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Geologic-line attributes for digital geologic-map data bases produced by the Southern California Areal Mapping Project (SCAMP)
Version 1.0

By

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To be used with lineset "geoSCAMP2.lin"

By

J.C. Matti, R.E. Powell, F.K. Miller, S.A. Kennedy, K.R. Ruppert, G.L. Morton, and P.M. Cossette

This document provides geologic attributes and associated codes for lines (arcs) defined in digital geologic-map coverages produced by the Southern California Areal Mapping Project (SCAMP)--a geologic-mapping project sponsored jointly by the U.S. Geological Survey and the California Division of Mines and Geology. Attributes include line type (geologic contacts, faults, fold axial traces, geomorphic features, dikes and veins, lineaments), geologic age, attributes for fault-movement history and fault character, named structures, compiled versus original data, data source for compiled information, and other attributes that characterize the properties, origin, and history of linear geologic features in southern California.

SCAMP's data-base structure and digital attributes anticipate Nationwide standards currently being developed under the auspices of the U.S. Geological Survey's National Cooperative Geologic Mapping Program (NCGMP). The NCGMP is working in conjunction with the State geological surveys and other entities to develop a national geologic-map data model that will describe the format, storage, and use of geologic-map data in a computer. Included in this model will be National spatial-data standards for geologic polygons, lines, and points. These national standards eventually will become a foundation of the Nation's geologic-map data base, currently under development by the U.S. Geological Survey and the State geological surveys (Soller and Berg, 1997). Information about model development and other aspects of the data-base project can be found at http://ncgmp.usgs.gov/ngmdbproject. Pending widespread review and adoption of the national standards, SCAMP's digital geologic-map data bases are developed as provisional data structures that can easily be integrated into the national model when it is adopted for nationwide use.

Intended purpose

This document targets two audiences: (1) users of Geographic Information Systems (GIS) who have little or no geologic training but who need to incorporate geologic-map information into their geospatial analyses; and (2) fellow geologists in the southern California region who, like ourselves, are struggling to convert their traditional analog geologic-map products into digital GIS data bases without the benefit of extensive GIS training. The GIS specialist hopefully will benefit from our brief discussion of geologic-map units; the geologic specialist hopefully will benefit from our brief discussion of how we use GIS rules and procedures to develop SCAMP digital geologic-map data bases. Our cursory treatment of these two specialties should allow geologist and GIS analyst to work together as they use digital geologic maps produced by SCAMP

GEOLOGIC-LINE ATTRIBUTES AND SPATIAL-DATA STANDARDS

A geologic map uses a combination of areas, lines, and points to portray the geologic framework of a prescribed geographic region. The geologic framework will include various kinds of earth materials (geologic units) separated from each other at the time of their formation by various kinds of boundaries (geologic contacts) and subsequently modified by various kinds of geologic structures (faults, folds) that have broken or warped the geologic units. On the map, geologic units form two-dimensional areas (polygons in the language of Geographic Information Systems, GIS). Polygons are bounded by linear geologic elements called contacts, but in places polygons may be bounded by faults. Other linear festures include the crestlines and troughlines of mappable folds; dikes and veins too thin to represent as polygons; topographic lineaments of various kinds; and geomorphic features such as landslide crownscarps, lake strandlines, and the traces of dune crests. These linear geologic features are all represented by various kinds of cartographic lines (arcs in the language of GIS). This document discusses rules and procedures used by SCAMP to assign digital attributes to these lines; companion documents (Matti and others, 1997a, b) discuss geologic points and geologic polygons.

Line elements described in this document convey three main attributes: (1) feature type, (2) certainty of existence, and (3) locatability. These three attributes are conveyed in two ways: they are coded into the data base for search-and-retrieval purposes, and they are expressed graphically in map plots through the use of various line weights, patterns, and ornaments.

FEATURE TYPE

Geologic contacts.—A geologic contact denotes the boundary where two different geologic-map units are in non-fault contact with each other. SCAMP geologic maps recognize several types of geologic contact (Appendix p. B-1):

- *Generic contact.*—Map-unit boundary that has not been assigned to any specific contact type;
- *Sedimentary contact.*—Map-unit boundary where one sedimentary unit has been deposited on or against another geologic unit, for example another sedimentary unit or an igneous or metamorphic unit. Sedimentary contacts can be characterized additionally as conformable, channelized, or unconformable, and the type of unconformity can be attributed as paraconformable, nonconformable, or angular (Appendix p. B-1). A specialized sedimentary contact is a *terraced alluvial contact* developed where an alluvial unit has been deposited on a surface incised into an older higher-standing alluvial unit so that a riser separates the two units; the buttressing contact of the younger low-standing alluvial unit against the high-standing unit is depicted as a hachured line, with hachures pointing away from the riser;
- *Igneous contact.*—Map-unit boundary where an igneous unit has been emplaced against, on, or into older pre-existing geologic units. Igneous contacts can be characterized additionally as intrusive, extrusive, pyroclastic, mineralized, or deformed (Appendix p. B-1);
- *Metamorphic contact.*—Map-unit boundary between two metamorphosed geologic units, as between a unit of marble and a unit of metaquartzite;
- *Residual regolith or pedogenic-soil contact.*—Map-unit boundary between geologic materials interpreted to be the product of weathering or pedogensis and other bedrock or surficial geologic units;
- *Landslide contact.*—Map-unit boundary surrounding a displaced slope-failure mass.

On the ground, most contacts have a discrete character—that is, the contact boundary is fairly sharp over a narrow span of a few meters or less; other contacts are gradational or transitional in character across a greater map distance. Discrete *versus* gradational contacts are symbolized by different line types (p. B-1).

Faults.—Faults may form geologic map-unit boundaries, or they may traverse a geologic unit and thereby separate it into adjacent polygons of the same unit. SCAMP geologic maps assign several attributes to faults, including fault geometry, fault-slip style, fault type, and where appropriate, fault hanging-wall relations (Appendix B-2):

- *Fault geometry*—Refers to the orientation of the fault plane: High-angle describes fault planes that are steeper than 45°; low-angle describes fault planes that are inclined 45° or shallower; variable-angle describes fault planes whose inclination varies either sytematically or irregularly as the fault plane is traced throughout the map area.
- *Fault-slip style*—Refers to the style of movement along the fault plane:

  High-angle faults

  - *Strike slip*—describes fault movement where one fault block has moved horizontally past the other fault block;
  - *Normal slip*—describes fault movement where one fault block has moved downward past the other fault block in such a way that younger rocks are placed against older rocks;
  - *Reverse slip*—describes fault movement where one fault block has moved upward past the other fault block in such a way that older rocks are placed against younger rocks;
  - *Oblique slip*—describes fault movement where one fault block has moved past the other fault block through a combination of horizontal and vertical movements;
  - *Unspecified slip*—escribes fault movement where the type of movement on the fault plane is not specified, usually because slip-style has not been determined by the geologist;

  Low-angle faults

  - *Normal slip*—describes fault movement where one fault block has moved downward past the other fault block in such a way that (usually) younger rocks are placed against older rocks;
  - *Thrust slip*—describes fault movement where one fault block has moved upward past the other fault block in such a way that (usually) older rocks are placed against younger rocks;
  - *Unspecified slip*—describes fault movement where the type of movement on the fault plane is not specified, usually because slip-style has not been determined by the geologist;

Variable-angle faults

- *Rotational normal slip*—describes fault movement where one fault block has slid downward past the other fault block along a fault plane whose geometry is high-angle up-dip but low-angle down-dip;

- *Fault type*—Refers to the specific fault-type assigned to structures having a particular geometry and slip-style:

High-angle strike-slip faults

- *Right-lateral srike-slip fault*—describes a fault where one fault block has moved horizontally to the right past the other fault block;
- *Left-lateral srike-slip fault*—describes a fault where one fault block has moved horizontally to the left past the other fault block;

High-angle normal-slip faults

- *Normal fault*

High-angle reverse-slip faults

- *Reverse fault*

High-angle oblique-slip faults

- *Oblique fault*

High-angle unspecified-slip faults

- *Generic fault*

Low-angle normal-slip faults

Hanging wall places younger rocks against older footwall rocks (typical)

- *Low-angle normal fault*
- *Master detachment fault*
- *Detachment fault*
- *Normal fault listric into detachment fault*

Hanging wall places older rocks against younger footwall rocks (rare)

- *Master detachment fault*
- *Detachment fault*
- *Normal fault listric into detachment fault*

Low-angle thrust-slip faults

Hanging wall places older rocks against younger footwall rocks (typical)

- *Thrust fault*
- *Overturned thrust fault* (if post-thrust folding has overturned the original thrust fault)

Hanging wall places younger rocks against older footwall rocks (rare)

- *Decollement fault*
- *Thrust fault*
- *Overturned thrust fault* (if post-thrust folding has overturned the original thrust fault)

Low-angle unspecified-slip faults

- *Low-angle fault*

Fold axial traces.—Map-scale folds have troughs and crests whose geometric relations can be measured and mapped as linear geologic features. Chief among these is the intersection of a fold's axial plane with the ground surface (fold-axial trace). Fold-axis traces traverse geologic units, but unlike faults they do not create boundaries between units. For this reason, in SCAMP geologic-map coverages fold-axial-trace lines are stored in a separate coverage layer different from the one storing geologic contacts and faults.

SCAMP geologic maps assign several attributes to fold-axial traces, including fold form, fold-axis geomtery, and fold-hinge geometry (Appendix B-2):

- *Fold form*—Refers to the convexity or concavity of the fold crest (or trough) relative to the age sequence of layers deformed by the fold:

  Fold form not determined

  - *antiformal fold*—convex-upward fold in rock layers whose relative ages have not been determined;
  - *synformal fold*—concave-upward fold in rock layers whose relative ages have not been determined;

  Fold form determined

  - *anticlinal fold*—a fold that is convex in the direction of the youngest layers in the folded sequence (from Davis and Reynolds, 1996, p. 380);
  - *synclinal fold*—a fold that is convex in the direction of the oldest layers in the folded sequence (from Davis and Reynolds, 1996, p. 380);

  Refolded fold

  Fold form not determined

  - *no fold name defined*

  Fold form determined

  - *synformal anticline (inverted anticline)*—a fold that is convex in the direction of the youngest layers in the folded sequence, but that has been inverted due to refolding of the original fold (from Davis and Reynolds, 1996, p. 380);
  - *antiformal syncline (inverted syncline)*—a fold that is convex in the direction of the oldest layers in the folded sequence, but that has been inverted due to refolding of the original fold (from Davis and Reynolds, 1996, p. 380);

- *Fold-axis geometry*—Refers to the orientation of a fold's axial plane relative to a vertical datum:

  - *upright fold*—fold whose axial plane is oriented within 10° of a vertical datum (from Davis and Reynolds, 1996, p. 387);
  - *overturned fold*—fold whose axial plane is inclined beyond 10° of a vertical datum (from Davis and Reynolds, 1996, p. 387);

- *Fold-hinge geometry*—Refers to the orientation of a fold's hinge relative to a horizontal datum:

  - *subhorizontal fold*—fold whose hinge line is inclined no more than 10° from a horizontal datum (from Davis and Reynolds, 1996, p. 387);
  - *plunging fold*—fold whose hinge line is inclined greater than 10° from a horizontal datum (from Davis and Reynolds, 1996, p. 387);

Additional geologic lines.—Additional linear geologic features that require symbolization as geologic lines include dikes, veins, geomorphic features, lineaments, mapped marker horizons, and miscellaneous administrative lines (map boundary, geologic cross-section lines, measured stratrigraphic-section lines, etc).

CERTAINTY OF EXISTENCE OR IDENTITY

A major attribute of geologic lines is their scientific veracity—that is, the certainty that the geologic feature symbolized by a particular cartographic line actually exists in the field or has been identified correctly in the field by the geologist. To many GIS users, the need for a certainty-of-existence factor may seem puzzling: in a typical GIS coverage, cartographic features such as a four-lane divided highway or a county-line boundary or an ephemeral stream that are embedded in the coverage must exist, otherwise the map maker would not have included them in the coverage. Unfortunately, the field identification of geologic features is not always a straightforward empirical process that leads inevitably to a yes-no determination of the feature's identity. In places, poor outcrop exposures or the absence of definitive corroborating evidence require the geologist to make an educated interpretation as to the existence nature and of a geologic feature. Two typical examples involve (1) whether a particular geologic feature is a contact or a fault or (2) whether a fault actually exists where evidence suggests (but does not confirm) that it exists.

In SCAMP data bases, the range of certainty reserved for geologic-line features is limited to two conditions: the existence or identity of a line either is certain or is uncertain. The certainty attribute is coded into the line definition, and in graphics plots is displayed through the nonuse or use of question marks: a linear geologic feature whose existence or identity is "certain" lacks question marks, whereas a linear geologic feature whose existence is "uncertain" is ornamented with question marks. In appropriate instances, the qualifiers "probable" or "possible" may be used in conjunction with queries to express the degree of confidence with which a queried feature is uncertain.

LOCATABILITY

Once the identity of a linear geologic feature has been ascertained in the field and its certainty of identity or existence determined, the feature is located in X-Y space and its positional accuracy stated in terms of some spatial standard. The position of a linear geologic feature can be determined in two ways: (1) by direct observation, where a feature's location is observed on the landscape and then identified on the topographic base, or (2) by inference, where a feature's location on the landscape is extrapolated from data that indirectly indicate its position and then identified on the base. In SCAMP geologic-map coverages, these two methods are conveyed respectively by "position observable " and "position inferred" (p. B1-B9). Whether observable or inferred, a geologic line identified in SCAMP coverages is characterized by one of the following three map-accuracy statements:

- its location meets the map-accuracy standard;
- its location may not meet the map-accuracy standard;
- its position is located well, but may not meet the map-accuracy standard.

For 1:24,000-scale SCAMP geologic coverages, geologic lines that meet the map-accuracy standard have been located within ±50 ft of their map-determined position. This means that a geologic line meeting the standard has been located by the geologist using hypsographic and planimetric elements of the topographic base map, and falls within 50 ft of its actual position as determinable from that cartographic base (as opposed to positioning through use of GPS measurements. The advent of global-positioning-satellite (GPS) technology greatly facilitates this locational procedure, but GPS techniques generally were not used to position geologic elements currently defined in SCAMP geologic-map products.).

CARTOGRAPHIC STANDARDS FOR LINE SYMBOLS IN PLOT FILES

Reynolds and others (1995) produced a comprehensive catalogue of geologic-point and geologic-line symbols that proposes technical standards for these elements. Although we have adopted many of the technical standards proposed in that catalogue, the geologic complexity in southern California required that we depart from the symbology proposed by Reynolds and others (1995): first, we created additional line symbols and second, we associated some of their symbols with different geologic features.

SCAMP's line-and-symbol usage is documented in two parts of this report:

- On p. 10-63 we present a schematic picture of each line type and associated line symbols; these symbols were generated on a Macintosh computer, and are intended simply to provide a schematic picture of each line type together with its coded definition in the data-base field L-DEF;

- An associated graphics plot illustrates each line type as assembled in the line set "geoSCAMP2.lin"; these line types are referenced in SCAMP geologic-map coverages.

In plot files generated from SCAMP data bases, the various line types are distinguished from each other through the use of line thickness, line color, and ornaments:

Line weight.—Thick lines (0.375 mm) identify faults, intermediate-weight lines (0.25 mm) identify fold axial-plane traces, thin lines (0.15 mm) identify all other line types, including geologic contacts.

Line color.— Black is the default color of almost all geologic lines. However, in SCAMP data bases, red is the default color of fold axial-plane traces. No established convention exists for the color of dikes and veins; SCAMP data bases use black, red, or majenta for dikes and veins depending on the color-shade of polygons in which the dikes or veins occur.

Line continuity.—The unbroken, broken, or dotted character of a line is used to convey information about locational accuracy. SCAMP plot files use the following conventions:

- solid, unbroken lines denote linear geologic features (geologic contacts, faults, fold axial-plane traces, etc.) that meet the map-accuracy standard;
- long-dashed lines denote observable linear geologic features that may not meet the map-accuracy standard ;
- short-dashed lines denote inferrable linear features that may not meet the map-accuracy standard;
- round dots denote linear features that are concealed by mapped or unmapped covering units.

Line ornaments.—Various kinds of line ornaments are used to convey specialized information about line types. For example, solid triangular "teeth" associated with a fault-weight line universally signify a thrust fault. On SCAMP map plots, hachures on one side of a fault-weight line signify that the fault forms a topographic scarp (hachures pointing toward the lower side of the scarp); arrows at end of or along a fold-axial trace indicate the direction that the hinge line plunges. SCAMP's use of these and other ornaments are identified in this report and on the accompanying plot of the lineset "geoSCAMP2.lin".

The catalog of geologic lines is long and repetitive because of the GIS requirement that each individual line type be coded separately—even if different lines display using the same graphic. Thus, ".fault.strike slip.right lateral.meets map accuracy standard." (L-TAG F3) would be coded differently than ".fault.reverse slip.meets map accuracy standard." (L-TAG F5), even though both would display as a line having the cartographic attributes of "solid, fault weight" (L-SYMB 50).

NOTE: Although each L-TAG in the line library on pages 12-113 is associated with a default L-SYMB, there are places on some SCAMP geologic-map plots where, for aesthetic reasons, it may not be desirable to use the default L-SYMB to display the line. The map user who discovers that L-TAG and L-SYMB depart from the default associations described in this report should assume that this discrepancy was designed deliberately.

DATA-BASE STRUCTURE

Line attributes in SCAMP geologic maps are assembled in ARC/INFO[1], but the attribute data easily can be exported into other database packages (such as Oracle, Ingres, or Access). The data-base architecture has two features:

- a small number of data-base fields, each containing short code sentences that store the attributes;
- a linguistic root-suffix codeing scheme that emphasizes relations among related attributes but allows clear separation among non-related attributes;

A typical data-base field will contain a code sentence comprising root-suffix codes parsed by dots. For example:

.FLTL.SLPND.WRLY.IDC.OBS.MNM.

[1]Use of any trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

is a code sentence for a linear geologic feature having the general attributes of ".low-angle fault.normal slip detachment fault.younger over older.identity certain.observable.may not meet map-accuracy standard.". In this example, .FLTL. is the root-suffix code for "low-angle fault". The code is built from the root .FLT. (fault) and the suffix "L" (low-angle). Next in the code string, .SLPND. is the root-suffix code for "detachment fault". The code is built from the root .SLP (slip style) and the suffixes "N" (normal-slip) and "D" (detachment). These two root-suffix codes allow attribution or selection of the following fault attributes:

- the family of all faults (.FLT root) without distinction among the many fault varieties;
- all low-angle faults (.FLTL.) whether they are normal-slip, thrust-slip, or slip unspecified;
- all faults for which slip-style information is determined (.SLP root) irrespective of slip type;
- all normal-slip faults (.SLPN), regardless if they are low-angle, variable-angle, or high-angle;
- all low-angle normal-slip faults (.FLTL.SLP) for which slip-style information is determined;
- all low-angle normal-slip faults (.FLTL.SLPN) irrespective of fault type;
- all detachment faults (.SLPND), regardless if they are detachments or master detachments;
- detachment faults (.SLPND.), excluding master detachments;

Note that data-base searches using the last two codes yield very different results even though they employ nearly identical codes: a search for .SLPND lacking the terminal parsing dot yields all detachment-type faults, whereas a search for .SLPND. having the terminal parsing dot yields only detachment faults (strict sense).

Through the use of code sentences built up from root-suffix code bits, SCAMP data bases store digital line attributes using both embedded data-base fields and relational data-base fields:

DATA-BASE FIELDS EMBEDDED IN .aat FILE		
.aat data-base field	**Explanation**	**Contents**
L-TAG	Line tag	L-TAG is the relate item that links ARC segments to their default definitions in the relate table "LINES.REL". L-TAG also is a convenient tag attached to each line type for ease in attributing and editing the coverage. L-TAG is not the line definition or the line-set number
L-SYMB	Line graphic	L-SYMB calls up the appropriate line-type from the line set "geoSCAMP2.lin"
L-AGE	Line age	L-AGE indicates the geologic age that is assigned to linear geologic features where their age has been determined
L-AGECON	Point graphic	L-AGECON indicates the confidence with which a geologic age is assigned to each line type
L-UNIQUE	Unique attributes	L-UNIQUE provides attributes that are assigned to specific linear geologic features where appropriate. Features uniquely applied to specific line segments include (for example) (1) faults having associated seismicity, (2) fault-scarp morphology, (3) named faults and folds, and (4) faults having historic ground rupture
L-NAME	Line name	L-NAME provides the name of faults and folds that have formal names (e.g., San Jacinto fault). Faults and folds having formal names will be identified in the .aat data-base field "L-UNIQUE" by the code .NFT.
L-SOURCE	Line source	L-SOURCE provides attribution for line data compiled from sources other than the U.S. Geological Survey authors of SCAMP map products (e.g., Allen, 1957)

DATA-BASE FIELDS IN RELATE TABLE "LINES.REL" The relate table "LINES.REL" stores general information about each geologic-line type. This information applies to all lines of a particular type. "LINES.REL" contains the following data-base fields:		
.aat data-base field	**Explanation**	**Contents**
L-TAG	Line tag	L-TAG is the relate item that links L-DEF in the relate table "LINES.REL" to ARC segments in the .aat file
L-DEF	Line definition	L-DEF provides the coded definition for each line-type (for example, .FLTL.SLPND.WRLY.IDC.OBS.MNM.). L-DEF is the default core definition for each line type. L-DEF is the main data-base field used for searching the coverage for lines having a particular attribute or attributes
L-EXP	Line explanation	L-EXP provides a text explanation for the codes stored in L-DEF. For example, ".fault.low angle.normal slip.detachment fault.younger over older.identity certain. observable.may not meet map-accuracy standard." is the explanation for the code sentence above in L-DEF.

The remainder of this document lists line-attribute codes used in geologic-map coverages produced by the Southern California Areal Mapping Project. Appendix A provides INFO command-line narratives that allow the data base to be searched for one or more specific attributes. Appendix B provides graphical flow diagrams that illustrate the hierarchical architecture of the line-attribute scheme.

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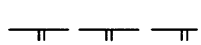
Graphic	L-TAG line label	L-SYMB (Line-set ID)	Line explanation followed by line definition [L-DEF] in parentheses
			CARTOGRAPHIC LINES (.CLN.)
————————	CL1	1	.cartographic line, map boundary. (.CLNB.)
————————	CL2	1	.cartographic line, water boundary. (.CLNW.)
			CONTACTS (.CON.)
			.generic contact. (.CONG.)
————————	C1	1	.generic contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONG.DIS.IDC.OBS.MEE.)
—— —— ——	C2	2	.generic contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONG.DIS.IDC.OBS.MNM.)
— — — — — -	C3	3	.generic contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONG.DIS.IDC.INF.MNM.)
.....	C4	4	.generic contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONG.DIS.IDC.INFM.MNM.)
.....	C5	4	.generic contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONG.DIS.IDC.INFU.MNM.)
—?— —?— — '	C6	5	.generic contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONG.DIS.IDQ.INF.MNM.)
..... ?..... ?.....	C7	6	.generic contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONG.DIS.IDQ.INFM.MNM.)
..... ?..... ?.....	C8	6	.generic contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONG.DIS.INFU.MNM.)
ıııııııııııııııııııııı	C9	7	.generic contact.gradational.identity certain.observable.location meets map accuracy standard. (.CONG.GRD.IDC.OBS.MEE.)
ıııı ıııı ıııı ıı	C10	8	.generic contact.gradational.identity certain.observable.location may not meet map accuracy standard. (.CONG.GRD.IDC.OBS.MNM.)

