Centrus GeoStan Status Codes

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For Windows, UNIX, OS/390

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"The first and foremost objective of Group 1 Software is the total, unreserved satisfaction of each Group 1 Client — satisfaction with Group 1 products and product support, with Group 1 people and with all other facets of the Client relationship. Every other Corporate objective is subordinate to and is addressed by this one."

Match Codes

GeoStan returns match codes that indicate the portions of the address that matched or did not match to the GeoStan Directory file. If GeoStan could not make a match, the match code begins with `E` and the remaining digits indicate why the address did not match. The digits do not specifically refer to which address elements did not match, but rather why the address did not match.

The following table contains the match code values.

NOTE: You can find a description of the hex digits for the different match codes in the table following the match code table.

Code	Description
`Ahh`	Same as Shh, but indicates match to an alias name record or an alternate record.
`D00`	Match is a small town with P.O. Box and/or General Delivery only.
`Gxx`	Match is to an auxiliary file.
`Nxx`	Match is to the nearest address. Used with reverse geocoding. The following are the only values for N: n NSO – Nearest street center match (nearest street segment interpolated) n NS1 – Nearest unranged street segment n NP0 – Nearest point address n NX0 – Nearest intersection
`Qhh`	Match to USPS range records with unique ZIP Codes. This match code was introduced for clarity because CASS rules prohibit altering an input ZIP if it matches a unique ZIP Code value.
`Shh`	Match found in USPS data. This is considered the best address match, because it matched directly against the USPS list of addresses.
`Thh`	Match to a street segment record. Street segment records do not contain ZIP Code information. If you enter a ZIP Code, the the application returns the ZIP Code you entered. If the input city and state has only one ZIP Code, the application returns that ZIP Code.
`Uhh`	Match found in USPS data but cannot resolve the ZIP+4 code without the firm name or other information. CASS mode returns an `E023` (multiple match) error code.
`Xhhh`	Match found is for an intersection of two streets, for example, "Clay St & Michigan Ave." The first hex digit refers to the last line information, the second hex digit refers to the first street in the intersection, and the third hex digit refers to the second street in the intersection. NOTE: The USPS does not allow intersections as a valid deliverable address.
`Yhhh`	Same as Xhhh, but indicates the application used an alias name record for one or both streets. The first hex digit refers to the last line information, the second hex digit refers to the first street in the intersection, and the third hex digit refers to the second street in the intersection.
`A`	Address matches to an alias record.
`Z`	No address given, but the application verified the validity of the given ZIP Code.

The following table contains the description of the hex digits for the match code values.

Code	In first hex position means:	In second and third hex position means:
0	No change in last line.	No change in address line.
1	ZIP Code changed.	Street type changed.
2	City changed.	Pre-directional changed.
3	City and ZIP Code changed.	Street type and Pre-directional changed.
4	State changed.	Post-directional changed.
5	State and ZIP Code changed.	Street type and Post-directional changed.
6	State and City changed.	Pre-directional and Post-directional changed.
7	State, City, and ZIP Code changed.	Street type, Pre-directional, and Post-directional changed.
8	ZIP+4 changed.	Street name changed.
9	ZIP and ZIP+4 changed.	Street name and Street type changed.
A	City and ZIP+4 changed.	Street name and Pre-directional changed.
B	City, ZIP, and ZIP+4 changed.	Street name, Street type, and Pre-directional changed.
C	State and ZIP+4 changed.	Street name and Post-directional changed.
D	State, ZIP, and ZIP+4 changed.	Street name, Street type, and Post-directional changed.
E	State, City, and ZIP+4 changed.	Street name, Pre-directional, and Post-directional changed.
F	State, City, ZIP, and ZIP+4 changed.	Street name, Street type, Pre-directional, and Post-directional changed.

The following table describes the values returned when the application cannot find a match code.

Code	Description
Ennn	Indicates an error, or no match. This can occur when the address entered does not exist in the GeoStan directory, or the address is badly formed and the application cannot parse the address correctly. The last three digits of an error code indicate which parts of an address the application could not match to the GeoStan Directory.
nnn = 000	No address found.
nnn = 001	Low level error.
nnn = 002	Could not find GSD file.
nnn = 003	Incorrect GSD file signature or version ID.
nnn = 004	GSD file out of date. Only occurs when CASS Mode is on.
nnn = 010	No city+state or ZIP Code found.
nnn = 011	Input ZIP not in the directory.
nnn = 012	Input city not in the directory.
nnn = 013	Input city not unique in the directory.
nnn = 014	Out of licensed area. Only occurs if using Group 1 licensing technology.
nnn = 015	Record count is depleted and license has expired.
nnn = 020	No matching streets found in directory.

