170 0606	Submerged or in ford
170 0607	Underpassing
170 0608	Limited access Deleted 10/91
170 0609	Toll
170 0610	Privately operated or restricted use
170 0611	Proposed Deleted 07/95
170 0612	Double-decked
170 0613	In service facility, rest area, or roadside park Deleted 07/95
170 0614	Elevated
170 0615	Bypass
170 0616	Alternate

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Number	Name
170 0617	Business
170 0618	On drawbridge
170 0619	Spur
170 0620	Loop Added 01/86
170 0621	Connector Added 01/86
170 0622	Truck route Added 06/87
170 0623	With railroad Added 10/90, Deleted 05/94
170 0624	Covered bridge Added 10/91
170 0625*	Scenic byway Added 07/95
170 0626*	National, recreational, or historic Added 07/95
170 0627*	Approximate location Added 07/95
170 0650	Road width 0.025 inch
170 0651	Road width 0.030 inch
170 0652	Road width 0.035 inch
170 0653	Road width 0.040 inch
170 0654	Road width 0.045 inch
170 0655	Road width 0.050 inch
170 0656	Road width 0.055 inch
170 0657	Road width 0.060 inch
170 0658	Road width 0.065 inch
170 0659	Road width 0.070 inch
171 ----	Number of lanes Deleted 05/94
172 ----	Interstate route number
173 ----	U.S. route number
174 ----	State route number
175 ----	Reservation, park, or military route number
176 ----	County route number
177 XXYY	Alphabetic portion of any route number
178 0000	Best estimate of position or classification Deleted 07/95
179 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
180 0000	Photorevised feature
180 0001	Bridge abutment
180 0002	Tunnel portal
180 0003	Crossover Added 10/90, Deleted 04/93
180 0007	Drawbridge Added 04/86
180 0100	Void area Added 06/87
180 0201	Railroad
180 0202	Railroad in road
180 0204	Carline
180 0205	Cog railroad, incline railway, or logging tram
180 0207	Railroad ferry crossing
180 0208	Railroad siding
180 0209	Railroad yard
180 0210	Arbitrary line extension Deleted 07/95
180 0211	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
180 0299	Processing line Added 10/90
180 0400	Railroad station
180 0401	Turntable
180 0402	Roundhouse
180 0600	Historical Deleted 01/86
180 0601	In tunnel
180 0602	Overpassing, on bridge (except drawbridge)
180 0603	Abandoned Deleted 05/94
180 0604	Dismantled Deleted 05/94
180 0605	Underpassing
180 0606	Narrow gauge
180 0607	In snowshed or under structure Deleted 05/94
180 0608	Under construction Deleted 05/94
180 0609	Elevated
180 0610	Rapid transit

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Number	Name
180 0611	On drawbridge
180 0612	Private
180 0613	U.S. Government
180 0614	Juxtaposition Deleted 05/94
181 ----	Number of tracks
183 ----	Angle of clockwise rotation Added 10/90, Deleted 04/93
188 0000	Best estimate of position or classification Deleted 07/95
189 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Number	Name
000 0000	Outside area
190 0000	Photorevised feature
190 0001	End of transmission line at power station, substation, or hydroelectric plant Deleted 05/94
190 0002	End of pipeline at oil or gas field Deleted 05/94
190 0003	End of pipeline at refinery, depot, or tank farm Deleted 05/94
190 0004	Steel or concrete tower on transmission line Added 10/90, Deleted 07/95
190 0100	Void area Added 06/87
190 0201	Pipeline
190 0202	Power transmission line
190 0203	Telephone line
190 0204	Aerial tramway, monorail, or ski lift Deleted 05/94
190 0205	Arbitrary line extension Deleted 07/95
190 0206	Closure line Added 06/87, Deleted 10/93 memo (05/94 Standard)
190 0207	Aerial tramway Added 05/94
190 0208	Monorail Added 05/94
190 0209	Ski lift Added 05/94
190 0299	Processing line Added 10/90
190 0300*	Seaplane anchorage Deleted 10/91 for general use, added 07/95 for USGS/Forest Service joint quadrangles only
190 0301*	Helispot Added 07/95
190 0400	Power station or power plant
190 0401	Substation
190 0402	Hydroelectric plant
190 0403	Landing strip, runway, apron, taxiway
190 0404	Helipad
190 0405	Launch complex
190 0406	Pumping station or compressor station

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Number	Name
190 0407	Seaplane ramp or landing area Deleted 05/94
190 0408	Measuring station or valve station Added 06/87
190 0409	Seaplane ramp Added 05/94
190 0410	Seaplane landing area Added 05/94
190 0600	Underground Deleted 07/95
190 0601	Under construction
190 0602	Abandoned
190 0603	Aboveground
190 0604	Labeled "Closed" Deleted 05/94
190 0605	Unpaved
190 0606	Submerged
190 0607	Nuclear
193 ----	Angle of clockwise rotation Deleted 04/93
198 0000	Best estimate of position or classification Deleted 07/95
199 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Number	Name
000 0000	Outside area
200 0000	Photorevised features
200 0001	End point of linear manmade feature Deleted 06/87
200 0002	Point on linear manmade feature Deleted 06/87
200 0100	Church complex
200 0101	School campus
200 0102	Health care complex
200 0103	Orphanage complex
200 0104	Prison compound
200 0105	Mobile home park
200 0120	Ski area
200 0122	Athletic field
200 0123	Golf course
200 0124	Shopping center
200 0125	Zoo
200 0126	Drive-in theater
200 0127	Raceway complex
200 0128	Playground Deleted 07/95
200 0140	Marina
200 0141	Cable area Deleted 05/94
200 0150	Built-up area
200 0160	Industrial park Deleted 07/95
200 0161	Materials storage area Deleted 07/95
200 0162	Refinery or industrial plant
200 0163	Tailings
200 0164	Intricate surface area
200 0165	Oil sump or sludge pit
200 0180	Tank farm Deleted 05/94
200 0181	Feedlot or stockyard
200 0182	Experimental farm
200 0183	Proving ground
200 0184	Firing range
200 0190	Void area Added 06/87
200 0200	Conveyor

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Number	Name
200 0201	Boardwalk
200 0202	Wall
200 0203	Sea wall
200 0206	Fence line
200 0207	Flume (nonwater) Added 04/86, Deleted 07/95
200 0209	Sewerline
200 0211	Coke ovens
200 0212	Recreational slide
200 0213	Screen (drive-in theater)
200 0214	Drag strip, racetrack, or raceway
200 0215	Athletic track Added 10/90, Deleted 05/94
200 0250	Arbitrary closure line Deleted 05/94
200 0299	Processing line Added 10/90
200 0300	Grave site Deleted 05/94
200 0301	Historical marker
200 0302	Mine tunnel entrance or cave
200 0303	Mine shaft
200 0304	Prospect
200 0305	Tower
200 0306	Burner or stack
200 0307	Well
200 0308	Cliff dwelling
200 0309	Light Deleted 07/95
200 0310	Kiln
200 0311	Drill hole
200 0312	Watermill Deleted 06/87
200 0313	Anchorage Deleted 06/87
200 0314	Guzzler
200 0315	Located object or landmark object Added 06/87, Deleted 07/95
200 0316	Campsite Added 10/90
200 0317	Wind generator Added 10/91

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Number	Name
200 0400	Building (general case)
200 0401	Class 2 building Deleted 10/91
200 0402	Church
200 0403	School
200 0404	Municipal building Deleted 07/95
200 0405	Courthouse
200 0406	Post office
200 0407	City hall or town hall
200 0408	Hospital
200 0409	Prison
200 0410	Town, village, settlement, locality, or unincorporated village Deleted 07/95
200 0411	Amphitheater Added 06/87
200 0412	Customs building Added 06/87
200 0413	Capitol Added 07/95
200 0414	Community center Added 07/95
200 0415	Museum Added 07/95
200 0416	Memorial Added 07/95
200 0417	Firehouse Added 07/95
200 0418	Library Added 07/95
200 0419	Auditorium Added 07/95
200 0420	Cemetery
200 0421	Sewage disposal plant
200 0422	Waterworks
200 0423	Oil reservoir Deleted 07/95
200 0424	Well field
200 0425	Tank
200 0426	Oil or gas platform
200 0427	Mine dump
200 0428	Open pit mine

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Number	Name
200 0429	Quarry
200 0430	Strip mine
200 0431	Landfill Deleted 07/95
200 0432	Pit, unconsolidated material
200 0433	Radio or television facility
200 0434	Storage bin Deleted 05/94
200 0435	Levee or dike
200 0436	Spoil bank
200 0438	Reclaimed area Added 10/90
200 0445	Fairgrounds
200 0446	Rodeo grounds
200 0447	Corral
200 0448	Boat ramp
200 0449	Campground
200 0450	Fort
200 0451	Swimming pool
200 0452	Archeological site, ruin, or Indian mound
200 0453	Recreation area, public use area
200 0454	Picnic area
200 0455	Port of entry
200 0456	Stadium
200 0457	Arena Added 07/95
200 0458	Armory Added 07/95
200 0459	Orphanage Added 07/95
200 0460	Observatory Added 07/95
200 0461	Grange hall Added 07/95
200 0462	Grain elevator Added 07/95
200 0465	Pile, dolphin, stump, or snag
200 0466	Breakwater, jetty, pier, dock, causeway, or wharf
200 0467	Exposed wreck or wreckage
200 0468	Sunken wreck (masts may be exposed)
200 0469	Drydock Deleted 07/95

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Part 3: Attribute Coding  
Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
200 0470*	Boat access, no ramp Added 7/95
200 0472*	Forest Headquarters Added 7/95
200 0473*	Ranger District Office Added 7/95
200 0474*	Other Forest Service facility Added 7/95
200 0601	Underground Deleted 7/95
200 0602	Under construction Deleted 7/98
200 0603	Abandoned Deleted 7/95
200 0604	Water
200 0605	Oil Deleted 5/94
200 0606	Gas Deleted 5/94
200 0607	Chemical Deleted 7/95
200 0608	Covered Deleted 7/95
200 0609	Gravel
200 0610	Sand
200 0611	Clay
200 0612	Borrow Deleted 5/94
200 0613	Radio Deleted 7/95
200 0614	Lookout
200 0615	Unincorporated Deleted 7/95
200 0616	No population Deleted 7/95
200 0617	Submerged
200 0618	Ruin
200 0619	Caliche Added 10/91, Deleted 5/94
200 0620	Chert Added 10/91, Deleted 5/94
200 0621	Cinder Added 10/91, Deleted 5/94

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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
200 0622	Pumice Added 10/91, Deleted 05/94
200 0623	Shale Added 10/91, Deleted 05/94
200 0624	Scoria Added 10/91, Deleted 05/94
200 0625	Communication Added 07/95
200 0626	Control Added 07/95
200 0627	Cooling Added 07/95
200 0629	Navigation Added 07/95
202 ----	Width in mils of feature to scale
203 ----	Angle of clockwise rotation Deleted 04/93
208 0000	Best estimate of position or classification Deleted 07/95
209 00--	Coincident feature or symbol Deleted 10/93 memo (05/94 Standard)

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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
000 0000	Outside area
300 0001	Found PLSS section corner
300 0002	Point on section line, no corner Deleted 06/87
300 0003	Closing corner Deleted 07/95
300 0004	Meander corner
300 0005	Auxiliary meander corner Deleted 07/95
300 0006	Special meander corner Deleted 07/95
300 0007	Witness corner
300 0008	Witness point
300 0009	Angle point
300 0010	Amended monument
300 0011	Reference monument Deleted 07/95
300 0012	Found quarter-section corner
300 0013	Tract corner Deleted 07/95
300 0014	Land grant or other special survey corner
300 0015	Arbitrary section corner Deleted 07/95
300 0040	Corner identified in the field Deleted 07/95
300 0041	Corner with horizontal coordinates Deleted before 01/85
300 0042	Corner with elevation value Deleted before 01/85
300 0100	Indian lands Deleted 07/95
300 0101	Homestead entry survey
300 0102	Donation land claim
300 0103	Land grant
300 0104	Private extension of public land survey
300 0105	Area of public and private survey overlap
300 0106	Overlapping land grants
300 0107	Military reservation Deleted 07/95
300 0108	Private survey in Ohio Added 10/90

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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
300 0109	Other reservation Added 10/91, Deleted 07/95
300 0110	PLSS area Added 07/95
300 0111	Tract Added 07/95
300 0112	U.S. survey Added 07/95
300 0113	Indian allotment Added 07/95
300 0114	Area outside of the public domain Added 07/95
300 0198	Water
300 0199	Unsurveyed area Deleted 07/95
300 0201	Approximate position
300 0202	Protracted position
300 0203	Closure line
300 0204	Base line Deleted 07/95
300 0205	Claim line, grant line Deleted 10/90
300 0206*	Location doubtful Added 07/95
300 0299	Processing line Added 10/90
300 0300	Location or mineral monument
300 0301	Isolated found section corner
300 0302	Witness corner (off survey line) Deleted 07/95
300 0600	Connecticut Western Reserve Added 07/95
300 0601	Virginia Military District Added 07/95
300 0602	Ohio Company Purchase Added 07/95
300 0603	Symmes Purchase Added 07/95
300 0604	French Grants Added 07/95
300 0605	Donation Tract Added 07/95

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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
300 0606	Old Seven Ranges Added 07/95
300 0607	Congress Lands North of Old Seven Ranges Added 07/95
300 0608	Congress Lands East of Scioto River Added 07/95
300 0609	Between the Miamis, North of Symmes Purchase Added 07/95
300 0610	West of the Great Miami Added 07/95
300 0611*	Weak Added 07/95
300 0612	Refugee Lands Added 07/95
300 0625	Fraction one-half for land grant corner, monument or section number, or nonsection identifier
301 ----	Section number
302 ----	Township number north of baseline
303 ----	Township number south of baseline
304 ----	Range number east of principal meridian
305 ----	Range number west of principal meridian
306 00--	Origin of survey
306 0038	Ohio River Base Deleted 07/95
306 0040	Second Scioto River Deleted 07/95
306 0041	Third Scioto River Deleted 07/95
306 0047	West of the Great Miami Deleted 07/95
306 0070	Connecticut Western Reserve and Firelands Deleted 07/95
306 0071	Virginia Military Survey Deleted 07/95
306 0072	Ohio Company Purchase Deleted 07/95
306 0073	Symmes Purchase Deleted 07/95
307 ----	Identifier, nonsection
308 0000	Best estimate of position or classification Deleted 07/95

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Appendix 3.0.B - Comprehensive List of Attribute Codes

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Number	Name
308 ----	Land grant, location, or mineral monument number Added 10/90
309 00--	Coincident feature Deleted 10/93 memo (05/94 Standard)

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Appendix 3.0.B - Comprehensive List of Attribute Codes

---

Number      Name

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These codes apply only to PLSS data that are revised by a cooperating agency.

601 000x	Source for "Found" designation Added 7/97
602 xyyy	Township number north of baseline Added 7/97
603 xyyy	Township number south of baseline Added 7/97
604 xyyy	Range number east of principle meridian Added 7/97
605 xyyy	Range number west of principle meridian Added 7/97
606 xxyy	Meridian/State Identifier Added 7/97
607 00xy	Datum and Units of measure identifier Added 7/97
608 00xx	UTM zone Added 7/97
609 xxxx	State Plane Coordinate System zone Added 7/97
610 0xxx	"X" Corner Identifier Added 7/97
611 0yyy	"Y" Corner Identifier Added 7/97
612 xxxx	ten thousands through millions place for the "X" coordinate of the node Added 7/97
613 xxxx	one, tens, hundreds and thousands place for the "X" coordinate of the node Added 7/97
614 xxxx	tenth through ten-thousandths for the "X" coordinate of the node Added 7/97
615 yyyy	ten thousands through millions place for the "Y" coordinate of the node Added 7/97
616 yyyy	one, tens, hundreds and thousands place for the "Y" coordinate of the node Added 7/97
617 yyyy	tenth through ten-thousandths for the "Y" coordinate of the node Added 7/97

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.1 HYP SOGRAPHY--MAJOR CODE 020

3.1.1 General Principles

3.1.1.1 Node Attribute Codes

There are no general principles that apply to node attribute codes.

3.1.1.2 Area Attribute Codes

There are no general principles that apply to area attribute codes.

3.1.1.3 Line Attribute Codes

The elevation parameter (02N ----) is used in conjunction with all line attribute codes, with the exception of watershed divides (202 0207) and processing lines (020 0299).

→ The carrying contour code (020 0201) cannot be assigned in conjunction with any other line attribute code, except the obsolete contour code. The condition of carrying takes precedence over other characteristics; if a contour is both carrying and supplementary, it is collected as carrying only. ←

On the map, contour lines may be broken for elevation labels. In collecting the contours, these breaks are ignored and the contours are collected as continuous lines through the breaks. When the breaks occur along curves on the contour, care must be taken to retain contour shape relative to the adjacent contours.

In general, contours are collected exactly as they are shown on the map. There is no requirement to add or modify contour segments to improve the logical consistency of the file. However, limited additions or modifications may be made to maximize the utility and efficiency of quality control software. For example, if a contour carries on one end and is feathered on the other, it is not necessary to treat both ends one way or the other in the digital data, but you may choose to do so in order to simplify processing. Any short segments that are added or modified are not uniquely identified; they are simply assigned the appropriate contour and elevation codes.

If contours at dams, seawalls, locks, levees, etcetera, have not been scribed or have been overprinted, they are not generally connected in the digital file. However, when the path of the contour can be readily determined (for example, when a contour

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crosses a road at a bridge wing tick) collect the contour as a continuous line, rather than breaking it for the overprinting feature.

3.1.1.4 Single-Point Attribute Codes

The elevation parameter (02N ----) is used in conjunction with all single-point attributes.

**Collection of Spot Elevations**

Spot elevation values are shown in italic type on standard graphics, and with slant lettering on provisional editions.

When collecting spot elevations from graphic source, it is not always clear exactly where to collect the elevation based on its portrayal on the graphic source. The following general guidelines should be used in determining where to collect a spot elevation.

Where the spot elevation is shown by symbols 224(A), 112.41(B), 512.108(C), or 2102.10(D), digitize a degenerate line at the center of the X. Where the spot elevation value is adjacent to another feature (for example, a well, windmill, or drill hole), digitize a degenerate line at the location of the coincident feature. Where the spot elevation value is shown at the intersection of two or more linear features (for example, the intersection of two or more roads, a road and a transmission line, a road and a fence line, or two streams), digitize a degenerate line where the features intersect. Where the spot elevation is shown at a horizontal control station, digitize a degenerate line coincident with the horizontal control station. Where the spot elevation is shown on a hill or top, but no spot elevation cross is shown, digitize a degenerate line at the center of the top as defined by the top contour.



Spot elevations that conflict with adjacent contours should not be collected, because subsequent processing software will flag them as errors and require additional editing. Spot elevations that are equal to an adjacent contour are not necessarily in conflict with that contour and should be collected. Processing software will not generate an error flag in these situations.

On provisional maps, elevations labeled "AT" (Analytical Elevation), "DB" (Drain Bottom), or "DR" (Drain) are not collected. Otherwise, collect all elevations that are not in conflict with adjacent contours. Do not reduce the number of spot elevations by eliminating those in close proximity of one another (sometimes called "thinning").



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Spot elevations are generally digitized as degenerate line elements; however, they are digitized as node elements when located on a line collected in the Hypsography category.

Elevations on bridges are encoded uniquely so they may be isolated from ground-level elevations used for Digital Elevation Model gridding or automatic contour tagging, and so that they may be symbolized correctly at time of product generation.

**Type Placement for Spot Elevations**

Figure 3.1-1 provides graphic examples of the preferred placement of type for spot elevations. For each situation, the placement illustrated in column 1 is most desirable, and that in column 4 is least desirable. These illustrations may be helpful in determining what location a specific spot elevation value refers to, and where to collect the degenerate line.

3.1.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.1.1.6 Descriptive Attribute Codes

There are no general principles that apply to descriptive attribute codes.

3.1.1.7 Parameter Attribute Codes

There are no general principles that apply to parameter attribute codes.

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1	2	3	4	1	2	3	4
BM $\Delta$ 4567	$\Delta$ BM 4567	BM $\Delta$ 4567	$\Delta$ BM 4567				
BM $\times$ 567	$\times$ BM 567	BM $\times$ 567	$\times$ BM 567				
$\times$ 4567	4567 $\times$	$\times$ 4567	4567 $\times$				
$\Delta$ 6734	6734 $\Delta$	$\Delta$ 6734	6734 $\Delta$				
$\times$ 6734	6734 $\times$	$\times$ 6734	6734 $\times$				

Figure 3.1-1  
 Type placement preference for spot elevations

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3.1.1.8 List of Hypsography Attribute Codes

o Node attribute codes

There are no node attribute codes

o Area attribute codes

000 0000 Outside area  
020 0100 Void area

o Line attribute codes

020 0200 Contour (index or intermediate)  
020 0201 Carrying contour  
020 0202 Supplementary contour  
~~020 0203 Continuation contour~~  
~~020 0204 Amended contour~~  
020 0205 Bathymetric contour (primary, index or  
intermediate)  
020 0206 Depth curve  
020 0207 Watershed divide  
~~020 0208 Closure line~~  
020 0209 Obsolete contour (Limited Update Digital Revision)  
020 0210 Supplementary bathymetric contour  
020 0299 Processing line

o Single-point attribute codes

020 0300 Spot elevation, less than third order, ground  
level  
~~020 0301 Spot elevation, less than third order,  
not at ground level, and not on bridge~~  
020 0302 Spot elevation, less than third order, on bridge  
020 0303 Sounding

o General purpose attribute codes

There are no general purpose attribute codes

o Descriptive attribute codes

020 0600 Decimal fraction of 0.0 feet or meters  
020 0601 Decimal fraction of 0.1 feet or meters  
020 0602 Decimal fraction of 0.2 feet or meters  
020 0603 Decimal fraction of 0.3 feet or meters  
020 0604 Decimal fraction of 0.4 feet or meters  
020 0605 Decimal fraction of 0.5 feet or meters  
020 0606 Decimal fraction of 0.6 feet or meters  
020 0607 Decimal fraction of 0.7 feet or meters

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020 0608 Decimal fraction of 0.8 feet or meters  
020 0609 Decimal fraction of 0.9 feet or meters  
020 0610 Approximate  
020 0611 Depression  
020 0612 Glacier or snow field  
020 0613 Underwater  
~~020 0614 Best estimate of contour elevation value~~  
~~020 0615 Fill~~  
020 0616 Rise (inside a depression)

o Parameter attribute codes

~~020 0000 Photorevised feature~~  
021 ---- Elevation, whole feet, greater than 9999  
022 ---- Elevation, whole feet, 9999 or less  
023 ---- Elevation, whole feet below datum  
024 ---- Elevation, whole meters  
025 ---- Elevation, whole meters below datum  
~~026 00-- Major category associated with spot height not at  
ground elevation~~  
~~029 00-- Coincident Feature~~

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.1.2 Node Attribute Codes

There are no node attribute codes.

3.1.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

020 0100 Void area

This code identifies an area where contours have been dropped due to mining activity and replaced by the disturbed surface pattern. The area beyond the national boundary is also coded as a void area, to distinguish it from the background area. The perimeter of the void area is collected as an unattributed line unless defined by a limiting contour. On topographic-bathymetric editions, void areas are also collected where features, such as channels and spoil areas, exist and bathymetric contours are not shown.

When collecting a void area where contours have been dropped and replaced by disturbed surface pattern, the edge of the pattern is used as a general guide in digitizing the perimeter of the void area. However, the perimeter of the void area must connect to the dangling ends of the dropped contours, so in some cases it may be necessary to digitize the perimeter of the void area slightly beyond the edge of the disturbed surface pattern, or within it.

3.1.4 Line Attribute Codes

020 0200 Contour (index or intermediate)

This code identifies both index and intermediate contours based on the contour interval. They are shown by symbols 300, 301 (A); 132.1, 132.2 (B); 532.1, 532.2 (C); or 2302.01, 2302.02 (D). Use descriptive codes for depression (020 0611), approximate (020 0610), glacier or snowfield (020 0612) and underwater (020 0613) as needed.

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Part 3: Attribute Coding

020 0201 Carrying contour

This code identifies a portion of a contour at cliff embankments and similar features where multiple contours merge into a single line. The carrying contour is digitized as separate line segments. Carrying contours are given the parameter elevation codes of the highest and lowest contours joined to the nodes of the carrying contour segment. Carrying contours are shown by symbols 306(A), 132.5(B), 532.5(C), or 2302.03(D).

Any portion of a carrying contour that carries one or more depression contours is also assigned the descriptive code for depression (020 0611).

Any portion of a carrying contour that carries only approximate contours is also coded approximate (020 0610). However, if any of the contours carried by a portion of carrying contour are not approximate, then the carrying contour is not approximate.

020 0202 Supplementary contour

This code identifies contours shown between intermediate contours to aid in defining topography in areas of minimal slope. Supplementary contours are shown by symbols 302, 309(A); 133.1, 133.2 (B); 533.1, 533.2(C); or 2303.01(D), or by dotted brown lines. If supplementary contours are shown on a map, there will be a note in the map collar, just below the contour interval note, that says either "Supplementary contour interval XX feet" or "Dotted lines represent XX foot contours."

Do not confuse supplementary contours with dual contour intervals. Maps covering areas with abrupt contrasts in relief may use two different basic contour intervals in different areas of the map. The contour interval note identifies maps with dual contour intervals, and a contour diagram or key, which delineates the area for which each contour interval applies, is also provided.

~~020 0203 Continuation contour~~

This code is no longer used.

~~020 0204 Amended contour~~

This code is no longer used.

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020 0205 Bathymetric contour (primary, index or intermediate)

This code identifies primary, index and intermediate bathymetric contours based on the contour interval. A bathymetric contour is a line connecting points of equal water depth. Primary bathymetric contours are only collected at certain contour intervals, and are shown in black. Bathymetric contours are shown by symbols 112.87, 112.88, 141.41, 141.42 (B) or 512.147, 512.148, 541.60, 541.61 (C). This code is used in conjunction with the parameter elevation code 021 ----, 022 ----, or 024 ----. (Note that the parameter elevation codes for feet or meters below datum are not used in conjunction with this code). Also use descriptive codes for depression (020 0611), approximate (020 0610) and rise (020 0616) as needed. Do not use this code for underwater contours. See code 020 0613.

Although the sounding datum (the "0" bathymetric contour) may appear on some map separates containing bathymetric contours, it is not collected in this category. It is collected only in the Hydrography category.

020 0206 Depth curve

→ This code is USED ONLY WHEN THE COLLECTION OF DEPTH CURVES HAS BEEN SPECIFICALLY AUTHORIZED AT THE REQUEST OF A COOPERATING AGENCY. Delaware, Illinois, Minnesota, and Wisconsin are examples of states requesting the collection of depth curves. Depth curves are shown by symbols 447(A) or 541.58(C). This code is used in conjunction with the parameter elevation code 021 ----, 022 ----, or 024 ----. (Note that the parameter elevation codes for feet or meters below datum are not used in conjunction with this code). ←

020 0207 Watershed divide

This code identifies the Continental Divide or the Tennessee Valley Divide. These features are shown by symbols 132.15(B) or 532.16(C).

~~020 0208 Closure line~~

This code is no longer used.

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020 0209 Obsolete contour

This code is used only in Digital Limited Update Revision. These contour segments are near revised major planimetric features and no longer represent the ground elevation. See Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps, Part 7: Hypsography, for details on when the obsolete contour code is applied. Assign other line attribute and/or descriptive codes to the same line, when applicable.



020 0210 Supplementary bathymetric contour

This code identifies bathymetric contours shown between intermediate contours to aid in defining water depth. Supplementary bathymetric contours are shown by symbols 512A.1, 512A.2, 512A.3, 512A.4(C). If supplementary bathymetric contours are shown on a map, it will be noted in the map collar. Use descriptive codes for depression (020 0611), approximate (020 0610), and rise (020 0616) as needed.

020 0299 Processing line

This code is described in section 3.0.6.3.

3.1.5 Single-Point Attribute Codes

020 0300 Spot elevation, less than third order, ground level

~~020 0301 Spot elevation, less than third order, not at ground level, and not on bridge~~

This code is no longer used.

020 0302 Spot elevation, less than third order, on bridge

This code is only applied when the elevation value is preceded by the letters BR. Since these letters indicate that the elevation occurs on the bridge, the elevation should be collected directly on the bridge itself.

020 0303 Sounding

This code is USED ONLY WHEN THE COLLECTION OF SOUNDINGS HAS BEEN SPECIFICALLY AUTHORIZED AT THE REQUEST OF A COOPERATING AGENCY. Soundings are shown by symbol 454(A). They may be printed in either blue or black. This code is used in conjunction with the parameter elevation code 021 ----, 022 ----, or 024 ----. (Note

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that the parameter elevation codes for feet or meters below datum are not used in conjunction with this code).

Digitize the sounding at the center of the best fitting rectangle for the sounding value.

3.1.6 General Purpose Attribute Codes

There are no general purpose attribute codes.

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3.1.7 Descriptive Attribute Codes

020 060- Descriptive attribute codes 020 0600 through 020 0609 are used to represent decimal fractions of feet or meters. They are used only in conjunction with the elevation parameter attribute codes when the original elevations are expressed to decimal fractions. The units are the same as those of the corresponding parameter code. The specific values are:

020 0600 Decimal fraction of 0.0 feet or meters  
020 0601 Decimal fraction of 0.1 feet or meters  
020 0602 Decimal fraction of 0.2 feet or meters  
020 0603 Decimal fraction of 0.3 feet or meters  
020 0604 Decimal fraction of 0.4 feet or meters  
020 0605 Decimal fraction of 0.5 feet or meters  
020 0606 Decimal fraction of 0.6 feet or meters  
020 0607 Decimal fraction of 0.7 feet or meters  
020 0608 Decimal fraction of 0.8 feet or meters  
020 0609 Decimal fraction of 0.9 feet or meters

020 0610 Approximate

This code identifies contours in areas where accurate representation is not attainable through normal compilation procedures. Approximate contours are shown by symbols 303, 304 (A); 112.89, 132.3, 141.43 (B); or 532.3, 541.44 (C). All contours within glaciers or snow fields are also assigned this code (see code 020 0612).

The depiction of contours as approximate is uncommon; they have been used primarily in heavily forested areas in the Pacific Northwest, and occasionally in marshy areas.

020 0611 Depression

This code identifies contours surrounding a basin or sink denoted by right-angle ticks (hachures) pointing inward (downslope). Depression contours are shown by symbols 307 (A); 112.90, 112A.2, 132.6, 132.7, 133.2, 141.44 (B); 512.149, 512A.3, 532.6, 532.7, 541.63 (C); or 2302.04 (D).

020 0612 Glacier or snow field

This code identifies contours in areas covered by glaciers or snow fields. It identifies contours within areas outlined by symbols 428, 429 (A); 141.27 (B);

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541.43, 541.44 (C); or 2205.04 (D). All such contours are also coded as approximate (020 0610), regardless of how they are symbolized on the map. When a glacier or snow field is shown with form lines, as in symbols 430(A), 141.28(B), or 541.45(C), it is not collected in the Hypsography category.

020 0613 Underwater

This code identifies submerged contours compiled before an area was inundated by the construction of a dam. These areas are overprinted with blue or purple tint. Use this code only if the inundated area is  $\geq 5.28$  square inches.

~~020 0614 Best estimate of contour elevation value~~

This code is no longer used.

~~020 0615 Fill~~

This code is no longer used. Portions of contours along which fill ticks are shown are not uniquely identified.

020 0616 Rise (inside a depression)

This code identifies contours surrounding a rise inside a depression, shown by right angle ticks, pointing downslope, as in symbols 112.91, 112A.3, 141.45 (B); or 512.151, 512A.4, 541.64 (C).

This code is used only in conjunction with bathymetric contours (020 0205 and 020 0210).

3.1.8 Parameter Attribute Codes

~~020 0000 Photorevised feature~~

This code is no longer used.

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02N ---- Elevation, whole feet or meters

This parameter is used to encode the elevation value associated with a contour or spot elevation. The digitizer enters a value in place of the "N" in the major code as follows:

- 1 = whole feet, greater than 9999
- 2 = whole feet, 9999 or less
- 3 = whole feet below datum (negative values only)
- 4 = whole meters
- 5 = whole meters below datum (negative values only)

The elevation value is then entered into the minor code, flush right. (For elevations greater than 9999 feet, only the final four digits are encoded in the minor code.)

Examples: 12,400 feet is coded as 021 2400  
          -5 feet is coded as 023 0005

Elevations exceeding 19,999 feet must be expressed in meters. Mt. McKinley, Alaska, is the only point within United States boundaries that falls in this category.

To express elevations to decimal feet or meters, use the above parameter codes in conjunction with descriptive attribute codes 020 0600 through 020 0609.

Negative contour elevations are found on maps of only a few areas of the United States, such as New Orleans or Death Valley.

In areas where contour feathering occurs, elevations for the feathered segments can generally be determined by referring to the compilation specifications for feathered areas. These specifications state that the last contour segment dropped in a constricted area is the first one to begin again as soon as space is available. The compilation specifications also state that when the space between index contours limits the depiction of intermediate contours, the priority for portrayal is as follows: the highest intermediate, the lowest, the second highest, the second lowest, and so on.

~~026 00 --- Major category associated with spot height not at ground elevation~~

This code is no longer used.

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~~029 00 --- Coincident Feature~~

This code is no longer used.

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3.2 HYDROGRAPHY--MAJOR CODE 050

Flowing and standing water and manmade features directly related to hydrography are collected in this category.

3.2.1 General Principles

**Coding Principles**

The majority of codes apply to both topographic and topographic-bathymetric editions, but some codes only apply to topographic-bathymetric editions. The individual coding descriptions identify these codes. If a feature appears on a topographic edition and the coding description indicates that it applies only to topographic-bathymetric editions, do not collect the feature.

The term "water body" is used to refer to any hydrographic feature collected as an area as well as any areal hydrographic feature collected as a degenerate line or as a node because of its small size. Use is not limited to a lake or a pond.

All double-line streams are digitized as areas. Where double-line streams join other water bodies or other double-line streams the two features are separated from one another by closure lines.

If a hydrographic feature is less than or equal to 0.030 inches in length (regardless of map scale), it is collected as a degenerate line or node; no shoreline code is added.

Do not collect islands that are less than or equal to 0.030 inches in length (regardless of map scale), unless they are named.

**Feature Classification and Delineation**

In the real world, hydrographic features vary considerably. The treatment of these features on USGS maps also varies considerably, making determination of the appropriate code difficult in some cases. In many cases, symbol references provide only a general idea of what a feature may look like. It is necessary, when collecting hydrographic features, to pay attention to such things as shape or form, context within the map, names, labels, and marginal information, some or all of which may be important aids to classification. Generally, use the code that best describes the feature, even if the symbolization of that feature varies from the symbolization that is referenced.

Lakes are defined as standing bodies of water with predominantly natural shoreline. Reservoirs are constructed basins formed to

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contain water or other liquids for various purposes. The names and labels of these features do not always convey the proper classification, and care must be taken not to use names and labels alone in determining how to classify them. Many features that are known as "Reservoirs" or labeled on the graphic as "Reservoir" may in fact, be lakes or ponds. As a general rule, if a water body has a regular geometric shape or other information indicates it is contained by a constructed basin, then it is a reservoir. If it does not appear to be contained by a constructed basin, then it is a lake or pond.

Many constructed reservoirs found on the map can be coded according to their specific type. Individual codes exist for covered reservoir, salt evaporator, aquaculture pond, industrial water impoundment, sewage disposal pond, tailings pond, soda evaporator, and filtration pond, all of which are types of reservoirs. The code for reservoir (050 0101) is used only when no other specific attribute code is available to describe the type of reservoir. Swimming pools and nonwater reservoirs are collected in the Manmade Features category.

Where a stream or river has been dammed, use the following guidelines in determining whether to collect the water body above the dam as stream or lake.

- o Collect the water body as stream if it retains its river-like appearance, and the width of the water body above the dam is similar to the width of the water body below the dam. Many rivers have been dammed to maintain water levels for navigation, or for flood control, in which case there is commonly a series of dams on the river.
- o Collect the water body as lake if it is actually an impounded water body created by the dam, and the width of the water body above the dam is significantly greater than the width of the water body below the dam. If a submerged river is shown within an impounded lake, collect both a lake and submerged stream.

To determine whether a given feature should be collected as a stream or as a ditch or canal, use the appearance and location of the feature. Do not rely only on names and labels, because in some regions of the country the term ditch is used as a synonym for creek. Ditches and canals have regular geometric shapes and are cut through land to provide irrigation or drainage, and for navigation around obstacles or between water bodies. If contours have been turned upstream and dropped at a hydrographic feature, as in symbols 312(A), 532.8(C), or 2302.07(D), or if the feature parallels a contour and has little or no gradient, collect the feature as a ditch or canal. Streams are naturally occurring, do not have a

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regular geometric form, and normally have a gradient and flow downslope. Streams that have been relocated or altered for purposes other than drainage or irrigation are considered to be streams and not ditches. In some cases, only a portion of a stream has been realigned, and the purpose of that realignment cannot be determined from the map. Unless the realigned portion is identified by a ditch label, or a change in name to a named ditch, collect it as a stream. Streams that have been channelized or canalized for navigation (the Ohio and Mississippi Rivers, for example), are collected as streams and not canals, even though a set of locks and dams may have transformed portions of the river from a free-flowing water body to a series of slack water pools.

Hydrographic features form networks where large and small rivers, streams, lakes, ponds, and so on, flow in and out of each other. On the map, these networks appear as blue areas with no dividing lines. However, in collecting digital data, each part of the network must be classified as the appropriate feature and assigned a code. What the feature is and where it begins and ends is not always clear. The following guidelines can be used to help make these determinations:

- o There are cases where it is difficult to classify the "bumps" or "fingers" of water bodies. Where a single-line stream appears to widen as it enters a double-line stream or lake, a judgement must be made as to whether the widened area is part of the double-line stream or lake (a "finger" in the larger water body that extends to the single-line stream) or if the single-line stream has widened to a double-line stream, which then enters the larger water body (double-line stream or lake).

As a general rule, lakes tend to have many "fingers" and most of the time these are considered to be part of the lake. A single-line stream usually enters a lake without becoming a double-line stream. However, "fingers" on a double-line stream are usually part of the incoming stream. In both cases, the length and width relationship of the incoming water body must be taken into consideration. If it is longer than it is wide, or has a narrow neck, it may be considered as a separate incoming feature from the single-line stream.

- o A single-line stream may flow into something other than a double-line stream, which then connects to the larger water body. Determine the feature based on shape, size, and positioning of the feature. For example, a single-line stream may flow into a partial oxbow (lake or pond) that connects to a double-line stream. Each of these three features is collected as an individual feature.

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- o Where a "finger" occurs in a water body, whether there is an entering stream or not, the overall size and the size of the opening neck are criteria that can be used to decide if it is part of the larger water body or not. Generally, the larger the size of the "finger" and the more narrow the neck, the more likely it is to be a separate, and possibly different, feature.
- o Whether a widened portion of single-line stream is collected as a small lake or as a double-line portion of the single-line stream, is dependent on its relative width, shape (linearity versus roundness), and name. Use judgement and common sense in determining whether you have a lake or a stream.
- o The "fingers" on impounded water bodies are considered part of the impounded water body up to the point where the entering stream returns to its normal channel. The normal channel of a stream can be recognized by its fairly consistent width or may be indicated on the map by the previous stream bed or contours.
- o Name is not always an indicator of the feature classification and should be used only in conjunction with other criteria.
- o In all cases, use your knowledge of what these features look like on the ground, along with your best judgement and common sense. Recognize that there may not be a single "right" way of delineating and coding connecting water bodies; several different solutions may all be equally "correct."

The classification of some hydrographic features added during photorevision cannot be determined solely on symbology, because earthen and manmade shoreline are both shown in purple, and the intermittent nature of features cannot always be determined from photography. Classification of these features must, therefore, be based on context. If photorevised shoreline has a regular, geometric shape or similar nearby shoreline is shown as manmade, or both, collect the shoreline as manmade. If in doubt, collect the shoreline as earthen (050 0200). In deciding whether or not to collect a feature as intermittent, look at the overall drainage pattern in the area. Hydrographic features are only collected as perennial if there is little doubt that they contain water year round; if uncertain, collect them as intermittent.

#### **Flow Direction**

The direction of flow is indicated on the map by the contours and the overall pattern of the drainage network. Information on the flow of water bodies is collected to support data users who model network flow on hydrographic phenomena for scientific studies. Flow is coded in one of two ways in the DLG data. For double-line

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features, the descriptive attribute codes for right bank (050 0605) and left bank (050 0606) are applied. For single-line features, the node attribute codes for upper origin (050 0001), upper origin at water body (050 0002), sink (050 0003), entering water body (050 0004), and exiting water body (050 0005) are applied.

For double-line features, capture the direction of flow by theoretically looking downstream and indicating right and left bank. For streams that have complex channels or islands, apply right and left bank codes to the outermost double-line channel, so long as the outermost channel can reasonably be considered to be a diverging and converging channel of the stream. Remember that the stream must maintain a roughly linear shape. The shore of any land area between the right and left banks is collected as shoreline.

In some areas, adjoining quadrangles must be consulted in order to determine direction of flow.

Node codes and right and left bank codes are only used when flow can readily and confidently be determined from the topography and overall pattern of the drainage network as shown on the map. Do not spend more than a few minutes looking for indications of direction of flow. If in doubt, do not code flow. Usually the direction of flow of streams and ditches in very flat areas, and of ditches in arid areas, cannot be determined unless contours cross the feature, the feature connects up with water bodies for which elevations are shown, or flow arrows are shown on the map. In coastal areas where flow cannot be determined, the gut code (050 0122) may be applied to water between the lowest contour and the open sea.

3.2.1.1 Node Attribute Codes

Node attribute codes assist in determining the direction of water flow of single-line hydrographic features. Node attribute codes are not used at the origin of double-line hydrographic features, or where double-line hydrographic features enter or exit water bodies. They are, however, used where single-line hydrographic features enter or exit double-line hydrographic features, including where single-line hydrographic features widen to, or narrow from, double-line hydrographic features.

3.2.1.2 Area Attribute Codes

In a structured file, it is not necessary to explicitly code the line around an area unless the line itself has characteristics that must be described. However, USGS maps have traditionally described characteristics of the limits of some hydrographic features. This

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includes whether a shoreline is earthen (blue) or masonry (black), and whether or not it can be accurately located (dashed versus solid). (The limits of a perennial versus intermittent stream or lake have also been symbolized differently. However, because it is the lake or the stream that is perennial or intermittent, that information is explicitly encoded on the area, rather than on the shoreline.)

Where the characteristics of a line around a hydrographic feature can vary, the line is always attributed. For example, sewage disposal ponds may have earthen shorelines (blue) or they may have masonry shorelines (black). Therefore, the line around a sewage disposal pond must always be attributed. Sometimes, however, the line around a hydrographic feature is simply a symbol, and it is collected as an unattributed line and the line symbology is derived from the area code. For example, the blue lines around evaporators, cranberry bogs, duck ponds and the like have been described as being "ditches." However, on the ground, the limits of these features are in some cases ditches, in some cases embankments, and in some cases ditches on embankments. The blue line on the map shows the extent of the hydrographic feature, but does not describe any characteristics of the line; the line is, therefore, unattributed. Please note that although in the past aquaculture ponds, filtration ponds, and industrial water impoundments have been shown with either earthen shorelines (blue) or masonry shorelines (black), the distinction is no longer considered important, and in the future these features will always be outlined in black; the line is, therefore, unattributed.

Where the outline of a water body is attributed, the entire outline is attributed. Although the shoreline may be interrupted by a manmade structure, which is collected either in this category or in the Manmade Features category, the line of contact between a water area and a land area is always also collected as some type of shoreline.

Appendix 3.2.A provides unambiguous information on the attribution of the outlines of hydrographic features collected as areas. In general, if the outline of the feature is always shown on the map with the same symbology, the line is unattributed because it is in essence a symbol. Follow these guidelines even if an individual feature on a map is outlined using a nonstandard symbol. In some cases, the outlines of two hydrographic features may coincide, so the instructions for coding of the outlines of both features must be considered. Also, if part of the outline of an area is formed by another hydrographic feature, that portion of the outline is collected as that feature.

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Additional hydrographic features can exist within a larger hydrographic feature. This is most common in a bay, estuary, gulf, ocean, or sea, or a gut, but can also occur in a lake, or a double-line stream or canal. Even though the additional features can be collected as areas, the integrity of the larger hydrographic feature is not affected. All areas within a larger hydrographic feature receive the code of the larger feature and their own code or codes. This includes areas that are created by linear features that close, and features collected as areas. An exception to this general principal is any area where the blue water tint has been cleared; some flats (see code 050 0115), some channels (see code 050 0419), spoil area, dredged area, or dump area (050 0424), and holiday area (050 0426).

3.2.1.3 Line Attribute Codes

Line attribute codes are used only where specific characteristics of a line that surrounds an area must be described. Unlike general purpose attribute codes, line attribute codes apply to features that can only be collected as a line.

USGS maps use line symbology to distinguish between earthen shorelines (blue) and manmade shorelines (black) and to describe the accuracy of the location, definite (solid line) versus indefinite (dashed line). There are unique codes to collect these characteristics: 050 0200 for earthen definite shoreline; 050 0201 for manmade shoreline; 050 0203 for earthen indefinite shoreline. Apparent shoreline (050 0207) is a special type of indefinite shoreline shown only on topographic-bathymetric editions. The descriptive attribute codes for right bank (050 0605) and left bank (050 0606) are used instead of the earthen definite shoreline code (050 0200) on double-line features where flow is collected. For all other shoreline characteristics, the right bank and left bank codes are used in addition to the appropriate shoreline code.

Additional line codes are used to collect other hydrographic features symbolized on the map, for example, Carolina bays (050 0205) and limiting danger lines (050 0206). Closure lines (050 0202) are used to code lines that are not shown on the map and must be added to the DLG.

Where no specific information is required to describe characteristics of the line, an unattributed line is collected. Unattributed lines can be collected regardless of whether an area feature has a symbolized perimeter or not. If the perimeter of an area is always symbolized in a particular way, the line symbol can be derived from the area feature and no specific line coding is required.

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A closure line is used where it is necessary to separate polygons that represent different hydrographic features when the separation is not explicitly indicated on the graphic. For example, in order to separate a stream polygon from a lake polygon, a closure line is collected where the double-line stream enters the lake.

Closure lines are required whenever flow is collected from one water body to another. For example, a closure line is collected where a double-line stream flows into another double-line stream and left bank and right bank are collected to indicate flow. Closure lines between like features are not necessary when flow is not coded. For example, no closure line is collected where two sections of double-line ditch connect with one another, if the direction of flow cannot be determined and the banks of both sections of ditch are coded as shoreline or manmade shoreline rather than left bank and right bank.

Closure lines are not used to close small gaps in linear features where the symbology has been broken on the map, although they have been used in this way in the past. In most cases, the symbology has been intentionally broken, because the feature is not visible on the earth's surface. In particular, map editors took great care to ensure that the dash and dot pattern of an intermittent stream, symbol 405(A), was adjusted to clearly indicate stream junctions. For example, editors made sure that intermittent streams started, and joined other streams, with the dash portion of the symbol, and that the dot portion of the symbol did not occur at sharp bends or other places where it might be confusing. If a gap is clearly the result of a scribing or registration error, and not an intentional break in the symbology, then the gap is ignored and the hydrographic feature is collected as a continuous line through the gap.

The closure line code is not assigned to the line segment digitized across the gap created where the symbol for an underpassing feature is broken back from the symbol of an overpassing feature, although it has been used in this way in the past. Instead, the line segment is assigned the underpassing code (050 0617) and the code or codes of the hydrographic feature.

If a feature collected as an area is intermittent, the intermittent code (050 0610) is applied only to the area, not to the line that bounds the area.

→ See section 3.2.1.2 and Appendix 3.2.A for information on how to attribute lines around specific areas. See the description for closure line (050 0202) for more information on the use and placement of these lines. ←

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3.2.1.4 Single-Point Attribute Codes

There are no general principles that apply to the single-point attribute codes.

3.2.1.5 General Purpose Attribute Codes

Hydrographic features that are symbolized as single-line are collected as lines, whereas features that are symbolized as double-line are collected as areas.

3.2.1.6 Descriptive Attribute Codes



The descriptive attribute codes for right bank (050 0605) and left bank (050 0606) are used instead of the earthen definite shoreline code (050 0200) on double-line features where flow is collected. For all other shoreline characteristics, the right bank and left bank codes are used in addition to the appropriate shoreline code.

3.2.1.7 Parameter Attributes

There are no general principles that apply to the parameter attribute codes.