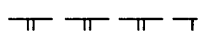
ıı ıı ıı ıı ıı	C11	9	.generic contact.gradational.identity certain.inferred.location may not meet map accuracy standard. (.CONG.GRD.IDC.INF.MNM.)
.....	C12	4	.generic contact.gradational.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONG.GRD.IDC.INFM.MNM.)
.....	C13	4	.generic contact.gradational.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONG.GRD.IDC.INFU.MNM.)
ıı ıı ?ıı ıı ıı	C14	10	.generic contact.gradational.identity questionable.inferred.location may not meet map accuracy standard. (.CONG.GRD.IDQ.INF.MNM.)
.....?.....?.....	C15	6	.generic contact.gradational.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONG.GRD.IDQ.INFM.MNM.)
.....?.....?.....	C16	6	.generic contact.gradational.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONG.GRD.IDQ.INFU.MNM.)

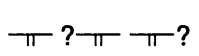
.landslide contact. (.CONL.)

————	C17	1	.landslide contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONL.DIS.IDC.OBS.MEE.)
— — —	C18	2	.landslide contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONL.DIS.IDC.OBS.MNM.)
— — — — — -	C19	3	.landslide contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONL.DIS.IDC.INF.MNM.)
.....	C20	4	.landslide contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONL.DIS.IDC.INFM.MNM.)
.....	C21	4	.landslide contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONL.DIS.IDC.INFU.MNM.)
—?— —?— —	C22	5	.landslide contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONL.DIS.IDQ.INF.MNM.)
.....?.....?.....	C23	6	.landslide contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONL.DIS.IDQ.INFM.MNM.)
.....?.....?.....	C24	6	.landslide contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONL.DIS.INFU.MNM.)

 C25 11 .landslide contact.crown scarp.identity certain.observable.location meets map accuracy standard. (.CONL.CRW.IDC.OBS.MEE.)

 C26 12 .landslide contact.crown scarp.identity certain.observable.location may not meet map accuracy standard. (.CONL.CRW.IDC.OBS.MNM.)

 C27 13 .landslide contact.crown scarp.identity certain.inferred.location may not meet map accuracy standard. (.CONL.CRW.IDC.INF.MNM.)

 C28N 14 .landslide contact.crown scarp.identity questionable.inferred.location may not meet map accuracy standard. (.CONL.CRW.IDQ.MNM.)

.sedimentary contact. (.CONS.)

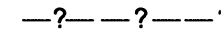
 C29 1 .sedimentary contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONS.DIS.IDC.OBS.MEE.)

 C30 2 .sedimentary contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONS.DIS.IDC.OBS.MNM.)

 C31 3 .sedimentary contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONS.DIS.IDC.INF.MNM.)

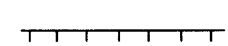
 C32 4 .sedimentary contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONS.DIS.IDC.INFM.MNM.)

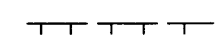
 C33 4 .sedimentary contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONS.DIS.IDC.INFU.MNM.)

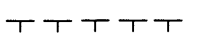
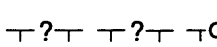
 C34 5 .sedimentary contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONS.DIS.IDQ.INF.MNM.)

 C35 6 .sedimentary contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONS.DIS.IDQ.INFM.MNM.)

 C36 6 .sedimentary contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONS.DIS.INFU.MNM.)

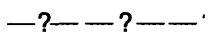
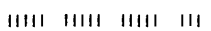
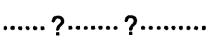
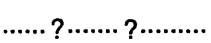
 C37 15 .sedimentary contact.discrete.separates terraced alluvial units.identity certain.observable.location meets map accuracy standard. (.CONST.DIS.IDC.OBS.MEE.)

 C38 16 .sedimentary contact.discrete.separates terraced alluvial units.identity certain.observable.location may not meet map accuracy standard. (.CONS.CONST.IDC.OBS.MNM.)

	C39	17	.sedimentary contact.discrete.separates terraced alluvial units.identity certain.inferred.location may not meet map accuracy standard. (.CONS.CONST.IDC.INF.MNM.)
	C40N	18	.sedimentary contact.discrete.separates terraced alluvial units.identity questionable.inferred.location may not meet map accuracy standard. (.CONS.CONST.IDQ.INF.MNM.)
	C41	7	.sedimentary contact.gradational.identity certain.observable.location meets map accuracy standard. (.CONS.GRD.IDC.OBS.MEE.)
	C42	8	.sedimentary contact.gradational.identity certain.observable.location may not meet map accuracy standard. (.CONS.GRD.IDC.OBS.MNM.)
	C43	9	.sedimentary contact.gradational.identity certain.inferred.location may not meet map accuracy standard. (.CONS.GRD.IDC.INF.MNM.)
	C44	4	.sedimentary contact.gradational.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONS.GRD.IDC.INFM.MNM.)
	C45	4	.sedimentary contact.gradational.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONS.GRD.IDC.INFU.MNM.)
	C46	10	.sedimentary contact.gradational.identity questionable.inferred.location may not meet map accuracy standard. (.CONS.GRD.IDQ.INF.MNM.)
	C47	6	.sedimentary contact.gradational.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONS.GRD.IDQ.INFM.MNM.)
	C48	6	.sedimentary contact.gradational.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONS.GRD.IDQ.INFU.MNM.)

.igneous contact. (.CONI.)

	C49	1	.igneous contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONI.DIS.IDC.OBS.MEE.)
	C50	2	.igneous contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONI.DIS.IDC.OBS.MNM.)
	C51	3	.igneous contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONI.DIS.IDC.INF.MNM.)
	C52	4	.igneous contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONI.DIS.IDC.INFM.MNM.)

	C53	4	.igneous contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONI.DIS.IDC.INFU.MNM.)
	C54	5	.igneous contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONI.DIS.IDQ.INF.MNM.)
	C55	6	.igneous contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONI.DIS.IDQ.INFM.MNM.)
	C56	6	.igneous contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONI.DIS.INFU.MNM.)
	C57	7	.igneous contact.gradational.identity certain.observable.location meets map accuracy standard. (.CONI.GRD.IDC.OBS.MEE.)
	C58	8	.igneous contact.gradational.identity certain.observable.location may not meet map accuracy standard. (.CONI.GRD.IDC.OBS.MNM.)
	C59	9	.igneous contact.gradational.identity certain.inferred.location may not meet map accuracy standard. (.CONI.GRD.IDC.INF.MNM.)
	C60	4	.igneous contact.gradational.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONI.GRD.IDC.INFM.MNM.)
	C61	4	.igneous contact.gradational.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONI.GRD.IDC.INFU.MNM.)
	C62	10	.igneous contact.gradational.identity questionable.inferred.location may not meet map accuracy standard. (.CONI.GRD.IDQ.INF.MNM.)
	C63	6	.igneous contact.gradational.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONI.GRD.IDQ.INFM.MNM.)
	C64	6	.igneous contact.gradational.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONI.GRD.IDQ.INFU.MNM.)

.metamorphic contact. (.CONM.)

	C65	1	.metamorphic contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONM.DIS.IDC.OBS.MEE.)
	C66	2	.metamorphic contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONM.DIS.IDC.OBS.MNM.)
	C67	3	.metamorphic contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONM.DIS.IDC.INF.MNM.)

.....	C68	4	.metamorphic contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONM.DIS.IDC.INFM.MNM.)
.....	C69	4	.metamorphic contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONM.DIS.IDC.INFU.MNM.)
—?— —?— —	C70	5	.metamorphic contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONM.DIS.IDQ.INF.MNM.)
..... ?..... ?.....	C71	6	.metamorphic contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONM.DIS.IDQ.INFM.MNM.)
..... ?..... ?.....	C72	6	.metamorphic contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONM.DIS.INFU.MNM.)
|||||||||||||||||||||||	C73	7	.metamorphic contact.gradational.identity certain.observable.location meets map accuracy standard. (.CONM.GRD.IDC.OBS.MEE.)
||||| ||||| ||||| |||	C74	8	.metamorphic contact.gradational.identity certain.observable.location may not meet map accuracy standard. (.CONM.GRD.IDC.OBS.MNM.)
||| ||| ||| ||| |||	C75	9	.metamorphic contact.gradational.identity certain.inferred.location may not meet map accuracy standard. (.CONM.GRD.IDC.INF.MNM.)
.....	C76	4	.metamorphic contact.gradational.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONM.GRD.IDC.INFM.MNM.)
.....	C77	4	.metamorphic contact.gradational.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONM.GRD.IDC.INFU.MNM.)
||| ||| ?||| ||| |||	C78	10	.metamorphic contact.gradational.identity questionable.inferred.location may not meet map accuracy standard. (.CONM.GRD.IDQ.INF.MNM.)
..... ?..... ?.....	C79	6	.metamorphic contact.gradational.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONM.GRD.IDQ.INFM.MNM.)
..... ?..... ?.....	C80	6	.metamorphic contact.gradational.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONM.GRD.IDQ.INFU.MNM.)

.regolith and (or) pedogenic-soil contact. (.CONR.)

————————	C81	1	.regolith or pedogenic soil contact.discrete.identity certain.observable.location meets map accuracy standard. (.CONR.DIS.IDC.OBS.MEE.)

—— —— ——	C82	2	.regolith or pedogenic soil contact.discrete.identity certain.observable.location may not meet map accuracy standard. (.CONR.DIS.IDC.OBS.MNM.)
— — — — — -	C83	3	.regolith or pedogenic soil contact.discrete.identity certain.inferred.location may not meet map accuracy standard. (.CONR.DIS.IDC.INF.MNM.)
.....	C84	4	.regolith or pedogenic soil contact.discrete.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONR.DIS.IDC.INFM.MNM.)
.....	C85	4	.regolith or pedogenic soil contact.discrete.identity certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONR.DIS.IDC.INFU.MNM.)
—?— —?——	C86	5	.regolith or pedogenic soil contact.discrete.identity questionable.inferred.location may not meet map accuracy standard. (.CONR.DIS.IDQ.INF.MNM.)
.....?.....?.....	C87	6	.regolith or pedogenic soil contact.discrete.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.CONR.DIS.IDQ.INFM.MNM.)
.....?.....?.....	C88	6	.regolith or pedogenic soil contact.discrete.identity questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.CONR.DIS.INFU.MNM.)

.contact, inferred by indirect methods. (.COND.)

— - - — - - —	C89	19	.contact inferred by indirect methods.geophysics.aeromagnetic survey.location may not meet map accuracy standard. (.COND.GPH.GPHA.MNM.)
— - - — - - —	C90	19	.contact inferred by indirect methods.geophysics.ground magnetic survey.location may not meet map accuracy standard. (.COND.GPH.GPHM.MNM.)
— - - — - - —	C91	19	.contact inferred by indirect methods.geophysics.gravity survey.location may not meet map accuracy standard. (.COND.GPH.GPHG.MNM.)
— - - — - - —	C92	19	.contact inferred by indirect methods.geophysics.radiometric survey.location may not meet map accuracy standard. (.COND.GPH.GPHR.MNM.)
— - - — - - —	C93	19	.contact inferred by indirect methods.remote sensing imagery.location may not meet map accuracy standard. (.COND.RSI.MNM.)
— □ — □ — [	C94	20	.contact inferred by indirect methods.ground water levels.location may not meet map accuracy standard. (.COND.GWL.MNM.)
— o — o — o –	C95	21	.contact inferred by indirect methods.subsurface boring data.location may not meet map accuracy standard. (.COND.SSB.MNM.)

.contact, scratch boundary. (.CONK.)

No line shows	C96	22	.contact, scratch boundary.generic. (.CONKG.)
No line shows	C97	22	.contact, scratch boundary.landslide. (.CONKL.)
No line shows	C98	22	.contact, scratch boundary.sedimentary. (.CONKS.)
No line shows	C99	22	.contact, scratch boundary.igneous. (.CONKI.)
No line shows	C100	22	.contact, scratch boundary.metamorphic. (.CONKM.)
No line shows	C101	22	.contact, scratch boundary.regolith or pedogenic soil. (.CONKR.)

.mapped marker horizon. (.MMH.)

•—•—•—•-	MH1	30	.mapped marker horizon.buried paleosol.identity certain.observable.located well but may not meet map accuracy standard. (.MMHB.IDC.OBS.LOW.)
.....	MH2	4	.mapped marker horizon.buried paleosol.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMHB.IDC.INFM.MNM.)
—••—••—••—	MH3	31	.mapped marker horizon.volcanic flow.identity certain.observable.located well but may not meet map accuracy standard. (.MMHV.IDC.OBS.LOW.)
.....	MH4	4	.mapped marker horizon.volcanic flow.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMHV.IDC.INFM.MNM.)
—v—v—v—	MH5	32	.mapped marker horizon.volcanic ash layer.identity certain.observable.located well but may not meet map accuracy standard. (.MMHA.IDC.OBS.LOW.)
.....	MH6	4	.mapped marker horizon.volcanic ash layer.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMHA.IDC.INFM.MNM.)
o—o—o—o-	MH7	33	.mapped marker horizon.gravel layer.identity certain.observable.located well but may not meet map accuracy standard. (.MMHG.IDC.OBS.LOW.)
.....	MH8	4	.mapped marker horizon.gravel layer.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMHG.IDC.INFM.MNM.)
—oo—oo—o	MH9	34	.mapped marker horizon.identity certain.observable.located well but may not meet map accuracy standard. (.MMH.IDC.OBS.LOW.)
.....	MH10	4	.mapped marker horizon.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMH.IDC.INFM.MNM.)
————	MH11	1	.mapped marker horizon.identity certain.observable.located well but may not meet map accuracy standard. (.MMH.IDC.OBS.LOW.)

MH12	4	.mapped marker horizon.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.MMH.IDC.INFM.MNM.)

.geomorphic feature. (.GEO.)

GF1	4	.geomorphic feature.eolian sand dune crest.identity certain.observable.located well but may not meet map accuracy standard. (.GEOE.IDC.OBS.LOW.)
GF2	35	.geomorphic feature.sag pond outline.identity certain.observable.located well but may not meet map accuracy standard. (.GEOP.IDC.OBS.LOW.)
GF3	36	.geomorphic feature.glacial moraine crest.identity certain.observable.located well but may not meet map accuracy standard. (.GEOG.IDC.OBS.LOW.)
GF4	37	.geomorphic feature.debris flow crest.identity certain.observable.located well but may not meet map accuracy standard. (.GEODC.IDC.OBS.LOW.)
GF5	37	.geomorphic feature.debris flow outline.identity certain.observable.located well but may not meet map accuracy standard. (.GEODO.IDC.OBS.LOW.)
GF6	37	.geomorphic feature.landslide debris train crest.identity certain.observable.located well but may not meet map accuracy standard. (.GEOLC.IDC.OBS.LOW.)
GF7	35	.geomorphic feature.topographic scarp origin unknown.identity certain.observable.located well but may not meet map accuracy standard. (.GEOTU.IDC.OBS.LOW.)
GF8	35	.geomorphic feature.landslide closed depression.identity certain.observable.located well but may not meet map accuracy standard. (.GEOLD.IDC.OBS.LOW.)
GF9	11	.geomorphic feature.ground-failure crown scarp.identity certain.observable.located well but may not meet map accuracy standard. (.GEOTG.IDC.OBS.LOW.)
GF10	38	.geomorphic feature.lakeshore strand line.identity certain.observable.located well but may not meet map accuracy standard. (.GEOS.IDC.OBS.LOW.)
GF11	39	.geomorphic feature.lakeshore strand line.identity certain.observable.located well but may not meet map accuracy standard. (.GEOS.IDC.OBS.LOW.)
GF12	40	.geomorphic feature.lakeshore strand line.identity certain.observable.located well but may not meet map accuracy standard. (.GEOS.IDC.OBS.LOW.)

FAULTS (.FLT.)

.FAULT, HIGH ANGLE (.FLTH.)

———	F1	50	.high-angle fault.slip unspecified.generic fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPUG.EXC.OBS.MEE.)
	F2	50	.high-angle fault.strike slip.right lateral fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPSR.EXC.OBS.MEE.)
	F3	50	.high-angle fault.strike slip.left lateral fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPSL.EXC.OBS.MEE.)
	F4	50	.high-angle fault.normal slip.normal fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPNN.EXC.OBS.MEE.)
	F5	50	.high-angle fault.reverse slip.reverse fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPRR.EXC.OBS.MEE.)
	F6	50	.high-angle fault.oblique slip.oblique fault.existence certain.observable.location meets map accuracy standard. (.FLTH.SLPOO.EXC.OBS.MEE.)
— — —	F7	51	.high-angle fault.slip unspecified.generic fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPUG.EXC.OBS.MNM.)
	F8	51	.high-angle fault.strike slip.right lateral fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPSR.EXC.OBS.MNM.)
	F9	51	.high-angle fault.strike slip.left lateral fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPSL.EXC.OBS.MNM.)
	F10	51	.high-angle fault.normal slip.normal fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPNN.EXC.OBS.MNM.)
	F11	51	.high-angle fault.reverse slip.reverse fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPRR.EXC.OBS.MNM.)
	F12	51	.high-angle fault.oblique slip.oblique fault.existence certain.observable.location may not meet map accuracy standard. (.FLTH.SLPOO.EXC.OBS.MNM.)
— — — — —	F13	52	.high-angle fault.slip unspecified.generic fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPUG.EXC.INF.MNM.)
	F14	52	.high-angle fault.strike slip.right lateral fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPSR.EXC.INF.MNM.)
	F15	52	.high-angle fault.strike slip.left lateral fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPSL.EXC.INF.MNM.)
	F16	52	.high-angle fault.normal slip.normal fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPNN.EXC.INF.MNM.)
	F17	52	.high-angle fault.reverse slip.reverse fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPRR.EXC.INF.MNM.)
	F18	52	.high-angle fault.oblique slip.oblique fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTH.SLPOO.EXC.INF.MNM.

••••••••••••	F19	53	.high-angle fault.slip unspecified.generic fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPUG.EXC.INFM.MNM.)
	F20	53	.high-angle fault.strike slip.right lateral fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSR.EXC.INFM.MNM.)
	F21	53	.high-angle fault.strike slip.left lateral fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSL.EXC.INFM.MNM.)
	F22	53	.high-angle fault.normal slip.normal fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPNN.EXC.INFM.MNM.)
	F23	53	.high-angle fault.reverse slip.reverse fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPR.SLPRR.EXC.INFM.MNM.)
	F24	53	.high-angle fault.oblique slip.oblique fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPO.SLPOO.EXC.INFM.MNM.)
••••••••••••	F25	53	.high-angle fault.slip unspecified.generic fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPUG.EXC.INFU.MNM.)
	F26	53	.high-angle fault.strike slip.right lateral fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSR.EXC.INFU.MNM.)
	F27	53	.high-angle fault.strike slip.left lateral fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSL.EXC.INFU.MNM.)
	F28	53	.high-angle fault.normal slip.normal fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPNN.EXC.INFU.MNM.)
	F29	53	.high-angle fault.reverse slip.reverse fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPRR.EXC.INFU.MNM.)
	F30	53	.high-angle fault.oblique slip.oblique fault.existence certain.inferred beneath unmapped covering unit. location may not meet map accuracy standard. (.FLTH.SLPOO.EXC.INFU.MNM.)
—?— —?— —	F31	54	.high-angle fault.slip unspecified.generic fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPUG.EXQ.INF.MNM.)
	F32	54	.high-angle fault.strike slip.right lateral fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPSR.EXQ.INF.MNM.)
	F33	54	.high-angle fault.strike slip.left lateral fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPSL.EXQ.INF.MNM.)
	F34	54	.high-angle fault.normal slip.normal fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPNN.EXQ.INF.MNM.)
	F35	54	.high-angle fault.reverse slip.reverse fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPRR.EXQ.INF.MNM.)

	F36	54	.high-angle fault.oblique slip.oblique fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTH.SLPOO.EXQ.INF.MNM.)
•••?••••?•••	F37	55	.high-angle fault.slip unspecified.generic fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPUG.EXQ.INFM.MNM.)
	F38	55	.high-angle fault.strike slip.right lateral fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSR.EXQ.INFM.MNM.)
	F39	55	.high-angle fault.strike slip.left lateral fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSL.EXQ.INFM.MNM.)
	F40	55	.high-angle fault.normal slip.normal fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPNN.EXQ.INFM.MNM.)
	F41	55	.high-angle fault.reverse slip.reverse fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPRR.EXQ.INFM.MNM.)
	F42	55	.high-angle fault.oblique slip.oblique fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPOO.EXQ.INFM.MNM.)
•••?••••?•••	F43	55	.high-angle fault.slip unspecified.generic fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPUG.EXQ.INFU.MNM.)
	F44	55	.high-angle fault.strike slip.right lateral fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPSR.EXQ.INFU.MNM.)
	F45	55	.high-angle fault.strike slip.left lateral fault.existence questionable.inferred beneath unmapped covering unit.may not meet map accuracy standard. (.FLTH.SLPSL.EXQ.INFU.MNM.)
	F46	55	.high-angle fault.normal slip.normal fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPNN.EXQ.INFU.MNM.)
	F47	55	.high-angle fault.reverse slip.reverse fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPRR.EXQ.INFU.MNM.)
	F48	55	.high-angle fault.oblique slip.oblique fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTH.SLPOO.EXQ.INFU.MNM.)

.FAULT.HIGH ANGLE.SCARP (.FLTH.FSC.)

┬┬┬┬┬┬┬┬┬┬┬┬	F49	56	.high-angle fault.slip unspecified.generic fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPUG.FSC.IDC.MEE.)
	F50	56	.high-angle fault.strike slip.right lateral fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPSR.FSC.IDC.MEE.)
	F51	56	.high-angle fault.strike slip.left lateral fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPSL.FSC.IDC.MEE.)

	F52	56	.high-angle fault.normal slip.normal fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPNN.FSC.IDC.MEE.)
	F53	56	.high-angle fault.reverse slip.reverse fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPRR.FSC.IDC.MEE.)
	F54	56	.high-angle fault.oblique slip.oblique fault.scarp.identity certain.location meets map accuracy standard. (.FLTH.SLPOO.FSC.IDC.MEE.)
	F55	57	.high-angle fault.slip unspecified.generic fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPUG.FSC.IDC.MNM.)
	F56	57	.high-angle fault.strike slip.right lateral fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPSR.FSC.IDC.MNM.)
	F57	57	.high-angle fault.strike slip.left lateral fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPSL.FSC.IDC.MNM.)
	F58	57	.high-angle fault.normal slip.normal fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPNN.FSC.IDC.MNM.)
	F59	57	.high-angle fault.reverse slip.reverse fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPRR.FSC.IDC.MNM.)
	F60	57	.high-angle fault.oblique slip.oblique fault.scarp.identity certain.location may not meet map accuracy standard. (.FLTH.SLPOO.FSC.IDC.MNM.)
	F61N	58	.high-angle fault.slip unspecified.generic fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPUG.FSC.IDQ.PRO.MNM.)
	F62N	58	.high-angle fault.slip unspecified.generic fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPUG.FSC.IDQ.POS.MNM.)
	F63N	58	.high-angle fault.strike slip.right lateral fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPSR.FSC.IDQ.PRO.MNM.)
	F64N	58	.high-angle fault.strike slip.right lateral fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPSR.FSC.IDQ.POS.MNM.)
	F65N	58	.high-angle fault.strike slip.left lateral fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPSL.FSC.IDQ.PRO.MNM.)
	F66N	58	.high-angle fault.strike slip.left lateral fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPSL.FSC.IDQ.POS.MNM.)
	F67N	58	.high-angle fault.normal slip.normal fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPNN.FSC.IDQ.PRO.MNM.)