Code	Description
nnn = 021	No matching cross streets for an intersection match.
nnn = 022	No matching segments.
nnn = 023	Unresolved match.
nnn = 024	No matching segments. (Same as 022.)
nnn = 025	Too many possible cross streets for intersection matching.
nnn = 026	No address found when attempting a multi-line match.
nnn = 027	Invalid directional attempted.
nnn = 028	Record also matched EWS data, therefore the application denied the match.

Location Codes

GeoStan returns location codes that indicate the accuracy of the assigned geocode. There are two types of geocodes:

- Address and ZIP + 4 centroids

  Address geocodes indicate a geocode made directly to a street network segment (or two segments, in the case of an intersection). ZIP + 4 centroids have a range of confidence depending on how GeoStan determined the ZIP + 4 centroid.

- E

  `E` indicates that a location was not available. This usually occurs when you have requested ZIP Code centroids of a high quality, and one is not available for that match. It can occur infrequently when GeoStan does not have a 5-digit centroid location. GeoStan can also return an `E` location code type when it cannot standardize an input address and there is no input ZIP Code. In this case, do not assume the ZIP Code returned with the non standardized address is the correct ZIP Code because GeoStan did not standardize the address; therefore, GeoStan does not return geocoding or Census Block information.

Address Location Codes

Address location codes detail the known qualities about the geocode.

An address location code has the following characters.

1st character Always an `A` indicating an address location.

2nd character May be one of the following

`G`	Auxiliary file data location
`I`	Application infers the correct segment from the candidate records
`P`	Point-level data location
`S`	Location on a street range
`X`	Location on an intersection of two streets

3rd character Digit indicating other qualities about the location.

The following table contains the address codes.

Code		Description
AGn		Indicates an auxiliary file for a geocode match where n is one of the following values:
	n = 0	Geocode is a point geocode
	n = 1	Geocode is an interpolated address along a segment
	n = 2	Geocode is an interpolated address along a segment, and GeoStan cannot determine the side of the street from the data provided in the auxiliary file record
	n = 3	Geocode is the midpoint of the segment
APnn		Indicates a point-level geocode match where nn is one of the following values:
	nn = 02	Parcel centroid Indicates the center of an accessor's parcel (tract or lot) polygon. When the center of an irregularly shaped parcel falls outside of its polygon, the centroid is manually repositioned to fall inside the polygon as closely as possible to the actual center.
	nn = 04	Address points Represents field-collected GPS points with field-collected address data
	nn = 05	Structure centroid Indicates the center of an addressable building footprint polygon. An addressable structure is typically a structure that receives mail or has telephone service. Usually a residential address consists of a single building. For houses with outbuildings (detached garages, shed, barns, etc.), only the residences have a structure point. Condominiums and duplexes have multiple points for each building. Larger buildings, such as apartment complexes, typically receive mail at one address for each building and therefore individual apartments are not represented as discrete structure points. Shopping malls, industrial complexes, and academic or medical center campuses where one building accepts mail for the entire complex are represented as one point. When addresses are assigned to multiple buildings within one complex, each addressed structure is represented by a point. If the center of a structure falls outside of its polygon, the center is manually repositioned to fall inside the polygon.
	nn = 07	Manually placed Address points are manually placed to coincide with the midpoint of an accessor's parcel's street frontage at a distance from the center line.
AIn		Application infers the correct segment from the candidate records at match time.
ASn		House range address geocode. This is the most accurate geocode available.
Both AIn and ASn share the same qualities for n as follows:		
	n = 0	Best location.
	n = 1	Street side is unknown. The application assigned the Census FIPS Block ID from the left side; however, there is no assigned offset and the application placed the point directly on the street.
	n = 2	May indicate one or both of the following: n Application interpolated the address onto a TIGER segment that did not initially contain address ranges initially. n The application changed the original segment name to match the US Postal Service spelling. This specifically refers to street type, predir, and postdir. NOTE: Because the application only completes segment range interpolation for TIGER data, only the second case is valid for non-TIGER data.
	n = 3	Both 1 and 2.
	n = 7	Placeholder. Used when starting and ending points of segments contain the same value and shape data is not available.