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3.2.1.8 List of Hydrography Attribute Codes

- o Node attribute codes
  - 050 0001 Upper origin
  - 050 0002 Upper origin at water body
  - 050 0003 Sink
  - 050 0004 Entering water body
  - 050 0005 Exiting water body
  
- o Area attribute codes
  - 000 0000 Outside area
  - 050 0100 Alkali flat
  - 050 0101 Reservoir
  - 050 0102 Covered reservoir
  - 050 0103 Glacier or permanent snow field
  - 050 0104 Salt evaporator
  - 050 0105 Inundation area
  - 050 0106 Aquaculture pond
  - 050 0107 Industrial water impoundment
  - 050 0108 Area to be submerged
  - 050 0109 Sewage disposal pond
  - 050 0110 Tailings pond
  - 050 0111 Marsh, wetland, swamp, or bog
  - 050 0112 Mangrove area
  - ~~050 0113 Rice field~~
  - 050 0114 Cranberry bog
  - 050 0115 Flat (tidal, sand, gravel, mud, etcetera)
  - 050 0116 Bay, estuary, gulf, ocean, or sea
  - 050 0117 Shoal
  - 050 0118 Soda evaporator
  - 050 0119 Duck pond
  - 050 0120 Void area
  - 050 0121 Obstruction area in water area
  - 050 0122 Gut
  - 050 0123 Drydock chamber
  - 050 0124 Filtration pond
  - 050 0125 Foul ground
  - 050 0126 Mine danger area
  
- o Line attribute codes
  - 050 0200 Shoreline
  - 050 0201 Manmade shoreline
  - 050 0202 Closure line
  - 050 0203 Indefinite shoreline
  - ~~050 0204 Apparent limit~~
  - 050 0205 Outline of a Carolina bay

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050 0206 Limiting danger line  
050 0207 Apparent shoreline  
050 0208 Sounding datum  
050 0209 Low-water line  
050 0210 Airboat trail  
050 0299 Processing line

o Single-point attribute codes

050 0300 Spring  
050 0301 Nonflowing well  
050 0302 Flowing well  
050 0303 Riser  
050 0304 Geyser  
050 0305 Windmill  
~~050 0306 Cistern~~

o General purpose attribute codes

050 0400 Rapids  
050 0401 Falls  
~~050 0402 Gravel pit or quarry filled with water~~  
050 0403 Gaging station  
050 0404 Pumping station  
050 0405 Water intake  
050 0406 Dam or weir  
050 0407 Lock chamber  
050 0408 Spillway  
050 0409 Gate  
050 0410 Rock  
050 0411 Crevasse  
050 0412 Stream  
050 0413 Braided stream  
050 0414 Ditch or canal  
050 0415 Aqueduct or pipeline  
050 0416 Flume  
050 0417 Penstock  
050 0418 Siphon  
050 0419 Channel  
050 0420 Wash  
050 0421 Lake or pond  
050 0422 Reef  
050 0423 Sand in open water  
050 0424 Spoil area, dredged area, or dump area  
050 0425 Fish ladder  
050 0426 Holiday area

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o Descriptive attribute codes

050 0601 Underground  
050 0602 Overpassing  
050 0603 Elevated  
050 0604 Tunnel  
050 0605 Right bank  
050 0606 Left bank  
050 0607 Under construction  
050 0608 Salt  
050 0609 Unsurveyed  
050 0610 Intermittent  
~~050 0611 Abandoned or discontinued~~  
050 0612 Submerged or sunken  
~~050 0613 Wooded~~  
050 0614 Dry  
050 0615 Mineral or hot  
~~050 0616 Navigable - transportation~~  
050 0617 Underpassing  
050 0618 Earthen construction (Limited Update Digital  
Revision)  
~~050 0619 Interpolated elevation~~  
050 0620 Decimal fraction of 0.0 feet or meters  
050 0621 Decimal fraction of 0.1 feet or meters  
050 0622 Decimal fraction of 0.2 feet or meters  
050 0623 Decimal fraction of 0.3 feet or meters  
050 0624 Decimal fraction of 0.4 feet or meters  
050 0625 Decimal fraction of 0.5 feet or meters  
050 0626 Decimal fraction of 0.6 feet or meters  
050 0627 Decimal fraction of 0.7 feet or meters  
050 0628 Decimal fraction of 0.8 feet or meters  
050 0629 Decimal fraction of 0.9 feet or meters  
050 0630 Boulders  
050 0631 Sand  
050 0632 Gravel  
050 0633 Rock (flat or reef)  
050 0634 Mud  
050 0635 Shell  
050 0636 Coral  
050 0637 Tide  
050 0639 Undredged

o Parameter attribute codes

050 0000 Photorevised feature  
051 ---- Water surface elevation, whole feet, 9999 or less  
052 ---- Water surface elevation, whole meters  
~~053 0 --- Angle of rotation~~  
054 ---- Water surface elevation, whole feet, greater than  
9999

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056 ---- Water surface elevation, whole feet below datum  
057 ---- Water surface elevation, whole meters below datum  
055 0--- River mile mark  
~~058 0000 Best estimate of classification or position~~  
~~059 00-- Coincident feature~~

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3.2.2 Node Attribute Codes

050 0001 Upper origin

This code identifies the node at the uppermost origin of a single-line hydrographic feature. This code is used only at the true beginning of a watercourse, where it first appears on the map; it is not used where one hydrographic feature diverges from another, or where a particular name first appears. Do not use this code for a single-line feature that originates at a water body (see code 050 0002).

Use this code in conjunction with code 050 0300 if a single-line hydrographic feature originates at a spring.

050 0002 Upper origin at water body

This code identifies the node where a single-line hydrographic feature originates either within the limits of, or at the point of exit from, a water body. It is not used to identify any subsequent exits from water bodies further downstream (see code 050 0005).

When a single-line hydrographic feature is shown beginning within, rather than at, a water body, this code is applied only to the beginning point, not to the point where the feature crosses the perimeter of the water body.

050 0003 Sink

This code identifies the definite point where a single-line or double-line hydrographic feature disappears. This code is used only if the sink is shown by symbols 407(A), 141.8(B), 541.12(C), or 2202.04(D), or labeled "Stream Disappears."

On a single-line feature, digitize a node at the apex of the sink symbol, where it intersects the stream, and assign the node this code. On a double-line feature, digitize a line across the end of the feature and assign the line this code.

050 0004 Entering water body

This code identifies the node where a single-line hydrographic feature enters a water body, or ends within the limits of a water body. (This includes the node

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where a single-line hydrographic feature widens to a double-line hydrographic feature.)

When a single-line hydrographic feature is shown ending within, rather than at, a water body, this code is applied only to the end point, not to the point where the feature crosses the perimeter of the water body.

050 0005 Exiting water body

This code identifies the node where a single-line hydrographic feature exits a water body, or begins within the limits of a water body, other than the upper origin (see code 050 0002). (This includes the node where a double-line hydrographic feature narrows to a single-line hydrographic feature.)

When a single-line hydrographic feature is shown beginning within, rather than at, a water body, this code is applied only to the beginning point, not to the point where the feature crosses the perimeter of the water body.

3.2.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

050 0100 Alkali flat

This code identifies an area shown by symbols 450(A), 141.16(B), 541.28(C), or 2203.08(D). Generally labeled "Alkali flat."

The outline of the area is unattributed.

050 0101 Reservoir

This code identifies a constructed basin as shown by symbols 179(A), 112.6(B), or 512.61(C). May be labeled.

The outline of the area is coded shoreline (050 0200) or manmade shoreline (050 0201).

Do not use this code for an artificially impounded water body with a predominantly natural shoreline (see code

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050 0421). See "Feature Classification and Delineation" in section 3.2.1 for more information.

050 0102 Covered reservoir

This code identifies an area shown by symbols 180(A), 512.62(C), or 2106.08(D). Generally labeled "Reservoir," but may be named.

The outline of the area is unattributed.

This code does not apply to 1:100,000-scale maps.

050 0103 Glacier or permanent snowfield

This code identifies an area shown by symbols 428, 429, 430 (A); 141.27, 141.28 (B); 541.43, 541.44, 541.45 (C); or 2205.04(D).

The outline of the area is unattributed.

050 0104 Salt evaporator

This code identifies each section of a salt evaporator shown by symbols 439(A), 141.15(B), 541.27(C), or 2205.10(D). Must be labeled "Salt Evaporator."

The outline of the area and any internal separators are unattributed.

050 0105 Inundation area

Inundation areas, which are lands subject to flooding, may be either controlled or uncontrolled.

Controlled inundation areas, shown by symbols 448(A), 141.38(B), or 541.56(C), have structures, such as dams or embankments, to control the water and inundate specific areas. Controlled inundation areas include debris basins, dewatering areas, percolator basins, retarding basins, and spreading grounds, as well as the area between the normal operating level and the high water line in lakes impounded by dams. If the high water line is labeled with an elevation value, the elevation parameter code is also assigned to the area. The outline of a controlled inundation area is unattributed.

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Uncontrolled inundation areas include areas along the coast where flooding is natural and periodic, as shown in the description following symbol 454(A), 146.1(B), or 546.1(C). Only the low-water line of the uncontrolled inundation area is coded (see code 050 0209). The line for the approximate limit of flooding is unattributed.

050 0106 Aquaculture pond

This code identifies an area used for production of finfish, shellfish, or aquatic plants. These areas may be shown by a variety of treatments generally similar to that for fish hatchery, which is shown by symbols 179(A), 112.6(B), 512.61(C), or 2205.11(D). Must be labeled to indicate that it is an aquaculture site, but the label may vary depending on the species and the controlling agency. Includes fish hatchery, fish farm, minnow pond, catfish farm, crayfish farm, shrimp farm, watercress pond.

The outline of the area and any internal separators are unattributed.

Fish ponds, which are shown in the ocean on maps of Hawaii, are not collected in the DLG.

050 0107 Industrial water impoundment

This code identifies a basin for the storage or treatment of water related to industrial use. Common labels include "Industrial Waste Pond," "Cooling Pond," "Fly Ash Pond," "Clarification Pond," "Settling Basin." If unlabeled, may still be identifiable as an industrial water impoundment because of proximity to an industrial site.

The outline of the area and any internal separators are unattributed.

050 0108 Area to be submerged

This code identifies an area shown by symbols 702(A); 141.39(B); 541.57(C); 2108.02 or 2203.07 (D). This symbol is used when a dam is under construction and the limits of the intended reservoir are known. If the high water line is labeled with an elevation value, the elevation parameter code is also assigned to the area.

The outline of the area is unattributed.

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All features shown within the area to be submerged are collected in the appropriate category. Any hydrographic features collected as areas within the area to be submerged are assigned this code in addition to all other appropriate codes. For example, a double-line stream within an area to be submerged is coded 050 0412 and 050 0108.

050 0109 Sewage disposal pond

This code identifies an area related to the treatment of sewage, which may be shown by symbols 178(A); 112.5,(B); 512.59(C); or 2205.12, 2205.13 (D). Generally labeled "Sewage Disposal Pond." If unlabeled, may still be identifiable as a sewage disposal pond because of proximity to a sewage disposal plant.

The outline of the area and any internal separators are coded shoreline (050 0200) or manmade shoreline (050 0201).

050 0110 Tailings pond

This code identifies an area shown by symbols 323(A), 134.2(B), 538.1(C), or 2112.05(D). Generally labeled "Tailings Pond."

The outline of the area is unattributed.

050 0111 Marsh, wetland, swamp, or bog

This code identifies an area shown by symbols 431(A), 143.1(B), 543.1(C), or 2205.05(D).

Any portion of a wetland that is overprinted with blue as in symbols 433(A), 143.2(B), 543.2(C), or 2205.06(D), or is overprinted with both blue and green as in symbols 143.4(B) or 543.4(C), is also coded submerged or sunken (050 0612). The green tint indicates woods, which are collected in the Vegetative Surface Cover category.

Wetlands less than or equal to 0.10 inches in length may be shown on the graphic, but they are not collected in the DLG.

The outline of the area, which follows the edge of the pattern or open window negative, is unattributed.

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050 0112 Mangrove area

This code identifies an area shown by symbols 437(A); 144.1(B); 544.1(C); or 2205.08, 2402.06 (D).

The outline of the area, which follows the edge of the pattern or open window negative, is unattributed.

~~050 0113 Rice field~~

This feature is no longer collected.

050 0114 Cranberry bog

This code identifies an area shown by symbols 438(A), 141.36(B), 541.49(C), or 2205.09(D). Must be labeled "Cranberry Bog."

The outline of the area is unattributed. Internal separators may be shown on the map, but are not collected in the DLG.

050 0115 Flat (tidal, sand, gravel, mud, etcetera)

This code identifies a number of features that fall into the general category of flat (foreshore flats, areas that uncover within or alongside reefs, and the area between the shoreline and sounding datum line on topographic-bathymetric editions). On topographic editions, these features are shown by symbols 232(A), 517.1(C), or 2113.01(D). On topographic-bathymetric editions, flats are shown by symbols 135.7(B) or 535.10(C).

Areas that uncover within or alongside reefs, which may be shown by either black sand pattern or brown tint, depending on whether the edition is topographic or topographic-bathymetric, are collected as flats. If a reef encircles an area and the closed portion of the reef symbol points outward, then the area within the reef uncovers (even though it may be shown with the blue water symbology); digitize the area within the reef and assign it the flat code. Do not add the code for the larger hydrographic feature in which the flat occurs, since the blue tint should have been cleared within the reef.

Except as just noted, any area of flat overprinted with blue tint is also assigned the code of the larger hydrographic feature in which it occurs.

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If the area is labeled boulder, sand, gravel, rock, mud, shell, or coral, also add the appropriate descriptive code (see codes 050 0630 through 050 0636).

Do not apply this code to sand dunes, sand in open water (see 050 0423), or beach areas on dry land.

The outline of the area is coded shoreline (050 0200), apparent shoreline (050 0207), sounding datum line (050 0208) or reef (050 0422). If the outline of the area is not symbolized, it is unattributed.

050 0116 Bay, estuary, gulf, ocean, or sea

This code identifies a seaward area of water.

Where a double-line stream enters a bay, estuary, gulf, ocean, or sea, a closure line (050 0202) is digitized to separate the stream from the seaward area of water. The line is placed where the conformation of the land and water make the division obvious, or, if no division is obvious, where the stream reaches a width of 1 nautical mile (6,080 feet) with no further constrictions.

Where a gut adjoins a bay, estuary, gulf, ocean, or sea, a closure line (050 0202) is digitized to separate the gut from the seaward area of open water.

The outline of the area is coded shoreline (050 0200), manmade shoreline (050 0201), apparent shoreline (050 0207), sounding datum (050 0208), low-water line (050 0209), or closure line (050 0202).

This code is not used for named bays on streams and lakes. Such embayments are simply collected as part of the stream or lake on which they occur.

050 0117 Shoal

This code identifies a shoal area shown by symbols 243(A), or 512.142(C). Generally named, but may be labeled.

When collecting from topographic editions, the outline of the area is coded limiting danger line (050 0206). When collecting from topographic-bathymetric editions, the outline of the area, which is indicated by a bathymetric contour, is collected as an unattributed line.

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The shoal area is also assigned the code of the larger hydrographic feature in which it occurs.

This code does not apply to 1:100,000-scale maps.

050 0118 Soda evaporator

This code identifies each section of an evaporator shown by symbols 439(A), 141.15(B), 541.27(C), or 2205.10(D). Must be labeled "Soda Evaporator."

The outline of the area and any internal separators are unattributed.

050 0119 Duck Pond

This code identifies an area shown by symbols 141.17(B), or 541.29(C). Must be labeled "Duck Pond."

The outline of the area and any internal separators are unattributed.

050 0120 Void area

The area beyond the national boundary is usually coded as a void area to distinguish it from the background area. The outline of the void area is unattributed, unless it is defined by a symbolized feature in the Hydrography category. If a national boundary is based on the position of a double-line stream, collect both banks of the stream and code the area between as Stream (050 0412).

050 0121 Obstruction area in water area

This code identifies an obstruction area in a water area shown with a double dashed line as in symbols 245(A), 512.143(C), or 2113.06(D). Must be labeled "Cable Area," "Pipeline Area," "Cable-Pipeline Area," or "Pipeline Obstruction Area."

The portion of the outline of the area that is shown with the dashed symbology is unattributed, and closure lines (050 0202) are collected to close off the open end or ends. The obstruction area is also assigned the code of the larger hydrographic feature in which it occurs.

This code does not apply to 1:100,000-scale maps.

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050 0122 Gut

A gut is a channel that is influenced by the tide of the body of water into which it flows, and within which the direction of water flow alternates with the rise and fall of the tide. Although some portion of almost every hydrographic feature that connects to a bay, estuary, gulf, ocean, or sea technically meets this definition, this code is only used in coastal areas where the non-tidal direction of flow cannot be determined readily and confidently. These are generally fairly extensive areas of marsh, wetland, swamp, or bog (050 0111) and/or low-lying land, intersected by a network of interconnecting water bodies. Named bayous, legs, narrows, slough, slues, creeks, inlets, or passages are often indicators of tidal influence on direction of flow.

The landward extent of a gut is wherever the direction of flow can be determined readily and confidently. This is typically at or near the lowest contour. Where a double-line stream enters a gut a closure line (050 0202) is digitized to separate the stream from the gut.

The seaward extent of a gut is where open water begins. A closure line is digitized to separate the gut from the bay, estuary, gulf, ocean, or sea.

Typically a gut is collected as a single fairly extensive area; the shoreline around all of the interconnecting water bodies is collected and the entire water area is collected as a single area. The individual water bodies and channels within a gut are not closed off from one another, unless they are features distinct from the gut. For example, the pipeline canals shown on maps of gulf coast oil fields must be closed off from the surrounding gut and collected as ditch or canal (050 0414).

The outline of the area is coded shoreline (050 0200), manmade shoreline (050 0201), apparent shoreline (050 0207), sounding datum (050 0208), low-water line (050 0209), or closure line (050 0202).

050 0123 Drydock chamber

A drydock consists of a rectangular basin, a gate, and various walls. This code identifies only the drydock chamber, which is collected as an area. The gate at the end of the drydock chamber is collected as a line using code 050 0409; this line connects the side walls and

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passes through the apex of the gate symbol. If the side walls are parallel to one another, this line is perpendicular to the sidewalls. However, if the side walls are not parallel to one another, this line is parallel to an imaginary line that passes through the endpoints of both legs of the gate symbol. The walls that form the chamber of the drydock, shown on the map with black lines, are collected as manmade shoreline (050 0201).

The drydock chamber is also assigned the code of the larger hydrographic feature in which it occurs.

050 0124 Filtration pond

This code identifies an area related to purification and distribution of water, which may be shown by symbols 178(A), 112.5(B), 512.59(C), or 2205.13(D). Generally labeled "Filtration Pond" or "Filtration Bed." If unlabeled, may still be identifiable as a filtration pond because of proximity to a filtration plant or waterworks.

The outline of the area and any internal separators are unattributed.

050 0125 Foul ground

This code identifies an area shown by a treatment similar to that in symbol 240(A), where the holding qualities for an anchor are poor, or where danger exists of striking or fouling the ground or other obstructions. Must be labeled "Foul Ground" or "Foul Area."

The outline of the area, which is indicated by a bathymetric contour, is collected as an unattributed line.

The foul ground area is also assigned the code of the larger hydrographic feature in which it occurs.

This code is used only when collecting from topographic-bathymetric editions. This code does not apply to 1:100,000-scale maps.

050 0126 Mine danger area

This code identifies an area having a danger from unexploded ordnance. The symbolization is similar to

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that for shoal area--see symbols 243(A), or 512.142(C). Must be labeled to indicate danger from explosives.

The outline of the area, which is indicated by a bathymetric contour, is collected as an unattributed line.

The mine danger area is also assigned the code of the larger hydrographic feature in which it occurs.

This code is used only when collecting from topographic-bathymetric editions. This code does not apply to 1:100,000-scale maps.

3.2.4 Line Attribute Codes

050 0200 Shoreline

This code identifies a natural shoreline shown by symbols 400(A), 141.1(B), 541.1(C), or 2203.01(D). This code is also used to define the shorelines of double-line streams and ditches when the direction of flow cannot be determined (when direction of flow can be determined, use codes 050 0605 and 050 0606, rather than this code).

050 0201 Manmade shoreline

This code identifies a constructed shoreline shown by a black line.

Although breakwaters, jetties, piers, docks, causeways, and wharfs are collected in the Manmade Features category (see code 200 0466) any portion of a single-line breakwater, jetty, pier, dock, causeway, or wharf that defines the shoreline (that is, has water on one side and land on the other) is assigned the manmade shoreline code. When a breakwater, jetty, pier, dock, causeway, or wharf is collected as an area, any portion of the outline that is symbolized as manmade shoreline is collected as manmade shoreline. Although covered piers and wharfs are collected in the Manmade Features category as buildings (general case), any portion of the perimeter of a covered pier or wharf that bounds water is collected as manmade shoreline.

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050 0202 Closure line

This codes identifies a line segment digitized to form the closure of an areal feature whose outline is not explicitly symbolized. The most common uses of closure lines are to separate two or more areas that must be assigned different sets of attribute codes, and to separate double-line hydrographic features that flow into one another and are coded with right and left bank. For example, a closure line is used wherever a double-line stream enters a lake or pond, or a bay, estuary, gulf, ocean, or sea, or wherever a double-line stream enters another double-line stream (if either of the streams is coded with right and left bank).

Digitize a closure line across the water body from one shoreline to the other shoreline at the place where it appears that one water body flows into the next. In complex areas, where it may not be clear which of one or more branches flows into the other, it does not matter which branch is closed with the closure line; select one.

A closure line is also digitized to close off areas that have only a portion of the perimeter symbolized when the symbolized portion is collected as an unattributed line and the unsymbolized portion has not been suppressed because of symbol conflict with a higher order feature. For example, a channel is shown by dashed lines along its length; the channel ends are left unsymbolized. The portrayed dashed lines are collected as unattributed lines and the ends of the area are closed off with closure lines.

050 0203 Indefinite shoreline

This code identifies a line shown by symbols 401, 415 (A); 141.3(B); 541.3(C); or 2203.02(D), which indicates that the shoreline cannot be definitely established. Note that on 1:24,000-scale quads compiled using older Part 6 symbology, the same symbol which is now used for indefinite shoreline was used for both indefinite shoreline and the shoreline of intermittent water bodies. Only apply this code to the outlines of areas as indicated in Appendix 3.2.A, and do not apply this code to the outline of intermittent or dry water bodies.

~~050 0204 Apparent limit~~

This code is no longer used.

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050 0205 Outline of a Carolina bay

This code identifies the outline of a Carolina bay as shown by symbols 401(A), 141.7(B), 541.17(C), or 2205.19(D).

A Carolina bay is always collected as a line, even if the outline forms a closed ellipse, so the interior area is not assigned an attribute code unless it is a hydrographic feature in its own right. Because a Carolina bay is not collected as an area the codes for upper origin at water body (050 0002), entering water body (050 0004), and exiting water body (050 0005) are not used in conjunction with this feature.

050 0206 Limiting danger line

This code identifies a line which represents the limit of an area considered to be dangerous for navigation. An example is shown by symbol 244(A). This code is used only when collecting from topographic editions; on topographic-bathymetric editions bathymetric contours indicate the extent of areas dangerous for navigation.

Only limiting danger lines related to rocks (050 0410), shoals (050 0117), and wreckage (which is collected in the Manmade Features category using codes 200 0467 and 200 0468) are collected. See the individual coding description for instructions on collecting the feature within the limiting danger line.

The area within a limiting danger line is also assigned the code of the larger hydrographic feature in which it occurs.

050 0207 Apparent shoreline

This code identifies a line shown by symbols 141.2(B) or 541.2(C), which represents a coastal shoreline in areas of marsh, grass, mangrove, or other similar marine vegetation. This symbol is shown at the outer edge of vegetation, instead of the mean high-water line.

This code is used only when collecting from topographic-bathymetric editions.

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050 0208 Sounding datum

This code identifies a line shown by symbols 141.40(B) and 541.59(C), which represents the starting elevation (0) for bathymetric contours and is the mean lower low-water line.

This code is used only when collecting from topographic-bathymetric editions.

050 0209 Low-water line

This code identifies a line shown by symbol 546.1(C), which represents the mean low-water or mean lower low-water line. The low-water line is shown as the lower limit of uncontrolled inundation areas in flat coastal areas where natural and periodic flooding occurs and the high water line cannot be located.

050 0210 Airboat trail

This codes identifies a line shown by symbols 141.9(B) and 541.16(C). Generally named, but may be labeled "Airboat Trail."

Canoe trails or wilderness waterways, also shown by these symbols, are not collected in the DLG.

050 0299 Processing line

This code is described in section 3.0.6.3.

3.2.5 Single-Point Attribute Codes

050 0300 Spring

This code identifies a spring shown by symbols 427(A), 141.25(B), 541.40(C), or 2205.03(D). Must be labeled "Spring."

The spring is digitized at the center of the circular part of the symbol, and the tail is ignored. Unless the center of the circle falls directly on a line collected in this category, the spring is collected as a degenerate line. When the spring falls directly on a stream it is collected as a node, and the general alignment of the

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stream, rather than the tail symbol, is followed when digitizing the stream.

Use this code in conjunction with code 050 0001 if the spring is the upper origin of the stream.

050 0301 Nonflowing well

This code identifies a well shown by symbols 426(A), 141.26(B), 541.39(C), or 2205.02(D). Must be labeled "Well."

050 0302 Flowing Well

This code identifies a well shown by symbols 426(A), 141.26(B), 541.39(C), or 2205.02(D). Must be labeled "Flowing Well" or "Artesian Well."

050 0303 Riser

A riser is a vertical overflow pipe controlling the water level in a reservoir, and is shown by symbols 198(A), 112.1(B), 512.72(C), or 2111.03(D). Must be labeled "Riser."

050 0304 Geyser

This code identifies a special type of spring that ejects hot water or steam periodically, shown by symbols 426, 427(A), 141.25, 141.26 (B), 541.39, 541.40 (C), or 2205.02, 2205.03 (D). Must be labeled "Geyser," "Gas Vent," "Mud Pot," "Fumarole," or "Steam Vent."

050 0305 Windmill

This code identifies a windmill shown by symbols 199(A), 112.3(B), 512.69(C), or 2111.04(D). If the label indicates the well is dry or salt, also assign code 050 0608 or 050 0614.

The windmill is digitized at the point where the arms of the symbol cross, or on older symbology, at the center of the circle.

~~050 0306 Cistern~~

This feature is no longer collected.

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3.2.6 General Purpose Attribute Codes

050 0400 Rapids

This code identifies a rapids shown by symbols 442, 443 (A); 141.31, 141.32 (B); 541.53, 541.54 (C); or 2205.16, 2205.17 (D). Generally labeled "Rapids," but may be named.

On a single-line stream, if the upstream and downstream tick are less than 0.02 inch apart, collect the rapids as a node equidistant between the ticks. If the upstream and downstream tick are 0.02 inch or more apart, or if several ticks (often irregularly spaced) are shown, the rapids is collected as a line, by assigning the section of stream between the ticks this code in addition to the stream code (050 0412). Use your best judgement in determining whether to collect a particular section of stream as a single long rapids or a series of short rapids. Factors to consider include the distance between ticks, and the placement of the "Rapids" label.

On a double-line stream, a rapids is always collected as an area. If the rapids extends completely across the stream, unattributed lines are digitized from bank to bank along the upstream and downstream edges of the rapids. If the rapids does not extend completely across the stream, an unattributed line is digitized along the extent of the rapids. The banks of the stream are collected as right and left bank, shoreline, manmade shoreline, or indefinite shoreline, as appropriate. The rapids area is also assigned the stream code (050 0412).

050 0401 Falls

This code identifies a falls shown by symbols 440, 441 (A); 141.29, 141.30 (B); 541.51, 541.52 (C); or 2205.14, 2205.15 (D). Generally labeled "Falls," but may be named.

On a single-line stream, a falls is collected as a node. On a double-line stream, a falls is collected as a line that extends from one shoreline to another. If the falls is symbolized by a pattern of ticks parallel to the shore, as in symbols 440(A), 141.29(B), 541.51(C), or 2205.14(D), the line is digitized along the upstream edge of the pattern of ticks.

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~~050 0402 Gravel pit or quarry filled with water~~

A gravel pit or quarry filled with water is collected as a lake or pond (050 0421). This code is no longer used.

050 0403 Gaging station

This code identifies a gaging station, shown by symbols 200(A), 112.45(B), 512.113(C), or 2111.05(D).

If the center of the symbol falls directly on a line collected in this category, the gaging station is collected as a node. Otherwise, the gaging station is collected as a degenerate line.

If the gaging station is labeled "Tide Gage" or "Tidal Gage," also apply code 050 0637.

050 0404 Pumping station

A pumping station may be shown as an individual building, or a group of structures. Must be named or labeled to indicate it is a pumping station.

Use this code only for pumping stations associated with water (canals or ditches). Pumping stations associated with oil or gas are collected in the Pipelines, Transmission Lines, and Miscellaneous Transportation Features category.

A pumping station is collected as a degenerate line if the area occupied by the individual building or group of structures is less than 120 feet in the shortest dimension. If the area occupied is 120 feet or more in the shortest dimension, it is collected as an area. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

Do not collect individual pumps shown with a circle or a located object symbol.

050 0405 Water intake

This code identifies a water intake shown by a variety of treatments. It may be shown by the located object symbol, 198(A), 512.72(C), or 2111.03(D), or by a small

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outlined perimeter, either at the end of a pipeline, or by itself in open water. The intake itself, or the pipeline, may be labeled "Water Intake," "Waterworks Intake," or "Intake." The actual intake at the end of the pipeline may not be symbolized at all. Regardless of how it is shown, collect the intake as a degenerate line in open water, or as a node at the end of the pipeline. The pipeline itself is collected using code 050 0415.

This code does not apply to 1:100,000-scale maps.

050 0406 Dam or weir

This code identifies a feature shown by symbols 152, 153, 155 (A); 112.63, 112.65 (B); 511.20, 512.35, 512.37 (C); or 2108.01, 2108.02, 2108.04 (D). Generally labeled "Dam," "Weir," or "Diversion Weir," but may be named.

When shown as a single-line, the feature is collected as a line, and assigned this code. If the feature is carrying a road, as in symbols 155(A); 112.65(B); 511.20, 512.37 (C); or 2108.04(D), digitize it as the centerline equidistant between the two road casings.

When shown to scale, the feature is collected as an area. The portion of the outline of the area that bounds water is coded manmade shoreline (050 0201), and the remainder of the outline is unattributed.

The radiating lines within symbol 153(A) are not digitized.

When an earthen dam is shown by symbol 132.14(B), digitize a line along the dam and assign it the shoreline (050 0200) code. Dams of earthen construction shown by contours are collected only in the Hypsography category (except during limited update digital revision).

050 0407 Lock chamber

A lock consists of a rectangular basin, gates, and various walls. This code identifies only the lock chamber. The gates at either end of the lock chamber are collected as gate (050 0409). The walls that form the chamber and any other wall-like structures associated with the lock, and shown on the map with black lines, are collected as manmade shoreline (050 0201).

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If a single gate is shown on a single-line stream and labeled "Lock," the gate symbol represents both the lock chamber and its gates. Digitize a node and assign it this code.

If two gates (indicating the gates at both ends of the lock) are shown on a single-line stream and labeled "Lock," collect each gate as a node using code 050 0409 and collect the line between the gates, which is the lock chamber, using this code in addition to the stream socde (050 0412).

If the lock is shown to scale, digitize the lock as an area that is bounded by the gates on each end and by the walls that enclose the chamber. Use this code only on the area. Digitize each gate as a line using code 050 0409; this line connects the side walls and passes through the apex of the gate symbol. If the side walls are parallel to one another, this line is perpendicular to the side walls. However, if the side walls are not parallel to one another, this line is parallel to an imaginary line that passes through the endpoints of both legs of the gate symbol. Digitize the walls and other associated structures using code 050 0201 (manmade shoreline).

If the lock is shown to scale, but the lock is shown only by gates across a double-line stream (there are no symbolized sidewalls), digitize the lock as an area that is bounded by the gates on each end and by the shorelines of the stream. Use this code only on the area. Digitize each gate as a line using code 050 0409; this line connects the side walls and passes through the apex of the gate symbol. If the side walls are parallel to one another, this line is perpendicular to the side walls. However, if the side walls are not parallel to one another, this line is parallel to an imaginary line that passes through the endpoints of both legs of the gate symbol. Digitize the shorelines using codes 050 0605 and 050 0606.

When collected as an area, the lock chamber is also assigned the code of the larger hydrographic feature in which it occurs.

050 0408 Spillway

This code identifies a constructed passage for surplus water to run over or around a dam. Since a spillway may

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be shown by a variety of treatments and is not always labeled, considerable judgement may be involved in identifying and collecting this feature.

If shown by a small circle or dot, the feature is collected as a degenerate line. If shown by either a perennial or intermittent single-line hydrographic feature, it is collected as a line. If shown by a black outline, collect the feature as an area; any portion of the outline of the area that forms the shoreline of an adjacent water body is collected as manmade shoreline (050 0201), and the remainder of the outline of the area is unattributed. If shown as an integral part of the dam, collect the feature as a node on the digitized line of the dam.

If a spillway elevation is shown, add parameter code 05N ---- , which is used to encode the water surface elevation, to the node, point, line, or area.

If the label "Spillway Elevation NNNN," placed within the impounded water body, is the only indication that a spillway exists, do not collect a spillway; add the spillway elevation value to the impounded water body area instead. If another elevation value is shown for the impounded water body, do not collect the spillway elevation value.

A spillway shown by contours is collected only as contour in the Hypsography category, even if labeled. If a spillway elevation is shown, collect it as described in the preceding paragraph.

050 0409 Gate

This code identifies a variety of gates used to control or divert the flow of water. Common labels include "Lock," "Sluice," "Drydock," "Flood," "Tidal," "Head," or "Check."

If shown by a > pointing upstream on a single-line hydrographic feature collect as a node at the apex of the symbol, unless it is labeled "Lock." See code 050 0407 for collection of a lock chamber symbolized by a single gate. If shown by a straight tick or black line on a single-line hydrographic feature collect as a node where the tick or line crosses the feature.

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If shown by a > pointing upstream on a double-line hydrographic feature collect as a degenerate line at the apex of the symbol, unless it is a drydock gate or lock gate. If shown by a straight tick or black line on a double-line hydrographic feature, the entire extent of the tick or line is digitized and assigned this code.

A drydock gate or lock gate shown by a > on a areal hydrographic feature is collected as a line that connects the side walls of the drydock or lock on either side of the gate, and passes through the apex of the gate symbol. If the side walls are parallel to one another, this line is perpendicular to the side walls. However, if the side walls are not parallel to one another, this line is parallel to an imaginary line that passes through the endpoints of both legs of the gate symbol.

050 0410 Rock

This code identifies a rock shown by symbols 236, 237, 246 (A); 112.97, 112.99 (B); 512.136, 512.137, 512.158, 512.159, 512.160(C); or 2113.03(D), or an individual rock within a group of rocks shown by symbols 238(A); 112.98(B); 512.138, 512.159 (C); or 2113.04(D). Each rock is digitized as a degenerate line.

A sunken rock shown by symbols 246(A), 112.99(B), or 512.160(C) is also assigned descriptive code 050 0612.

If a dotted line is shown around a rock or rocks, as in symbols 236, 238 (A); old symbol 112.98(B); 512.136, 512.138 (C); or 2113.04(D), the line is collected as a limiting danger line (050 0206).

050 0411 Crevasse

This code identifies a crevasse shown by symbol 453(A).

If a crevasse field contains three or fewer crevasses, each individual crevasse is collected as a line. If a crevasse field contains four or more lines it is collected as an area. The outline of the field is unattributed.

This code does not apply to 1:100,000-scale maps.

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050 0412 Stream

This code identifies all naturally flowing water. Streams are shown by symbols 402 through 406, 408 (A); 141.4 through 141.6 (B); 541.4 through 541.9 (C); or 2202.01 through 2202.03, 2202.05 (D). See "Feature Classification and Delineation" in section 3.2.1 for guidance in distinguishing between a stream and a ditch or canal.

If shown as perennial, as in symbols 402, 403 (A), 141.4(B), 541.4, 541.5 (C), or 2202.01(D), this code is used alone. Any stream shown by these symbols is collected as a perennial stream, even if named or labeled as a wash.

If shown as intermittent, as in symbols 405, 406 (A), 141.6(B), 541.7, 541.8 (C), or 2202.02(D), add the descriptive code for intermittent (050 0610). Any stream shown by these symbols is collected as an intermittent stream, even if named or labeled as a wash.

If shown as unsurveyed, as in symbols 408(A), 141.5(B), 541.10, 541.11 (C), or 2202.05(D), add the descriptive code for unsurveyed (050 0609).

When a stream is collected as an area, the outline of the area is coded right bank (050 0605) and left bank (050 0606), shoreline (050 0200), manmade shoreline (050 0201), indefinite shoreline (050 0203), closure line (050 0202). (See section 3.2.1.3 on Line Attribute Codes for more information.)

A submerged stream within an impounded water body, shown by dashed blue lines, is digitized as a separate area and assigned this code and the descriptive code for submerged or sunken (code 050 0612). The outline of the area is unattributed, except for the open ends, which are collected as closure lines (050 0202).

050 0413 Braided Stream

This code identifies a braided stream, which is shown by a treatment generally similar to that in symbols 404(A), 541.6, 541.9 (C), or 2203.03(D).

Although a braided stream is typically perennial in nature, at its prevailing stage it does not entirely cover its bed. Instead, it flows in a number of sub-

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channels that expose island-like sand or gravel bars. The course of these sub-channels changes frequently.

This code is only used when the braiding involves at least five sub-channels, and covers an extensive area at least one-quarter mile in width and one mile in length.

The braided stream is collected as an area. The limit of the area on either side is the far bank of the outermost channel, or the limit of the sand or gravel stream bed, whichever extends furthest. These limiting lines are coded as right bank (050 0605) and left bank (050 0606). The upstream and downstream extent of the area is the point where the stream is unbraided, or insufficiently braided. The braided area is separated from a double-line stream using closure lines (050 0202). If the braided area occurs on a single-line stream, the nodes where the stream enters and exits the braided area are coded 050 0004 and 050 0005, respectively.

No streams (either single-line or double-line, intermittent or perennial) are collected within the braided area. The sand or gravel is collected in the Non-Vegetative Features category.

The descriptive code for intermittent (050 0610) is never used in conjunction with this code, regardless of how the braided stream is symbolized on the map.

050 0414 Ditch or canal

This code identifies any manmade, flowing water feature used for irrigation, drainage, or transportation shown by symbols 416 through 422 (A); 141.19, 141.20 (B); 541.31, 541.32 (C); or 2204.01 through 2204.06 (D). See "Feature Classification and Delineation" in section 3.2.1 for guidance in distinguishing between a stream and a ditch or canal.

The descriptive code for intermittent (050 0610) is never used in conjunction with this code, regardless of how the ditch or canal is symbolized on the map.

The only descriptive attribute codes used in conjunction with ditch or canal are underpassing (050 0617), overpassing (050 0602), elevated (050 0603), and tunnel (050 0604).

When a ditch or canal is collected as an area, the outline of the area is coded right bank (050 0605) and

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left bank (050 0606), shoreline (050 0200), manmade shoreline (050 0201), indefinite shoreline (050 0203), closure line (050 0202). (See section 3.2.1.3 on Line Attribute Codes for more information.)

If a canal is labeled "Pipeline Canal," the canal is collected using this code. The pipeline, which carries oil, is collected in the Pipelines, Transmission Lines, and Miscellaneous Features category.

050 0415 Aqueduct or pipeline

This code identifies features represented by symbols 416, 418, 419, 421, 423, 424, 425 (A); 141.19 through 141.23 (B); 541.31 through 541.36 (C); or 2204.01, 2204.03, 2204.04, 2204.06 through 2204.09 (D). Generally must be labeled "Aqueduct" or "Pipeline," but some pipelines associated with water intakes may be labeled "Water Intake," "Waterworks Intake," or "Intake." (See code 050 0405 for coding of the intake itself, which is collected even if only the pipeline is symbolized on the map.)

An aqueduct in a tunnel is shown by symbols 424(A), 141.23(B), 541.35(C), or 2204.08(D) regardless of size. The portion of the aqueduct that is in the tunnel is digitized as a line and assigned this code and the code for tunnel (050 0604). A feature shown by symbol 424(A) and labeled "Water Tunnel" is coded the same way.

The only other descriptive attribute codes used in conjunction with aqueduct or pipeline are underground (050 0601), overpassing (050 0602), elevated (050 0603), submerged or sunken (050 0612), and underpassing (050 0617).

Pipelines which carry gas or oil, shown in black on the map, are collected in the Pipelines, Transmission Lines, and Miscellaneous Transportation Features category.

If a canal is labeled "Pipeline Canal," it is collected as a ditch or canal (050 0414). The pipeline is collected in the Pipelines, Transmission Lines, and Miscellaneous Features category.

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050 0416 Flume

This code identifies a feature shown by symbols 416, 418, 419, 421, 423, 425 (A); 141.19, 141.21, 141.22 (B); 541.31 through 541.34, 541.36 (C); or 2204.01, 2204.03, 2204.04, 2204.06, 2204.07, 2204.09 (D). Must be labeled "Flume." A flume is an open, inclined, artificial channel.

No descriptive attribute codes are used in conjunction with flume.

050 0417 Penstock

This code identifies a feature shown by symbols 423, 425 (A); 141.21(B); 541.34, 541.36 (C); or 2204.07, 2204.09 (D). Generally labeled "Penstock." If unlabeled, may still be identifiable based on context; a penstock is pipe conveying water from a canal or a dam into the turbine of a hydroelectric generating plant.

If a pipe that conveys water into the turbine of a hydroelectric generating plant is shown by symbols 424(A), 141.23(B), or 2204.08(D), collect it as an aqueduct or pipeline (050 0415) in a tunnel (050 0604), rather than a penstock.

050 0418 Siphon

This code identifies a feature shown by symbols 452(A), 141.21(B), 541.41(C), or 2205.18(D). Must be labeled "Siphon."

No descriptive attribute codes are used in conjunction with siphon.

050 0419 Channel

This code identifies a dredged channel shown by symbols 444(A); 112.94, 141.34 (B); or 512.154 through 512.156, 541.15 (C), or a named undredged channel shown by periodic labeling.

A dredged channel shown by parallel dashed lines is collected as an area. The symbolized portion of the outline of the area is unattributed. A closure line (050 0202) is digitized to close off any unsymbolized portion of the outline.

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050 0416 Flume

This code identifies a feature shown by symbols 416, 418, 419, 421, 423, 425 (A); 141.19, 141.21, 141.22 (B); 541.31 through 541.34, 541.36 (C); or 2204.01, 2204.03, 2204.04, 2204.06, 2204.07, 2204.09 (D). Must be labeled "Flume." A flume is an open, inclined, artificial channel.

No descriptive attribute codes are used in conjunction with flume.

050 0417 Penstock

This code identifies a feature shown by symbols 423, 425 (A); 141.21(B); 541.34, 541.36 (C); or 2204.07, 2204.09 (D). Generally labeled "Penstock." If unlabeled, may still be identifiable based on context; a penstock is pipe conveying water from a canal or a dam into the turbine of a hydroelectric generating plant.

If a pipe that conveys water into the turbine of a hydroelectric generating plant is shown by symbols 424(A), 141.23(B), or 2204.08(D), collect it as an aqueduct or pipeline (050 0415) in a tunnel (050 0604), rather than a penstock.

050 0418 Siphon

This code identifies a feature shown by symbols 452(A), 141.21(B), 541.41(C), or 2205.18(D). Must be labeled "Siphon."

No descriptive attribute codes are used in conjunction with siphon.

050 0419 Channel

This code identifies a dredged channel shown by symbols 444(A); 112.94, 141.34 (B); or 512.154 through 512.156, 541.15 C), or a named undredged channel shown by periodic labeling.

A dredged channel shown by parallel dashed lines is collected as an area. The symbolized portion of the outline of the area is unattributed. A closure line (050 0202) is digitized to close off any unsymbolized portion of the outline.

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Any portion of a named waterway (generally the Intracoastal Waterway) that is undredged, and therefore shown only by periodic labeling, is collected as a line and assigned both this code and the undredged descriptive code (050 0639). The line is digitized following the course of the waterway and passing through the center line of the periodic occurrences of the label.

On topographic editions, a channel area is shown with blue tint, and is therefore, also assigned the code of the larger hydrographic feature in which it occurs. On topographic-bathymetric editions, a channel area is cleared of tint, and therefore, is not assigned the code of the larger hydrographic feature in which it occurs.

This code does not apply to the course of a submerged river in an impounded water body (see code 050 0412).

050 0420 Wash

This code identifies a wash, which is a portion of a stream bed that is usually dry and contains water only during or after a rainstorm or snowmelt.

A single-line wash shown by an irregular dotted brown line (similar to a stipple pattern) is normally collected as a line. However, where a single-line wash is shown as a channel through an areal wash it is not collected in the DLG. Any feature shown by symbols 409(A), 141.6(B), 541.13(C), or 2202.06(D) is collected as an intermittent stream, even if named or labeled as a wash.

An areal wash is shown by brown sand pattern, as in symbols 317(A), 134.1(B), 534.3(C), or 2112.04(D). The outline of the area is unattributed.

Since a wash is never perennial, any feature named or labeled as a wash, but symbolized as perennial, is collected as a stream (050 0412) rather than a wash. If any perennial streams, or several interlacing intermittent streams, are shown running through an area of brown sand pattern, the area may be a braided stream (see code 050 0413), or it may be an area of sand adjacent to a stream (such sand is collected in the Non-Vegetative Features category).

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050 0421 Lake or pond

This code identifies a standing body of water with a predominantly natural shoreline. Lakes or ponds are shown by symbols 410, 411, 412, 414 (A); 141.12, 141.13, 141.14 (B); 541.23, 541.25, 541.26 (C); or 2203.03, 2203.04, 2203.05, 2203.06 (D). An artificially impounded water body with a predominantly natural shoreline is collected as a lake or pond, even if named or labeled as a reservoir or river. See "Feature Classification and Delineation" in section 3.2.1 for more information.

If shown as perennial, as in symbols 410(A), 141.12(B), 541.23(C), or 2203.03(D), this code is used alone.

If shown as perennial salt, as in symbols 411(A), 141.12(B), 541.23(C), or 2203.04(D), add the descriptive code for salt (050 0608).

If shown as intermittent, as in symbols 412(A), 141.13(B), 541.26(C), or 2203.05(D), add the descriptive code for intermittent (050 0610).

If shown as dry, as in symbols 414(A), 141.14(B), 541.25(C), or 2203.06(D), add the descriptive code for dry (050 0614).

When a lake or pond is collected as an area, the outline of the area is coded shoreline (050 0200), manmade shoreline (050 0201), or indefinite shoreline (050 0203).

050 0422 Reef

This code identifies a reef shown by symbols 233, 234 (A); 135.8, 112.100 (B); 512.135, 512.161, 517.2, 517.3, 535.11 (C); or 2113.02(D). Except when collected as a degenerate line, a reef is collected as a line that connects the high points of the closed, outer portion of the reef symbol. The appropriate descriptive code is also added to the line to indicate whether the reef is rock (050 0633) or coral (050 0636).

Areas that uncover within or alongside reefs, which may be shown by either black sand pattern or brown tint, depending on whether the edition is topographic or topographic-bathymetric, are collected as flats (050 0115). In addition, if a reef encircles an area and the closed portion of the reef symbol points outward,

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then the area within the reef uncovers (even though it may be shown with the blue water symbology) and it is collected as flat. Do not add the code for the larger hydrographic feature in which the flat occurs, because the blue tint should have been cleared within the reef.

If a reef encircles an area and the closed portion of the reef symbol points inward, then the area within the reef shown with the blue water symbology is a reef pool and is assigned the code for the larger hydrographic feature in which the reef occurs.

050 0423 Sand in open water

The code identifies an area of sand in other than tidal waters, shown by symbols 322(A), 134.3(B), 534.4(C), or 2112.03(D).

Where collected as an area, the outline of the area is unattributed.

050 0424 Spoil area, dredged area, or dump area

This code identifies a feature shown by symbols 112.95(B) or 512.157(C), or by a dashed blue line. Must be labeled "Spoil Area," "Dredged Area," "Dump Area," or "Dump Site Area."

Where shown by a single dashed blue line that does not form a closed area, it is collected as a line. When shown by a single dashed blue line that does form a closed area, or by parallel dashed black lines, it is collected as an area.

Where collected as an area, the symbolized portion of the outline of the area is unattributed. A closure line (050 0202) is digitized to close off any unsymbolized portion of the outline of the area.

Because a spoil area, dredged area, or dump area is cleared of blue tint, the area is not assigned the code of the larger hydrographic feature in which it occurs.

This code is used only when collecting from topographic-bathymetric editions.

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050 0425 Fish ladder

This code describes a feature shown by symbol 512.39(C) or as a labeled section of a stream. Must be labeled "Fish Ladder."

When shown by symbol 512.39(C), the feature is collected as an area. The outline of the area is coded shoreline (050 0200) or manmade shoreline (050 0201). The area is not assigned the code of the larger hydrographic feature, because the fish ladder is not actually part of the feature. The channels connecting the fish ladder to the stream are collected as ditch or canal (050 0414).

If shown as a labeled section of a single-line stream, this feature is collected as a line. Unattributed nodes are digitized at the upstream and downstream limits of the ladder, and the segment of the stream between the nodes is assigned this code in addition to the stream code.

If shown as a labeled section of a double-line stream, this feature is collected as an area. The upstream and downstream limits of the ladder are digitized as unattributed lines, and the section of the stream between those lines is assigned this code. The banks of the stream are coded as right bank (050 0605) and left bank (050 0606). The area is also assigned the code of the larger hydrographic feature on which it occurs.

050 0426 Holiday area

This code identifies an area of inadequate or nonexistent survey data, shown by symbols 112.93(B) or 512.153(C). Must be labeled "Holiday Area" or "No Data."