	F68N	58	.high-angle fault.normal slip.normal fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPNN.FSC.IDQ.POS.MNM.)
	F69N	58	.high-angle fault.reverse slip.reverse fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPRR.FSC.IDQ.PRO.MNM.)
	F70N	58	.high-angle fault.reverse slip.reverse fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPRR.FSC.IDQ.POS.MNM.)
	F71N	58	.high-angle fault.oblique slip.oblique fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPOO.FSC.IDQ.PRO.MNM.)
	F72N	58	.high-angle fault.oblique slip.oblique fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPOO.FSC.IDQ.POS.MNM.)

.FAULT.LOW ANGLE.SLIP UNSPECIFIED.FAULT WALL RELATIONS UNSPECIFIED.LOW ANGLE FAULT. (.FLTL.SLPUL.WRLU.)

———	F73	50	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPUL.WRLU.EXC.OBS.MEE.)
— — —	F74	51	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXC.OBS.MNM.)
— — — — —	F75	52	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXC.INF.MNM.)
• • • • • • • • • • • •	F76	53	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXC.INFM.MNM.)
• • • • • • • • • • • •	F77	53	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXC.INFU.MNM.)
—?— —?— —	F78	54	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXQ.INF.MNM.)
• • • ?• • • • ?• • •	F79	55	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence questionable.Inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXQ.INFM.MNM.)

●●●?●●●●?●●●	F80	55	.fault.low angle.slip unspecified.fault wall relations unspecified.low angle fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLU.EXQ.INFU.MNM.)

.FAULT.LOW ANGLE.SLIP UNSPECIFIED.FAULT WALL RELATIONS SPECIFIED.LOW ANGLE FAULT. (.FLTL.SLPUL.WRLU.)

.fault.low angle.slip unspecified.low angle fault.younger over older. (.FLTL.SLPUL.WRLY.)

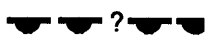
	F81	59	.fault.low angle.slip unspecified.younger over older.low angle fault.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPUL.WRLY.EXC.OBS.MEE.)
	F82	60	.fault.low angle.slip unspecified.younger over older.low angle fault.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXC.OBS.MNM.)
	F83	61	.fault.low angle.slip unspecified.younger over older.low angle fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXC.INF.MNM.)
	F84	62	.fault.low angle.slip unspecified.younger over older.low angle fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXC.INFM.MNM.)
	F85	62	.fault.low angle.slip unspecified.younger over older.low angle fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXC.INFU.MNM.)
	F86N	63	.fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INF.MNM.)
	F87N	64	.fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INFM.MNM.)
	F88N	64	.fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INFU.MNM.)

.fault.low angle.slip unspecified.low angle fault.older over younger. (.FLTL.SLPUL.WRLO.)

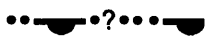
	F89	65	.fault.low angle.slip unspecified.older over younger.low angle fault.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPUL.WRLO.EXC.OBS.MEE.)
	F90	66	.fault.low angle.slip unspecified.older over younger.low angle fault.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXC.OBS.MNM.)
	F91	67	.fault.low angle.slip unspecified.older over younger.low angle fault.existence certain.nferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXC.INF.MNM.)

F92 68 .fault.low angle.slip unspecified.older over younger.low angle fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXC.INFM.MNM.)

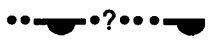
F93 68 .fault.low angle.slip unspecified.older over younger.low angle fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXC.INFU.MNM.)



F94N 69 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INF.MNM.)



F95N 70 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INFM.MNM.)

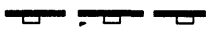


F96N 70 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INFU.MNM.)

.FAULT.LOW ANGLE.NORMAL SLIP. (.FLTL.SLPN.)

.fault.low angle.normal slip.low angle normal fault.younger over older. (.FLTL.SLPNL.WRLY.)

F97 71 .fault.low angle.normal slip.younger over older.low angle normal fault.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.OBS.MEE.)



F98 72 .fault.low angle.normal slip.younger over older.low angle normal fault.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.EC.OBS.MNM.)

F99 73 .fault.low angle.normal slip.younger over older.low angle normal fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INF.MNM.)

F100 74 .fault.low angle.normal slip.younger over older.low angle normal fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INFM.MNM.)

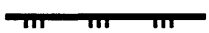
F101 74 .fault.low angle.normal slip.younger over older.low angle normal fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INFU.MNM.)

F102N 75 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INF.MNM.)

F103N 76 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFM.MNM.)

F104N 76 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFU.MNM.)

.fault.low angle.normal slip.detachment related.younger over older. (.FLTL.SLPN.WRLY.)

	F105	77	.fault.low angle.normal slip.younger over older.master detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPNDM.WRLY.EXC.OBS.MEE.)
	F106	78	.fault.low angle.normal slip.younger over older.master detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXC.OBS.MNM.)
	F107	79	.fault.low angle.normal slip.younger over older.master detachment.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXC.INF.MNM.)
	F108	80	.fault.low angle.normal slip.younger over older.master detachment.existence certain.nferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXC.INFM.MNM.)
	F109	80	.fault.low angle.normal slip.younger over older.master detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXC.INFU.MNM.)
	F110N	81	.fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXQ.INF.MNM.)
	F111N	82	.fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXQ.INFM.MNM.)
	F112N	82	.fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLY.EXQ.INFU.MNM.)
	F113	83	.fault.low angle.normal slip.younger over older.detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPND.WRLY.EXC.OBS.MNM.)
	F114	84	.fault.low angle.normal slip.younger over older.detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXC.OBS.MNM.)
	F115	85	.fault.low angle.normal slip.younger over older.detachment.existence certain.inferred.located well but rarley meets map accuracy standard. (.FLTL.SLPND.WRLY.EXC.INF.MNM.)
	F116	86	.fault.low angle.normal slip.younger over older.detachment.existence certain.inferred beneath mapped covering unit.located well but rarley meets map accuracy standard. (.FLTL.SLPND.WRLY.EXC.INFM.MNM.)
	F117	86	.fault.low angle.normal slip.younger over older.detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXC.INFU.MNM.)

 F118N 87 .fault.low angle.normal slip.younger over older.detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INF.MNM.)

 F119N 88 .fault.low angle.normal slip.younger over older.detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INFM.MNM.)

 F120N 88 .fault.low angle.normal slip.younger over older.detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INFU.MNM.)

 F121 89 .fault.low angle.normal slip.younger over older.listric into detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.OBS.MEE.)

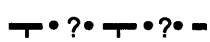
 F122 90 .fault.low angle.normal slip.younger over older.listric into detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.OBS.MNM.)

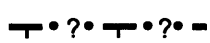
 F123 91 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INF.MNM.)

 F124 92 .fault.low angle.normal slip.younger over older.listric into detachment.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INFM.MNM.)

 F125 92 .fault.low angle.normal slip.younger over older.listric into detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXC.INFU.MNM.)

 F126N 93 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INF.MNM.)

 F127N 94 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFM.MNM.)

 F128N 94 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFU.MNM.)

.fault.low angle.normal slip.detachment related.older over younger. (.FLTL.SLPN.WRLO.)

 F129 77 .fault.low angle.normal slip.older over younger.master detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPNDM.WRLO.EXC.OBS.MEE.)

 F130 78 .fault.low angle.normal slip.older over younger.master detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXC.OBS.MNM.)

 F131 79 .fault.low angle.normal slip.older over younger.master detachment.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXC.INF.MNM.)

 F132 80 .fault.low angle.normal slip.older over younger.master detachment.existence certain.nferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXC.INFM.MNM.)

 F133 80 .fault.low angle.normal slip.older over younger.master detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXC.INFU.MNM.)

 F134N 81 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INF.MNM.)

 F135N 82 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFM.MNM.)

 F136N 82 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFU.MNM.)

 F137 83 .fault.low angle.normal slip.older over younger.detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPND.WRLO.EXC.OBS.MNM.)

 F138 84 .fault.low angle.normal slip.older over younger.detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXC.OBS.MNM.)

 F139 85 .fault.low angle.normal slip.older over younger.detachment.existence certain.inferred.located well but rarley meets map accuracy standard. (.FLTL.SLPND.WRLO.EXC.INF.MNM.)

 F140 86 .fault.low angle.normal slip.older over younger.detachment.existence certain.inferred beneath mapped covering unit.located well but rarley meets map accuracy standard. (.FLTL.SLPND.WRLO.EXC.INFM.MNM.)

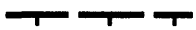
 F141 86 .fault.low angle.normal slip.older over younger.detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXC.INFU.MNM.)

 F142N 87 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INF.MNM.)

 F143N 88 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INFM.MNM.)

 F144N 88 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INFU.MNM.)


F145 89 .fault.low angle.normal slip.older over younger.listric into detachment.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPNL.WRLO.EXC.OBS.MEE.)


F146 90 .fault.low angle.normal slip.older over younger.listric into detachment.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXC.OBS.MNM.)


F147 91 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXC.INF.MNM.)


F148 92 .fault.low angle.normal slip.older over younger.listric into detachment.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXC.INFM.MNM.)


F149 92 .fault.low angle.normal slip.older over younger.listric into detachment.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXC.INFU.MNM.)

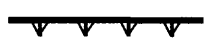

F150N 93 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INF.MNM.)


F151N 94 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INFM.MNM.)


F152N 94 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INFU.MNM.)

.FAULT.LOW ANGLE.THRUST SLIP (.FLTL.SLPT.)

.fault.low angle.thrust slip.decollement.younger over older. (.FLTL.SLPTD.WRLY.)

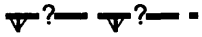

F153 95 .fault.low angle.thrust slip.younger over older.decollement.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPTD.WRLY.EXC.OBS.MEE.)

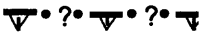

F154 96 .fault.low angle.thrust slip.younger over older.decollement.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXC.OBS.MNM.)


F155 97 .fault.low angle.thrust slip.younger over older.decollement.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXC.INF.MNM.)

 F156 98 .fault.low angle.thrust slip.younger over older.decollement.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXC.INFM.MNM.)

 F157 98 .fault.low angle.thrust slip.younger over older.decollement.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXC.INFU.MNM.)

 F158N 99 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INF.MNM.)

 F159N 100 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INFM.MNM.)

 F160N 100 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INFU.MNM.)

.fault.low angle.thrust slip.thrust.younger over older. (.FLT.SLPTT.WRLY.)

 F161 101 .fault.low angle.thrust slip.younger over older.thrust.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPTT.WRLY.EXC.OBS.MEE.)

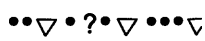
 F162 102 .fault.low angle.thrust slip.younger over older.thrust.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXC.OBS.MNM.)

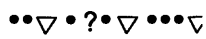
 F163 103 .fault.low angle.thrust slip.younger over older.thrust.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXC.INF.MNM.)

 F164 104 .fault.low angle.thrust slip.younger over older.thrust.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXC.INFM.MNM.)

 F165 104 .fault.low angle.thrust slip.younger over older.thrust.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXC.INFU.MNM.)

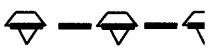
 F166N 105 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INF.MNM.)

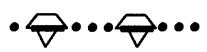
 F167N 106 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INFM.MNM.)

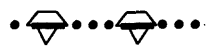
 F168N 106 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INFU.MNM.)

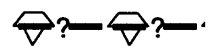
 F169 107 .fault.low angle.thrust slip. younger over older.thrust.overturned.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPTTO.WRLY.EXC.OBS.MEE.)

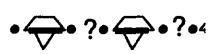
 F170 108 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXC.OBS.MNM.)

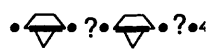
 F171 109 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXC.INF.MNM.)

 F172 110 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXC.INFM.MNM.)

 F173 110 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXC.INFU.MNM.)

 F174N 111 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INF.MNM.)

 F175N 112 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INFM.MNM.)

 F176N 112 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INFU.MNM.)

.fault.low angle.thrust slip.thrust.older over younger. (.FLTL.SLPTT.WRLO.)

 F177 113 .fault.low angle.thrust slip.older over younger.thrust.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPTT.WRLO.EXC.OBS.MEE.)

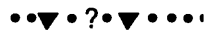
 F178 114 .fault.low angle.thrust slip.older over younger.thrust.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXC.OBS.MNM.)

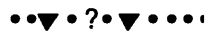
 F179 115 .fault.low angle.thrust slip.older over younger.thrust.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXC.INF.MNM.)

 F180 116 .fault.low angle.thrust slip.older over younger.thrust.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXC.INFM.MNM.)

 F181 116 .fault.low angle.thrust slip.older over younger.thrust.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXC.INFU.MNM.)

 F182N 117 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INF.MNM.)

 F183N 118 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INFM.MNM.)

 F184N 118 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INFU.MNM.)

 F185 119 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence certain.observable.location meets map accuracy standard. (.FLTL.SLPTTO.WRLO.EXC.OBS.MEE.)

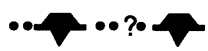
 F186 120 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence certain.observable.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXC.OBS.MNM.)

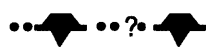
 F187 121 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence certain.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXC.INF.MNM.)

 F188 122 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.IEC.NFM.MNM.)

 F189N 122 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXC.INFU.MNM.)

 F190N 123 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INF.MNM.)

 F191N 124 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INFM.MNM.)

 F192N 124 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.overturned.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INFU.MNM.)

.FAULT.LOW ANGLE.THRUST SLIP.THRUST.OLDER OVER YOUNGER.SCARP. (.FLTL.SLPTT.WRLO.FSC.)

F193 125 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity certain.location meets map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDC.MEE.)

F194 126 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity certain.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDC.MNM.)

F195N 127 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDQ.PRO.MNM.)

F196N 127 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDQ.POS.MNM.)

.FAULT.VARIABLE ANGLE.THRUST SLIP.FAULTED METAMORPHIC CONTACT. (.FLTV.SLPT.FMC.)

F197 50 .fault.variable angle.thrust slip.faulted metamorphic contact.existence certain.observable.location meets map accuracy standard. (.FLTV.SLPT.FMC.EXC.OBS.MEE.)

F198 51 .fault.variable angle.thrust slip.faulted metamorphic contact.existence certain.observable.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.EXC.OBS.MNM.)

F199 52 .fault.variable angle.thrust slip.faulted metamorphic contact.existence certain.inferred.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.EXC.OBS.MNM.)

F200 53 .fault.variable angle.thrust slip.faulted metamorphic contact.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.INFM.MNM.)

F201 53 .fault.variable angle.thrust slip.faulted metamorphic contact.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.INFU.MNM.)

F202 54 .fault.variable angle.thrust slip.faulted metamorphic contact.existence questionable.inferred.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.EXQ.INF.MNM.)

F203 55 .fault.variable angle.thrust slip.faulted metamorphic contact.existence questionable.Inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.EXQ.INFM.MNM.)

F204 56 .fault.variable angle.thrust slip.faulted metamorphic contact.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTV.SLPT.FMC.EXQ.INFU.MNM.)

.FAULT.VARIABLE ANGLE.ROTATIONAL NORMAL SLIP.SLIDE FAULT RELATED TO MOUNTAIN FRONT COLLAPSE. (.FLTV.SLPNRS.)

	F205	128	.fault.variable angle.rotational normal slip.slide fault.existence certain.observable.location meets map accuracy standard. (.FLTV.SLPNRS.EXC.OBS.MEE.)
	F206	129	.fault.variable angle.rotational normal slip.slide fault.existence certain.observable.location may not meet map accuracy standard. (.FLTV.SLPNRS.EXC.OBS.MNM.)
	F207	130	.fault.variable angle.rotational normal slip.slide fault.existence certain.inferred.location may not meet map accuracy standard. (.FLTV.SLPNRS.EXC.INF.MNM.)
	F208	131	.fault.variable angle.rotational normal slip.slide fault.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTV.SLPNRS.EXC.INFM.MNM.)
	F209	131	.fault.variable angle.rotational normal slip.slide fault.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLT.SLPNRS.EXC.INFU.MNM.)
	F210N	132	.fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTV.SLPNRS.INF.EXQ.MNM.)
	F211N	133	.fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLT.SLPNRS.EXQ.INFM.MNM.)
	F212N	133	.fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLT.SLPNRS.EXQ.INFU.MNM.)

.FAULT.INFERRED BY INDIRECT METHODS. (.FLTD.)

	F213	134	.fault.inferred by indirect methods.geophysics.aeromagnetic survey.location may not meet map accuracy standard. (.FLTD.GPH.GPHA.MNM.)
	F214	134	.fault.inferred by indirect methods.geophysics.ground magnetic survey.location may not meet map accuracy standard. (.FLTD.GPH.GPHM.MNM.)
	F215	134	.fault.inferred by indirect methods.geophysics.gravity survey.location may not meet map accuracy standard. (.FLTD.GPH.GPHG.MNM.)
	F216	134	.fault.inferred by indirect methods.geophysics.radiometric survey.location may not meet map accuracy standard. (.FLTD.GPH.GPHR.MNM.)
	F217	134	.fault.inferred by indirect methods.remote-sensing imagery.location may not meet map accuracy standard. (.FLTD.RSI.MNM.)
	F218	135	.fault.inferred by indirect methods.ground water levels.location may not meet map accuracy standard. (.FLTD.GWL.MNM.)

—o—o—o—	F219	136	.fault.inferred by indirect methods.subsurface boring data.location may not meet map accuracy standard. (.FLTD.SSB.MNM.)

.FAULT.INTRUDED OUT. (.FLTI.)

—•—•—•—	F220	137	.fault.intruded, preintrusive existence inferred. (.FLTI.)

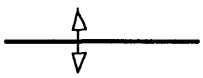
.FAULT ZONE BOUNDARY.SCRATCH. (.FZBS.)

No line shows	FZ1	150	.fault zone boundary.scratch.generic. (.FZBSG.)
No line shows	FZ2	150	.fault zone boundary.scratch.boundary of fault breccia zone. (.FZBSB.)
No line shows	FZ3	150	.fault zone boundary.scratch.boundary of cataclastic zone. (.FZBSC.)
No line shows	FZ4	150	.fault zone boundary.scratch.boundary of mylonite zone. (.FZBSM.)

FOLD AXIAL TRACE LINES (.FAX.)

.Fold axial trace.fold form not determined. (.FAXN.)

.fold axial trace.fold form not determined.antiform. (.FAXNA.)(NOTE: arrow ornaments are point data,not embedded in line code)



FA1 170 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXNA.UPR.SHZ.EXC.OBS.MEE.)

FA2 171 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXC.OBS.MNM.)

FA3 172 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXC.INF.MNM.)

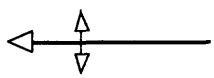
FA4 173 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXC.INFM.MNM.)

FA5 173 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXC.INFU.MNM.)

FA6 174 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXQ.INF.MNM.)

FA7 175 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXQ.INFM.MNM.)

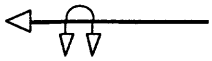
FA8 175 .fold axial trace.fold form not determined.antiform.upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.SHZ.EXQ.INFU.MNM.)



FA9 170 .fold axial trace.fold form not determined.antiform.upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXNA.UPR.PLG.EXC.OBS.MEE.)

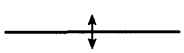
FA10 171 .fold axial trace.fold form not determined.antiform.upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXC.OBS.MNM.)

— — — — — - FA11	172	.fold axial trace.fold form not determined.antiform.upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXC.INF.MNM.)
..... FA12	173	.fold axial trace.fold form not determined.antiform.upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXC.INFM.MNM.)
..... FA13	173	.fold axial trace.fold form not determined.antiform.upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXC.INFU.MNM.)
—?— —?— — FA14	174	.fold axial trace.fold form not determined.antiform.upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXQ.INF.MNM.)
.....?.....?..... FA15	175	.fold axial trace.fold form not determined.antiform.upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXQ.INFM.MNM.)
.....?.....?..... FA16	175	.fold axial trace.fold form not determined.antiform.upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.UPR.PLG.EXQ.INFU.MNM.)
FA17	170	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXNA.OVT.SHZ.EXC.OBS.MEE.)
— — — FA18	171	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXC.OBS.MNM.)
— — — — — - FA19	172	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence certain.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXC.INF.MNM.)
..... FA20	173	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXC.INFM.MNM.)
..... FA21	173	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXC.INFU.MNM.)
—?— —?— — FA22	174	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXQ.INF.MNM.)

..... ?..... ?.....	FA23	175	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXQ.INFM.MNM.)
..... ?..... ?.....	FA24	175	.fold axial trace.fold form not determined.antiform.overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.SHZ.EXQ.INFU.MNM.)
	FA25	170	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXNA.OVT.PLG.EXC.OBS.MEE.)
— — —	FA26	171	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXC.OBS.MNM.)
— — — — — -	FA27	172	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXC.INF.MNM.)
.....	FA28	173	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXC.INFM.MNM.)
.....	FA29	173	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXC.INFU.MNM.)
—?— —?— —	FA30	174	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXQ.INF.MNM.)
..... ?..... ?.....	FA31	175	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXQ.INFM.MNM.)
..... ?..... ?.....	FA32	175	.fold axial trace.fold form not determined.antiform.overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNA.OVT.PLG.EXQ.INFU.MNM.)

.Fold axial trace.fold form determined. (.FAXD.)

.fold axial trace.fold form determined.anticline. (.FAXDA.) (NOTE: arrow ornaments are point data, not embedded in line code)

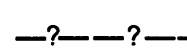
	FA33	170	.fold axial trace.fold form determined.anticline.upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXDA.UPR.SHZ.EXC.OBS.MEE.)

FA34 171 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXC.OBS.MNM.)

FA35 172 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXC.INF.MNM.)

FA36 173 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXC.INFM.MNM.)

FA37 173 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXC.INFU.MNM.)


FA38 174 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXQ.INF.MNM.)


FA39 175 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXQ.INFM.MNM.)


FA40 175 .fold axial trace.fold form determined.anticline.upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.SHZ.EXQ.INFU.MNM.)

FA41 170 .fold axial trace.fold form determined.anticline.upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXDA.UPR.PLG.EXC.OBS.MEE.)

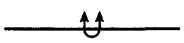
FA42 171 .fold axial trace.fold form determined.anticline.upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXC.OBS.MNM.)

FA43 172 .fold axial trace.fold form determined.anticline.upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXC.INF.MNM.)

FA44 173 .fold axial trace.fold form determined.anticline.upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXC.INFM.MNM.)

FA45 173 .fold axial trace.fold form determined.anticline.upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXC.INFU.MNM.)

FA46 174 .fold axial trace.fold form determined.anticline.upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXQ.INF.MNM.)

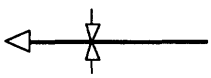
·····?·····?····· FA47	175	.fold axial trace.fold form determined.anticline.upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXQ.INFM.MNM.)
·····?·····?····· FA48	175	.fold axial trace.fold form determined.anticline.upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.UPR.PLG.EXQ.INFU.MNM.)
 FA49	170	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXDA.OVT.SHZ.EXC.OBS.MEE.)
FA50	171	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXC.OBS.MNM.)
FA51	172	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXC.INF.MNM.)
..... FA52	173	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXC.INFM.MNM.)
..... FA53	173	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXC.INFU.MNM.)
—?——?——' FA54	174	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXQ.INF.MNM.)
·····?·····?····· FA55	175	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXQ.INFM.MNM.)
·····?·····?····· FA56	175	.fold axial trace.fold form determined.anticline.overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.SHZ.EXQ.INFU.MNM.)
FA57	170	.fold axial trace.fold form determined.anticline.overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXDA.OVT.PLG.EXC.OBS.MEE.)
FA58	171	.fold axial trace.fold form determined.anticline.overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXC.OBS.MNM.)

