

**Boundary and Annexation Survey
Respondent Guide: Paper**

Issued January 2013

U S C E N S U S B U R E A U

Helping You Make Informed Decisions

This page is intentionally left blank

Table of Contents

1.	Introduction to the Boundary and Annexation Survey (BAS).....	2
1.1	Overview of the BAS	2
1.2	Specific state arrangements and agreements	2
1.3	Legal disputes	2
1.4	Key dates for BAS respondents	3
1.5	Steps of the BAS Review	3
2.	Completing the BAS forms.....	4
2.1	Forms included in the BAS package	4
3.	Reviewing and Updating the BAS Maps.....	5
3.1	Maps included in the BAS package	5
3.2	General guidelines for reviewing and updating BAS maps	5
3.3	Geocoding	7
3.4	Legal Boundary Changes	8
3.5	Boundary Corrections	12
3.6	Tribal Subdivisions	13
3.7	Feature Modifications	16
3.8	Point Landmarks	22
3.9	Area Landmarks	23
3.10	Geographic Corridors and offsets	23
3.11	County Review and Consolidations	27
3.12	PLSS.....	28
3.13	New incorporations.....	28
3.14	Disincorporations.....	28
4.	Signing the Updated Maps and returning the BAS Materials.....	29
	Appendix 1: Paperwork Reduction Project.....	31
	Appendix 2: Additional Copies of the Documentation of Changes forms.....	32
	Appendix 3: MTFCC Codes.....	36
	Appendix 4: How to Read a Map.....	42

1. Introduction to the Boundary and Annexation Survey (BAS)

1.1 Overview of the BAS

The U.S. Census Bureau conducts an annual survey called the Boundary and Annexation Survey (BAS) to collect information about selected legally defined geographic areas, such as counties (and equivalent areas), incorporated places, minor civil divisions (MCDs), and federally recognized American Indian reservations (including off-reservation trust lands and tribal subdivisions). The BAS also provides an opportunity for participants to review the names and geographic relationships for these areas. Title 13, U.S. Census Code authorizes this survey.

The Census Bureau uses BAS information to provide a record for reporting the results of the decennial and economic censuses, and to support the Population Estimates Program and the American Community Survey. Maintaining correct boundaries and boundary-to-feature relationships through the BAS helps ensure that the appropriate population is assigned to each governmental unit (GU).

In compliance with the Office of Management and Budget Circular A-16, the BAS supports the Census Bureau's spatial data steward responsibilities for the Federal Geographic Data Committee and the Geo.Data.gov website by updating the inventory and boundaries of GUs. In addition, the BAS is the source of up-to-date information on boundaries, codes, and names for the U.S. Geological Survey's (USGS) National Map and the Geographic Names Information System, as well as the source for changes in the boundaries of incorporated places, minor civil divisions (MCDs), counties (and equivalent areas), and federally recognized American Indian Areas (AIAs), which include reservations and off-reservation trust lands.

1.2 Specific state arrangements and agreements

The Census Bureau has established a number of arrangements or agreements with states for reporting boundary changes. Please visit the BAS program website at <http://www.census.gov/geo/partnerships/bas.html> or call (800) 972-5651 for information regarding state agreements.

1.3 Legal disputes

If it comes to the Census Bureau's attention that an area of land is in dispute between two or more jurisdictions, annexations or boundary corrections will not be made in Census Bureau products or data until the parties come to a written agreement, or there is a documented final court decision regarding the matter/dispute. If you have questions concerning this, please contact the Census Bureau Legal Office at 301-763-9844. For disputes involving tribal areas, the Census Bureau must defer to the Office of the Solicitor at the Department of the Interior for a legal opinion. Often complicated land issues require an extended period of time for resolution, and in those cases, the Census Bureau will retain the current boundary in the database until a legal opinion is issued by the Solicitor's office.

1.4 Key dates for BAS respondents

All legal boundary updates received by **March 1** of the survey year will be reflected in the Population Estimates Program and the American Community Survey. If the Census Bureau receives legal boundary updates by **May 31**, they will be included in BAS materials for the following year.

The last day to request materials for the first BAS deadline (updates to be reflected in the ACS) is **February 15**. The last day to request materials for the second BAS deadline (updates to be reflected in the next years BAS materials) is **April 15**. Any requests for paper materials made after these dates may not be received in time to meet the deadlines. Contact the Census Bureau by phone at 800-972-5651 or by email at geo.bas@census.gov.

1.5 Steps of the BAS Review

There are four primary steps required to review and submit BAS materials to the Census Bureau. Detailed instructions for each step are provided in the guide.

STEP ONE: Complete the BAS forms

Answer all the questions on the BAS form and review all preprinted information. Confirm that the name and status of the governmental unit is correct and that the Highest Elected Official (HEO) or Tribal Chair (TC) and BAS contact information is accurate. Record all legal changes on the BAS form.

STEP TWO: Review the maps

Review boundaries and features for accuracy. If there are no changes to report, please return only the **No Change** postcard to the Census Bureau. The BAS form and maps should be returned only if there are corrections.

STEP THREE: Update the maps

Update maps with boundary changes (e.g., annexations), boundary corrections, and feature changes (e.g., roads). Please follow the specific instructions on updating maps.

STEP FOUR: Sign and return updated maps and BAS forms

Return the completed BAS form and updated map(s) using the pre-addressed envelope or return label by **March 1st** to:

U.S. Census Bureau
National Processing Center
ATTN: BAS Returns, Bldg 63A
1201 East 10th Street
Jeffersonville, IN 47132

2. Completing the BAS forms

1.1 Forms included in the BAS package

The forms in the BAS package should be used to verify legal names, legal status, contact information, previous legal boundary changes submitted to the Census Bureau, and to document any recent or missing legal boundary changes. There are four types of forms:

BAS-1 for Incorporated Places

BAS-2 for Counties and Equivalent Areas

BAS-3 for Minor Civil Divisions

BAS-5 for American Indian Reservations and Off-Reservation Trust Land

Name or type changes

Verify that the legal names and legal status of the governmental unit or AIA are accurate. Make any necessary corrections by crossing out the error and clearly printing the correct information. Provide an effective date for name, type, or status changes. County participants should verify the list of active and inactive entities within their counties.

Contact information

Verify that the Census Bureau has the most recent BAS, HEO, or TC contact information for the GU or AIA. Fill in any missing or incorrect information, including e-mail and fax. If the primary address of the BAS contact, HEO, or TC is a PO Box, provide the Census Bureau with a physical address that can be used for the delivery of maps. Contact changes or updates may also be provided to the Census Bureau throughout the year by email to geo.bas@census.gov.

Legal boundary changes

Record all legal boundary changes in the Documentation of Changes section of the BAS form. Include legal boundary changes that occurred prior to January 1 of the current survey year if they do not appear on the current BAS maps. Please include legal authorization, such as a local ordinance or resolution number, and the effective date of the legal action. If additional pages are needed to record legal changes, a copy of the Documentation of Changes is provided in the appendix.

Other changes

Please indicate if there are any boundary corrections or feature updates that need to be made on the BAS maps. This will assist the Census Bureau in identifying and accounting for any updates made to the maps.

3. Reviewing and Updating the BAS Maps

3.1 Maps included in the BAS package

The Census Bureau mails an index map showing the entire governmental unit or AIA, along with more detailed individual map sheets. Index maps are provided as a reference to help locate a map sheet. Governmental units and AIAs with more than 40 map sheets receive only an index map and the map sheets that show the legal boundary. Entities that require more than 40 boundary ring map sheets receive only the index map.

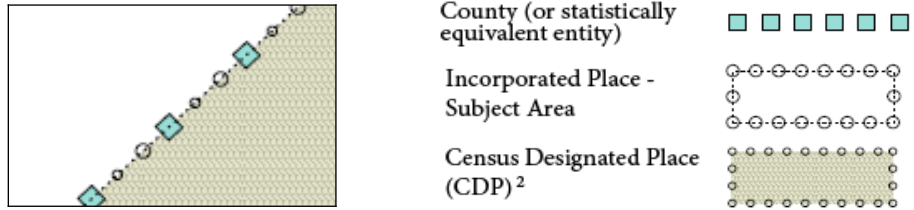
Requesting Additional Maps

If you only received an index map for a county, incorporated place, MCD, or AIA where boundary changes or feature updates need to be made, call (800) 972-5651 or email geo.bas@census.gov to request individual map sheet or a full set of maps. **Do not make updates on the index map.**

3.2 General guidelines for reviewing and updating BAS maps

1. Colored pencils are provided in the package. The red pencil should be used to indicate legal boundary changes and non-legal boundary corrections for all counties, places, MCDs, and AIAs. The purple pencil should be used to indicate feature changes or corrections. The blue pencil should be used by AIAs to add or modify tribal subdivisions.
2. Compare the BAS maps to a local source for an entity (e.g., a local plat map, or a county assessor's dataset). Update the map(s) if the boundaries shown do not correctly depict the boundaries in effect as of **January 1st** of the survey year.
3. You may also provide annexations and deannexations from previous years in addition to providing updates as of **January 1st**. However, the Census Bureau does require legal documentation when submitting these vintage legal updates.

4. The maps show boundaries for multiple legal and statistical boundaries. If an entity's legal boundaries are coextensive with another boundary, the symbols on the map will alternate. In the figure below, the county shares a boundary with an incorporated place and CDP; therefore, the symbols on the map alternate between county, incorporated place, and CDP.

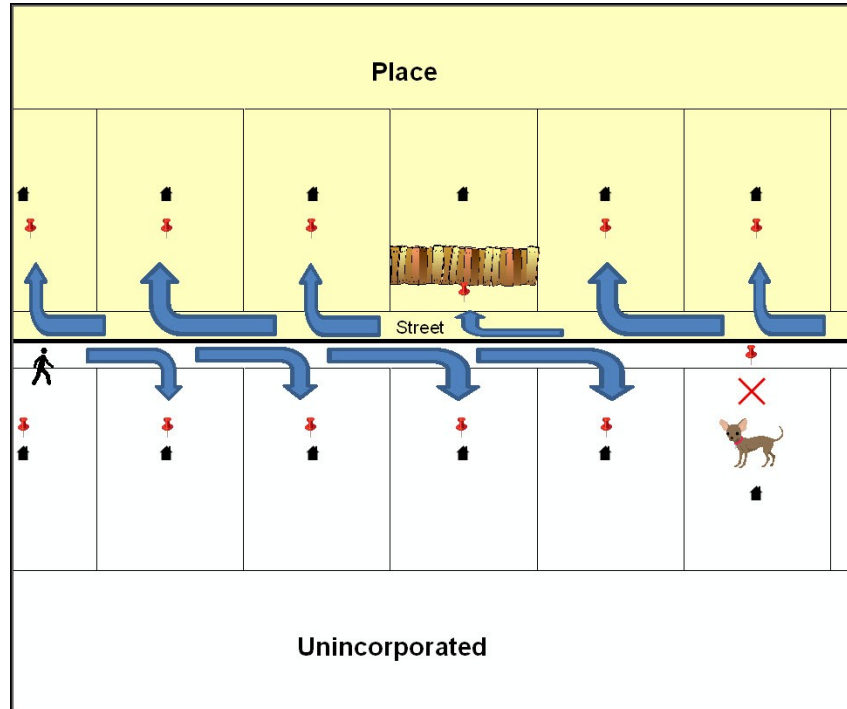


Example 3.2.1: The combined line represents a county, incorporated place and CDP boundary.