The symbolized portion of the outline of the area is unattributed. A closure line (050 0202) is collected to close off any unsymbolized portion of the outline of the area.

Because a holiday area is cleared of blue tint, it is not assigned the code of the larger hydrographic feature in which it occurs.

This code is used only when collecting from topographic-bathymetric editions.

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3.2.7 Descriptive Attribute Codes

050 0601 Underground

This code describes a feature labeled "Underground," or an underground aqueduct or pipeline (050 0415) shown by symbols 423(A), 141.21(B), 541.34(C), or 2204.07(D).

050 0602 Overpassing

This code describes the portion of a feature that passes over rather than intersects another feature, as indicated by wing ticks as in symbols 425(A), 141.22(B), 541.36(C) or 2204.09(D). This code is used only where wing ticks are present, and the code is applied only to the portion of the hydrographic feature between the wing ticks. Wherever wing ticks are present, this code rather than the elevated code (050 0603) is used, even if the feature is labeled as elevated.

050 0603 Elevated

This code describes a ditch or canal (050 0414) or aqueduct or pipeline (050 0415) labeled "Elevated." If the portion of the feature labeled elevated is also indicated by wing ticks, as in symbols 425(A), 141.22(B), 541.36(C) or 2204.09(D), then use the overpassing code (050 0602) rather than this code.

050 0604 Tunnel

This code describes the portion of a feature that is carried through a tunnel, shown by symbols 424(A), 141.23(B), 541.35(C), or 2204.08(D), or by the label "Tunnel." Since a tunnel is by definition underground or underpassing, codes 050 0601 or 050 0617 are not added to the portion of a feature coded tunnel.

050 0605 Right bank

This code describes the limit of a double-line feature on the right side when facing downstream. It is used instead of shoreline code (050 0200).

050 0606 Left bank

This code describes the limit of a double-line feature on the left side when facing downstream. It is used instead of shoreline code (050 0200).

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050 0607 Under construction

This code describes a canal (050 0414) or dam (050 0406) labeled to indicate that it was under construction at the time the map was made.

050 0608 Salt

This code describes any feature that is labeled "Salt."

050 0609 Unsurveyed

This code describes an unsurveyed stream shown by symbols 408(A); 141.5(B); 541.10, 541.11 (C); or 2202.05(D).

050 0610 Intermittent

This code describes any hydrographic feature that is shown as intermittent, as in symbols 405, 412 (A); 141.6, 141.13 (B); 541.7, 541.11, 541.26 (C); or 2202.02, 2203.05 (D). This code overrides the assumed default value of perennial.

This code is not added to a ditch or canal (050 0414), or a braided stream (050 0413), regardless of how they are symbolized on the map.

~~050 0611 Abandoned or discontinued~~

This code is no longer used. If a hydrographic feature is portrayed on the map as abandoned or discontinued, it is collected using all appropriate codes, but not specifically identified as abandoned or discontinued.

050 0612 Submerged or sunken

This code describes any feature labeled "Submerged" or "Sunken," or overprinted by blue tint to indicate that it is submerged, such as a marsh, or an old river course in an impounded water area. The outline of a submerged river course is digitized as an unattributed line.

This code is not applied to channels (050 0419).

~~050 0613 Wooded~~

Woods are collected only in the Vegetative Surface Cover category. This code is no longer used.

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050 0614 Dry

This code describes any feature labeled "Dry," or symbolized as dry, such as a dry lake, shown by symbols 134.7(B) or 534.5(C).

050 0615 Mineral or hot

This code describes any well, spring, or water source that is labeled to indicate the water is hot or contains minerals. Includes mineral, hot, sulphur, alkali.

~~050 0616 Navigable - transportation~~

This code is no longer used. See channel (050 0419).

050 0617 Underpassing

This code describes a feature or a section of a feature that passes underneath, rather than intersects, another feature. This code is used only when the symbol for the underpassing feature has been broken back from the overpassing feature to indicate that it is underpassing. This code is generally applied to a linear feature, such as an aqueduct under a canal. The underpassing segment is also assigned the code or codes of the hydrographic feature on which it occurs.

→ 050 0618 Earthen construction

This code is used only for new earthen dams added during Limited Update Digital Revision. Earthen dams that are shown by contours are not collected in the Hydrography category.

~~050 0619 Interpolated elevation~~ ←

This code is no longer used. Only water surface elevations that are printed on the map are collected.

050 062- Decimal fractions

Descriptive attribute codes 050 0620 through 050 0629 are used to represent decimal fractions of feet or meters. They are used only in conjunction with the water surface elevation or river mile mark parameter attribute codes when the elevations or river mile marks are expressed to decimal fractions. It is not necessary to distinguish between feet and meters, because the unit of measurement encoded in the associated parameter code. The

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specific decimal fraction values associated with each code are listed below.

050 0620 Decimal fraction of 0.0 feet or meters  
050 0621 Decimal fraction of 0.1 feet or meters  
050 0622 Decimal fraction of 0.2 feet or meters  
050 0623 Decimal fraction of 0.3 feet or meters  
050 0624 Decimal fraction of 0.4 feet or meters  
050 0625 Decimal fraction of 0.5 feet or meters  
050 0626 Decimal fraction of 0.6 feet or meters  
050 0627 Decimal fraction of 0.7 feet or meters  
050 0628 Decimal fraction of 0.8 feet or meters  
050 0629 Decimal fraction of 0.9 feet or meters

050 0630 Boulders

This code describes a flat (050 0115) labeled "Boulders."

050 0631 Sand

This code describes a flat (050 0115) labeled "Sand."

Do not apply this code to sand in open water (see code 050 0423).

050 0632 Gravel

This code identifies a flat (050 0115) labeled "Gravel."

050 0633 Rock (flat or reef)

This code identifies a flat (050 0115) or a reef (050 0422) labeled "Rock."

Do not apply this code to individual rocks or groups of rocks (see code 050 0410).

050 0634 Mud

This code identifies a flat (050 0115) labeled "Mud."

050 0635 Shell

This code identifies a flat (050 0115) labeled "Shell."

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050 0636	Coral	This code identifies a flat (050 0115) or a reef (050 0422) labeled "Coral."
050 0637	Tide	This code describes a gaging station that is labeled "Tide Gage" or "Tidal Gage."
050 0639	Undredged	This code describes a channel that is undredged. It is used only in conjunction with code 050 0419.

3.2.8 Parameter Attribute Codes

050 0000	Photorevised feature	<p>This code is described section 3.0.6.4.</p> <p>This code is added to any feature collected as a node, line, point, or area that is shown in purple on the graphic. If a feature is shown with purple tint or pattern, this code is added to the area point. If the line that bounds an area is shown in purple, this code is added to the line, even if the line would otherwise be unattributed. This code is not added to closure lines (050 0202), since these lines do not appear on the map and therefore are never shown in purple.</p> <p>An unattributed line is used to separate the photorevised portion of a water body from the non-photorevised portion.</p> <p>If a photorevised water body completely encloses the original water body shown in blue (that is, the entire shoreline is shown in purple) the original water body is not distinguished from the photorevised portion in the DLG; the entire water body is collected as photorevised.</p>
05N ----	Water surface elevation	<p>This parameter is used to encode water surface elevations printed on the map. The value may be shown as "Normal Pool Elevation XXXX," "Elevation XXXX," or simply as a value printed in blue or black. This code is also used to encode a maximum potential water surface elevation</p>

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shown on the line defining the limits of an area subject to controlled inundation.

Enter a value in place of the "N" in the major code as follows:

- 1 = whole feet, 9999 or less
- 2 = whole meters
- 4 = whole feet, greater than 9999
- 6 = whole feet below datum
- 7 = whole meters below datum

The elevation value is then entered into the minor code, flush right. If a value in feet exceeds 9999, only the final four digits are encoded in the minor code. To express elevations in decimal feet or meters, use this parameter code in conjunction with descriptive attribute codes 050 0620 through 050 0629.

Examples: 421 feet is coded as 051 0421  
10014 feet is coded as 054 0014  
101.5 meters is coded as 052 0101, 050 0625  
-3 meters is coded as 057 0003

~~053 0--- Angle of rotation~~

This code is no longer used.

055 0--- River mile mark

This parameter code is used both to identify a river mile mark, as shown by symbol 512.109(C), and to encode the mile value. A mile value is encoded for each symbolized mile mark, although on the map the mile value may be printed only at intervals, such as every fifth mark.

The mile mark is digitized at the center of the cross symbol. If the cross occurs directly on a line that is digitized in the Hydrography category, the mile mark is digitized as a node on that line. Otherwise the mile mark is digitized as a degenerate line.

Enter the mile value in the minor code flush right. If the river mile mark is expressed to a decimal fraction, use this code for the nondecimal value and code 050 0620 through 050 0629 for the decimal value.

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~~058 0000 Best estimate of classification or position~~

This code is no longer used.

~~059 00-- Coincident feature~~

This code is no longer used.

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Part 3: Attribute Coding

Appendix 3.2.A - Attribution of Outlines of Hydrographic Areas

APPENDIX 3.2.A

Attribution of Outlines of Hydrographic Areas

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.2.A - Attribution of Outlines of Hydrographic Areas

The following list provides unambiguous information on the attribution of the outlines of hydrographic features collected as areas.

This list, which is arranged alphabetically, includes features from the list of area attribute codes, and those features from the list of general purpose attribute codes that may be collected as areas.

In general, if the outline of the feature is always shown on the map with the same symbology, the line is unattributed because it is in essence a symbol.

Follow these guidelines even if an individual feature on a map is outlined using a nonstandard symbol. In some cases, the outlines of two hydrographic features may coincide, so the instructions for coding of the outlines of both features must be considered. Also, if part of the outline of an area is formed by another hydrographic feature, that portion of the outline is collected as that feature.

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Part 3: Attribute Coding

Appendix 3.2.A - Attribution of Outlines of Hydrographic Areas

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Area	Outline of area
Alkali flat	unattributed line
Aquaculture pond	unattributed line (including internal separators)
Aqueduct or pipeline	right bank/left bank, shoreline, manmade shoreline, indefinite shoreline, closure line
Area to be submerged	unattributed line
Bay, estuary, gulf, ocean, or sea	shoreline, manmade shoreline, apparent shoreline, sounding datum line, low-water line, closure line
Braided stream	right bank/left bank, closure line
Channel	unattributed line, closure line
Covered reservoir	unattributed line
Cranberry bog	unattributed line (do not collect internal separators)
Crevasse	unattributed line
Dam or weir	unattributed line, shoreline, manmade shoreline
Ditch or canal	right bank/left bank, shoreline, manmade shoreline, indefinite shoreline, closure line
Drydock chamber	manmade shoreline and gate
Duck pond	unattributed line (including internal separators)
Filtration pond	unattributed line (including internal separators)
Fish ladder	right bank/left bank, shoreline, unattributed line (for upstream/downstream limits), manmade shoreline

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Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.2.A - Attribution of Outlines of Hydrographic Areas

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Area	Outline of area
Flat	shoreline, apparent shoreline, sounding datum line, unattributed line, reef
Flume	right bank/left bank, shoreline, manmade shoreline, closure line
Foul ground	unattributed line
Glacier or permanent snow field	unattributed line
Gut	manmade shoreline, shoreline, apparent shoreline, sounding datum line, low water line, closure line
Holiday area	unattributed line, closure line
Industrial water impoundment	unattributed line (including internal separators)
Inundation area	unattributed line (if controlled), low-water line (if uncontrolled)
Lake or pond	shoreline, manmade shoreline, indefinite shoreline, closure line
Lock chamber	right bank/left bank, manmade shoreline, gate
Mangrove area	unattributed line
Marsh, wetland, swamp, or bog	unattributed line
Mine danger area	unattributed line
Obstruction in water area	unattributed line, closure line
Pumping station	unattributed line
Rapids	unattributed line (for upstream/downstream limits), right bank/left bank, shoreline, manmade shoreline, indefinite shoreline

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Appendix 3.2.A - Attribution of Outlines of Hydrographic Areas

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Area	Outline of area
Reservoir	shoreline or manmade shoreline
Salt evaporator	unattributed line (including internal separators)
Sand in open water	unattributed line
Sewage disposal pond	shoreline or manmade shoreline (including internal separators)
Shoal	limiting danger line or unattributed line
Soda evaporator	unattributed line (including internal separators)
Spillway	manmade shoreline, unattributed line
Spoil area, dredged area, or dump area	unattributed line, closure line
Stream	right bank/left bank, shoreline, manmade shoreline, indefinite shoreline, closure line
Tailings pond	unattributed line
Void area	unattributed line
Wash	unattributed line

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3.3 VEGETATIVE SURFACE COVER--MAJOR CODE 070

This category includes woods or brush-wood, scrub, orchards or plantations, scattered trees, and vineyards. Additional vegetative features that are associated with wetland or submerged areas, such as marshes and swamps, mangrove, and cranberry bogs, are collected under Hydrography (major code 050).

The photorevision code is not applicable to Vegetative Surface Cover. Normally photorevised vegetation is shown in green, rather than purple, and, therefore, it is not distinguishable as photorevised. If, however, scrub, orchard or plantation, vineyard, or scattered trees does appear in purple, collect it according to normal guidelines and ignore the fact that it is photorevised.

3.3.1 General Principles

3.3.1.1 Node Attribute Codes

There are no node attribute codes.

3.3.1.2 Area Attribute Codes

Vegetative surface cover information is shown on the map source as an area of pattern or tint. The digitized line depicting the limits of the vegetative feature is unattributed.

3.3.1.3 Line Attribute Codes

There are no general principles that apply to line attribute codes.

3.3.1.4 Single-Point Attribute Codes

There are no single-point attribute codes.

3.3.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.3.1.6 Descriptive Attribute Codes

There are no descriptive attribute codes.

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3.3.1.7 Parameter Attribute Codes

There are no parameter attribute codes.

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Part 3: Attribute Coding

3.3.1.8 List of Vegetative Surface Cover Attribute Codes

- o Node attribute codes
  - None
- o Area attribute codes
  - 000 0000 Outside area
  - 070 0101 Woods or brushwood
  - 070 0102 Scrub
  - 070 0103 Orchard or plantation
  - 070 0104 Vineyard
  - 070 0105 Scattered trees
  - 070 0106 Void area
- o Line attribute codes
  - ~~070 0200 Closure line~~
  - ~~070 0201 Edge of surface cover at built-up, house-omission, or urban area~~
  - 070 0299 Processing line
- o Single-point attribute codes
  - None
- o General purpose attribute codes
  - None
- o Descriptive attribute codes
  - None
- o Parameter attribute codes
  - ~~078 0000 Best estimate of position or classification~~
  - ~~079 00-- Coincident feature~~

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.3.2 Node Attribute Codes

There are no attribute codes for nodes in this category.

3.3.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

070 0101 Woods or brushwood

Woods are shown by symbols 600, 604(A); 152.1, 152.2, 152.3, 152.5(B); 552.1, 552.2, 552.3, 552.5(C); or 2402.01(D).

If a wooded area is partially overprinted by swamp, submerged swamp, or open water, do not break the wooded area up into separate polygons. Digitize a single area by following the outermost extent of the green tint.

070 0102 Scrub

Scrub areas are shown by symbols 603(A), 154.1(B), 554.1(C), or 2402.05(D).

070 0103 Orchard or plantation

These features are shown by symbols 601(A), 155.1(B), 555.1(C), or 2402.03(D). Plantings of trees that are called groves are collected using this code.

070 0104 Vineyard

Vineyards are shown by symbols 602(A), 156.1(B), 556.1(C), or 2402.04(D).

070 0105 Scattered trees

Scattered trees are shown by symbol 553.1(C).

070 0106 Void area

The area beyond the national boundary is coded as a void area to distinguish it from the background area.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.3.4 Line Attribute Codes

~~070 0200~~ Closure line

This code is no longer used. Unattributed lines are used to close off areas.

~~070 0201~~ Edge of surface cover at built-up, house-omission, or urban area

This code is no longer used.

070 0299 Processing line

This code is described in section 3.0.6.3.

3.3.5 Single-Point Attribute Codes

There are no single-point attribute codes for this category.

3.3.6 General Purpose Attribute Codes

There are no general purpose attribute codes for this category.

3.3.7 Descriptive Attribute Codes

There are no descriptive attribute codes for this category.

3.3.8 Parameter Attribute Codes

~~078 0000~~ Best estimate of position or classification

This code is no longer used.

~~079 00--~~ Coincident feature

This code is no longer used.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.4 NON-VEGETATIVE FEATURES--MAJOR CODE 080

Features digitized in this category portray information about the naturally occurring, non-vegetated surface of the Earth; such as lava, sand, and gravel features. While numerous other non-vegetative features exist, they are digitized in other categories that are more applicable. For example, features that are the result of human activity, such as mines, are digitized in Manmade Features (major code 200), and features associated with water, such as glaciers, are digitized in Hydrography (major code 020).

It is important to note that most non-vegetative features are shown with the same, or very similar, pattern. At 1:24,000 scale, gravel areas and glacial moraines are shown using pattern USGS 22. The context and label must be used to decide if an area is a gravel area or glacial moraine. At 1:100,000 scale, only one pattern (USGS 17) is used for all of the features in this category, except lava. The context and label must always be used to decide which is the appropriate code to use. On provisional edition maps, all of the features in this category are outlined with a dashed symbol. The context and label must always be used to decide which is the appropriate code to use.

3.4.1 General Principles

3.4.1.1 Node Attribute Codes

There are no node attribute codes.

3.4.1.2 Area Attribute Codes

Non-vegetative surface features are shown on the map as an area of pattern or tint. The digitized line depicting the limits of the non-vegetative feature is unattributed.

3.4.1.3 Line Attribute Codes

There are no general principles that apply to line attribute codes.

3.4.1.4 Single-Point Attribute Codes

There are no single-point attribute codes.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.4.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.4.1.6 Descriptive Attribute Codes

There are no descriptive attribute codes.

3.4.1.7 Parameter Attribute Codes

There are no general principles that apply to parameter attribute codes.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.4.1.8 List of Non-Vegetative Features Attribute Codes

- o Node attribute codes

None

- o Area attribute codes

000 0000 Outside area  
080 0100 Glacial moraine  
080 0101 Gravel area  
080 0102 Sand area  
~~080 0103 Shifting sand or dune area~~  
080 0104 Lava  
080 0105 Void area

- o Line attribute codes

~~080 0200 Closure line~~  
080 0201 Fracture  
080 0299 Processing line

- o Single-point attribute codes

~~080 0300 Located surface feature~~

- o General purpose attribute codes

None

- o Descriptive attribute codes

None

- o Parameter attribute codes

080 0000 Photorevised feature  
~~088 0000 Best estimate of position or classification~~  
~~089 00 Coincident feature~~

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.4.2 Node Attribute Codes

There are no attribute codes for nodes in this category.

3.4.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

080 0100 Glacial moraine

This code identifies an area shown by a brown area pattern, which is the same as, or similar to, most features in this category. Generally the symbol is not labeled; the surrounding area must be examined to distinguish a glacial moraine from other features shown by the same pattern. The glacier itself is collected in the hydrography category.

080 0101 Gravel area

This code identifies an area shown by a brown area pattern, which is the same as, or similar to, most features in this category. The feature's context and any applicable labels must be used to distinguish gravel area from other features shown by the same pattern.

080 0102 Sand area

This code identifies an area shown by a brown area pattern which is the same as, or similar to, most features in this category. The feature's context and any applicable labels must be used to distinguish sand area from other features shown by the same pattern.

~~080 0103 Shifting sand or dune area~~

This code is no longer used. See code 080 0102.

080 0104 Lava

This code identifies an area shown by symbols 328(A), 135.5(B), 535.6(C), or 2112.07(D). Lava is also shown in Hawaii without a screen or pattern. In Hawaii, do not collect the line separating overlapping or adjacent lava flows. Collect adjacent flows as one area.

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Part 3: Attribute Coding

080 0105 Void area

The area beyond the national boundary is coded as a void area, to distinguish it from the background area.

3.4.4 Line Attribute Codes

~~080 0200 Closure line~~

This code is no longer used. Unattributed lines are used to close off areas.

→ 080 0201 Fracture

This code identifies a crack in the earth's crust. Fractures are often mapped in Hawaii and are symbolized by a dashed black or solid brown line and the label "CRACK" or "FRACTURE."

080 0299 Processing line

This code is described in section 3.0.6.3. ←

3.4.5 Single-Point Attribute Codes

There are no longer any single-point attribute codes in this category.

~~080 0300 Located surface feature~~

This feature is no longer collected.

3.4.6 General Purpose Attribute Codes

There are no general purpose attribute codes in this category.

3.4.7 Descriptive Attribute Codes

There are no descriptive attribute codes in this category.

3.4.8 Parameter Attribute Codes

080 0000 Photorevised feature

This code is described in section 3.0.6.4.

~~088 0000 Best estimate of position or classification~~

This code is no longer used.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

~~089 00--- Coincident feature~~

This code is no longer used.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.5 BOUNDARIES--MAJOR CODE 090

3.5.1 General Principles

Civil boundaries are the limiting lines of jurisdictional authority for the various levels of government. The international boundaries of the United States were established through treaties made by the nations concerned, and State boundaries have been defined by the Congress of the United States. Subdivisions within the States, counties or county equivalents, can be further divided into minor civil divisions. Incorporated places include cities, towns, and villages. Incorporated places can be within, exclusive of, or coextensive with, the county or minor civil division in which they are located. Quadrangle maps show only subdivisions that are reasonably stable. Refer to Appendix 3.5.A for more specific information on the civil divisions of the States, the District of Columbia, the Outlying Areas of the United States, the Freely Associated States, and the Trust Territory.

In addition to civil boundaries, a variety of reservations are also collected in this category. Appendix 3.5.B provides generic examples of the kinds of reservations that are associated with each reservation type, regardless of jurisdiction. Appendix 3.5.C is divided into separate parts for national, State, and county, and lists the DLG-3 code used to collect each kind of reservation.

Where boundaries of two or more units of different rank coincide, only the symbol for the higher ranking unit boundary is shown on the map. Boundaries are ranked in the following order: national; State, commonwealth, and territory; county, parish, borough, and municipio; township or minor civil division; city or incorporated place; Federal reservation; other reservation; large park and small park.

3.5.1.1 Node Attribute Codes

There are no general principles that apply to the node attribute code.

3.5.1.2 Area Attribute Codes

All areas in this category are attributed. The codes for Canada, Mexico, and open water are independent codes, and no other codes are applied to these areas. Coastal water areas may occasionally require only the State FIPS code. All land areas require State and county FIPS codes as a minimum, and additional codes as needed to

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Part 3: Attribute Coding

describe the area. For example, a small park in an incorporated city which is part of an active township will be coded with State FIPS, county FIPS, incorporated city code, township code, Township FIPS, and the small park code.

National, State, and county reservations are all shown with the same symbology. If the reservation boundary also has pink stippling, it is a national reservation; however, the pink stippling has not always been used, so many national areas are shown without the stippling. The name of the reservation may indicate jurisdiction but often does not. Ancillary sources may be required to determine jurisdiction.

It is not uncommon for a reservation to be shown as completely overlapping, partially overlapping, or entirely within another reservation. It may be difficult to determine if the area in question is part of just one of the reservations, or both. However, for forests and parks, any area within the proclamation boundaries is considered to be part of the forest or park. Therefore, any other reservations shown within a forest or park are coded with both the forest or park code appropriate for the jurisdiction, and any additional reservation code or codes that apply.

Areas normally shown with the reservation boundary symbology may be shown with a dashed line if the area is quite small.

Hawaii is divided into five counties. Four of the counties are subdivided into minor civil divisions called districts. Ahupuaas and homesteads reflect historical ownership patterns and although they are not civil boundaries, they are important features and are collected. The boundaries of ilis and leles, further subdivisions of ahupuaas, are not collected.

3.5.1.3 Line Attribute Codes

Boundary lines are not attributed if they are implicitly defined by the bounding area. For example, a civil township boundary is deducible as such from the area codes on either side of it. However, boundary lines that are shown in purple have 090 0000 (photorevised feature) attached to the line segment itself.

3.5.1.4 Single-Point Attribute Codes

There are no general principles that apply to the single-point attribute code.

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Part 3: Attribute Coding

3.5.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.5.1.6 Descriptive Attribute Codes

There are no descriptive attribute codes.

3.5.1.7 Parameter Attribute Codes

There are no general principles that apply to the parameter attribute codes.

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Part 3: Attribute Coding

3.5.1.8 List of Boundaries Attribute Codes

- o Node attribute codes
  - 090 0001 Boundary monument
  - ~~090 0002 Boundary turning point~~
- o Area attribute codes
  - 000 0000 Outside area
  - 090 0100 Civil township, district, precinct, or barrio
  - 090 0101 Incorporated city, village, town, borough, or hamlet
  - 090 0103 National park
  - 090 0104 National forest
  - 090 0105 National wildlife area
  - 090 0106 National wilderness area
  - 090 0107 Indian reservation
  - 090 0108 Military reservation
  - ~~090 0109 Non-military government reservation~~
  - 090 0110 Federal prison
  - 090 0111 Miscellaneous Federal reservation
  - ~~090 0113 Land grant~~
  - 090 0129 Miscellaneous State reservation
  - 090 0130 State park
  - 090 0131 State wildlife area
  - 090 0132 State forest
  - 090 0133 State prison
  - 090 0134 Miscellaneous county reservation
  - 090 0135 Ahupuaa (Hawaii)
  - 090 0136 Hawaiian homestead
  - 090 0150 Large park (city, county, or private)
  - 090 0151 Small park (city, county, or private)
  - 090 0197 Canada
  - 090 0198 Mexico
  - 090 0199 Open water
- o Line attribute codes
  - ~~090 0200 Approximate boundary~~
  - 090 0201 Indefinite or approximate boundary
  - 090 0202 Disputed boundary
  - 090 0203 Historical line
  - 090 0204 Boundary closure line
  - 090 0299 Processing line
- o Single-point attribute codes
  - 090 0301 Reference monument for boundary point

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- o General purpose attribute codes

There are no general purpose codes

- o Descriptive attribute codes

There are no descriptive codes

- o Parameter attribute codes

090 0000 Photorevised feature  
091 00-- State or State equivalent FIPS code  
092 0--- County or county equivalent FIPS code  
093 00-- Civil township or civil township equivalent  
FIPS code, first two digits  
094 0--- Civil township or civil township equivalent  
FIPS code, last three digits  
095 ---- Monument number  
096 XXYY Alphabetic portion of any monument number  
~~098 0000 Best estimate of classification or position~~  
~~099 00-- Coincident feature~~

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Part 3: Attribute Coding

3.5.2 Node Attribute Codes

090 0001 Boundary monument

This code identifies a physical monument shown by symbols 222, 223, 225, 226 (A); 512.104, 512.105, 512.107 (C); or 2102.08, 2102.09 (D) or any other point represented with a black boundary monument symbol. Boundary monuments with geodetic position are also collected in the Survey Control and Markers category.

International boundaries will occasionally have points on the boundary, over water, which are depicted with the located object symbol and numbered. These points are to be collected and given this code. These points will also have a reference monument in the vicinity (see code 090 0301).

If the monument is numbered, also use parameter codes 095 and 096 as appropriate.

This code does not apply to 1:100,000-scale maps.

~~090 0002 Boundary turning point~~

This code is no longer used.

3.5.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

090 0100 Civil township, district, precinct, or barrio

This code identifies a point placed within an area delineated by symbols 205(A), 112.77(B), 512.126(C), or 2107.03(D).

The minor civil division column of Appendix 3.5.A identifies, for each State or state equivalent, the entity or entities collected using this code.

Only minor civil divisions with active governments, as identified in the current FIPS Publication 55, are collected in the DLG, with the following two exceptions: 1) although some minor civil divisions in Nebraska are active, they are not collected, and 2) although the

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Part 3: Attribute Coding

minor civil division in West Virginia are not active, they are collected.

090 0101 Incorporated city, village, town, borough, or hamlet

This code identifies a point placed within an area delineated by symbols 206(A), 512.127(C), or 2107.04(D). It is also always added to independent cities.

The city column of Appendix 3.5.A identifies, for each State or state equivalent, the entity or entities collected using this code.

This code does not apply to 1:100,000-scale maps.

090 0103 National park

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0104 National forest

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0105 National wildlife area

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0106 National wilderness area

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0107 Indian reservation

This code identifies a point placed within an Indian reservation delineated by symbols 207(A), 112.78(B), 512.128(C), or 2107.05(D). They may also have boundaries symbolized with a solid red line, symbol 523.14(C).

Rancherias are a type of Indian reservation found only in California.

If a solid red line is labeled with the name "Old Indian Reservation Boundary," neither the area nor the line is collected.

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Part 3: Attribute Coding

Indian allotments, which are collected in the U.S. Public Land Survey System category, are not Indian reservations.

090 0108 Military reservation

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

~~090 0109 Non-military government reservation~~

This code is no longer used.

090 0110 Federal prison

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0111 Miscellaneous Federal reservation

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

~~090 0113 Land grant~~

This code is no longer used. Land grants are collected in the U.S. Public Land Survey System category.

090 0129 Miscellaneous State reservation

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0130 State park

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0131 State wildlife area

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0132 State forest

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

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090 0133 State prison

Refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0134 Miscellaneous county reservation

This code identifies a point placed within a county reservation other than park. The area is delineated by symbols 207, 209 (A); 112.78 (B), 512.128, 512.129 (C); or 2107.05, 2107.06 (D). Some examples are County Game Preserve or County Forest.

Also refer to Appendix 3.5.B and Appendix 3.5.C for coding information.

090 0135 Ahupuaa (Hawaii)

This code identifies a point placed within an area delineated by symbols 500(A), 112.78(B), 523.10(C), or 2502.01(D). Code 300 0103 is not used for ahupuaas because they are not part of the Public Land Survey System. More explanation of this code is given in section 3.5.1.2.

090 0136 Hawaiian homestead

This code identifies a point placed within an area delineated by symbols 207(A), 112.78(B), 512.128(C), or 2107.05(D). Codes 090 0111 and 090 0129 are not used for Hawaiian homesteads because they are not reservations. More explanation of this code is given in section 3.5.1.2.

090 0150 Large park (city, county, or private)

This code identifies a point placed within a regional, city, county, or private park delineated by symbols 207(A), 112.78, 112.79 (B), 512.128(C), or 2107.05(D). If the boundary is not symbolized, the park may be delineated by cleared tint or by corner ticks indicating what part of the cleared area is used as a park. This feature will always be labeled "Park" or named. In some cases, named parks may have the term field in their name, rather than the term park (for example, "Farwell Field"). Some judgement must be used in determining if a named field is a park or an athletic field (which is collected in the Manmade Features category, using code 200 0122).

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In digital revision, use this code only for county parks greater than or equal to 0.5 square miles.

090 0151 Small park (city, county, or private)

This code identifies a point placed within a regional, city, county, or private park delineated by symbols 209(A), 512.129(C), or 2107.06(D). If the boundary is not symbolized, the park may be delineated by cleared tint or by corner ticks indicating what part of the cleared area is used as a park. This feature will always be labeled "Park" or named. In some cases, named parks may have the term field in their name, rather than the term park (for example, "Farwell Field"). Some judgement must be used in determining if a named field is a park or an athletic field (which is collected in the Manmade Features category, using code 200 0122).

This code does not apply to collection from 1:100,000-scale maps; see code 090 0150.

In digital revision, use this code for all city and private parks, and for county parks less than 0.5 square miles.

090 0197 Canada

This code identifies a point placed within the boundaries of Canada. The boundary between Canada and the United States is delineated by symbols 202(A), 112.74(B), 512.123(C), or 2107.01(D).

090 0198 Mexico

This code identifies a point placed within the boundaries of Mexico. The boundary between Mexico and the United States is delineated by symbols 202(A), 112.74(B), 512.123(C), or 2107.01(D).

090 0199 Open water

This code identifies a point placed within water areas on coastal quadrangles, where State boundaries are dropped at the shoreline.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.5.4 Line Attribute Codes

~~090 0200 Approximate boundary~~

This code is no longer used. Approximate boundaries are collected using code 090 0201.

090 0201 Indefinite or approximate boundary

This code identifies a boundary for which the accuracy of location does not meet National Map Accuracy Standards for well-defined features. Indefinite boundaries of county rank or higher appear on 1:100,000- and 1:24,000-scale maps with standard symbolization but reduced to one-half the specified lineweight and labeled "Indefinite Boundary" or "Approximate Boundary." Those of less than county rank are shown with normal symbolization and lineweight and are labeled "Indefinite Boundary." Indefinite boundaries are shown by symbols 212(A), 112.80(B), or 512.130(C).

090 0202 Disputed boundary

This code identifies a State, county, or national reservation boundary which is unmarked and cannot be located on the ground from other substantial evidence, which has a disputed location, or for which the recorded description cannot be reconciled with local conditions. Disputed boundaries are labeled "Indefinite" on the map with an additional marginal note.

090 0203 Historical line

This code applies only to the Von Schmidt line along the California and Nevada border. Any other historical lines shown on the map (such as the boundaries of old Indian, military, or lighthouse reservations) are not collected in the DLG, unless they limit public lands, in which case they are collected in the U.S. Public Land Survey System.

090 0204 Boundary closure line

This code identifies lines digitized to complete unclosed boundaries. The boundary closure line code is used wherever a boundary line is not shown on the map. The only exception is where a boundary is broken for a label, such as in the center of a stream; in this case the unattributed line is carried through the center of label.

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Where a boundary is not shown on the graphic because of a symbol conflict with a higher order feature such as a shoreline, road, or railroad, the shoreline, the centerline of the road, or the railroad is followed and assigned the boundary closure line code.

If a boundary line comes up to another feature, and the symbolized boundary line turns the corner and is then dropped, the boundary closure line is collected from the point where the boundary turns the corner or intersects the second feature. The unattributed line is not carried around the corner.

All States extend at least three miles into open water, so they are treated as extending into the open water to the quad edge. Counties may or may not extend into the open water. The digital treatment is based on the graphic treatment.

If a quadrangle lies entirely within one State, and the county boundary stops at the shoreline, the shoreline is digitized and assigned the boundary closure line code. The offshore area is assigned the State FIPS only.

In the case of a national or State boundary that stops at a shoreline, a line approximating the shoreline is digitized and assigned the boundary closure line code. The offshore area is then coded 090 0199 (Open water).

In the case where a national, State, or county boundary is extended out from the shore and dropped, an arbitrary line is digitized by extending the line from the drop point to the quadrangle neatline and assigned the boundary closure line code. The water area within the boundary is given the same codes as the equivalent land area.

Offshore islands are included with the onshore political entity, even where the political boundaries stop at the shoreline. Extend the closure line to include any coastal features which can logically be assumed to be included in the political entity.

An offshore island without a boundary but labeled as a park, wildlife area, etcetera is assigned the appropriate park or wildlife area code, and otherwise coded consistently with the onshore political entity. A line that follows the shoreline is digitized and assigned the boundary closure line code.

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The code 090 0000 (Photorevised feature) is not used in conjunction with this code.

090 0299 Processing line

This code is described in section 3.0.6.3.

3.5.5 Single-Point Attribute Codes

090 0301 Reference monument for boundary point

This code identifies a monumented point not on a boundary line, but serving as a reference to establish the location of a point on the boundary. Reference monuments are shown by symbols 226(A) or 512.105(C). If the monument is numbered or labeled, also use code 095 ---- or 096 ---- as appropriate.

3.5.6 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.5.7 Descriptive Attribute Codes

There are no descriptive attribute codes.

3.5.8 Parameter Attribute Codes

090 0000 Photorevised feature

This code is described in section 3.0.6.4. It is applied to the area point when the name or label is in purple, and to the bounding line when the line is purple.

091 00-- State or State equivalent FIPS code

Enter the two-digit State or State equivalent FIPS code.

092 0--- County or county equivalent FIPS code

Enter the three-digit county or county equivalent (for example, parish or independent city) FIPS code.

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093 00-- Civil township or civil township equivalent FIPS code,  
first two digits

Enter the first two digits of the five-digit township or  
township equivalent FIPS code.

094 0--- Civil township or civil township equivalent FIPS code,  
last three digits

Enter the last three digits of the five-digit township or  
township equivalent FIPS code.

095 ---- Monument number

Enter the one- to four-digit monument number, flush  
right.

096 XXYY Alphabetic portion of any monument number

This code is used to encode one or two letters of the  
alphabetic portion of any monument number, by  
substituting numbers for the letters as follows:

00 = blank, 01 = A, 02 = B, 03 = C, 04 = D, 05 = E,  
06 = F, 07 = G, 08 = H, 09 = I, 10 = J, 11 = K, 12 = L,  
13 = M, 14 = N, 15 = O, 16 = P, 17 = Q, 18 = R, 19 = S,  
20 = T, 21 = U, 22 = V, 23 = W, 24 = X, 25 = Y, 26 = Z.

If one letter is encoded it will be entered in the YY  
portion of the code with blank coded into the XX portion.  
This code is used in conjunction with the appropriate  
code 095 ----, if the monument designation is mixed  
numeric and alphabetic; this code precedes or follows the  
code for the numeric portion of the monument number in  
accordance with its actual position.

~~098 0000 Best estimate of classification or position~~

This code is no longer used.

~~099 00-- Coincident feature~~

This code is no longer used.

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.A - Civil Divisions

APPENDIX 3.5.A  
Civil Divisions

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.A - Civil Divisions

This appendix provides information on the civil divisions collected for each State or state equivalent. The first part of the appendix covers the 50 States and the District of Columbia, while the final page of the appendix covers the Outlying Areas of the United States, the Freely Associated States, and the Trust Territory.

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 Part 3: Attribute Coding  
 Appendix 3.5.A - Civil Divisions

State (First Order)	County (Second Order)	Minor Civil Division (Third Order)	City (Incorporated Place)
Alabama	Counties		Cities, Towns
Alaska	Boroughs, the "unorganized borough" (not labeled)		Cities
Arizona	Counties		Cities, towns
Arkansas	Counties		Cities, towns
California	Counties		Cities, towns
Colorado	Counties		Cities, towns
Connecticut	Counties	Towns	Cities, boroughs <sup>1</sup>
Delaware	Counties		Cities, towns, villages
District of Columbia	District of Columbia (county equivalent)		
Florida	Counties		Cities, towns, villages
Georgia	Counties		Cities, towns
Hawaii	Counties	Districts	Honolulu
Idaho	Counties		Cities
Illinois	Counties	Townships <sup>2</sup>	Cities, incorporated towns <sup>1</sup> , villages
Indiana	Counties	Townships	Cities, towns <sup>3</sup>

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.5.A - Civil Divisions

State (First Order)	County (Second Order)	Minor Civil Division (Third Order)	City (Incorporated Place)
Iowa	Counties	Townships <sup>2</sup>	Cities
Kansas	Counties	Townships	Cities <sup>4</sup>
Kentucky	Counties		Cities
Louisiana	Parishes		Cities, towns, villages
Maine	Counties	Plantations, towns	Cities <sup>5</sup>
Maryland	Counties, independent cities		Cities, towns, villages
Massachusetts	Counties	Towns	Cities <sup>4</sup>
Michigan	Counties	Townships	Cities, villages <sup>6</sup>
Minnesota	Counties	Townships <sup>2</sup>	Cities <sup>4</sup>
Mississippi	Counties		Cities, towns, villages
Missouri	Counties, independent cities	Townships <sup>2</sup>	Cities, towns, villages <sup>1</sup>
Montana	Counties, Yellowstone National Park		Cities, towns
Nebraska	Counties	<sup>7</sup>	Cities, villages <sup>3</sup>
Nevada	Counties, independent cities		Cities, towns

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.5.A - Civil Divisions

State (First Order)	County (Second Order)	Minor Civil Division (Third Order)	City (Incorporated Place)
New Hampshire	Counties	Towns	Cities <sup>4</sup>
New Jersey	Counties	Townships	Cities, towns, boroughs, villages <sup>4</sup>
New Mexico	Counties		Cities, towns, villages
New York	Counties	Towns	Cities, villages <sup>5</sup>
North Carolina	Counties		Cities, towns, villages
North Dakota	Counties	Townships <sup>2</sup>	Cities <sup>4</sup>
Ohio	Counties	Townships	Cities, villages <sup>2</sup>
Oklahoma	Counties		Cities, towns
Oregon	Counties		Cities, towns
Pennsylvania	Counties	Boroughs, cities, one incorporated town, townships	
Rhode Island	Counties	Towns	Cities <sup>4</sup>
South Carolina	Counties		Cities, towns
South Dakota	Counties	Townships <sup>2</sup>	Cities, towns <sup>4</sup>
Tennessee	Counties		Cities, towns
Texas	Counties		Cities, towns, villages
Utah	Counties		Cities, towns

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.5.A - Civil Divisions

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State (First Order)	County (Second Order)	Minor Civil Division (Third Order)	City (Incorporated Place)
Vermont	Counties	Towns	Cities, villages <sup>3</sup>
Virginia	Counties, independent cities		Towns
Washington	Counties		Cities, towns
West Virginia	Counties	Districts <sup>8</sup>	Cities, towns, villages
Wisconsin	Counties	Towns	Cities, villages <sup>4</sup>
Wyoming	Counties		Cities, towns

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1. In areas within the State where minor civil divisions exist, cities (incorporated places) can be either within or coextensive with the area of any minor civil division.
2. Minor civil divisions with active governments do not exist in all areas of the State.
3. In areas within the State where minor civil divisions exist, cities (incorporated places) are within the area of any minor civil division.
4. In areas within the State where minor civil divisions exist, cities (incorporated places) can be either within or exclusive of the area of any minor civil division.
5. Cities (incorporated places) are exclusive of the area of any minor civil division.
6. In areas within the State where minor civil divisions exist, cities (incorporated places) can be either within, exclusive of, or coextensive with the area of any minor civil division.
7. Although minor civil divisions with active governments exist in some areas of the State, there are not collected.
8. Although minor civil divisions in the State do not have active governments, they are collected.

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.A - Civil Divisions

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State (First Order)	County (Second Order)	Minor Civil Division (Third Order)
American Samoa	Districts and Islands	Counties
Federated States of Micronesia	States	Municipalities
Guam	Guam (county equivalent)	Municipalities
Marshall Islands	Municipalities	
Northern Mariana Islands	Municipalities	
Palau	States	
Puerto Rico	Municipios	
U.S. Minor Outlying Islands	Islands	
Virgin Islands of the U.S.	Islands	

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.B - Generic Examples of Reservation Types

APPENDIX 3.5.B

Generic Examples of Reservation Types

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.B - Generic Examples of Reservation Types

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Reservation type	Examples
Forest	Forest, Grassland
Miscellaneous	Cemetery, Department of Energy (DOE) Areas, Experimental and Research Areas, Scenic Research Areas, etcetera
Indian	Indian Reservation, Rancheria
Military	Air Force Base, Ammunition Depot, Arsenal, Bombing and Gunnery Range, Coast Guard Station, Fort, Military Airfield, Military Reservation, National Guard Training Site, Naval Air Station, Weapons Station
Park	Battlefield, Battlefield Park, Battlefield Site, Historical Park, Lakeshore, Memorial, Military Park, Monument, Park, Parkway, Recreation Area, Seashore
Prison	Penitentiary, Prison
Wilderness Area	Riverway, Scenic Riverway, Scenic Waterway, Wild and Scenic River, Wilderness Area
Wildlife Area	Animal Farm, Aquatic Preserve, Conservation Area, Estuarine Sanctuary, Fish and Wildlife Area, Fish Hatchery, Game Land, Game Management Area, Game Preserve, Game Refuge, Hunting and Fishing Area, Natural Area, Natural Area Reserve, Wild Horse Range, Wildlife Area, Wildlife Management Area, Wildlife Preserve, Wildlife Range, Wildlife Refuge, Wildlife Research Center, Wildlife Reserve, Wildlife Sanctuary

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.C - Various Reservations and Equivalent Attribute Codes

APPENDIX 3.5.C

Various Reservations and Equivalent Attribute Codes

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.5.C - Various Reservations and Equivalent Attribute Codes

The following listing of various reservations is intended to direct the user to the appropriate attribute code. No attempt has been made to present a complete or exhaustive list of reservations shown on USGS maps.

The listing is divided into three separate sections. The first lists national reservations, the second lists State reservations, and the third lists county reservations.

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.5.C - Various Reservations and Equivalent Attribute Codes

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National reservation	DLG code
Ammunition Depot	090 0108
Arsenal	090 0108
Battlefield	090 0103
Battlefield Park	090 0103
Battlefield Site	090 0103
Cemetery	090 0111
Conservation Area	090 0105
Coast Guard Base	090 0108
→ <del>Corps of Engineers Area</del>	<del>090 0111</del>
Department of Energy Area	090 0111
Experimental and Research Areas	090 0111
Fish Hatchery	090 0105
Forest	090 0104
Game Preserve	090 0105
Game Refuge	090 0105
Grassland	090 0104
Historical Park	090 0103
Historic Site	090 0103
Hospital	090 0111
Indian Reservation	090 0107
Lakeshore	090 0103
Memorial	090 0103
Military Airfield	090 0108
Monument	090 0103
Reserve	090 0105
Scenic Research Area	090 0111
Scenic River/Scenic Riverway	090 0106
Seashore	090 0103
Wilderness	090 0106
Wild and Scenic River	090 0106
Wild Horse Range	090 0105
Wildlife Management Area	090 0105
Wildlife Range	090 0105
Wildlife Refuge	090 0105
Wildlife Research Center	090 0105
Wildlife Sanctuary	090 0105
Zoo	090 0103

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Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.C - Various Reservations and Equivalent Attribute Codes

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State reservation	DLG code
Aquatic Preserve	090 0131
Cemetery	090 0129
Conservation Area	090 0131
Estuarine Sanctuary	090 0131
Fish and Wildlife Area	090 0131
Fish Hatchery	090 0131
Forest	090 0132
Game Land	090 0131
Game Management Area	090 0131
Game Preserve	090 0131
Game Refuge	090 0131
Historic Site	090 0129
Hospital	090 0129
Hunting and Fishing Area	090 0131
Indian Reservation	090 0129
Memorial	090 0130
National Guard Training Site	090 0108
Natural Area	090 0131
Natural Area Reserve	090 0131
Park	090 0130
Prison	090 0133
Recreation Area	090 0130
Wild and Scenic River/Waterway	090 0131
Wilderness	090 0131
Wildlife Management Area	090 0131
Wildlife Area/Preserve/Reserve	090 0131

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.5.C - Various Reservations and Equivalent Attribute Codes

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County reservation	DLG code
Cemetery	090 0134
Forest	090 0134
Game Preserve	090 0134
Game Refuge	090 0134
Hospital	090 0134
Park	090 0150/0151
Recreation Area	090 0150/0151

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.6 SURVEY CONTROL AND MARKERS--MAJOR CODE 150

Please note that proposals to either automate or discontinue the collection of Survey Control and Markers category DLGs are currently being evaluated.

The purpose of collecting Survey Control and Markers category data is to capture information about established horizontal and vertical positions which are used as fixed references in positioning and correlating map features. Elevation data of less than third order, such as spot elevations, or the "T" and "AT" spot elevations on provisional maps, are not collected in this category.

Because the survey control and markers depicted on the graphic cannot be revised from photographs, there is no photorevised feature code in this category.

None of the codes in this section applies to 1:100,000-scale maps.

3.6.1 General Principles

3.6.1.1 Node Attribute Codes

There are no node attribute codes.

3.6.1.2 Area Attribute Codes

There are no general principles that apply to area attribute codes.

3.6.1.3 Line Attribute Codes

There are no line attribute codes.

3.6.1.4 Single-Point Attribute Codes

The features in this category are generally digitized as single-point features, also called degenerate lines. Each single-point feature is assigned a code to describe the type of control point or marker and appropriate parameter codes to designate the location and elevation. Each single-point feature is also assigned the State and county FIPS codes.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.6.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.6.1.6 Descriptive Attribute Codes

There are no general principles that apply to descriptive attribute codes.

3.6.1.7 Parameter Attribute Codes

There are no general principles that apply to parameter attribute codes.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.6.1.8 List of Survey Control and Markers Attribute Codes

- o Node attribute codes
  - None
- o Area attribute codes
  - 000 0000 Outside area
  - 150 0100 Void area
- o Line attribute codes
  - ~~150 0200 Closure Line~~
- o Single-point attribute codes
  - 150 0300 Horizontal control station, third order or better, permanent mark
  - 150 0301 Horizontal and vertical control station, third order or better
  - 150 0302 Horizontal control station, vertical angle bench mark (VABM)
  - 150 0303 Horizontal control station, checked spot elevation
  - 150 0310 Vertical control station, third order or better, tablet
  - 150 0311 Vertical control station, recoverable mark, third order or better, no tablet
  - 150 0320 Boundary monument, third order or better, tablet
  - 150 0321 Boundary monument, third order or better, no tablet
  - ~~150 0330 Reference monument~~
  - ~~150 0331 U.S. mineral or location monument~~
  - ~~150 0332 Other control point~~
- o General purpose attribute codes
  - None
- o Descriptive attribute codes
  - 150 0601 Decimal fraction of 0.1 feet or meters
  - 150 0602 Decimal fraction of 0.2 feet or meters
  - 150 0603 Decimal fraction of 0.3 feet or meters
  - 150 0604 Decimal fraction of 0.4 feet or meters
  - 150 0605 Decimal fraction of 0.5 feet or meters
  - 150 0606 Decimal fraction of 0.6 feet or meters
  - 150 0607 Decimal fraction of 0.7 feet or meters

Standards for Digital Line Graphs  
Part 3: Attribute Coding

150 0608 Decimal fraction of 0.8 feet or meters  
150 0609 Decimal fraction of 0.9 feet or meters

o Parameter attribute codes

151 ---- State or State equivalent FIPS code  
152 ---- County or county equivalent FIPS code  
153 ---- Elevation, whole feet, 9999 or less  
154 ---- Elevation, whole meters  
155 ---- Elevation, whole feet below datum  
156 ---- Elevation, whole feet greater than 9999  
157 ---- Elevation, whole meters below datum  
~~159 00 ---- Coincident feature~~

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.6.2 Node Attribute Codes

There are no attribute codes for nodes in this category.