— — — — — - FA59	172	.fold axial trace.fold form determined.anticline.overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXC.INF.MNM.)
..... FA60	173	.fold axial trace.fold form determined.anticline.overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXC.INFM.MNM.)
..... FA61	173	.fold axial trace.fold form determined.anticline.overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXC.INFU.MNM.)
—?— —?— — FA62	174	.fold axial trace.fold form determined.anticline.overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXQ.INF.MNM.)
.....?.....?..... FA63	175	.fold axial trace.fold form determined.anticline.overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard.
.....?.....?..... FA64	175	.fold axial trace.fold form determined.anticline.overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDA.OVT.PLG.EXQ.INFU.MNM.)

.Fold axial trace.fold form not determined. (.FAXN.)

.fold axial trace.fold form not determined.synform. (.FAXNS.) (NOTE: arrow ornaments are point data, not embedded in line code)

FA65	170	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXNS.UPR.SHZ.EXC.OBS.MEE.)
— — — FA66	171	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXC.OBS.MNM.)
— — — — — - FA67	172	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXC.INF.MNM.)
..... FA68	173	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXC.INFM.MNM.)
..... FA69	173	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXC.INFU.MNM.)

—?— —?— — '	FA70	174	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXQ.INF.MNM.)
..... ?..... ?.....	FA71	175	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXQ.INFM.MNM.)
..... ?..... ?.....	FA72	175	.fold axial trace.fold form not determined.synform.upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.SHZ.EXQ.INFU.MNM.)
	FA73	170	.fold axial trace.fold form not determined.synform.upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXNS.UPR.PLG.EXC.OBS.MEE.)
—— —— —	FA74	171	.fold axial trace.fold form not determined.synform.upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXC.OBS.MNM.)
— — — — — -	FA75	172	.fold axial trace.fold form not determined.synform.upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXC.INF.MNM.)
.....	FA76	173	.fold axial trace.fold form not determined.synform.upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXC.INFM.MNM.)
.....	FA77	173	.fold axial trace.fold form not determined.synform.upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXC.INFU.MNM.)
—?— —?— — '	FA78	174	.fold axial trace.fold form not determined.synform.upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXQ.INF.MNM.)
..... ?..... ?.....	FA79	175	.fold axial trace.fold form not determined.synform.upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXQ.INFM.MNM.)
..... ?..... ?.....	FA80	175	.fold axial trace.fold form not determined.synform.upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.UPR.PLG.EXQ.INFU.MNM.)
	FA81	170	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXNS.OVT.SHZ.EXC.OBS.MEE.)

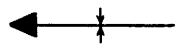
—— —— —— FA82	171	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXC.OBS.MNM.)
— — — — — - FA83	172	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXC.INF.MNM.)
..... FA84	173	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXC.INFM.MNM.)
..... FA85	173	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXC.INFU.MNM.)
—?——?—— FA86	174	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXQ.INF.MNM.)
.....?.....?..... FA87	175	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXQ.INFM.MNM.)
.....?.....?..... FA88	175	.fold axial trace.fold form not determined.synform.overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.SHZ.EXQ.INFU.MNM.)
 FA89	170	.fold axial trace.fold form not determined.synform.overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXNS.OVT.PLG.EXC.OBS.MEE.)
—— —— —— FA90	171	.fold axial trace.fold form not determined.synform.overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXC.OBS.MNM.)
— — — — — - FA91	172	.fold axial trace.fold form not determined.synform.overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXC.INF.MNM.)
..... FA92	173	.fold axial trace.fold form not determined.synform.overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXC.INFM.MNM.)

.....	FA93	173	.fold axial trace.fold form not determined.synform.overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXC.INFU.MNM.)
—?— —?——	FA94	174	.fold axial trace.fold form not determined.synform.overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXQ.INF.MNM.)
·····?·····?·····	FA95	175	.fold axial trace.fold form not determined.synform.overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXQ.INFM.MNM.)
·····?·····?·····	FA96	175	.fold axial trace.fold form not determined.synform.overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXNS.OVT.PLG.EXQ.INFU.MNM.)

.Fold axial trace.fold form determined. (.FAXD.)

.fold axial trace.fold form determined.syncline. (.FAXDS.) (NOTE: arrow ornaments are point data, not embedded in line code)

	FA97	170	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXDS.UPR.SHZ.EXC.OBS.MEE.)
—— —— ——	FA98	171	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXC.OBS.MNM.)
— — — — — -	FA99	172	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXC.INF.MNM.)
.....	FA100	173	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXC.INFM.MNM.)
.....	FA101	173	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXC.INFU.MNM.)
—?— —?——	FA102	174	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXQ.INF.MNM.)
·····?·····?·····	FA103	175	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXQ.INFM.MNM.)
·····?·····?·····	FA104	175	.fold axial trace.fold form determined.syncline.upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.SHZ.EXQ.INFU.MNM.)


FA105 170 .fold axial trace.fold form determined.syncline.upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXDS.UPR.PLG.EXC.OBS.MEE.)

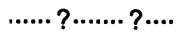
FA106 171 .fold axial trace.fold form determined.syncline.upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXC.OBS.MNM.)

FA107 172 .fold axial trace.fold form determined.syncline.upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXC.INF.MNM.)

FA108 173 .fold axial trace.fold form determined.syncline.upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXC.INFM.MNM.)

FA109 173 .fold axial trace.fold form determined.syncline.upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXC.INFU.MNM.)


FA110 174 .fold axial trace.fold form determined.syncline.upright.plunging.existence questionable.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXQ.INF.MNM.)


FA111 175 .fold axial trace.fold form determined.syncline.upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXQ.INFM.MNM.)


FA112 175 .fold axial trace.fold form determined.syncline.upright.plunging.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.UPR.PLG.EXQ.INFU.MNM.)


FA113 170 .fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXDS.OVT.SHZ.EXC.OBS.MEE.)

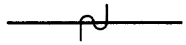
FA114 171 .fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXC.OBS.MNM.)

FA115 172 .fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXC.INF.MNM.)

FA116 173 .fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXC.INFM.MNM.)

..... FA117	173	.fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXC.INFU.MNM.)
—?— —?— — FA118	174	.fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXQ.INF.MNM.)
..... ?..... ?..... FA119	175	.fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXQ.INFM.MNM.)
..... ?..... ?..... FA120	175	.fold axial trace.fold form determined.syncline.overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.SHZ.EXQ.INFU.MNM.)
FA121	170	.fold axial trace.fold form determined.syncline.overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXDS.OVT.PLG.EXC.OBS.MEE.)
— — — FA122	171	.fold axial trace.fold form determined.syncline.overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXC.OBS.MNM.)
— — — — — - FA123	172	.fold axial trace.fold form determined.syncline.overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXC.INF.MNM.)
..... FA124	173	.fold axial trace.fold form determined.syncline.overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXC.INFM.MNM.)
..... FA125	173	.fold axial trace.fold form determined.syncline.overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXC.INFU.MNM.)
—?— —?— — FA126	174	.fold axial trace.fold form determined.syncline.overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXQ.INF.MNM.)
..... ?..... ?..... FA127	175	.fold axial trace.fold form determined.syncline.overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXQ.INFM.MNM.)
..... ?..... ?..... FA128	175	.fold axial trace.fold form determined.syncline.overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXDS.OVT.PLG.EXQ.INFU.MNM.)

.Fold axial trace.refolded fold.fold form not determined. (.FAXRN.) (NOTE: arrow ornaments are point data, not embedded in line code)

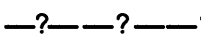
 FA129 170 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRN.UPR.SHZ.EXC.OBS.MNM.)

 FA130 171 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXC.OBS.MNM.)

 FA131 172 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXC.INF.MNM.)

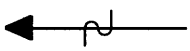
 FA132 173 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXC.INFM.MNM.)

 FA133 173 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXC.INFU.MNM.)

 FA134 174 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXQ.INF.MNM.)

 FA135 175 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXQ.INFM.MNM.)

 FA136 175 .fold axial trace.refolded fold.fold form not determined.upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.SHZ.EXQ.INFU.MNM.)

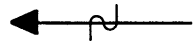
 FA137 170 .fold axial trace.refolded fold.fold form not determined.upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRN.UPR.PLG.EXC.OBS.MEE.)

 FA138 171 .fold axial trace.refolded fold.fold form not determined.upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.OBS.MNM.)

 FA139 172 .fold axial trace.refolded fold.fold form not determined.upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INF.MNM.)

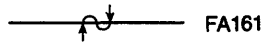
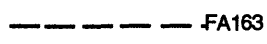
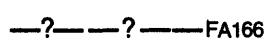
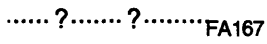
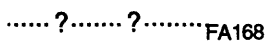
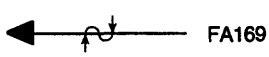
 FA140 173 .fold axial trace.refolded fold.fold form not determined.upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INFM.MNM.)

FA141	173	.fold axial trace.refolded fold.fold form not determined.upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INFU.MNM.)
FA142	174	.fold axial trace.refolded fold.fold form not determined.upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXQ.INF.MNM.)
FA143	175	.fold axial trace.refolded fold.fold form not determined.upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXQ.INFM.MNM.)
FA144	175	.fold axial trace.refolded fold.fold form not determined.upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.P.EQL.INFU.MNM.)
FA145	170	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRN.OVT.SHZ.EXC.OBS.MNM.)
FA146	171	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXC.OBS.MNM.)
FA147	172	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXC.INF.MNM.)
FA148	173	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXC.INFM.MNM.)
FA149	173	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXC.INFU.MNM.)
FA150	174	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXQ.INF.MNM.)
FA151	175	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXQ.INFM.MNM.)
FA152	175	.fold axial trace.refolded fold.fold form not determined.overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.OVT.SHZ.EXQ.INFU.MNM.)

	FA153	170	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRN.OVT.PLG.EXC.OBS.MEE.)
	FA154	171	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.OBS.MNM.)
	FA155	172	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INF.MNM.)
	FA156	173	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INFM.MNM.)
	FA157	173	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXC.INFU.MNM.)
	FA158	174	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXQ.INF.MNM.)
	FA159	175	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXQ.INFM.MNM.)
	FA160	175	.fold axial trace.refolded fold.fold form not determined.overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.UPR.PLG.EXQ.INFU.MNM.)

.Fold axial trace.refolded fold. fold form determined. (.FAXRD.)

.Refolded fold. fold form determined.antiformal syncline (inverted syncline). (.FAXRDA.)(NOTE: arrow ornaments are point data, not embedded in line code)

 FA161	170	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRDA.UPR.SHZ.EXC.OBS.MEE.)
 FA162	171	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXC.OBS.MNM.)
 FA163	172	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXC.INF.MNM.)
 FA164	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXC.INFM.MNM.)
 FA165	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXC.INFU.MNM.)
 FA166	174	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXQ.INF.MNM.)
 FA167	175	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXQ.INFM.MNM.)
 FA168	175	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.SHZ.EXQ.INFU.MNM.)
 FA169	170	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRDA.UPR.PLG.EXC.OBS.MEE.)
 FA170	171	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXC.OBS.MNM.)

FA171	172	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXC.INF.MNM.)
FA172	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXC.INFM.MNM.)
FA173	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXC.INFU.MNM.)
FA174	174	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXQ.INF.MNM.)
FA175	175	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXQ.INFM.MNM.)
FA176	175	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.UPR.PLG.EXQ.INFU.MNM.)
FA177	170	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRDA.OVT.SHZ.EXC.OBS.MEE.)
FA178	171	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXC.OBS.MNM.)
FA179	172	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXC.INF.MNM.)
FA180	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXC.INFM.MNM.)
FA181	173	.fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXC.INFU.MNM.)

—?— —?— — FA182 174 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXQ.INF.MNM.)

····· ?····· ?····· FA183 175 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXQ.INFM.MNM.)

····· ?····· ?····· FA184 175 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.SHZ.EXQ.INFU.MNM.)

FA185 170 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRDA.OVT.PLG.EXC.OBS.MEE.)

— — — FA186 171 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRDA.OVT.PLG.EXC.OBS.MNM.)

— — — — — FA187 172 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDA.OVT.PLG.EXC.INF.MNM.)

..... FA188 173 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.PLG.EXC.INFM.MNM.)

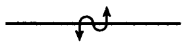
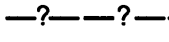
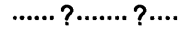
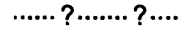
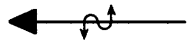
..... FA189 173 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDA.OVT.PLG.EXC.INFU.MNM.)

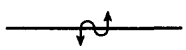
—?— —?— — FA190 174 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRN.FFD.FAXRDA.OVT.PLG.EXQ.INF.MNM.)

····· ?····· ?····· FA191 175 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRN.FFD.FAXRDA.OVT.PLG.EXQ.INFM.MNM.)

····· ?····· ?····· FA192 175 .fold axial trace.refolded fold.fold form determined.antiformal syncline (inverted syncline).overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRN.FFD.FAXRDA.OVT.PLG.EXQ.INFU.MNM.)

.Refolded fold.fold form determined.synformal anticline (inverted anticline). (.FAXRDS.)

 FA193	170	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRDS.UPR.SHZ.EXC.OBS.MEE.)
FA194	171	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXC.OBS.MNM.)
FA195	172	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXC.INF.MNM.)
FA196	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXC.INFM.MNM.)
FA197	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXC.INFU.MNM.)
 FA198	174	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXQ.INF.MNM.)
 FA199	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXQ.INFM.MNM.)
 FA200	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.SHZ.EXQ.INFU.MNM.)
 FA201	170	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRDS.UPR.PLG.EXC.OBS.MEE.)
FA202	171	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXC.OBS.MNM.)
FA203	172	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXC.INF.MNM.)

..... FA204	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXC.INFM.MNM.)
..... FA205	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXC.INFU.MNM.)
—?— —?— — FA206	174	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXQ.INF.MNM.)
..... ?..... ?..... FA207	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXQ.INFM.MNM.)
..... ?..... ?..... FA208	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).upright.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.UPR.PLG.EXQ.INFU.MNM.)
 FA209	170	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence certain.observable.location meets map accuracy standard. (.FAXRDS.OVT.SHZ.EXC.OBS.MEE.)
— — — FA210	171	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence certain.observable.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXC.OBS.MNM.)
— — — — — FA211	172	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXC.INF.MNM.)
..... FA212	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXC.INFM.MNM.)
..... FA213	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXC.INFU.MNM.)
—?— —?— — FA214	174	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXQ.INF.MNM.)

·····?·····?·····FA215	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXQ.INFM.MNM.)
·····?·····?·····FA216	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.subhorizontal.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.SHZ.EXQ.INFU.MNM.)
FA217	170	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.plunging.existence certain.observable.location meets map accuracy standard. (.FAXRDS.OVT.PLG.EXC.OBS.MEE.)
——— ——— ———FA218	171	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overtumed.plunging.existence certain.observable.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXC.OBS.MNM.)
— — — — — —FA219	172	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.plunging.existence certain.inferred.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXC.INF.MNM.)
.....FA220	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overtumed.plunging.existence certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXC.INFM.MNM.)
.....FA221	173	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overtumed.plunging.existence certain.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXC.INFU.MNM.)
—?——?———FA222	174	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.plunging.existence questionable.inferred.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXQ.INF.MNM.)
·····?·····?·····FA223	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.plunging.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXQ.INFM.MNM.)
·····?·····?·····FA224	175	.fold axial trace.refolded fold.fold form determined.synformal anticline (inverted anticline).overturned.plunging.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FAXRDS.OVT.PLG.EXQ.INFU.MNM.)

DIKE LINES (.DIK.)

DK1	1	.dike.identity certain.observable.located well, but location may not meet map accuracy standard. (.DIK.IDC.OBS.LOW.)
DK2	4	.dike.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDC.INFM.MNM.)
DK3	5	.dike.identity questionable.inferred.location may not meet map accuracy standard. (.DIK.IDQ.INF.MNM.)
DK4	6	.dike.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDQ.INFM.MNM.)
DK5	200	.dike.identity certain.observable.located well, but location may not meet map accuracy standard. (.DIK.IDC.OBS.LOW.)
DK6	4	.dike.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDC.INFM.MNM.)
DK7	5	.dike.identity questionable.inferred.location may not meet map accuracy standard. (.DIK.IDQ.INF.MNM.)
DK8	6	.dike.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDQ.INFM.MNM.)
DK9	201	.dike.identity certain.observable.location may not meet map accuracy standard. (.DIK.IDC.OBS.MNM.)
DK10	4	.dike.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDC.INFM.MNM.)
DK11	5	.dike.identity questionable.inferred.location may not meet map accuracy standard. (.DIK.IDQ.INF.MNM.)
DK12	6	.dike.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.DIK.IDQ.INFM.MNM.)

VEIN LINES (.VEN.)

VEN1	1	.vein.identity certain.observable.located well, but location may not meet map accuracy standard. (.VEN.IDC.OBS.LOW.)
VEN2	4	.vein.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDC.INFM.MNM.)
VEN3	5	.vein.identity questionable.inferred.location may not meet map accuracy standard. (.VEN.IDQ.INF.MNM.)

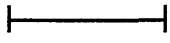
·····?·····?·····VEN4	6	.vein.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDQ.INFM.MNM.)
—●—●—●—●—●—VEN5	202	.vein.identity certain.observable.located well, but location may not meet map accuracy standard. (.VEN.IDC.OBS.LOW.)
····· VEN6	4	.vein.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDC.INFM.MNM.)
—?— —?— — VEN7	5	.vein.identity questionable.inferred.location may not meet map accuracy standard. (.VEN.IDQ.INF.MNM.)
·····?·····?·····VEN8	6	.vein.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDQ.INFM.MNM.)
—o—o—o—o—o—o—VEN9	203	.vein.identity certain.observable.location may not meet map accuracy standard. (.VEN.IDC.OBS.MNM.)
····· VEN10	4	.vein.identity certain.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDC.INFM.MNM.)
—o—?—o— o—?—o— o—VEN11	204	.vein.identity questionable.inferred.location may not meet map accuracy standard. (.VEN.IDQ.INF.MNM.)
·····?·····?·····VEN12	6	.vein.identity questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.VEN.IDQ.INFM.MNM.)

LINEAMENT LINES (.LIN.)

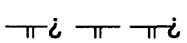
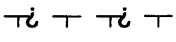
LT1	210	.lineament.fault line escarpment.identity certain.observable.located well but may not meet map accuracy standard. (.LIN.LINF.IDC.OBS.LOW.)
— ▪ — ▪ — LT2	211	.lineament.aligned topographic saddles.identity certain.observable.located well but may not meet map accuracy standard. (.LIN.LINA.IDC.OBS.LOW.)
— ▪▪ — ▪▪ — LT3	212	.lineament.base of fold controlled slope.identity certain.observable.located well but may not meet map accuracy standard. (.LIN.LINB.IDC.OBS.LOW.)
— o — o — o – LT4	213	.lineament.eroded edge of resistant bed.identity certain.observable.located well but may not meet map accuracy standard. (.LIN.LINE.IDC.OBS.LOW.)
— o — o — o – LT5	214	.lineament.origin unknown.identity certain.observable.located well but may not meet map accuracy standard. (.LIN.LINU.IDC.OBS.LOW.)

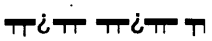
MISCELLANEOUS LINES (.MSC.)

ML1	220	.line of gravity transect.located well but may not meet map accuracy standard. (.MSC.TRNG.LOW.)

	ML2	220	.line of magnetic transect.located well but may not meet map accuracy standard. (.MSC.TRNM.LOW.)
	ML3	220	.line of radiometric transect.located well but may not meet map accuracy standard. (.MSC.TRNR.LOW.)
	ML4	220	.line of seismic transect.located well but may not meet map accuracy standard. (.MSC.TRNS.LOW.)
	ML5	220	.line of measured stratigraphic section.located well but may not meet map accuracy standard. (.MSC.MSS.LOW.)
	ML6	221	.line of geologic cross section.located well but may not meet map accuracy standard. (.MSC.GCS.LOW.)
	ML7	221	.polygon boundary.geologic type and origin unknown.located well but may not meet map accuracy standard. (.MSC.POLU.LOW.)

REVERSED VERSIONS OF QUERIED LINES WITH ORNAMENTS

	C28R	300	.landslide contact.crown scarp.identity questionable.location may not meet map accuracy standard. (.CON.CONL.CRW.IDQ.INF.MNM.)
	C40R	301	.sedimentary contact.separates terraced alluvial units.identity questionable.inferred.location may not meet map accuracy standard. (.CON.CONS.CONST.IDQ.INF.MNM.)
	F61R	302	.high-angle fault.slip unspecified.generic fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPUG.FSC.IDQ.PRO.MNM.)
	F62R	302	.high-angle fault.slip unspecified.generic fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPUG.FSC.IDQ.POS.MNM.)
	F63R	302	.high-angle fault.strike slip.right lateral fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPSR.FSC.IDQ.PRO.MNM.)
	F64R	302	.high-angle fault.strike slip.right lateral fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPSR.FSC.IDQ.POS.MNM.)
	F65R	302	.high-angle fault.strike slip.left lateral fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPSL.FSC.IDQ.PRO.MNM.)

 F66R 302 .high-angle fault.strike slip.left lateral fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPSL.FSC.IDQ.POS.MNM.)

 F67R 302 .high-angle fault.normal slip.normal fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPNN.FSC.IDQ.PRO.MNM.)

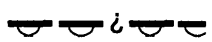
 F68R 302 .high-angle fault.normal slip.nornal fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPNN.FSC.IDQ.POS.MNM.)

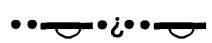
 F69R 302 .high-angle fault.reverse slip.reverse fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPRR.FSC.IDQ.PRO.MNM.)

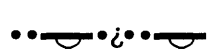
 F70R 302 .high-angle fault.reverse slip.reverse fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPRR.FSC.IDQ.POS.MNM.)

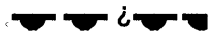
 F71R 302 .high-angle fault.oblique slip.oblique fault.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTH.SLPOO.FSC.IDQ.PRO.MNM.)

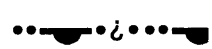
 F72R 302 .high-angle fault.oblique slip.oblique fault.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTH.SLPOO.FSC.IDQ.POS.MNM.)

 F86R 303 .fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INF.MNM.)

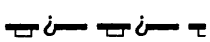
 F87R 304 .fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INFM.MNM.)

 F88R 304 .fault.low angle.slip unspecified.younger over older.low angle fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLY.EXQ.INFU.MNM.)

 F94R 305 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INF.MNM.)

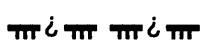
 F95R 306 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INFM.MNM.)

 F96R 306 .fault.low angle.slip unspecified.older over younger.low angle fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPUL.WRLO.EXQ.INFU.MNM.)

 F102R 307 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INF.MNM.)

 F103R 308 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFM.MNM.)

 F104R 308 .fault.low angle.normal slip.younger over older.low angle normal fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFU.MNM.)

 F109R 309 .fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INF.MNM.)

 F110R 310 .fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFM.MNM.)

 F111R 310 .fault.low angle.normal slip.younger over older.master detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFU.MNM.)

 F118R 311 .fault.low angle.normal slip.younger over older.detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INF.MNM.)

 F119R 312 .fault.low angle.normal slip.younger over older.detachment.existence inferred.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INFM.MNM.)

 F120R 312 .fault.low angle.normal slip.younger over older.detachment.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLY.EXQ.INFU.MNM.)

 F126R 313 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INF.MNM.)

 F127R 314 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFM.MNM.)

 F128R 314 .fault.low angle.normal slip.younger over older.listric into detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLY.EXQ.INFU.MNM.)

 F134N 81 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INF.MNM.)

 F135N 82 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFM.MNM.)

 F136N 82 .fault.low angle.normal slip.older over younger.master detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNDM.WRLO.EXQ.INFU.MNM.)

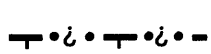
 F142N 87 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INF.MNM.)

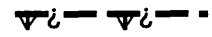
 F143N 88 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INFM.MNM.)

