

**2006 Listing and Mapping Instrument (LAMI)
Version 4.0 Listing Function Specifications
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Version 4.0 Listing Function Specifications**

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- Confirmations include address information from record instead of listing only the “Rec #”, where appropriate.
- Rearrangement of items on Detailed Information screen.
- Reflects developer comments from Version 2.0 specification.
 - Exclusion of the Display button on the Address List screen.
 - Clarification on process for saving action codes to record.
 - Clarification on when map spot/GPS collect is launched.
 - Clarification on display and functionality of Next and Previous buttons.
 - Clarification on the process of various actions taken for a record.
 - Clarification on the process of setting the OLQ action code and housing unit status for a record.
- Revised map spot/GPS collection initiation process.
- Reflects additional changes from various development meetings.
 - Deletion of city-style/non-city style flags in Section 1 and 3 (shown with a strikethrough).
 - Additional comment regarding setting of Structure Type for Adds, Corrections, Verifies and Other Living Quarters.
 - Revised method for saving /setting action code for all action codes so that Save button is no longer used.
 - Revised method for setting of the Z action code. Revised to reflect addition of setting an structure type, and not using Save button
 - Revised Address Update Business Rules.
 - Clarification on “Same as Location Address” radio button functionality.

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- Added a new pop-up in Section 1 that let’s the user know if their GPS unit is working properly.
- Minor wording changes suggested by developers.

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- Clarification on capture of structure type for various action codes.
- Multi can now be a status for the Z action code.

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- *New for Version 3.0*
- Includes additional details as discussed with developers on:
 - QC Block List.
 - Display of the QC Flag on the Address List and Detailed Information screens.

- Clarification on the three QC fields that need to be carried in the Address List.

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- QC Action Code is now in the Visible table.
- The legal values and comments have been updated for HU-TYPE in the Visible table.
- Comments have changed in the Non-visible table for city-style location flag, city-style mail flag, noncity-style mail flag, and QC_Flag.
- Includes comments from Version 2.0 specification.
 - Grammatical changes.
- Includes changes to developer comments from Version 2.0 specification.
 - Minor changes.

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- Includes updated Field Names, Column (C), to match Jay Spurlin’s layout document.
- Includes few updates to the Item Description, Column (E).
- Includes few updates to the Editing Details, Column (G).

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- New ZIP Code rule, under “Rules for both Location and Mailing Address”.

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- No changes.

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- No changes.

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- No changes.

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- Few updates for Version 4.0 and the title of the table has changed.

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- Few updates for Version 4.0 and the title of the table has changed.

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- New for Version 4.0.

2006 Listing and Mapping Instrument (LAMI) Version 4.0 Listing Function Specifications

Introduction

Following are the specifications for the Address Canvassing listing components of the Listing and Mapping Instrument (LAMI). Developers will use these specifications as guidance on how FLD would like the LAMI program to look and function. Refer questions about these specifications to Andrea Johnson or Heidi Crawford.

Overall Assumptions

Following are general assumptions that apply to all of the functions listed in this specification:

- A-1 Copy and paste functionality is a function of the Windows CE operating system; this functionality is not specifically programmed into the LAMI software.
- A-2 When the user is required to enter text, the LAMI will automatically invoke the pop-up keyboard.
- A-3 Error messages will contain standard error and warning icons.
- A-4 Throughout this document, users from the production portion of the Address Canvassing will be referred to as “Address Canvassing production listers” or “Listers” and user from the Quality Control portion of the Address Canvassing operation will be referred to as “QC Listers”.
- A-5 Within the LAMI address list functions, the time from task initiation to task completion should be as short as possible.
- A-6 No LAMI address list function should take longer than 10 seconds to complete after initiation.
- A-7 If a LAMI address list function takes longer than 3 seconds to complete after initiation, then LAMI should provide the user with visual indication that the software is working. (ie; spinning wheel etc.).

A. BLOCK LIST

Block List Assumptions

- A-1 User will only have one Assignment Area (AA) accessible within the LAMI at a time.
- A-2 The LAMI Block List function will both read from and populate the LAMI_AMS Work Unit Status File for the AA.