3.6.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

150 0100 Void area

This code is used to identify the area beyond the national boundary to distinguish it from the background area. The line that defines the void area is unattributed.

3.6.4 Line Attribute Codes

~~150 0200 Closure line~~

This code is no longer used.

3.6.5 Single-Point Attribute Codes

150 0300 Horizontal control station, third order or better, permanent mark

This code identifies a degenerate line placed on a horizontal control station of third order or better with a permanent mark. It is shown by symbols 216(A), 512.99(C), or 2102.03(D).

150 0301 Horizontal and vertical control station, third order or better

This code identifies a degenerate line placed on a horizontal control station of third order or better, having elevation data of third order or better and labeled BM (bench mark) as shown by symbols 217(A), 512.99(C), or 2102.03(D). See codes 153 ---- through 157 ---- for the appropriate elevation code.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

150 0302 Horizontal control station, vertical angle bench mark (VABM)

This code identifies a degenerate line placed on a horizontal control station, third order or better, with vertical angle elevation indicated by the label VABM as shown by symbols 218(A) or 2102.03(D). See codes 153 ---- through 157 ---- for the appropriate elevation code.

150 0303 Horizontal control station, checked spot elevation

This code identifies a degenerate line placed on a horizontal control station, third order or better, with a checked spot elevation as shown by symbols 219(A), 512.99(C), or 2102.04(D). Do not code the elevation value in this category because it is coded in the Hypsography category.

150 0310 Vertical control station, third order or better, tablet

This code identifies a degenerate line placed on a vertical control station with elevation data of third order or better and that is marked with a tablet as is shown by symbols 220(A), 512.100(C), or 2102.06(D). See codes 153 ---- through 157 ---- for the appropriate elevation code.

150 0311 Vertical control station, recoverable mark, third order or better, no tablet

This code identifies a degenerate line placed on a vertical control station without a tablet but with a recoverable mark as shown by symbols 221(A), 512.100(C), or 2102.07(D). See codes 153 ---- through 157 ---- for the appropriate elevation code.

150 0320 Boundary monument, third order or better, tablet

This code identifies a degenerate line placed on a boundary monument or land grant monument with elevation data of third order or better that has a tablet as shown by symbols 222, 501 (A) or 512.104, 523.11 (C). Although these symbols are digitized in the Boundaries or PLSS categories, they must also be digitized in this category to collect the elevation data. A monument number, if shown, is encoded in the Boundaries category. See codes 153 ---- through 157 ---- for the appropriate elevation code.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

150 0321 Boundary monument, third order or better, no tablet

This code identifies a degenerate line placed on a boundary monument or land grant monument with elevation data of third order or better but without a tablet as shown by symbols 223, 501 (A) or 512.104, 523.11 (C). Although these symbols are digitized in the Boundaries or PLSS categories, they must also be digitized in this category to collect elevation data. A monument number, if shown, is encoded in the Boundaries category. See codes 153 ---- through 157 ---- for the appropriate elevation code.

~~150 0330 Reference monument~~

This feature is no longer collected in this category.

~~150 0331 U.S. mineral or location monument~~

This feature is no longer collected in this category.

~~150 0332 Other control point~~

This feature is no longer collected.

3.6.6 General Purpose Attribute Codes

There are no general purpose attribute codes in this category.

3.6.7 Descriptive Attribute Codes

150 060- Descriptive attribute codes 150 0601 through 150 0609 are used to represent decimal fractions of feet or meters. They are used only in conjunction with the elevation parameter attribute codes when the elevations are expressed to decimal fractions. It is not necessary to distinguish between feet and meters, because the unit of measurement is encoded in the associated parameter code. The specific decimal fraction values associated with each code are listed below.

150 0601	Decimal fraction of 0.1 feet or meters
150 0602	Decimal fraction of 0.2 feet or meters
150 0603	Decimal fraction of 0.3 feet or meters
150 0604	Decimal fraction of 0.4 feet or meters
150 0605	Decimal fraction of 0.5 feet or meters
150 0606	Decimal fraction of 0.6 feet or meters

Standards for Digital Line Graphs  
Part 3: Attribute Coding

150 0607    Decimal fraction of 0.7 feet or meters  
150 0608    Decimal fraction of 0.8 feet or meters  
150 0609    Decimal fraction of 0.9 feet or meters

3.6.8        Parameter Attribute Codes

151 00--    State or State equivalent FIPS code  
  
            Enter the two-digit FIPS code for the State in which the control point is located in the two spaces, flush right.

152 0---    County or county equivalent FIPS code  
  
            Enter the three-digit FIPS code for the county in which the control point is located in the three spaces, flush right.

153 ----    Elevation, whole feet, 9999 or less  
  
            Enter the elevation of a control point shown in feet (9999 or less) on the map in the four spaces, flush right. If a fractional part of a foot is shown, use the appropriate descriptive attribute to encode the value.

154 ----    Elevation, whole meters  
  
            Enter the elevation of a control point shown in meters on the map in the four spaces, flush right. If a fractional part of a meter is shown, use the appropriate descriptive attribute to encode the value.

155 ----    Elevation, whole feet below datum  
  
            Enter the elevation of a control point shown as a negative elevation in feet on the map in the four spaces, flush right.

156 ----    Elevation, whole feet, greater than 9999  
  
            Enter the final four digits of the elevation of a control point shown in feet (greater than 9999) on the map in the four spaces, flush right. If a fractional part of a foot is shown, use the appropriate descriptive attribute to encode the value.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

157 ---- Elevation, whole meters below datum

Enter the elevation for a control point shown as a negative elevation in meters on the map in the four spaces, flush right. If a fractional part of a meter is shown, use the appropriate descriptive attribute to encode the value.

The following examples illustrate the application of the elevation parameter attribute codes:

elevation 8,745 feet	- encoded 153 8745
elevation 12,321 feet	- encoded 156 2321
elevation 423 meters	- encoded 154 0423
elevation 3,480.5 feet	- encoded 153 3480, 150 0605
elevation -5 feet	- encoded 155 0005

~~159 00 --- Coincident feature~~

This code is no longer used.

Standards for Digital Line Graphs  
Part 3: Attribute Coding

3.7 ROADS AND TRAILS - Major Code 170

Transportation data are collected in three separate categories (Roads and Trails; Railroads; and Pipelines, Transmission Lines, and Miscellaneous Transportation Features) for each map source, which means that the attribute codes from the three categories are not intermingled. However, the three categories are distributed by the National Cartographic Data Base office as one unit. Where collection of transportation is authorized from a map source, all of the transportation for that source is collected. If there are no features in a particular category on a source, the header record shows that the file was initialized to hold Roads and Trails, Railroads, or Pipelines, Transmission Lines, and Miscellaneous Transportation Features, but the neatlines of the source, the background area, and the area outside the map are the only information digitized for that category.

3.7.1 General Principles

As described in section 3.0.1, generally, if multiple attributes are needed to describe a feature the ordering is not significant. An exception occurs in coding highway route numbers. If a highway is labeled BYP, ALT, or BR, for example, then the route number parameter code must be preceded by the appropriate descriptive code for bypass, alternate, or business. This is important because when multiple descriptive codes are required to describe a road, each descriptive code must be associated with the proper route number.

3.7.1.1 Node Attribute Codes

There are no general principles that apply to node attribute codes.

3.7.1.2 Area Attribute Codes

There are no general principles that apply to area attribute codes.

3.7.1.3 Line Attribute Codes

USGS maps use symbology to distinguish five classes of roads plus trails. The symbology is easily understood on standard maps. However, on provisional edition maps, some assumptions may have to be made about the class of the road. On provisional edition maps, if the road class is not indicated, the route designation must be used to determine the road class: Interstate and U.S. numbered highways are always class 1; State highways are generally class 2;

Standards for Digital Line Graphs  
Part 3: Attribute Coding

county highways are class 2; other improved roads for which there is no route descriptor to indicate administrative responsibility are class 3.

The line attribute codes for roads distinguish between the five road classes and trails. In addition, the codes describe whether the road is undivided (symbolized with two casings), the road is divided by a narrow median (symbolized with three casings), or the road is a divided highway with lanes separated by a wide median (symbolized with two separate roads).

The symbol books do not always provide unique symbol numbers. For example, in reference C, a class 1 and class 2 highway have the same symbol number. This should not be a problem because the symbols are easily differentiated.

Every road must receive a code that identifies the road class (170 0201-170 0212; 170 0217-170 0223), unless it is a ramp in an interchange (170 0402) or a nonstandard section of road (170 0405).

Roads are always digitized as a centerline. Some depictions of roads can indicate minor changes in road width or shape. This occurs most often in suburban developments where stub roads, decorative plantings, partial cul-de-sacs, and other "bumps" in the roads have been symbolized and the road casings deviate from parallel lines. This also commonly occurs with road "flares" at road junctions. Small parking areas or pull-off areas have also been symbolized. This level of detail should be ignored when collecting the centerline. Only major changes in road width and shape are collected, using the descriptive code for road width (170 065-) or road in transition (170 0222).

Roads that underpass other features, including other roads, railroads, buildings, and runways, are collected using the code for underpassing (170 0607), if the road symbol has been broken to indicate that it underpasses. Roads that pass through snowsheds are collected continuously, as though the snowshed were not there, and are given all appropriate attribute codes.

3.7.1.4 Single-Point Attribute Codes

There are no single-point attribute codes.

3.7.1.5 General Purpose Attribute Codes

There are no general principles for general purpose attribute codes.

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Part 3: Attribute Coding

3.7.1.6 Descriptive Attribute Codes

The only descriptive attribute codes that can stand alone are submerged or in ford (170 0606) where it is applied to a node, or covered bridge (170 0624) where it is applied to an isolated covered bridge that is not on a road. In all other cases, descriptive codes must be used with a primary attribute code, either from the list of line attribute codes, or from the list of general-purpose attribute codes.

The descriptive attribute code for road width (170 065-) distinguishes between road symbols whose width varies by 0.005 inches and measurement may be required to determine the appropriate road width code. However, the vast majority of roads are shown with the standard width symbol, and therefore, do not require measurement. For those roads that are shown with a nonstandard width symbol, it should be possible to determine the symbol width easily, if the map was prepared carefully. If it is not possible to determine symbol width easily, because one symbol represents a range of road widths (10 feet), choose the smaller road width.

3.7.1.7 Parameter Attribute Codes

Assigning route numbers to road segments involves interpreting the placement of the route shields on the map. This is not always a straightforward task. Although the route shields were originally placed on the map to provide clear indications of the extent of the numbered route, because of various State requirements for numbering the roads, it can be difficult to determine whether route numbers are continuous or when a road has multiple route numbers, particularly where multiple numbered routes join and split. In general, on any given map, interstate and U.S. numbered highways will be continuous and every effort should be made to identify each segment of the road with the appropriate route number. (Interstate and U.S. numbered highways are not necessarily continuous across the entire country or even an entire State.) State and county route numbers, however, are not necessarily continuous and this varies by State. If a numbered route joins another numbered route and both route numbers are shown next to the segment of road, assign both route numbers to the segment of road. If, however, a numbered route joins another numbered route and only one route number is shown next to the segment of road, assume the segment carries only the one route number and assign only one route number. If the numbered route that was dropped when it joined the other numbered route reappears after splitting from the other numbered route, allow the route to be discontinuous.

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Part 3: Attribute Coding

The entity responsible for roads varies by state; use the following information in determining whether a route number is a State or county route.

County route numbers have only been shown on maps in Florida, Missouri, and Wisconsin. In Missouri and Wisconsin, if a route number is symbolized with the State route shield (a circle) and it contains an alphabetic designator, it is collected with a county route number (176 ----). In Florida, county route numbers are no longer required and these route numbers are not collected in the DLG, even though they are shown on the map. (County route numbers in Florida have been shown with a rectangular route shield.)

In Texas, farm-to-market roads have been shown with the State route shield (although it becomes an ellipse instead of a circle because the route number is generally 4 digits). These route numbers are collected with (174 ----), State route number.

All other route numbers symbolized with the State route shield are collected using the State route number (174 ----). Note that if the State route number is four digits, the State route shield will be elliptical, rather than circular.

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Part 3: Attribute Coding

3.7.1.8 List of Roads and Trails Attribute Codes

- o Node attribute codes
  - 170 0001 Bridge abutment
  - 170 0002 Tunnel portal
  - 170 0004 Gate
  - 170 0005 Cul-de-sac
  - ~~170 0006 Dead end~~
  - 170 0007 Drawbridge
  
- o Area attribute codes
  - 000 0000 Outside area
  - 170 0100 Void area
  
- o Line attribute codes
  - 170 0201 Primary route, class 1, symbol undivided
  - 170 0202 Primary route, class 1, symbol divided by centerline
  - 170 0203 Primary route, class 1, divided, lanes separated
  - 170 0204 Primary route, class 1, one-way, other than divided highway
  - 170 0205 Secondary route, class 2, symbol undivided
  - 170 0206 Secondary route, class 2, symbol divided by centerline
  - 170 0207 Secondary route, class 2, symbol divided, lanes separated
  - 170 0208 Secondary route, class 2, one-way, other than divided highway
  - 170 0209 Road, class 3, symbol undivided
  - 170 0210 Road, class 4
  - 170 0211 Trail
  - 170 0212 Road, class 5, four-wheel-drive
  - 170 0213 Footbridge
  - 170 0214 Road ferry crossing
  - ~~170 0215 Perimeter of parking area~~
  - ~~170 0216 Arbitrary line extension~~
  - 170 0217 Road, class 3, symbol divided by centerline
  - 170 0218 Road, class 3, symbol divided, lanes separated
  - 170 0219 Road, class 4, one-way
  - ~~170 0220 Closure line~~
  - 170 0221 Road, class 3, one-way
  - 170 0222 Road in transition
  - 170 0223 Road in service facility, rest area, or viewpoint
  - 170 0299 Processing line

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Part 3: Attribute Coding

o Single-point attribute codes

None

o General purpose attribute codes

170 0401 Traffic circle  
170 0402 Ramp in interchange  
170 0403 Tollgate  
170 0404 Weigh station  
170 0405 Nonstandard section of road  
~~170 0406 Covered bridge~~

o Descriptive attribute codes

~~170 0600 Historical~~  
170 0601 In tunnel  
170 0602 Overpassing, on bridge (except drawbridge)  
170 0603 Under construction  
~~170 0604 Under construction, classification unknown~~  
170 0605 Labeled "Old Railroad Grade"  
170 0606 Submerged or in ford  
170 0607 Underpassing  
~~170 0608 Limited access~~  
170 0609 Toll  
170 0610 Privately operated or restricted use  
~~170 0611 Proposed~~  
170 0612 Double-decked  
~~170 0613 In service facility, rest area, or roadside park~~  
170 0614 Elevated  
170 0615 Bypass  
170 0616 Alternate  
170 0617 Business  
170 0618 On drawbridge  
170 0619 Spur  
170 0620 Loop  
170 0621 Connector  
170 0622 Truck route  
~~170 0623 With railroad~~  
170 0624 Covered bridge  
170 0650 Road width 0.025 inch  
170 0651 Road width 0.030 inch  
170 0652 Road width 0.035 inch  
170 0653 Road width 0.040 inch  
170 0654 Road width 0.045 inch  
170 0655 Road width 0.050 inch  
170 0656 Road width 0.055 inch  
170 0657 Road width 0.060 inch

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170 0658 Road width 0.065 inch  
170 0659 Road width 0.070 inch

o Parameter attribute codes

170 0000 Photorevised feature  
~~171 ---- Number of lanes~~  
172 ---- Interstate route number  
173 ---- U.S. route number  
174 ---- State route number  
175 ---- Reservation, park, or military route number  
176 ---- County route number  
177 XXYY Alphabetic portion of any route number  
~~178 0000 Best estimate of position or classification~~  
~~179 00-- Coincident feature~~

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3.7.2 Node Attribute Codes

170 0001 Bridge abutment

This code identifies a bridge wing tick shown by symbols 137, 138, 146 (A); 112.83, 116.6 (B); 511.15, 516.11(C); or 2105.01, 2105.02 (D). Digitize a node where the bridge wing tick intersects the centerline of the road. See code 170 0602 for coding the bridge.

170 0002 Tunnel portal

This code identifies a tunnel portal shown by symbols 139(A), 112.83, 116.5(B), 511.17, 516.12(C), or 2105.03(D). Digitize a node where the tunnel portal tick intersects the centerline of the road. See code 170 0601 for coding the tunnel.

170 0004 Gate

This code identifies a gate, other than a tollgate (see code 170 0403), shown by the same tick as symbols 104(A); 511.26(C); or 2103.06(D). Must be labeled "Gate." Digitize the gate as a node where the gate tick intersects the centerline of the road.

This code does not apply to 1:100,000-scale maps.

170 0005 Cul-de-sac

This code identifies a cul-de-sac shown by symbols 116.10(B); 516.7 (C); or 2103.09(D). When a cul-de-sac is shown with a solid symbol, with no interior island, digitize a node and assign this code only. Do not use this code when the cul-de-sac is shown with an interior island. Instead, digitize a centerline along the road and code as appropriate for the road class; generally class 3 (170 0209) on 1:24,000-scale maps, and class 4 (170 0210) on 1:100,000-scale maps).

~~170 0006 Dead end~~

This feature is no longer collected.

170 0007 Drawbridge

This code identifies a drawbridge shown by the circle portion of the drawbridge symbol: 138(A); 511.15, 516.11 (C); or 2105.02(D). Digitize a node in the center of the

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circle. See code 170 0618 for coding the road segments on both sides of the circle portion of the drawbridge symbol.

This code does not apply to 1:100,000-scale maps.

3.7.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

170 0100 Void area

This code is used to identify the area beyond the national boundary to distinguish it from the background area. The perimeter of the void area is collected as an unattributed line, unless it is defined by a road.

3.7.4 Line Attribute Codes

170 0201 Primary route, class 1, symbol undivided

This code identifies a class 1 road shown by symbols 100, 101 (A); 121.1(B); or 511.10(C). It is also used for symbol 2103.01(D) when labeled as an interstate or U.S. numbered highway. Digitize a centerline along the road.

If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

170 0202 Primary route, class 1, symbol divided by centerline

This code identifies a class 1 road symbolized with three casings as shown by symbols 109(A) or 511.11(C). It is also used for symbol 2103.02(D) when labeled as an interstate or U.S. highway. Digitize a centerline along the middle casing. If the middle casing is broken (to indicate breaks in the median for turning), collect the centerline as if the breaks did not exist.

If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

This code does not apply to 1:100,000-scale maps.

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170 0203 Primary route, class 1, divided, lanes separated

This code identifies a class 1, divided highway, symbolized as separate roads as shown by symbols 110(A), 121.1(B), 511.11(C). It is also used for symbol 2103.02(D) when labeled as an interstate or U.S. numbered highway and the lanes are separated. Digitize a centerline in each lane of a divided highway. Crossovers on divided highways are digitized as a centerline and coded using the appropriate road class code.

If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

170 0204 Primary route, class 1, one-way, other than divided highway

This code identifies a class 1, one-way road as symbolized by a directional arrow. Digitize a centerline along the road. One-way roads generally occur in urban areas in which major through streets may be designated as one-way. This code is not used if the road is part of a divided highway (see code 170 0203).

This code does not apply to 1:100,000-scale maps.

170 0205 Secondary route, class 2, symbol undivided

This code identifies a class 2 road shown by symbols 102, 103(A); 121.2(B); or 511.10(C). It is also used for symbol 2103.01(D) when labeled as a State or county highway. Digitize a centerline along the road.

If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

170 0206 Secondary route, class 2, symbol divided by centerline

This code identifies a class 2 road symbolized with three casings as shown by symbols 109(A) or 511.11(C). It is also used for symbol 2103.02(D) when labeled as a State or county highway. Digitize a centerline along the middle casing. If the middle casing is broken (to indicate breaks in the median for turning), collect the centerline as if the breaks did not exist.

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If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

This code does not apply to 1:100,000-scale maps.

170 0207 Secondary route, class 2, symbol divided, lanes separated

This code identifies a class 2, divided highway, symbolized as separate roads as shown by symbols 110(A), 121.2(B), 511.11(C). It is also used for symbol 2103.02(D) when labeled as a State or county highway and the lanes are separated. Digitize a centerline in each lane of a divided highway. Crossovers on divided highways are digitized as a centerline and coded using the appropriate road class code.

If the road exceeds the standard width for the map scale, add the appropriate road width code (see codes 170 0650 through 170 0659).

170 0208 Secondary route, class 2, one-way, other than divided highway

This code identifies a class 2, one-way road as symbolized by a directional arrow. Digitize a centerline along the road. One-way roads generally occur in urban areas in which major through streets may be designated as one-way. This code is not used if the road is part of a divided highway (see code 170 0208).

This code does not apply to 1:100,000-scale maps.

170 0209 Road, class 3, symbol undivided

This code identifies a class 3 road shown by symbols 105(A), 116.1(B), or 516.1(C). It is also used for symbol 2103.01(D) when there is no route descriptor to indicate administrative responsibility. Digitize a centerline along the road.

170 0210 Road, class 4

This code identifies a class 4 road shown by symbols 106(A), 116.2(B), 516.4(C), or 2103.11(D). It is also used for street patterns in built-up areas on 1:100,000-scale maps shown by symbol 116.7(B). Digitize a centerline along the road.

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170 0211 Trail

This code identifies a trail shown by symbols 107, 133(A), 116.3(B), 516.5(C), or 2103.12 (D) that is NOT labeled to indicate it is designated for four-wheel-drive use. The trail symbol may be labeled in various ways such as "foot trail," "pack trail," or "bicycle trail" although the type of trail is not encoded. For trails labeled "Old Railroad Grade," add code 170 0605.

170 0212 Road, class 5, four-wheel drive

This code identifies a class 5 road shown by symbols 107(A), 116.3(B), 516.5(C), or 2103.12(D) that is labeled to indicate it is designated for four-wheel-drive use. Generally labeled "Jeep Trail" or "4WD."

170 0213 Footbridge

This code identifies a footbridge shown by symbols 140(A), 511.23(C), or 2105.04(D). The footbridge is digitized as a line, from wing tick to wing tick, even when the connecting footpaths are not shown. The nodes at ends of the line segment are unattributed.

This code does not apply to 1:100,000-scale maps.

170 0214 Road ferry crossing

This code identifies a road ferry crossing shown by symbols 150, 151 (A); 112.84(B); 511.24(C); or 2105.09(D). The ferry crossing is digitized as a line, from shoreline to shoreline.

~~170 0215 Perimeter of parking area~~

This feature is no longer collected.

~~170 0216 Arbitrary line extension~~

This code is no longer used.

170 0217 Road, class 3, symbol divided by centerline

This code identifies a class 3 road symbolized with three road casings as shown in symbol 109(A) but without the red fill. It is also used for symbol 2103.02(D) when there is no route descriptor to indicate administrative responsibility. Digitize a centerline along the middle

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casing. If the middle casing is broken (to indicate breaks in the median for turning), collect the centerline as if the breaks did not exist.

This code does not apply to 1:100,000-scale maps.

170 0218 Road, class 3, symbol divided, lanes separated

This code identifies a class 3, divided road, symbolized as separate roads as shown by symbols 110(A) (without the red fill) or 516.2(C). It is also used for symbol 2103.02(D) when there is no route descriptor to indicate administrative responsibility. Crossovers on divided highways are digitized as a centerline and coded using the appropriate road class code.

This code does not apply to 1:100,000-scale maps.

170 0219 Road, class 4, one-way

This code identifies a class 4, one-way road as symbolized by a directional arrow.

This code does not apply to 1:100,000-scale maps.

~~170 0220 Closure line~~

This code is no longer used.

170 0221 Road, class 3, one-way

This code identifies a class 3, one-way road as symbolized by a directional arrow. Use this code for symbols 2103.01(D) when there is no route descriptor to indicate administrative responsibility and designated for one-way traffic.

This code does not apply to 1:100,000-scale maps.

170 0222 Road in transition

This code identifies a centerline digitized in a section of any road where a change in the road width occurs, and the transitional section is equal to or greater than 0.5 inches in length. An unattributed node is placed at the beginning and end of the extent of the transitional segment. The road classification is assigned to the transitional segment of the road for connectivity.

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When a change in road width occurs, and the transitional section is less than 0.5 inches in length, the narrower width road is carried through the transitional segment, following the centerline, until the wider width is attained. The road in transition code is not used.

170 0223 Road in service facility, rest area, or viewpoint

This code identifies a road that runs through a service facility, rest area, or viewpoint. The service road must have definite entrance and exit points and must be separate from the roadway it serves. Digitize a centerline along the service road. Do not collect a pull-off area that is shown only as a wide spot in the road.

Common labels include "Service Facility," "Service Area," "Service Plaza," "Rest Area," "Roadside Park," "Viewpoint," "Vantage Point," or "Overlook."

170 0299 Processing line

This code is described in section 3.0.6.3.

3.7.5 Single-Point Attribute Codes

There are no single-point feature attribute codes in this category.

3.7.6 General Purpose Attribute Codes

170 0401 Traffic circle

This code identifies a traffic circle, which is a junction of roads (three or more) that forms a circle around which traffic normally moves in one direction (not to be confused with a cul-de-sac or with a road intersection with a center island). Traffic circles are shown by symbols 114(A); 116.10, 121.10 (B); 511.28, 516.6 (C); or 2103.09(D). The feature is digitized as a centerline that follows the circle and is broken by unattributed nodes at the points where the roads join the circle. Road classes and route numbers are also encoded on this centerline as appropriate; the classification assigned is that of the highest class of road entering the traffic circle.

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If the traffic circle is symbolized as a solid circle without a center island, do not collect a traffic circle; digitize an unattributed node in the center of the circle and join all of the roads to the node.

170 0402 Ramp in interchange

A ramp is a road that connects two or more roads that are grade-separated (in other words, the roads cross at different levels, generally by underpassing or overpassing, or both). This code does not apply to connecting roadways between two roads that are at the same grade; such turning roadways are collected using the appropriate road class codes.

This code identifies a ramp in an interchange, shown by symbols 115(A); 121.5(B); 511.13(C); or 2103.10(D). Digitize a centerline along the ramp, beginning where the ramp separates from the centerline of one main road and ending where the ramp joins the centerline of the other main road. A ramp in interchange does not carry a road class. A ramp in interchange generally does not carry a route number except in the few cases where a ramp forms the only connection between segments of a numbered route.

All ramps are collected as centerlines of the individual roads, even if on the map, the individual ramps converge and are symbolized with three casings. This occurs most often on exit and entrance ramps on cloverleaf type interchanges.

170 0403 Tollgate

This code identifies a tollgate shown by symbols 104(A), 511.26(C), or 2103.06(D). If a tollgate falls on a standard width road, digitize a node where the gate tick intersects the centerline of the road. If a tollgate falls on a nonstandard section of road (170 0405), or a road carrying a width code (170 065-), digitize a line, perpendicular to the centerline, from road casing to road casing. Any buildings associated with the tollgate are not collected in the DLG.

Although in some cases larger tollgate structures have been shown to scale and identified as toll plazas, they are collected in the DLG according to the instructions for tollgate; the exact size and shape is not captured.

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170 0404 Weigh station

This code identifies a feature labeled "Weigh Station" or "Agricultural Inspection Station." Several treatments may be used depending on the size of the feature. If shown by a road or ramp only, digitize it as a line. If shown to scale, collect it as an area; the line around the perimeter of the feature is unattributed. If depicted by a located object symbol or building without ramps or roads shown, digitize as a degenerate line.

170 0405 Nonstandard section of road

This code identifies a line digitized on the casings of a nonstandard section, equal to or greater than one inch in length, of any class road. Unattributed nodes are placed on each end of the nonstandard section, on the centerline of the road. One or more lines that begin at one of these unattributed nodes, run perpendicular to the centerline until they reach the casing, then follow the outer edge of the nonstandard section of road until they reach a point on the casing that is on a line perpendicular to the centerline and passing through the other unattributed node, then follow the perpendicular line and end at the other unattributed node, are digitized and assigned this code. Road classification and route number are not assigned to the lines digitized as nonstandard section of road, but are assigned to the digitized centerline that continues through the unattributed nodes.

The nonstandard section of road code is not used when the nonstandard section is less than 1 inch in length; in such cases the road is carried through the section, following the centerline.

Where a change in road width occurs, the road in transition code (170 0222) rather than the nonstandard section of road code is used.

~~170 0406 Covered bridge~~

This code is no longer used. See descriptive code for covered bridge (170 0624).

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3.7.7 Descriptive Attribute Codes

~~170 0600 Historical~~

This code is no longer used.

170 0601 In tunnel

This code identifies the portion of a road or trail that is shown as being in a tunnel by symbols 139(A); 121.7, 116.5 (B); 511.16, 516.12 (C); or 2105.03(D). The code is applied only to the portion of the road or trail between the wing ticks (see 170 0002 for coding the wing ticks).

170 0602 Overpassing, on bridge (except drawbridge)

This code identifies the portion of a road or trail that is on a bridge indicated by wing ticks as in symbols 137, 138, 146 (A); 116.6, 121.8 (B); 511.15, 516.11 (C); or 2105.01, 2105.02 (D). This code is used only when wing ticks are present and the code is applied only to the portion of the road between the wing ticks (see 170 0001 for coding the wing ticks). When a road on a bridge passes under another road or railroad, for example, as indicated by a break in the road on the bridge, it is necessary to collect both overpassing, on bridge and underpassing (see code 170 0607).

Do not use this code for drawbridges (see code 170 0618).

170 0603 Under construction

This code identifies the portion of a class 1 or class 2 road that is labeled "Under Construction." On 1:24,000-scale maps, road under construction is shown by symbols 112(A) or 511.12(C). Class 3, 4, or 5 roads shown on the map as under construction are not collected in the digital file. On 1:100,000-scale maps only class 1 roads under construction are shown, by symbol 121.3(B). The exact extent of the construction is not indicated on 1:100,000-scale maps; apply the code to all sections of the road, extending from the label in both directions, until an intersection with another road or the edge of an urban tint provides a reasonable limit to the portion of the road considered to be under construction.

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~~170 0604 Under construction, classification unknown~~

This code is no longer used.

170 0605 Labeled "Old Railroad Grade"

This code identifies an old railroad grade shown by symbols 133(A), 116.3(B), 516.5(C), or 2104.12(D). Must be labeled "Old Railroad Grade."

Must be used in conjunction with 170 0211 (trail).

No code from the Railroad subcategory is used on this feature.

170 0606 Submerged or in ford

→ This code identifies the portion of a road that fords a stream as shown by symbols 147, 148, 149 (A); 516.13(C); or 2105.08(D). In the case of a ford through a single-line stream, digitize a node at the point where the road or trail intersects the stream. In this case the descriptive code stands alone, because codes for road class and route number are not applied to the node. In the case of a ford through a double-line stream, this code is added to the segment of the road from shoreline to shoreline. ←

This code is not used on 1:100,000-scale maps.

170 0607 Underpassing

This code identifies the portion of a road or trail whose symbol has been broken to indicate that it passes under, rather than intersects, another feature (for example, road, railroad, building, runway, canal). It is shown by symbols 145(A); 116.4, 121.6 (B); 511.14, 516.10 (C); or 2105.06(D). Digitize a line connecting the dropped portions of the road or trail and apply this code. When a road on a bridge passes under another road or railroad, for example, as indicated by a break in the road on the bridge, it is necessary to collect both underpassing and overpassing, on bridge (see code 170 0602 or 170 0618).

~~170 0608 Limited access~~

This code is no longer used.

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170 0609 Toll

This code identifies a road that is labeled to indicate it is a toll road. Generally labeled "Toll Road."

Sometimes only a portion of the road, for example, a bridge or a tunnel, has a toll. In those cases, apply this code only to the portion of the road that is on the bridge or in the tunnel.

170 0610 Privately operated or restricted use

This code identifies a road or trail that is restricted, such as a road through a military reservation, a road or trail through a ranch, or a fire road in a forest preserve. Must be labeled "Private" or "Restricted." There may be a gate shown at the point where the restriction begins.

~~170 0611 Proposed~~

This code is no longer used. Any feature labeled "Proposed" is not collected.

170 0612 Double-decked

This code identifies a road that is constructed over another road or a road on a two-level bridge. The double-decked structure is shown by the standard road symbol appropriate to its class. Must be labeled "Double-decked."

This code is not used on 1:100,000-scale maps.

~~170 0613 In service facility, rest area, or roadside park~~

This descriptive code is no longer used. A road in a service facility, rest area, or roadside park is collected using the primary attribute code 170 0223.

170 0614 Elevated

This code identifies a road that is labeled "elevated" to indicate that it is raised above ground level. This code is not used on bridges (see code 170 0602).

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170 0615 Bypass

This code identifies a road that is identified as a bypass route by the presence of the letters BYP in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0616 Alternate

This code identifies a road that is identified as an alternate route by the presence of the letters ALT in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0617 Business

This code identifies a road that is identified as a business route by the presence of the letters BR in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0618 On drawbridge

This code identifies the portion of a road that is shown as being on a drawbridge indicated by wing ticks and a circle as in symbols 138(A); 511.15, 516.11(C) or 2105.02(D). This code is used only when wing ticks and the circle are present and the code is applied only to the portion between the wing ticks. See 170 0001 for coding the wing ticks. See code 170 0007 for coding the circular portion of the drawbridge symbol.

This code does not apply to 1:100,000-scale maps.

170 0619 Spur

This code identifies a road that is described as a spur route by the presence of the word SPUR in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0620 Loop

This code identifies a road that is described as a loop route by the presence of the word LOOP in the highway

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route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0621 Connector

This code identifies a road that is described as a connector route by the presence of the abbreviation CONN in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

170 0622 Truck route

This code identifies a road that is described as a truck route by the presence of the abbreviation TR in the highway route marker. This code is used in addition to and precedes the parameter code that contains the route number.

~~170 0623 With railroad~~

This code is no longer used.

170 0624 Covered bridge

This code identifies a bridge that is labeled "Covered." A covered bridge is always collected as a line. This code is always used in conjunction with the overpassing code (170 0602), except when it is applied to an isolated covered bridge that is not on a road. When applied to an isolated covered bridge that is not on a road, this code stands alone.

170 065- Road width

Descriptive attribute codes 170 0650 through 170 0659 are used to describe roads that are scribed to scale rather than shown by standard size symbols. This code applies only to 1:24,000-scale maps. At 1:24,000-scale, roads shown with the symbol undivided, equal to or less than 45 feet on the ground, are shown with the standard width road symbol (0.02 inch). If the road is greater than 45 feet on the ground, the symbol width is increased by 0.005 inch for each 10 feet of road width. Roads whose symbol is divided by a centerline equal to or less than 75 feet on the ground are shown with the standard width for a road with a centerline (0.035 inch). If the road

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is greater than 75 feet on the ground, the symbol width is increased by 0.005 inch for each 10 feet of road width. However, variations in width that are not sustained for at least one-half mile (1.33 inches at 1:24,000-scale) are not collected. The specific widths associated with each code are listed below. The first three codes do not apply to class 1, 2 or 3 roads, symbol divided by centerline (codes 170 0202, 170 0206, or 170 0217).

170 0650	Road width 0.025 inch
170 0651	Road width 0.030 inch
170 0652	Road width 0.035 inch
170 0653	Road width 0.040 inch
170 0654	Road width 0.045 inch
170 0655	Road width 0.050 inch
170 0656	Road width 0.055 inch
170 0657	Road width 0.060 inch
170 0658	Road width 0.065 inch
170 0659	Road width 0.070 inch

3.7.8 Parameter Attribute Codes

170 0000 Photorevised feature

This code is described in section 3.0.6.4.

For roads, if any part of the symbol, (the casing or the fill, or both) is shown in purple, add this code. If only the route designator (road shield) is shown in purple, do not add this code.

When a road divided by a centerline has been added during photorevision, sometimes the centerline has been symbolized, and sometimes it has not. Such roads are collected as shown on the map. If the symbol is divided by a centerline on the map, the appropriate symbol divided by centerline code is applied. If the symbol is not divided by a centerline on the map, the appropriate symbol undivided code is applied, and a width code is added.

~~171 ----- Number of lanes -----~~

This code is no longer used.

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172 ---- Interstate route number

This code is used to encode the route number of an interstate highway. Enter the number shown on the highway route marker in the spaces, flush right, one to four digits. If the route number contains alphabetic characters, also use 177 XXYY. If the highway is labeled BYP, ALT, BR, or so on, this parameter code should be preceded by the appropriate descriptive code, such as 170 0615, 170 0616, or 170 0617, respectively. Do not encode the uppercase I that is sometimes associated with an interstate highway, because this parameter code imparts that information.

173 ---- U.S. route number

This code is used to encode the route number of a U.S. numbered highway. Enter the number shown on the highway route marker in the spaces, flush right, one to four digits. If the route number contains alphabetic characters, also use code 177 XXYY. If the highway is labeled BYP, ALT, BR, or so on, this parameter code should be preceded by the appropriate descriptive code, such as 170 0615, 170 0616, or 170 0617, respectively. Do not encode the uppercase "US" that is sometimes associated with a U.S. highway, because this parameter code imparts that information.

174 ---- State route number

This code is used to encode the route number of a State highway. Enter the number shown on the highway route marker in the spaces, flush right, one to four digits. If the route number contains alphabetic characters, also use code 177 XXYY. If the highway is labeled BYP, ALT, BR, or so on, this parameter code should be preceded by the appropriate descriptive code, such as 170 0615, 170 0616, or 170 0617, respectively. Do not encode the uppercase SR that is sometimes associated with a State highway, because this parameter code imparts that information.

175 ---- Reservation, park, or military route number

This code is used to encode the route number of a reservation, park, or military route number. Enter the number shown on the highway route marker in the spaces, flush right, one to four digits. If the route number contains alphabetic characters, also use code 177 XXYY.

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If the highway is labeled BYP, ALT, BR, or so on, this parameter code should be preceded by the appropriate descriptive code, such as 170 0615, 170 0616, or 170 0617, respectively.

This code is not used on 1:100,000-scale maps.

176 ---- County route number

This code is used to encode a county route number when shown on a Missouri or Wisconsin map. Enter the number shown on the highway route marker in the spaces, flush right, one to four digits. Because the route number contains an alphabetic designator, also use code 177 XXYY. If the highway is labeled BYP, ALT, BR, or so on, this parameter code should be preceded by the appropriate descriptive code, such as 170 0615, 170 0616, or 170 0617, respectively.

This code is not used on 1:100,000-scale maps.

177 XXYY Alphabetic portion of any route number

This code is used to encode the alphabetic portion of any route number, by substituting numeric values for the alphabetic characters as follows:

00 = blank, 01 = A, 02 = B, 03 = C, 04 = D, 05 = E,  
06 = F, 07 = G, 08 = H, 09 = I, 10 = J, 11 = K, 12 = L,  
13 = M, 14 = N, 15 = O, 16 = P, 17 = Q, 18 = R, 19 = S,  
20 = T, 21 = U, 22 = V, 23 = W, 24 = X, 25 = Y, 26 = Z.

If one letter is encoded, it is entered in the YY portion of the code with blank coded in the XX portion. This code is used in conjunction with the appropriate code, 172 ---- through 176 ----, if the route designation is mixed numeric and alphabetic; this code precedes or follows the code for the route number in accordance with its actual position in the route designator. In the case of an entirely alphabetic route designator, also use the appropriate code to specify jurisdiction (173 ---- through 176 ----) with 0000 entered into the minor code.

Do not use this code to represent ALT, BR, BYP, I (interstate), SR (state route), US (United States), SPUR, LOOP, CONN (connector), or TR (truck route), as these qualifiers of the route number are encoded by other codes.

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The following examples illustrate the use of this parameter code:

State route B143 is encoded 177 0002, 174 0143  
County route 6R is encoded 176 0006, 177 0018  
U.S. route A1A is encoded 177 0001, 173 0001, 177 0001  
State route KK is encoded 177 1111, 174 0000  
U.S. route ALT 1 is encoded 170 0616, 173 0001

~~178 0000 Best estimate of position or classification~~

This code is no longer used.

~~179 00 Coincident feature~~

This code is no longer used.

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3.8 RAILROADS - Major Code 180

Transportation data are collected in three separate categories (Roads and Trails; Railroads; and Pipelines, Transmission Lines, and Miscellaneous Transportation Features) for each map source, which means that the attribute codes from the three categories are not intermingled. However, the three categories are distributed by the National Cartographic Data Base office as one unit. Where collection of transportation is authorized from a map source, all of the transportation for that source is collected. If there are no features in a particular category on a source, the header record shows that the file was initialized to hold Roads and Trails, Railroads, or Pipelines, Transmission Lines, and Miscellaneous Transportation Features, but the neatlines of the source, the background area, and the area outside the map are the only information digitized for that category.

3.8.1 General Principles

3.8.1.1 Node Attribute Codes

There are no general principles that apply to node attribute codes.

3.8.1.2 Area Attribute Codes

There are no general principles that apply to area attribute codes.

3.8.1.3 Line Attribute Codes

Railroads are uniquely symbolized to portray the gauge and number of tracks. In addition, labels identify rapid transit railroads, elevated railroads, private railroads, and U.S. Government railroads. This information is encoded using descriptive codes 180 0606 (narrow gauge), 180 0609 (elevated), 180 0610 (rapid transit), 180 0612 (private), and 180 0613 (U.S. Government) and parameter code 181 ---- (number of tracks), in addition to the primary line attribute code. The operational status (abandoned, under construction, dismantled) of railroads is shown on the maps, but that information is no longer collected in the digital data. Railroad features labeled "Abandoned" are collected using the appropriate primary code. Railroad features labeled "Under Construction," or "Dismantled" are not collected.

The symbol books do not always provide unique symbol numbers. For example, in reference C, a standard gauge general case railroad has

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the same number as a rapid transit railroad. This should not be a problem because rapid transit will always be labeled on the map.

Every railroad must receive a code that identifies the type of railroad (180 0201 - 180 0208).

Railroads that underpass other features, including roads, other railroads, buildings, and runways, are collected using the code for underpassing (180 0605), if the railroad symbol has been broken to indicate that it underpasses. Railroads that pass through snowsheds are collected continuously, as though the snowshed were not there, and are given all appropriate attribute codes.



180 0209 (Railroad yard) is now collected as an area. See code description for information on how to attribute the perimeter line.



3.8.1.4 Single-Point Attribute Codes

There are no single-point attribute codes.

3.8.1.5 General Purpose Attribute Codes



When a general purpose code is assigned to an area, the perimeter of that area is usually unattributed.



3.8.1.6 Descriptive Attribute Codes

None of the descriptive attribute codes can stand alone. They must be used with a primary attribute code from the list of line attribute codes.

3.8.1.7 Parameter Attribute Codes

There are no general principles that apply to parameter attribute codes.

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3.8.1.8 List of Railroads Attribute Codes

- o Node attribute codes
  - 180 0001 Bridge abutment
  - 180 0002 Tunnel portal
  - ~~180 0003 Crossover~~
  - 180 0007 Drawbridge
- o Area attribute codes
  - 000 0000 Outside area
  - 180 0100 Void area
- o Line attribute codes
  - 180 0201 Railroad
  - 180 0202 Railroad in road
  - 180 0204 Carline
  - 180 0205 Cog railroad, incline railway, or logging tram
  - 180 0207 Railroad ferry crossing
  - 180 0208 Railroad siding
  - 180 0209 Railroad yard
  - ~~180 0210 Arbitrary line extension~~
  - ~~180 0211 Closure line~~
  - 180 0299 Processing line
- o Single-point attribute codes
  - None
- o General purpose attribute codes
  - 180 0400 Railroad station
  - 180 0401 Turntable
  - 180 0402 Roundhouse
- o Descriptive attribute codes
  - ~~180 0600 Historical~~
  - 180 0601 In tunnel
  - 180 0602 Overpassing, on bridge (except drawbridge)
  - ~~180 0603 Abandoned~~
  - ~~180 0604 Dismantled~~
  - 180 0605 Underpassing
  - 180 0606 Narrow gauge
  - ~~180 0607 In snowshed or under structure~~
  - ~~180 0608 Under construction~~
  - 180 0609 Elevated

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180 0610 Rapid transit  
180 0611 On drawbridge  
180 0612 Private  
180 0613 U.S. Government  
~~180 0614 Juxtaposition~~

o Parameter attribute codes

180 0000 Photorevised feature  
181 ---- Number of tracks  
~~183 0---- Angle of clockwise rotation~~  
~~188 0000 Best estimate of position or classification~~  
~~189 00-- Coincident feature~~

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3.8.2 Node Attribute Codes

180 0001 Bridge abutment

This code identifies a bridge wing tick shown by symbols 141, 142, 143 (A); 112.17(B); 512.21(C); or 2105.02, 2105.05 (D). Digitize a node where the bridge wing tick intersects the centerline of the railroad. See code 180 0602 for coding the bridge.

180 0002 Tunnel portal

This code identifies a tunnel portal shown by symbols 144(A), 112.19(B), 512.22(C), or 2105.03(D). Digitize a node where the tunnel portal tick intersects the centerline of the railroad. See code 180 0601 for coding the tunnel.

~~180 0003 Crossover~~

This feature is no longer collected.

180 0007 Drawbridge

This code identifies a drawbridge shown by the circle portion of the drawbridge symbol: 143(A), 512.21(C), or 2105.02(D). Digitize a node in the center of the circle. See code 180 0611 for coding the railroad segments on both sides of the circle portion of the drawbridge symbol.

This code does not apply to 1:100,000-scale maps.

3.8.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

180 0100 Void area

This code is used to identify the area beyond the national boundary to distinguish it from the background area. The perimeter of the void area is collected as an unattributed line, unless it is defined by a railroad.

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Part 3: Attribute Coding

3.8.4 Line Attribute Codes

180 0201 Railroad

This code identifies a railroad line shown by symbols 117 through 123, 127 through 130 (A); 112.11 through 112.14 (B); 512.1 through 512.5, 512.10 through 512.13 (C); or 2104.01 through 2104.06, 2104.10, 2104.11 (D).

If shown by symbols 117, 118, 119(A); 112.11(B); 512.1, 512.2(C); 2104.01, 2104.02, 2104.03(D), this code is used alone.

If shown by symbols 120, 121, 122, or 123(A); 112.12(B); 512.3, 512.4, or 512.5(C); 2104.04, 2104.05, 2104.06(D), add parameter code 181 ---- to encode number of tracks. At 1:24,000 scale, digitize a centerline between the two tracks.

If shown by symbols 127, 128(A); 112.13(B); 512.10, 512.11(C); 2104.10(D), add descriptive code 180 0606 to describe narrow gauge.

If shown by symbols 129, 130(A); 112.14(B); 512.12 or 512.13(C); 2104.11(D), add parameter code 181 ---- to encode number of tracks and add descriptive code 180 0606 to describe narrow gauge.

180 0202 Railroad in road

This code identifies a railroad located in a road. It is used only when the railroad is shown by symbols 124(A), 112.25(B), 512.8, 512.9 (C), or 2104.07(D), in which the road symbol is superimposed on the railroad symbol.

180 0204 Carline

This code identifies a carline shown by symbols 131, 132, 133 (A); 112.27(B); or 512.14, 512.15(C).

180 0205 Cog railroad, incline railway, or logging tram

This code identifies a special purpose railroad such as a cog railroad, incline railway, or logging tram as shown by symbols 188(A), 112.23(B), 512.24(C), or 2110.02(D). Must be labeled to indicate it is one of the special purpose railroads listed.

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180 0207 Railroad ferry crossing

This code identifies a railroad ferry crossing shown by symbols 150(A), 112.21(B), 512.23(C), or 2105.09(D). The ferry crossing is digitized as a line, from shoreline to shoreline.

180 0208 Railroad siding

This code identifies a railroad siding that is one or more single tracks branching off from a main line of a railroad and shown by symbols 126(A), 112.16(B), 512.7(C), or 2104.09(D). This code is used only to identify short sidings that are used for passing, temporary storage, or loading and unloading of railroad cars. Often, but not always, the siding is shown with a line weight of 0.003 inch to distinguish it from the main line, which is shown by a line weight of 0.005 inch.

Sidings are not collected within railroad yards.

Do not use this code to collect spur tracks, which can travel some distance to a facility. Spur tracks are collected as general case railroads (180 0201).

180 0209 Railroad yard

A railroad yard is an area with six or more adjacent tracks, including both primary tracks and sidings. Any areas within a yard that are not covered with tracks are included in the yard. The yard begins at the point where multiple sidings diverge from the primary line and ends at the point where multiple sidings converge on the primary line, or where the lines terminate.

Railroad yards are shown with symbols 125(A), 112.15(B), 512.6(C), or 2104.08(D) and are mapped to scale with the main line through the yard and the outermost tracks that form the perimeter shown in true position. The rest of the tracks in the yard are shown by a representative pattern.