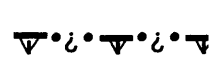
 F144N 88 .fault.low angle.normal slip.older over younger.detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPND.WRLO.EXQ.INFU.MNM.)

 F150N 93 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INF.MNM.)

 F151N 94 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INFM.MNM.)

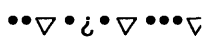
 F152N 94 .fault.low angle.normal slip.older over younger.listric into detachment.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPNL.WRLO.EXQ.INFU.MNM.)

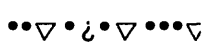
 F158R 315 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INF.MNM.)

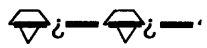
 F159R 316 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INFM.MNM.)

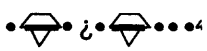
 F160R 316 .fault.low angle.thrust slip.younger over older.decollement.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTD.WRLY.EXQ.INFU.MNM.)

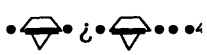
 F166R 317 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INF.MNM.)

 F167R 318 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INFM.MNM.)

 F168R 318 .fault.low angle.thrust slip.younger over older.thrust.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLY.EXQ.INFU.MNM.)

 F174R 319 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INF.MNM.)

 F175R 320 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INFM.MNM.)

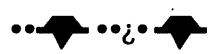
 F176R 320 .fault.low angle.thrust slip.younger over older.thrust.overturned.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLY.EXQ.INFU.MNM.)

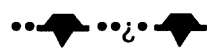
 F182R 321 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INF.MNM.)

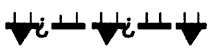
 F183R 322 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INFM.MNM.)

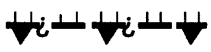
 F184R 322 .fault.low angle.thrust slip.older over younger.thrust.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.EXQ.INFU.MNM.)

 F190R 323 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence questionable.inferred.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INF.MNM.)

 F191R 324 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INFM.MNM.)

 F192R 324 .fault.low angle.thrust slip.older over younger.thrust.overturned.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLTL.SLPTTO.WRLO.EXQ.INFU.MNM.)

 F195R 325 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity questionable.probable.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDQ.PRO.MNM.)

 F196R 325 .fault.low angle.thrust slip.older over younger.thrust.scarp.identity questionable.possible.location may not meet map accuracy standard. (.FLTL.SLPTT.WRLO.FSC.IDQ.POS.MNM.)

 F210R 326 fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred.location may not meet map accuracy standard. (.FLTV.SLPNRS.EXQ.MNM.)

 F211R 327 fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred beneath mapped covering unit.location may not meet map accuracy standard. (.FLT.SLPNRS.EXQ.INFM.MNM.)(

 F212R 327 fault.variable angle.rotational normal slip.slide fault.existence questionable.inferred beneath unmapped covering unit.location may not meet map accuracy standard. (.FLT.SLPNRS.EXQ.INFU.MNM.)

GEOLOGIC-LINE ATTRIBUTES (alphabetic listing by major topic)
Version 1.0

U.S. Geological Survey, Southern California Areal Mapping Project

MAJOR LINE CATEGORIES

contact=.CON.
contact, scratch boundary=.CONK.
cartographic line=.CLN.
dike=.DIK.
fault=.FLT.
fold axial trace=.FAX.
geomorphic feature=.GEO.
lineament=.LIN.
mapped marker horizon=.MMH.
miscellaneous line=.MSC.
vein=.VEN.

GEOLOGIC CONTACTS (.CON.)

Contact type

- igneous=.CONI.
  - igneous, deformed.CONID.
  - igneous, intrusive.CONII.
  - igneous, mineralized.CONIM.
  - igneous, pyroclastic.CONIP.
  - igneous, extrusive.CONIX.
- generic=.CONG.
- landslide=.CONL.
- metamorphic=.CONM.
- sedimentary=.CONS.
  - channelized=.CONSC.
  - channelized=.CONSH.
  - unconformable=.CONSU.
    - angular unconformity=.CONSUA.
    - nonconformity=.CONSUN.
    - paraconformity=.CONSUP.
- terraced alluvial=.CONST.
- scratch contact=.CONK.
  - scratch contact, generic=.CONKG.
  - scratch contact, igneous=.CONKI.
  - scratch contact, landslide=.CONKL.
  - scratch contact, metamorphic=.CONKM.
  - scratch contact, regolith or pedogenic soil=.CONKR.
  - scratch contact, sedimentary=.CONKS.

Contact character

- discrete=.DIS.
- gradational=.GRD.

Certainty of identity

- identity certain=.IDC.
- identity questionable=.IDQ.

Locatability

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.COND.
geophysical methods=.GPH.
aeromagnetic survey=.GPHA.
gravity survey=.GPHG.
ground magnetic survey=.GPHM.
radiometric survey=.GPHR.
remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

Data source (secondary codes)

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

DIKES (.DIK.)

Dike type

andesite=.DIKN.
aplite=.DIKA.
basalt=.DIKB.
dacite=.DIKD.
granite=.DIKG.
pegmatite=.DIKP.
quartz=.DIKQ.

Dike features

mineralized=.MIN.
metallic mineralization=.MINM.
carbonate mineralization=.MINMC.
copper carbonate=.MINMCC.
lead carbonate=.MINMCL.
zinc carbonate=.MINMCZ.
oxide mineralization=.MINMO.
iron oxide=.MINMOI.
native-metal mineralization=.MINMN.
copper=.MINMNC.
gold=.MINMNG.
silver=.MINMNS.
sulphide mineralization=.MINMS.
iron sulphide=.MINMSI.
lead sulphide=.MINMSL.
mercury sulphide=.MINMSM.
unspecified mineralization=.MINMU.

nonmetallic mineralization=.MINN.
carbonate mineralization=.MINNC.

alteration=.MINA.
albitization=.MINAA.
chloritic alteration=.MINAC.
dolomitization=.MINAD.
greisenization (fluorine metasomatism)=.MINAG.
kaolinization (clay alteration)=.MINAK.
saussuritic alteration (epidotization)=.MINAU.
sericitic alteration=.MINAR.
silicification=.MINAS.
chalcedony=.MINASC.
jasperoid=.MINASJ.
opal=.MINASO.
quartz=.MINASQ.
toumalinization (boron metasomatism)=.MINAT.=
zeolitic alteration=.MINAZ.
laumontite=.MINAZL.

staining=.MINS.
greenish staining=.MINSG.
pinkish staining=.MINSP.
reddish staining=.MINSR.
yellowish staining=.MINSY.
yellowish-orange staining=.MINSYO.
white staining=.MINSW.

Certainty of identity

identity certain=.IDC.
identity questionable=.IDQ.

Locatability

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
geophysical methods=.GPH.
aeromagnetic survey=.GPHA.
gravity survey=.GPHG.
ground magnetic survey=.GPHM.
radiometric survey=.GPHR.
remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

FAULTS (.FLT.)

Certainty of existence

Faults
existence certain=.EXC.
existence questionable=.EXQ.
probable=.PRO.
possible=.POS.
Fault scarps
identity certain=.IDC.
identity questionable=.IDQ.
probable=.PRO.
possible=.POS.

Fault features (modified from Sharp, 1972)=.FFE.

Bench=.FFEB.
Depression=.FFED.
Drainage channel, beheaded=.FFECB.
Drainage channel, beheaded, with alluvial ramp=.FFECBA.
Drainage channel, deflected=.FFECD.
Drainage channel, offset=.FFECO.
Faceted ridge=.FFEF.
Fault-movement indicators=.FFEM.
Grooves=.FFEMG.
Slickenside striations=.FFEMS.
Linear gully=.FFEL.
Notch=.FFEN.
Ponded alluviium=.FFEP.
Scarp quality=.FFEQ.
Scarp quality, fresh=.FFEQF.
Scarp quality, slightly degraded=.FFEQS.
Scarp quality, moderately degraded=.FFEQM.
Scarp quality, highly degraded=.FFEQH.
Seismicity associated with fault trace=.FFES.
Shutter-ridge scarp=.FFER.
Spring(s)=.FFEG.
Swale=.FFEW.
Trench=.FFET.
Trough or linear canyon=.FFEK.
Vegetation lineament=.FFEV.

Fault geometry

high angle=.FLTH.
low angle=.FLTL.
variable angle=.FLTV.

Fault slip style

normal slip=.SLPN.
oblique slip=.SLPO.
reverse dip-slip=.SLPR.
rotational normal-slip=.SLPNR.
slip unspecified=.SLPU.
strike slip=.SLPS.
thrust slip=.SLPT.

Fault type

decollement fault=.SLPTD.
detachment fault=.SLPND.
detachment fault, master=.SLPNDM.
generic fault=.SLPUG.
low-angle fault=.SLPRR.
normal fault=.SLPNN.
normal fault, listric-into-detachment=.SLPNL.
normal fault, low-angle=.SLPNL.
oblique fault=.SLPOO.
reverse fault=.SLPRR.
scarp, fault=.FSC.
slide fault=.SLPNRS.
strike-slip fault, left-lateral =.SLPSL.
strike-slip fault, right-lateral=.SLPSR.
thrust fault=.SLPTT.
thrust fault, overturned=.SLPTTO.

Hanging-wall relations (for low-angle faults)

older over younger=.WRLO.
wall-relations unspecified=.WRLU.
younger over older=.WRLY.

Locatability

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
geophysical methods=.GPH.
aeromagnetic survey=.GPHA.
gravity survey=.GPHG.
ground magnetic survey=.GPHM.
radiometric survey=.GPHR.
remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

Mineralized fault zone

mineralized=.MIN.
metallic mineralization=.MINM.
carbonate mineralization=.MINMC.
copper carbonate=.MINMCC.
lead carbonate=.MINMCL.
zinc carbonate=.MINMCZ.
oxide mineralization=.MINMO.
iron oxide=.MINMOI.
native-metal mineralization=.MINMN.
copper=.MINMNC.
gold=.MINMNG.
silver=.MINMNS.

sulphide mineralization=.MINMS.
iron sulphide=.MINMSI.
lead sulphide=.MINMSL.
mercury sulphide=.MINMSM.
unspecified mineralization=.MINMU.

nonmetallic mineralization=.MINN.
carbonate mineralization=.MINNC.

alteration=.MINA.
albitization=.MINAA.
chloritic alteration=.MINAC.
dolomitization=.MINAD.
greisenization (fluorine metasomatism)=.MINAG.
kaolinization (clay alteration)=.MINAK.
saussuritic alteration (epidotization)=.MINAU.
sericitic alteration=.MINAR.
silicification=.MINAS.
chalcedony=.MINASC.
jasperoid=.MINASJ.
opal=.MINASO.
quartz=.MINASQ.
toumalinization (boron metasomatism)=.MINAT.=
zeolitic alteration=.MINAZ.
laumontite=.MINAZL.

staining=.MINS.
greenish staining=.MINSG.
pinkish staining=.MINSP.
reddish staining=.MINSR.
yellowish staining=.MINSY.
yellowish-orange staining=.MINSYO.
white staining=.MINSW.

Movement history=.MOV.

fault having multiple movement styles=.MOVM.
latest movement has multiple styles=.MOVMM.
indicated slip style is latest movement=.MOVML.
indicated slip style is dominant movement=.MOVMD.
fault has been reactivated=.MOVMR.
reactivated slip style same as earlier styles=.MOVMRS.
reactivated slip style different than earlier styles=.MOVMRD.
historic rupture has occurred=.MOVH.
recurrence estimate determined=.MOVR.
slip rate determined=.MOVS.

Named faults:

named fault=.NFT.

Data source (secondary codes)

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

FOLD AXES (.FAX.)

Fold form

Unfolded fold

Fold-form not determined=.FAXN.
antiform=.FAXNA.
synform=.FAXNS.
Fold-form determined=.FAXD.
anticline=.FAXDA.
syncline=.FAXDS.

Refolded fold=.RFO.

Fold-form not determined=.FAXRN.

Fold-form determined=.FAXRD.
antiformal syncline (inverted syncline)=.FAXRDA.
synclinal anticline (inverted anticline)=.FAXRDS.

Fold-axis geometry

upright=.UPR.
overturned=.OVT.

Fold-hinge geometry

plunging=.PLG.
subhorizontal=.SHZ.

Certainty of fold existence

existence certain=.EXC.
existence questionable=.EXQ.

Locatability of fold axis

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
geophysical methods=.GPH.
aeromagnetic survey=.GPHA.
gravity survey=.GPHG.
ground magnetic survey=.GPHM.
radiometric survey=.GPHR.
remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

Fold-axis data source (secondary codes)

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

Fold-axis history

fold generation
first generation=-F1-
second generation=-F2-
third generation=-F3-

Named fold=.NFA.

GEOLOGIC AGE CLASSIFICATION (chronologic listing, youngest to oldest)

Age unknown=.AGU.

Cenozoic=.CZO.

Quaternary=.CZOQ.

Holocene=.CZOQH.
Modern=.CZOQHD.
Holocene, late=.CZOQHL.
Holocene, middle=.CZOQHM.
Holocene, early=.CZOQHE.
Pleistocene=.CZOQP.
Pleistocene, late=.CZOQPL.
Pleistocene, middle=.CZOQPM.
Pleistocene, early=.CZOQPE.

Tertiary=.TER. Neogene=-NGN-

Pliocene=.CZOTP.
Pliocene, late=.CZOTPL.
Pliocene, early=.CZOTPE.
Miocene=.CZOTM.
Miocene, late=.CZOTML.
Miocene, middle=.CZOTMM.
Miocene, early=.CZOTME.
Oligocene=.CZOTO.
Oligocene, late=.CZOTOL.
Oligocene, early=.CZOTOE.
Eocene=.CZOTE.
Eocene, late=.CZOTEL.
Eocene, middle=.CZOTEM. Paleogene=-PGN-
Eocene, early=.CZOTEE.
Paleocene=.CZOTA.
Paleocene, late=.CZOTAL.
Paleocene, early=.CZOTAE.

Mesozoic=.MZO.

Cretaceous=.MZOK.
Cretaceous, late=.MZOKL.
Cretaceous, early=.MZOKE.
Jurassic=.MZOJ.
Jurassic, late=.MZOJL.
Jurassic, early=.MZOJE.
Triassic=.MZOT.
Triassic, late=.MZOTL.

Triassic, early=.MZOTE.

Paleozoic=.PZO.

Permian=.PZOR.
Permian, late=.PZORL.
Permian, early=.PZORE.
Pennsylvanian=.PZOP.
Pennsylvanian, late=.PZOPL.
Pennsylvanian, early=.PZOPE.
Mississippian=.PZOM.
Mississippian, late=.PZOML.
Mississippian, early=.MISE
Devonian=.PZOD.
Devonian, late=.PZODL.
Devonian, early=.PZODE.
Silurian=.PZOS.
Silurian, late=.PZOSL.
Silurian, early=.PZOSE.
Ordovician=.PZOO.
Ordovician, late=.PZOOL.
Ordovician, early=.PZOOE.
Cambrian=.PZOC.
Cambrian, late=.PZOCL.
Cambrian, early=.PZOCE.

Late Paleozoic=-PZOL-

Middle Paleozoic=-PZOI-

Early Paleozoic=-PZOE-

Precambrian=.PRC.

Archean=.PRCA.
Archean, late=.PRCAL.
Archean, middle=.PRCAM.
Archean, early=.PRCAE.
Proterozoic=.PRCP.
Proterozoic, late=.PRCPL.
Proterozoic, middle=.PRCPM.
Proterozoic, early=.PRCPE.

GEOLOGIC AGE CLASSIFICATION (alphabetic listing)

age unknown=.AGU.
Archean=.PRCA.
Archean, early=.PRCAE.
Archean, late=.PRCAL.
Archean, middle=.PRCAM.
Cambrian=.PZOC.
Cambrian, early=.PZOCE.
Cambrian, late=.PZOCL.
Cenozoic=.CZO.
Cretaceous=.MZOK.
Cretaceous, early=.MZOKE.
Cretaceous, late=.MZOKL.
Devonian=.PZOD.
Devonian, early=.PZODE.
Devonian, late=.PZODL.
Eocene=.CZOTE.
Eocene, early=.CZOTEE.
Eocene, middle=.CZOTEM.
Eocene, late=.CZOTEL.

Holocene=.CZOQH.
Holocene, early=.CZOQHE.
Holocene, late=.CZOQHL.
Holocene, middle=.CZOQHM.
Jurassic=.MZOJ.
Jurassic, early=.MZOJE.
Jurassic, late=.MZOJL.
Mesozoic=.MZO.
Miocene=.CZOTM.
Miocene, early=.CZOTME.
Miocene, late=.CZOTML.
Miocene, middle=.CZOTMM.
Mississippian=.PZOM.
Mississippian, early=.PZOME.
Mississippian, late=.PZOML.
Modern=.CZOQHD.
Neogene=-NGN-
Oligocene=.CZOTO.
Oligocene, early=.CZOTOE.
Oligocene, late=.CZOTOL.
Ordovician=.PZOO.
Ordovician, early=.PZOOE.
Ordovician, late=.PZOOL.
Paleocene=.CZOTA.
Paleocene, early=.CZOTAE.
Paleocene, late=.CZOTAL.
Paleogene=-PGN-
Paleozoic=.PZO.
Paleozoic, early=-PZOE-
Paleozoic, late=-PZOL-
Paleozoic, middle=-PZOI-
Pennsylvanian=.PZOP.
Pennsylvanian, early=.PZOPE.
Pennsylvanian, late=.PZOPL.
Permian=.PZOR.
Permian, early=.PZORE.
Permian, late=.PZORL.
Pleistocene=.CZOQP.
Pleistocene, early=.CZOQPE.
Pleistocene, late=.CZOQPL.
Pleistocene, middle=.CZOQPM.
Pliocene=.CZOTP.
Pliocene, early=.CZOTPE.
Pliocene, late=.CZOTPL.
Precambrian=.PRC.
Proterozoic=.PRCP.
Proterozoic, early=.PRCPE.
Proterozoic, late=.PRCPL.
Proterozoic, middle=.PRCPM.
Quaternary=.CZOQ.
Silurian=.PZOS.
Silurian, early=.PZOSE.
Silurian, late=.PZOSL.
Tertiary=.TER.
Triassic=.MZOT.
Triassic, early=.MZOTE.
Triassic, late=.MZOTL.

GEOLOGIC AGE CRITERIA (basis and confidence of unit-age assignment)

Fossil age=.FSL.
- age is certain=.FSLC.
- age is uncertain=.FSLU.

Geomorphic development=.GMD.
- age is certain=.GMDC.
- age is uncertain=.GMDU.

Intrusive relations=.INR.
- age is certain=.INRC.
- age is uncertain=.INRU.

Isoptopic age=.IAG.
- age is certain=.IAGC.
- age is uncertain=.IAGU.

Paleomagnetism=.PMG.
- age is certain=.PMGC.
- age is uncertain=.PMGU.

Pedogenic-soil development=.SOD.
- age is certain=.SODC.
- age is uncertain=.SODU.

Regional correlation=.RCO.
- age is certain=.RCOC.
- age is uncertain=.RCOU.

Stratigraphic relations=.SRL.
- age is certain=.SRLC.
- age is uncertain=.SRLU.

Tephrochronology=.TEP.
- age is certain=.TEPC.
- age is uncertain=.TEPU.

GEOMORPHIC FEATURES (.GEO.)

Feature type

- debris-flow crest=.GEODC.
- debris-flow outline=.GEODO.
- eolian sand dune crest=.GEOE.
- glacial-moraine crest=.GEOG.
- lakeshore strand line=.GEOS.
- landslide closed depression=.GEOLD.
- landslide debris train crest=.GEOLC.
- sag-pond outline=.GEOP.
- topographic scarp, ground-failure crown scarp=.GEOTG.
- topographic scarp, orgin unknown=.GEOTU.

Certainty of identity

identity certain=.IDC.
identity questionable=.IDQ.

Locatability

located well but may not meet map accuracy standard=.LOW.
observable=.OBS.

Data source

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

LINEAMENTS (.LIN.)

Lineament type

aligned topographic saddles=.LINA.
base of fold controlled slope=.LINB.
eroded edge of resistant bed=.LINE.
fault line escarpment=.LINF.
origin unknown=.LINU.

Certainty of identity

identity certain=.IDC.
identity questionable=.IDQ.

Locatability

located well but may not meet map accuracy standard=.LOW.
observable=.OBS.

Data source

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

MAPPED MARKER HORIZONS (.MMH.)

Marker type

buried paleosol=.MMHB.
gravel layer=.MMHG.
named marker=.MMHN.
volcanic ash layer=.MMHA.
volcanic flow=.MMHV.
    andesite flow=.MMHVA.
    basalt flow=.MMHVB.
    rhyolite flow=.MMHVR.

Certainty of identity

identity certain=.IDC.
identity questionable=.IDQ.

Locatability

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
geophysical methods=.GPH.
aeromagnetic survey=.GPHA.
gravity survey=.GPHG.
ground magnetic survey=.GPHM.
radiometric survey=.GPHR.
remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

Data source (secondary codes)

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

MISCELLANEOUS LINES (.MSC.)

Miscellaneous line type

line of geologic cross section=.GCS.
line of gravity transect=.TRNG.
line of measured stratigraphic section=.MSS.
line of magnetic transect=.TRNM.
line of radiometric transect=.TRNR.
line of seismic transect=.TRNS.
polygon boundary, geologic type unknown=.POLU.

Miscellaneous line certainty

identity certain=.IDC.

Miscellaneous line locatability

located well but may not meet map accuracy standard=.LOW.
observable=.OBS.

Miscellaneous line data source

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

VEINS (.VEN.)

Vein type

aplite=.VENA.
granite=.VENG.
pegmatite=.VENP.
quartz=.VENQ.

Vein features

mineralized=.MIN.
- metallic mineralization=.MINM.
  - carbonate mineralization=.MINMC.
    - copper carbonate=.MINMCC.
    - lead carbonate=.MINMCL.
    - zinc carbonate=.MINMCZ.
  - oxide mineralization=.MINMO.
    - iron oxide=.MINMOI.
  - native-metal mineralization=.MINMN.
    - copper=.MINMNC.
    - gold=.MINMNG.
    - silver=.MINMNS.
  - sulphide mineralization=.MINMS.
    - iron sulphide=.MINMSI.
    - lead sulphide=.MINMSL.
    - mercury sulphide=.MINMSM.
- unspecified mineralization=.MINMU.

- nonmetallic mineralization=.MINN.
  - carbonate mineralization=.MINNC.

alteration=.MINA.
- albitization=.MINAA.
- chloritic alteration=.MINAC.
- dolomitization=.MINAD.
- greisenization (fluorine metasomatism)=.MINAG.
- kaolinization (clay alteration)=.MINAK.
- saussuritic alteration (epidotization)=.MINAU.
- sericitic alteration=.MINAR.
- silicification=.MINAS.
  - chalcedony=.MINASC.
  - jasperoid=.MINASJ.
  - opal=.MINASO.
  - quartz=.MINASQ.
- tourmalinization (boron metasomatism)=.MINAT.=
- zeolitic alteration=.MINAZ.
  - laumontite=.MINAZL.

staining=.MINS.
- greenish staining=.MINSG.
- pinkish staining=.MINSP.
- reddish staining=.MINSR.
- yellowish staining=.MINSY.
- yellowish-orange staining=.MINSYO.
- white staining=.MINSW.

Certainty of identity

identity certain=.IDC.
identity questionable=.IDQ.

Vein locatability

binocular determination=.BIN.
inferred=.INF.
inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
    geophysical methods=.GPH.
        aeromagnetic survey=.GPHA.
        gravity survey=.GPHG.
        ground magnetic survey=.GPHM.
        radiometric survey=.GPHR.
    remote-sensing imagery=.RSI.
located well but may not meet map accuracy standard=.LOW.
meets map accuracy standard=.MEE.
may not meet map accuracy standard=.MNM.
observable=.OBS.