Code		Description
AXn		Intersection geocode. The digit at the end indicates the following:
	n = 3	Standard single-point intersection computed from the center lines of street segments.
	n = 8	Interpolated (divided-road) intersection geocode. The application will attempt to return a centroid for the intersection.

ZIP+4 Centroid Location Codes

ZIP+4 centroid location codes indicate the quality of two location attributes: Census ID accuracy and positional accuracy.

A ZIP+4 centroid location code has the following characters.

1st character Always Z indicating a location derived from a ZIP centroid.

2nd character Census ID accuracy.

3rd character Location type.

4th character How the application defined the location and Census ID. Provided for completeness, and may not be useful for most applications. If this is the case, you can set the width of the location code field to three so that the application does not return this identifier.

The following table contains the values and descriptions for the location codes.

Character Position	Code	Description
2nd Character		
	B	Block Group accuracy (most accurate).
	T	Census Tract accuracy.
	C	Unclassified Census accuracy. Normally accurate to at least the County level.
3rd Character		
	5	Location of the Post Office that delivers mail to that address, a 5-digit ZIP Code centroid, or a location based upon locale (city). See the 4th character for a precise indication of locational accuracy.
	7	Location based upon a ZIP+2 centroid. These locations can represent a multiple block area in urban locations, or a slightly larger area in rural settings.
	9	Location based upon a ZIP+4 centroid. These are the most accurate centroids and normally place the location on the correct block face. For a small number of records, the location may be the middle of the entire street on which the ZIP+4 falls. See the 4th character for a precise indication of locational accuracy.
4th Character		
	A	Address matched to a single segment. Location assigned in the middle of the matched street segment, offset to the proper side of the street.
	a	Address matched to a single segment, but the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.

Character Position	Code	Description
	B	Address matched to multiple segments, all segments have the same Block Group. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP+4. Location offset to the proper side of the street.
	b	Same as methodology B except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	C	Address matched to multiple segments, with all segments having the same Census Tract. Returns the Block Group representing the most households in this ZIP+4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP+4. Location offset to the proper side of the street.
	c	Same as methodology C except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	D	Address matched to multiple segments, with all segments having the same County. Returns the Block Group representing the most households in this ZIP+4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP+4. Location offset to the proper side of the street.
	d	Same as methodology D except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	E	Street name matched; no house ranges available. All matched segments have the same Block Group. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	F	Street name matched; no house ranges available. All matched segments have the same Census Tract. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	G	Street name matched (no house ranges available). All matched segments have the same County. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	H	Same as methodology G, but some segments are not in the same County. Used for less than .05 % of the centroids.
	I	Created ZIP+2 cluster centroid as defined by methodologies A, a, B, and b. All centroids in this ZIP+2 cluster have the same Block Group. Location assigned to the ZIP+2 centroid.
	J	Created ZIP+2 cluster centroid as defined by methodologies A, a, B, b, C, and c. All centroids in this ZIP+2 cluster have the same Census Tract. Location assigned to the ZIP+2 centroid.
	K	Created ZIP+2 cluster centroid as defined by methodologies A, a, B, b, C, c, D, and d. Location assigned to the ZIP+2 centroid.
	L	Created ZIP+2 cluster centroid as defined by methodology E. All centroids in this ZIP+2 cluster have the same Block Group. Location assigned to the ZIP+2 centroid.
	M	Created ZIP+2 cluster centroid as defined by methodology E and F. All centroids in this ZIP+2 cluster have the same Census Tract. Location assigned to the ZIP+2 centroid.
	N	Created ZIP+2 cluster centroid as defined by methodology E, F, G, and H. Location assigned to the ZIP+2 centroid.
	V	Over 95 % of addresses in this ZIP Code are in a single Census Tract. Location assigned to the ZIP Code centroid.
	W	Over 80 % of addresses in this ZIP Code are in a single Census Tract. Reasonable Census Tract accuracy. Location assigned to the ZIP Code centroid.
	X	Less than 80 % of addresses in this ZIP Code are in a single Census Tract. Census ID is uncertain. Location assigned to the ZIP Code centroid.
	Y	Rural or sparsely populated area. Census code is uncertain. Location based upon the USGS places file.
	Z	P.O. Box or General Delivery addresses. Census code is uncertain. Location based upon the Post Office location that delivers the mail to that address.

NOTE: The default offset distance is 50 feet or the value specified by the data set function with the offset enumeration.