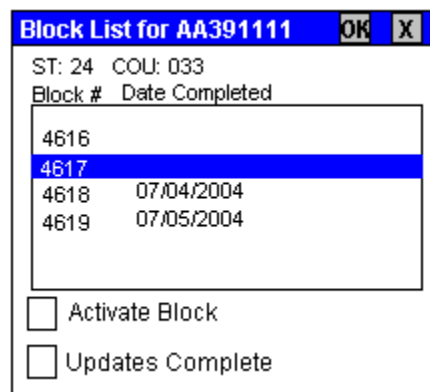
1. Block List Overview: (REQALDOS: 0101.0 / 0101.6)

The **Block List** screen will appear when the block list icon is selected from the LAMI toolbar. The **Block List** screen will show all of the blocks in the AA (See Figure A-1-1.)

The heading of the block list will display “AA:” plus the six digit AA number where the first two digits represent the operation code (for Address Canvassing the Operation code is 39) and the last four digits represent a unique AA number generated during AA creation. Example “AA: 391001”. If the AA has an alphanumeric suffix, the suffix will be displayed after the AA number. Example “AA: 391001B”.

The body of the **Block List** screen will display the state and county that the blocks are contained in, and then it will display the list of blocks in the AA, and the date the user indicated that the block was complete in the **Date Complete** column. A vertical scroll will be available when the **Block List** is larger than the screen display. To exit out of **Block List** screen, at any time without any action, the user can select the X in the upper right hand corner of the screen. After the **Block List** screen is closed, the user will be returned to the LAMI map view for the current “active block” or the AA map if no block is currently “active”.

Figure A-1-1: LAMI Block List- Revised

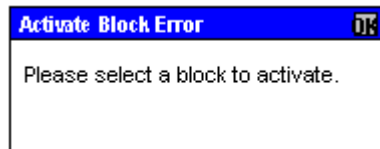


2. Activate Block Functionality: (REQALDOS: 0106.1/ 0106.3)

Following is a description of the **Activate Block** functionality available in the **Block List** screen:

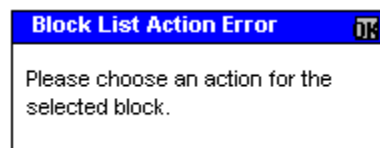
- a. To activate a block for viewing or editing, or to change the current active block, the user selects the block number. This action highlights the block on the **Block List** (like block 1237 in the illustration above),
- b. After the desired block is selected, the user will select the **Activate Block** ~~button~~ **check box** and:
 - i. The **Block List** screen will disappear
 - ii. The map will show the active block differently from the other blocks, (shaded uniquely).
 - iii. When activated, the address list will show the addresses for the active block.
- c. If no block is selected, ~~button will be grayed out and disabled.~~ and the user selects the **Activate Block** **check box**:
 - i. The user will receive a error message like as shown in Figure A-2-1.
 - ii. To remove the error message the user will select the OK button in the right hand corner of the pop-up box.

Figure A-2-1: Activate Block Error



- d. If a block is selectd and the user selects the OK button without selecting the **Activate Block** or **Updates Complete** checkbox:
 - i. The user will receive an error message as shown in Figure A-2-2.
 - ii. To remove the error message the user will select the OK button in the right hand corner of the pop-up box.

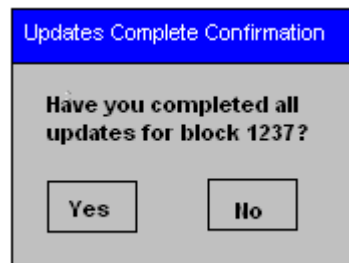
Figure A-2-2: Block List Action Error



2. **Updates Complete Functionality: (REQALDOS: 0106.2/ 0201.10/ 0201.11)**
Following is a description of the **Updates Complete** functionality available in the **Block List** screen:

- a. To indicate that all updates for a block are complete, the user will select the block, so that it is highlighted as shown in Figure A-1-1 on page 6.
- b. Once the block has been selected, the user will select the **Updates Complete button check box**.
 - i. If all address records within the active block contain an action code, **and the records with an A, C, V or Z action code also have a map spot (the manual coordinate field is populated)**, a pop-up box will appear asking the user to confirm that all updates for the block are complete. (See Figure A-3-1.)