3.3 Census Bureau Geocoding

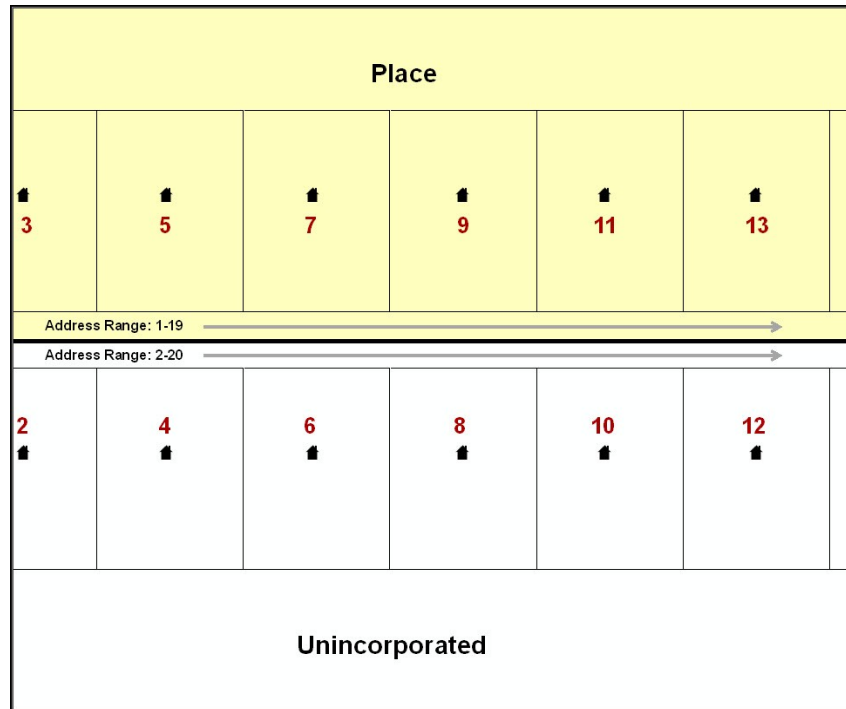
Geocoding is how the Census Bureau codes population to geographic entities. There are two primary methods of geocoding used by the Census Bureau. Both of these involve coding an address to a spatial polygon, but one uses GPS technology, while the other uses address ranges.

MAF structure point (MSP) geocoding: a field worker stands in front of a house or living quarters, and records the physical location with a GPS device (Example 3.3.1). Usually, the GPS point should fall very close to the front door of the house. However, since this is a field operation, real-world obstacles like locked fences, poor satellite reception, or even aggressive dogs might sometimes prevent the worker from gaining access to the front door. In these circumstances, the worker may have to take the GPS coordinate from the sidewalk or side of the road.



Example 3.3.1: MSP method of geocoding. Notice that it is occasionally not possible for the field worker to go all the way to the front door, due to unforeseen circumstances, like the fence or the dog shown above. Thus, the MSP (represented here by the red pins) can sometimes fall within the road or the road right-of-way.

Address Range geocoding: when no MSP is available, the Census Bureau codes houses and living quarters according to a potential range of addresses associated with the adjacent stretch of road (Example 3.3.2).



Example 3.3.2: Address Range method of geocoding. When it is not possible to collect an MSP, houses are geocoded according to their placement along a range of *potential* addresses along that road. Since the address is being related to the road, boundaries placed on front lot lines will lead to mis-geocoding unless an offset flag is used

While the two methods of geocoding differ greatly, both rely heavily on the integrated nature of the MAF/TIGER database, and are affected by the way streets and boundaries are represented in relation to one another. This interdependence between streets, boundaries, and geocoding means that Census Bureau representations of legal boundaries may sometimes differ from other representations (e.g., in local or state GIS). This is especially true regarding geographic corridors and offsets that follow road right of ways (or the front lot lines of parcels). In both of the examples above, delineating a boundary along the front lot line will tend to increase the risk of incorrect geocoding. Using the road centerline as a boundary is much safer.

When completing a BAS submission in which a road or road right-of-way is owned or maintained by a place or AIA but the adjacent housing is not, the respondent should use the centerline of the road (not the front lot-line) as the boundary whenever possible. If local or state law requires that the front lot line boundary be used, the respondent must explicitly designate the polygon(s) between the road centerline and the front-lot boundary as a corridor or an offset (see Section 3.10 of this document for more details).

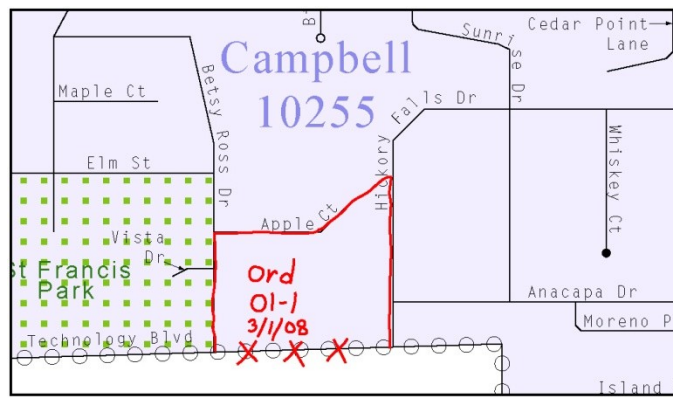
3.4 Legal Boundary Changes

Legal boundary changes are the result of legal actions (e.g., annexations), and are the primary goal of the BAS. AIA Legal documentation (e.g., statute, federal court decision, trust deed) must accompany all AIA legal boundary changes, while legal boundary change submissions from

incorporated places, MCDs, and counties must provide an authorization number, such as a resolution or ordinance number¹.

The following figures illustrate the correct way to draw legal boundary changes on BAS maps.

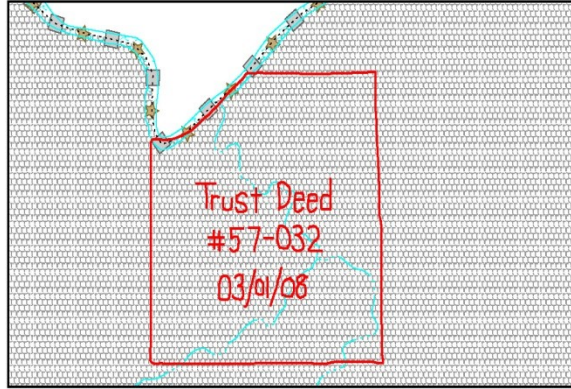
- Using the red pencil provided, cross out the portion of the boundary that is no longer current with a string of Xs.
- Draw the new boundary line(s) ensuring the boundary is closed.
- Add the ordinance number or other legal identifier of the action authorizing the change, along with the effective date of each annexation or deannexation that is drawn on the map.
- Record all legal changes in the **Documentation of Changes** section of the BAS form.



Change Type A/D/B/O (1)	Authorization		Date Month/Day Year (4)	County/Equivalent Name (5)	Minor Civil Division Name (if any) (6)	Area Acres (Tenths) (7)
	Type O/R/L/S/X (2)	Authorization Number (3)				
A	O	ORD 01-1	3/1/2008	ALBANY	NA	0.7

Example 3.4.1: Correctly annotating a legal boundary change with the red pencil and recording the change in the Documentation of Changes section of the BAS form

¹ Legal boundary changes from the State of Georgia are the exception: a state statute requires participants to include acreage, and the Census requests that the respondent includes an authorization number.



Change Type A/D/B/O (1)	Authorization		Date Month/Day Year (4)	Land Type R/T (5)	County/Equivalent Name (6)	Area Acres (Tenths) (7)
	Type A/C/D/N/X (2)	Identifying Number (If any) (3)				
A	D	TRUST DEED 57-032	3/1/2008	T	COUNTY ABC	640.7

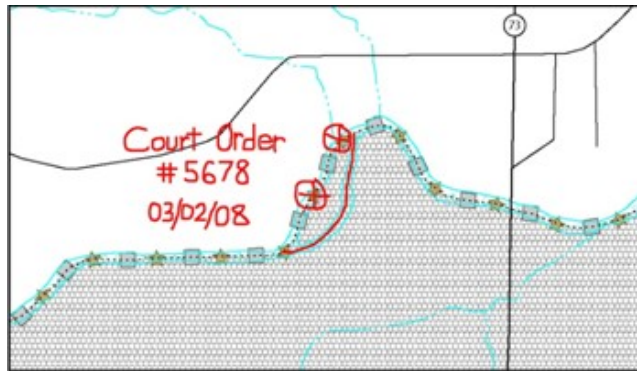
Example 3.4.2: Correctly annotating an AIA trust land and recording the change in the Documentation of Changes section of the BAS form. The original reservation is not deleted and therefore does not require a string of X's.

Boundary changes involving coincident features

The following figures illustrate how to adjust a boundary that is coincident with (i.e., follows exactly) a feature, such as a river or street. In this case, the *feature location* is correct, but the *boundary location* is incorrect.

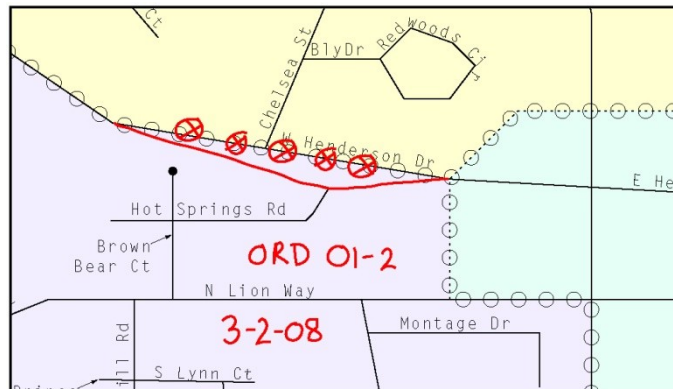
- Using the red pencil, cross out the portion of the boundary that is no longer current using a string of **Xs** inside circles.
- Draw the updated boundary.
- Add the authorization number or other identifier of the action authorizing the change along with the effective date of each addition or deletion.
- Record all legal changes in the **Documentation of Changes** section of the BAS form.

If both the boundary and feature need to be moved, cross out the incorrect boundary with a string of red "Xs" and then draw a red line representing the new location of the boundary and road.



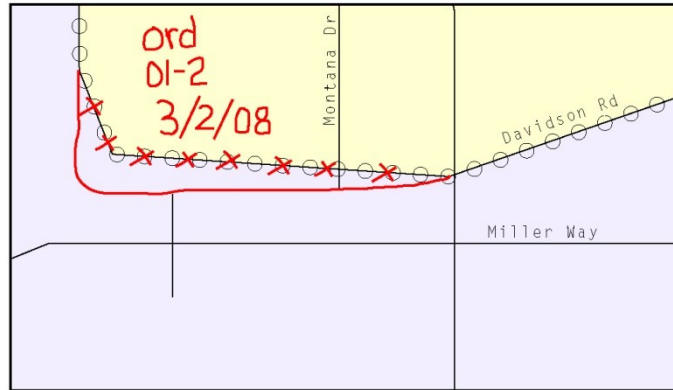
Change Type A/D/B/O (1)	Authorization		Date Month/Day Year (4)	Land Type R/T (5)	County/Equivalent Name (6)	Area Acres (Tenths) (7)
	Type A/C/D/N/X (2)	Identifying Number (If any) (3)				
A	D	COURT ORDER 5678	3/2/2008	T	COUNTY ABC	125.3

Example 3.4.3: Annotating a legal boundary change coincident with a river feature, where the river location does not change, but the boundary does. The legal change is also recorded in the Documentation of Changes.



Example 3.4.4: Annotating a legal change to an incorporated place boundary coincident with a road feature, where only the boundary moves to the new location. The street feature location is correct, but the boundary location is incorrect.

Example 3.4.5 illustrates how to make a correction to the boundary where an associated feature moves along with the boundary. If these changes are the result of an annexation or deannexation, include the authorization number and effective date.



Change Type A/D/B/O	Authorization		Date Month/Day Year	County/Equivalent Name	Minor Civil Division Name (if any)	Area Acres (Tenths)
	Type O/R/L/S/X	Authorization Number				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A	O	ORD 01-2	3/2/2008	ALBANY	NA	0.7

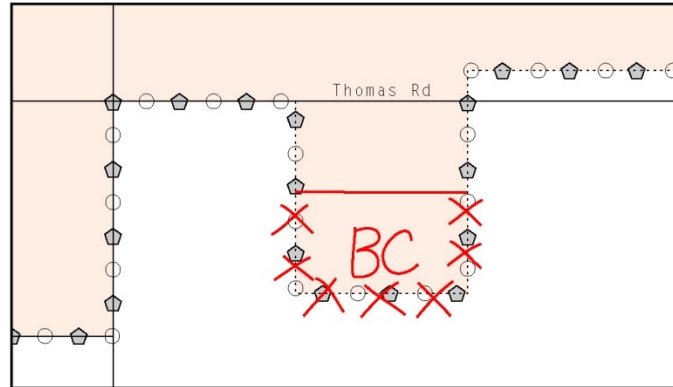
Example 3.4.5: Annotating a legal change to both an incorporated place boundary and an associated coincident road feature, where both the street and the boundary should be moved to a new location. The legal change is recorded in the Documentation of Changes.