Railroad yards are collected as areas. The outline of the area follows the outermost tracks and is unattributed, unless the outermost track is the mainline through the yard. Any open ended portion of a yard is closed off with an unattributed line.

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Where it can be distinguished, the main line through the yard is digitized and described by the appropriate railroad code. Sidings within the yard are not collected. Turntables (180 0401) and roundhouses (180 0402) are collected. Other buildings are collected in Manmade Features.

~~180 0210 Arbitrary line extension~~

This code is no longer used.

~~180 0211 Closure line~~

This code is no longer used.

180 0299 Processing line

This code is described in section 3.0.6.3.

3.8.5 Single-Point Attribute Codes

There are no single-point attribute codes in this category.

3.8.6 General Purpose Attribute Codes

180 0400 Railroad station

This code identifies a railroad station. If the station is shown by symbols 136(A), 112.18(B), 512.18(C) or 2104.14(D), digitize a node on the line that represents the railroad. If the station is less than 0.05 inch on the longest side, and is not on the railroad line, digitize a degenerate line. If the station is greater than or equal to 0.05 inch on the longest side, digitize it as an area.

180 0401 Turntable

This code identifies a railroad turntable. If the turntable is shown by symbols 134(A), 512.17(C), or 2104.13(D) and is 0.06 inch in diameter, digitize a node on the railroad line. If the turntable is shown to scale (greater than 0.06 inch in diameter), digitize it as an area.

This code is not used on 1:100,000-scale maps.

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180 0402 Roundhouse

This code identifies a railroad roundhouse as shown by symbols 135(A), 112.22(B), 512.16(C), or 2104.13(D). It is digitized as an area.

3.8.7 Descriptive Attribute Codes

~~180 0600 Historical~~

This code is no longer used.

180 0601 In tunnel

This code identifies the portion of a railroad that is shown as being in a tunnel by symbols 144(A), 112.19(B), 512.22(C), or 2105.03(D). The code is applied only to the portion of the railroad between the wing ticks (see code 180 0002 for coding the wing ticks).

180 0602 Overpassing, on bridge (except drawbridge)

This code identifies the portion of a railroad that is on a bridge indicated by wing ticks as in symbols 141, 142, 143 (A); 112.17(B); 512.21(C); or 2105.02, 2105.05 (D). This code is used only when wing ticks are present and the code is applied only to the portion of the railroad between the wing ticks (see 180 0001 for coding the wing ticks). Where a railroad on a bridge passes under another railroad or road as indicated by a break in the railroad on the bridge, it is necessary to collect both overpassing, on bridge and underpassing (see code 180 0605).

Do not use this code for drawbridges (see code 180 0611).

~~180 0603 Abandoned~~

This code is no longer used. Any feature labeled "Abandoned" is collected using the appropriate feature code.

~~180 0604 Dismantled~~

This code is no longer used. Any feature labeled "Dismantled" is not collected.

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180 0605 Underpassing

This code identifies the portion of a railroad whose symbol has been broken to indicate that it passes under, rather than intersects, another feature (i.e. railroad, road, building, runway, canal). It is shown by symbols 145(A), 112.20(B), 512.20(C), or 2105.06(D). Digitize a line connecting the dropped portions of the railroad and apply this code. Where a railroad on a bridge passes under another railroad or road as indicated by a break in the railroad on the bridge, it is necessary to collect both overpassing, on bridge and underpassing (see code 180 0602).

180 0606 Narrow gauge

This code further describes a railroad that is shown by symbols 127 through 130(A); 112.13, 112.14(B); 512.10 through 512.13(C); or 2104.10, 2104.11(D).

~~180 0607 In snowshed or under structure~~

This code is no longer used. Snowsheds or other structures are collected in Manmade Features as building (general case).

~~180 0608 Under construction~~

This code is no longer used. Any feature labeled "Under Construction" is not collected.

180 0609 Elevated

This code identifies any feature that is labeled "elevated." This code is not used on bridges (see code 180 0602).

180 0610 Rapid transit

This code further describes a railroad that is labeled to indicate it is used for rapid transit. Must be labeled "Rapid Transit."

180 0611 On drawbridge

This code identifies the portion of a railroad that is shown as being on a drawbridge indicated by wing ticks and a circle as in symbols 143(A), 512.21(C), or 2105.02(D). This code is used only when wing ticks and

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the circle are present and this code is applied only to the portion between the wing ticks. See 180 0001 for coding the wing ticks. See code 180 0007 for coding the circular portion of the drawbridge symbol.

This code does not apply to 1:100,000-scale maps.

180 0612 Private

This code further describes a railroad that is labeled "Private."

180 0613 U.S. Government

This code further describes a railroad labeled as belonging to the U.S. Government.

~~180 0614 Juxtaposition~~

This code is no longer used. Railroads shown with the symbol for juxtaposition, 123(A), 512.5(C), 2104.06(D) are collected as multiple track railroad (180 0201 plus 181----).

3.8.8 Parameter Attribute Codes

180 0000 Photorevised feature

This code is described in section 3.0.6.4.

181 ---- Number of tracks

This code is used to encode the number of tracks only on railroads shown with the multiple track symbol. Do not collect number of tracks where sidings branch off from the mainline. The number of tracks is entered in the spaces, flush right, one to four digits. If a railroad is shown with the multiple track symbol, and the number of tracks is not labeled, then the number of tracks is 2. Do not encode the number of tracks shown in railroad yards.

~~183 0 --- Angle of clockwise rotation~~

This code is no longer used.

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~~188 0000 Best estimate of position or classification~~

This code is no longer used.

~~189 00 Coincident feature~~

This code is no longer used.

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3.9 PIPELINES, TRANSMISSION LINES, and MISCELLANEOUS TRANSPORTATION  
FEATURES - Major Code 190

Transportation data are collected in three separate categories (Roads and Trails; Railroads; and Pipelines, Transmission Lines, and Miscellaneous Transportation Features) for each map source, which means that the attribute codes from the three categories are not intermingled. However, the three categories are distributed by the National Cartographic Data Base office as one unit. Where collection of transportation is authorized from a map source, all of the transportation for that source is collected. If there are no features in a particular category on a source, the header record shows that the file was initialized to hold Roads and Trails, Railroads, or Pipelines, Transmission Lines, and Miscellaneous Transportation Features, but the neatlines of the source, the background area, and the area outside the map are the only information digitized for that category.

3.9.1 General Principles

3.9.1.1 Node Attribute Codes

There are no node attribute codes.

3.9.1.2 Area Attribute Codes

There are no general principles for area attribute codes.

3.9.1.3 Line Attribute Codes

Transmission lines and pipelines are not shown on USGS maps as continuous transportation features. These features are shown more for their landmark character. Pipelines in particular are often shown only where there is a visible scar on the ground. As explained in section 3.0.5, some features are suppressed for legibility concerns. Transmission lines and pipelines are often suppressed for other features, particularly roads. Do not attempt to connect the dropped portions of these features. Digitize these features as shown on the map.

3.9.1.4 Single-Point Attribute Codes

There are no single-point attribute codes

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Part 3: Attribute Coding

3.9.1.5 General Purpose Attribute Codes

Several general purpose attribute codes are used to collect complexes that are associated with transmission lines and pipelines. These include, power station or power plant (190 0400), hydroelectric plant (190 0402), pumping station or compressor station (190 0406), and measuring station or valve station (190 0408). Sometimes these features have been treated as individual buildings on the map, and sometimes they have been treated as complexes. However, in the DLG these features are collected as degenerate lines if the area they occupy is less than 120 feet in the shortest dimension, and as areas if they occupy 120 feet or more. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

On some maps, individual pumps have been shown with a circle or a located object symbol. These features are not collected.

3.9.1.6 Descriptive Attribute Codes

There are no general principles for descriptive attribute codes.

3.9.1.7 Parameter Attribute Codes

There are no general principles for parameter attribute codes.

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3.9.1.8 List of Pipelines, Transmission Lines, and Miscellaneous Transportation Features Attribute Codes

o Node attribute codes

~~190 0001 End of transmission line at power station, substation, or hydroelectric plant~~  
~~190 0002 End of pipeline at oil or gas field~~  
~~190 0003 End of pipeline at refinery, depot, or tank farm~~  
~~190 0004 Steel or concrete tower on transmission line~~

o Area attribute codes

000 0000 Outside area  
190 0100 Void area

o Line attribute codes

190 0201 Pipeline  
190 0202 Power transmission line  
190 0203 Telephone line  
~~190 0204 Aerial tramway, monorail, or ski lift~~  
~~190 0205 Arbitrary line extension~~  
~~190 0206 Closure line~~  
190 0207 Aerial tramway  
190 0208 Monorail  
190 0209 Ski lift  
190 0299 Processing line

o Single-point attribute codes

~~190 0300 Seaplane anchorage~~

o General purpose attribute codes

190 0400 Power station or power plant  
190 0401 Substation  
190 0402 Hydroelectric plant  
190 0403 Landing strip, runway, apron, taxiway  
190 0404 Helipad  
190 0405 Launch complex  
190 0406 Pumping station or compressor station  
~~190 0407 Seaplane ramp or landing area~~  
190 0408 Measuring station or valve station  
190 0409 Seaplane ramp  
190 0410 Seaplane landing area

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o Descriptive attribute codes

~~190 0600 Underground~~  
190 0601 Under construction  
190 0602 Abandoned  
190 0603 Aboveground  
~~190 0604 Labeled "Closed"~~  
190 0605 Unpaved  
190 0606 Submerged  
190 0607 Nuclear

o Parameter attribute codes

190 0000 Photorevised feature  
~~193 0--- Angle of clockwise rotation~~  
~~198 0000 Best estimate of position or classification~~  
~~199 00--- Coincident feature~~

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3.9.2 Node Attribute Codes

~~190 0001 End of transmission line at power station, substation, or hydroelectric plant~~

This feature is no longer collected.

~~190 0002 End of pipeline at oil or gas field~~

This feature is no longer collected.

~~190 0003 End of pipeline at refinery, depot, or tank farm~~

This feature is no longer collected.

~~190 0004 Steel or concrete tower on transmission line~~

This feature is no longer collected.

3.9.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

190 0100 Void area

This code is used to identify the area beyond the national boundary to distinguish it from the background area. The perimeter of the void area is collected as an unattributed line, unless it is defined by a symbolized feature collected in the Pipelines, Transmission Lines, and Miscellaneous Transportation Features category.

3.9.4 Line Attribute Codes

190 0201 Pipeline

This code identifies a pipeline shown by symbols 190, 191 (A); 112.57, 112.58, 116.12(B); 512.93, 512.94, 516.23 (C); or 2110.04(D).

If shown by symbols 190(A), 112.58 (B), 512.94(C), or 2110.04(D) (if not labeled "Aboveground"), this code is used alone.

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If the pipeline is shown by symbols 191(A), 112.57(B), 512.93(C), or 2110.04(D) (if labeled "Aboveground"), add descriptive code 190 0603 to describe it as aboveground.

If the pipeline is submerged and shown by symbols 112.58, 116.12(B), or 512.94, 516.23(C), add descriptive code 190 0606 to describe it as submerged. Any pipeline symbol shown in the water receives the submerged code.

If a canal is labeled "Pipeline Canal," digitize a centerline in the canal and apply this code as well as 190 0606 to indicate that it is submerged. The canal is collected in the Hydrography category.

Pipelines which carry water, shown in blue on the map, are collected in the Hydrography category.

190 0202 Power transmission line

This code identifies a power transmission line that is shown by symbols 187(A), 112.55(B), 512.91(C), or 2110.01(D). Collect the transmission lines as if the tower symbols did not exist. Do not digitize the towers.

Any power transmission line labeled "Underground" on the map is not collected in the DLG.

190 0203 Telephone line

This code identifies a telephone line shown by symbols 189(A), 112.54(B), 512.90(C), or 2110.03(D). Must be labeled "Telephone." Do not collect telegraph lines.

~~190 0204 Aerial tramway, monorail, or ski lift~~

This code is no longer used. Codes for the individual features have been established.

~~190 0205 Arbitrary line extension~~

This code is no longer used.

~~190 0206 Closure line~~

This code is no longer used.

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190 0207 Aerial tramway

This code identifies an aerial tramway shown by symbols 188(A), 112.59(B), 512.95(C), or 2110.02(D). Must be labeled "Tramway" or "Aerial Tramway."

190 0208 Monorail

This code describes a monorail shown by symbols 188(A), 112.59(B), 512.95(C), or 2110.02(D). Must be labeled "Monorail."

190 0209 Ski lift

This code describes a ski lift shown by symbols 188(A), 112.59(B), 512.95(C), or 2110.02(D). Must be labeled "Ski Lift."

190 0299 Processing line

This code is described in section 3.0.6.3.

3.9.5 Single-Point Attribute Codes

There are no longer any single-point attribute codes.

~~190 0300 Seaplane anchorage~~

This feature is no longer collected.

3.9.6 General Purpose Attribute Codes

190 0400 Power station or power plant

A power station or power plant may be shown as an individual building, or a group of structures. Must be named or labeled to indicate it is a power station or power plant. If it is not named or labeled, collect only as a general case building in the Manmade Features category; do not make any assumptions about the function of the building.

A power station or power plant is collected as a degenerate line if the area occupied by the individual building or group of structures is less than 120 feet in the shortest dimension. If the area occupied is 120 feet or more in the shortest dimension, it is collected as an area. When collected as an area, the outline of the area

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Part 3: Attribute Coding

is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

190 0401 Substation

This code identifies a substation shown by symbols 112.56(B), 512.92(C), or 2111.13(D). Must be labeled "Substation."

If the symbol is 0.06 inch or less on the shortest side and is joined to a power transmission line, digitize the substation as a node. If the symbol is less than 0.06 inch on the shortest side and is not joined to a power transmission line, digitize the substation as a degenerate line. If the symbol is greater than or equal to 0.06 inch on the shortest side, collect it as an area. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

190 0402 Hydroelectric plant

A hydroelectric plant may be shown as an individual building, or a group of structures. Must be named or labeled to indicate it is a hydroelectric plant. If it is not named or labeled, collect only as a general case building in the Manmade Features category; do not make any assumptions about the function of the building.

A hydroelectric plant is collected as a degenerate line if the area occupied by the individual building or group of structures is less than 120 feet in the shortest dimension. If the area occupied is 120 feet or more in the shortest dimension, it is collected as an area. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

190 0403 Landing strip, runway, apron, taxiway

This code identifies landing strips, runways, aprons, and taxiways, which have been shown by a variety of treatments. This code does not identify an airport facility, only the actual surfaces used by aircraft for take-off, landing, parking, and access to runways.

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On 1:24,000-scale maps made before the mid 1980's, and starting again in 1994, landing strips, runways, aprons, and taxiways are generally outlined with a black line. The black line is solid if the landing strip, runway, apron, taxiway is paved and the black line is dashed if the landing strip or runway is unpaved. Generally, only paved aprons and taxiways are shown on the maps. This treatment is also found on provisional edition maps as shown by symbol 2110.08(D).

On 1:24,000-scale maps made from the mid 1980's to 1994, runways and paved landing strips are symbolized with a screened black line as shown by symbol 516.26 (C). Aprons and taxiways are shown by symbol 511.31(C). Unpaved landing strips are shown by symbol 511.30(C).

On 1:100,000-scale maps, landing strips and runways are shown with a screened black line as shown in symbol 116.16(B). Generally, aprons and taxiways are not shown on 1:100,000-scale maps.

On 1:24,000-scale maps, if the symbol is 0.02 inch or less on the shortest side, digitize as a line and assign this code. If the symbol is greater than 0.02 inch on the shortest side, digitize an unattributed line that follows the outline of the runway, landing strip, apron taxiway and assign the area within the outline this code.

On 1:100,000-scale maps, if the symbol is 0.01 inch or less on the shortest side, digitize as a line and assign this code. If the symbol is greater than 0.01 inch on the shortest side, digitize an unattributed line that follows the outline of the runway, landing strip, apron taxiway and assign the area within the outline this code.

Landing strips that are shown with a dashed line, as in symbols 511.30(C) or 2110.08(D) are also assigned descriptive code 190 0605 to indicate they are unpaved.

Landing strips, runways, aprons, and taxiways that are labeled "Under Construction" or "Abandoned" are also assigned the appropriate descriptive code (190 0601 and 190 0602, respectively).

190 0404 Helipad

This code identifies a landing area for helicopters as shown by symbols 198(A); 112.4, 116.15 (B); 511.32, 511.33 (C); or 2111.16(D). This code does not identify a

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heliport facility, only the actual surfaces used by helicopters for take-off, landing, parking, and access.

When shown by symbols 198(A), 112.4(B), or 511.33(C), which is the located object symbol, digitize a degenerate line. If shown by symbols 116.15(B) or 511.32(C), and less than .04" long, digitize a degenerate line at the center of the symbol. If shown by symbols 116.15(B) or 511.32(C), and .04" long or more, digitize an unattributed line that defines the perimeter of the landing surface and assign this code to the area.

190 0405 Launch complex

This code identifies an area that is generally named, but may be labeled, as a launch complex. There is no standard symbol for this feature.

Typically, the outline of the launch complex, which is collected as an unattributed line, is defined by a road.

The individual launch pads are not collected in the DLG.

190 0406 Pumping station or compressor station

A pumping station or compressor station may be shown as an individual building, or a group of structures. Must be named or labeled to indicate it is a pumping station or compressor station. If it is not named or labeled, collect only as a general case building in the Manmade Features category; do not make any assumptions about the function of the building.

A pumping station or compressor station is collected as a degenerate line if the area occupied by the individual building or group of structures is less than 120 feet in the shortest dimension. If the area occupied is 120 feet or more in the shortest dimension, it is collected as an area. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

On some maps, individual pumps have been shown with a circle or a located object symbol. These features are not collected.

Use this code only for pumping stations or compressor stations associated with oil or gas. Pumping stations

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associated with water (canals or ditches) are collected in the Hydrography category.

~~190 0407 Seaplane ramp or landing area~~

This code is no longer used. Codes for the individual features have been established (190 0409 and 190 0410).

190 0408 Measuring station or valve station

A measuring station or valve station may be shown as an individual building, or a group of structures. Must be named or labeled to indicate it is a measuring station or valve station. If it is not named or labeled, collect only as a general case building in the Manmade Features category; do not make any assumptions about the function of the building.

A measuring station or valve station is collected as a degenerate line if the area occupied by the individual building or group of structures is less than 120 feet in the shortest dimension. If the area occupied is 120 feet or more in the shortest dimension, it is collected as an area. When collected as an area, the outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400) in the Manmade Features category.

Do not collect individual valves shown with a circle or a located object symbol.

190 0409 Seaplane ramp

This code describes a seaplane ramp, shown by a variety of treatments on the 1:24,000-scale map and labeled. If the ramp is symbolized as a line less than 0.02 inches wide, digitize the line and give it this code. If the ramp is symbolized as a line 0.02 inches wide or wider, or as an area, then collect it as an area and give the area this code. The line defining the perimeter of the ramp is unattributed.

190 0410 Seaplane landing area

This code describes a seaplane landing area, shown by a variety of treatments on the 1:24,000-scale map and labeled. If the landing area is symbolized as a line less than 0.02 inches wide, digitize the line and give it this code. If the landing area is symbolized as a line

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0.02 inches wide or wider, or as an area, then collect it as an area and give the area this code. The line defining the perimeter of the landing area is unattributed. Although in some cases it may be difficult to determine the extent of the landing area, it must be collected as an area based on context and placement of the label.

3.9.7 Descriptive Attribute Codes

~~190 0600~~ ~~Underground~~

This code is no longer used. Pipelines are assumed to be underground features, and so are not identified as such. Any other miscellaneous transportation feature labeled "Underground" on the map is not collected in the DLG.

190 0601 Under construction

This code describes a landing strip, runway, apron, taxiway (see code 190 0403) that is labeled "Under Construction."

190 0602 Abandoned

This code describes a landing strip, runway, apron, taxiway (see code 190 0403) that is labeled "Abandoned."

190 0603 Aboveground

This code describes any feature that is labeled "Aboveground." It is not used on features that are by definition assumed to be aboveground.

~~190 0604~~ ~~Labeled "Closed"~~

This code is no longer used. Any feature labeled "Closed" is collected using the appropriate feature code.

190 0605 Unpaved

This code describes a landing strip (see code 190 0403) that is shown by a dashed line to indicate an unpaved surface.

This code does not apply to 1:100,000-scale maps.

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190 0606 Submerged

This code describes a pipeline that is submerged.

190 0607 Nuclear

This code describes a power plant that is labeled "Nuclear."

3.9.8 Parameter Attribute Codes

190 0000 Photorevised feature

This code is described in section 3.0.6.4.

~~193 0 --- Angle of clockwise rotation~~

This code is no longer used.

~~198 0000 Best estimate of position or classification~~

This code is no longer used.

~~199 00 --- Coincident feature~~

This code is no longer used.

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3.10 MANMADE FEATURES--MAJOR CODE 200

It is important to understand the general principles because this information is not provided in the individual coding descriptions. The general principles provide instructions on when to collect a feature, how to interpret the feature on the map, where to collect a feature, and how to apply the attribute code. These general principles are used for all features unless there are specific instructions in the individual coding description.

3.10.1 General Principles

3.10.1.1 Node Attribute Codes

There are no node attribute codes.

3.10.1.2 Area Attribute Codes

Most manmade features that are collected using area attribute codes are indicated on the map only by text (either a proper name or a generic label). As such, the code descriptions generally do not have symbol references. Instead, guidelines on how the features are named or labeled on the map are given. The following guidelines are used for all features on the list of area attribute codes and several features that are always collected as areas but are on the list of general purpose attribute codes, including 200 0424 (Well field), 200 0445 (Fairgrounds), and 200 0446 (Rodeo grounds). These features are always treated as "complexes." Several other features, including 200 0421 (Sewage disposal plant), 200 0422 (Waterworks), and 200 0450 (Fort) are treated as complexes and always collected as areas, even though they are sometimes shown as individual buildings on the map.

**What kind of features are treated as complexes?**

Complexes are generally groups of associated structures functioning as a unit or areas that have a particular use. The text "Lakewood School" identifies a school contained in an individual structure, and the structure would be collected and attributed as a school (200 0403). However, the text "George Washington University" does not identify an individual structure, but an area that has a particular institutional use that would be collected as school campus (200 0101). An individual racetrack that is labeled "Racetrack" would be collected as a racetrack (200 0214). However, the text "Indianapolis Motor Speedway" identifies more than an individual structure and would be collected as raceway complex

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(200 0127). It would be prohibitive to determine what actually constitutes George Washington University or to determine the ownership boundaries of the speedway. As such, the text describes land use not land ownership.

Determining the extent of a complex requires judgement. The intent of collecting a complex is to describe an area that includes all of associated structures or all of the area that has the particular use being described. This includes parking lots associated with shopping centers, open areas in a fairgrounds, and roads in a mobile home park.

**How to recognize a complex**

The text placement and size is the best indication of the extent of the feature. In general, if the area is adequate, the text is placed within the feature boundaries, preferably centered in the middle one-third. The extent of the feature can also be indicated by type size and letter spacing. Therefore, larger areas would have larger type or wider letter spacing, or both.

Understanding this rule can be especially helpful if one edge of the feature is obvious, because the distance from the end of the text to the edge of the feature is likely to be very similar to the distance from the beginning of the text to the other edge of the feature. Also, text for area features is sized so that it does not extend outside the feature. However, these are not hard and fast rules because text must sometimes be moved to accommodate graphic requirements for legibility.

If the feature being labeled is an individual structure, the text is placed to the right (preferred) or the left of the symbol. If the name or label is shown on two lines, the words are generally aligned, either flush left or flush right, with the symbol. Individual structures are generally labeled with 6 or 7 point type and the type is never letter spaced.

Although in most cases the presence of a name or label is the best indication of when a feature should be collected as a complex, there are a few examples of areas where only the individual structures are labeled, but it is clear that a complex exists. For example, sometimes ski areas are indicated only by labeling the ski lifts and by clearings in the woodland tint where the ski slopes are.

Other indicators of the extent of a complex may be the pattern of the woodland tint, the arrangement of buildings and other structures including parking lots, and the pattern of streets.

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Complexes are perhaps the least definitive features. Therefore, some generalization is acceptable, if not necessary. For example, a university could have an outlying building which may or may not be included within the complex. In other words, this is a case in which identifying a reasonably representative area is more desirable than investing a great deal of effort to refine details, which may not be more accurate or indisputable.

**How do other features within a complex get collected?**

A complex generally describes a homogenous unit and is significant for its land use. Most complexes include additional features. However, even though the additional features may be collected as areas, the integrity of the complex itself is not affected. All areas within a complex receive the code for the complex. This includes other features that are collected as areas and areas that are created by linear features that close. For example, a building collected as an area within a school campus will receive the code for school campus (200 0101) as well as building, either 200 0400 or 200 0403 (see below). If a racetrack (200 0214) exists within a fairgrounds (200 0445), the area within the racetrack (the infield) receives the code for fairgrounds.

In the case of built-up area (200 0150), an area could have three codes. If a building is collected as an area and it is within a school complex and within a built-up area, all three codes are applied.

Buildings collected within a complex are coded as general case buildings (200 0400), except for churches and schools. If a building has a cross or a flag, it is necessary to collect a special case building (200 0402 or 200 0403), so the building can be properly symbolized.

Any other structures, such as a drive-in theater screen within a drive-in theater or ski lifts within a ski area, are also collected and coded using the appropriate attribute code.

Any complex that is shown with a reservation boundary symbol is collected as both reservation in the Boundaries category and the appropriate complex in Manmade Features. In general, the feature collected in Boundaries as a reservation describes a parcel of land that has been set aside for a particular purpose. If there is an identifiable use of the land, it is collected in Manmade Features. For example, Fort Detrich Cancer Research Center is collected as a miscellaneous reservation in the Boundaries category and as health care complex in Manmade Features.

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Any special conditions for collection are given in the individual code description.

**How are these features labeled?**

The area code identifiers are generalized and may be shown on the map with various labels or proper names. For example, a school complex may be identified with such terms as university, college, or academy. If a label identifies an area that cannot be reasonably included in one of the types of areas defined, do not collect it. For example, "Holy Rosary Academy" is collected as a school complex, but "Mink Farm" does not conform to standard content and is not collected.

**What gets coded?**

Area attribute codes are assigned only to the area point, not to the line that outlines the area.

3.10.1.3 Line Attribute Codes

There are no general principles that apply to line attribute codes.

3.10.1.4 Single-Point Attribute Codes

In general, the single-point features either have unique symbols, which may or may not be labeled, or they are shown with the "located object" symbol. Features shown with the located object symbol are generally labeled, and the label is used to determine the correct code. If a feature shown with the located object symbol is not labeled, or the label shown is not associated with any code, then the feature is not collected in the DLG.

The labeling conditions in the individual coding descriptions provide the details for how to interpret those features that are shown with a common symbol, but different labels. For those features that have a unique symbol, there are no labeling conditions.

3.10.1.5 General Purpose Attribute Codes

Several features that are coded using general purpose attribute codes are always treated as "complexes" (see 3.10.1.2 for a complete list).

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Any building shown by a minimum size symbol, or a building less than 0.05 inches (100 feet) along the longest axis, is collected as a single-point feature (degenerate line). Any building that is 0.05 inches (100 feet) or more along the longest axis is collected as an area.

Within a built-up area (200 0150), collect only buildings that are at least 400,000 square feet or can be described as an arena, (200 0457), auditorium (200 0419), armory (200 0458), capitol (200 0413), city hall (200 0407), community center (200 0414), courthouse (200 0405), firehouse (200 0417), hospital (200 0408), house of worship (200 0402), library (200 0418), memorial (200 0416), museum (200 0415), post office (200 0406), railroad station, school (200 0403), stadium (200 0456), or town hall (200 0407). Note that railroad station is collected in the Railroads category.

Outside built-up area, collect all buildings according to the codes that follow.

Structures that have not traditionally been collected as buildings, such as snowsheds and covered piers and wharfs, are now collected as building (general case).

A building that is shown with a purple photorevised addition is digitized as two separate areas. The original portion of the structure is identified with the appropriate codes. The purple portion is identified by the same codes and is, in addition, assigned code 200 0000 (photorevised feature).

The extent of mining features, including mine dumps, open pit mines, quarries, strip mines, and pits (unconsolidated material) are indicated by the edge of the excavation. Ignore any water bodies within the excavation. Water bodies are collected in the Hydrography category, using the appropriate codes.

3.10.1.6 Descriptive Attribute Codes

Descriptive attribute codes are only used with other codes. The use of a descriptive attribute code is, in many cases, called for by the equivalent label on the source. For example, a map may show "gravel pits," "sandpits," or "claypits." In each case the identifying code for pit (200 0432) must be used with the code to describe the type of pit; gravel (200 0609), sand (200 0610), or clay (200 0611).

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3.10.1.7 Parameter Attribute Codes

There are no general principles that apply to parameter attribute codes.

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3.10.1.8 List of Manmade Features Attribute Codes

- o Node attribute codes
  - ~~200 0001 End point of linear manmade feature~~
  - ~~200 0002 Point on linear manmade feature~~
  
- o Area attribute codes
  - 000 0000 Outside area
  - 200 0100 Church complex
  - 200 0101 School campus
  - 200 0102 Health care complex
  - 200 0103 Orphanage complex
  - 200 0104 Prison compound
  - 200 0105 Mobile home park
  - 200 0120 Ski area
  - 200 0122 Athletic field
  - 200 0123 Golf course
  - 200 0124 Shopping center
  - 200 0125 Zoo
  - 200 0126 Drive-in theater
  - 200 0127 Raceway complex
  - ~~200 0128 Playground~~
  - 200 0140 Marina
  - ~~200 0141 Cable area~~
  - 200 0150 Built-up area
  - ~~200 0160 Industrial park~~
  - ~~200 0161 Materials storage area~~
  - 200 0162 Refinery or industrial site
  - 200 0163 Tailings
  - 200 0164 Intricate surface area
  - 200 0165 Oil sump or sludge pit
  - ~~200 0180 Tank farm~~
  - 200 0181 Feedlot or stockyard
  - 200 0182 Experimental farm
  - 200 0183 Proving ground
  - 200 0184 Firing range
  - 200 0190 Void area
  
- o Line attribute codes
  - 200 0200 Conveyor
  - 200 0201 Boardwalk
  - 200 0202 Wall
  - 200 0203 Sea wall
  - 200 0206 Fence line
  - ~~200 0207 Flume (nonwater)~~
  - 200 0209 Sewerline

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200 0211 Coke ovens  
200 0212 Recreational slide  
200 0213 Screen (drive-in theater)  
200 0214 Drag strip, racetrack, or raceway  
~~200 0215 Athletic track~~  
~~200 0250 Arbitrary closure line~~  
200 0299 Processing line

o Single-point attribute codes

~~200 0300 Grave site~~  
200 0301 Historical marker  
200 0302 Mine tunnel entrance or cave  
200 0303 Mine shaft  
200 0304 Prospect  
200 0305 Tower  
200 0306 Burner or stack  
200 0307 Well  
200 0308 Cliff dwelling  
~~200 0309 Light~~  
200 0310 Kiln  
200 0311 Drill hole  
~~200 0312 Watermill~~  
~~200 0313 Anchorage~~  
200 0314 Guzzler  
~~200 0315 Located object or landmark object~~  
200 0316 Campsite  
200 0317 Wind generator

o General purpose attribute codes

200 0400 Building (general case)  
~~200 0401 Class 2 building~~  
200 0402 Church  
200 0403 School  
~~200 0404 Municipal building~~  
200 0405 Courthouse  
200 0406 Post office  
200 0407 City hall or town hall  
200 0408 Hospital  
200 0409 Prison  
~~200 0410 Town, village, settlement, locality, or  
unincorporated village~~  
200 0411 Amphitheater  
200 0412 Customs building  
200 0413 Capitol  
200 0414 Community center  
200 0415 Museum  
200 0416 Memorial

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200 0417 Firehouse  
200 0418 Library  
200 0419 Auditorium  
200 0420 Cemetery  
200 0421 Sewage disposal plant  
200 0422 Waterworks  
~~200 0423 Oil reservoir~~  
200 0424 Well field  
200 0425 Tank  
200 0426 Oil or gas platform  
200 0427 Mine dump  
200 0428 Open pit mine  
200 0429 Quarry  
200 0430 Strip mine  
~~200 0431 Landfill~~  
200 0432 Pit, unconsolidated material  
200 0433 Radio or television facility  
~~200 0434 Storage bin~~  
200 0435 Levee or dike  
200 0436 Spoil bank  
200 0438 Reclaimed area  
200 0445 Fairgrounds  
200 0446 Rodeo grounds  
200 0447 Corral  
200 0448 Boat ramp  
200 0449 Campground  
200 0450 Fort  
200 0451 Swimming pool  
200 0452 Archeological site, ruin, or Indian mound  
200 0453 Recreation area, public use area  
200 0454 Picnic area  
200 0455 Port of entry  
200 0456 Stadium  
200 0457 Arena  
200 0458 Armory  
200 0459 Orphanage  
200 0460 Observatory  
200 0461 Grange hall  
200 0462 Grain elevator  
200 0465 Pile, dolphin, stump, or snag  
200 0466 Breakwater, jetty, pier, dock, causeway,  
or wharf  
200 0467 Exposed wreck or wreckage  
200 0468 Sunken wreck (masts may be exposed)  
~~200 0469 Drydock~~

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o Descriptive attribute codes

~~200 0601 Underground~~  
~~200 0602 Under construction~~  
~~200 0603 Abandoned~~  
200 0604 Water  
~~200 0605 Oil~~  
~~200 0606 Gas~~  
~~200 0607 Chemical~~  
~~200 0608 Covered~~  
200 0609 Gravel  
200 0610 Sand  
200 0611 Clay  
~~200 0612 Borrow~~  
~~200 0613 Radio~~  
200 0614 Lookout  
~~200 0615 Unincorporated~~  
~~200 0616 No population~~  
200 0617 Submerged  
200 0618 Ruin  
~~200 0619 Caliche~~  
~~200 0620 Chert~~  
~~200 0621 Cinder~~  
~~200 0622 Pumice~~  
~~200 0623 Shale~~  
~~200 0624 Scoria~~  
200 0625 Communication  
200 0626 Control  
200 0627 Cooling  
200 0629 Navigation

o Parameter attribute codes

200 0000 Photorevised features  
202 ---- Width in mils of feature to scale  
~~203 ---- Angle of clockwise rotation~~  
~~208 0000 Best estimate of position or classification~~  
~~209 00-- Coincident feature or symbol~~

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3.10.2 Node Attribute Codes

~~200 0001 End point of linear manmade feature~~

This code is no longer used.

~~200 0002 Point on linear manmade feature~~

This code is no longer used.

3.10.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

200 0100 Church complex

Generally named, but may be labeled. Includes convent, monastery, retreat, friary, seminary.

200 0101 School campus

Generally named, but may be labeled. Includes university, college, academy, institute.

200 0102 Health care complex

Generally named, but may be labeled. Includes sanitarium, nursing home, clinic, medical center.

200 0103 Orphanage complex

Generally named, but may be labeled. Includes children's home.

200 0104 Prison compound

Generally named, but may be labeled. Includes prison farm, detention center, correctional institution, prison camp.

200 0105 Mobile home park

Generally labeled "Trailer Park" or "Mobile Home Park."

Until recently, the house-omission area tint was cleared from mobile home parks and they were labeled. With the

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expanded definition of built-up area, mobile home parks will be included in the built-up area and will not be identified within built-up area.

200 0120 Ski area

Generally named, but may be labeled.

The ski lifts are digitized in the Pipelines, Transmission Lines, and Miscellaneous Transportation Features category.

200 0122 Athletic field

Athletic fields are outlined as shown in symbols 209(A), 516.16(C), or 2107.06(D). Generally labeled "Athletic Field." Includes ball park, equestrian area, polo field.

Individual fields may be unlabeled. Athletic fields whose perimeter is formed by a running track are generally unlabeled because the shape is distinctive.

In areas where multiple athletic fields have been outlined, the individual fields are digitized and given this code.

The term field does not always identify an athletic field. In some cases, parks have the term field in their name, for example "Farwell Field."

200 0123 Golf course

Generally labeled "Golf Course," but may be named. Includes country club, golf club.

200 0124 Shopping center

Generally labeled "Shopping Center," but may be named.

200 0125 Zoo

Generally named, but may be labeled. Includes zoo, zoological park, or wild animal park.

200 0126 Drive-in theater

This code identifies an area defined by symbols 252(A), 512.68(C), or 2111.08(D). Generally labeled "Drive-in Theater."

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The screen of a drive-in theater is collected using code 200 0213.

200 0127 Raceway complex

Generally named, but may be labeled. Includes speedway, kennel club.

~~200 0128 Playground~~

This feature is no longer collected.

200 0140 Marina

Generally named, but may be labeled. Includes yacht club.

~~200 0141 Cable area~~

This feature is no longer collected in the Manmade Features category. See Hydrography category.

200 0150 Built-up area

This code has traditionally been applied to areas delineated by symbols 520(A), 115.1(B), 515.1(C), or 2110.11(D), but the minimum allowable size, density criteria, and exclusions for built-up area have been revised. As a result, there may be areas on the graphic that did not meet the previous criteria for built-up area, but do meet the revised criteria. These areas will be collected as built-up area. Because built-up area is collected based on these revised criteria rather than its depiction on the map, any built-up area shown in purple is not coded as photorevised.

Built-up area is defined as an area of intensive use, with much of the land covered by structures. The limits of the built-up area are determined by the relative concentration of buildings and associated intensive use areas, such as parking lots, and the existence of a systematic street pattern. Density of building and associated use areas will vary from densely concentrated areas downtown, to moderately concentrated residential areas where most of the property is developed. Built-up area is collected if the area is at least 30 percent built-up, is at least 40 acres in size, and has a minimum width of 660 feet.

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Built-up area does not refer to political boundaries and can include incorporated and unincorporated areas as well as military reservations.

Although built-up area limits need not be fixed in relation to linear features, where practical, the limits of built-up area should share the edge with other linear features such as streams, boundaries, roads, or railroads. The outline of built-up area should be relatively smooth. It should not be extended to include a few buildings nor to exclude a few buildings when the smoothness of the edge would be effected. Where the perimeter streets are at least 30 percent developed, the built-up area should be extended across the street to include these buildings.

Housing developments where the street network is complete and building development is well underway, and it can reasonably be assumed that most of the development will be occupied, should be collected as built-up area.

Narrow strips, where there is only a road and buildings along both sides of the road, should not be collected as built-up area, even if they would connect an adjoining larger built-up area. A large built-up area that is separated from a smaller isolated built-up area may be extended to include the smaller area, if the smaller area is within 660 feet of the larger built-up area.

Within a built-up area, areas that are less than 30 percent developed, and are at least 80 acres in size, with a minimum width of 660 feet, are not collected as built-up area. In addition, if canal/ditches, lake/ponds, reservoirs, stream/rivers, swamp/marshes, parks, railway yards, runways, air facilities, cemeteries, golf courses, or exhibition grounds (fairgrounds) are collected as areas within a built-up area they are not also collected as built-up. All other area features collected within a built-up area are also collected as built-up areas. Any mobile home parks shown on the map within a built-up area are not collected in the DLG.

See section 3.10.1.5 for information on which buildings are collected within built-up areas.

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~~200 0160 Industrial park~~

This code is no longer used. See 200 0162 for all industrial sites.

~~200 0161 Materials storage area~~

This feature is no longer collected.

200 0162 Refinery or industrial site

Industrial sites have traditionally not been identified on USGS maps. Generally only the buildings are shown with no attempt to identify the complex. This feature is only collected if the complex is identified with a label. Common labels include "Refinery."

200 0163 Tailings

This code identifies an area shown by symbols 324(A), 135.3(B), 535.4(C), or 2112.05(D). Generally labeled "Dredge Tailings" or "Tailings."

200 0164 Intricate surface area

This code identifies an area shown by symbol 328(A). This code is used only when the symbol is not labeled and the nature of the disturbed surface cannot be determined from other features in the area. For example, in an area of extensive strip mines, not all of the strip mines are labeled. However, labels are generally omitted only when it is obvious that the unlabeled features are also strip mines. This feature was used most often during photorevision, when the reason for the disturbed surface could not be determined.

200 0165 Oil sump or sludge pit

This code identifies an area shown by symbols 250(A), 512.86(C), or 2111.07(D). Generally labeled "Oil Sump" or "Sludge Pit." May be unlabeled.

~~200 0180 Tank farm~~

This complex is no longer collected. Individual tanks (200 0425) and any other structures are collected using the appropriate code.

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200 0181 Feedlot or stockyard

This code identifies an area shown by symbols 258(A), 512.112(C), or 2111.14(D), or similar treatment. Generally labeled "Feedlot" or "Stockyard," but may be named.

If the symbol is less than 0.06 inch on the shortest side, digitize the feedlot or stockyard as a degenerate line. If the symbol is 0.06 inch or greater on the shortest side, digitize the feedlot or stockyard as an area.

200 0182 Experimental farm

Generally named, but may be labeled.

200 0183 Proving ground

Generally labeled "Proving Ground." Includes auto test track, tire proving ground.

200 0184 Firing range

Generally labeled "Rifle Range." Includes shooting range, pistol range, artillery impact area, artillery range, skeet range.

200 0190 Void area

This code is used to identify the area beyond the national boundary, to distinguish it from the background area. The perimeter of the void area is collected as an unattributed line, unless it is defined by a symbolized feature in the Manmade Features category.

3.10.4 Line Attribute Codes

200 0200 Conveyor

This code identifies a line shown generally by symbols 188(A), 512.95(C), or 2110.02(D), although it may be shown with a solid line. Generally labeled "Conveyor." The label may be omitted on a photorevised conveyor, in which case the conveyor may still be identifiable if it connects a mine or strip mine to a type of plant.

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200 0201 Boardwalk

This code identifies a centerline digitized in a boardwalk shown by symbols 254(A), 512.71(C), or 2111.09(D). Generally labeled "Boardwalk."

If shown to scale (greater than 0.02 inch along the shortest axis), also use code 202 0--- to encode the width. Some depictions of boardwalks may indicate entryways onto the boardwalk or onto the beach. However, boardwalk is to be collected as a centerline and any entryways or other detail should be ignored.

200 0202 Wall

This code identifies a line that represents a wall as shown by symbols 192, 193 (A); 512.63, 512.64 (C); or 2110.06, 2110.06 (D). This feature is generally unlabeled and is generally found around prisons, some tanks (not to be confused with levees), and in Hawaii (labeled "Rock Wall").

If shown to scale (greater than 0.017 inch along the shortest axis), also use code 202 0--- to encode the width.

200 0203 Sea wall

This code identifies a line shown by symbols 159(A), 112.69(B), 512.48(C), or 2108.07(D). Must be labeled "Seawall" or "Floodwall."

200 0206 Fence line

This code identifies a line shown by symbols 522(A), 523.15(C), or 2110.07(D).

~~200 0207 Flume (nonwater)~~

This feature is no longer collected. Water flumes are digitized in the Hydrography category.

200 0209 Sewerline

This code identifies a line shown by symbols 116.13(B) or 516.24(C). Must be labeled "Sewerline."

Because the feature is only shown when it is submerged, also use code 200 0617.

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- 200 0211 Coke ovens
- This code identifies a centerline digitized along symbols 253(A) or 512.70(C).
- 200 0212 Recreational slide
- This code identifies a line shown by symbols 188(A), 112.59(B), 512.117(C), or 2110.09(D). Generally labeled "Recreational Slide" or "Alpine Slide." Includes bobsled run, luge run.
- 200 0213 Screen (drive-in theater)
- This code identifies the line within the drive-in theater, shown by symbols 252(A), 512.68(C), or 2111.08(D) that represents the screen.
- 200 0214 Drag strip, racetrack, or raceway
- This code identifies a racetrack or raceway shown by symbols 105 or 106(A), 116.9(B), 516.15(C), or 2110.08(D). Generally labeled "Racetrack." Includes drag strip, raceway, speedway.
- If shown to scale (greater than 0.02 inch along the shortest axis), also use code 202 0--- to encode the width.
- This code does not apply to tracks shown with a single, dashed line, which are generally running tracks. See athletic field (200 0122).
- See code 200 0127 if the racetrack is associated with a raceway complex.
- ~~200 0215 Athletic track~~
- This code is no longer used. See code 200 0122, athletic field.
- ~~200 0250 Arbitrary closure line~~
- This code is no longer used. Unattributed lines are used to close off areas.
- 200 0299 Processing line
- This code is described in section 3.0.6.3.

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3.10.5 Single-Point Attribute Codes

~~200 0300 Grave site~~

This feature is now collected as cemetery (200 0420).

200 0301 Historical marker

This code identifies a feature shown by symbols 198(A), 112.4 (B) 512.72(C) or 2111.03(D). Historical marker is defined as a structure, not a building, that commemorates people or past events. Common labels include "Historical Monument," "Historical Marker," "Monument," "Shrine." May also be named, for example "Treaty Oak," "Meade Pyramid," "Carranza Memorial."

200 0302 Mine tunnel entrance or cave

This code identifies a feature shown by symbols 184(A), 112.35(B), 512.80(C), or 2109.03(D). A degenerate line is digitized at the intersection of the arms of the symbol.

200 0303 Mine shaft

This code identifies a feature shown by symbols 186(A), 112.36(B), 512.81(C), or 2109.05(D).

200 0304 Prospect

The code identifies a prospect shown by symbols 185(A), 512.82(C), or 2109.04(D). A degenerate line is digitized at the intersection of the arms of the symbol.

200 0305 Tower

This code identifies a feature shown by symbols 198(A), 112.4(B), 512.72(C) or 2111.03(D). Must be labeled to identify it as a tower; label generally indicates type of tower.

If the label identifies the tower as water, also use the descriptive code 200 0604. (A feature labeled "WT" is a water tank; features identified as tanks are collected using code 200 0425.)

If the label identifies the tower as lookout, also use descriptive code 200 0614. This includes fire towers.

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A building labeled "Lookout" is collected as a general case building (200 0400) rather than a tower.

If the label identifies the tower as communication, also use descriptive code 200 0625. This includes antenna, microwave, radio, range, relay, and repeater.

If the label identifies the tower as for air traffic control, also use descriptive code 200 0626.

If the label identifies the tower as cooling, also use descriptive code 200 0627.

If the label identifies the tower as for determining position or safe course, also use the descriptive code for navigation (200 0629). This includes airway beacon, beacon, daybeacon, and light.

Towers are collected as degenerate lines, except for cooling towers, which are always collected as areas regardless of size.

Individual towers on transmission lines are not collected.

200 0306 Burner or stack

This code identifies a feature shown by symbols 198(A), 512.72(C) or 2111.03(D). Common labels include "Burner," "Stack," "Chimney," "Incinerator."

200 0307 Well

This code identifies a feature shown by symbols 194(A), 112.101(B), 512.83(C), or 2111.01(D). Generally labeled "Well," including a product such as "Oil Well." Product is not coded.

See 200 0311 if symbol is labeled "Drill Hole."

This code does not apply to water wells, which are digitized in the Hydrography category.

200 0308 Cliff dwelling

Cliff dwellings are shown by symbols 182(A), 112.34(B), 512.79(C), or 2106.10(D). This code describes a habitat built in the recesses of high vertical or overhanging faces of rock that is controlled and protected by a

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government or private agency, which has given the USGS permission to portray it. Because in the past well-known cliff dwellings may have been shown on USGS maps without the explicit permission of the administering agency, approval must be obtained before collecting such cliff dwellings from existing graphics.

~~200 0309 Light~~

This code is no longer used. Lights are collected as navigation towers (codes 200 0305 and 200 0629).

200 0310 Kiln

This code identifies a feature that is labeled to indicate it is a kiln. Common labels include "Charcoal Kiln," "Charcoal Oven," "Brick Kiln," "Lime Kiln."

If a kiln is 40 feet or more in diameter or along the shortest axis, it is collected as an area, rather than as a degenerate line.

200 0311 Drill hole

This code identifies a feature shown by symbols 194(A), 512.83(C), or 2111.03(D). Must be labeled "Drill Hole."

~~200 0312 Watermill~~

This feature is no longer collected.

~~200 0313 Anchorage~~

This feature is no longer collected.

200 0314 Guzzler

This code identifies a feature shown by symbols 198(A), 512.72 (C), or 2111.03(D). Common labels include "Guzzler," "Trick Tank."

~~200 0315 Located object or landmark object~~

This feature is no longer collected. Features shown by the located object or landmark object symbol--symbols 198(A), 112.4(B), 512.72(C), or 2111.03(D)--are collected only when they are named or labeled in such a way that they meet the collection criteria for a specific code.

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200 0316 Campsite

This code identifies a feature shown by symbol 198(A), 512.72(C) or 2111.03(D). Must be labeled "Campsite."

This code also identifies a feature shown by symbol 257(A), 112.48(B), 512.115 (C), or 2111.11(D) that is labeled "Campsite."

200 0317 Wind generator

This code identifies a feature shown by the windmill symbol 199(A), 112.3(B), 512.69(C), or 2111.04(D). Must be labeled to indicate it is a generator to distinguish it from a windmill. (Unlabeled windmills or windmills named or labeled "Well" are collected in the Hydrography category, using code 050 0305.)

Digitize the wind generator as a degenerate line at the apex of the triangle portion of the symbol.