Figure A-3-1: Block List Updates Complete Confirmation Pop-up



1. If the user selects the **Yes** button from Figure A-3-1:
 - a. The block will be marked as complete in the LAMI_AMS Work Unit Status File for the AA.
 - b. The date that the user marks the block completed will appear in the Date Complete column of the **Block List** screen.
 - c. **The current selected block will remain highlighted on the Block List.**
 - d. The user will be returned to the **Block List** screen to select another block.
2. If the user selects the **No** button from Figure A-3-1:
 - a. The block will not be marked as complete in the Date Complete column of the **Block List** screen.

- b. The current selected block will remain highlighted on the **Block List**.
 - c. The user will be returned to the **Block List** screen.
- ii. If the user tries to mark a block completed, and there is not an action code associated with every record in the block, a pop-up box will appear warning the user that they cannot mark the block as complete. (See Figure A-3-2.)

Figure A-3-2: Block List Updates Complete Error Pop-up



1. When the user selects the **OK** button from Figure A-3-2:
 - a. The pop-up will disappear.
 - b. The current selected block will remain highlighted on the **Block List**.
 - d. The user will be returned to the **Block List** screen.
- iii. If the user tries to mark a block completed, and there is not an GPS or manually collected coordinate associated with every record with an A, C, V or Z action code a pop-up box will appear warning the user that they cannot mark the block as complete. (See Figure A-3-3.)

Figure A-3-3: Block List Updates Complete Map Spot Error Pop-up



2. When the user selects the **OK** button from Figure A-3-3:
 - a. The pop-up will disappear.
 - b. The current selected block will remain highlighted on the **Block List**.
 - c. The user will be returned to the **Block List** screen.

B. DISPLAY ADDRESS LIST

Display Address List Assumptions:

- A-1 The Address List display will only show the contents of one block at a time.
- A-2 The Address List display will show existing and added addresses for the 2006 Census Test Collection Block. (REQALDOS: 0101.2/ 0101.3)
- A-3 The source of the address data shown in the LAMI will be the Census Bureau’s Master Address File (MAF). (REQALDOS: 0101.2)
- A-4 Before opening the address list within the LAMI, the user will need to select an “active block” from the **Block List** screen. (See item A.2 on page 7.)
- A-5 When map spots are highlighted on the map, using the map spot identify and find tools, the corresponding address record on the address list will be highlighted. If the unit is a multi-unit (where the structure type = multi, and multiple addresses share the same map spot #) then only one record for the multi unit will be highlighted. The record shown will be the record with the lowest record number for the selected map spot number, excluding records that have been marked as deletes or duplicates.
- A-5 The Address List display for the QC lister will include QC information not shown to the production lister. (REQALDOS: 0501.1)

1. Display Address List Overview: ((REQALDOS: 0101.1/ 0101.2/ 0101.3

- a. To open the address list within LAMI the user will select the address list icon from the LAMI toolbar.
- b. The **Address List** screen will show all of the address records in the “active” census block as shown in Figure B-1-1 below:

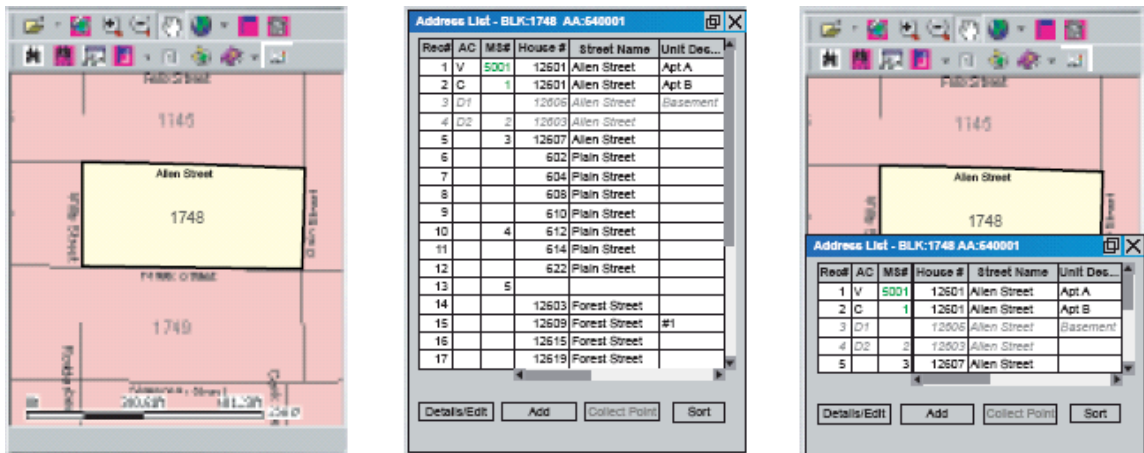
Figure B-1-1: Address List Screen

Rec#	AC	MS#	House #	Street Name	Unit Des...
1	V	5001	12801	Allen Street	Apt A
2	C	1	12801	Allen Street	Apt B
3	D		12605	Allen Street	Basement
4	D2	2	12603	Allen Street	
5		3	12807	Allen Street	
6			602	Plain Street	
7		9	604	Plain Street	
8			608	Plain Street	
9			610	Plain Street	
10		4	612	Plain Street	
11			614	Plain Street	
12			622	Plain Street	
13		5			
14			12803	Forest Street	
15			12809	Forest Street	#1
16			12815	Forest Street	
17			12819	Forest Street	

Details/Edit Add Collect Point Sort

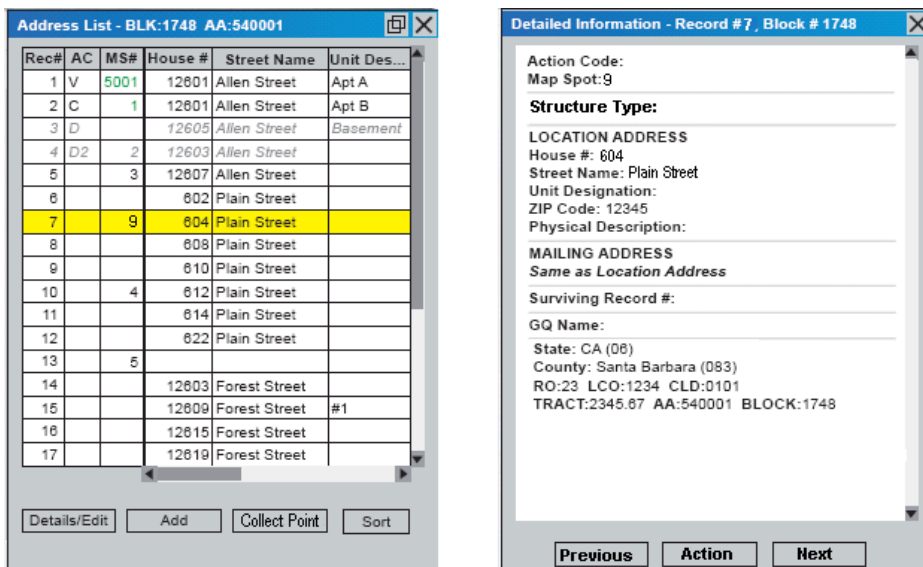
- c. The address list will be able to be displayed as a full screen or split screen with the corresponding block map. To change between the full and split screens the user will tap the screen size (standard windows min/max button) icon in the upper right hand corner of the **Address List** screen. (See Figure B-1-2 below.)
- d. To return to a full map screen the user will select the X in the upper right hand corner of the **Address List** screen to close the **Address List** screen. (See Figure B-1-2 below.)

Figure B-1-2: Address List Screen Options



- e. To return to the full **Address List** screen the user will need to launch the Address List function from the toolbar.
- f. To see detailed information about a specific address, the user will select an address from the address list, and then select the **Details/Edit** button within the address list screen. After selecting this button the **Detailed Information** screen will appear as shown in Figure B-1-3.

Figure B-1-3: Detailed Address Screen



2. **Address List Display Details:** (REQALDOS: 0101.1/ 0101.2/ 0101.3/ 0101.5/ 0201.8/ 0201.8.1)

g. **Address List Display Header:** The LAMI will display the following data in the header of the **Address List** screen. (Additional information about the header items of the address list can be found in Attachment A: LAMI MAF Details):

i. **Block:** Display “**BLK:**” Plus the 4 or 5 digit 2006 collection block number that has been selected as active from the block. Example “**BLK: 1234**”.

ii. **AA:** Display “**AA:**” plus the six digit AA number where the first two digits represent the operation code (for Address Canvassing the Operation code is 39) and the last four digits represent a unique AA number generated during AA creation. Example “**AA: 391001**”. If the AA has an alphanumeric suffix, the suffix will be displayed after the AA number. Example “**AA: 391001B**”.