3.5 Boundary Corrections

A boundary correction is the adjustment of a boundary to correct an error in how the Census Bureau depicts an existing boundary. Boundary corrections should follow the general shape of the existing boundary. Legal documentation is not required when submitting a boundary correction to the Census Bureau. Boundary corrections also do not need to be reported on the BAS form.

The following figure illustrates how to complete a boundary correction.

- Using the enclosed red pencil, cross out the incorrect boundary with a string of Xs.
- Add a line showing the correct boundary.
- Print the letters **BC** inside the change to identify the update as a boundary correction rather than a legal change.



Example 3.5.1: Annotating a boundary correction to an incorporated place boundary

3.6 Tribal subdivisions

The Census Bureau considers any type of unit of self-government or administration in tribal areas as a **tribal subdivision**. A tribe may submit only one type of subdivision, even if it has more than one type of distinct administrative area that could qualify as a tribal subdivision (e.g., tribal election districts, tribal water districts, or health service areas with different boundaries).

Tribal subdivisions can be considered either active (A) or inactive (I):

- Active subdivisions are defined as having a functioning government, with elected officials, that provides programs and services
- Inactive subdivisions have no functioning government or elected officials and receive services solely from the tribe

Some examples of areas submitted as tribal subdivisions are:

- Areas used by a tribe for the election of tribal government officials (e.g., districts or precincts used for the election of tribal council members)
- Areas used by a tribal government for tax purposes
- Areas used by a tribal government for the provision of general services or specified services, such as:
 - water districts
 - health service areas
 - emergency service delivery areas (911, fire, and/or police), or
 - grazing districts or range units
- Historical or traditional areas recognized by a tribal government
- Sub-reservation tribal community governments

Keep the following criteria in mind when defining tribal subdivisions:

- Tribal subdivisions should cover all, or most, of a tribe's land base
- The delineation of tribal subdivisions is restricted to the area contained within reservations and/or associated off-reservation trust lands
- There is no minimum population threshold for a tribal subdivision
- A tribal subdivision may be noncontiguous

- Tribes may designate only **one** type of tribal subdivision. If a tribe has more than one level of tribal subdivision within its land base, the Census Bureau recommends delineating subdivisions corresponding to the lowest geographic level (those geographic areas containing the smallest area) of the tribe’s administrative hierarchy
- Tribal subdivisions should not be based solely on land ownership or other cadastral areas, nor should they consist of divisions based on the U.S. public land survey system of townships, ranges, and sections, if these areas have no governmental or administrative function for a tribe
- The following descriptions can be appended to chosen subdivision names (e.g., Red Rock Community):
 - District
 - Community
 - Area
 - Chapter
 - Segment
 - Administrative Area
 - Addition
 - County District

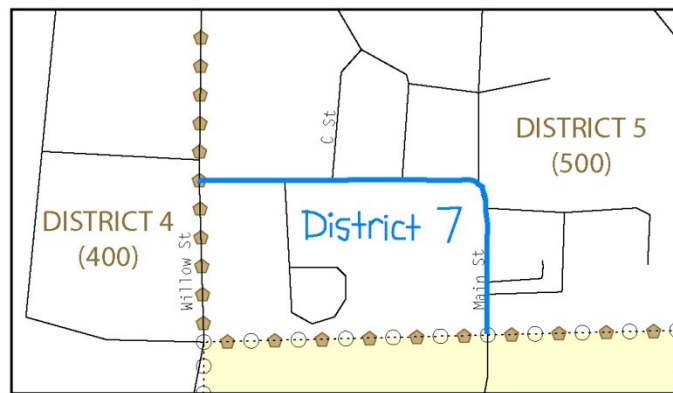
Delineating new tribal subdivisions

If this is the first time tribal subdivisions are being provided to Census:

- Using the blue pencil, add the boundaries on the BAS map(s).

Note: If a full set of BAS maps has not been sent, please request them by calling your Regional Office.

- Each tribal subdivision must be labeled on each map sheet with its name (e.g., “District 3,” “Arlee District,” “White Rock Chapter,” “Parmelee Community”).
- Record the names, type, and status of each subdivision in the **Tribal Names and Status Documentation** section of the BAS-5 form.
- If a tribal subdivision boundary follows a visible feature such as a stream, road, or fence line, be sure to indicate that on the BAS map. Add the visible feature the boundary follows if it is not already shown on the map.



OFFICIAL NAME OF TRIBAL SUBDIVISION If the name shown has changed — • Please draw a line through it, • Print the correct name above it, and • Enter the date the change was effective in column (8). If the name is misspelled — • Please correct the spelling only. • Do not enter a date in column (8). (1)	TYPE Is this an active [A] or inactive [I] subdivision? (See definitions above.) If the type shown is incorrect — • Please draw a line through it, • Print the correct type above it, and • Enter the date the change was effective in column (8), if applicable. (2)	STATUS CHANGES If changes in status have occurred: mark (X) the appropriate column and enter the effective date in column (8).					EFFECTIVE DATE Month, day, year (8)
		New subdivision (3)	Deleted subdivision (4)	Subdivision never existed (5)	Legal boundary change (6)	Boundary correction (7)	
DISTRICT 7	I	X					1/1/2008

Example 3.6.1: Depicting a new tribal subdivision and recording the information in the Tribal Names and Status Documentation section of the BAS form

Updating existing tribal subdivisions

If tribal subdivisions were delineated during a prior survey, they are symbolized on the enclosed BAS maps by a dashed pentagon-shaped gold line.

Before adding/or revising tribal subdivision boundaries on the enclosed map(s):

- Using the red pencil, note any changes to the boundary of the land base on the map(s).
- Using the blue pencil, add and/or revise the boundaries of the tribal subdivisions on the enclosed BAS map(s).

Note: The names and types (active or inactive) of tribal subdivisions are listed in the **Tribal Names and Status Documentation** section of the BAS-5 form. This information should be reviewed and updated.

Tribal subdivision documentation

New tribal subdivisions and name changes to existing tribal subdivisions require documentation, regardless of whether they are being delineated for the first time, or being added to those previously reported. This documentation should be in the form of a tribal resolution or a tribal constitution. Include a copy of this documentation with your BAS maps and BAS-5 form when returning these materials to the Census Bureau.

Corrections to the Census Bureau's depiction of tribal subdivision boundaries or names do not require documentation.

If there are any questions or if additional maps are needed, contact the local Regional Office's Geography staff at the telephone number shown on the enclosed BAS-5 form.

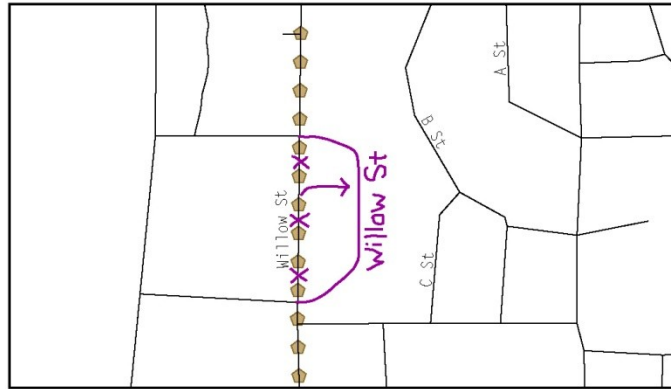
3.7 Feature modifications

The primary purpose of the BAS is to collect legal boundary information. However, feature (e.g. streets, rivers) updates and modifications that occur near or coincident with a legal boundary should be submitted through the BAS. Feature modifications that are internal to the boundary of an incorporated place, county or MCD will be accepted, but are not required as part of the BAS.

Modifying locations of streets

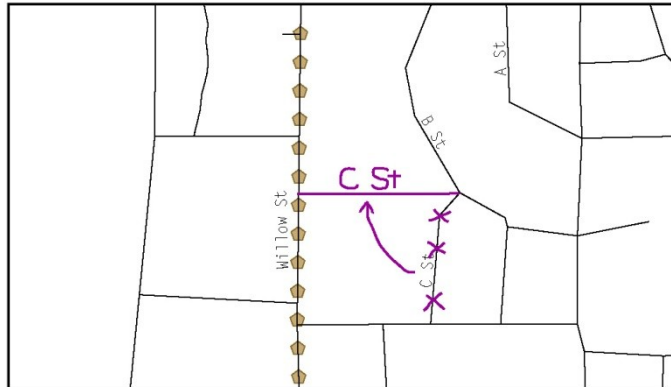
The following figures illustrate how to correct the location of a street feature:

- Using the purple pencil, cross out the incorrect feature location with Xs.
- Draw the feature in the correct location.
- Print the name of the feature along the length of the feature (as shown in the figures below).



Example 3.7.1: Modifying a street feature location.

In this example the street location moves, but the boundary does not.



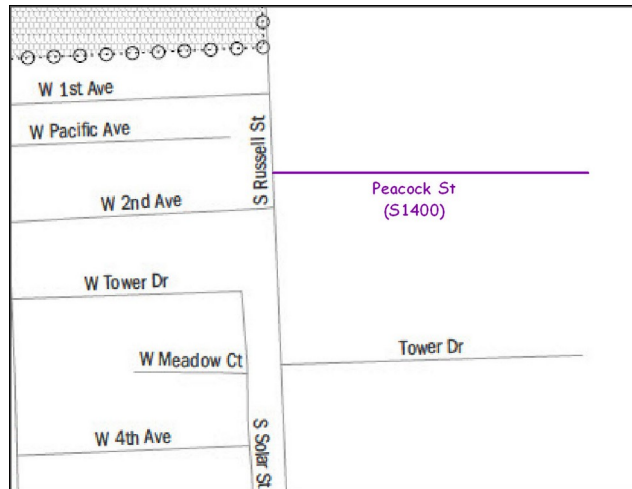
Example 3.7.2: Modifying a street feature location that does not affect a boundary.

The Census Bureau recently completed a nationwide program to improve the positional accuracy of all streets and other features that appear in the Census Bureau's MAF/TIGER database. It is not necessary to make small positional corrections on the BAS maps; correct only those streets that are incorrectly located, mislabeled or distorted. Additionally, new streets may be added, and nonexistent streets may be deleted.

Adding, deleting and naming streets

When adding missing streets, new streets, and alternate street names:

- Use the purple pencil to draw the feature and its name on the map.
- If possible, provide the address range for any new streets.
- Provide the MTFCC code (Appendix 5) for all new streets (Example 3.6.3).
- Alternate street names can be written in parentheses below the primary street name.

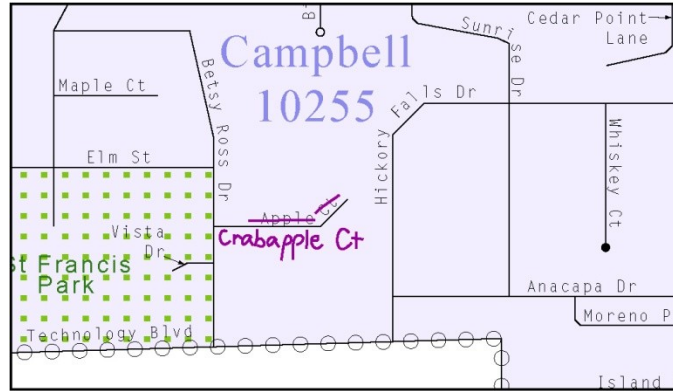


Example 3.7.3: Adding an MTFCC code when adding a new street.

Note: Due to the difficulty of showing multiple names for the same street, only the primary street name is shown on BAS maps. Please note that, even though alternate street names are not shown on the maps, they do exist in our database. For example, US Hwy 30 may be locally known as Main St., but on the BAS map, only US Hwy 30 will be displayed; however, within our database, both names are listed. If you have reported an alternate street name in the past, you do not have to report it to us again.