3.10.6 General Purpose Attribute Codes

200 0400 Building (general case)

All buildings shown by symbols 163, 164, 165 (A); 112.1(B); 512.52, 512.53 (C); or 2106.01 through 2106.03 (D) and buildings shown by old symbols 175, 176 (A) or 512.57, 512.58 (C) are given this attribute code. (This code is used for all buildings that were previously attributed as class 1 or class 2.)

This code is not applied to a building for which a specific code exists, such as a church or a hospital.

~~200 0401 Class 2 building~~

This code is no longer used. Both class 1 and class 2 buildings are now collected using code 200 0400.

200 0402 Church

This code identifies any building symbolized with a cross as in symbols 168-170, 172 (A), 512.55(C), or 2106.05(D).

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200 0403 School

This code identifies any building symbolized with a flag as in by symbols 166-167, 170-173 (A); 512.54, 512.56 (C); or 2106.04(D).

~~200 0404 Municipal building~~

Previously, a wide range of building types were collected using this code. Codes for individual building types have been established. This code is no longer used.

200 0405 Courthouse

This code identifies a building. Must be labeled to indicate it is a courthouse.

200 0406 Post office

This code identifies a building. Must be labeled "Post Office."

200 0407 City hall or town hall

This code identifies a building. Must be labeled "City Hall," "Town Hall," "Township Hall," "Village Hall."

200 0408 Hospital

This code identifies a building. Must be labeled to indicate it is a health care facility. May be named. Includes sanitarium, nursing home, clinic, medical center.

200 0409 Prison

This code identifies a building. Must be labeled to indicate it is a prison.

~~200 0410 Town, village, settlement, locality, or unincorporated village~~

This feature is no longer collected.

200 0411 Amphitheater

Must be labeled to indicate it is an amphitheater.

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200 0412	Customs building	
	This code identifies a building. Generally labeled "Customs" or "Customs House."	
	See code 200 0455 for any building labeled "Port of Entry."	
200 0413	Capitol	
	This code identifies a building. Must be labeled "Capitol" or "State Capitol."	
200 0414	Community center	
	This code identifies a building. Generally labeled "Community Center." May be named.	
200 0415	Museum	
	This code identifies a building. Generally labeled "Museum." May be named.	
200 0416	Memorial	
	This code identifies a building. Generally labeled "Memorial." May be named.	
200 0417	Firehouse	
	This code identifies a building. Must be labeled "Fire Station."	
200 0418	Library	
	This code identifies a building. Must be labeled "Library."	
200 0419	Auditorium	
	This code identifies a building. Must be labeled "Auditorium."	
200 0420	Cemetery	
	This code identifies a burial site of one or more graves shown by symbols 213, 214, 215 (A); 112.72, 112.73 (B); 512.119, 512.120, 512.121 (C); or 2107.07, 2107.08 (D).	

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Generally labeled "Cemetery." May be named. May also be identified only by a cross placed within the feature.

If the symbol is a small cross labeled "Grave," digitize the cemetery as a degenerate line at the intersection of lines of the cross. If the symbol is outlined and is less than 0.060 inch on the shortest side, digitize the cemetery as a degenerate line. If the symbol is outlined and is 0.060 inch or greater on the shortest side, then digitize the cemetery as an area.

200 0421 Sewage disposal plant

A sewage disposal plant may be shown as an individual building, or a group of buildings and associated ponds. Generally labeled "Sewage Disposal Plant."

In the DLG a sewage disposal plant is always collected as an area. If the feature is shown only as an individual building, digitize an area that is slightly larger than the building and encloses. If the feature is shown as a group of buildings or associated ponds, or both, digitize an area that encloses all associated structures.

The outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400). The sewage disposal ponds and filtration beds are digitized in the Hydrography category.

200 0422 Waterworks

A waterworks may be shown as an individual building, or a group of buildings and associated ponds. Generally labeled "Water Filtration Plant" or "Waterworks."

In the DLG a waterworks is always collected as an area. If the feature is shown only as an individual building, digitize an area that is slightly larger than the building and encloses. If the feature is shown as a group of buildings or associated ponds, or both, digitize an area that encloses all associated structures.

The outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400). The ponds are digitized in the Hydrography category.

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Part 3: Attribute Coding

~~200 0423 Oil reservoir~~

This feature is no longer collected.

200 0424 Well field

Generally labeled "Oil Field," "Gas Field," "Oil and Gas Field." May be named.

The perimeter of a well field is delineated by digitizing a line that connects the outermost wells of the well field.

200 0425 Tank

This code identifies a tank shown by symbols 196(A), 112.2(B), 512.65(C), or 2111.02(D) or shown by old symbols 197(A) or 512.66(C). Generally labeled "Tank." May be unlabeled. Includes a feature shown by one of these symbols and labeled "Storage Bin," "Silo," or "Standpipe."

If the tank contains water, as indicated by the label "Water Tank" or "WT" use the descriptive code 200 0604. Other products are not coded.

If the circle is 0.03 inch or less in diameter, digitize the tank as a degenerate line. If the circle is greater than 0.03 inch in diameter, digitize the tank as an area.

200 0426 Oil or gas platform

This code describes an offshore oil or gas platform shown by symbols 116.11(B) or 516.22(C). Must be labeled "Platform," "Oil Platform," "Gas Platform," or "Oil and Gas Platform."

If the square is 0.03 inches or less, digitize it as a degenerate line. If the symbol is greater than 0.03 inches, digitize it as an area.

200 0427 Mine dump

This code identifies a mine dump, which is a pile of waste rock, from a mine. It is shown by a variety of treatments. Must be labeled "Mine Dump" or "Slag Dump."

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On 1:24,000-scale maps, mine dumps are shown in several ways. When the mine dump is shown by symbols 327(A) or 532.23(C), digitize a centerline in the symbol from one end to the other, at right angles to the tick marks. When the mine dump is large and has a regular hill-like shape, it may be shown by contours only and is digitized as an area. Outline the area, but do not digitize the contours. A large mine dump of an irregular shape covering a large area that may not be evident from the contours is overprinted with the intricate surface pattern as shown by symbols 328(A) or 535.4(C). Digitize an area outlined by the edge of the pattern.

On provisional edition maps all mine dumps are shown by symbol 2112.05(D) and labeled.

On 1:100,000-scale maps all mine dumps are shown by symbol 135.3(B). This symbol is digitized as an area and is distinguished from other disturbed surfaces only by the label.

200 0428 Open pit mine

Open pit mines are open pits from which mineral ores are removed. They may be shown by a variety of treatments. Generally named, but may be labeled "Mine" or "Open Pit Mine."

When an open pit mine is shown only by the crossed-pick symbols 183(A), 112.37(B), 512.84(C), or 2109.01(D) (without tint), digitize it as a degenerate line at the intersection of the symbol. If the crossed-pick symbol is labeled "Quarry," do not use this code, see code 200 0429.

When an open pit mine is shown by symbols 333(A), 135.2 (B), 535.3(C), or 2112.08(D), digitize as an area. If the outline of the open pit mine is symbolized by brown hachures symbol 333(A), digitize a centerline through the hachures.

When the open pit mine is shown only by contours, digitize as an area. The outline of the area is formed by digitizing the outermost contour line of the pit.

200 0429 Quarry

A quarry is an excavation in solid rock from which building stone is removed. Must be labeled "Quarry."

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It is shown by the same symbology as the open pit mine. The feature is digitized in the same manner as described in the instructions for code 200 0428.

200 0430 Strip mine

A strip mine is a shallow surface excavation. Strip mines are shown by symbols 325, 326(A), 135.1(B), 535.1, 535.2(C), or 2112.06(D). Must be labeled "Strip Mine."

Strip mines are always collected as areas, by following the edge of the pattern.

~~200 0431 Landfill~~

This feature is not collected.

200 0432 Pit, unconsolidated material

A pit is an excavation of unconsolidated materials. Small pits are shown by symbols 255(A), 112.38(B), 512.85(C), or 2109.02(D), with no additional brown pattern or tint. In addition to the previous symbols, large pits add a pattern or tint as shown by symbols 333(A), 135.4 (B), 535.5(C), or 2112.08(D). Generally labeled "Pit," including a product such as "Gravel Pit."

A photorevised intricate surface area, shown by symbol 328(A), but labeled "Pit" is also collected using this code.

When the pit is shown by symbols 255(A), 112.38(B), 512.85(C), or 2109.02(D), digitize as a degenerate line at the intersection of the crossed shovels.

When the pit is shown by symbols 328, 333(A), 135.4(B), 535.5(C), or 2112.08(D), digitize it as an area. If the outline of the pit is symbolized by brown hachures symbol 333(A), the outline of the area, which is unattributed, is collected as a centerline through the hachures.

If a pit is labeled as gravel, sand, or clay, also use the appropriate descriptive code. Other products are not coded.

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200 0433 Radio or television facility

This code identifies a building. Must be labeled "Radio Facility."

Do not use this code for a radio tower (see code 200 0305).

~~200 0434 Storage bin~~

This code is no longer used. These features are collected as general case buildings (200 0400) or tanks (200 0425) according to the symbology.

200 0435 Levee or dike

This code identifies a line shown by symbols 314, 315(A); 132.13(B); 532.11, 532.12 (C); or 2112.01, 2112.02 (D). Levees shown by contours are collected only as contour, in the Hypsography category, even if labeled.

Where the levee is shown by symbols 315(A), 532.12(C) or 2112.02(D), the centerline is digitized along the road or railroad.

On 1:100,000-scale maps, a levee carrying a road or railroad is not shown; instead the road or railroad is labeled "Road on Levee" or "Railroad on Levee." For these cases digitize the centerline of the road or the railroad.

200 0436 Spoil bank

This code identifies a feature generally shown by symbols 332(A), 532.13(C), or 2112.01(D). Spoil banks shown by contours are collected only as contour, in the Hypsography category, even if labeled.

200 0438 Reclaimed area

This code identifies an area, bounded by dashed purple lines, which contains contours overprinted with symbol 328(A) or an area represented by a 4 percent purple tint. Must be labeled "Reclaimed Strip Mine" or, if the area is not labeled, there must be a note in the collar of the map that identifies the area as reclaimed strip mines.

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200 0445 Fairgrounds

Generally labeled "Fairgrounds." May include the administration as in "County Fairgrounds" or "State Fairgrounds." Parade grounds are not collected in the DLG.

200 0446 Rodeo grounds

Generally labeled "Rodeo Grounds."

200 0447 Corral

This code identifies a fenced animal enclosure shown by symbols 258(A), 112.44(B), or 512.112(C). Must be labeled "Corral."

If the symbol is less than 0.06 inch on the shortest side, digitize the corral as a degenerate line. If the symbol is 0.06 inch or greater on the shortest side, digitize the corral as an area.

200 0448 Boat ramp

A boat ramp may be shown by a variety of treatments. A boat ramp that is less than 40 feet along the shoreline, or is shown by a line as in symbol 516.14(C), is digitized as a degenerate line, approximately on the shoreline, where the symbol or label indicates the boat ramp enters the water. A boat ramp that is 40 feet or more along the shoreline is collected as an area.

200 0449 Campground

This code identifies a feature shown by symbols 257(A), 112.48(B), 512.115(C), or 2111.11(D). In some cases, the symbol may not be present and the feature may be indicated by a label only. Generally labeled "Campground."

If the tepee symbol is shown, digitize the campground as a degenerate line at the apex of the triangle portion of the tepee symbol. If the campground is identified by a label only, collect it as a degenerate line at the approximate center of the area indicated by the label.

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200 0450 Fort

This code applies only to forts that are historically significant. Such forts are generally named, but may be labeled. (A complex shown with a reservation boundary symbol which has the word "Fort" in its name is collected in the Boundaries category. If there is an identifiable use of the land, such as a health care complex, it is also collected as the appropriate complex in the Manmade Features category. It is not, however, assigned the fort code.)

A historically significant fort may be shown as an individual building, a group of structures, or a site shown by symbol 198(A), 112.4 (B), 512.72(C), or 2111.03(D), but in the DLG a fort is always collected as an area.

If the fort is shown only as an individual building, digitize an area that is slightly larger than the building and encloses. If the feature is shown as a group of buildings or structures, digitize an area that encloses all associated structures.

The outline of the area is unattributed. Individual buildings within the area are collected as general case buildings (200 0400).

200 0451 Swimming pool

This code identifies a feature shown by symbols 179(A), 512.60(C), or 2205.01(D). Generally labeled "Swimming Pool" on earlier map editions. On later editions, this symbol is not labeled but bears a resemblance to a reservoir. It is generally found associated with country clubs, campgrounds, and community centers.

If the symbol is 0.03 inch or less on the longest side, digitize as a degenerate line. If the symbol is greater than 0.03 inch on the longest side, digitize it as an area.

200 0452 Archeological site, ruin, or Indian mound

This code describes an area of scientific interest that contains the material remains of past human activities and is controlled and protected by a government or private agency, which has given the USGS permission to portray it. Because in the past well-known archeological

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sites, ruins, and Indian mounds may have been shown on USGS maps without the explicit permission of the administering agency, approval must be obtained before collecting such areas from existing graphics.

Archeological sites or ruins are shown by symbols 181(A), 112.33(B), 512.78(C), or 2106.09(D). Generally labeled "Archeological Site," "Ruin," "Petroglyph," or "Pictograph," "Indian Mound." May be named.

If the symbol is less than 0.06 inch on the shortest side, digitize as a degenerate line. If the symbol is 0.06 inch or greater on the shortest side, digitize it as an area. Note that the outline of the symbol is solid rather than dashed if the symbol is less than 0.050 inch on the shortest side (both in reference A and reference B).

This code is also applied to an Indian mound that is shown by contours and labeled or named. An unattributed line is digitized to define the perimeter of the area, by following the contour shown as the base of the mound. If the area defined is 0.030 inch or less in diameter, digitize a degenerate line inside the contour shown as the top of the mound.

Any feature labeled "Ruin" that does not meet the above collection criteria is not collected. The only exception is a pier or wharf ruin (see codes 200 0466 and 200 0618).

200 0453 Recreation area, public use area

Generally labeled "Recreation Area" or "Public Use Area." May be named. Includes amusement park, camp. National or State recreations areas are collected only in the Boundaries category (section 3.5).

Do not collect roadside parks and viewpoints, vantage points, and overlooks using this code. See code 170 0223 in the Roads and Trails category.

200 0454 Picnic area

This code identifies a feature shown by symbols 256(A), 112.47(B), 512.116(C), or 2111.10(D). Do not collect a single picnic table symbol adjacent to a highway using this code. See code 170 0223 in the Roads and Trails

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category. Generally labeled "Picnic Area." Digitize the picnic area as a degenerate line at the apex of the triangle portion of the picnic table symbol.

200 0455 Port of entry

This code identifies a building. Must be labeled "Port of Entry."

See code 200 0412 for any building labeled "Customs."

200 0456 Stadium

This code identifies a building. Must be labeled "Stadium."

200 0457 Arena

This code identifies a building. Generally labeled "Arena." May be named.

200 0458 Armory

This code identifies a building. Generally labeled "Armory." May be named.

200 0459 Orphanage

This code identifies a building. Generally labeled "Orphanage." May be named.

200 0460 Observatory

This code identifies a building. Generally labeled "Observatory." May be named.

200 0461 Grange hall

This code identifies a building. Must be labeled "Grange Hall."

200 0462 Grain Elevator

This code identifies a building. Generally labeled "Grain Elevator" or "Elevator."

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200 0465 Pile, dolphin, stump, or snag

This code identifies a feature shown by symbol 235 (A).

This code applies only to collection from topographic-bathymetric editions. This code does not apply to 1:100,000-scale maps.

Where the feature is shown by the single circle symbol it is collected as a degenerate line.

Where the feature is shown by a label collect it as an area. The outline of the area, which is defined by the limiting bathymetric contour, is unattributed.

200 0466 Breakwater, jetty, pier, dock, causeway, or wharf

This code identifies features shown by symbols 156-158 (A); 112.69, 112.70, 112.96 (B); 512.43 through 512.47, 512.162 (C); or 2108.05, 2108.06 (D).

A single-line structure, as in symbols 156 (A), 112.69 (B), 512.43 (C), or 2108.05, 2108.06 (D), is collected as a line and assigned this code. Any portion of the structure that defines the shoreline (that is, has land on one side and water on the other) is also collected as manmade shoreline (see code 050 0201) in the Hydrography category.

A structure shown to scale, as in symbols 157 (A), 512.44 (C), or 2108.05, 2108.06 (D), is collected as an area. The outline of the area is collected as an unattributed line in this category. However, the portion of the outline of the area that is shown by a black line is also collected as manmade shoreline (see code 050 0201) in the Hydrography category.

When a structure is shown as a ruin, as in symbols 112.70 (B) or 512.46, 512.47 (C), also assign the descriptive code for ruin (200 0618). When a ruined structure is shown to scale, the outline of the area is collected as an unattributed line in this category. However, the end that abuts land is also collected as shoreline (see code 050 0200) or manmade shoreline (see code 050 0201) in the Hydrography category.

When a structure is shown as submerged, as in symbols 112.69 (B) or 512.162(C), also assign the descriptive code for submerged (200 0617).

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A covered pier or wharf, shown by symbols 158(A) or 512.45(C), is collected as a building (general case) in this category. However, any portion of the perimeter of the structure that bounds water is also collected as manmade shoreline (see code 050 0201) in the Hydrography category.

200 0467 Exposed wreck or wreckage

This code identifies a feature shown by symbols 239, 240 (A); 512.139, 512.140 (C); or 2113.05(D).

An exposed wreck shown by symbols 239 (A), 512.139 (C), or 2113.05 (D) is collected as a degenerate line, digitized at the center of the circle at the base of the symbol.

Exposed wreckage shown by symbols 240 (A) or 512.140 (C) is collected as an area. The outline of the area, which is defined by either a limiting danger line or a limiting bathymetric contour, is collected as an unattributed line.

200 0468 Sunken wreck (masts may be exposed)

This code identifies a feature shown by symbols 241, 242 (A) or 512.141(C). It is collected as a degenerate line, digitized at the center of the symbol.

~~200 0469 Drydock~~

This feature is no longer collected in the Manmade Features category. See the Hydrography category.

3.10.7 Descriptive Attribute Codes

~~200 0601 Underground~~

This code is no longer used.

~~200 0602 Under construction~~

This code is no longer used.

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~~200 0603~~ ~~Abandoned~~

This code is no longer used. Any feature labeled "Abandoned" is collected using the appropriate feature code.

200 0604 Water

This code describes a tower (200 0305) or tank (200 0425) that is labeled "Water."

~~200 0605~~ ~~Oil~~

This code is no longer used.

~~200 0606~~ ~~Gas~~

This code is no longer used.

~~200 0607~~ ~~Chemical~~

This code is no longer used.

~~200 0608~~ ~~Covered~~

This code is no longer used. A pier or wharf that is covered is collected as a building.

200 0609 Gravel

This code describes a pit (200 0432) labeled "Gravel."

200 0610 Sand

This code describes a pit (200 0432) labeled "Sand."

200 0611 Clay

This code describes a pit (200 0432) labeled "Clay."

~~200 0612~~ ~~Borrow~~

This code is no longer used.

~~200 0613~~ ~~Radio~~

This code is no longer used. The communication code (200 0625) is used to describe a tower (200 0305) labeled "Radio."

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200 0614 Lookout

This code describes a tower (200 0305) labeled "Lookout" or "Fire."

~~200 0615 Unincorporated~~

This code is no longer used.

~~200 0616 No population~~

This code is no longer used.

200 0617 Submerged

This code describes a sewer line (200 0209) labeled "Submerged," or a submerged pier or wharf (200 0466), shown by symbols 112.69 (B) or 512.162 (C).

200 0618 Ruin

This code describes a pier or wharf ruin shown by symbols 112.70 (B) or 512.46, 512.47 (C). This code is used only in conjunction with code 200 0466.

~~200 0619 Caliche~~

This code is no longer used.

~~200 0620 Chert~~

This code is no longer used.

~~200 0621 Cinder~~

This code is no longer used.

~~200 0622 Pumice~~

This code is no longer used.

~~200 0623 Shale~~

This code is no longer used.

~~200 0624 Scoria~~

This code is no longer used.

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200 0625    Communication

This code describes a tower (200 0305) labeled to indicate it is used for communication. Includes antenna, microwave, radio, range, relay, and repeater.

200 0626    Control

This code describes a tower (200 0305) labeled to indicate it is used for air traffic control.

200 0627    Cooling

This code describes a tower (200 0305) labeled "Cooling."

200 0629    Navigation

This code describes a tower (200 0305) labeled to indicate it is used for navigation. Includes airway beacon, beacon, daybeacon, and light.

3.10.8    Parameter Attribute Codes

200 0000    Photorevised feature

This code is described in section 3.0.6.4. Because built-up area (200 0150) is collected based on revised criteria rather than its depiction on the map, this code is not applied to built-up area shown in purple.

202 0---    Width in mils of feature to scale

Enter the width in mils of a linear feature that is shown to scale in the spaces flush right.

~~203 ----- Angle of clockwise rotation~~

~~This code is no longer used.~~

~~208 0000    Best estimate of position or classification~~

~~This code is no longer used.~~

~~209 00--- Coincident feature or symbol~~

~~This code is no longer used.~~

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3.11 U.S. PUBLIC LAND SURVEY SYSTEM--MAJOR CODE 300

→ The Public Land Survey System (PLSS) and other special surveys within, and exclusions from, public domain lands, are shown on USGS quadrangle maps. This portrayal shows first-level subdivisions and is intended to be used as a reference grid, not as an identification of ownership or parcel boundaries. Survey corners, lines, and areas within public domain States are mapped and are collected as DLG-3 data. All States, except the following, are public domain States: Connecticut, Delaware, Georgia, Hawaii, Kentucky, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, Vermont, West Virginia. ←

The public domain includes the land ceded to the Federal Government by the Thirteen Original States and acquired from native Indians and foreign powers. The surveys of the public domain can be classified into the following general types:

Land Grants - Land grants were conferred on individuals by a predecessor government and were never part of the public domain.

PLSS Area - The rectangular system of surveys was developed to divide the public lands for disposal by the government. This survey system typically divides the land into 6-mile square townships, which are further subdivided into 1-mile square sections, although there are departures from this regular system.

Private Surveys - The government is responsible for conducting these surveys, but some land has been surveyed by private surveyors who have extended the PLSS using the rectangular system of surveys.

Special Survey Areas - Some land was disposed of by special surveys that were usually the result of acts of Congress. These include U.S. surveys, homestead entry surveys, Indian allotments, and donation land claims. Special survey areas are not subdivided by rectangular surveys.

Waterbodies - Navigable water ways and water bodies over 50 acres were not subject to disposal and were not subdivided by surveys.

Reservations - Other land was "reserved" by the Federal Government and not subject to disposal, such as national parks, forests, and Indian reservations. These lands may contain subdivision lines if the reservations were established after the area had been surveyed.

For additional background information on the PLSS and its associated types of survey areas, lines, and corners, see Appendix 3.11.A.

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3.11.1 General Principles

Because the PLSS depicted on the graphic cannot be revised from photographs, there is no photorevised feature code in this category.



Supplemental 600-series major codes may be assigned to PLSS DLGs by agreement with a cooperating agency. Descriptions and guidelines for these codes are documented in Appendix 3.11.E, Supplemental Codes for U.S. Public Land Survey System Data."



3.11.1.1 Node Attribute Codes

Node attribute codes are collected only when a monumented survey corner or point has been recovered in the field and is identified on the graphic, unless otherwise specified in a cooperative agreement. All other nodes are unattributed. Do not make any assumptions about survey corners, even if boundary monuments or control stations are shown. Only one code from section 3.11.2, Node Attribute Codes, is assigned to any given node.



Changes in azimuth along a survey line, which are not represented by a recovered corner or point, are collected simply as inflection points on the line. All other vertices are superfluous and should not be retained.



3.11.1.2 Area Attribute Codes

All areas are attributed. Only one code from the list of area attribute codes is assigned to each polygon, except in the case of a land grant that is also a private extension of the public land survey.

Each area code description contains information on which parameter codes are used in conjunction with that area code. Several coding descriptions say "Used in conjunction with parameter codes 301-305, as appropriate." This means that the township number, the range number, and the section number are collected, if they can be determined from the graphic. If a section number is collected, township and range numbers must be collected.

Areas that make up a section, or unsectionalized areas that cannot be assigned any other code from the list of area attribute codes, are considered PLSS areas (300 0110). There are a number of departures from the rectangular survey system. Areas were surveyed, generally by acts of Congress, for such things as wagon roads, coal leases, railroad grants, and small holding claims. Only a few of these survey areas are uniquely identified on USGS maps and in the

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DLGs (see below). Other non-rectangular surveys that interrupt the regular rectangular grid are attributed as PLSS area (300 0110). These areas generally do not have a section number.

Special surveys (homestead entry surveys, donation land claims, tracts, U.S. surveys, and Indian allotments), land grants, private surveys, water areas, and area outside of the public domain are not considered as PLSS area.

**How to collect**

Evaluation of the limiting survey lines or the label within the area or along the survey line, or both, is required to determine the correct area attribute and the extent of the area to be collected.

PLSS areas that have section numbers and are not completely closed off by mapped survey lines are closed off with a closure line or unattributed survey line (see section 3.11.1.3).

Areas of old reservations, such as Indian, military, and lighthouse, have been identified on the map. Where their extent defines the limiting lines of a subdivision, the limiting lines are collected as survey lines, and the areas are assigned the appropriate code from the list of area attribute codes, but the reservation type is not identified.

Other surveys that do not conform to the rectangular system of surveys, such as tracts, donation land claims, and Indian allotments are collected as shown on the map.

In a number of States special survey areas that do not meet the collection criteria for homestead entry surveys, donation land claims, tracts, U.S. surveys, Indian allotments, or land grants have been shown on the map. They are collected as PLSS areas, and assigned no additional codes, even though they may be numbered or lettered.

Survey areas in Ohio are unique in that various reference systems and subdivision schemes were used and a mix of public and private surveys exist. See Appendix 3.11.A for more detailed information on these surveys.

3.11.1.3 Line Attribute Codes

Subdivision lines shown by symbols 502, 504, 508, 509 (A), 123.1, 123.2 (B), 523.1, 523.2, 523.12, 523.13 (C), or 2502.03, 2502.05, 2503.01, 2503.02 (D) are collected as unattributed lines. (On maps published before about 1940, subdivision lines were shown by black

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dotted lines; on those published between about 1940 and 1948, black solid lines were used.)

In addition to depicted land lines, other lines that limit the land net must be digitized to complete closure of all polygons. Where survey lines have been dropped on the map because of coincidence with another linear feature, such as a road or boundary, an unattributed line is collected unless the overall pattern of the surrounding portrayed lines indicate the line is approximate. If a land line is dropped for a boundary that is labeled approximate or symbolized as indefinite, code the land line as approximate. Survey lines that have been dropped because of coincidence with other features are generally collected as straight lines connecting section corners, even if the feature they have been dropped for deviates from that straight line.

Where survey lines are not shown on the map for reasons other than coincidence with another feature (most commonly in areas where there was insufficient evidence to map the survey lines, or in the vicinity of water bodies), the area is required to be closed off with a line when a section number is shown. A closure line (300 0203) is collected. Closure lines provided by cooperators (see Appendix 3.11.E) may be based on Meander Lines or other information that is not apparent on the published quadrangle map. All changes in azimuth should be retained to maintain the character of these lines.

The extent of old reservations, such as Indian, military, and lighthouse, shown on maps with the land grant or section line symbol and labeled, are collected as section lines where they form the limit of subdivisions of the rectangular system of surveys. Where these lines do not form the limit of a subdivision of a rectangular survey, they are not collected in any category. (Previously these lines were collected in the Boundaries category and coded as "Historical Line.")

3.11.1.4 Single-Point Attribute Codes

There are no general principles that apply to the single-point attribute codes.

3.11.1.5 General Purpose Attribute Codes

There are no general purpose attribute codes.

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3.11.1.6 Descriptive Attribute Codes

The names of public land and private surveys in Ohio have been shown within the interior of the map and in margin notes. For areas where names cannot be derived from the origin of survey code, an additional descriptor code must be collected to identify the survey name.

3.11.1.7 Parameter Attribute Codes

There are no general principles that apply to the parameter attribute codes.

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3.11.1.8 List of PLSS Attribute Codes

- o Node attribute codes
  - 300 0001 Found PLSS section corner
  - ~~300 0002 Point on section line, no corner~~
  - ~~300 0003 Closing corner~~
  - 300 0004 Meander corner
  - ~~300 0005 Auxiliary meander Corner~~
  - ~~300 0006 Special meander corner~~
  - 300 0007 Witness corner
  - 300 0008 Witness point
  - 300 0009 Angle point
  - 300 0010 Amended monument
  - ~~300 0011 Reference monument~~
  - 300 0012 Found quarter-section corner
  - ~~300 0013 Tract corner~~
  - 300 0014 Land grant or other special survey corner
  - ~~300 0015 Arbitrary section corner~~
  - ~~300 0040 Corner identified in the field~~
  - ~~300 0041 Corner with horizontal coordinates~~
  - ~~300 0042 Corner with elevation value~~
  
- o Area attribute codes
  - 000 0000 Outside area
  - ~~300 0100 Indian lands~~
  - 300 0101 Homestead entry survey
  - 300 0102 Donation land claim
  - 300 0103 Land grant
  - 300 0104 Private extension of public land survey
  - 300 0105 Area of public and private survey overlap
  - 300 0106 Overlapping land grants
  - ~~300 0107 Military reservation~~
  - 300 0108 Private survey in Ohio
  - ~~300 0109 Other reservation~~
  - 300 0110 PLSS area
  - 300 0111 Tract
  - 300 0112 U.S. survey
  - 300 0113 Indian allotment
  - 300 0114 Area outside of the public domain
  - 300 0198 Water
  - ~~300 0199 Unsurveyed area~~
  
- o Line Attribute codes
  - 300 0201 Approximate position
  - 300 0202 Protracted position
  - 300 0203 Closure line

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~~300 0204 Base line~~  
~~300 0205 Claim line, grant line~~  
300 0299 Processing line

o Single-point attribute codes

300 0300 Location or mineral monument  
300 0301 Isolated found section corner  
~~300 0302 Witness corner (off survey line)~~

o General purpose attribute codes

There are no general purpose codes

o Descriptive attribute codes

300 0600 Connecticut Western Reserve  
300 0601 Virginia Military District  
300 0602 Ohio Company Purchase  
300 0603 Symmes Purchase  
300 0604 French Grants  
300 0605 Donation Tract  
300 0606 Old Seven Ranges  
300 0607 Congress Lands North of Old Seven Ranges  
300 0608 Congress Lands East of Scioto River  
300 0609 Between the Miamis, North of Symmes Purchase  
300 0610 West of the Great Miami  
300 0612 Refugee Lands  
300 0625 Fraction one-half for land grant corner, monument  
or section number, or nonsection identifier

o Parameter attribute codes

301 ---- Section number  
302 ---- Township number north of baseline  
303 ---- Township number south of baseline  
304 ---- Range number east of principal meridian  
305 ---- Range number west of principal meridian  
306 00-- Origin of survey  
307 ---- Identifier, nonsection  
308 ---- Land grant, location, or mineral monument number  
~~308 0000 Best estimate of position or classification~~  
~~309 00-- Coincident feature~~

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3.11.2 Node Attribute Codes

300 0001 Found PLSS section corner

This code identifies a section corner shown by a double weight cross or "T" as in symbols 506(A), 523.5(C), 523.6(C), or 2502.07(D). Indicated corners, shown by a single-weight cross or "T" are not collected.

Section corners are found at the extremity of a township section and are not labeled.

When authorized by a cooperative agreement, this code is applied to corners where field-derived coordinates exist and are available from the cooperator. In this situation, 300 0001 is used in conjunction with code 601 0002 (see Appendix 3.11.E). In some instances, these corners may not be shown on the graphic.

~~300 0002 Point on section line, no corner~~

This feature is no longer collected.

~~300 0003 Closing corner~~

This code is no longer used. See code 300 0001.

300 0004 Meander corner

This code identifies a corner shown by symbols 523(A), 523.7(C) or 2502.10(D). Must be labeled "MC."

~~300 0005 Auxiliary meander corner~~

This feature is no longer collected.

~~300 0006 Special meander corner~~

This feature is no longer collected.

300 0007 Witness corner

This code identifies a corner shown by symbols 523(A), 523.7(C), or 2502.09(D). Must be labeled "WC."

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300 0008 Witness point

This code identifies a point shown by symbols 506, 507 (A); 523.5, 523.6 (C); or 2502.07, 2502.08 (D). Must be labeled "WP."

300 0009 Angle point

This code identifies a point shown by symbols 506, 507 (A); 523.5, 523.6 (C); or 2502.07, 2502.08 (D). Must be labeled "AP."

300 0010 Amended monument

This code identifies a monument shown by symbols 506, 507 (A); 523.5, 523.6 (C); or 2502.07, 2502.08 (D). Must be labeled "AM."

~~300 0011 Reference monument~~

This feature is no longer collected.

300 0012 Found quarter-section corner

This code identifies a quarter-section corner shown by a double-weight cross or "T" as in symbols 506(A), 523.5(C), or 2502.07(D). Indicated corners, shown by a single-weight cross or "T" are not collected.

→ When authorized by a cooperative agreement, this code is also applied to quarter corners where field-derived coordinates exist and are available from the cooperator. In this situation, 300 0012 is used in conjunction with code 601 0002 (see Appendix 3.11.E). In some instances, these quarter-section corners may not be shown on the graphic. ←

Quarter-section corners are found at the extremity of a quarter-section, theoretically located halfway (40 chains) between section corners. They are not labeled.

~~300 0013 Tract corner~~

This code is no longer used. See code 300 0014.

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300 0014 Land grant or other special survey corner

This code identifies a corner shown by symbols 501(A), 523.11(C), or 2502.02(D).

Used in conjunction with parameter code 308 to identify a land grant corner number, and descriptive code 300 0625 if the number contains the fraction one-half.

~~300 0015 Arbitrary section corner~~

This feature is no longer collected.

~~300 0040 Corner identified in the field~~

This code is no longer used, since only "found" corners are collected.

~~300 0041 Corner with horizontal coordinates~~

This code is no longer used.

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~~300 0042 Corner with elevation values~~

This code is no longer used.

3.11.3 Area Attribute Codes

000 0000 Outside area

This code is described in section 3.0.6.1.

~~300 0100 Indian lands~~

This code is no longer used. If the area is an active Indian reservation, it is collected in the boundaries category. If the area is a historical reservation, the area is collected using the appropriate area code.

300 0101 Homestead entry survey

This code identifies an area delineated by symbols 500(A), 123.5(B), 523.10(C), or 2502.01(D). Must be labeled "HES." Area will also contain an area survey number.

Must be used in conjunction with parameter code 307 to identify the area survey number.

300 0102 Donation land claim

This code identifies an area delineated by symbols 500(A), 123.5(B), 523.10(C), or 2502.01(D) in Arizona, Florida, New Mexico, Oregon, or Washington. Donation land claims are not labeled, but contain an area survey number. They may be wholly contained within a section or lie in more than one section.

Must be used in conjunction with parameter codes 302-307 to identify the area township number, range number, origin of survey, and the area survey number.

300 0103 Land grant

This code identifies an area delineated by symbols 500(A), 123.5(B), 523.10(C), or 2502.01(D). Names are shown in black and centered within the grant. The word "grant" is omitted unless the entire quadrangle falls within the grant. Must be named and have a code that appears in Appendices 3.11.C and 3.11.D.

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Must be used in conjunction with parameter code 307 to identify land grant names. If land grants overlap, do not use this code. See area code 300 0106 to identify overlapping land grants.

If a land grant is also a private extension of the public land survey, code 300 0104 is also assigned.

300 0104 Private extension of public land survey

This code identifies an area delineated by symbols 508, 509 (A); 523.12, 523.13 (C); or 2503.01, 2503.02 (D), except those private surveys in Ohio identified by the code 300 0108.

Must be used in conjunction with parameter code 306. Used in conjunction with parameter codes 301-305, as appropriate. Used in conjunction with one of descriptive codes 300 0606 through 300 0610, if appropriate.

If a private extension of the public land survey falls within a land grant, codes 300 0103 and parameter code 307 are also applied.

300 0105 Area of public and private survey overlap

This code identifies an area where private surveys (300 0104) overlap the public land surveys (300 0110).

Must be used in conjunction with parameter code 306. Used in conjunction with parameter codes 301-305, as appropriate. If the designations of the public and private surveys do not agree, use two sets of parameter codes in the following order: area code, 301-306, 301-306. Used in conjunction with one of descriptive codes 300 0606 through 300 0610, if appropriate.

300 0106 Overlapping land grants

This code identifies an area where land grants overlap because of survey error or disputed claims. The land grant code (300 0103) is not used.

Each of the land grant names is collected using parameter code 307.

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~~300 0107 Military reservation~~

This code is no longer used. Reservations are collected in the Boundaries category.

300 0108 Private survey in Ohio

This code identifies the following private surveys in Ohio: the Connecticut Western Reserve, Virginia Military District, Ohio Company Purchase, Symmes Purchase, French Grants, and Donation Tract.

Must be used in conjunction with parameter code 306. Used in conjunction with parameter codes 301-305, as appropriate. Must be used in conjunction with one of the descriptive codes 300 0600 through 300 0605.

~~300 0109 Other reservation~~

This code is no longer used. Reservations are collected in the boundaries category.

300 0110 PLSS area

This code identifies an area delineated by symbols 502, 503, 504, 505 (A), 123.1, 123.2 (B), 523.1, 523.2, 523.3, 523.4 (C), or 2502.03, 2502.04, 2502.05, 2503.06 (D). This code also identifies arpent sections in Louisiana, delineated by symbols 500(A), 123.5(B), 523.10(C), or 2502.01(D). An area that does not contain land lines and to which no other area code applies, (either because the area has not been surveyed or because there was not enough information to locate the lines) is also identified with this code.

Except when used as described in the following paragraph, this code must be used in conjunction with parameter code 306. Used in conjunction with parameter codes 301-305, as appropriate.

This code is also applied to any area delineated by symbols 500(A), 123.5(B), 523.10(C), or 2502.01(D), which does not meet the collection criteria for codes 300 0101 through 300 0103 or 300 0111 through 300 0113 (homestead entry survey, donation land claim, land grant, tract, U.S. survey, or Indian allotment). In these areas, this code is used alone, without any additional parameter codes, even though the area may be identified by a number or letter on the map.

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300 0111 Tract

This code identifies an area delineated by symbols 500(A), 523.10(C), or 2502.01(D). Tracts are not labeled, but contain an area survey number. They lie in more than one section and are never wholly contained within a section.

Must be used in conjunction with parameter codes 302-307 to identify the area township number, range number, origin of survey, and the area survey number.

300 0112 U.S. survey

This code identifies an area delineated by symbols 500(A), 523.10(C), or 2502.01(D). Must be labeled "U.S. Survey." Area will also contain an area survey number.

Must be used in conjunction with parameter code 307 to identify the area survey number.

300 0113 Indian allotment

This code identifies an area shown by symbols 500(A), 523.10(C), or 2502.01(D). Must be labeled "Indian Allotment." Area will also contain an area survey number.

Must be used in conjunction with parameter code 307 to identify the area survey number.

300 0114 Area outside of the public domain

This code identifies an area outside of the public domain. It is used wherever a portion of Canada, Mexico, or any State which is not part of the public domain is shown on a map of a public domain State.

Cannot be used in conjunction with any parameter codes.

300 0198 Water

This code identifies an area of water (which may include some adjacent land areas) across which the land net cannot be extended with closure lines. The area is generally bounded by closure lines that close off the sections on either side of the water body.

Cannot be used in conjunction with any parameter codes.

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~~300 0199 Unsurveyed area~~

This code is no longer used. See code 300 0110 for unsurveyed PLSS areas. See code 300 0114 for areas outside of the public domain.

3.11.4 Line Attribute Codes

300 0201 Approximate position

This code identifies a line shown by symbols 503, 505 (A); 523.3, 523.4 (C); or 2502.04, 2503.06 (D). Land grant lines that are labeled "Approximate" are also assigned this code. When only a portion of a land grant line is labeled approximate, the entire segment between the nearest found grant monument on either side of the labeled portion of the line is assigned this code.

300 0202 Protracted position

This code identifies a line shown by symbols 123.3(B), 123.4(B), 523.16(C), or 523.17(C). Currently, on 1:24,000-scale maps, protracted lines are shown only in Alaska. On 1:100,000-scale maps, protracted lines may be shown in any public land State.

300 0203 Closure line

This code identifies an arbitrary line digitized to separate two or more areas that must be assigned different sets of attribute codes. Closure lines are needed only if areas are still not closed off from one another after all the survey lines that have been dropped on the map because of coincidence with linear features have been collected, as described in section 3.11.1.3.

**Why do unclosed areas appear on the map?**

Survey lines may be missing on the map because there was insufficient evidence on the ground to complete the grid, because the survey lines were interrupted by a waterbody that was segregated from the public domain, or because the area was not surveyed.

**What areas need to be closed off?**

Only those areas on the map that have a section number or areas with different township and range numbers, that are

not completely enclosed by survey lines need to be closed off. On 1:100,000-scale maps, usually only sections 1, 6, 31, and 36 are labeled, so other sections may need to be closed off, even when no section number is shown.

**How should closure lines be used?**

In closing off areas, the preferred approach is to assume a regular grid and to use closure lines to add any lines needed to approximate that regular grid. As noted above, it is not necessary to complete the entire grid; only those areas that must be assigned different sets of attribute codes must be closed off from one another. An area that has not been surveyed is collected as a single PLSS area (300 0110), with no code for section numbers. A large water body, or portion of a water body, with no section lines or section numbers is collected as Water (300 0198).

If it is not possible to assume a regular grid, either because the map contains areas with different surveys that do not line up, or because there are not enough corners or portions of section lines to determine if the grid is regular, then the areas must be closed off. Generally the closure line is collected as a straight line connecting the end points of the depicted survey lines. In some cases, though, it may be desirable to add a few points to roughly approximate the extent of the section, as indicated by the position of the section number, or the shoreline, or both. Closure lines provided by cooperators (see Appendix 3.11.E) may be based on Meander Lines or other information that is not apparent on the published quadrangle map. All changes in azimuth should be retained to maintain the character of the line.

Keep in mind that range lines may be offset when they cross township lines. Although it may at first glance appear as though the survey lines to the north and south of the interruption cannot be matched up with one another, often the regular grid can be assumed if this offset is taken into consideration.

**How should the regular grid be approximated?**

The rectangular system called for sections to be 1 mile by 1 mile. Obviously, depending on the skill of the surveyor, the terrain, and other conditions, this may not have been achieved. However, by looking at the sections

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that are completed on the map, the location of the section numbers, isolated pieces of survey lines, and survey corners, the general grid can usually be determined. If you see an apparent section (a section number is present but not all of the surrounding survey

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lines are) complete the section by using the available information to create a square that is approximately 1 mile by 1 mile.

It is not necessary to be exact when digitizing closure lines to approximate the grid. On USGS maps, the PLSS is shown as a reference grid, not to show ownership or parcel boundaries.

~~300 0204 Base line~~

This code is no longer used. The base line can be determined from the associated areas.

~~300 0205 Claim line, grant line~~

This code is no longer used.

300 0299 Processing line

This code is described in section 3.0.6.3.

3.11.5 Single-Point Attribute Codes

300 0300 Location or mineral monument

This code identifies a monument shown by symbols 227(A), 512.106(C), or 2102.12(D).

Used in conjunction with parameter code 308 to identify a monument number, and descriptive code 300 0625 if the number contains the fraction one-half.

300 0301 Isolated found section corner

This code identifies a corner shown by symbols 506(A), 523.5(C), or 2502.07(D). Must be located in an area where subdivision lines are omitted because of insufficient data.

~~300 0302 Witness corner (off survey line)~~

This code is no longer used. Witness corners both on and off survey lines are collected using code 300 0007.

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3.11.6 General Purpose Attribute Codes

There are no general purpose attribute codes.

3.11.7 Descriptive Attribute Codes

300 0600 Connecticut Western Reserve

This code identifies the Connecticut Western Reserve in Ohio. Must be used in conjunction with area code 300 0108.

300 0601 Virginia Military District

This code identifies the Virginia Military District in Ohio. Must be used in conjunction with area code 300 0108.

300 0602 Ohio Company Purchase

This code identifies the Ohio Company Purchase in Ohio. Must be used in conjunction with area code 300 0108.

300 0603 Symmes Purchase

This code identifies the Symmes Purchase in Ohio. Must be used in conjunction with area code 300 0108.

300 0604 French Grants

This code identifies the French Grants in Ohio. Must be used in conjunction with area code 300 0108.

300 0605 Donation Tract

This code identifies the Donation Tract in Ohio. Must be used in conjunction with area code 300 0108.

300 0606 Old Seven Ranges

This code identifies the Old Seven Ranges in Ohio. Must be used in conjunction with area code 300 0104, 300 0105, or 300 0110. Must use parameter code 306 0035.

300 0607 Congress Lands North of Old Seven Ranges

This code identifies the Congress Lands North of Old Seven Ranges in Ohio. Must be used in conjunction with

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area code 300 0104, 300 0105, or 300 0110. Must use parameter code 306 0035.

300 0608 Congress Lands East of Scioto River

This code identifies the Congress Lands East of Scioto River in Ohio. Must be used in conjunction with area code 300 0104, 300 0105, or 300 0110. In Range 22W and Range 23W, must use parameter code 306 0039; otherwise must use parameter code 306 0035.

Lands falling within the Congress Lands East of Scioto River and the Refugee Lands are further identified with descriptive code 300 0612.

300 0609 Between the Miamis, North of Symmes Purchase

This code identifies the Between the Miamis, North of Symmes Purchase in Ohio. Must be used in conjunction with area code 300 0104, 300 0105, or 300 0110. Must use parameter code 306 0036.

300 0610 West of the Great Miami

This code identifies the West of the Great Miami in Ohio. Must be used in conjunction with area code 300 0104, 300 0105, or 300 0110. Must use parameter code 306 0036.

300 0612 Refugee Lands

This code identifies the Refugee Lands within the Congress Lands East of the Scioto River in Ohio. Must be used in conjunction with descriptive code 300 0608. Must be used in conjunction with area code 300 0104, 300 0105, or 300 0110. In Township 5N, Range 22 W, must use parameter code 306 0039; otherwise must use parameter code 306 0035.

300 0625 Fraction one-half for land grant corner, monument or section number, or nonsection identifier

This code represents that portion of a land grant corner, monument number, section number, or nonsection identifier that is the fraction one-half.

For a fractional land grant corner, location monument, or mineral monument, must be used in conjunction with code 300 0014 or 300 0300, and parameter code 308.

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For a fractional section number or nonsection identifier, must be used in conjunction with parameter code 301 or 307.

This code is not used to identify fractional township or range numbers. (See parameter codes 302-305.)

3.11.8 Parameter Attribute Codes

301 *xyyy* Section number

*x* = 0 for numeric section identifier  
1 for numeric part of alphanumeric section identifier  
2 for alphabetic part of alphanumeric section identifier

*yyy* = Section number, flush right, or numeric code for alphabetic character, flush right:

A = 01, B = 02, C = 03, D = 04, E = 05, F = 06,  
G = 07, H = 08, I = 09, J = 10, K = 11, L = 12,  
M = 13, N = 14, O = 15, P = 16, Q = 17, R = 18,  
S = 19, T = 20, U = 21, V = 22, W = 23, X = 24,  
Y = 25, Z = 26

Examples:           Section 36 - 301 0036  
                      Section 101 - 301 0101  
                      Section 23A - 301 1023, 301 2001

This code represents the number of a township section collected for a PLSS Area, private extension of public land survey, or area of public and private survey overlap. If a section number is omitted from the published map because of insufficient space, the proper identifier can be derived from those of adjoining sections or by consulting the adjacent map.

This code is also used to capture the identifiers of irregular subdivisions of PLSS areas. These identifiers are typically numbers over 36.

Also use code 300 0625 to identify that portion of a section number that is the fraction one-half.

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302 *xyyy* Township number north of baseline  
303 *xyyy* Township number south of baseline

x = 0 for full township  
2 for 1/4 township  
4 for 1/2 township  
6 for 3/4 township

*yyy* = township number, flush right

Examples: Township 101 South - 303 0101  
Township 23 1/2 North - 302 4023

This code represents the designation for a row of townships. Township numbers follow the label "T" and are normally placed in pairs straddling the exterior line of the township. They are found in the east and west margins or in the interior of the map if the township line does not extend to the neatline. Partial townships are labeled on the map as, for example, "T23 1/2N."

In Symmes Purchase and Between the Miamis, North of Symmes Purchase, rows of townships are labeled "R." Use parameter code 302 to capture these range numbers as township numbers.

304 *xyyy* Range number east of principal meridian  
305 *xyyy* Range number west of principal meridian

x = 0 for full range  
2 for 1/4 range  
4 for 1/2 range  
6 for 3/4 range  
8 for duplicate to north or east of the original township  
9 for triplicate to north or east of a duplicate township

*yyy* = range number, flush right

Examples: Range 5 East - 304 0005  
Range 47 West, duplicate to north or east of the original township - 305 8047

This code represents the designation for a column of townships. Range numbers follow the label "R" and are normally placed in pairs straddling the exterior line of the township. They are found in the north and south margins or in the interior of the map if the range line

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does not extend to the neatline. Partial ranges are labeled on the map as, for example, "R79 1/2E."