h. **Address List Display Body:**

The LAMI will display the following data items in the body of **Address List** screen. The display will be a table where each field in the table will be labeled with the header described below and shown in Figure B-1-1 on page 11. (Additional information about the data items in the address list body can be found in the Appendix A: LAMI MAF Details):

#	Data Item	Display Header	Item Description
1	Record Number	Rec #	Unique number for each address record in the Assignment Area (including Adds).
2	Action code	AC	Action code assigned during canvassing. Initially blank, after canvasser finishes the record it will be filled.
3	Map Spot Number	MS #	Number associated with the physical representation of the address on the map. For addresses without an existing map spot, this field will be left blank. For all others use existing map spot number.
4	Location House Number	House #	House number associated with the location address of each record.
5	Location Street Name	Street Name	Street name associated with the location address of each record.
6	Location Unit Designation	Unit Desig	Unit designators associated with the location address or each record.
7	Physical Description	Phys Desc	Display the physical description associated with address record.

#	Data Item	Display Header	Item Description
8	Structure Type	Str Type	Displays the structure type flag. Initially blank, after canvasser finishes the record it will be filled.
9	Survivor_ID	Surv Rec #	Displays the record number of the address it duplicates. Initially blank, after canvasser finishes the record it may be filled.

i. **Functionality Associated with Address List Display:**

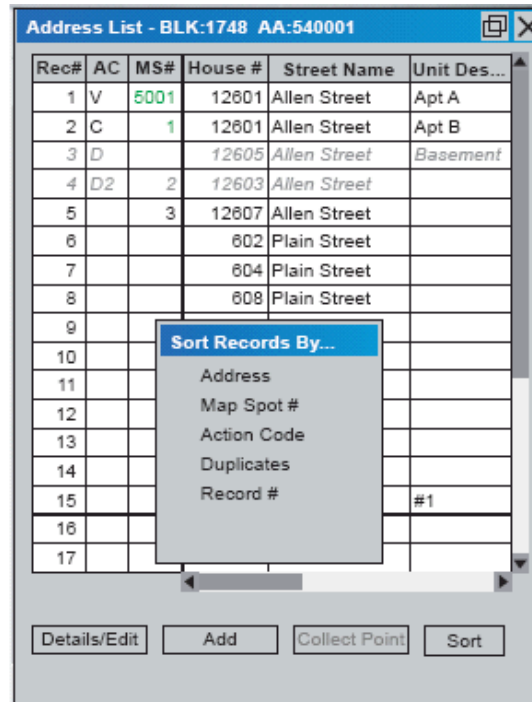
The following functions will be present on the initial display of the address list.

- i. The user must have the ability to scroll up and down (vertical scroll), and side to side (horizontal scroll) within the **Address List** screen.
- ii. Columns 1-3 of the address list screen will be “frozen” within the **Address List** screen. That is, even if the user uses the horizontal scroll bar to adjust the screen-view, the first three columns will remain on the display while additional items are brought into screen through the horizontal scroll. These columns are Rec#, AC, and MS#.
- iii. The initial width of each column should be set so that most of the time the column does not need to be resized to show information in the field. This width will be determined by GEO’s software development working group.
- iv. The user will have the ability to resize the columns 4-9 of the **Address List** screen with the stylus. When resized, column widths will have a minimum width of one character so that the user is not able to mistakenly hide a column from screen.
- v. The user will be able to select records by tapping the stylus anywhere on the record’s corresponding row in the **Address List** screen. Selecting a record will highlight it in yellow. The highlight will indicate that the record is selected and available for additional action.
- vi. The user will be able to sort the address records shown in the **Address List** screen using several predefined sorts: (REQALDOS: 0101.5/0201.5.1)
 1. **Address** – When this option is selected the LAMI will sort address records in ascending order with blanks sorted to the bottom by:
 - a. Location Street Name,
 - b. Location House Number,
 - c. Location Unit Designation.