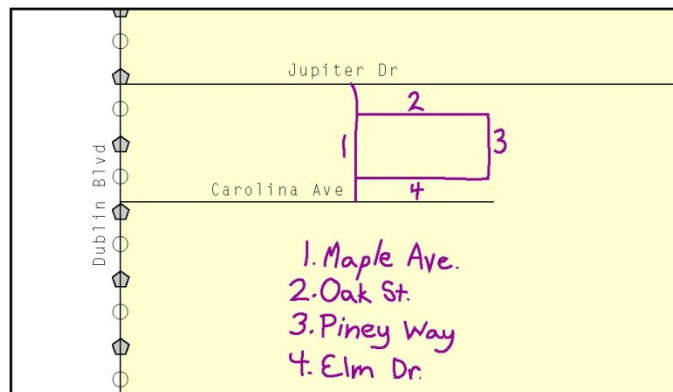
When correcting street names:

- Using the purple pencil, draw a line through the incorrect street name.
- Print the correct street name along the feature.



Example 3.7.4: Correcting a street name

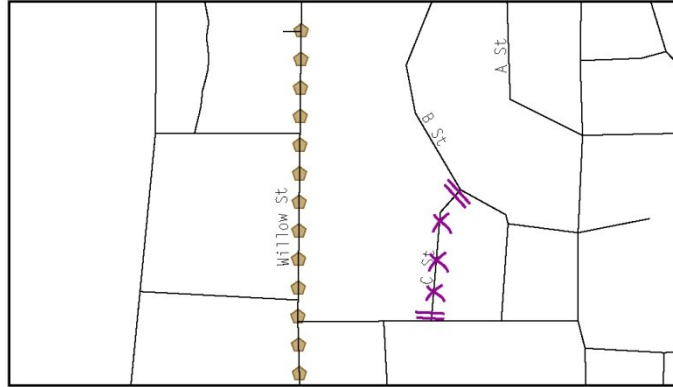
Note: If an area of the map is too congested to add all feature names, number each feature and list this number and the corresponding feature name in the map margin or in an uncongested spot close to the feature’s actual location (see below). Do not repeat numbers on a map sheet.



Example 3.7.5 Adding street name features in a congested area when deleting streets:

Note: Delete street features only if they are nonexistent, or impassable. Do not delete a street because the local jurisdiction is not responsible for maintaining it.

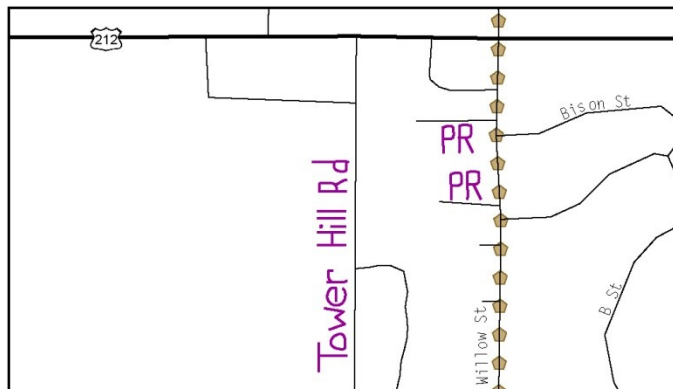
- Using the purple pencil, mark the beginning and end of the base feature to be deleted with hatch (//) marks perpendicular to the feature as shown below.
- Cross out what is to be removed using a string of Xs.



Example 3.7.6: Deleting a street feature

When naming streets:

- Using the purple pencil, label any unnamed streets on the maps.
- Label any unnamed private roads with **PR**.
 - Examples of private roads are driveways and unnamed roads in commercial or industrial parks.



Example 3.7.7: Adding unnamed road features

Cul-de-sacs and traffic circles

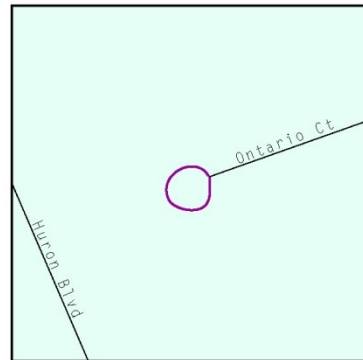
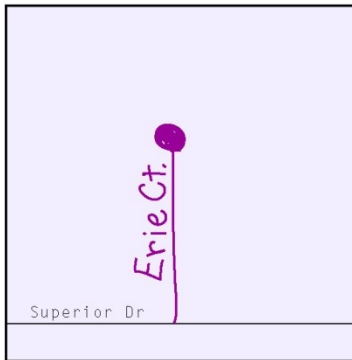
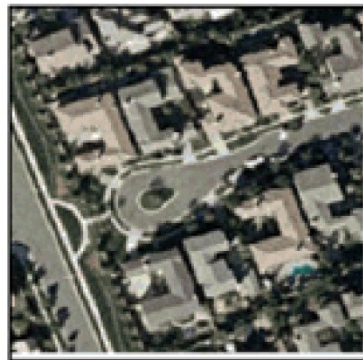
When adding a cul-de-sac or circle:

- Using the purple pencil, draw the feature.
 - Cul-de-sacs are entirely paved, and should be drawn as a solid dot.
 - Circles have an area of unpaved ground within them, and should be drawn as an unfilled circle.
- Print the name of the associated street leading to the cul-de-sac or circle.

Cul-de-sac



Circle



Example 3.7.8: Adding cul-de-sac and circle features

Annotating address range breaks

Addresses are stored in the Census Bureau spatial database as potential address ranges. The BAS maps show the break in the potential address range created where a street is bisected by a boundary. These address range breaks are shown because it is important that the Census Bureau assign the correct addresses to each governmental unit.

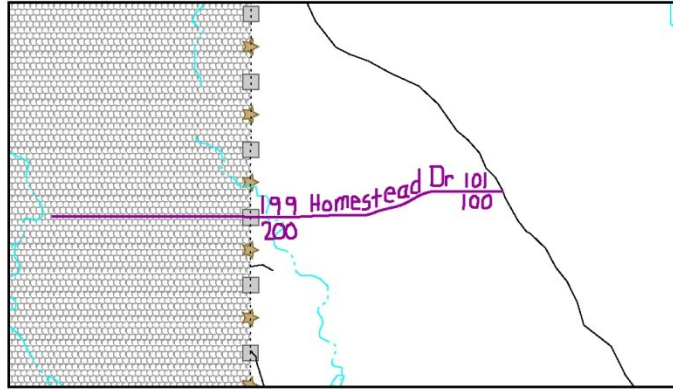
Note: Some streets on the BAS maps do not display address breaks due to space considerations.

Add address ranges on both ends of the street **only** if one of the following circumstances exists:

- A road where house numbers, street names and/or addresses were added or deleted
- A street was added that crosses a boundary
- The address ranges created by a boundary are incorrect on the map.

When adding address ranges:

- Using the purple pencil, add in the address ranges. Provide the lowest or highest addresses that could be assigned to a road where the road intersects a boundary.



Example 3.7.9: Adding a street feature and annotating with the name and address breaks

3.8 Point Landmarks

BAS maps display a select number of point landmarks (e.g., mountain peaks). Point landmarks can be updated through the BAS, but are not required.

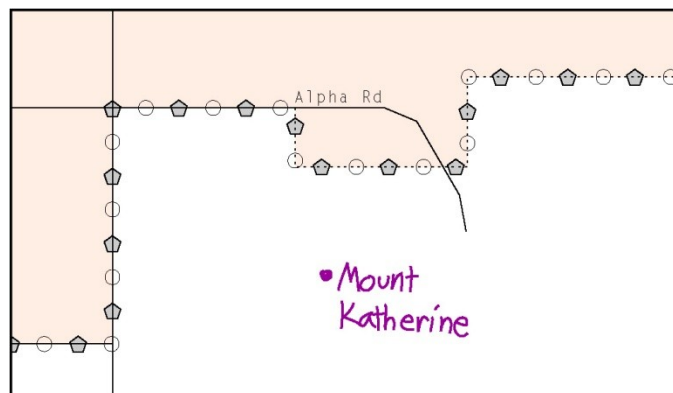
Acceptable point landmark feature updates include mountain peaks or summits, libraries, city halls, community centers and police stations. Airports, parks, schools, golf courses, museums, and cemeteries can be submitted as point landmarks or area landmarks.

Features that contain residences or private business should not be added as point landmarks or area features (e.g. hotels, campgrounds, retirement homes, farms).

The BAS maps also include select point landmarks (e.g. airports, cemeteries, summits) taken from USGS topography maps and the USGS Geographic Names Information System. These landmarks represent the official federally recognized name and will not be removed or updated unless it is verified by the USGS.

When adding a point landmark:

- Using the purple pencil, place a solid dot at the location of the point landmark.
- Print the name of the landmark next to the dot.



Example 3.8.1: Adding a point landmark

3.9 Area Landmarks

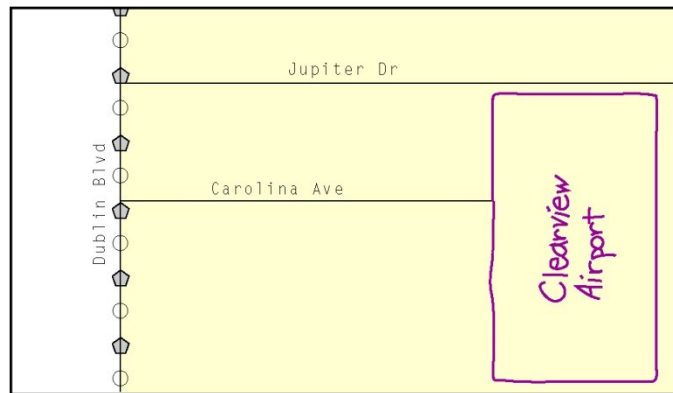
The BAS maps display a select number of area landmarks (e.g., lakes). Like point landmarks, area features can be updated through the BAS, but are not required.

Acceptable area landmark updates include water bodies, swamps, quarries, national parks or forests. Airports, parks, schools, golf courses, museums, and cemeteries can be submitted as area landmarks or point landmarks.

Features that contain residences or private business should not be added as point landmarks or area features (e.g. hotels, campgrounds, retirement homes, farms).

When adding an area landmark:

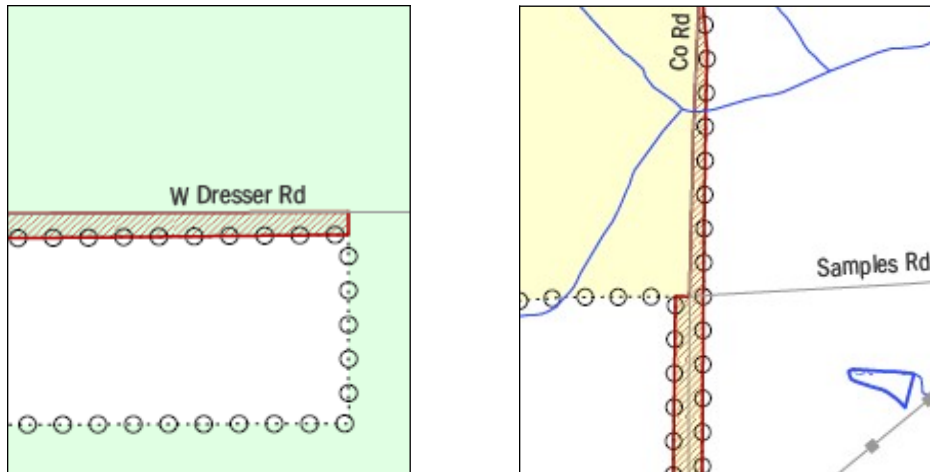
- Using the purple pencil, draw the area landmark boundary in the correct location.
- Print the name of the landmark inside or next to the feature.



Example 3.9.1: Adding an area landmark

3.10 Geographic corridors and offsets

A **geographic corridor** is an area that only includes road surface and right-of-way and does not contain any structures addressed to either side of the street. A **geographic offset** is an area claimed by a geographic entity that is only on one side of a road and does not include structures addressed to that side of the road.