Vein data source

data compiled from non-SCAMP sources=.CPD.
original data from USGS SCAMP=.ORG.

GEOLOGIC-LINE ATTRIBUTES (alphabetic listing by specific keywords)
Version 1.0

U.S. Geological Survey, Southern California Areal Mapping Project

aeromagnetic survey, linear geologic feature inferred from=.GPHA.
age unknown=.AGU.
aligned topographic saddles (lineament)=.LINA.

alteration=.MINA.
alteration, albitization=.MINAA.
alteration, chloritic=.MINAC.
alteration, dolomitization=.MINAD.
alteration, greisenization (fluorine metasomatism)=.MINAG.
alteration, kaolinization (clay alteration)=.MINAK.
alteration, saussuritic alteration (epidotization)=.MINAU.
alteration, sericitic alteration=.MINAR.
alteration, silicification=.MINAS.
alteration, silicification, chalcedony=.MINASC.
alteration, silicification, jasperoid=.MINASJ.
alteration, silicification, opal=.MINASO.
alteration, silicification, quartz=.MINASQ.
alteration, tourmalinization (boron metasomatism)=.MINAT.=
alteration, zeolitic=.MINAZ.
alteration, zeolitic, laumontite=.MINAZL.

andesite=.DIKN.
anticline=.FAXDA.
antiform=.FAXNA.
antiformal syncline (inverted syncline)=.FAXRDA.
aplite dike=.DIKA.
aplite vein=.VENA.
Archean, early=.PRCAE.
Archean, late=.PRCAL.
Archean, middle=.PRCAM.
Archean=.PRCA.

basalt=.DIKB.
basalt flow=.MMHVB.
base of fold controlled slope (lineament)=.LINB.
binocular determination=.BIN.
buried paleosol=.MMHB.

Cambrian, early=.PZOCE.
Cambrian, late=.PZOCL.
Cambrian=.PZOC.
cartographic line=.CLN.
Cenozoic=.CZO.

contact=.CON.
contact, generic=.CONG.
contact, igneous=.CONI.
contact, landslide=.CONL.
contact, metamorphic=.CONM.
contact, regolith or pedogenic soil=.CONR.
contact, sedimentary=.CONS.
contact, sedimentary, separates terraced alluvial units=.CONST.

Cretaceous=.MZOK.
Cretaceous, early=.MZOKE.
Cretaceous, late=.MZOKL.

dacite=.DIKD.
debris-flow crest=.GEODC.
debris-flow outline=.GEODO.
decollement fault=.SLPTD.
detachment fault=.SLPND.
Devonian=.PZOD.
Devonian, early=.PZODE.
Devonian, late=.PZODL.
dike=.DIK.
discrete contact=.DIS.

Eocene=.CZOTE.
Eocene, early=.CZOTEE.
Eocene, late=.CZOTEL.
Eocene, middle=.CZOTEM.
eolian sand dune crest=.GEOE.
eroded edge of resistant bed (lineament)=.LINE.
existence certain=.EXC.
existence questionable=.EXQ.

fault=.FLT.

fault geometry, high angle=.FLTH.
fault geometry, low angle=.FLTL.
fault geometry, variable angle=.FLTV.

fault-line escarpment (lineament)=.LINF.

fault-movement history=.MOV.
fault-movement history, fault having multiple movement styles=.MOVM.
fault-movement history, latest movement has multiple styles=.MOVMM.
fault-movement history, indicated slip style is latest movement=.MOVML.
fault-movement history, indicated slip style is dominant movement=.MOVMD.
fault-movement history, fault has been reactivated=.MOVMR.
fault-movement history, reactivated slip style same as earlier styles=.MOVMRS.
fault-movement history, reactivated slip style different from earlier styles=.MOVMRD.
fault-movement history, historic rupture has occurred=.MOVH.
fault-movement history, recurrence estimate determined=.MOVR.
fault-movement history, slip rate determined=.MOVS.

fault scarp=.FSC.
fault scarp, identity questionable, possible=.POS.
fault scarp, identity questionable, probable=.PRO.

fault-slip style, normal slip=.SLPN.
fault-slip style, oblique slip=.SLPO.
fault-slip style, reverse dip-slip=.SLPR.
fault-slip style, rotational normal-slip=.SLPNR.
fault-slip style, slip unspecified=.SLPU.
fault-slip style, strike slip=.SLPS.
fault-slip style, thrust slip=.SLPT.

fault type, decollement fault=.SLPTD.
fault type, detachment fault=.SLPND.

fault type, detachment fault, master=.SLPNDM.
fault type, generic fault=.SLPUG.
fault type, low-angle fault=.SLPRR.
fault type, normal fault=.SLPNN.
fault type, normal fault, listric-into-detachment=.SLPNL.
fault type, normal fault, low-angle=.SLPNL.
fault type, oblique fault=.SLPOO.
fault type, reverse fault=.SLPRR.
fault type, scarp=.FSC.
fault type, rotational slide fault=.SLPNRS.
fault type, strike-slip fault, left-lateral =.SLPSL.
fault type, strike-slip fault, right-lateral=.SLPSR.
fault type, thrust fault=.SLPTT.
fault type, thrust fault, overturned=.SLPTTO.

fault-wall relations, older over younger=.WRLO.
fault-wall relations, wall-relations unspecified=.WRLU.
fault-wall relations, younger over older=.WRLY.

faulted metamorphic contact=.FMC.

fold axial trace=.FAX.
fold-form determined=.FAXD.
fold-form not determined=.FAXN.
fold generation, first=-F1-
fold generation, second=-F2-
fold generation, third=-F3-

generic fault=.SLPUG.

geologic contact, generic=.CONG.
geologic contact, igneous=.CONI.
geologic contact, igneous, deformed=.CONID.
geologic contact, igneous, intrusive=.CONII.
geologic contact, igneous, mineralized=.CONIM.
geologic contact, igneous, pyroclastic=.CONIP.
geologic contact, igneous, extrusive=.CONIX.
geologic contact, landslide=.CONL.
geologic contact, metamorphic=.CONM.
geologic contact, regolith and (or) pedogenic soil=.CONR.
geologic contact, scratch=.CONK.
geologic contact, scratch, generic=.CONKG.
geologic contact, scratch, igneous=.CONKI.
geologic contact, scratch, landslide=.CONKL.
geologic contact, scratch, metamorphic=.CONKM.
geologic contact, scratch, regolith or pedogenic soil=.CONKR.
geologic contact, scratch, sedimentary=.CONKS.
geologic contact, sedimentary=.CONS.
geologic contact, sedimentary, conformable=.CONSC.
geologic contact, sedimentary, channelized=.CONSH.
geologic contact, sedimentary, terraced alluvial=.CONST.
geologic contact, sedimentary, unconformable=.CONSU.
geologic contact, sedimentary, unconformable, angular unconformity=.CONSUA.
geologic contact, sedimentary, unconformable, nonconformity=.CONSUN.
geologic contact, sedimentary, unconformable, paraconformity=.CONSUP.

geologic cross section=.GCS.
geologic information compiled from non-SCAMP sources=.CPD.

geologic information generated by SCAMP=.ORG.

geomorphic feature=.GEO.
geomorphic feature, debris-flow crest=.GEODC.
geomorphic feature, debris-flow outline=.GEODO.
geomorphic feature, eolian sand dune crest=.GEOE.
geomorphic feature, glacial-moraine crest=.GEOG.
geomorphic feature, lakeshore strand line=.GEOS.
geomorphic feature, landslide closed depression=.GEOLD.
geomorphic feature, landslide debris train crest=.GEOLC.
geomorphic feature, sag-pond outline=.GEOP.
geomorphic feature, topographic scarp, ground-failure crown scarp=.GEOTG.
geomorphic feature, topographic scarp, orgin unknown=.GEOTU.

geophysical methods, linear geologic feature inferred from=.GPH.
glacial-moraine crest=.GEOG.
gradational=.GRD.
granite dike=.DIKG.
granite vein=.VENG.
gravel layer=.MMHG.
gravity survey, linear geologic feature inferred from=.GPHG.
gravity transect, location of=.TRNG.
ground magnetic survey, linear geologic feature inferred from=.GPHM.
ground water=.GWL.
ground-failure crown scarp=.GEOTG.

high-angle fault geometry=.FLTH.
historic rupture has occurred=.MOVH.
Holocene=.CZOQH.
Holocene, early=.CZOQHE.
Holocene, late=.CZOQHL.
Holocene, middle=.CZOQHM.

identity certain=.IDC.
identity questionable=.IDQ.

igneous contact=.CONI.
igneous contact, deformed=.CONID.
igneous contact, extrusive=.CONIX.
igneous contact, intrusive=.CONII.
igneous contact, mineralized=.CONIM.
igneous contact, pyroclastic=.CONIP.

inferred beneath mapped covering unit=.INFM.
inferred beneath unmapped covering unit=.INFU.
inferred by indirect methods=.IIM.
inferred=.INF.
intruded fault=.INT.
inverted anticline=.FAXRDS.
inverted syncline=.FAXRDA.

Jurassic=.MZOJ.
Jurassic, early=.MZOJE.
Jurassic, late=.MZOJL.

lakeshore strand line=.GEOS.
landslide closed depression=.GEOLD.
landslide crown scarp=.CRW.

landslide debris train crest=.GEOLC.
landslide contact=.CONL.
left lateral strike-slip fault=.SLPSL.

line position may not meet map accuracy standard=.MNM.
line position meets map accuracy standard=.MEE.
line position located well but may not meet map accuracy standard=.LOW.

lineament, aligned topographic saddles=.LINA.
lineament, base of fold controlled slope=.LINB.
lineament, eroded edge of resistant bed=.LINE.
lineament, fault line escarpment=.LINF.
lineament, origin unknown=.LINU.
lineament=.LIN.

listric into detachment=.SLPNL.
low angle fault geometry=.FLTL.
low-angle fault=.SLPUL.
low-angle normal fault=.SLPNL.

magnetic transect=.TRNM.
map boundary=.CLNB.

mapped marker horizon=.MMH.
mapped marker horizon, buried paleosol=.MMHB.
mapped marker horizon, gravel layer=.MMHG.
mapped marker horizon, named marker=.MMHN.
mapped marker horizon, volcanic ash layer=.MMHA.
mapped marker horizon, volcanic flow=.MMHV.
mapped marker horizon, volcanic flow, andesite flow=.MMHVA.
mapped marker horizon, volcanic flow, basalt flow=.MMHVB.
mapped marker horizon, volcanic flow, rhyolite flow=.MMHVR.

master detachment=.SLPNDM.
measured stratigraphic section=.MSS.
Mesozoic=.MZO.
metamorphic contact=.CONM.

mineralized dike, vein, or fault=.MIN.
mineralized dike, vein, or fault, metallic mineralization=.MINM.
mineralized dike, vein, or fault, metallic mineralization, carbonate mineralization=.MINMC.
mineralized dike, vein, or fault, metallic mineralization, copper carbonate=.MINMCC.
mineralized dike, vein, or fault, metallic mineralization, lead carbonate=.MINMCL.
mineralized dike, vein, or fault, metallic mineralization, zinc carbonate=.MINMCZ.

mineralized dike, vein, or fault, metallic mineralization, oxide mineralization=.MINMO.
mineralized dike, vein, or fault, metallic mineralization, iron oxide=.MINMOI.

mineralized dike, vein, or fault, metallic mineralization, native-metal mineralization=.MINMN.
mineralized dike, vein, or fault, metallic mineralization, copper=.MINMNC.
mineralized dike, vein, or fault, metallic mineralization, gold=.MINMNG.
mineralized dike, vein, or fault, metallic mineralization, silver=.MINMNS.

mineralized dike, vein, or fault, metallic mineralization, sulphide mineralization=.MINMS.
mineralized dike, vein, or fault, metallic mineralization, iron sulphide=.MINMSI.
mineralized dike, vein, or fault, metallic mineralization, lead sulphide=.MINMSL.
mineralized dike, vein, or fault, metallic mineralization, mercury sulphide=.MINMSM.

mineralized dike, vein, or fault, metallic mineralization, unspecified mineralization=.MINMU.

mineralized dike, vein, or fault, nonmetallic mineralization=.MINN.
mineralized dike, vein, or fault, nonmetallic mineralization, carbonate mineralization=.MINNC.

Miocene=.CZOTM.
Miocene, early=.CZOTME.
Miocene, late=.CZOTML.
Miocene, middle=.CZOTMM.
miscellaneous line=.MSC.
Mississippian=.PZOM.
Mississippian, early=.PZOME.
Mississippian, late=.PZOML.
Modern=.CZOQHD.
mylonite zone boundary=.MYL.

named fault=.NFT.
named fold=.NFA.
named marker horizon=.MMHN.
Neogene=-NGN-
normal fault=.SLPNN.
normal slip (slip style)=.SLPN.
not determined=.NDT.

oblique fault=.SLPOO.
oblique slip (slip style)=.SLPO.
observable=.OBS.
older over younger hanging wall=.WRLO.
Oligocene=.CZOTO.
Oligocene, early=.CZOTOE.
Oligocene, late=.CZOTOL.
Ordovician=.PZOO.
Ordovician, early=.PZOOE.
Ordovician, late=.PZOOL.
overturned fold axis=.OVT.
overturned thrust fault=.SLPTTO.

Paleocene=.CZOTA.
Paleocene, early=.CZOTAE.
Paleocene, late=.CZOTAL.
Paleogene=-PGN-
pegmatite dike=.DIKP.
pegmatite vein=.VENP.
Pennsylvanian=.PZOP.
Pennsylvanian, early=.PZOPE.
Pennsylvanian, late=.PZOPL.
Permian=.PZOR.
Permian, early=.PZORE.
Permian, late=.PZORL.
Pleistocene=.CZOQP.
Pleistocene, early=.CZOQPE.
Pleistocene, late=.CZOQPL.
Pleistocene, middle=.CZOQPM.
Pliocene=.CZOTP.
Pliocene, early=.CZOTPE.
Pliocene, late=.CZOTPL.
plunging fold hinge=.PLG.
polygon boundary, geologic type unknown=.POLU.

Precambrian=.PRC.
Proterozoic=.PRCP.
Proterozoic, early=.PRCPE.
Proterozoic, late=.PRCPL.
Proterozoic, middle=.PRCPM.

quartz dike=.DIKQ.
quartz vein=.VENQ.

radiometric survey, linear geologic feature inferred from=.GPHR.
radiometric transect=.TRNR.
recurrence-interval determined=.MOVR.
refolded fold=.RFO.
regolith or pedogenic soil contact=.CONR.
reverse slip (slip style)=.SLPR.
reverse fault=.SLPRR.
rhyolite flow=.MMHVR.
right lateral fault=.SLPSR.
rotational normal slip (slip style)=.SLPNR.

sag pond outline=.GEOP.

scratch contact=.CONK.
scratch contact, generic=.CONKG.
scratch contact, igneous=.CONKI.
scratch contact, landslide=.CONKL.
scratch contact, metamorphic=.CONKM.
scratch contact, regolith or pedogenic soil=.CONKR.
scratch contact, sedimentary=.CONKS.

sedimentary contact=.CONS.
seismic transect=.TRNS.
Silurian=.PZOS.
Silurian, early=.PZOSE.
Silurian, late=.PZOSL.
slide fault=.SLPNRS.
slip rate determined=.MOVS.
slip unspecified=.SLPU.

stained dike, vein, or fault=.MINS.
stained dike, vein, or fault, greenish staining=.MINSG.
stained dike, vein, or fault, pinkish staining=.MINSP.
stained dike, vein, or fault, reddish staining=.MINSR.
stained dike, vein, or fault, yellowish staining=.MINSY.
stained dike, vein, or fault, yellowish-orange staining=.MINSYO.
stained dike, vein, or fault, white staining=.MINSW.

strike slip fault, left lateral=.SLPSL.
strike slip fault, right lateral=.SLPSR.
strike slip (slip style)=.SLPS.
subhorizontal fold hinge=.SHZ.
subsurface boring data=.SSB.
syncline=.FAXDS.
synform=.FAXNS.
synformal anticline (inverted syncline)=.FAXRDS.

Tertiary=.TER.
thrust fault=.SLPTT.

thrust slip (slip style)=.SLPT.
topographic scarp, orgin unknown=.GEOTU.
Triassic=.MZOT.
Triassic, early=.MZOTE.
Triassic, late=.MZOTL.

upright fold axis=.UPR.

variable-angle fault geometry=.FLTV.
vein=.VEN.
volcanic ash layer=.MMHA.
volcanic flow=.MMHV.

younger over older hanging wall=.WRLY.

GEOLOGIC LINE ATTRIBUTES (alphabetic listing by code)
Version 1.0

U.S. Geological Survey, Southern California Areal Mapping Project

.AGU=geologic age, unknown

.BIN=binocular determination, line determined from

.CLN=cartographic line
.CLNB=cartographic line, map boundary
.CLNW=cartographic line, water boundary
.CLY=mapped marker horizon, clay layer
.CON=geologic contact
.COND=geologic contact, inferred by indirect methods
.CONG=geologic contact, generic
.CONI=geologic contact, igneous
.CONID=geologic contact, igneous, deformed
.CONII=geologic contact, igneous, intrusive
.CONIM=geologic contact, igneous, mineralized
.CONIP=geologic contact, igneous, pyroclastic
.CONIX=geologic contact, igneous, extrusive
.CONK=geologic contact, scratch
.CONKG=geologic contact, scratch, generic
.CONKI=geologic contact, scratch, igneous
.CONKL=geologic contact, scratch, landslide
.CONKM=geologic contact, scratch, metamorphic
.CONKR=geologic contact, scratch, regolith or pedogenic soil
.CONL=geologic contact, landslide
.CONM=geologic contact, metamorphic
.CONR=geologic contact, regolith or pedogenic soil
.CONS=geologic contact, sedimentary
.CONSC=geologic contact, sedimentary, conformable
.CONSH=geologic contact, sedimentary, channelized
.CONST=geologic contact, sedimentary, separating terraced alluvial units
.CONSU=geologic contact, sedimentary, unconformable
.CONSUA=geologic contact, sedimentary, unconformable, angular unconformity
.CONSUN=geologic contact, sedimentary, unconformable, nonconformity
.CONSUP=geologic contact, sedimentary, unconformable, paraconformity
.CPD=geologic information compiled from non-SCAMP sources
.CRW=geologic contact, landslide crown scarp
.CZO=geologic age, Cenozoic
.CZOQ=geologic age, Quaternary
.CZOQH=geologic age, Holocene
.CZOQHD=geologic age, Modern
.CZOQHE=geologic age, Holocene, early
.CZOQHL=geologic age, Holocene, late
.CZOQHM=geologic age, Holocene, middle
.CZOQP=geologic age, Pleistocene
.CZOQPE=geologic age, Pleistocene, early
.CZOQPL=geologic age, Pleistocene, late
.CZOQPM=geologic age, Pleistocene, middle
.CZOT=geologic age, Tertiary
.CZOTA=geologic age, Paleocene
.CZOTAE=geologic age, Paleocene, early
.CZOTAL=geologic age, Paleocene, late
.CZOTE=geologic age, Eocene

.CZOTEE=geologic age, Eocene, early
.CZOTEL=geologic age, Eocene, late
.CZOTEM=geologic age, Eocene, middle
.CZOTM=geologic age, Miocene
.CZOTME=geologic age, Miocene, early
.CZOTML=geologic age, Miocene, late
.CZOTMM=geologic age, Miocene, middle
.CZOTO=geologic age, Oligocene
.CZOTOE=geologic age, Oligocene, early
.CZOTOL=geologic age, Oligocene, late
.CZOTP=geologic age, Pliocene
.CZOTPE=geologic age, Pliocene, early
.CZOTPL=geologic age, Pliocene, late

.DIK=dike
.DIKA=dike , aplite
.DIKB=dike, basalt
.DIKD=dike, dacite
.DIKG=dike, granite
.DIKN=dike, andesite
.DIKP=dike, pegmatite
.DIKQ=dike, quartz
.DIS=geologic contact, discrete boundary

.EXC=fault, existence certain
.EXQ=fault, existence questionable

-F1=fold generation, first
-F2=fold generation, second
-F3=fold generation, third
.FAX=fold axial trace
.FAXD=fold axial trace, fold-form determined
.FAXDA=fold axial trace, anticline
.FAXDS=fold axial trace, syncline
.FAXN=fold axial trace, fold-form not determined
.FAXNA=fold axial trace, antiform
.FAXNS=fold axial trace, synform
.FAXRDA=fold axial trace, antiformal syncline (inverted syncline)
.FAXRDS=fold axial trace, synformal anticline (inverted anticline)
.FFE=fault feature, line has information about
.FFEB=fault feature, bench
.FFECB=fault feature, drainage channel, beheaded
.FFECBA=fault feature, drainage channel, beheaded, with alluvial ramp
.FFECD=fault feature, drainage channel, deflected
.FFECO=fault feature, drainage channel, offset
.FFED=fault feature, depression
.FFEF=fault feature, faceted ridge
.FFEG=fault feature, spring(s)
.FFEK=fault feature, trough or linear canyon
.FFEL=fault feature, linear gully
.FFEM=fault feature, fault-movement indicators
.FFEMG=fault feature, fault-movement indicators, grooves
.FFEMS=fault feature, fault-movement indicators, slickenside striations
.FFEN=fault feature, notch
.FFEP=fault feature, ponded alluviium
.FFEQ=fault-scarp quality
.FFEQF=fault-scarp quality, fresh
.FFEQH=fault-scarp quality, highly degraded

.FFEQM=fault-scarp quality, moderately degraded
.FFEQS=fault-scarp quality, slightly degraded
.FFER=fault feature, shutter-ridge scarp
.FFES=fault feature, fault having associated seismicity
.FFET=fault feature, trench
.FFEV=fault feature, vegetation lineament
.FFEW=fault feature, swale
.FLT=fault
.FLTH=fault geometry, high angle
.FLTL=fault geometry, low angle
.FLTV=fault geometry, variable angle
.FMC=geologic contact, metamorphic, faulted
.FSC=fault scarp
.FSL=age assignment based on fossils
.FSLC=age assignment based on fossils, age is certain
.FSLU=age assignment based on fossils, age is uncertain
.FZB=fault-zone boundary
.FZBC=fault-zone boundary, scratch

.GCS=geologic cross section, position of
.GEO=geomorphic feature
.GEODC=geomorphic feature, debris-flow crest
.GEODO=geomorphic feature, debris-flow outline
.GEOE=geomorphic feature, eolian sand-dune crest
.GEOG=geomorphic feature, glacial-moraine crest
.GEOLC=geomorphic feature, landslide debris-train crest
.GEOLD=geomorphic feature, landslide closed depression
.GEOP=geomorphic feature, sag pond outline
.GEOS=geomorphic feature, lakeshore strand line
.GEOTG=geomorphic feature, ground-failure crown scarp
.GEOTU=geomorphic feature, topographic scarp, orgin unknown
.GMD=age assignment based on geomorphic development
.GMDC=age assignment based on geomorphic development, age is certain
.GMDU=age assignment based on geomorphic development, age is uncertain
.GNF=fault type, generic
.GPH= linear feature inferred by geophysical methods
.GPHA=linear feature inferred by geophysical methods, aeromagnetic survey
.GPHG=linear feature inferred by geophysical methods, gravity survey
.GPHM=linear feature inferred by geophysical methods, ground-magnetic survey
.GPHR=linear feature inferred by geophysical methods, radiometric survey
.GRD=geologic contact, gradational boundary
.GTU=polygon boundary, geologic type unknown
.GWL=linear feature inferred from ground-water levels