2. **Map Spot #** - When this option is selected the LAMI will sort address records in ascending order with blanks sorted to the bottom by:
 - a. Map Spot #
 - b. Location Street Name,
 - c. Location House Number,
 - d. Location Unit Designation.
3. **Action code** - When this option is selected the LAMI will sort address records in ascending order with blanks sorted to the bottom by:
 - a. Action code,
 - b. Location Street Name,
 - c. Location House Number,
 - d. Location Unit Designation.
4. **Duplicate Records** – (REQALDOS: 0201.5.1)
When this option is selected the LAMI will sort the address list so that records that have been linked as duplicates are “clustered” together within the sorted list. Each “cluster” will contain a survivor record and the records linked to it. Once duplicates have been clustered together, the clusters (using the address of the survivor) will be sorted with other address records in ascending order with blanks sorted to the bottom by:
 - a. Street Name,
 - b. House Number,
 - c. Unit Designation.
 - d. Map Spot
 - e. Physical Description
5. **Record #** - When this option is selected the LAMI will return the address to its default sort, by record number.
6. The user will activate the sort by selecting the **Sort** button from the address list screen. This will launch a Sort by Pop-up as shown in Figure B-2-1 on page 16.
7. To conduct the sort users will select the appropriate radio button-sort from the Sort Records by Pop-up box shown in Figure B-2-1 and then select the **OK** button. (Note: radio buttons should be standard round radio buttons.) Then the list will sort according the button selected. This sort will be reflected in the **Address List** screen and the **Detailed Information** screen.

8. To cancel the sort users will select the **Cancel** button from the Sort Records by Pop-up box shown in Figure B-2-1. Then LAMI will remove the Sort Records by Pop-up box shown in Figure B-2-1 from the **Address List** screen view.

Figure B-2-1: Address List Sort Function



- vii. The **Address List** screen will contain a **Details/Edit** button to display, additional information about an address as described below and shown in Figure B-1-3 on page 12.
1. The user will select a record from the address list screen.
 2. The user will tap the **Details/ Edit** button.
 - a. If the no address record has been selected, the **Details/Edit** button will be grayed out and the function will be deactivated until a record has been selected.
 3. The LAMI will replace the **Address List** screen with the Detailed **Information** screen to show additional information about the selected record.
- viii. Within the **Address List** screen, deletes (records with a D1 action code) or duplicates (records that have been marked with a D2 action code), **Non-residential** (records that have been marked with a D2

action code) and Uninhabitable (records that have been marked with a U action code) will be distinguished from other records by making the text in the record gray and italicized. (REQALDOS: 0201.2.2/0201.5.9)

- ix. The **Address List** screen will contain an **Add** button, which is described in section C.1 on [page 20](#).
- x. The **Address List** screen will contain a **Collect Point** button, which is described in section D.1.b on [page 53](#).

3. Detailed Information Display:

j. Detailed Information Display Header:

The LAMI will display the following data in the header of the detailed information display for a selected address as shown in Figure B-1-3 on [page 12](#). Additional information about the header items of the detailed information display can be found in the “2nd Level: Address Screen” portion of Appendix A: LAMI MAF Details:

- i. “**Detailed Information -**” plus,
- ii. **Record Number:** Display “Record #” plus the number of the address record selected for the detailed screen then a comma. Example “**Record # 123,**”
- iii. **Block Number:** Display “Block:” Plus the 4 or 5 digit 2006 collection block number that has been selected as active from the block. Example “**Block # 1234**” and the block suffix where present. Example “**AA: 391001**”. If the AA has an alphanumeric suffix, the suffix will be displayed after the AA number. Example “**AA: 391001B**”.
- iv.

k. Detailed Information Display Body:

The LAMI will display items described in Appendix B: LAMI Details/Edit Display and Update Details in the body of the detailed information display as shown in Figure B-1-3 on [page 12](#).

- i. Additional information about the [source of the](#) data items in the detailed information display can be found in Appendix A: LAMI MAF Details.
- ii. Additional information about the display of the items in the Detailed Information screen can be found in Appendix B: LAMI Details/Edit Display and Update Details

1. Functionality Associated with Detailed Information Display:

- i. The **Detailed Information** screen will replace the **Address List** screen.
- ii. The user will only be able to interact with the **Detailed Information** screen while it is open.
- iii. When the **Detailed Information** screen is closed the user will be returned to the **Address List** screen and its functionality.
- iv. User will have the ability to tap the **X** in the upper right hand portion of the **Detailed Information** screen to close this screen and return to the **Address List** screen.
- v. User will have the ability to view detailed address information about the “next” or “previous” records, as sorted in the **Address List** screen, using **Next** or **Previous** buttons on the detailed address information display as shown below in Figure B-3-1.