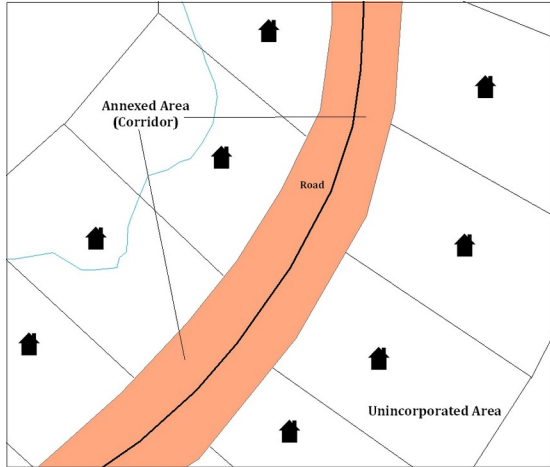
Example 3.10.1: The image on the left illustrates a geographic offset, designated by red diagonal lines. The offset is part of the incorporated place (green area). However, the dwelling units are counted outside of the incorporated place. The image on the right illustrates a geographic corridor (Co Rd, south of Samples Rd) and a geographic offset (Co Rd, north of Samples Rd). The geographic corridor and offset are both part of the incorporated place (yellow area), but the dwelling units are not.

Geographic Corridors

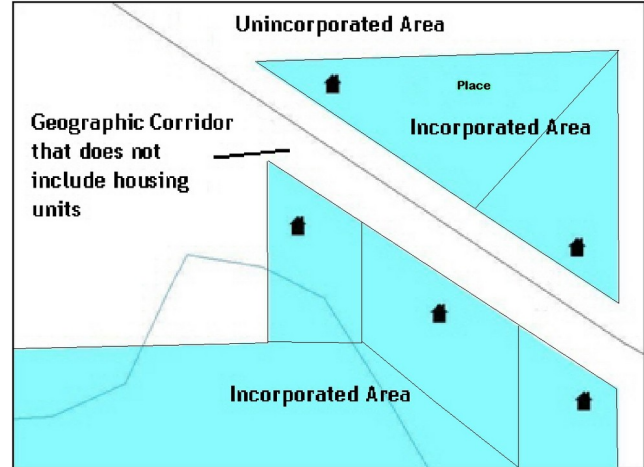
A **geographic corridor** is an area that includes only the road right-of-way and does not contain any structures addressed to either side of the street. Example 3.9.2 shows a corridor that has been created where the incorporated place or AIA owns the right-of-way, and wishes for that ownership to be displayed on the Census Bureau's maps, but the housing units are not included in the incorporated place or AIA (shown in color). Without a corridor, the housing units along this road would be incorrectly geocoded into the incorporated place or AIA. Thus, if it is important to the place or AIA that its ownership and/or maintenance of the road and/or its rights-of-way be displayed on Census' maps, a geographic corridor should be created. However, the Census does not require places and AIAs to report rights-of-way: maintaining geographic corridors in a nationwide database is not essential to the mission of the Census Bureau and the right-of-way should only be included if it is crucial to the place or AIA, or if state or local laws require it.

Example 3.10.3 shows a case where the right-of-way belongs in the unincorporated area, while the housing units are included in the incorporated place (shown in color). While depicting this corridor may be important for local purposes, it is not relevant for Census Bureau tabulations because no house can be built in a road right-of-way. This type of corridor should not be included in a BAS response.

Please note that the Census Bureau does not require places or AIAs to display rights-of-way or road maintenance corridors that do not contain or potentially contain housing or population. If local or state law does not require depiction of these geographic features, the Census Bureau prefers that they be left off BAS submissions. If it is necessary for the place or AIA to depict them, they must be submitted as a geographic corridor.

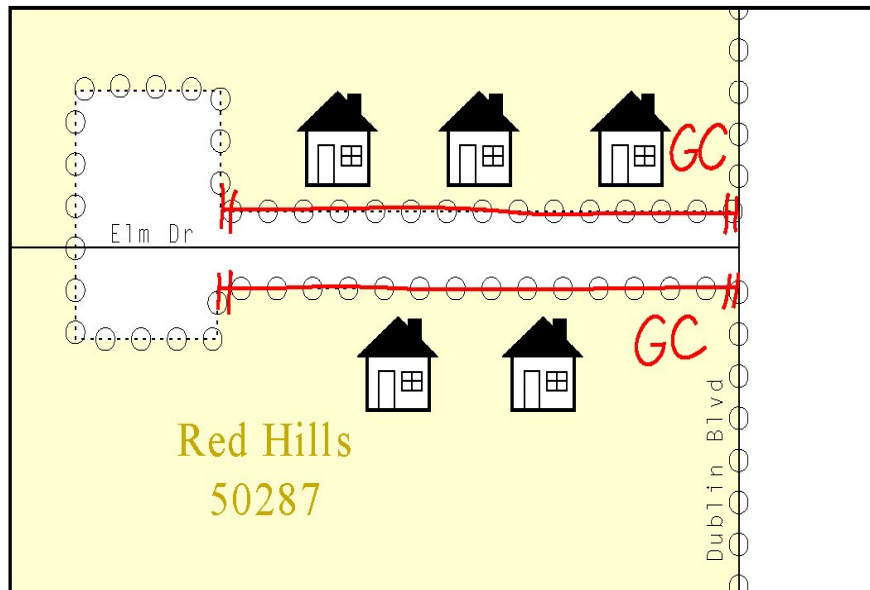


Example 3.10.2



Example 3.10.3

Geographic corridors can be provided to the Census Bureau if the centerline representation results in addresses being assigned to the wrong entity. However, geographic corridors should only be created if the addresses along the street do not belong to your governmental unit. To indicate a geographic corridor on your map, use the red pencil to draw a line on each side of the road. Mark the beginning and end of each line with perpendicular hatch marks. Write the letters “GC” beside each line (Example 3.10.4). To remove a geographic corridor or offset, use the red pencil to mark the beginning and end of the corridor or offset with perpendicular hatch marks and write “remove GC.”

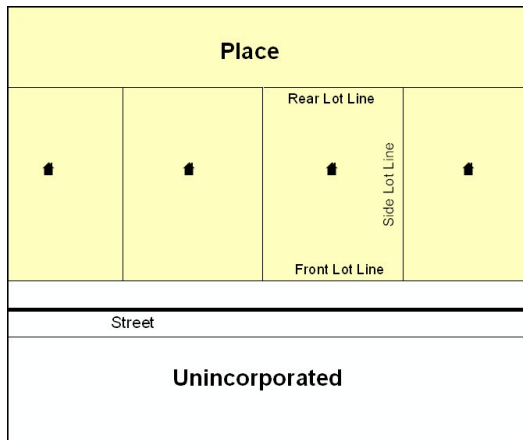


Example 3.10.4: To indicate a geographic corridor on your BAS return, use the red pencil to draw a line on each side of the road. Mark the beginning and end of each line with perpendicular hatch marks. Write the letters “GC” beside each line.

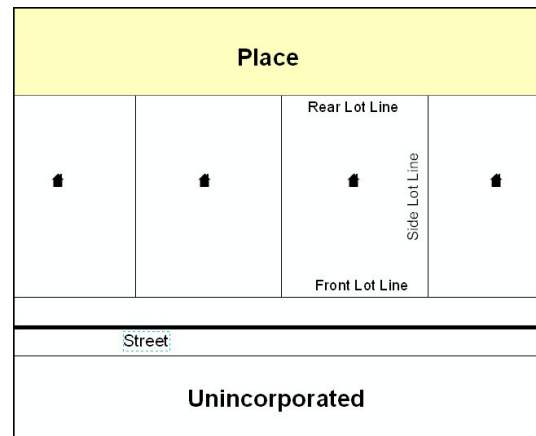
Geographic offsets

The Census Bureau is aware that many governments base their legal boundaries on cadastral (parcel-based) right-of-way mapping. Census maps are based on spatial data that is topologically integrated, which makes maintenance of geographic offsets inefficient. Delineating an entity boundary on the centerline wherever applicable will help to establish more accurate population counts. If a boundary is on the front lot line adjacent to a road on the map, the Census Bureau strongly prefers that the boundary be delineated on the road centerline already shown on the map. If a boundary is on the rear or side lot line, then it should be depicted as such. If it is unclear whether a particular line is a front lot line or something else, please contact the BAS team for assistance. Generally, if a house or other building could not conceivably be built in the area between the potential line and the centerline of the road, then the line can be considered a front lot line.

Example 3.10.5, below, shows a situation in which the place boundary is along the **front lot line**. In this example, the respondent must either delineate the boundary on the road centerline, or create an offset. In Example 3.10.6, the place boundary is on the **rear lot line**, so the respondent should not delineate it on the road centerline or create an offset; instead, the respondent should delineate a new edge that actually follows the rear lot line.

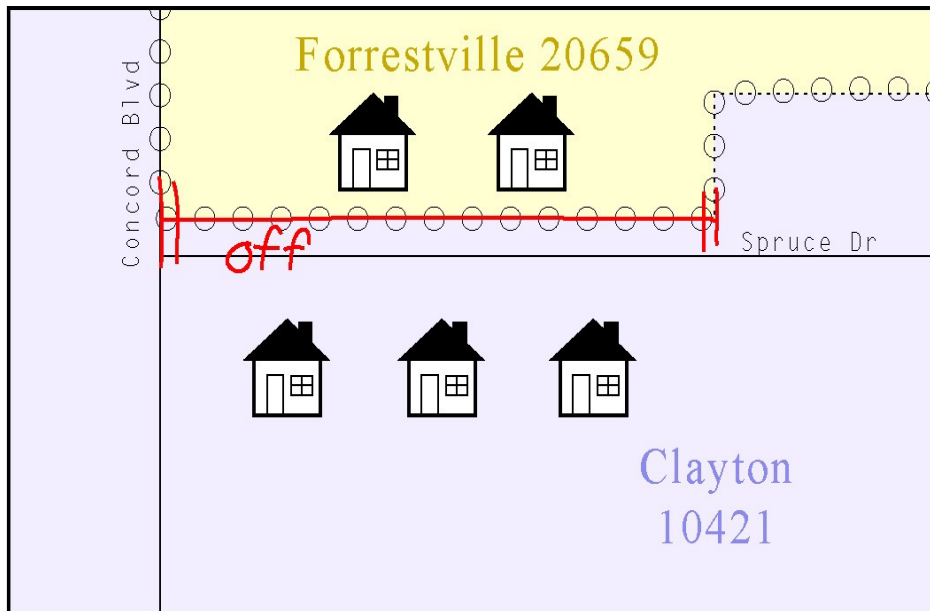


Example 3.10.5



Example 3.10.6

To indicate a geographic offset on your map, use the red pencil to draw a line on parallel to the road, along which you want the offset to be created. Mark the beginning and end of the line with perpendicular hatch marks. Write the letters “OFF” on the side of the road where the geographic offset exists (Example 3.10.7).



Example 3.10.7: This example shows the proper method of depicting a geographic offset on a paper BAS submission.

3.11 County Review and Consolidations

Counties receive boundary information from the Census Bureau for all governmental units within their county boundary. Counties should review the names and legal status of active and inactive incorporated places and MCDs found on page 3 of the BAS-2 form.

- Active entities are defined as having a functioning government, with elected officials, that provides programs and services.
- Inactive entities have no functioning government or elected officials, receive services solely from the county, and should be reviewed by the county during BAS.

Although it is not required, counties may update boundaries for incorporated places and MCDs on the county BAS maps. The Census Bureau encourages counties to establish consolidation agreements with local governments in order to consolidate resources, reduce the burden on local governments, and avoid duplication of work. Under a county consolidation agreement, the county is responsible for reporting boundary changes to the Census Bureau. Participating local governments would no longer receive an annual BAS package. One hundred percent participation is not required and governments may opt out of the agreement at any time. Contact the Census Bureau at geo.bas@census.gov for more information on participating in a county consolidation.

3.12 Public Land Survey System (PLSS)

Boundaries are often based on nonvisible features, such as Public Land Survey System (PLSS) lines (i.e. township, section, range lines, etc.). The Census Bureau is currently working on a program through which PLSS lines can be incorporated into the MAF/TIGER database. If any of your entity's existing or new boundaries are known to follow PLSS lines, you should designate that on your BAS submission by writing "PLSS" in red pencil next to (and parallel to) the appropriate boundary segments. In areas where the Census Bureau has obtained accurate PLSS shapefiles, we will then be able to compare these lines to those shapefiles and ensure accurate placement of the boundary.

3.13 New incorporations

Newly incorporated places should provide the Census Bureau:

- A copy of the official new incorporation papers, including date of incorporation.
- A map indicating the boundaries of the new incorporation.

- Contact information for the highest elected official and a contact for the BAS.

3.14 Disincorporations

Disincorporated entities should provide the Census Bureau with a copy of the official papers of disincorporation, including the effective date.