In Symmes Purchase and Between the Miamis, North of Symmes Purchase, columns of townships are labeled "T." Use parameter code 304 to capture these township numbers as range numbers.

The range number code can contain an identifier used to distinguish among identical sets of meridian, township, and range numbers, occurring most commonly at State boundaries. Table 3.11-1 contains a partial list of meridian, township, and range number duplicates ordered by State and meridian.

306 00xx Origin of survey

xx = two-digit code from Appendix 3.11.B

Examples:Boise Meridian - 306 0008  
Ohio River - 306 0035

This code represents the reference for a set of townships. The BLM map entitled "Principal Meridians and Base Lines" is used to locate the survey area and identify the name of the origin. Appendix 3.11.B is then used to identify the appropriate code for that origin.

~~306 0038 Ohio River Base~~

This parameter code value is no longer used. See code 306 0035.

~~306 0040 Second Scioto River~~

This parameter code value is no longer used. See code 306 0039.

~~306 0041 Third Scioto River~~

This parameter code value is no longer used. See code 306 0039.

~~306 0047 West of the Great Miami~~

This parameter code value is no longer used. See code 300 0610.

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Table 3.11-1  
 Partial List of Township Duplicates

State	Meridian	Township and Range
California/ Nevada	MT. DIABLO	Township 001N, Ranges 031E - 032E
		Township 002N, Ranges 030E - 031E
		Township 003N, Ranges 029E - 030E
		Township 004N, Ranges 028E - 029E
		Township 005N, Ranges 026E - 028E
		Township 006N, Ranges 025E - 027E
		Township 007N, Ranges 024E - 026E
		Township 008N, Ranges 023E - 025E
		Township 009N, Ranges 022E - 024E
		Township 010N, Ranges 021E - 022E
		Township 001S, Ranges 032E - 033E
		Township 002S, Ranges 033E - 034E
		Township 003S, Ranges 034E - 035E
		Township 004S, Ranges 035E - 036E
		Township 005S, Ranges 037E - 038E
		Township 006S, Ranges 038E - 039E
		Township 007S, Ranges 039E - 040E
		Township 008S, Ranges 039E - 041E
		Township 009S, Ranges 040E - 042E
		Township 010S, Ranges 041E - 043E
Township 011S, Ranges 042E - 044E		
Township 012S, Ranges 043E - 045E		
Township 013S, Ranges 045E - 046E		
Township 014S, Ranges 045E - 046E		
Township 015S, Range 046E		
Colorado	NEW MEXICO PRINCIPAL	Township 034N, Ranges 003W - 016W
Colorado/ Wyoming	6TH PRINCIPAL	Township 012N, Ranges 060W - 104W

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Table 3.11-1  
 Partial List of Township Duplicates

State	Meridian	Township and Range
North Dakota/ South Dakota	5TH PRINCIPAL	Township 118N, Range 052W
		Township 119N, Ranges 051W - 053W
		Township 120N, Ranges 051W - 053W
		Township 121N, Range 051W
		Township 122N, Ranges 050W - 051W
		Township 123N, Range 050W
		Township 124N, Ranges 050W and 054W
		Township 125N, Ranges 049W - 050W
		Township 126N, Ranges 048W - 049W
		Township 127N, Ranges 047W - 048W
		Township 128N, Ranges 047W - 049W
		Township 129N, Ranges 047W - 055W
		Township 130N, Ranges 053W - 055W
		Township 005S, Ranges 037E and 038E
		Township 006S, Range 039E
Township 007S, Range 039E		
Township 009S, Ranges 040E and 041E		
Oregon	WILLAMETTE	Township 026S, Ranges 030E - 032E
		Township 036S, Range 007E

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~~306 0070 Connecticut Western Reserve and Firelands~~

This parameter code value is no longer used. See code  
300 0600.

~~306 0071 Virginia Military Survey~~

This parameter code value is no longer used. See code  
300 0601.

~~306 0072 Ohio Company Purchase~~

This parameter code value is no longer used. See code  
300 0602.

~~306 0073 Symmes Purchase~~

This parameter code value is no longer used. See code  
300 0603.

307 *xyyy* Identifier, nonsection

x = 0 for numeric identifier  
1 for numeric part of alphanumeric section identifier  
2 for alphabetic part of alphanumeric section  
identifier  
3 for alphabetic identifier  
4 for identifier of named grant in Arizona  
5 for identifier of named grant in California  
6 for identifier of named grant in Colorado  
7 for identifier of named grant in New Mexico  
8 for identifier of named grant in Florida

For x = 0-3:

*yyy* = number, flush right, or numeric code for  
alphabetic character, flush right:

A = 01, B = 02, C = 03, D = 04, E = 05, F = 06,  
G = 07, H = 08, I = 09, J = 10, K = 11, L = 12,  
M = 13, N = 14, O = 15, P = 16, Q = 17, R = 18,  
S = 19, T = 20, U = 21, V = 22, W = 23, X = 24,  
Y = 25, Z = 26

For x = 4-8

*yyy* = three-digit code of the named grant as  
designated in Appendices 3.11.C and 3.11.D.

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Examples: Grant number 51 - 307 0051  
Grant W - 307 2023  
San Ignacio de la Canoa grant in Arizona  
- 307 4009  
Pueblo of Santa Ana grant in New Mexico -  
307 7302

This code represents the area survey number for a homestead entry survey, donation land claim, tract, U.S. survey, or Indian allotment and the area survey name of a land grant. Also use code 300 0625 to identify that portion of an identifier that is the fraction one-half.

308 xxxx Land grant, location, or mineral monument number

xxxx = number of the monument

This code represents the monument number on a land grant corner, location monument or mineral monument. Used only in conjunction with code 300 0014 or 300 0300. Also use code 300 0625 to identify that portion of a monument number that is the fraction one-half.

~~308 0000 Best estimate of position or classification~~

~~This code is no longer used.~~

~~309 00 Coincident feature~~

~~This code is no longer used.~~

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Appendix 3.11.A - Background Information on the Public Land Survey System

APPENDIX 3.11.A

Background Information on the Public Land Survey System

## Standards for Digital Line Graphs

### Part 3: Attribute Coding

#### Appendix 3.11.A - Background Information on the Public Land Survey System

##### Introduction

All lands in the public domain are subject to subdivision by a rectangular system of surveys called the Public Land Survey System (PLSS), established and regulated by the Bureau of Land Management. The original public domain includes the land ceded to the Federal Government by the Thirteen Original States, supplemented with acquisitions from native Indians and foreign powers. It encompasses major portions of the land area of 30 western States.

Under Congressional mandate, cadastral surveys of public lands were undertaken to create parcels suitable for disposal by the Government. The PLSS was developed for this purpose. The PLSS is a rectangular survey system that typically divides the land into 6-mile square townships, which are further subdivided into 1-mile square sections. The extension of the rectangular system of surveys over the public domain has been in progress since 1785. These surveys form the basis of patents issued when public lands pass out of Federal ownership.

Certain lands were excluded from the public domain and not subject to survey and disposal. These lands include the beds of navigable bodies of water, national installations such as military reservations and national parks, and areas such as land grants that had already passed to private ownership prior to subdivision by the Government.

Data describing the PLSS is required by Federal surface and mineral management agencies, as well as any organization concerned with land ownership in the 30 western States that were formed from the public domain. Additionally, many agencies have encoded natural resource or environmental inventory data based on the PLSS.

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The Rectangular System of Surveys

The rectangular system of surveys was devised to subdivide public domain lands. It divides the land into townships 6-mile square by north and south lines that run according to the true meridian and by others crossing the north and south lines at right angles. Townships are, in turn, subdivided into sections of, as nearly as possible, 640 acres by parallel lines that run east to west and south to north at 1-mile intervals. Corner monuments are placed along all lines as they are surveyed at 1/2-mile (quarter-section) intervals. The monumentation is intended to establish a permanent marking of the lines and to fix the corner positions so that the location of the surveyed lands can always be definitely known.

With respect to the ideal rectangular plan, a survey of the public lands is accomplished by establishing, in order, the following:

Independent initial point

This is the point from which the survey of the principal meridian and base line, controlling the survey of the public lands in a given area, is initiated. There are 46 separate surveys in the nationwide system. Of these, only eight in Ohio and Indiana (commenced between 1785 and 1805) have no initial point as defined.

Principal meridian

This is a line extending north and south along the astronomic meridian passing through the initial point. It serves as the origin for the survey of township boundaries along the parallels.

Base line

This is a line extending east and west along a true parallel of latitude passing through the initial point. It serves as the origin for the survey of meridional township boundaries.

Standard parallels (correction lines)

These are auxiliary governing lines that extend east and west from the Principal Meridian, generally at intervals of 24 miles (four townships) north and south of the base line. In many surveys run before 1850, correction lines were run at intervals of 30, 36, or 60 miles. Standard parallels are used to take up error in the rectangular plan caused by the convergence of meridians.

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##### Guide meridians

These are auxiliary governing lines that are projected north from points established on either the base line or standard parallels, generally at intervals of 24 miles east and west of the principal meridian. Guide meridians terminate at the point of intersection with another standard parallel.

##### Township exteriors

These are lines surveyed at 6-mile intervals that conform to meridians and parallels within established limits. Meridional township boundaries (range lines) are run from south to north and terminate at the point of intersection with a standard parallel. Latitudinal township boundaries (township lines) are run from east to west through corners established on the meridional lines. Townships are numbered to the north and south commencing with number 1 at the base line, and with range numbers to the east and west commencing with number 1 at the principal meridian. The township number is used in conjunction with the range number to indicate the coordinates of a particular township with respect to the initial point.

##### Subdivision of townships

The south and east boundaries of a township are normally the governing lines of subdivisional surveys. Meridional section lines are initiated at the section corners at the south boundary of the township and are run north parallel to the east boundary. They are not continued north beyond a section corner until the connecting latitudinal section lines have been surveyed. Latitudinal section lines are run west to east parallel to the south boundaries of the respective sections. Any fractional measurement is placed in the north or west 1/2 mile of the township. A normal township is divided into 36 sections numbered commencing with number 1 in the northeast section of the township, proceeding west to section 6, then south to section 7, then east to section 12, and so on, to number 36 in the southeast section.

Half townships may be created in instances where the distance between the regular position of township boundaries is so great that the application of normal rules of subdivision would result in sections elongated in excess of 120 chains (7,920 feet).

Half ranges may be created in instances where the distance between the regular position of township boundaries is so great that the application of normal rules of subdivision would result in sections elongated in excess of 120 chains (7,920 feet).

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##### Subdivision of sections

Subdivision of sections into aliquot parts or irregular lots is controlled by the previously established section and quarter-section corners. This subdivision may be accomplished by field methods or protracted on the official plat.

Subdivision lines and corners are shown on quadrangle maps, usually to the section level with some quarter section corners shown, to the extent that their positions can be determined from evidence on the ground. During field work, enough corners are located to accurately position the network of public land lines from official plats. Although the PLSS is mapped to meet National Map Accuracy Standards, its depiction is not intended to be official or authoritative; it is presented as useful reference information. The only legal basis for determining land boundaries remains the original survey.

##### Survey Corners

Survey corners are points on the surface of the Earth that represent extremities of a subdivision of the public lands, generally at the intersection of two or more surveyed lines. The classification of a corner describes the relative corner location, type of survey, or the controlling aspects of the corner. A survey corner is identified by unique symbology or labeling on the map only when the monumented point has been recovered in the field.

The following is a list of the types of survey corners found on USGS quadrangle maps:

##### Angle point

This is a point on a survey where the alignment or boundary deflects from a straight line.

##### Amended monument

A survey monument whose position no longer marks the true position for the corner, but which is connected by course and distance to the new corner. There are two primary applications of amended monuments: (1) If another survey such as a mineral survey, homestead entry, small holding claim, or right of way or reservoir survey has been tied to a monument that has been found to be out of position, the monument is marked "AM" and connected by course and distance to a new, correctly positioned monument, and (2) If a recovered closing corner is not at the true point of intersection of the line it is closing to, a new monument will be placed at the true point of intersection and the old monument will be marked "AM" and connected by course and distance.

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Land grant or other special survey corner

A monumented point on a land grant, tract, donation land claim, U.S. Survey, Homestead Entry Survey, or Indian Allotment.

Meander corner

The beds of navigable bodies of water are not public domain and are not subject to survey and disposal by the United States. At every point where a section line intersects the banks of such a feature, a meander corner is established, and a metes and bounds traverse, called a meander line, is run to segregate the water area from the public lands. Meander lines are not mapped.

Quarter-section corner

Quarter-section corners are found at the extremity of a quarter-section boundary, theoretically located halfway (40 chains) between section corners.

Normally, quarter-section corners are not searched for or plotted unless there is a bend in the line at the corner or the section corners on either side cannot be recovered.

Section Corner

A section corner is established at the extremity of a PLSS section boundary, where two or more section lines meet or cross. It is surrounded by one or more distinct sections.

U.S. Mineral Monument and U.S. Location Monument

This is a monumented reference for one or more mineral surveys or for an isolated special survey. The monument is established during surveys of the irregular boundaries of mining claims when no public land corners have been established in the vicinity. When the public land surveys are subsequently extended to the area, the mineral monument is tied to a regular section corner. This type of monument may also be used in any situation where no corner of an existing survey is available to provide a satisfactory connection for an isolated special survey. In most cases a the monument does not fall on a public land line.

Witness corner

A witness corner is established if the true corner cannot be marked in the usual manner because of obstructions or difficult terrain. It is located on the section line within 10 chains (660 feet) or anywhere

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within 5 chains (330 feet) of the actual corner. Normally, only one witness corner is established in each instance. For example, a witness corner is commonly established on secure ground when the true position of a meander corner falls at a point where the monument would likely be destroyed by the effects of tide, waves, or ice.

#### Witness point

This is a monumented point on a survey line marking an important location remote from and not related to a regular corner (for example, a road or stream crossing).

#### Survey Lines

Survey lines in the PLSS category represent the build up of the land net from the section corners whose monuments have been recovered in the field. The accuracy of the section lines depends on the relative accuracy and density of the recovered section corners.

Solid lines connect reliable section corners and represent survey lines plotted to meet National Map Accuracy Standards (40 feet at the 1:24,000 scale). Dashed section lines connect questionable section corners and represent survey lines that do not meet National Map Accuracy Standards, but are plotted within 200 ft at 1:24,000-scale.

The Bureau of Land Management has defined protracted land lines for all areas of Alaska not yet subdivided by ground surveys and some other areas in the continental United States. The unsurveyed land lines represent theoretically perfect subdivisions. Protracted land lines have been shown as solid gray lines on Alaska quadrangle maps. The current symbol for protracted land lines is a solid red line. The protracted land lines for all suspended and unsurveyed townships in the conterminous United States are not shown at the 1:24,000 scale unless they are provided by the Forest Service for portrayal on quadrangle maps produced through the single edition initiative. Protracted land lines are shown by dashed red lines on 1:100,000-scale maps.

Land lines may be omitted from maps in public land States when they have not been established by survey or where there is insufficient field evidence to position the land net to established standards. A note in the map margin explains the reason for the omission.

#### Survey Areas

The States within the public domain contain a variety of surveys, such as land grants, lands subdivided by rectangular surveys, and lands subdivided by special

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surveys. Specific types of survey areas within the public domain that are shown on USGS quadrangle maps are:

##### PLSS Area

An area of land that was part of the original public domain and which was subject to subdivision by the Public Land Survey System. The PLSS is a rectangular survey system that typically divides the land into 6-mile square townships, which are further subdivided into 1-mile square sections.

##### Homestead Entry Survey

A Homestead Entry is an entry under the U.S. laws for the purpose of acquiring title to a portion of the public domain under the Homestead laws. A Homestead Entry is a metes and bounds survey entered under the Act of June 11, 1906 as amended. Homestead Entries are not mapped unless they define the limits of the land net.

##### Donation Land Claim

Tracts of land, 320 or 640 acres in size, were allocated to settlers in the Oregon Territory (Oregon and Washington) who had resided on and cultivated the land for 4 years under the Donation Act of September 27, 1850; to settlers in Florida under the Act of August 4, 1842; and to settlers in the New Mexico Territory (New Mexico and Arizona) under the Act of July 22, 1854. These tracts were part of the original public domain and were surveyed prior to the rectangular surveys. Donation Land Claims are not mapped unless they define the limits of the land net.

##### Land Grant

A land grant is an area of land to which title was conferred by a predecessor government and confirmed by the U.S Government after the territory in which it is situated was acquired by the United States. These lands were never part of the original public domain and were not subject to subdivision by the rectangular surveys.

##### Private Extension of the Public Land Survey

The term "private" refers to any public land survey not performed by or contracted by the Bureau of Land Management. They include, for example, Bureau of Indian Affairs surveys on Indian lands. These areas are also assigned origin of survey, township, range, and section number parameters as appropriate.

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##### Tract

The term tract is used to mean a parcel of land that lies in more than one section or cannot be identified in whole as part of a particular section. Tract boundaries are not mapped unless they define the limits of the land net.

##### United States Survey

A metes and bounds survey executed to comply with one of various regulations for entry of public lands in Alaska. U.S. Surveys are not mapped unless they define the limits of the land net.

##### Indian Allotment

An allocation of a parcel of public lands or Indian Reservation lands to a native American for his or her individual use in the lower 48 States. Indian Allotments are not mapped unless they define the limits of the land net.

#### Irregular Rectangular Surveys in Ohio and Indiana

The rectangular system of surveys was in its initial stage of development when the State of Ohio was surveyed, beginning in 1785. Because the current system of principal meridians and baselines was not yet established, the Ohio surveys used a number of different reference meridians and base lines.

Eight public land surveys were conducted having no initial point as an origin for both township and range numbers. These include seven surveys in Ohio and one in Indiana. They commenced between 1785 and 1805, a period when the laws prescribing the subdivision of the public domain were in flux. Although rectangular in nature, these surveys do not strictly conform to the current plan.

Within several surveys, townships depend on crooked rivers for base lines. This causes offsets in the township tiers and irregular sequences of numbering. In addition, the subdivision of townships is not consistent. The current system of numbering sections within a township was not adopted until passage of the Land Act of May 18, 1796. Prior to this time, the original Ordinance of May 24, 1785, applied, in which sections were numbered commencing with number 1 in the southeast corner of the township, proceeding north to section 6, then continuing with section number 7 in the southernmost section of the next column to the west, and proceeding north to section 12, and so on, to number 36 in the northwest section.

Public land surveys in Ohio are identified by the survey name. These surveys are listed in the table of "Public land surveys having no initial point as an origin" in Chapter III of the BLM book entitled "Manual of Surveying Instructions." The

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table further describes the references used for the set of townships within the survey. Following is a brief description of each of the public land surveys in Ohio:

##### Ohio River Survey

The Ohio River is the base line (origin of survey) for these surveys. Townships are numbered north from the Ohio River, and ranges west from the Ohio-Pennsylvania boundary (Ellicott's Line). The Ohio River Survey consists of three separate areas:

- o Old Seven Ranges - The first rectangular survey was begun in 1785 with the establishment of a point of origin on the north bank of the Ohio River at the Ohio-Pennsylvania boundary and the running of a line westward for 42 miles (seven ranges). This line is termed the Geographer's Line. Ranges 1 through 7 of the Ohio River Survey, south of the Geographer's Line, are referred to as the Seven Ranges, or the Old Seven Ranges. Sections in this area are numbered according to the Ordinance of 1785 as described above.
- o Congress Lands East of Scioto River - This area includes the land west of the Seven Ranges, east of the Scioto River, and south of the U.S. Military District, except for the large Ohio Company tract, which lies in the southeast. Sections within the Congress Lands are numbered according to the present system. The Refugee Lands lie within the Congress Lands East of the Scioto River, at the northernmost extremity; the exterior boundaries of the Refugee Lands are labeled. Three small areas along the Scioto River, including the western portion of the Refugee Lands, are based on the Scioto River rather than the Ohio River.
- o Congress Lands North of Old Seven Ranges - This includes all the lands north of the Seven Ranges and the U.S. Military District and south of Connecticut's Western Reserve, except for the two townships in the Muskingum River Survey. Sections are numbered according to the present plan.

Maps of the Ohio River Survey area contain a marginal note: "Land lines based on the Ohio River Base." Marginal notes also identify the Seven Ranges and the Congress Lands. The Geographer's Line and the boundaries of the Congress Lands are labeled on the maps.

##### Ohio River Base - Indiana

In this area of southeast Indiana, townships are numbered north from the Ohio River, and ranges west from the Ohio-Indiana boundary and its

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projection south. The area is bounded on the north and west by the Greenville Treaty Line.

#### Between the Miamis, North of Symmes Purchase

The Great Miami River is the origin of survey for these surveys. Townships are numbered east from the Great Miami River, and ranges are numbered north from the Ohio River. Sections are numbered according to the Ordinance of 1785. This represents an extension of the system used in the private survey of the Symme's Purchase Tract. This area is also called the Congress Lands East of the Miami River. It is bounded on the northeast by the Virginia Military Survey. Marginal notes on maps of this area identify that land lines are based on the Great Miami River Base and that the area lies within the Between the Miamis. The north and south boundaries of the area are labeled on the map.

#### Muskingum River Survey

This area consists of only two townships, within the Congress Lands North of the Old Seven Ranges and bounded on the north by the Connecticut Western Reserve. Townships are numbered 1 and 2 north, and the range is 10 west. The range continues the numbering of the Ohio River Survey. A marginal note identifies the specific townships that are based on the Muskingum River Base.

#### Scioto River Base Surveys

The Scioto River is the base line of the following surveys, which are part of the Congress Lands East of the Scioto River. (The remainder of the Congress Lands East of the Scioto River are based on the Ohio River.) Townships are numbered north from the Scioto River, and ranges west from the Ohio-Pennsylvania boundary, continuing the numbering of the Ohio River Survey.

- o First Scioto River Base - This is the southernmost of the three small surveys at the western edge of the Congress Lands east of the Scioto River. It contains townships numbered 1 through 4 north, and range 22 west. The standard plan for numbering sections is disrupted at the Scioto River, that is, if section 2 is the last section on the top tier of a township, the section below it (on the next tier) is number 3. This area is bounded on the south by the Scioto River (Chillicothe East 1:24,000-scale quadrangle), on the east by range 21 west of the Ohio River Survey, on the west by the Scioto River, and on the north by the Second Scioto River Base (Asheville 1:24,000-scale quadrangle).

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- o Second Scioto River Base - The survey contains townships numbered 2 through 5 north, and range 22 west. (Township 5 north, range 22 west of this survey is part of the Refugee Lands.) Sections are numbered according to the standard plan. The area is bounded on the south by the First Scioto River Base (Asheville 1:24,000 quadrangle), on the east by range 21 west of the Ohio River Survey, on the west by the Scioto River and the Third Scioto River Base (Southwest Columbus quadrangle), and on the north by the U.S. Military Survey.
- o Third Scioto River Base - This survey contains only a single township: township 1 north, range 23 west. Sections are numbered according to the standard plan. It is bounded on the south and west by the Scioto River, on the east by the Second Scioto River Base Survey, and on the north by the U.S. Military Survey (Southwest Columbus 1:24,000-scale quadrangle).

#### Twelve-Mile Square Reserve

This small area in northwest Ohio consists of only four townships, numbered 1 through 4. There is no associated range number. Exterior boundaries of the area are labeled.

#### West of the Great Miami

The Great Miami River is the base line for this survey. Townships are numbered north from the Great Miami River, and ranges east from the Ohio-Indiana boundary. This area is also called the Congress Lands West of the Miami River. It is bounded on the north by the Greenville Treaty Line.

#### U.S. Military Survey

Townships are numbered from the south boundary of the U.S. Military Tract, and ranges west from the west boundary of the Seven Ranges. This area is subdivided into 5-mile square townships; sections are numbered 1 to 25. Section numbering follows the present plan, commencing with number 1 in the northeast corner of the township, to number 25 in the southwest corner. Some townships are divided into quarters, which are numbered 1 to 4 beginning with the northeast quarter and proceeding counterclockwise. These areas are treated as sections for digitizing purposes.

In general, each area is completely identified on the published map as the situation warrants, by labels within survey areas and along survey lines and by marginal notes that identify the base line or meridians.

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.A - Background Information on the Public Land Survey System

Private Surveys in Ohio

The State of Ohio also contains several large tracts of land that were excluded from the public domain. Two large areas were claimed by existing States: the Connecticut Western Reserve, and the Virginia Military District. Two additional tracts were sold to private concerns: the Ohio Company Purchase and Symmes Purchase. These areas were subdivided by private surveys. The following are the major private surveys in Ohio that are shown on USGS quadrangle maps:

Connecticut Western Reserve

This area in northwestern Ohio was divided into 5 square-mile townships and irregular tracts by the Connecticut Land Company. Townships are numbered north from the southern boundary of the reserve, and ranges west from the Ohio-Pennsylvania boundary. In the western portion of this area (the Firelands), townships were divided into quarter townships, which are numbered 1 to 4, commencing with 1 in the southeast quarter and proceeding counter-clockwise. These areas are digitized as sections. In the eastern portion, only township and range lines are mapped. The boundaries of the Connecticut Western Reserve are labeled in black.

Virginia Military District

This area was surveyed according to the laws of the State of Virginia. It does not conform to the rectangular system. Land lines are not shown within this area. The boundaries of the Virginia Military District are labeled. The area may be labeled on the map as Virginia Military Reservation or Virginia Military Survey.

Ohio Company Purchase

This area in southeastern Ohio was subdivided by private surveys. Land lines are mapped as dotted lines. The Ohio River is the base line for these surveys. Townships are numbered north from the Ohio River, and ranges west from the Ohio-Pennsylvania boundary, continuing the system of the Ohio River Survey. Sections are numbered according to the Ordinance of 1785. There are many irregularities in the subdivisions, and these irregular lots are not mapped. The boundaries of Ohio Company lands are labeled.

Symmes Purchase

The Great Miami River is the base line for the private surveys of this area. Townships are numbered east from the Great Miami River and ranges north from the Ohio River. Ranges 1 and 2 are duplicated in the southern portion of the area. The first occurrence is labeled "F.R." (Fractional Range). Sections are numbered according to the

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.A - Background Information on the Public Land Survey System

Ordinance of 1785. The Between the Miamis public land survey continued the numbering adopted in the survey of this tract. The north boundary of Symmes purchase is labeled.

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Part 3: Attribute Coding

Appendix 3.11.A - Background Information on the Public Land Survey System

Figure 3.11.A-1  
State of Ohio land subdivision names

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Part 3: Attribute Coding  
Appendix 3.11.B - Origins of the U.S. Rectangular Surveys

APPENDIX 3.11.B

Origins of the U.S. Rectangular Surveys

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.11.B - Origins of the U.S. Rectangular Surveys

Code	Designation	Type	States	Date
01	First Principal	PM	OH, IN	1819
02	Second Principal	PM	IL, IN	1805
03	Third Principal	PM	IL	1805
04	Fourth Principal	PM	IL	1815
05	Fifth Principal	PM	AR, IA, MN, MO, ND, SD	1815
06	Sixth Principal	PM	CO, KS, NE, SD, WY	1855
07	Black Hills	PM	SD	1878
08	Boise	PM	ID	1867
09	Chickasaw	PM	MS	1833
10	Choctaw	PM	MS	1821
11	Cimarron	PM	OK	1881
12	Copper River	PM	AK	1905
13	Fairbanks	PM	AK	1910
14	Gila and Salt River	PM	AZ	1865
15	Humboldt	PM	CA	1853
16	Huntsville	PM	AL, MS	1807
17	Indian	PM	OK	1870
18	Louisiana	PM	LA	1807
19	Michigan	PM	MI, OH	1815
20	Principal	PM	MT	1867
21	Mount Diablo	PM	CA, NV	1851
22	Navajo	PM	AZ	1869
23	New Mexico Principal	PM	CO, NM	1855
24	St. Helena	PM	LA	1819
25	St. Stephens	PM	AL, MS	1805
26	Salt Lake	PM	UT	1855
27	San Bernardino	PM	CA, AZ*	1852
28	Seward	PM	AK	1911

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.11.B - Origins of the U.S. Rectangular Surveys

Code	Designation	Type	States	Date
29	Tallahassee	PM	FL, AL	1824
30	Uintah	PM	UT	1875
31	Ute	PM	CO	1880
32	Washington	PM	MS	1803
33	Willamette	PM	OR, WA	1851
34	Wind River	PM	WY	1875
35	Ohio River	OH	OH, IN	1785
36	Great Miami River	OH	OH	1802
37	Muskingum River	OH	OH	1800
39	Scioto River	OH	OH	1799
43	Twelve-Mile Square	OH	OH	1805
44	Kateel River	PM	AK	1956
45	Umiat	PM	AK	1956
46	Fourth Principal Extended	PM	MN, WI	1831
48	Baseline of the U.S. Military Survey	OH	OH	1797

\* Although the San Bernardino meridian is for California, Bureau of Land Management records show some Arizona townships are referenced to it.

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

APPENDIX 3.11.C

Codes for Named Land Grants  
(Numeric Order by State)

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

This appendix lists numeric identifiers for named land grants. These numeric identifiers are three digits; the first digit of the four digit DLG minor code identifies the State (Arizona = 4, California = 5, Colorado = 6, Florida = 8, New Mexico = 7). The appropriate State name and identifier are shown at the top of each page of the list.

In this appendix the identifiers are listed in numeric order by State. See Appendix 3.11.D for an alphabetic listing.

→ Codes followed by an asterisk (\*) have been assigned by USGS and do not exist in the BLM data dictionary. The names appear on USGS maps and are stored in the Geographic Names Information system. ←

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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Arizona (4)

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001 ARIBACA  
002 LUIS MARIA BACA FLOAT #3  
003 LUIS MARIA BACA FLOAT #5  
004 LOS NOGALES DE ELLAS  
005 MARIA SANTISIMA DEL CARMEN  
006 RANCHO DE MARTINEZ  
007 SABINO OTERO ET AL  
008 SAN BERNARDINO  
009 SAN IGNACIO DE LA CANOA  
010 SAN IGNACIO DEL BABOCOMARI  
011 SAN JOSE DE SONOITA  
012 SAN JUAN DE LAS BOQUILLAS Y  
NOGALES  
013 SAN RAFAEL DE LA ZANJA  
014 SAN RAFAEL DEL VALLE  
015 TUMACACORI AND CALABAZAS  
→ 016\* SAN RAFAEL DEL VALLE (in  
Cochise County)

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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001	SAN BUENA VENTURA	043	SAN RAFAEL
002	EL PRIMER CANON	044	SAN PEDRO SANTA MAGARITA Y LAS GALLINAS
003	LA BARRANCA COLORADA	045	SAN JOSE--PACHECO
004	LAS FLORES	046	NOVATO
005	SAUCOS	047	CORTE MADERA DE NOVATO
006	RIO DE LOS MOLINOS	048	OLOMPALI
007	BOSQUEJO	049	PETALUMA
008	CAPAY	050	ROBLAR DE LA MISERIA
009	ARROYO CHICO	051	CANADA DE POGOLIMI
010	RANCHO DE FARWELL	052	CANADA DE JONIVE
011	JACINTO	053	MOLINOS
012	LLANO SECO	054	SOTOYOME
013	AGUAS FRIAS	055	TZABACO
014	ESQUON	056	RINCON DE MUSALACON
015	FERNANDEZ	057	CASLAMAYOMI
016	LARKINS CHILDRENS RANCHO	058	GUENOC
017	COLUSA	059	COLLAYOMI
018	BOGA	060	MALLACOMES OR MORISTUL
019	HONCUT	061	MALLACOMES Y PLAN DE AGUA CALIENTE
020	NEW HELVETIA	062	SAN MIGUEL--WEST
021	JOHNSON RANCHO	063	CABEZA DE SANTA ROSA
022	JIMENO	064	LLANO DE SANTA ROSA
023	YOKAYA	065	COTATE
024	SANEL	066	LOS GUILICOS
025	GERMAN	067	AGUA CALIENTE (in Sonoma County)
026	MUNIZ	068	PUEBLO LANDS OF SONOMA
027	BODEGA	069	LAC
028	ESTERO AMERICANO	070	S F SOLAND IN SONOMA MISSION
029	BLUCHER	071	SONOMA CITY LOT IN
030	LAGUNA DE SAN ANTONIO	072	HUICHICA
031	SOULAJULE LANDS	073	RINCON DE LOS CARNEROS
032	NICASIO LANDS	074	ENTRE NAPA
033	PUNTA DE LOS REYES--RANDALL	075	TULUCAY
034	PUNTA DE LOS REYES--SOBRANTE	076	NAPA
035	LAS BAULINES	077	YAJOME
036	SAUCELITO	078	CAYMUS
037	TOMALES Y BAULINES--PHELPS	079	CARNE HUMANA
038	TOMALES Y BAULINES--GARCIA	080	LA JOTA
039	SAN GERONIMO (in Marin County)	081	LOCOALLOMI
040	CANADA DE HERRERA		
041	PUNTA DE QUENTIN		
042	CORTE DE MADERA DEL PRESIDIO		

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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082	CATACULA	123	LAGUNA DE LOS PALOS COLORADOS
083	LAS PUTAS	124	ACALANES
084	CANADA DE CAPAY	125	LA BOCA DE LA CANADA DEL PINOLE
085	GUESISOSI	126	PINOLE
086	RIO JESUS MARIA	127	SAN PABLO
087	RIO DE LOS PUTOS	128	SAN ANTONIO--V & D PERALTA
088	LOS PUTOS	129	SAN ANTONIO--A M PERALTA
089	CHIMILES	130	SAN ANTONIO--Y PERALTA
090	TOLENAS	131	SAN LEANDRO
091	SUISUN	132	SAN LORENZO--SOTO
092	LOS ULPINOS	133	ARROYO DE LA ALEMEDA
093	SANJON DE LOS MOQUELUMNES	134	POTRERO DE LOS CERRITOS
094	COSUMNES	135	MISSION SAN JOSE
095	OMOCHUMNES	136	AGUA CALIENTE (in Alameda & Santa Clara Counties)
096	DEL PASO	137	TULARCITOS--HIGUERA
097	SAN JUAN	138	MILPITAS--ALVISO
098	RIO DE LOS AMERICANOS	139	RINCON DE LOS ESTEROS--WHITE
099	ARROYO SECO	140	RINCON DE LOS ESTEROS-- BERREYESA
100	CAMPO DE LOS FRANCESES	141	RINCON DE LOS ESTEROS--ALVISO
101	STANISLAUS RIVER	142	EMBARCADERO DE SANTA CLARA
102	RANCHERIA DEL RIO ESTANISLAO	143	ULISTAC
103	YOSEMITE & BIG TREE GRANTS	144	PASTORIA DE LAS BORREGAS
104	LAS MARIPOSAS	145	POSOLMI
105	ORESTIMBA	146	RINCON DE SAN FRANCISQUITO
106	RANCHO DEL PUERTO	147	RINCONADA DEL ARROYO DE SAN FRANCISQUITO
107	EL PESCADERO--GRIMES	148	PULGAS
108	EL PESCADERO--PICO AND NAGLEE	149	SAN MATEO
109	CANADA DE LOS VAQUEROS	150	BURI BURI
110	LOS MEGANOS	151	CANADA DE GUADALUPE VISITACION Y RODEO VIEJO
111	LOS MEDANOS	152	CANADA DE GUADALUPE Y RODEO VIEJO
112	MONTE DEL DIABLO	153	RINCON DE LAS SALINAS Y POTRERO VIEJO
113	LAS JUNTAS	154	SAN MIGUEL--NOE
114	CANADA DEL HAMBRE Y LOS BOLSAS	155	PUEBLO LANDS OF SAN FRANCISCO
115	ARROYO DE LAS NUECES Y BOLBONES	156	MISSION DOLORES
116	SAN RAMON--CARPENTIER	157	MISSION DOLORES 50 VARA LOT IN DE HARO
117	SAN RAMON--NORRIS		
118	SAN RAMON--AMADOR		
119	SANTA RITA		
120	LAS POSITAS		
121	VALLE DE SAN JOSE--SUNOL & BERNAL		
122	SAN LORENZO--CASTRO		

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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158 MISSION DOLORES--BERNAL	197 CANADA DE SAN FELIPE Y LAS ANIMAS
159 OJO DE AGUA DE FIGUEROA S F	198 SANJON DE SANTA RITA
160 MISSION DOLORES SUERTE IN	199 OJO DE AGUA DE LA COCHE
161 MISSION DOLORES	200 LAS UVAS
162 SAN FRANCISCO	201 SHOQUEL AUGMENTATION
163 LAGUNA DE LA MERCED	202 SAN AUGUSTIN
164 SAN PEDRO--SANCHEZ	203 ZAYANTA
165 CORRAL DE TIERRA--PALOMARES	204 SAN VICENTE--ESCARRILLA
166 CORRAL DE TIERRA--VASQUEZ	205 PUNTA DEL ANO NUEVO
167 FELIZ	206 AGUA PUERCA Y LAS TRANCAS
168 CANADA DE RAYMUNDO	207 REFUGIO
169 MIRAMONTES	208 CANADA DEL RINCON EN EL RIO SAN LORENZO
170 CANADA DE VERDE Y ARROYO DE LA PURISIMA	209 LA CARBONERA
171 SAN GREGORIO--RODRIGUEZ	210 SANTA CRUZ MISSION
172 SAN GREGORIO--CASTRO	211 TRES OJOS DE AGUA
173 EL CORTE DE MADERA	212 MESA DE OJO DE AGUA
174 SAN FRANCISQUITO--RODRIGUEZ	213 POTRERO Y RINCON DE SAN PADRO DE REGLADO
175 LA PURISIMA CONCEPCION	214 ARROYO DEL RODEO
176 SAN ANTONIO--MESA	215 SHOQUEL
177 SANTA CLARA TR NR--ENRIGHT	216 APTOS
178 EL POTRERO DE SANTA CLARA	217 LAGUNA DE LAS CALABASAS
179 PUEBLO LANDS OF SAN JOSE	218 LOS CORRALITOS
180 PALA	219 SAN ANDRES
181 CANADA DE PALA	220 BOLSA DEL PAJARO
182 LOS HUECOS	221 BOLSA DE SAN CAYETANO
183 YERBA BUENA	222 VEGA DEL RIO DEL PAJARO
184 SANTA TERESA	223 SALSIPUEDES
185 SAN JUAN BAUTISTA	224 LAS ANIMAS
186 LOS COCHES (in Santa Clara County)	225 SOLIS
187 QUITO	226 SAN FRANCISCO DE LAS LLAGAS
188 SANTA CLARA MISSION TR	227 LA POLKA
189 SANTA CLARA COUNTY--BENNETT	228 SAN YSIDRO--GILROY
190 SAN ANTONIO OR PESCADERO	229 SAN YSIDRO--ORTEGA
191 BUTANO	230 LLANO DEL TEQUISQUITA
192 RINCONADA DE LOS GATOS	231 BOLSA DE SAN FELIPE
193 CANADA DE LOS CAPITANCILLOS	232 SAN JOAQUIN (in San Benito County)
194 LOS CAPITANCILLOS	233 AUSAYMAS Y SAN FELIPE
195 SAN VICENTE--BERREYESA	234 SAN LUIS GONZAGA
196 LA LAGUNA SECA	

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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235	PANOCHÉ DE SAN JUAN Y LOS CARRISALITOS	275	EL TORO
236	REAL DE LAS AGUILAS	276	LAGUNA SECA
237	SANTA ANA Y QUIEN SABE	277	SAUCITO
238	SAN JUSTO	278	NOCHE BUENA
239	LOMERIAS MUERTAS	279	PUNTA DE PINOS
240	MISSION SAN JUAN BAUTISTA	280	EL PESCADERO--JACK
241	JURISTA	281	MISSION CARMELOCHORRO
242	LAS AROMITAS Y AGUA CALIENTE	282	AGUAJIT
243	CANADA DE LA CARPENTERIA	283	CANADA DE LA SEGUNDA
244	LOS CARNEROS--LITTLEJOHN	284	JAMES MEADOWS TRACT
245	BOLSA NUEVA Y MORO COJO	285	LOS LAURELLES--RANSOM
246	LOS CARNEROS--MCDOUGAL	286	EL POTRERO DE SAN CARLOS
247	SAN JUAN BAUTISTA TR NR	287	SAN FRANCISQUITO
248	SAN JUAN BAUTISTA--BREEN	288	EL SUR
249	LOS VERGELES	289	LOS LAURELLES--BERONDA
250	CIENEGA DEL GABILAN	290	CORRAL DE TIERRA--MCCOBB
251	LA NATIVIDAD	291	LOS TULARCITOS--GOMEZ
252	BOLSA DE LAS ESCORPINAS	292	PARAJE DE SANCHEZ
253	LOS GATOS OR SANTA RITA	293	SAN VICENTE--MUNRASS
254	BOLSA DEL POTRERO Y MORO COJO	294	EX-MISSION SOLEDAD
255	RINCON DE LAS SALINAS	295	MISSION SOLEDAD
256	MONTEREY CITY	296	LOS COCHES (in Monterey County)
257	LAS SALINAS	297	ARROYO SECO--TORRE
258	MONTEREY COUNTY--CASTRO	298	POSA DE LOS OSITOS
259	EL TUCHO	299	SAN LORENZO--SOBERANES
260	TWO SUERTES	300	SAN LORENZO--SANCHEZ
261	RINCON DE SANJON	301	LAGUNA DE TACHE
262	MONTEREY COUNTY--COCKS	302	SAN LORENZO--RANDALL
263	NACIONAL	303	SAN BERNABE
264	SAUSAL	304	SAN BENITO
265	EL ALISAL--BERNAL	305	SAN LUCAS
266	LLANO DE BUENA VISTA	306	SAN BERNARDO--SOBERANES
267	EL ALISAL--HARTNELL	307	MILPITAS
268	CIENEGA DE LOS PAICINES	308	MISSION SAN ANTONIO
269	ENCINAL Y BUENA ESPERANZA	309	SAN MIGUELITO (in Monterey County)
270	CHUALAR	310	EL PIOJO
271	ZANJONES	311	LOS OJITOS
272	RINCON DE LA PUENTE DEL MONTE	312	PLEYTO
273	GUADALUPE Y LLANITOS DE LOS CORREOS	313	MISSION SAN MIGUEL
274	BUENA VISTA	314	CHOLAME
		315	HUERHUERO

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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316 SANTA MARGARITA	353 GUADALUPE
317 ATASCADERO	354 PUNTA DE LA LAGUNA
318 ASUNCION	355 CASMALIA
319 SANTA YSABEL (in San Luis Obispo County)	356 JESUS MARIA
320 PASO DE ROBLES	357 TODOS SANTOS Y SAN ANTONIO
321 PIEDRA BLANCA	358 LOS ALAMOS
322 SAN SIMEON	359 TINAQUAIC
323 SANTA ROSA--ESTRADA	360 LA LAGUNA--GUTIERREZ
324 SAN GERONIMO (in San Luis Obispo County)	361 LA ZACA
325 MORO Y CAYUCOS	362 CORRAL DE QUATI
326 SAN BERNARDO--CANE	363 CANADA DE LOS PINOS OR COLLEGE RANCHO
327 SAN LUISITO	364 SAN MARCOS
328 EL CHORRO	365 TEQUEPIS
329 POTRERO DE SAN LUIS OBISPO	366 LOMAS DE LA PURIFICACION
330 HUERTA DE ROMUALDO	367 NOJOQUI
331 CANADA DE LOS OSOS Y PECHO Y ISLAY	368 MISSION OF SANTA YNEZ
332 LAGUNA	369 SAN CARLOS DE JONATA
333 SAN LUIS OBISPO MISSION	370 SANTA ROSA--COTA
334 RANCHITA DE SANTA FE	371 SANTA RITA--MALO
335 SAN MIGUELITO (in San Luis Obispo County)	372 MISSION LA PURISMA (in Santa Barbara County)
336 PISMO	373 MISSION LA PURISMA
337 CORRAL DE PIEDRA	374 LOMPOC
338 SANTA MANUELA	375 PUNTA DE LA CONCEPCION
339 ARROYO GRANDE	376 LA MISSION VIEJA DE LA PURISMA
340 HUASNA	377 CANADA DE SALSIPUEDES
341 CUYAMA--M A DE LA G Y LATAILLADE	378 SAN JULIAN
342 CUYAMA--CESARIO LATAILLADE	379 NUESTRA SENORA DEL REFUGIO
343 SAN EMIDIO	380 CANADA DEL CORRAL
344 EL TEJON	381 LOS DOS PUEBLOS
345 CASTAC	382 LA GOLETA
346 LOS ALAMOS Y AGUA CALEINTE	383 LAS CIENEGAS
347 LA LIEBRE	384 MISSION SANTA BARBARA
348 SISQUOC	385 LAS POSITAS Y LA CALERA
349 TEPUSQUET	386 PUEBLO LANDS OF SANTA BARBARA
350 SUEY	387 EL RINCON--ARELLANES
351 NIPOMO	388 SANTA ANA
352 BOLSA DE CHAMISAL	389 OJAI
	390 CANADA LARGA O VERDE
	391 CANADA DE SAN MIGUELITO
	392 MISSION SAN BUENAVENTURA

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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393	LOT MISSION SAN BUENAVENTURA	433	TOPANGA MALIBU SEQUIT
394	SAN MIGUEL--OLIVAS & LORENZANA	434	BALLONA
395	SANTA PAULA Y SATICOY	435	RINCON DE LOS BUEYES
396	EX-MISSION SAN BUENAVENTURA	436	CIENEGA O PASO DE LA TIJERA
	LANDS OF	437	AGUAJE DE LA CENTINELLA
397	SESPE	438	SAUSAL REDONDO
398	TEMASCAL	439	LOS PALOS VERDES
399	SAN FRANCISCO	440	SAN PEDRO--DOMINGUEZ
400	SIMI	441	TAJAUTA
401	LAS POSAS	442	SAN ANTONIO--LUGO
402	SANTA CLARA DEL NORTE	443	LA MERCED
403	RIO DE SANTA CLARA	444	PORTRERO CHICO
404	SANTA CRUZ ISLAND OF	445	PORTRERO GRANDE
405	SANTA ROSA ISLAND OF	446	POTRERO DE FELIPE LUGO
406	GUADALASCA	447	SAN FRANCISCO--DALTON
407	CALLEGUAS	448	MISSION SAN GABRIEL
408	EL CONEJO	449	SAN GABRIEL TR NR--AGUILAR
409	EL ESCORPIO	450	SAN GABRIEL TR NR--SALES
410	EX-MISSION DE SAN FERNANDO	451	SAN GABRIEL TR NR--SIMEON
411	EL ENCINO	452	SAN GABRIEL TR NR--SEXTON
412	MISSION SAN FERNANDO	453	SAN GABRIEL TR NR--DOMINGO
413	TUJUNGA	454	SANTA ANITA
414	LA CANADA	455	AZUSA--DUARTE
415	SAN PASCUAL--GARFIAS	456	AZUSA--DALTON
416	SAN GABRIEL TR NR--COURTNEY	457	SAN JOSE ADDITION TO
417	SAN GABRIEL TR NR--LEDESMA	458	SAN JOSE--DALTON ET AL
418	LAND 1000 VARAS SQ--SEXTON	459	LOS NOGALES
419	PROSPERO TRACT	460	LA PUENTE
420	SAN GABRIEL TR NR--WHITE	461	RINCON DE LA BREA
421	HUERTO DE CUATI	462	LA HABRA
422	SAN PASCUAL--WILSON	463	SANTA GERTRUDES--COLIMA
423	SAN RAFAEL	464	PASO DE BARTOLO--PICO
424	PROVIDENCIA	465	PASO DE BARTOLO--GUIRADO
425	CAHUENGA	466	SANTA GERTRUDES--MCFARLAND & DOWNEY
426	LOS FELIS	467	LOS CERRITOS
427	LOS ANGELES CITY LANDS OF	468	LOS ALIMITOS
428	LAS CIENEGAS	469	LA BOLSA CHICA
429	LA BREA	470	SANTA CATALINA ISLAND
430	SAN ANTONIO OR RODEO DE LAS AGUAS	471	LAS BOLSAS
431	SAN JOSE DE BUENOS AYRES	472	LOS COYOTES
432	SAN VICENTE Y SANTA MONICA	473	SAN JUAN CAJON DE SANTA ANA

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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474 SANTIAGO DE SANTA ANA	512 CUYAMACA
475 CANON DE SANTA ANA	513 CANADA DE SAN VICENTE Y MESA DEL PADRE BARONA
476 EL RINCON	514 VALLE DE PAMO OR SANTA MARIA
477 SANTA ANA DEL CHINO	515 GUEJITO
478 SANTA ANA DEL CHINO ADDITION	516 RINCON DEL DIABLO
479 CUCAMONGA	517 LOS VALLECITOS DE SAN MARCOS
480 MUSCUPIABE	518 BUENA VISTA
481 SAN BERNARDINO	519 GUAJOME
482 JURUPA--ROUBIDEAU	520 EX-MISSION SAN LUIS REY 4 TRACTS
483 JURUPA--STEARNS	521 AGUA HEDIONDA
484 LA SIERRA--SEPULVEDA	522 LOS ENCENITOS
485 LA SIERRA--YORBA	523 SAN DIEGUITO
486 EL SOBRANTE DE SAN JACINTO	524 SAN BERNARDO--SNOOK
487 SAN JACINTO NUEVO Y POTRERO	525 LOS PENASQUITOS
488 SAN JACINTO & SAN GORGONIO TRACT BETWEEN	526 SAN DIEGO PUEBLO LANDS OF
489 SAN JAACINTO VIEJO	527 SAN DIEGO ISLAND OR PENINSULA
490 PAUBA	528 LA NACION
491 VALLEY O TEMECULA	529 OTAY--ESTUDILLO
492 TEMECULA	530 OTAY--DOMINGUEZ
493 SANTA ROSA--MORINO	531 JAMACHO
494 POTREROS SAN JUAN CAPISTRANO	532 MISSION SAN DIEGO
495 LA LAGUNA--STEARNS	533 EX-MISSION SAN DIEGO 3 TR AT-- CH PR
496 MISSION VIEJO OR LA PAZ	534 EL CAJON
497 TRABUCO	535 CANADA DE LOS COCHES--INSIDE 534
498 CANADA DE LOS ALISOS	536 EL CHAMISAL
499 LOMAS DE SANTIAGO	537 LOS PRIETOS Y NAJALAYEGUA
500 SAN JOAQUIN (in Orange County)	538 CUCA OR EL POTRER
501 NIGUEL	539 BOCA DE SANTA MONICA
502 BOCA DE LA PLAYA	540 ARROYO DE LA LAGUNA
503 MISSION SAN JUAN CAPISTRANO 5 TR AT	541 JAMUL
504 EX-MISSION SAN JUAN CAPISTRANO # TR AT	542 PUEBLO LOT NO 6
505 SANTA MARGARITA Y LAS FLORES	543 CAMARITAS IN SAN FRANCISCO
506 MONSERATE	545 LAS VIRGENES
507 PAUMA	546 CANADA DE LOS NOGALES
508 VALLE DE SAN JOSE--PORTILLA	547 PASO DE BARTOLO--MCFARLAND & DOWNEY
509 SAN JOSE DEL VALLE	548 PASO DE BARTOLO--SEPULVEDA
510 SANTA YSABEL (in San Diego County)	549 LAS CRUCES
511 VALLE DE SAN FELIPA	

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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California (5)

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550 EL SOBRANTE  
551 CANADA DEL CORTE DE MADERA  
552 SAN JOSE Y SUR CHIQUITO  
553 ONE SUERTE  
554 RESSIGHINI  
556 100 VARA LOT AT SAN PEDRO  
557 RANCHO AGUAS NIEVES  
558 JUAN SILVAS  
560 EX-MISSION SAN JOSE  
→ 561\* AGUA JITA  
562\* APTOS  
563\* CANAL RANCH  
564\* GUADALUPE Y LLANITOS DE LOS  
CORREOS  
565\* LITTLE TEMECULA  
566\* MISSION LANDS (in San Luis  
Obispo County)  
567\* MISSION SAN DIEGO DE ACALA  
568\* MISSION SAN RAFAEL  
569\* NAVAJO  
570\* PESCADERO  
571\* POTRERO DE LA CIENEGA  
572\* POTRERO EL CARISO  
573\* POTRERO LOS PINOS  
574\* PUEBLO LANDS OF SAN DIEGO  
575\* SAN BERNARDINO  
576\* SAN VICENTE  
577\* SANTA GERTRUDES  
578\* SANTA ROSA  
579\* COCHIL DEHE RANCHERIA ←

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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Colorado (6)

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001 BEAUBIEN AND MIRANDA  
002 LUIS MARIA BACA NO. 4<sup>1</sup>  
003 LUIS MARIA B.<sup>1</sup>  
004 MONTROSE RES  
005 SANGRE DE CRISTO<sup>2</sup>  
006 TIERRA AMARILLA  
007 ZAPATO  
008 DURANGO RESRV  
009 SANGRE DE CRI.<sup>2</sup>  
010 NOLAN GRANT  
011 VIGIL AND SAINT VRAIN  
012 VIGIL AND SAINT VRAIN NO. 6

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1. 002 and 003 are probably the same grant but entered in the land records with two different representations.
2. 005 and 009 are probably the same grant but entered in the land records with two different representations.