.IAG=age assignment based on isoptopic age
.IAGC=age assignment based on , age is certain
.IAGU=age assignment based on , age is uncertain
.IDC=line identity certain
.IDQ=line identity questionable
.INF=line position inferred
.INFM=line position inferred beneath mapped covering unit
.INFU=line position inferred beneath unmapped covering unit
.INR=age assignment based on intrusive relations
.INRC=age assignment based on intrusive relations, age is certain
.INRU=age assignment based on intrusive relations, age is uncertain
.INT=fault, intruded

.LIN=lineament

.LINA=lineament, aligned topographic saddles
.LINB=lineament, base of fold controlled slope
.LINE=lineament, eroded edge of resistant bed
.LINF=lineament, fault-line escarpment
.LINU=lineament, origin unknown
.LOW=line position located well but rarely meets map accuracy standard

.MEE=line position meets map accuracy standard
.MIN=mineralized dike, vein, or fault
.MINA=mineralized dike, vein, or fault, metallic mineralization, alteration
.MINAA=mineralized dike, vein, or fault, metallic mineralization, albitization
.MINAC=mineralized dike, vein, or fault, metallic mineralization, chloritic alteration
.MINAD=mineralized dike, vein, or fault, metallic mineralization, dolomitization
.MINAG=mineralized dike, vein, or fault, metallic mineralization, greisenization (fluorine metasomatism)
.MINAK=mineralized dike, vein, or fault, metallic mineralization, kaolinization (clay alteration)
.MINAR=mineralized dike, vein, or fault, metallic mineralization, sericitic alteration
.MINAS=mineralized dike, vein, or fault, metallic mineralization, silicification
.MINASC=mineralized dike, vein, or fault, metallic mineralization, silicification, chalcedony
.MINASJ=mineralized dike, vein, or fault, metallic mineralization, silicification, jasperoid
.MINASO=mineralized dike, vein, or fault, metallic mineralization, silicification, opal
.MINASQ=mineralized dike, vein, or fault, metallic mineralization, silicification, quartz
.MINAT=mineralized dike, vein, or fault, metallic mineralization, toumalinization (boron metasomatism)
.MINAU=mineralized dike, vein, or fault, metallic mineralization, saussuritic alteration (epidotization)
.MINAZ=mineralized dike, vein, or fault, metallic mineralization, zeolitic alteration
.MINAZL=mineralized dike, vein, or fault, metallic mineralization, zeolitic alteration, laumontite
.MINM=mineralized dike, vein, or fault, metallic mineralization
.MINMC=mineralized dike, vein, or fault, metallic mineralization, carbonate mineralization
.MINMCC=mineralized dike, vein, or fault, metallic mineralization, copper carbonate
.MINMCL=mineralized dike, vein, or fault, metallic mineralization, lead carbonate
.MINMCZ=mineralized dike, vein, or fault, metallic mineralization, zinc carbonate
.MINMN=mineralized dike, vein, or fault, metallic mineralization, native-metal mineralization
.MINMNC=mineralized dike, vein, or fault, metallic mineralization, copper
.MINMNG=mineralized dike, vein, or fault, metallic mineralization, gold
.MINMNS=mineralized dike, vein, or fault, metallic mineralization, silver
.MINMO=mineralized dike, vein, or fault, metallic mineralization, oxide mineralization
.MINMOI=mineralized dike, vein, or fault, metallic mineralization, iron oxide
.MINMS=mineralized dike, vein, or fault, metallic mineralization, sulphide mineralization
.MINMSI=mineralized dike, vein, or fault, metallic mineralization, iron sulphide
.MINMSL=mineralized dike, vein, or fault, metallic mineralization, lead sulphide
.MINMSM=mineralized dike, vein, or fault, metallic mineralization, mercury sulphide
.MINMU=mineralized dike, vein, or fault, metallic mineralization, unspecified mineralization
.MINN=mineralized dike, vein, or fault, metallic mineralization, nonmetallic mineralization
.MINNC=mineralized dike, vein, or fault, metallic mineralization, carbonate mineralization
.MINS=stained dike, vein, or fault
.MINSG=stained dike, vein, or fault, greenish staining
.MINSP=stained dike, vein, or fault, pinkish staining
.MINSR=stained dike, vein, or fault, reddish staining
.MINSW=stained dike, vein, or fault, white staining
.MINSY=stained dike, vein, or fault, yellowish staining
.MINSYO=stained dike, vein, or fault, yellowish-orange staining
.MMH=mapped marker horizon
.MMHA=mapped marker horizon, volcanic ash layer
.MMHB=mapped marker horizon, buried paleosol
.MMHG=mapped marker horizon, gravel layer
.MMHN=mapped marker horizon, named horizon
.MMHV=mapped marker horizon, volcanic flow
.MMHVA=mapped marker horizon, volcanic flow, andesite
.MMHVB=mapped marker horizon, volcanic flow, basalt

.MMHVR=mapped marker horizon, volcanic flow, rhyolite
.MNM=line position may not meet map accuracy standard
.MOV=fault-movement history
.MOVH=fault-movement history, historic rupture has occurred
.MOVM=fault having multiple movement styles
.MOVMD=fault having multiple movement styles, indicated slip is dominant movement
.MOVML=fault having multiple movement styles, indicated slip is latest movement
.MOVMM=fault having multiple movement styles, latest movement has multiple styles
.MOVMR=fault-movement history, fault has been reactivated
.MOVMRD=fault-movement history, latest slip style different from earlier styles
.MOVMRS=fault-movement history, latest slip style same as earlier styles
.MOVR=fault-movement history, recurrence-interval determined
.MOVS=fault-movement history, slip rate determined
.MSC=miscellaneous line
.MSS=measured stratigraphic section
.MYL=mylonite zone boundary
.MZO=geologic age, Mesozoic
.MZOJ=geologic age, Jurassic
.MZOJE=geologic age, Jurassic, early
.MZOJL=geologic age, Jurassic, late
.MZOK=geologic age, Cretaceous
.MZOKE=geologic age, Cretaceous, early
.MZOKL=geologic age, Cretaceous, late
.MZOT=geologic age, Triassic
.MZOTE=geologic age, Triassic, early
.MZOTL=geologic age, Triassic, late

-NGN=geologic age, Neogene
.NDT=not determined
.NFA=fold axial trace, named
.NFT=fault, named

.OBS=line position, observable
.ORG=geologic information generated by SCAMP
.OVT=fold axial trace, axial plane overturned

-PGN=geologic age, Paleogene
.PLG=fold axial trace, fold hinge plunging
.PMG=age assignment based on paleomagnetism
.PMGC=age assignment based on paleomagnetism, age is certain
.PMGU=age assignment based on paleomagnetism, age is uncertain
.POLU=polygon boundary, geologic type unknown
.POS=fault scarp, identity questionable, possible
.PRC=geologic age, Precambrian
.PRCA=geologic age, Archean
.PRCAE=geologic age, Archean, early
.PRCAL=geologic age, Archean, late
.PRCAM=geologic age, Archean, middle
.PRCP=geologic age, Proterozoic
.PRCPE=geologic age, Proterozoic, early
.PRCPL=geologic age, Proterozoic, late
.PRCPM=geologic age, Proterozoic, middle
.PRO=fault scarp, identity questionable, probable
.PZO=geologic age, Paleozoic
.PZOC=geologic age, Cambrian
.PZOCE=geologic age, Cambrian, early
.PZOCL=geologic age, Cambrian, late
.PZOD=geologic age, Devonian

.PZODE=geologic age, Devonian, early
.PZODL=geologic age, Devonian, late
.PZOM=geologic age, Mississippian
.PZOME=geologic age, Mississippian, early
.PZOML=geologic age, Mississippian, late
.PZOO=geologic age, Ordovician
.PZOOE=geologic age, Ordovician, early
.PZOOL=geologic age, Ordovician, late
.PZOP=geologic age, Pennsylvanian
.PZOPE=geologic age, Pennsylvanian, early
.PZOPL=geologic age, Pennsylvanian, late
.PZOR=geologic age, Permian
.PZORE=geologic age, Permian, early
.PZORL=geologic age, Permian, late
.PZOS=geologic age, Silurian
.PZOSE=geologic age, Silurian, early
.PZOSL=geologic age, Silurian, late

.RCO=age assignment based on regional correlation
.RCOC=age assignment based on, age is certain
.RCOU=age assignment based on, age is uncertain
.RFO=fold axial trace, refolded
.RSI=linear feature inferred by geophysical methods, remote-sensing imagery

.SHZ=fold axial trace, fold hinge subhorizontal
.SLP=fault-slip style, line has information about
.SLPN=fault-slip style, normal slip
.SLPND=fault type, detachment
.SLPNDM=fault type, master detachment
.SLPNL=fault type, low-angle fault, normal
.SLPNL=fault type, normal fault listric into detachment
.SLPNN=fault type, normal fault
.SLPNR=fault-slip style, normal slip, rotational
.SLPNRS=fault type, rotational slide fault
.SLPO=fault-slip style, oblique slip
.SLPOO=fault type, oblique fault
.SLPR=fault-slip style, reverse slip
.SLPRR=fault type, reverse fault
.SLPS=fault-slip style, strike slip
.SLPSL=fault type, strike slip fault, left lateral
.SLPSR=fault type, strike slip fault, right lateral
.SLPT=fault-slip style, thrust slip
.SLPTD=fault type, decollement
.SLPTT=fault type, thrust
.SLPTTO=fault type, thrust, overturned
.SLPU=fault-slip style, slip unspecified
.SLPUG=fault type, generic fault (type unspecified)
.SLPUL=fault type, low-angle fault
.SOD=age assignment based on pedogenic-soil development
.SODC=age assignment based on pedogenic-soil development, age is certain
.SODU=age assignment based on pedogenic-soil development, age is uncertain
.SRL=age assignment based on stratigraphic relations
.SRLC=age assignment based on stratigraphic relations, age is certain
.SRLU=age assignment based on stratigraphic relations, age is uncertain
.SSB=linear feature inferred from subsurface boring data

.TEP=age assignment based on tephrochronology
.TEPC=age assignment based on tephrochronology, age is certain

.TEPU=age assignment based on tephrochronology, age is uncertain
.TRNG=line of gravity transect
.TRNM=line of magnetic transect
.TRNR=line of radiometric transect
.TRNS=line of seismic transect

.UPR=fold axial trace, axial plane upright

.VENA=vein, aplite
.VENG=vein, granite
.VENP=vein, pegmatite
.VENQ=vein, quartz

.WRL=fault-wall relations
.WRLO=fault-wall relations, older over younger
.WRLU=fault-wall relations, unspecified
.WRLY=fault-wall relations, younger over older

APPENDIX A

LINE-ATTRIBUTE CODES FOR DIGITAL GEOLOGIC-MAP DATA BASES
Version 1.0

U.S. Geological Survey, Southern California Areal Mapping Project

Suggestions for searching and selecting: How it's done with a SCAMP database

SCAMP's digital data bases can be searched in a number of ways—each requiring a basic understanding of the database structure in order to take full advantage of ARC/INFO's selection tools. The SCAMP database and coding model is linguistic by nature. Coding is accomplished through the use of alpha-numeric characters separated by a parsing symbol—dots (.) that separate primary attribute data and (rarely) hyphens (-) that separate secondary attribute data.

ARC has a number of selection commands that can be employed to access the database:

SELECT	Selects features or data items
ASELECT	Adds to your selected set of items or features
UNSELECT	Removes selected features from your group of selected items.
RESELECT	Selects a subset of items our of your group of selected items.
NSELECT	Unselects all of your currently selected items and selects all those you did not have selected.

All of the selection commands except for NSELECT can be used in conjunction with logical expressions of operators and connectors so that you can select for or against any item that is coded in the database.

Table1 illustrates some ways to search the geologic-line data base. The examples use code sentences from two different line types (Item 1 and Item 2), using the data-base field L-DEF (in LINES.REL):

	Item 1	Item 2
LITH1:	.SDE.ESE.TES.TES.ZXE.SEES.MESE.	.SDE.ESE.TES.TES.ZXE.SEEB.MEII.

For Items 1 and 2 the two code sentences clearly are related, but they differ slightly in their last two codes.

Expression	Example	Explanation
CN	Select LINES.REL//L-DEF cn '.SEES.'	This is a whole-word search that would select sentence 1 above
CN	Select LINES.REL//L-DEF cn '.SEE	This is a prefix search that will select all items containing a word with the prefix **SEE** . In this case ,both sentence 1 and 2 would be selected
CN	Select LINES.REL//L-DEF cn '.SEES.' and L-NAME =San Andreas fault	This example uses the connector AND, which would select all items that contain **.SEES.** and also are of type "San Andreas fault"

Table 1

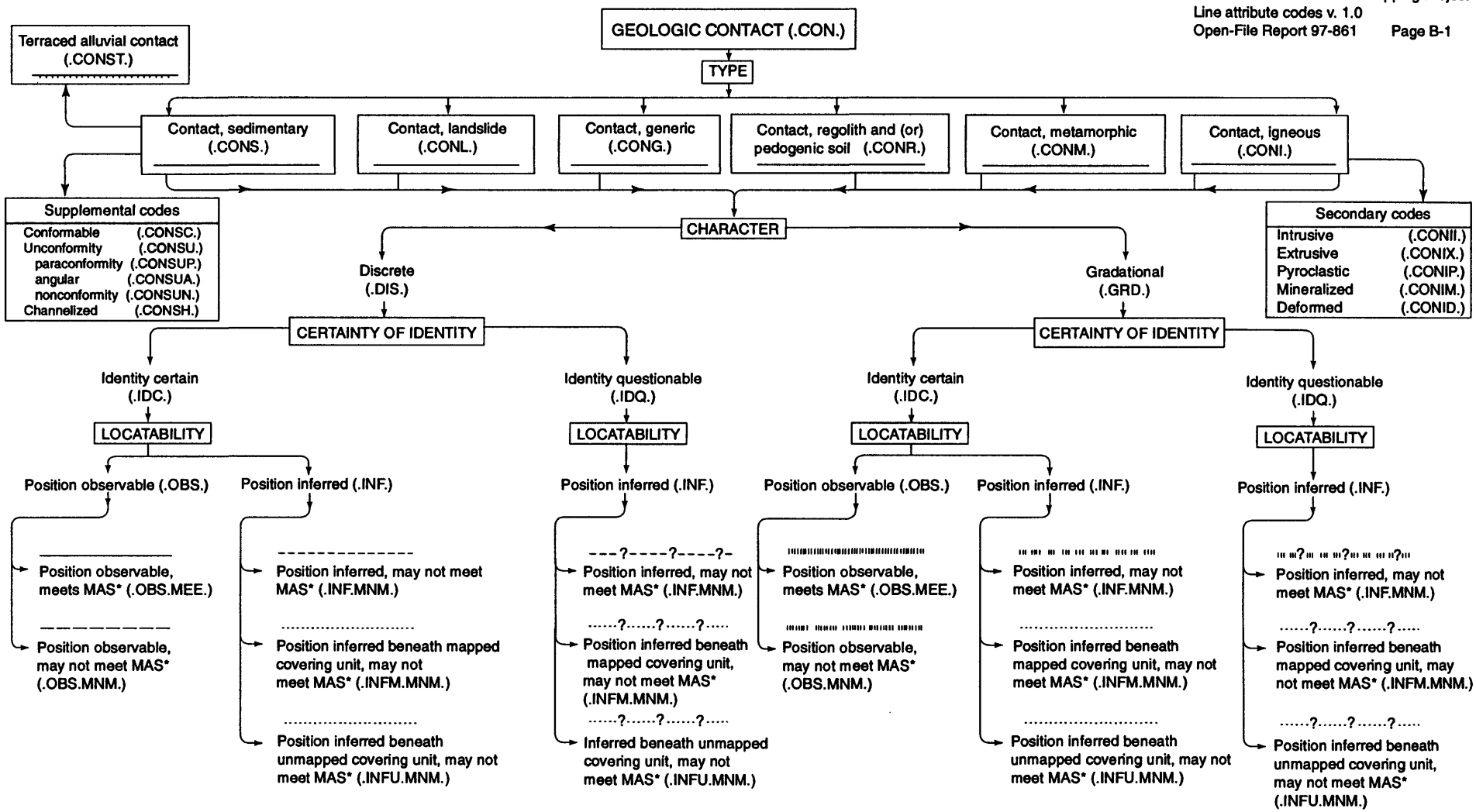
The user can substitute any operator or connector to search for and/or against any combination of items coded in the database. Some of the operators and connectors that are useful include:

Operators:

CN	Contains
NC	Not containing
LK	Contains something like

Connectors:

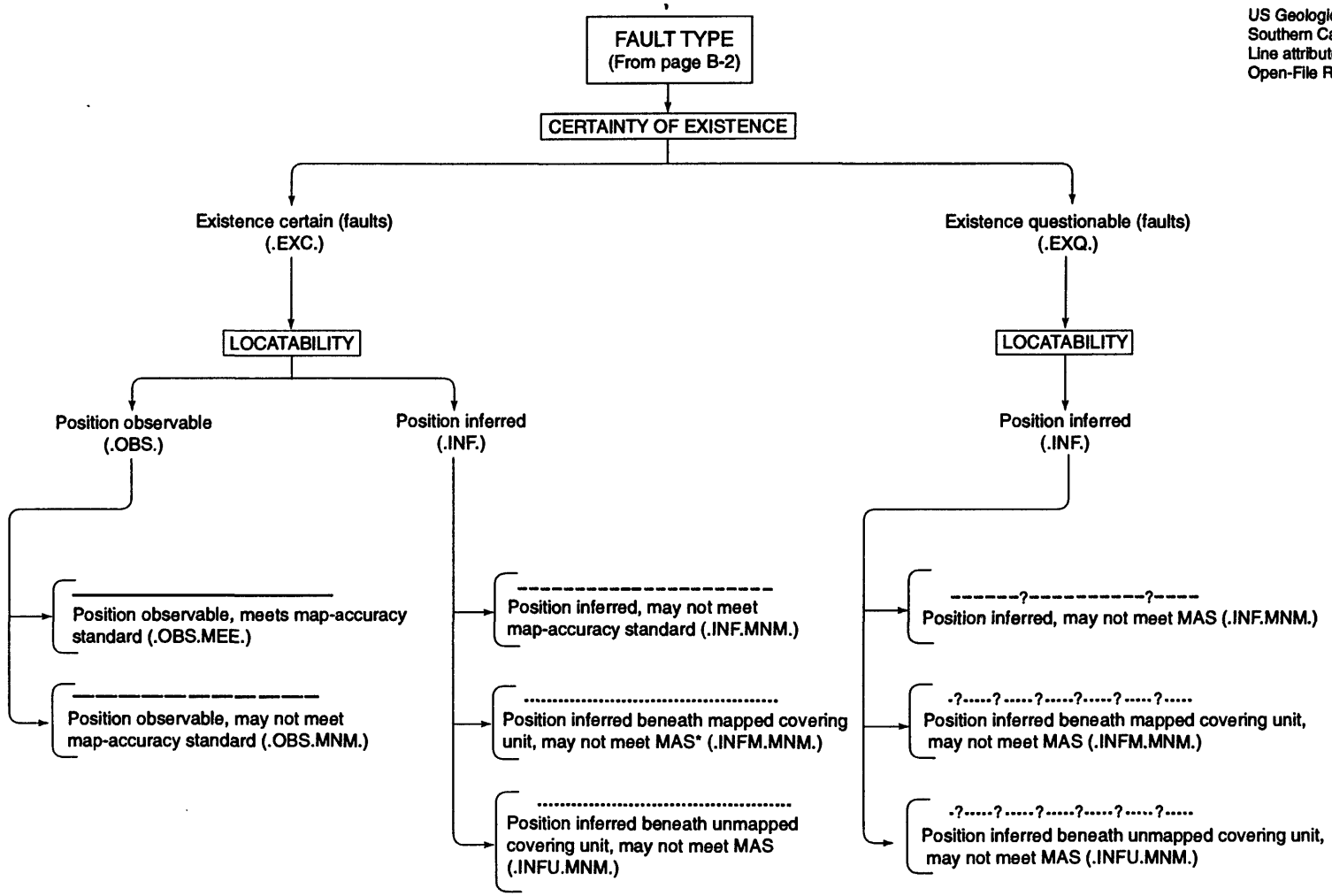
AND	Only items for which the expressions on both side of the AND are true will be selected
OR	Items for which the expressions on either side of the OR will be selected
XOR	Items for which ONLY one of the expressions on either side of the XOR are true will be selected



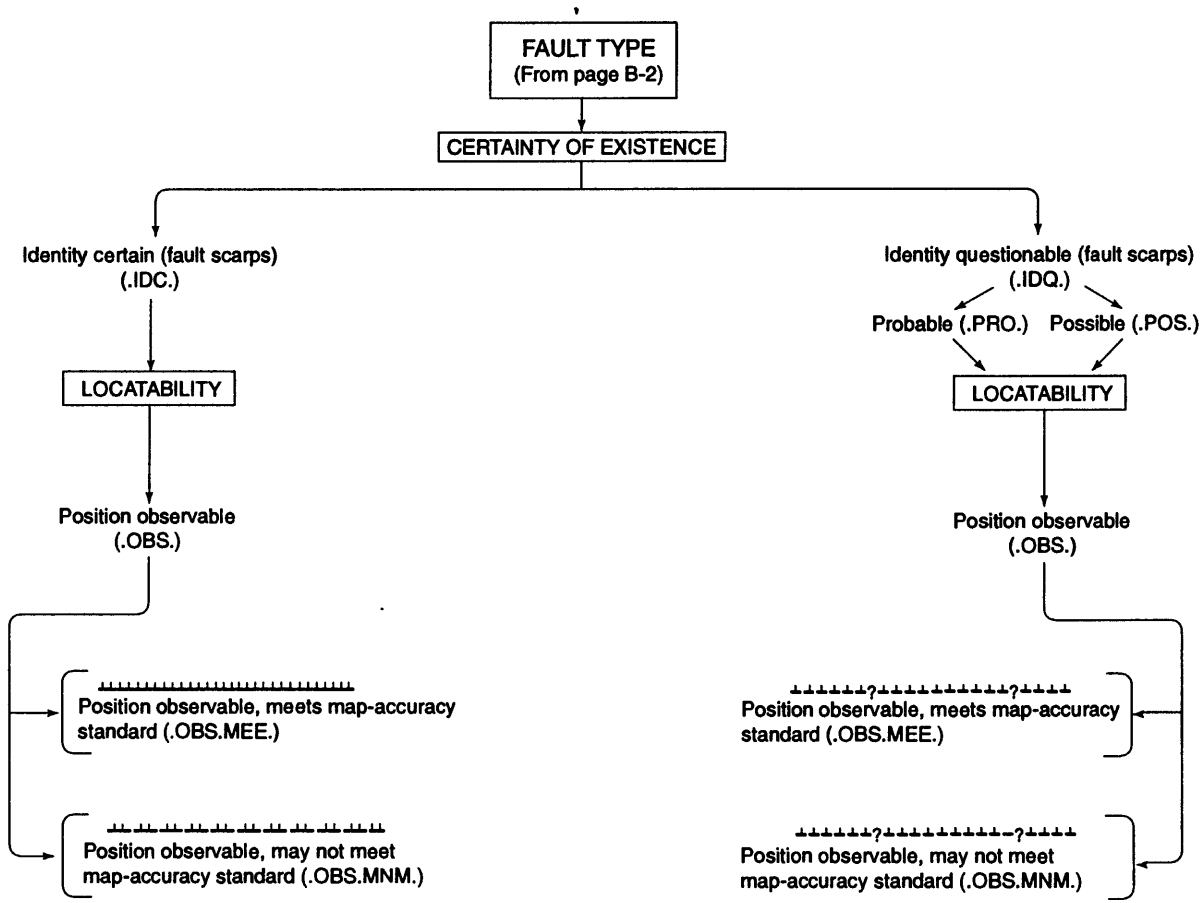
* MAS = Map Accuracy Standard

Fault Features(modified from Sharp (1972)