4. Signing the Updated Maps and returning the BAS Materials

For each map sheet that has changes, fill in the Signature Box on one copy of the map:

- Print your name, your position, your telephone number, and the date.
- Sign your name in the **Signature** area.

SIGNATURE BOX	
The corrected boundaries shown on the map are accurate as of January 1, 2010.	
Print Name	
Position	
Signature	
Telephone	Date

Example 4.1: BAS paper map Signature Box

Use the postage-paid envelope to return the set of signed maps and the BAS form to the Census Bureau. If after reviewing the BAS forms and maps, it is determined that there are no changes to report, sign the **No Change** postcard and return it to the Census Bureau.

Note: If the **No Change** post card is sent in, keep or destroy the maps and forms, do not return them to the Census Bureau.

Appendices

Appendix 1: Paperwork Reduction Project

The U.S. Census Bureau estimates that the BAS review will take most respondents from 1 to 8 hours to complete. This includes the time needed to read the instructions, assemble materials, organize and review the information, and report any needed changes. This estimate is based on 80 percent of all areas having few or no changes. However, for areas with many changes it may take 20 hours or longer to complete the survey. Please send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to:

Paperwork Project 0607-0151
U.S. Census Bureau
4600 Silver Hill Road
Room 3K138
Washington, DC 20233

Or you may e-mail comments to:

paperwork@census.gov

Note: Use **Paperwork Project 0607-0151** as the subject.

Please include a copy of your message addressed to:

geo.bas@census.gov

Appendix 2: Additional Copies of the Documentation of Changes forms

FORM BAS-1 <small>(9-2-2010)</small>	Documentation of Changes – Continued				<small>U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. CENSUS BUREAU</small>	
INCORPORATED PLACES						
Incorporated place			Type	State		
BAS ID		STATE CODE		PLACE CODES	Former FIPS	
SPECIAL INSTRUCTIONS (If any)						
Change Type A/D/B/O (1)	Authorization		Date Month/Day, Year (4)	County/Equivalent Name (5)	Minor Civil Division Name (if any) (6)	Area Acres (Tenths) (7)
	Type O/R/L/S/X (2)	Authorization Number (3)				

U S C E N S U S B U R E A U

Documentation of Changes – Continued
MINOR CIVIL DIVISIONS

Minor civil division	Type	County	State
BAS ID	STATE CODE	COUNTY CODE	MCD CODES

Former FIPS

SPECIAL INSTRUCTIONS (If any)

Change Type A/D/B/O (1)	Authorization		Date Month/Day, Year (4)	Minor Civil Division Name (5)	Area Acres (tenths) (6)
	Type O/R/L/S/X (2)	Authorization Number (3)			

If additional space is needed, please use the BAS-3 "Documentation of Changes" form found in the BAS Respondent Guide.

FORM BAS-3 (9-16-2010)

Documentation of Changes – *Continued*
AMERICAN INDIAN RESERVATIONS AND OFF-RESERVATION TRUST LAND

American Indian reservation/off-reservation trust land name

BAS ID		CENSUS CODE	CODE			
Change Type A/D/B/O (1)	Authorization		Date Month/Day, Year (4)	Land Type R/T (5)	County/Equivalent Name (6)	Area Acres (tenths) (7)
	Type A/C/D/N/X (2)	Identifying Number (If any) (3)				

FORM BAS-5 (9-17-2010)

Appendix 3: MTFCC Codes

MTFCC Codes

MTFCC Code	MTFCC Description (Short)	MTFCC Description (Long)
C3022	Mountain Peak or Summit	Prominent elevation rising above the surrounding level of the Earth's surface
C3023	Island	Area of dry or relatively dry land surrounded by water or low wetland (archipelago, atoll, cay, hammock, hummock, isla, isle, key, moku, rock)
C3024	Levee	Natural or manmade embankment flanking a stream (bank, berm)
C3026	Quarry (not water-filled), Open Pit Mine or Mine	Place or area from which commercial minerals are or were removed from the Earth; not including oilfield
C3027	Dam	Water barrier or embankment built across the course of a stream or into a body of water to control and (or) impound the flow of water (breakwater, dike, jetty)
C3061	Cul de sac	A street that is closed at one end with a circular turnaround area and only one outlet
C3062	Traffic Circle	A circular intersection allowing for continuous movement of traffic at the meeting of roadways
C3066	Gate	A movable barrier across a road
C3067	Toll booth	A structure or barrier where a fee is collected for using a road
C3070	Tower/beacon	A manmade structure, higher than its diameter, generally used for observation, storage, or electronic transmission
C3071	Lookout Tower	A manmade structure, higher than its diameter used for observation
C3072	Transmission Tower including cell, radio and TV	A manmade structure, higher than its diameter used for electronic transmission
C3073	Water Tower	A manmade structure, higher than its diameter used for water storage
C3074	Lighthouse Beacon	A manmade structure, higher than its diameter used for transmission of light generally to aid in navigation
C3075	Tank/Tank Farm	A manmade structure(s), higher than its diameter used for liquid (other than water) or gas storage
C3076	Windmill Farm	A manmade structure(s) used to generate power from the wind
C3077	Solar Farm	A manmade structure(s) used to generate power from the sun

C3078	Monument or Memorial	A manmade structure to educate, commemorate, or memorialize an event, person, or feature
C3079	Boundary Monument Point	Material object placed on or near a boundary line to preserve and identify the location of the boundary line on the ground
C3080	Survey Control Point	Point on the ground whose position (horizontal or vertical) is known and can be used as a base for additional survey work
C3081	Locality Point	This feature represents points that identify locations and names of unbounded localities e.g., crossroads, community names, names from the Geographic Names Information System (GNIS).
C3088	Landfill	A disposal facility at which solid waste is placed on or in the land
H2025	Swamp/Marsh	A poorly drained Wetland, fresh or saltwater, wooded or grassy, possibly covered with open water (bog, cienega, marais, marsh, pocosin)
H2030	Lake/Pond	A natural body of inland water (backwater, lac, lagoon, laguna, pond, pool, resaca, waterhole)
H2040	Reservoir	An artificially impounded body of water (lake, tank)
H2041	Treatment Pond	An artificial body of water built to treat fouled water
H2051	Bay/Estuary/Gulf/Sound	A body of water partly surrounded by land (arm, bight, cove, inlet)
H2053	Ocean/Sea	Large body of salt water (gulf, ocean)
H2060	Gravel Pit/Quarry filled with water	A body of water in a place or area from which commercial minerals were removed from the Earth
H2081	Glacier	A body or stream of ice moving outward and down slope from an area of accumulation; an area of relatively permanent snow or ice on the top or side of a mountain or mountainous area (ice field, ice patch, snow patch)
H3010	Stream/River	A linear body of water flowing on the Earth's surface (anabranche, awawa, bayou, branch, brook, creek, distributary, fork, kill, pup, rio, river, run, slough)
H3013	Braided Stream	A body of water flowing on the Earth's surface that is separated into multiple channels
H3020	Canal, Ditch or Aqueduct	A manmade waterway used by watercraft or for drainage, irrigation, mining, or water power (ditch, lateral)

K1100	Housing Unit Location	
K1121	Apartment Building or Complex	
K1122	Rooming or Boarding House	
K1223	Trailer Court or Mobile Home Park	
K1225	Crew-of-Vessel Location	
K1226	Housing Facility/Dormitory for Workers	
K1227	Hotel, Motel, Resort, Spa, Hostel, YMCA, or YWCA	
K1228	Campground	
K1229	Shelter or Mission	
K1231	Hospital/Hospice/Urgent Care Facility	One or more structures where the sick or injured may receive medical or surgical attention (infirmary)
K1232	Halfway House/Group Home	
K1233	Nursing Home, Retirement Home, or Home for the Aged	
K1234	County Home or Poor Farm	
K1235	Juvenile Institution	
K1236	Local Jail or Detention Center	
K1237	Federal Penitentiary, State Prison, or Prison Farm	
K1238	Other Correctional Institution	
K1239	Convent, Monastery, Rectory, Other Religious Group Quarters	
K1241	Sorority, Fraternity, or College Dormitory	
K1251	Military Group Quarters	
K2100	Governmental	
K2110	Military Installation	This feature represents areas owned and/or occupied by the Department of Defense for use by a branch of the armed forces, including the Army, Navy, Air Force, Marines, Coast Guard, and include state owned areas for the use of the National Guard.
K2146	Community Center	
K2165	Government Center	
K2167	Convention Center	
K2180	Park	This feature represents parklands defined and administered by Federal State and Local governments.
K2181	National Park Service Land	National Park Service Land
K2182	National Forest or Other Federal Land	National Forest or Other Federal Land
K2191	Post Office	An official facility of the U.S. Postal Service used for processing and distributing mail and other postal material
K2193	Fire Department	

K2194	Police Station	
K2195	Library	
K2196	City/Town Hall	
K2197	Mixed Use/Other Non-residential	
K2300	Commercial Workplace	
K2361	Shopping Center or Major Retail Center	
K2362	Industrial Building or Industrial Park	
K2363	Office Building or Office Park	
K2364	Farm/Vineyard/Winery/Orchard	Farm/Vineyard/Winery/Orchard
K2366	Other Employment Center	
K2400	Transportation Terminal	
K2424	Marina	
K2432	Pier/Dock	
K2451	Airport or Airfield	A manmade facility maintained for the use of aircraft (airfield, airstrip, landing field, landing strip)
K2452	Train Station, Trolley or Mass Transit Rail Station	
K2453	Bus Terminal	
K2454	Marine Terminal	
K2455	Seaplane Anchorage	
K2456	Airport - Intermodal Transportation Hub/Terminal	
K2457	Airport - Statistical Representation	
K2458	Park and Ride Facility /Parking Lot	
K2459	Runway/Taxiway	
K2460	Helicopter Landing Pad	
K2500	Other Workplace	
K2545	Museum, Visitor Center, Cultural Center, or Tourist Attraction	
K2561	Golf Course	
K2564	Amusement Center	
K2582	Cemetery	A place or area for burying the dead (burial, burying ground, grave, memorial garden)
K2586	Zoo	
L4010	Pipeline	
L4020	Powerline	
L4040	Conveyor	
L4110	Fence Line	
L4121	Ridge Line	
L4125	Cliff/Escarpment	A very steep or vertical slope (bluff, crag, head, headland, nose, palisades, precipice, promontory, rim, rimrock)
L4130	Point-to-Point Line	

L4140	Property/Parcel Line (Including PLSS)	
L4165	Ferry Crossing	
P0001	Nonvisible Linear Legal/Statistical Boundary	
P0002	Perennial Shoreline	
P0003	Intermittent Shoreline	
P0004	Other non-visible bounding Edge (e.g., Census water boundary, boundary of an areal feature)	
R1011	Railroad Feature (Main, Spur, or Yard)	Rail feature refers to a line of fixed rails or tracks that form railways or railroads, spurs, and rail yards. They are used for the transport of passengers and goods.
R1051	Carline, Streetcar Track, Monorail, Other Mass Transit Rail	Carline, Streetcar Track, Monorail, and other mass transit refer to various forms of rail transport that has one or more than one track on which monorails or streetcars run. These tracks are typically in urban areas.
R1052	Cog Rail Line, Incline Rail Line, Tram	Cog Rail Line, Incline Rail Line are railways with a special toothed rack rail or rack mounted on the railroad ties between the running rails. The trains are fitted with one or more cog wheels that mesh with this rack rail. This allows the trains to operate on steeply inclined slopes. A Tram is a cable car, especially one suspended from an overhead cable, or a wheeled vehicle that runs on rails and is propelled by electricity.
S1100	Primary Road	Primary Road
S1200	Secondary Road	Secondary Road
S1400	Local Neighborhood Road, Rural Road, City Street	Local Neighborhood Road, Rural Road, City Street
S1500	Vehicular Trail (4WD)	Vehicular Trail (4WD)
S1630	Ramp	Ramp
S1640	Service Drive usually along a limited access highway	Service Drive usually along a limited access highway
S1710	Walkway/Pedestrian Trail	Walkway/Pedestrian Trail
S1720	Stairway	Stairway
S1730	Alley	Alley
S1740	Private Road for service vehicles (logging, oil fields, ranches, etc.)	Private Road for service vehicles (logging, oil fields, ranches, etc.)
S1750	Private Driveway	Private Driveway
S1780	Parking Lot Road	Parking Lot Road
S1820	Bike Path or Trail	Bike Path or Trail
S1830	Bridle Path	Bridle Path
S2000	Road Median	Road Median

Table A5: Select MTFCC Codes

Appendix 4: Reading a Map

Scales

A map is a paper or digital representation of an area. Naturally, the map is always smaller than the area it represents, so nearly all maps are equipped with a scale, which depicts the ratio of distance on the map to the actual distance on land. The scale can be designed any number of ways, but two of the most common scales are ratio scales (Figure A6.1), which describe a ratio between the map and the real world (e.g., 1:24,000), and bar scales, which depict that relationship graphically by displaying how much a certain distance on the map represents in the real world (Figure A6.1). In other words, if a map has a ratio scale of 1:24,000, it means that one inch on the map represents 24,000 inches on the ground. (This works with any unit of measurement, so long as the unit being used on the map is the same as – or properly converted from – the unit being depicted on the ground.) Often a map will have both types of scale.