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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Florida (8)

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003 FLEMING GRANT  
004 DELESPINE GRANT  
005 ARRENDONDO GRANT  
006 MOSES E LEVY  
007 GOMEZ  
008 HANSON  
009 BERNARDO SEGUI  
010 DOMINGO ACOSTA  
011 WILLIAM GARVIN  
012 PETER FOUCHARD  
013 LUCAS CRAYON  
014 JOHN H McINTOSH  
015 H M GOMEZ  
016 ANTELM GAY  
017 PABLO ROSETTE  
018 JOHN LOW  
019 JOSEPH WALES  
020 CHARLES SIBBOLD  
021 C E MCHARDY  
022 JOSEPH GAUNT  
023 GEORGE F CLARK  
024 JANE MURRAY  
025 JOHN BOLTON  
026 SAMUEL BETTS  
027 AMBROSE HULL  
028 GERONIMO ALVAREZ  
030 FORBES PURCHASE

Standards for Digital Line Graphs  
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Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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New Mexico (7)

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001	AGUA SALADA	059	REFUGIO COLONY
003	ALAMEDA	060	JUAN JOSE LOBATO
004	ALAMITOS	061	CRISTOVAL DE LA SERNA
007	CASA COLORADA	062	CUBERO
008	ANGOSTURA	063	CUYAMUNGUE PUEBLO
010	JOSE SUTTON	064	DABOLOS
011	ANTON CHICO	068	ELENA GALLEGOS
012	ANTONIO DE ABEYTA	069	PUEBLO OF SANTA ANA
013	ANTONIO GUTTIEREZ AND JOAQUIN SEDILLO	072	JUAN BATISTA VALDEZ
014	ANTONIO MARTINEZ	074	ESTANCIA
015	ANTONIO ORTIZ	076	FELIPE TAFOYA
018	PEDRO ARMENDARIS	077	FERNANDO DE TAOS
021	ARROYO HONDO	078	FRANCISCO MONTES VIGIL
022	ARROYO SECO	079	GALISTEO
024	BARTOLOME FERNANDEZ	080	GIJOSA
025	BARTOLOME SANCHEZ	081	BENJAMIN EDWARDS
026	MAXWELL	082	GOTERA
027	BELEN	087	IGNACIO CHAVEZ
028	BERNABE MONTANO	088	JACONA
029	BERNALLILO	090	JOHN SCOLLY
030	BLACK MESA	091	JUAN DE GABALDON
031	BOSQUE DEL APACHE	092	SIERRA MOSCA
032	M AND S MONTOYA	093	NUESTRA SENORA DE LA LUZ DE LAS LAGUNITAS
033	BRAZITO	094	LAGUNA PUEBLO
034	CAJA DEL RIO	096	LA MAJADA
035	CANADA DE COCHITI	098	LA SALINA
036	CANADA DE LOS ALAMOS	099	LAS VEGAS
037	ANTONIO SEDILLO	101	LO DE PADILLA
041	ANTONIO ARMENTA	102	LOS CERRILLOS
042	CANON DE CARNUE	105	LOS FRIJOLES
043	CANON DE CHAMA	107	LOS TRIGOS
044	CANON DEL AGUA	108	ANTONIO SALAZAR
046	BACA LOCATION NUMBER TWO	110	UNA DE GATO
047	CANON DE SAN DIEGO	111	MANZANO
049	NOLAN	113	MESITA DE JUANA LOPEZ
050	SALVADOR GONZALES	115	JUAN DE MESTAS
051	GASPAR ORTIZ	116	MORA
052	CHILILI	118	NICOLAS DURAN DE CHAVEZ
056	DONA ANA BEND COLONY	121	NUESTRA SENORA DEL ROSARIO SAN FERNANDO
057	MESILLA CIVIL COLONY		
058	SANTO TOMAS DE YTURBIDE	124	OJO DEL BORREGO

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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New Mexico (7)

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125	OJO CALIENTE	196	SAN ANTONIO DEL RIO COLORADO
126	OJO DE LA CABRA	197	SAN ANTONIO DE LAS HUERTAS
127	OJO DEL ESPIRITU SANTO	198	SAN CLEMENTE
129	OJO DE SAN JOSE	199	SAN CRISTOVAL
130	SAN MATEO SPRINGS	200	SANGRE DE CRISTO
132	ORTIZ MINE	202	SAN JOAQUIN DEL NACIEMENTO
133	PABLO MONTOYA	203	SAN MARCOS PUEBLO
134	PACHECO	204	SAN MIGUEL DEL BADO
135	PAGUATE PURCHASE	205	SAN PEDRO
136	PAJARITO	206	SANTA BARBARA
137	PENA BLANCA	207	SANTA CRUZ
138	PETACA	208	SANTO DOMINGO DE CUNDIYO
140	PIEDRE LUMBRE	209	SANTE FE
141	PLAZA BLANCA	211	SANTA ROSA DE CUBERO
142	PLAZA COLORADA	213	SANTA TERESA
143	POLVADERA	216	SANTIAGO RAMIREZ
144	PRESTON BECK	218	SAN YSIDRO
145	PUEBLO OF ACOMA	219	SEBASTIAN DE VARGAS
146	PUEBLO OF COCHITI	220	SEVILLETA
148	PUEBLO OF ISLETA	221	SITIO DE JUANA LOPEZ
149	PUEBLO OF JEMEZ	222	SITIO DE LOS CERRILLOS
150	PUEBLO OF NAMBE	223	SOCORRO
152	PECOS PUEBLO	224	TAJIQUE
153	PUEBLO OF PICURIS	225	TALAYA HILL
154	PUEBLO OF POJOAQUE	226	TECOLOTE
156	PUEBLO OF SANDIA	227	TEJON
157	PUEBLO OF SAN FELIPE	228	TIERRA AMARILLA
158	PUEBLO OF SAN ILDEFONSO	229	TOME
159	PUEBLO OF SAN JUAN	230	TORREON
160	JOSE MANUEL SANCHEZ BACA	231	TOWN OF ABIQUI
162	SANTA CLARA PUEBLO	232	TOWN OF ALAMEDA
→ 163	PUEBLO OF SANTO DOMINGO	233	TOWN OF ALBUQUERQUE
164	PUEBLO OF TAOS	237	TOWN OF ATRISCO
165	PUEBLO OF TESUQUE	241	CEBOLLETA
166	PUEBLO OF ZIA	242	SEBASTIAN MARTIN
167	PUEBLO OF ZUNI	243	TOWN OF CHIMITA
168	RAMON VIGIL	245	CIENEGUILLA
180	RANCHO DEL RIO GRANDE	250	IGNACIO SANCHEZ VERGASA
181	RANCHO EL RIJO	251	TOWN OF LAS TRAMPAS
189	RIO COLORADO	253	LUIS ARMENTA
192	RIO DE TESUQUE	257	SANTA ANA
195	RITO DE LOS	258	BALTHAZAR BACA

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.C - Codes for Named Land Grants (Numeric Order by State)

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New Mexico (7)

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259 TOWN OF TECOLATE  
260 TOWN OF TEJON  
262 LAS TRUCHAS  
264 VALLECITO  
265 BISHOP JOHN LAMY  
266 AGUA NEGRA  
267 JOSE PEREA  
269 ALEXANDER VALLEY  
270 ANTONIO CHAVEZ  
271 NERIO ANTONIO MONTOYA  
272 BACA LOCATION NUMBER ONE  
274 JOSE TRUJILLO  
275 ANTOINE LEROUX  
276 ROGUE LOVATO  
278 MARQUEZ AND PADILLA  
279 CEBOLLA  
280 JOSE F BACA Y TERRUS  
281 JOAQUIN MESTAS  
283 BACA Y PINO  
285 PUEBLO OF SANTA CLARA  
286 PUEBLOS OF SANTO DOMINGO AND  
SAN FELIPE  
300 ZIA SANTA ANA AND JEMEZ  
301 SERAFIN RAMIREZ  
302 PUEBLO OF SANTA ANA  
→ 303\* ACOMA PURCHASE  
304\* BEAUBIEN & MIRANDA--MAXWELL  
305\* EL RANCHITO GRANT  
306\* EL RITO  
307\* JUAN OTERO GRANT  
308\* LAS TRAMPAS GRANT  
309\* SHO 1235  
310\* SHO 1898 ←

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

APPENDIX 3.11.D

Codes for Named Land Grants  
(Alphabetic Order by State)

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

This appendix lists numeric identifiers for named land grants. These numeric identifiers are three digits; the first digit of the four digit DLG minor code identifies the State (Arizona = 4, California = 5, Colorado = 6, Florida = 8, New Mexico = 7). The appropriate State name and identifier are shown at the top of each page of the list.

→ In this appendix the identifiers are listed in alphabetic order by State. See Appendix 3.11.C for a numeric listing.

Codes followed by an asterisk (\*) have been assigned by USGS and do not exist in the BLM data dictionary. The names appear on USGS maps and are stored in the Geographic Names Information System. ←

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

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Arizona (4)

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001 ARIBACA  
004 LOS NOGALES DE ELLAS  
002 LUIS MARIA BACA FLOAT #3  
003 LUIS MARIA BACA FLOAT #5  
005 MARIA SANTISIMA DEL CARMEN  
006 RANCHO DE MARTINEZ  
007 SABINO OTERO ET AL  
008 SAN BERNARDINO  
009 SAN IGNACIO DE LA CANOA  
010 SAN IGNACIO DEL BABOCOMARI  
011 SAN JOSE DE SONOITA  
012 SAN JUAN DE LAS BOQUILLAS Y  
NOGALES  
013 SAN RAFAEL DE LA ZANJA  
014 SAN RAFAEL DEL VALLE  
→ 016\* SAN RAFAEL DEL VALLE (in  
Cochise County)  
015 TUMACACORI AND CALABAZAS

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

California (5)

556	100 VARA LOT AT SAN PEDRO	518	BUENA VISTA
124	ACALANES	150	BURI BURI
136	AGUA CALIENTE (in Alameda & Santa Clara Counties)	191	BUTANO
067	AGUA CALIENTE (in Sonoma County)	063	CABEZA DE SANTA ROSA
521	AGUA HEDIONDA	425	CAHUENGA
→ 561*	AGUA JITA	407	CALLEGUAS
206	AGUA PUERCA Y LAS TRANCAS	543	CAMARITAS IN SAN FRANCISCO
437	AGUAJE DE LA CENTINELLA	100	CAMPO DE LOS FRANCESES
282	AGUAJIT	084	CANADA DE CAPAY
013	AGUAS FRIAS	151	CANADA DE GUADALUPE VISITACION Y RODEO VIEJO
216	APTOS	152	CANADA DE GUADALUPE Y RODEO VIEJO
→ 562*	APTOS	040	CANADA DE HERRERA
009	ARROYO CHICO	052	CANADA DE JONIVE
133	ARROYO DE LA ALEMEDA	243	CANADA DE LA CARPENTERIA
540	ARROYO DE LA LAGUNA	283	CANADA DE LA SEGUNDA
115	ARROYO DE LAS NUECES Y BOLBONES	498	CANADA DE LOS ALISOS
214	ARROYO DEL RODEO	193	CANADA DE LOS CAPITANCILLOS
339	ARROYO GRANDE	535	CANADA DE LOS COCHES--INSIDE 534
099	ARROYO SECO	546	CANADA DE LOS NOGALES
297	ARROYO SECO--TORRE	331	CANADA DE LOS OSOS Y PECHO Y ISLAY
318	ASUNCION	363	CANADA DE LOS PINOS OR COLLEGE RANCHO
317	ATASCADERO	109	CANADA DE LOS VAQUEROS
233	AUSAYMAS Y SAN FELIPE	181	CANADA DE PALA
456	AZUSA--DALTON	051	CANADA DE POGOLIMI
455	AZUSA--DUARTE	168	CANADA DE RAYMUNDO
434	BALLONA	377	CANADA DE SALSIPUEDES
029	BLUCHER	197	CANADA DE SAN FELIPE Y LAS ANIMAS
502	BOCA DE LA PLAYA	391	CANADA DE SAN MIGUELITO
539	BOCA DE SANTA MONICA	513	CANADA DE SAN VICENTE Y MESA DEL PADRE BARONA
027	BODEGA	170	CANADA DE VERDE Y ARROYO DE LA PURISIMA
018	BOGA	380	CANADA DEL CORRAL
352	BOLSA DE CHAMISAL	551	CANADA DEL CORTE DE MADERA
252	BOLSA DE LAS ESCORPINAS	114	CANADA DEL HAMBRE Y LOS BOLSAS
221	BOLSA DE SAN CAYETANO		
231	BOLSA DE SAN FELIPE		
220	BOLSA DEL PAJARO		
254	BOLSA DEL POTRERO Y MORO COJO		
245	BOLSA NUEVA Y MORO COJO		
007	BOSQUEJO		
274	BUENA VISTA		

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 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

California (5)

208	CANADA DEL RINCON EN EL RIO SAN LORENZO	408	EL CONEJO
390	CANADA LARGA O VERDE	173	EL CORTE DE MADERA
→ 563*	CANAL RANCH	411	EL ENCINO
475	CANON DE SANTA ANA	409	EL ESCORPIO
008	CAPAY	107	EL PESCADERO--GRIMES
079	CARNE HUMANA	280	EL PESCADERO--JACK
057	CASLAMAYOMI	108	EL PESCADERO--PICO AND NAGLEE
355	CASMALIA	310	EL PIOJO
345	CASTAC	286	EL POTRERO DE SAN CARLOS
082	CATACULA	178	EL POTRERO DE SANTA CLARA
078	CAYMUS	002	EL PRIMER CANON
089	CHIMILES	476	EL RINCON
314	CHOLAME	387	EL RINCON--ARELLANES
270	CHUALAR	550	EL SOBRANTE
268	CIENEGA DE LOS PAICINES	486	EL SOBRANTE DE SAN JACINTO
250	CIENEGA DEL GABILAN	288	EL SUR
→ 436	CIENEGA O PASO DE LA TIJERA	344	EL TEJON
579*	COCHIL DEHE RANCHERIA	275	EL TORO
059	COLLAYOMI	259	EL TUCHO
017	COLUSA	142	EMBARCADERO DE SANTA CLARA
337	CORRAL DE PIEDRA	269	ENCINAL Y BUENA ESPERANZA
362	CORRAL DE QUATI	074	ENTRE NAPA
290	CORRAL DE TIERRA--MCCOBB	014	ESQUON
165	CORRAL DE TIERRA--PALOMARES	028	ESTERO AMERICANO
166	CORRAL DE TIERRA--VASQUEZ	410	EX-MISSION DE SAN FERNANDO
042	CORTE DE MADERA DEL PRESIDIO	396	EX-MISSION SAN BUENAVENTURA LANDS OF
047	CORTE MADERA DE NOVATO	533	EX-MISSION SAN DIEGO 3 TR AT-- CH PR
094	COSUMNES	560	EX-MISSION SAN JOSE
065	COTATE	504	EX-MISSION SAN JUAN CAPISTRANO # TR AT
538	CUCA OR EL POTRER	520	EX-MISSION SAN LUIS REY 4 TRACTS
479	CUCAMONGA	294	EX-MISSION SOLEDAD
342	CUYAMA--CESARIO LATAILLADE	167	FELIZ
341	CUYAMA--M A DE LA G Y LATAILLADE	015	FERNANDEZ
512	CUYAMACA	025	GERMAN
096	DEL PASO	406	GUADALASCA
265	EL ALISAL--BERNAL	353	GUADALUPE
267	EL ALISAL--HARTNELL	273	GUADALUPE Y LLANITOS DE LOS CORREOS
534	EL CAJON		
536	EL CHAMISAL		
328	EL CHORRO		

Standards for Digital Line Graphs  
 Part 3: Attribute Coding  
 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

California (5)

→ 564*	GUADALUPE Y LLANITOS DE LOS CORREOS	175	LA PURISIMA CONCEPCION
519	GUAJOME	484	LA SIERRA--SEPULVEDA
515	GUEJITO	485	LA SIERRA--YORBA
058	GUENOC	361	LA ZACA
085	GUESISOSI	069	LAC
019	HONCUT	332	LAGUNA
340	HUASNA	163	LAGUNA DE LA MERCED
315	HUERHUERO	217	LAGUNA DE LAS CALABASAS
330	HUERTA DE ROMUALDO	123	LAGUNA DE LOS PALOS COLORADOS
421	HUERTO DE CUATI	030	LAGUNA DE SAN ANTONIO
072	HUICHICA	301	LAGUNA DE TACHE
011	JACINTO	276	LAGUNA SECA
531	JAMACHO	418	LAND 1000 VARAS SQ--SEXTON
284	JAMES MEADOWS TRACT	016	LARKINS CHILDRENS RANCHO
541	JAMUL	224	LAS ANIMAS
356	JESUS MARIA	242	LAS AROMITAS Y AGUA CALIENTE
022	JIMENO	035	LAS BAULINES
021	JOHNSON RANCHO	471	LAS BOLSAS
558	JUAN SILVAS	383	LAS CIENEGAS
241	JURISTA	428	LAS CIENEGAS
482	JURUPA--ROUBIDEAU	549	LAS CRUCES
483	JURUPA--STEARNS	004	LAS FLORES
003	LA BARRANCA COLORADA	113	LAS JUNTAS
125	LA BOCA DE LA CANADA DEL PINOLE	104	LAS MARIPOSAS
469	LA BOLSA CHICA	401	LAS POSAS
429	LA BREA	120	LAS POSITAS
414	LA CANADA	385	LAS POSITAS Y LA CALERA
209	LA CARBONERA	083	LAS PUTAS
382	LA GOLETA	257	LAS SALINAS
462	LA HABRA	200	LAS UVAS
080	LA JOTA	→ 545	LAS VIRGENES
196	LA LAGUNA SECA	565*	LITTLE TEMECULA
360	LA LAGUNA--GUTIERREZ	266	LLANO DE BUENA VISTA
495	LA LAGUNA--STEARNS	064	LLANO DE SANTA ROSA
347	LA LIEBRE	230	LLANO DEL TEQUISQUITA
443	LA MERCED	012	LLANO SECO
376	LA MISSION VIEJA DE LA PURISMA	081	LOCOALLOMI
528	LA NACION	366	LOMAS DE LA PURIFICACION
251	LA NATIVIDAD	499	LOMAS DE SANTIAGO
227	LA POLKA	239	LOMERIAS MUERTAS
460	LA PUENTE	374	LOMPOC
		358	LOS ALAMOS

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 Part 3: Attribute Coding  
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California (5)

346	LOS ALAMOS Y AGUA CALEINTE	161	MISSION DOLORES
468	LOS ALIMITOS	157	MISSION DOLORES 50 VARA LOT IN DE HARO
427	LOS ANGELES CITY LANDS OF	160	MISSION DOLORES SUERTE IN
194	LOS CAPITANCILLOS	158	MISSION DOLORES--BERNAL
244	LOS CARNEROS--LITTLEJOHN	373	MISSION LA PURISMA
246	LOS CARNEROS--MCDUGAL	372	MISSION LA PURISMA (in Santa Barbara County)
467	LOS CERRITOS	→ 566*	MISSION LANDS (in San Luis Obispo County)
296	LOS COCHES (in Monterey County)	368	MISSION OF SANTA YNEZ
186	LOS COCHES (in Santa Clara County)	308	MISSION SAN ANTONIO
218	LOS CORRALITOS	392	MISSION SAN BUENAVENTURA
472	LOS COYOTES	532	MISSION SAN DIEGO
381	LOS DOS PUEBLOS	→ 567*	MISSION SAN DIEGO DE ACALA
522	LOS ENCENITOS	412	MISSION SAN FERNANDO
426	LOS FELIS	448	MISSION SAN GABRIEL
253	LOS GATOS OR SANTA RITA	135	MISSION SAN JOSE
066	LOS GUILICOS	240	MISSION SAN JUAN BAUTISTA
182	LOS HUECOS	503	MISSION SAN JUAN CAPISTRANO 5 TR AT
289	LOS LAURELLES--BERONDA	313	MISSION SAN MIGUEL
285	LOS LAURELLES--RANSOM	→ 568*	MISSION SAN RAFAEL
111	LOS MEDANOS	384	MISSION SANTA BARBARA
110	LOS MEGANOS	295	MISSION SOLEDAD
459	LOS NOGALES	496	MISSION VIEJO OR LA PAZ
311	LOS OJITOS	053	MOLINOS
439	LOS PALOS VERDES	506	MONSERATE
525	LOS PENASQUITOS	112	MONTE DEL DIABLO
537	LOS PRIETOS Y NAJALAYEGUA	256	MONTEREY CITY
088	LOS PUTOS	258	MONTEREY COUNTY--CASTRO
291	LOS TULARCITOS--GOMEZ	262	MONTEREY COUNTY--COCKS
092	LOS ULPINOS	325	MORO Y CAYUCOS
517	LOS VALLECITOS DE SAN MARCOS	026	MUNIZ
249	LOS VERGELES	480	MUSCUPIABE
393	LOT MISSION SAN BUENAVENTURA	263	NACIONAL
060	MALLACOMES OR MORISTUL	076	NAPA
061	MALLACOMES Y PLAN DE AGUA CALIENTE	→ 569*	NAVAJO
212	MESA DE OJO DE AGUA	020	NEW HELVETIA
307	MILPITAS	032	NICASIO LANDS
138	MILPITAS--ALVISO	501	NIGUEL
169	MIRAMONTES	351	NIPOMO
281	MISSION CARMELOCHORRO		
156	MISSION DOLORES		

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 Part 3: Attribute Coding  
 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

California (5)

278	NOCHE BUENA	213	POTRERO Y RINCON DE SAN PADRO DE REGLADO
367	NOJOQUI	494	POTREROS SAN JUAN CAPISTRANO
046	NOVATO	419	PROSPERO TRACT
379	NUESTRA SENORA DEL REFUGIO	424	PROVIDENCIA
389	OJAI	574*	PUEBLO LANDS OF SAN DIEGO
159	OJO DE AGUA DE FIGUEROA S F	155	PUEBLO LANDS OF SAN FRANCISCO
199	OJO DE AGUA DE LA COCHE	179	PUEBLO LANDS OF SAN JOSE
048	OLOMPALI	386	PUEBLO LANDS OF SANTA BARBARA
095	OMOCHUMNES	068	PUEBLO LANDS OF SONOMA
553	ONE SUERTE	542	PUEBLO LOT NO 6
105	ORESTIMBA	148	PULGAS
530	OTAY--DOMINGUEZ	375	PUNTA DE LA CONCEPCION
529	OTAY--ESTUDILLO	354	PUNTA DE LA LAGUNA
180	PALA	033	PUNTA DE LOS REYES--RANDALL
235	PANOCH DE SAN JUAN Y LOS CARRISALITOS	034	PUNTA DE LOS REYES--SOBRANTE
292	PARAJE DE SANCHEZ	279	PUNTA DE PINOS
465	PASO DE BARTOLO--GUIRADO	041	PUNTA DE QUENTIN
547	PASO DE BARTOLO--MCFARLAND & DOWNEY	205	PUNTA DEL ANO NUEVO
464	PASO DE BARTOLO--PICO	187	QUITO
548	PASO DE BARTOLO--SEPULVEDA	102	RANCHERIA DEL RIO ESTANISLAO
320	PASO DE ROBLES	334	RANCHITA DE SANTA FE
144	PASTORIA DE LAS BORREGAS	557	RANCHO AGUAS NIEVES
490	PAUBA	010	RANCHO DE FARWELL
507	PAUMA	106	RANCHO DEL PUERTO
→ 570*	PESCADERO	236	REAL DE LAS AGUILAS
049	PETALUMA	207	REFUGIO
321	PIEDRA BLANCA	554	RESSIGHINI
126	PINOLE	461	RINCON DE LA BREA
336	PISMO	272	RINCON DE LA PUENTE DEL MONTE
312	PLEYTO	255	RINCON DE LAS SALINAS
444	POTRERO CHICO	153	RINCON DE LAS SALINAS Y POTRERO VIEJO
445	POTRERO GRANDE	435	RINCON DE LOS BUEYES
298	POSA DE LOS OSITOS	073	RINCON DE LOS CARNEROS
145	POSOLMI	141	RINCON DE LOS ESTEROS--ALVISO
446	POTRERO DE FELIPE LUGO	140	RINCON DE LOS ESTEROS--BERREYESA
→ 571*	POTRERO DE LA CIENEGA	139	RINCON DE LOS ESTEROS--WHITE
134	POTRERO DE LOS CERRITOS	056	RINCON DE MUSALACON
329	POTRERO DE SAN LUIS OBISPO	146	RINCON DE SAN FRANCISQUITO
→ 572*	POTRERO EL CARISO	261	RINCON DE SANJON
→ 573*	POTRERO LOS PINOS		

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 Part 3: Attribute Coding  
 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

California (5)

516	RINCON DEL DIABLO	416	SAN GABRIEL TR NR--COURTNEY
192	RINCONADA DE LOS GATOS	453	SAN GABRIEL TR NR--DOMINGO
147	RINCONADA DEL ARROYO DE SAN FRANCISQUITO	417	SAN GABRIEL TR NR--LEDESMA
098	RIO DE LOS AMERICANOS	450	SAN GABRIEL TR NR--SALES
006	RIO DE LOS MOLINOS	452	SAN GABRIEL TR NR--SEXTON
087	RIO DE LOS PUTOS	451	SAN GABRIEL TR NR--SIMEON
403	RIO DE SANTA CLARA	420	SAN GABRIEL TR NR--WHITE
086	RIO JESUS MARIA	039	SAN GERONIMO (in Marin County)
050	ROBLAR DE LA MISERIA	324	SAN GERONIMO (in San Luis Obispo County)
070	S F SOLAND IN SONOMA MISSION	172	SAN GREGORIO--CASTRO
223	SALSIPUEDES	171	SAN GREGORIO--RODRIGUEZ
219	SAN ANDRES	489	SAN JAACINTO VIEJO
190	SAN ANTONIO OR PESCADERO	488	SAN JACINTO & SAN GORGONIO TRACT BETWEEN
430	SAN ANTONIO OR RODEO DE LAS AGUAS	487	SAN JACINTO NUEVO Y POTRERO
129	SAN ANTONIO--A M PERALTA	500	SAN JOAQUIN (in Orange County)
442	SAN ANTONIO--LUGO	232	SAN JOAQUIN (in San Benito County)
176	SAN ANTONIO--MESA	457	SAN JOSE ADDITION TO
128	SAN ANTONIO--V & D PERALTA	431	SAN JOSE DE BUENOS AYRES
130	SAN ANTONIO--Y PERALTA	509	SAN JOSE DEL VALLE
202	SAN AUGUSTIN	552	SAN JOSE Y SUR CHIQUITO
304	SAN BENITO	458	SAN JOSE--DALTON ET AL
303	SAN BERNABE	045	SAN JOSE--PACHECO
481	SAN BERNARDINO	097	SAN JUAN
→ 575*	SAN BERNARDINO	185	SAN JUAN BAUTISTA
326	SAN BERNARDO--CANE	247	SAN JUAN BAUTISTA TR NR
524	SAN BERNARDO--SNOOK	248	SAN JUAN BAUTISTA--BREEN
306	SAN BERNARDO--SOBERANES	473	SAN JUAN CAJON DE SANTA ANA
001	SAN BUENA VENTURA	378	SAN JULIAN
369	SAN CARLOS DE JONATA	238	SAN JUSTO
527	SAN DIEGO ISLAND OR PENINSULA	131	SAN LEANDRO
526	SAN DIEGO PUEBLO LANDS OF	122	SAN LORENZO--CASTRO
523	SAN DIEGUITO	302	SAN LORENZO--RANDALL
343	SAN EMIDIO	300	SAN LORENZO--SANCHEZ
162	SAN FRANCISCO	299	SAN LORENZO--SOBERANES
399	SAN FRANCISCO	132	SAN LORENZO--SOTO
226	SAN FRANCISCO DE LAS LLAGAS	305	SAN LUCAS
447	SAN FRANCISCO--DALTON	234	SAN LUIS GONZAGA
287	SAN FRANCISQUITO	333	SAN LUIS OBISPO MISSION
174	SAN FRANCISQUITO--RODRIGUEZ	327	SAN LUISITO
449	SAN GABRIEL TR NR--AGUILAR		

## Standards for Digital Line Graphs

## Part 3: Attribute Coding

## Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

## California (5)

364	SAN MARCOS		404	SANTA CRUZ ISLAND OF
149	SAN MATEO		210	SANTA CRUZ MISSION
154	SAN MIGUEL--NOE	→	577*	SANTA GERTRUDES
394	SAN MIGUEL--OLIVAS & LORENZANA		463	SANTA GERTRUDES--COLIMA
062	SAN MIGUEL--WEST		466	SANTA GERTRUDES--MCFARLAND & DOWNEY
309	SAN MIGUELITO (in Monterey County)		338	SANTA MANUELA
335	SAN MIGUELITO (in San Luis Obispo County)		316	SANTA MARGARITA
127	SAN PABLO		505	SANTA MARGARITA Y LAS FLORES
415	SAN PASCUAL--GARFIAS		395	SANTA PAULA Y SATICOY
422	SAN PASCUAL--WILSON		119	SANTA RITA
044	SAN PEDRO SANTA MAGARITA Y LAS GALLINAS	→	371	SANTA RITA--MALO
440	SAN PEDRO--DOMINGUEZ		578*	SANTA ROSA
164	SAN PEDRO--SANCHEZ		405	SANTA ROSA ISLAND OF
043	SAN RAFAEL		370	SANTA ROSA--COTA
423	SAN RAFAEL		323	SANTA ROSA--ESTRADA
118	SAN RAMON--AMADOR		493	SANTA ROSA--MORINO
116	SAN RAMON--CARPENTIER		184	SANTA TERESA
117	SAN RAMON--NORRIS		510	SANTA YSABEL (in San Diego County)
322	SAN SIMEON		319	SANTA YSABEL (in San Luis Obispo County)
→	576*	SAN VICENTE	474	SANTIAGO DE SANTA ANA
432	SAN VICENTE Y SANTA MONICA		036	SAUCELITO
195	SAN VICENTE--BERREYESA		277	SAUCITO
204	SAN VICENTE--ESCARRILLA		005	SAUCOS
293	SAN VICENTE--MUNRASS		264	SAUSAL
228	SAN YSIDRO--GILROY		438	SAUSAL REDONDO
229	SAN YSIDRO--ORTEGA		397	SESPE
024	SANEL		215	SHOQUEL
093	SANJON DE LOS MOQUELUMNES		201	SHOQUEL AUGMENTATION
198	SANJON DE SANTA RITA		400	SIMI
388	SANTA ANA		348	SISQUOC
477	SANTA ANA DEL CHINO		225	SOLIS
478	SANTA ANA DEL CHINO ADDITION		071	SONOMA CITY LOT IN
237	SANTA ANA Y QUIEN SABE		054	SOTOYOME
454	SANTA ANITA		031	SOULAJULE LANDS
470	SANTA CATALINA ISLAND		101	STANISLAUS RIVER
189	SANTA CLARA COUNTY--BENNETT		350	SUEY
402	SANTA CLARA DEL NORTE		091	SUISUN
188	SANTA CLARA MISSION TR		441	TAJAUTA
177	SANTA CLARA TR NR--ENRIGHT		398	TEMASCAL

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

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California (5)

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492 TEMECULA  
349 TEPUSQUET  
365 TEQUEPIS  
359 TINAQUAIC  
357 TODOS SANTOS Y SAN ANTONIO  
090 TOLENAS  
038 TOMALES Y BAULINES--GARCIA  
037 TOMALES Y BAULINES--PHELPS  
433 TOPANGA MALIBU SEQUIT  
497 TRABUCO  
211 TRES OJOS DE AGUA  
413 TUJUNGA  
137 TULARCITOS--HIGUERA  
075 TULUCAY  
260 TWO SUERTES  
055 TZABACO  
143 ULISTAC  
514 VALLE DE PAMO OR SANTA MARIA  
511 VALLE DE SAN FELIPA  
508 VALLE DE SAN JOSE--PORTILLA  
121 VALLE DE SAN JOSE--SUNOL &  
BERNAL  
491 VALLEY O TEMECULA  
222 VEGA DEL RIO DEL PAJARO  
077 YAJOME  
183 YERBA BUENA  
023 YOKAYA  
103 YOSEMITE & BIG TREE GRANTS  
271 ZANJONES  
203 ZAYANTA

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

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Colorado (6)

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001 BEAUBIEN AND MIRANDA  
008 DURANGO RESRV  
003 LUIS MARIA B.<sup>1</sup>  
002 LUIS MARIA BACA NO. 4<sup>1</sup>  
004 MONTROSE RES  
010 NOLAN GRANT  
009 SANGRE DE CRI.<sup>2</sup>  
005 SANGRE DE CRISTO<sup>2</sup>  
006 TIERRA AMARILLA  
011 VIGIL AND SAINT VRAIN  
012 VIGIL AND SAINT VRAIN NO. 6  
007 ZAPATO

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1. 002 and 003 are probably the same grant but entered in the land records with two different representations.
2. 005 and 009 are probably the same grant but entered in the land records with two different representations.

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

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Florida (8)

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027 AMBROSE HULL  
016 ANTELM GAY  
005 ARRENDONDO GRANT  
009 BERNARDO SEGUI  
021 C E McHARDY  
020 CHARLES SIBBOLD  
004 DELESPINE GRANT  
010 DOMINGO ACOSTA  
003 FLEMING GRANT  
030 FORBES PURCHASE  
023 GEORGE F CLARK  
028 GERONIMO ALVAREZ  
007 GOMEZ  
015 H M GOMEZ  
008 HANSON  
024 JANE MURRAY  
025 JOHN BOLTON  
014 JOHN H McINTOSH  
018 JOHN LOW  
022 JOSEPH GAUNT  
019 JOSEPH WALES  
013 LUCAS CRAYON  
006 MOSES E LEVY  
017 PABLO ROSETTE  
012 PETER FOUCHARD  
026 SAMUEL BETTS  
011 WILLIAM GARVIN

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 Part 3: Attribute Coding  
 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

New Mexico (7)

→ 303*	ACOMA PURCHASE	007	CASA COLORADA
266	AGUA NEGRA	279	CEBOLLA
001	AGUA SALADA	241	CEBOLLETA
003	ALAMEDA	052	CHILILI
004	ALAMITOS	245	CIENEGUILLA
269	ALEXANDER VALLEY	061	CRISTOVAL DE LA SERNA
008	ANGOSTURA	062	CUBERO
275	ANTOINE LEROUX	063	CUYAMUNGUE PUEBLO
011	ANTON CHICO	064	DABOLOS
041	ANTONIO ARMENTA	056	DONA ANA BEND COLONY
270	ANTONIO CHAVEZ	→ 305*	EL RANCHITO GRANT
012	ANTONIO DE ABEYTA	→ 306*	EL RITO
013	ANTONIO GUTTIEREZ AND JOAQUIN SEDILLO	068	ELENA GALLEGOS
014	ANTONIO MARTINEZ	074	ESTANCIA
015	ANTONIO ORTIZ	076	FELIPE TAFOYA
108	ANTONIO SALAZAR	077	FERNANDO DE TAOS
037	ANTONIO SEDILLO	078	FRANCISCO MONTES VIGIL
021	ARROYO HONDO	079	GALISTEO
022	ARROYO SECO	051	GASPAR ORTIZ
272	BACA LOCATION NUMBER ONE	080	GIJOSA
046	BACA LOCATION NUMBER TWO	082	GOTERA
283	BACA Y PINO	087	IGNACIO CHAVEZ
258	BALTHAZAR BACA	250	IGNACIO SANCHEZ VERGASA
024	BARTOLOME FERNANDEZ	088	JACONA
025	BARTOLOME SANCHEZ	281	JOAQUIN MESTAS
→ 304*	BEAUBIEN & MIRANDA--MAXWELL	090	JOHN SCOLLY
027	BELEN	280	JOSE F BACA Y TERRUS
081	BENJAMIN EDWARDS	160	JOSE MANUEL SANCHEZ BACA
028	BERNABE MONTANO	267	JOSE PEREA
029	BERNALLILO	010	JOSE SUTTON
265	BISHOP JOHN LAMY	274	JOSE TRUJILLO
030	BLACK MESA	072	JUAN BATISTA VALDEZ
031	BOSQUE DEL APACHE	091	JUAN DE GABALDON
033	BRAZITO	115	JUAN DE MESTAS
034	CAJA DEL RIO	060	JUAN JOSE LOBATO
035	CANADA DE COCHITI	→ 307*	JUAN OTERO GRANT
036	CANADA DE LOS ALAMOS	096	LA MAJADA
042	CANON DE CARNUE	098	LA SALINA
043	CANON DE CHAMA	094	LAGUNA PUEBLO
047	CANON DE SAN DIEGO	→ 308*	LAS TRAMPAS GRANT
044	CANON DEL AGUA	262	LAS TRUCHAS
		099	LAS VEGAS

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 Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

New Mexico (7)

101	LO DE PADILLA	150	PUEBLO OF NAMBE
102	LOS CERRILLOS	153	PUEBLO OF PICURIS
105	LOS FRIJOLES	154	PUEBLO OF POJOAQUE
107	LOS TRIGOS	157	PUEBLO OF SAN FELIPE
253	LUIS ARMENTA	158	PUEBLO OF SAN ILDEFONSO
032	M AND S MONTOYA	159	PUEBLO OF SAN JUAN
111	MANZANO	156	PUEBLO OF SANDIA
278	MARQUEZ AND PADILLA	069	PUEBLO OF SANTA ANA
026	MAXWELL	302	PUEBLO OF SANTA ANA
057	MESILLA CIVIL COLONY	285	PUEBLO OF SANTA CLARA
113	MESITA DE JUANA LOPEZ	→ 163	PUEBLO OF SANTO DOMINGO
116	MORA	164	PUEBLO OF TAOS
271	NERIO ANTONIO MONTOYA	165	PUEBLO OF TESUQUE
118	NICOLAS DURAN DE CHAVEZ	166	PUEBLO OF ZIA
049	NOLAN	167	PUEBLO OF ZUNI
093	NUESTRA SENORA DE LA LUZ DE LAS LAGUNITAS	286	PUEBLOS OF SANTO DOMINGO AND SAN FELIPE
121	NUESTRA SENORA DEL ROSARIO SAN FERNANDO	168	RAMON VIGIL
125	OJO CALIENTE	180	RANCHO DEL RIO GRANDE
126	OJO DE LA CABRA	181	RANCHO EL RIJO
129	OJO DE SAN JOSE	059	REFUGIO COLONY
124	OJO DEL BORREGO	189	RIO COLORADO
127	OJO DEL ESPIRITU SANTO	192	RIO DE TESUQUE
132	ORTIZ MINE	195	RITO DE LOS
133	PABLO MONTOYA	276	ROGUE LOVATO
134	PACHECO	050	SALVADOR GONZALES
135	PAGUATE PURCHASE	197	SAN ANTONIO DE LAS HUERTAS
136	PAJARITO	196	SAN ANTONIO DEL RIO COLORADO
152	PECOS PUEBLO	198	SAN CLEMENTE
018	PEDRO ARMENDARIS	199	SAN CRISTOVAL
137	PENA BLANCA	202	SAN JOAQUIN DEL NACIEMENTO
138	PETACA	203	SAN MARCOS PUEBLO
140	PIEDRE LUMBRE	130	SAN MATEO SPRINGS
141	PLAZA BLANCA	204	SAN MIGUEL DEL BADO
142	PLAZA COLORADA	205	SAN PEDRO
143	POLVADERA	218	SAN YSIDRO
144	PRESTON BECK	200	SANGRE DE CRISTO
145	PUEBLO OF ACOMA	257	SANTA ANA
146	PUEBLO OF COCHITI	206	SANTA BARBARA
148	PUEBLO OF ISLETA	162	SANTA CLARA PUEBLO
149	PUEBLO OF JEMEZ	207	SANTA CRUZ
		211	SANTA ROSA DE CUBERO

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.D - Codes for Named Land Grants (Alphabetic Order by State)

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New Mexico (7)

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213 SANTA TERESA  
209 SANTE FE  
216 SANTIAGO RAMIREZ  
208 SANTO DOMINGO DE CUNDIYO  
058 SANTO TOMAS DE YTURBIDE  
219 SEBASTIAN DE VARGAS  
242 SEBASTIAN MARTIN  
301 SERAFIN RAMIREZ  
220 SEVILLETA  
→ 309\* SHO 1235  
→ 310\* SHO 1898  
092 SIERRA MOSCA  
221 SITIO DE JUANA LOPEZ  
222 SITIO DE LOS CERRILLOS  
223 SOCORRO  
224 TAJIQUE  
225 TALAYA HILL  
226 TECOLOTE  
227 TEJON  
228 TIERRA AMARILLA  
229 TOME  
230 TORREON  
231 TOWN OF ABIQUI  
232 TOWN OF ALAMEDA  
233 TOWN OF ALBUQUERQUE  
237 TOWN OF ATRISCO  
243 TOWN OF CHIMITA  
251 TOWN OF LAS TRAMPAS  
259 TOWN OF TECOLATE  
260 TOWN OF TEJON  
110 UNA DE GATO  
264 VALLECITO  
300 ZIA SANTA ANA AND JEMEZ

Standards for Digital Line Graphs  
Part 3: Attribute Coding  
Appendix 3.11.E - Supplemental Codes for U.S. Public Land Survey System Data

APPENDIX 3.11.E

Supplemental Codes for U.S. Public Land Survey System Data  
(Numeric Order)

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.E - Supplemental Codes for U.S. Public Land Survey System Data

This appendix lists additional attributes that may be used when PLSS data are revised by a cooperating agency. These 600-series codes enable USGS to store and distribute information that otherwise is not available in DLG-3 data. 600-series codes will not be recognized by NMD's processing software.

The accuracy and content of this data is verified by the cooperating agency. USGS verifies the format, structure and topology of the data. Until metadata files can provide appropriate credit, the cooperating agency will be identified in the third record of the DLG header.

600-series codes will be used only by agreement between USGS and a cooperating agency.

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.E - Supplemental Codes for U.S. Public Land Survey System Data

3.11.E.1 Node Attribute Codes

601 000x Source

- X = 1 when corner is designated as "Found" based only on the source Quadrangle map  
2 when corner is designated as "Found" based on other information derived by the cooperator.

If x=2, field-derived coordinate values, provided by the cooperator, may be stored as attribute values (see major codes 612 through 617). If x=2 and the coordinate values are not stored as attributes, these coordinates can be acquired by contacting the cooperator.

For cooperator-derived coordinate values in Florida, contact:

Florida Dept. of Environmental Protection  
Branch of Surveying and Mapping  
3900 Commonwealth Blvd. MS105  
Tallahassee, FL 32399

602 xyyy Township number north of baseline  
603 xyyy Township number south of baseline  
604 xyyy Range number east of principal meridian  
605 xyyy Range number west of principal meridian

These codes are applied in the same manner as the Township and Range identifiers in Section 3.11.8, Parameter Attribute Codes. The difference here is the 600 major codes are applied to a node instead of an area.

606 xxyy Meridian/State Identifier

The Meridian or Origin of Survey Code is designated by location on Bureau of Land Management's (BLM) "*Principal Meridians and Base Lines*" Map. The appropriate code id is identified in Appendix 3.11.B, "*Origins of the U.S. Rectangular Surveys.*"

Example: xxyy where xx=29 (Tallahassee meridian)

The State Identifier will be a two digit State or State equivalent FIPS Code, "*FIPS PUB 6-4*", August 1990

Example: xxyy where yy=12 (FIPS code for Florida)

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.E - Supplemental Codes for U.S. Public Land Survey System Data

Attributes 607 through 609 are only valued when the Datum, Unit of Measure, or Coordinate System for a cooperator-provided coordinate is different from that specified in the header.

607 00xy Horizontal Datum and Units of measure if different than that specified in the header

x = 1 for NAD27  
2 for NAD83  
y = 1 for meters  
2 for feet

608 00xx UTM Zone, if different from UTM zone specified in the header

609 xxxx State Plane Coordinate System Zone, if coordinate system is State Plane instead of UTM

610 0xxx "X" Corner Identifier

611 0yyy "Y" Corner Identifier

The Corner Identifier is a six digit code developed by the BLM. This code, used in conjunction with the Meridian, Township, and Range, provides a unique id and relative location for all attributed points in the DLG. For directions on using this Identifier, refer to BLM's "GMM Version 2.00 User Manual" June 7, 1994, Appendix A "Naming Convention", Section "GCDB Point Identifier", Pages A-2 thru A-9.

xxx = the "X" value of the identifier

yyy = the "Y" value of the identifier

Standards for Digital Line Graphs

Part 3: Attribute Coding

Appendix 3.11.E - Supplemental Codes for U.S. Public Land Survey System Data

612 xxxx through 617 xxxx      Field-Derived Coordinates

Field-Derived Coordinates, when provided by the cooperator, will be coded here. Values for Datum, Units, and UTM or State Plane Zones are the same as specified in the DLG header, unless major codes 607, 608, or 609 are valued.

612 xxxx	ten thousands through millions place for the "X" coordinate of the node
613 xxxx	one, tens, hundreds and thousands place for the "X" coordinate of the node
614 xxxx	tenth through ten-thousandths for the "X" coordinate of the node
615 yyyy	ten thousands through millions place for the "Y" coordinate of the node
616 yyyy	one, tens, hundreds and thousands place for the "Y" coordinate of the node
617 yyyy	tenth through ten-thousandths for the "Y" coordinate of the node

Example:      for coordinate value = 526198.0016, 3444298.5412, the appropriate codes would be:

612.0052  
613.6198  
614.0016  
615.0344  
616.4298  
617.5412