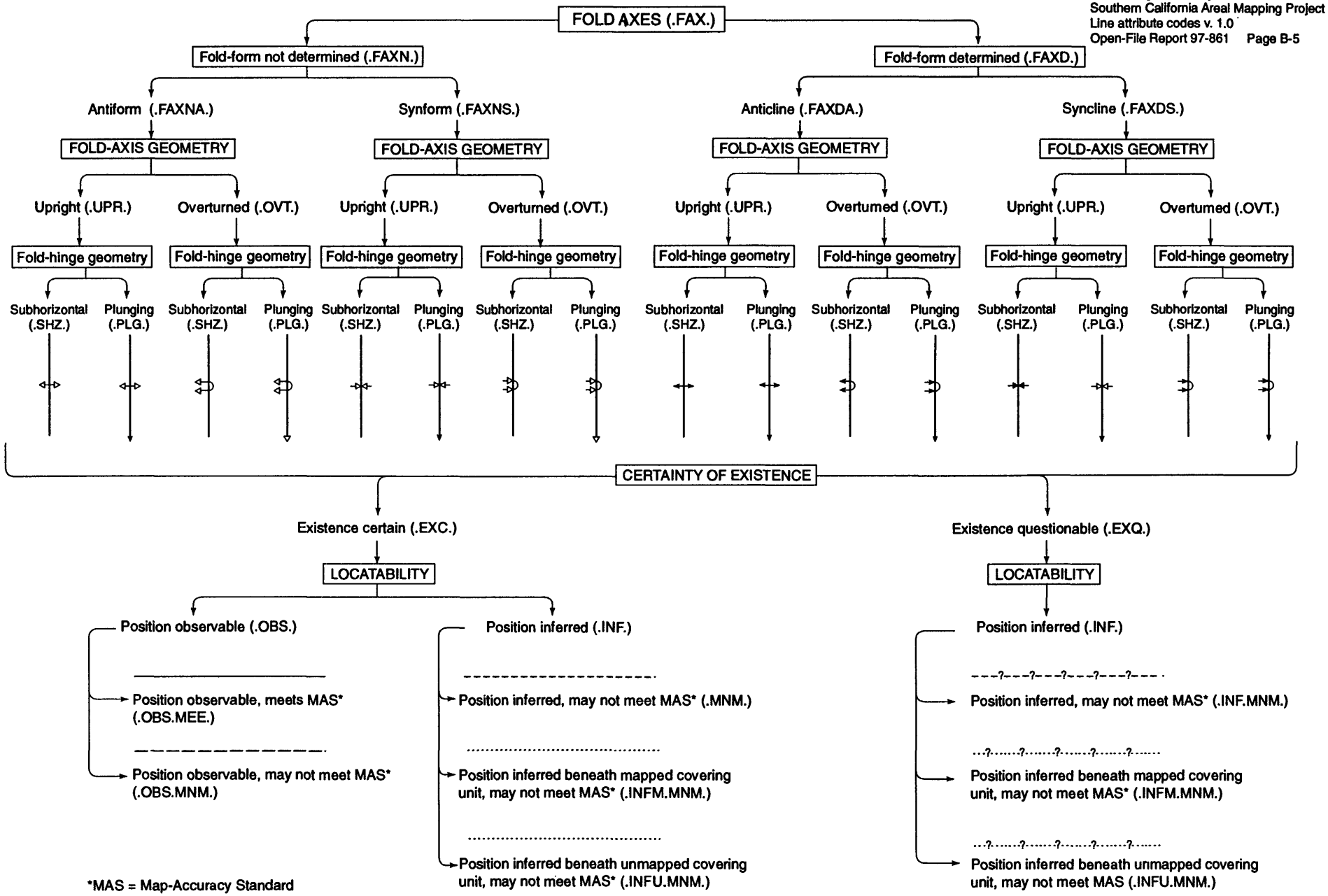
Bench	(.FFEB.)	Ponded alluvium	(.FFEP.)
Depression	(.FFED.)	Scarp quality	(.FFEQ.)
Drainage channel	(.FFEC.)	Fresh	(.FFEQF.)
Beheaded	(.FFECB.)	Slightly degraded	(.FFEQS.)
Beheaded, with alluvial ramp	(.FFECBA.)	Moderately degraded	(.FFEQM.)
Deflected	(.FFECD.)	Highly degraded	(.FFEQH.)
Offset	(.FFECO.)	Seismicity associated with fault trace	(.FFES.)
Faceted ridge	(.FFEF.)	Shutter-ridge scarp	(.FFER.)
Fault-movement indicators	(.FFEM.)	Spring(s)	(.FFEG.)
Grooves	(.FFEMG.)	Swale	(.FFEW.)
Slickenside striations	(.FFEMS.)	Trench	(.FFET.)
Linear gully	(.FFEL.)	Trough or linear canyon	(.FFEK.)
Notch	(.FFEN.)	Vegetation lineament	(.FFEV.)

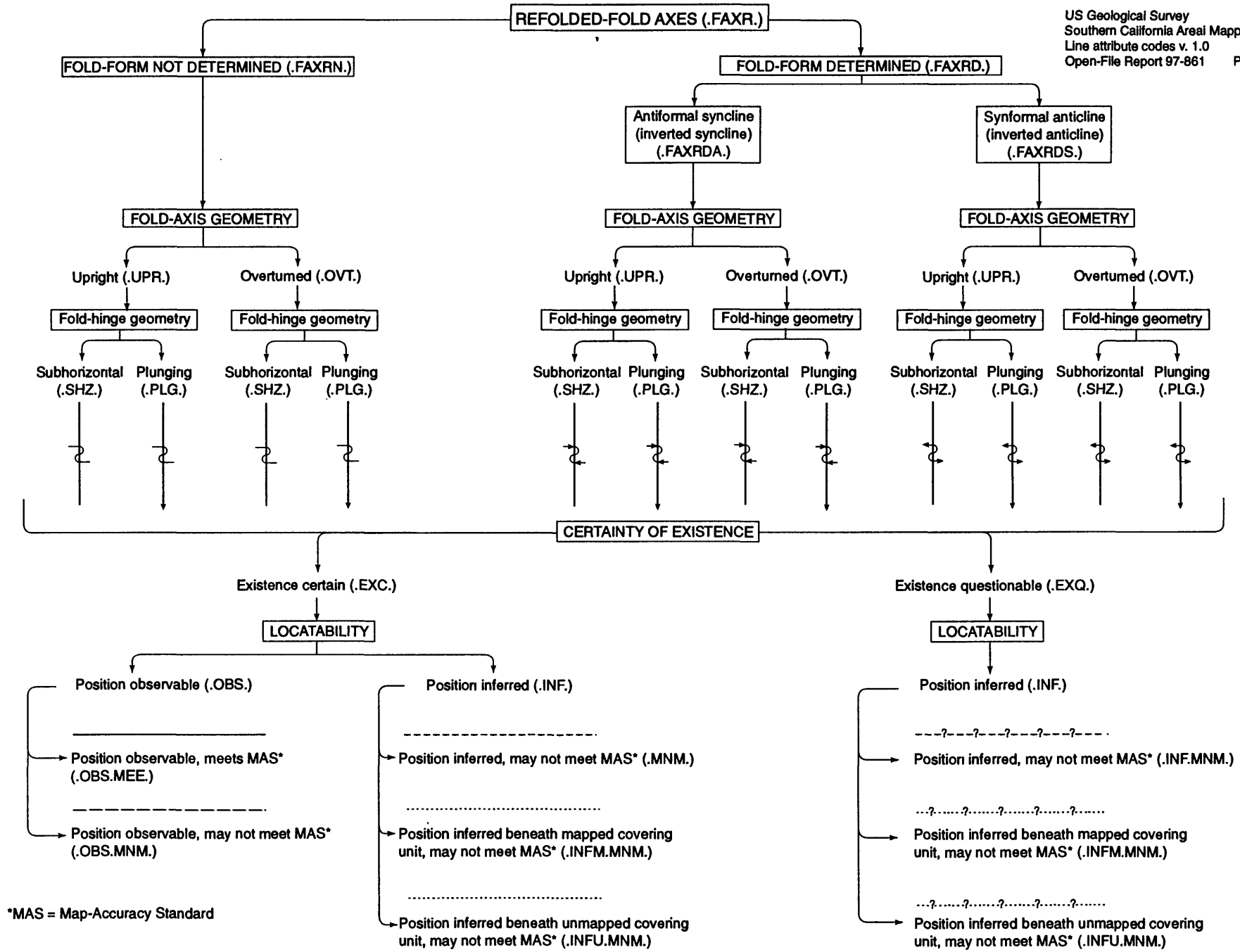


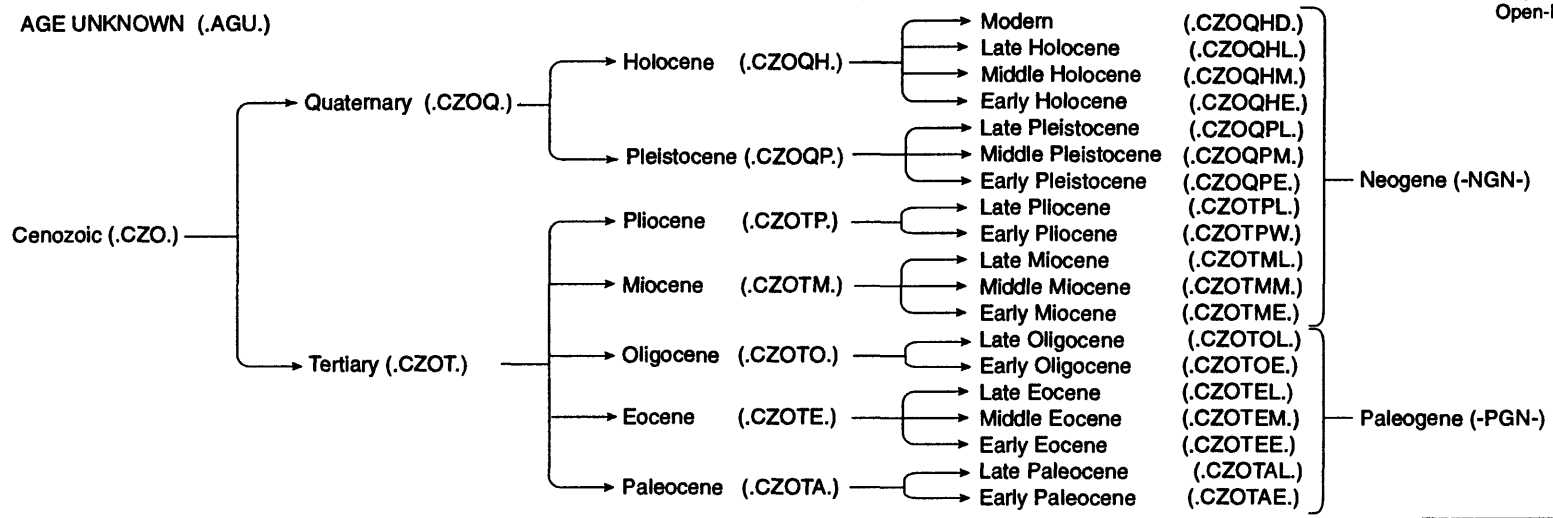
* MAS = Map-accuracy standard

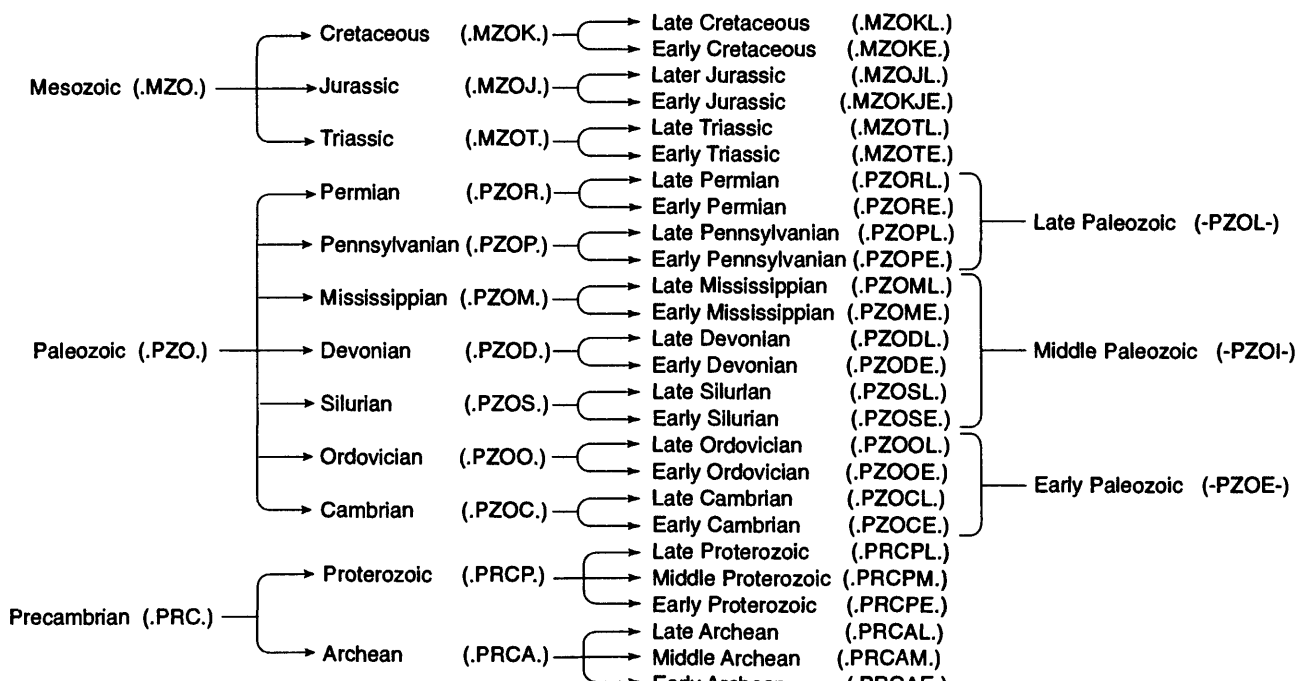


* MAS = Map-accuracy standard


FOLD AXES (.FAX.)
Fold-form not determined (.FAXN.)
Fold-form determined (.FAXD.)
Antiform (.FAXNA.)
Synform (.FAXNS.)
Anticline (.FAXDA.)
Syncline (.FAXDS.)
FOLD-AXIS GEOMETRY
Upright (.UPR.)
Overturned (.OVT.)
Fold-hinge geometry
Subhorizontal (.SHZ.)
Plunging (.PLG.)
CERTAINTY OF EXISTENCE
Existence certain (.EXC.)
Existence questionable (.EXQ.)
LOCATABILITY
Position observable (.OBS.)
Position observable, meets MAS* (.OBS.MEE.)
Position observable, may not meet MAS* (.OBS.MNM.)
Position inferred (.INF.)
Position inferred, may not meet MAS* (.MNM.)
Position inferred beneath mapped covering unit, may not meet MAS* (.INFM.MNM.)
Position inferred beneath unmapped covering unit, may not meet MAS* (.INFU.MNM.)
Position inferred, may not meet MAS* (.INF.MNM.)
Position inferred beneath mapped covering unit, may not meet MAS* (.INFM.MNM.)
Position inferred beneath unmapped covering unit, may not meet MAS (.INFU.MNM.)
*MAS = Map-Accuracy Standard


REFOLDED-FOLD AXES (.FAXR.)
FOLD-FORM NOT DETERMINED (.FAXRN.)
FOLD-FORM DETERMINED (.FAXRD.)
Antiformal syncline (inverted syncline) (.FAXRDA.)
Synformal anticline (inverted anticline) (.FAXRDS.)
FOLD-AXIS GEOMETRY
Upright (.UPR.)
Overturned (.OVT.)
Fold-hinge geometry
Subhorizontal (.SHZ.)
Plunging (.PLG.)
CERTAINTY OF EXISTENCE
Existence certain (.EXC.)
Existence questionable (.EXQ.)
LOCATABILITY
Position observable (.OBS.)
Position inferred (.INF.)
Position observable, meets MAS* (.OBS.MEE.)
Position observable, may not meet MAS* (.OBS.MNM.)
Position inferred, may not meet MAS* (.MNM.)
Position inferred beneath mapped covering unit, may not meet MAS* (.INFM.MNM.)
Position inferred beneath unmapped covering unit, may not meet MAS* (.INFU.MNM.)
Position inferred, may not meet MAS* (.INF.MNM.)
*MAS = Map-Accuracy Standard





BASIS & CONFIDENCE OF AGE ASSIGNMENT	
Fossils	(.FSL.)
Age is certain	(.FSLC.)
Age is uncertain	(.FSLU.)
Geomorphic development	(.GMD.)
Age is certain	(.GMDC.)
Age is uncertain	(.GMDU.)
Intrusive relations	(.INR.)
Age is certain	(.INRC.)
Age is uncertain	(.INRU.)
Isotopic age	(.IAG.)
Age is certain	(.IAGC.)
Age is uncertain	(.IAGU.)
Paleomagnetism	(.PMG.)
Age is certain	(.PMGC.)
Age is uncertain	(.PMGU.)
Regional correlation	(.RCO.)
Age is certain	(.RCOC.)
Age is uncertain	(.RCOU.)
Stratigraphic relations	(.SRL.)
Age is certain	(.SRLC.)
Age is uncertain	(.SRLU.)
Soil development	(.SOD.)
Age is certain	(.SODC.)
Age is uncertain	(.SODU.)
Tephrochronology	(.TEP.)
Age is certain	(.TEPC.)
Age is uncertain	(.TEPU.)

MAJOR GEOLOGIC-LINE CATEGORIES	
Dike	(.DIK.)
Fault	(.FLT.)
Fold axial trace	(.FAX.)
Geologic contact	(.CON.)
Generic	(.GEN.)
Igneous	(.IGN.)
Landslide	(.LSD.)
Metamorphic	(.MET.)
Regolith and (or) pedogenic soil	(.RPS.)
Sedimentary	(.SED.)
Terraced alluvial	(.TAL.)
Geomorphic feature	(.GEO.)
Lineament	(.LIN.)
Mapped marker horizon	(.MMH.)
Miscellaneous line	(.MSC.)
Vein	(.VEN.)

LINEAMENTS (.LIN.)	
Aligned topographic saddles	(.LINA.)
Base of fold-controlled slope	(.LINB.)
Eroded edge of resistant bed	(.LINE.)
Fault-line escarpment	(.LINE.)
Origin unknown	(.LINU.)

VEINS (.VEN.)	
Aplite	(.VENA.)
Granite	(.VENG.)
Pegmatite	(.VENP.)
Quartz	(.VENQ.)

MAPPED MARKER HORIZONS (.MMH.)	
Buried paleosol	(.MMHB.)
Gravel layer	(.MMHG.)
Named marker	(.MMHN.)
Volcanic-ash layer	(.MMHA.)
Volcanic flow	(.MMHV.)
Andesite flow	(.MMHVA.)
Basalt flow	(.MMHVB.)
Rhyolite flow	(.MMHVR.)

MINERALIZED, ALTERED, AND STAINED LINEAR FEATURES			
Mineralized linear features	(.MIN.)	Altered linear features	(.MINA.)
Unspecified mineralization	(.MINU.)	Albitization	(.MINAA.)
Metallic mineralization	(.MINM.)	Chloritic alteration	(.MINAC.)
Carbonate mineralizatiion	(.MINMC.)	Dolomitization	(.MINAD.)
Copper carbonate	(.MINMCC.)	Greisenization	(.MINAG.)
Lead carbonate	(.MINMCL.)	Kaolinization	(.MINAK.)
Zinc carbonate	(.MINMCZ.)	Saussuritic alteration	(.MINAU.)
Oxide mineralizatiion	(.MINMO.)	Sericitic alteration	(.MINAR.)
Iron oxide	(.MINMOI.)	Silicification	(.MINAS.)
Native-metal mineralizatiion	(.MINMN.)	Chalcedony	(.MINASC.)
Copper	(.MINMNC.)	Jasperoid	(.MINASJ.)
Gold	(.MINMNG.)	Opal	(.MINASO.)
Silver	(.MINMNS.)	Quartz	(.MINASQ.)
Sulphide mineralizatiion	(.MINMS.)	Tourmalinization	(.MINAT.)
Iron sulphide	(.MINMSI.)	Zeolitic alteration	(.MINAZ.)
Lead sulphide	(.MINMSL.)	Laumontite	(.MINAZL.)
Mercury	(.MINMSM.)	Stained linear features	(.MINS.)
Unspecified metallic mineral	(.MINMU.)	Greenish staining	(.MINSG.)
Nonmetallic mineralization	(.MINN.)	Pinkish staining	(.MINSP.)
Carbonate mineralizatiion	(.MINNC.)	Reddish staining	(.MINSR.)
		Yellowish staining	(.MINSY.)
		Yellowish-orange staining	(.MINSYO.)
		White staining	(.MINSW.)

GEOMOPHIC FEATURES (.GEO.)	
Debris-flow crest	(.GEODC.)
Debris-flow outline	(.GEODO.)
Eolian sand-dune crest	(.GEOE.)
Glacial-moraine crest crest	(.GEOG.)
Lakeshore strand line	(.GEOS.)
Landslide closed depresssion	(.GEOLD.)
Landslide debris-train crest	(.GEOLC.)
Sag-pond outline	(.GEOP.)
Topographic scarp	(.GEOT.)
Ground-failure crown scarp	(.GEOTG.)
Origin unknown	(.GEOTU.)

DIKES (.DIK.)	
Andesite	(.DIKN.)
Aplite	(.DIKA.)
Basalt	(.DIKB.)
Dacite	(.DIKD.)
Granite	(.DIKG.)
Pegmatite	(.DIKP.)
Quartz	(.DIKQ.)

FAULT FEATURES (modified from Sharp (1972)			
Bench	(.FFEB.)	Ponded alluvium	(.FFEP.)
Depression	(.FFED.)	Scarp quality	(.FFEQ.)
Drainage channel	(.FFEC.)	Fresh	(.FFEQF.)
Beheaded	(.FFECB.)	Slightly degraded	(.FFEQS.)
Beheaded, with alluvial ramp	(.FFECBA.)	Moderately degraded	(.FFEQM.)
Deflected	(.FFECD.)	Highly degraded	(.FFEQH.)
Offset	(.FFECO.)	Seismicity associated with fault trace	(.FFES.)
Faceted ridge	(.FFEF.)	Shutter-ridge scarp	(.FFER.)
Fault-movement indicators	(.FFEM.)	Spring(s)	(.FFEG.)
Grooves	(.FFEMG.)	Swale	(.FFEW.)
Slickenside striations	(.FFEMS.)	Trench	(.FFET.)
Linear gully	(.FFEL.)	Trough or linear canyon	(.FFEK.)
Notch	(.FFEN.)	Vegetation lineament	(.FFEV.)

FAULT-MOVEMENT AND FOLD-MOVEMENT HISTORY (.MOV.)	
Age of faulting or folding known	(.MOVA.)
Age of most recent fault-movement known	(.MOVAFR.)
Age of most recent folding known	(.MOVADR.)
Age of oldest fault-movement known	(.MOVAFO.)
Age of oldest folding known	(.MOVADO.)
Multiple fault-movement history	(.MOVM.)
Latest movement has multiple styles	(.MOVMM.)
Indicated slip style is latest movement	(.MOVMML.)
Indicated slip style is dominant movement	(.MOVMMD.)
Fault has been reactivated	(.MOVMR.)
Reactivated slip style same as earlier styles	(.MOVMRS.)
Reactivated slip style different than earlier styles	(.MOVMRD.)
Age of earlier movement known	(.MOVMRE.)
Historic fault rupture has occurred	(.MOVH.)
Recurrence estimate determined	(.MOVR.)
Slip rate determined	(.MOVS.)