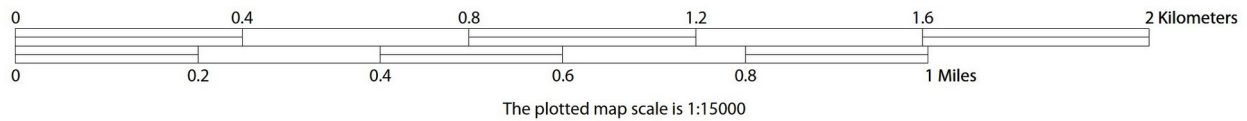


Figure A.6.1: The map from which this scale was taken has a ratio scale of 1:15,000. The bar scale shows distances in kilometers and miles.

A bar scale will often be a set length (e.g., one inch), and/or represent a set distance (e.g., one mile). You can use the bar scale to determine distance on your map by using a ruler. Simply place the ruler on the map to determine the distance on the map; then place the ruler along the bar scale, which will show how much that distance represents on the ground.

Maps that display a small area, but with a relatively large amount of detail, are considered large-scale maps (see Figure A6.2). A map that displays a large area, but shows less detail, is called a small-scale map (see Figure A6.3). This is because the representative fraction of a large-scale map (e.g., 1/7,500 or 1:7,500) is a larger fraction than that of a small-scale map (e.g., 1/250,000 or 1:250,000).

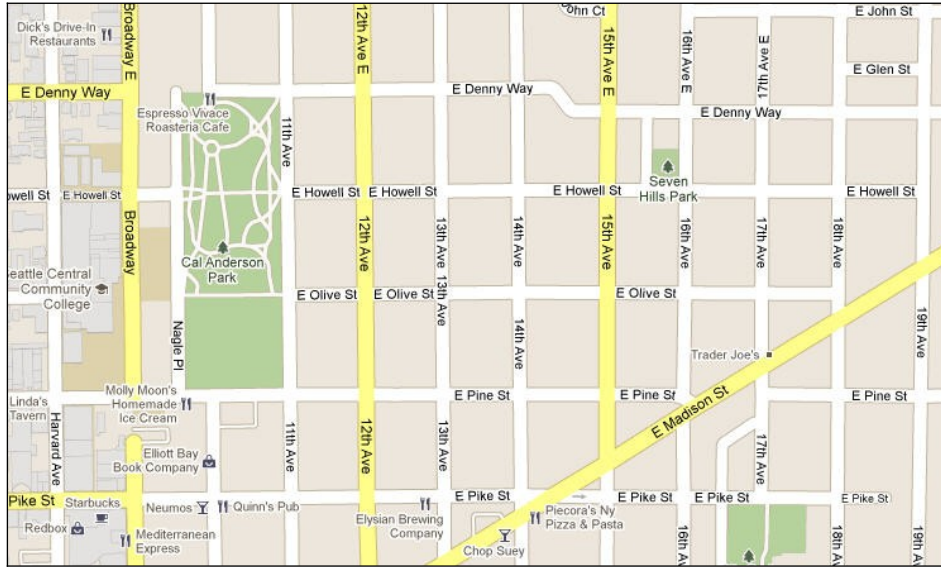


Figure A6.2: A large-scale map shows a greater amount of detail; this example displays streets, parks, churches and restaurants.



Figure A6.3: A small-scale map shows a large area, but with a small amount of detail.

Compass Rose

All maps should have some sort of diagram depicting at least one – but sometimes all – of the cardinal directions (north, south, east, and west) that the map reader can use to orient the map. This diagram is sometimes called a compass rose (see Figure A6.4). A compass rose can have any number of designs, and north can be shown in any direction on the map, but most maps are oriented with north at the top of the map. It is important to check the compass rose when beginning to read a map, in order to determine the direction in which the map is oriented (i.e., which direction is at the top of the map).

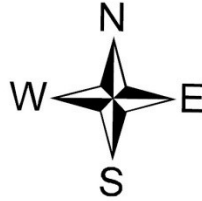


Figure A6.4: Compass Rose

Legend

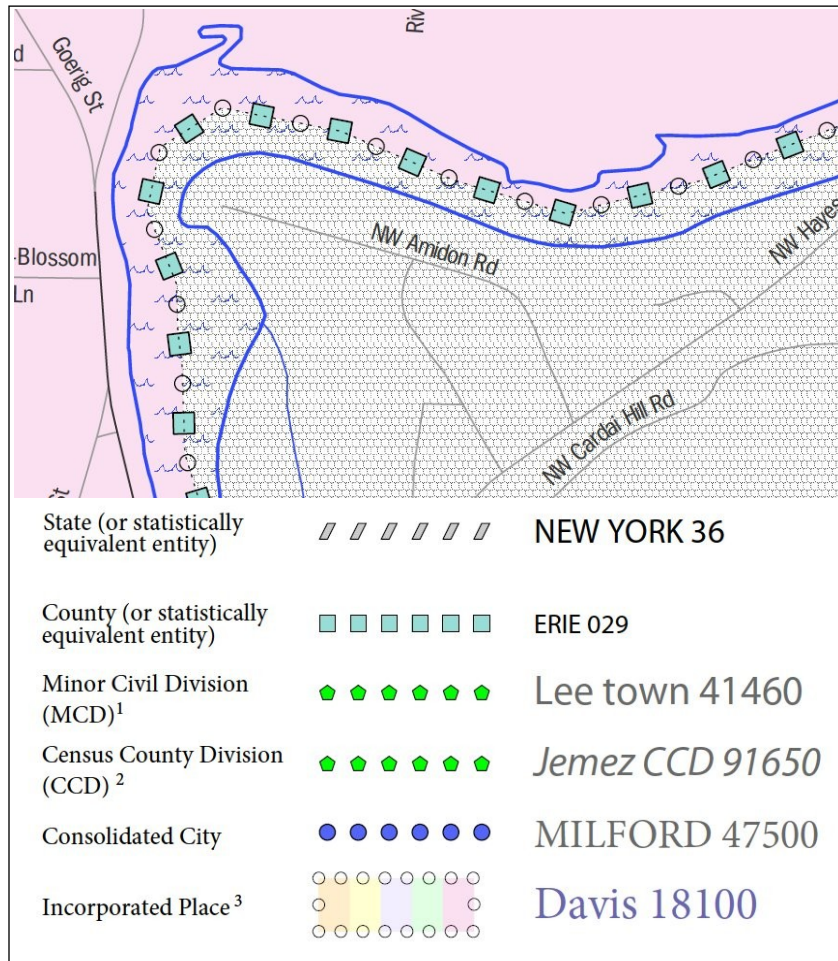
Because a map is a graphic representation of a real-world area, naturally it is necessary, and convenient, to symbolize real-world features with representative symbols. These symbols can take any form, so long as they are consistent within any individual map. In order to describe what each symbol means, most maps have a legend (see Figure A6.5, below). The legend is typically located on the side or bottom of the map – they can be anywhere, so long as they do not obstruct the integral parts of the map. Typically, the legend will have a small example of each symbol (e.g. a line, or a picture of a tent), and next to the symbol, in text, a brief description of what is being depicted (e.g. “road”, or “campground”).

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate		Geographic Offset and Corridor	
U.S. Highway		Water Body	
State Highway		Swamp or Marsh	
Other Road		Glacier	
Cul-de-sac		Airport	
Circle		Cemetery	
Address Range Break ⁴		Golf Course	
4WD Trail, Stairway, Alley, Walkway, or Ferry		Military	
Railroad			
Pipeline or Power Line			

Figure A6.5: A legend describes what each symbol means

Sometimes a map needs to depict multiple features concurrently. This is because some lines are the boundaries of multiple geographies at the same time (i.e. a county boundary can also be a city boundary, a voting district boundary, and even a highway or river). Such instances can be depicted in various ways, but Census Bureau maps depict coincident lines by alternating the

symbols for each type of line as shown in Figure A6.6 below. In other words, if a line is both a county boundary (symbolized by a series of squares) and a city boundary (a series of circles), that boundary will be depicted as a series of alternating squares and circles for the length of the concurrency.



FigureA6.6: In this case, the city and the county boundaries are coincident, and run through the middle of the river.

In situations where higher-level geographies (e.g. national, state, county, or county subdivisions) coincide, the Census Bureau’s maps display only the symbol of the highest-ranking of these boundaries. In other words, if a particular boundary is shared by both a state and county, only the symbol representing the state boundary will be displayed.

Index Maps

In order to decide which map you need to use for your BAS submission, it is necessary to view the entity as a whole, and choose the correct parent map sheet based on its location within the entity. You can do this by referring to the index map (Figure A6.7), a relatively small-scale map that shows the entire entity, and the location and number of all parent map sheets within that entity. Each parent map sheet has a numerical locator which differentiates it from the other parent map sheets associated with that entity. The numbering begins with the northern and western-most parent map sheets, and continues left-to-right, in much the same pattern as words

in a book. By referring to the index map, you can then determine which parent map sheet(s) you need to use for your BAS submission, and then access it based on its number on the index map.

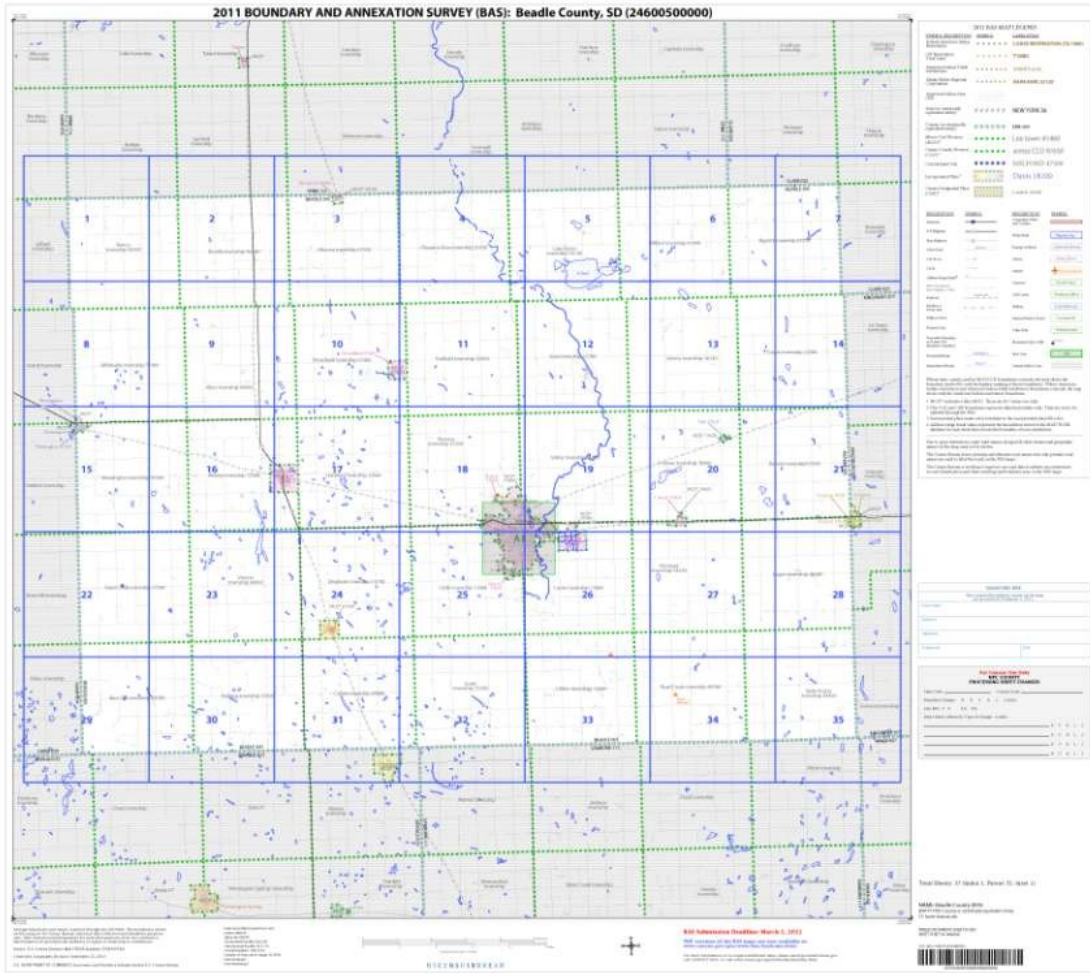


Figure A6.7: The Index Map sheet shows the location of all parent map sheets and inset map sheets within an entity.

The index map is not appropriate for BAS submissions. Its purpose is as a reference or index of parent maps, and it will not be accepted as a BAS submission.

Inset Maps

In some instances, in highly congested areas, even a parent map sheet provides insufficient detail for BAS purposes. In such cases, rather than using a parent map, the area is depicted within an inset map (Figure A6.10). This refers to a map with a very large scale, so that it displays a smaller area than the parent map sheet, but with greater detail. On the index map, an inset map is represented by a green outline, and is assigned a number preceded by a letter (i.e. A1, A2, B1, etc.), as shown in Figure A6.9 on the next page. Inset maps are only found in areas with a large number of features, and as such are used less often than parent maps.

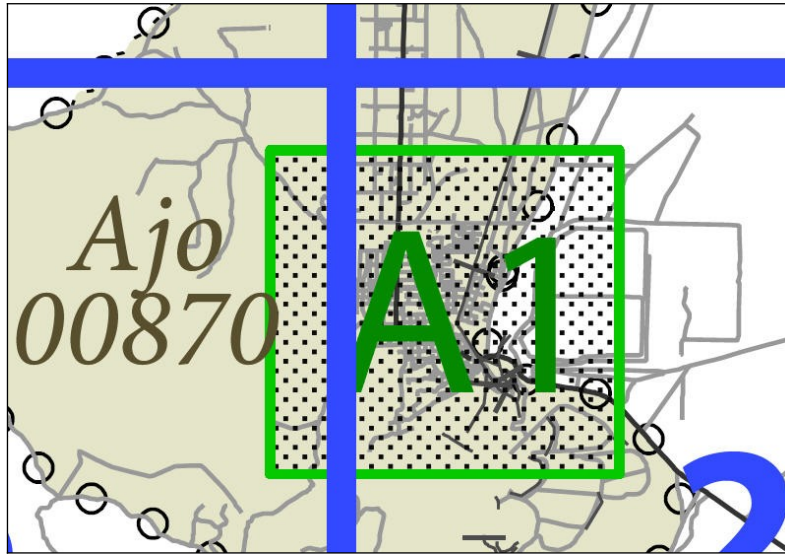


Figure A6.9: An inset map as it is displayed on the index map

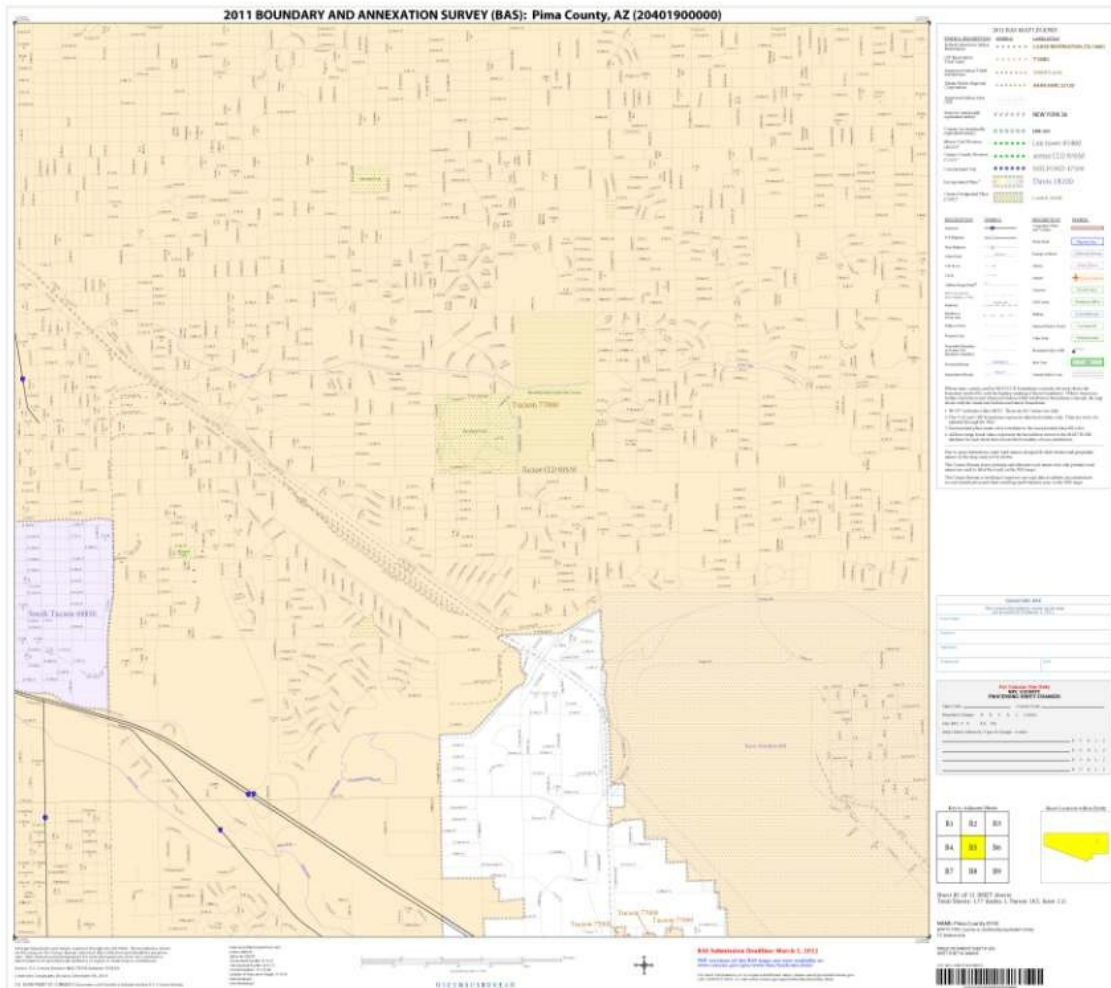


Figure A6.10: Inset maps show areas of relative congestion at a large scale, allowing a greater amount of detail.

Parent Maps

Many entities², such as incorporated places and counties, are too large to be shown on a single map; that is, the scale is too small to allow the necessary details for BAS updates. Thus, it is necessary to separate the entity into sections, each of which has its own map, called the parent map sheet³ (Figure A6.11). Thus, a single entity is often represented with numerous map sheets, with each parent map sheet showing a small section of the entity. Each parent map is assigned a number, beginning with the number one and increasing progressively for each additional parent map sheet (i.e. 1, 2, 3, 4, etc.). In this way, viewing and editing map sheets becomes more manageable, and it becomes possible to depict an area with the level of detail necessary to make changes or challenges. In most instances, the parent map is the one that should be used for BAS submissions.

² Entity refers to any local governmental unit, e.g. a county, incorporated place, or minor civil division.

³ Within the scope of BAS, the terms 'map' and 'map sheet' have the same meaning, and they are used interchangeably throughout this document.

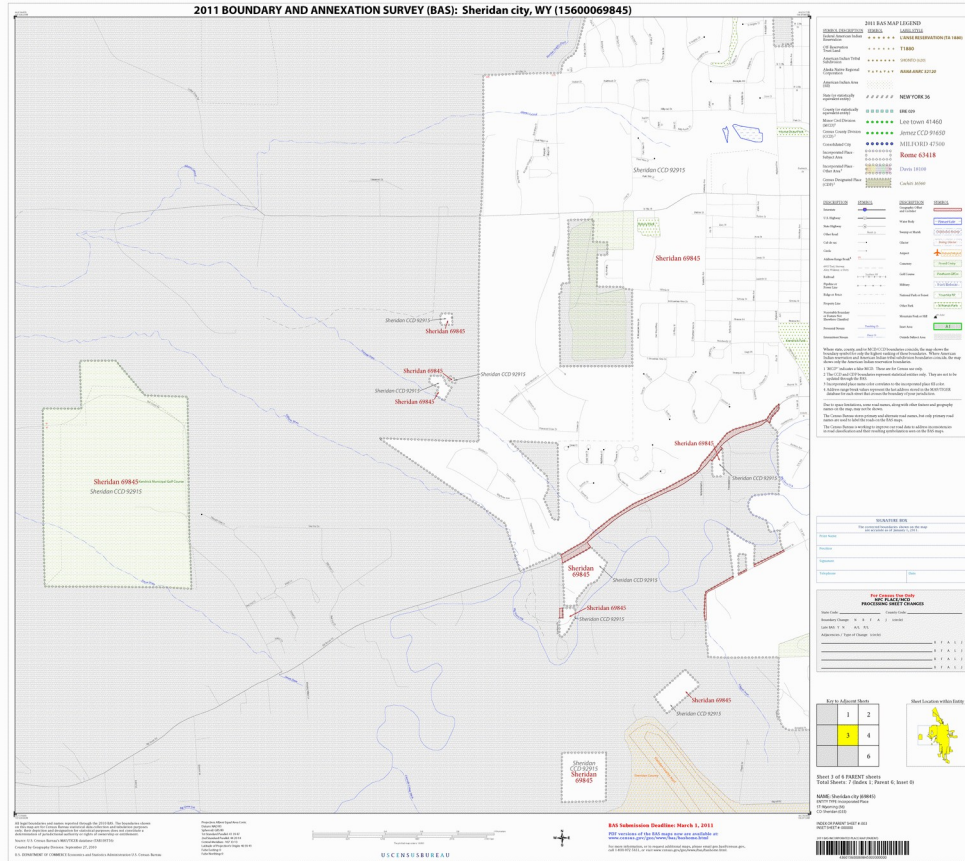


Figure A6.11: The parent map sheet shows a section of an entity at a relatively large scale.

In the bottom right-hand corner of the parent map sheet, there is a key to the parent map sheet's location in relation to adjacent map sheets as shown in Figure A6.11 above. A larger example of this key is shown in Figure A6.12 on the next page. This way, if you need to refer to an adjacent map sheet, you can quickly determine which one you will need.

Key to Adjacent Sheets

	1	2
	3	4
		6

Figure A6.12: The key to adjacent sheets shows where the parent map sheet lies in relation to adjacent sheets.

Next to the key to adjacent sheets, there is a small outline of the entire entity (the inside of which is colored yellow), and a blue outline of the parent map sheet. This key displays the location of the map sheet in relation to the entity as a whole as is shown in Figure A6.13 below.

Sheet Location within Entity

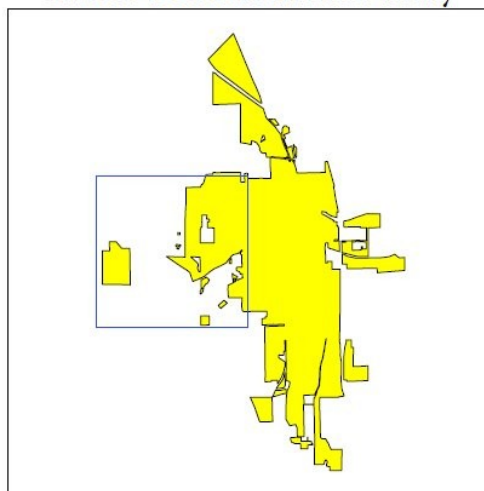


Figure A6.13: The Sheet Location within Entity key shows where the parent map sheet is located within the entity to which it belongs.