Figure B-3-1: Next and Previous Buttons on Detailed Information Display



1. When the **Previous** button is selected, the **Detailed Information** screen will be updated to reflect the previous address record in the list.
 2. When the **Next** button is selected, the **Detailed Information** screen will be updated to reflect the next address record in the list (using the current sort of the **Address List** screen).
 3. The next and previous records will reflect the order that the records appear on the **Address List** screen. If the **Address List** screen is sorted, the next and previous records will reflect this sort.
- vi. User will have a vertical scroll available when the screen cannot accommodate all detailed address information about the selected address record.

4. Address Information Required by the LAMI Non-visible to the User

In addition to the address information shown to the user, the LAMI will also capture and manage many data items for each record that are non-visible to the user. These items are necessary to support Address List functionality within the LAMI. Appendix A describes each of these items in more detail.

5. Address List Help Screen (REQLADOS: 0101.7)

User help for the LAMI's Address List functionality should be included as part of the Help screen launched by the **Help** tool on the LAMI toolbar. The Address List help will be contained under the title "**Address List Buttons and Corresponding Functions**". Appendix I, included at the end of this document, provides specific contents for this help screen.

C. EDIT ADDRESS LIST

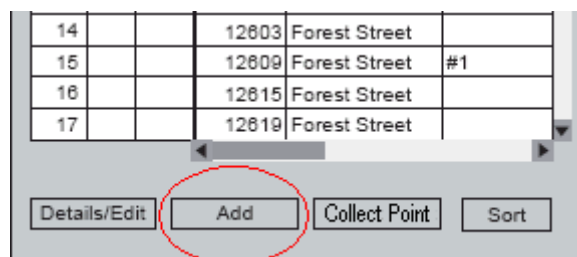
Edit Address List Assumptions:

- A-1 Only one block will be available for editing at a time. (REQALDOS: 0201.5.6)
 - A-2 Before opening an address list to edit within the LAMI, the user will need to select an “active block” from the block list. (See item A.2 on page 7.)
 - A-3 The addresses available for editing will include existing addresses from the Census MAF and added addresses. (REQALDOS: 0101.2/ 0101.3)
 - A-4 All updates made to MAF data through the LAMI will be made to a shape file containing MAF data and then subsequently processed into a MAF Update File. (REQALDOS: 0101.4)
 - A-5 Confirmation pop-ups should contain location address information about the record # in question including the location house number, location street name, and location unit designation and/or map spot and physical description.
 - A-6 Address records handled from the **Address List** screen and **Detailed Information** screen will retain the last sort conducted unless otherwise specified.
 - A-7 Duplicate records cannot be linked to added records. In other words, an added record cannot be a surviving record in a duplicate linkage.
 - A-8 The amount of editing available to a record will be determined by the action code selected. (REQALDOS: 0201.6/ 0201.6.1)
- 1. Adding Addresses:** (REQALDOS: 0201.1/ 0201.1.1/ 0201.1.3 /0201.1.4/ 0201.1.5/ 0201.1.6/ 0201.1.7/)

During Address Canvassing, users will need to add addresses to their address list that exist on the ground, but are not currently part of the address list. Add functionality will be available from the **Address List** screen. Following are the details for adding an address to the block currently displayed in the **Address List** screen:

- a. The user will tap the **Add** button at the bottom of the **Address List** screen. (See Figure C-1-1.)

Figure C-1-1: Address List Add Button



- b. LAMI will bring up an editing interface for adding the new address record as shown in Figure C-1-2 on [page 21](#).
- m. Details on the method for data entry for each data item are listed in Appendix B: [LAMI Details/Edit Display and Update Details](#). (REQALDOS: 0201.1.1/ 0201.1.5/ 0201.1.6)
- c. Specific rules for adding new records are provided in Appendix C: [Address Record Update Rules](#). (REQALDOS: 0201.1.3/ 0201.1.4)

Figure C-1-2: LAMI Add Record Screen

- d. Editable fields will be shown in black text, non-editable fields will be shown in gray text.
- e. When adding an address record the user will use the **same as location address** radio button from the **Add Record** screen to indicate whether the mailing address is the same or different from the location address for the record. The user of this radio button is described in detail in Appendix B.
- f. When the add action has been selected, LAMI will make **Cancel** button available on the bottom right hand side of the **Add Record** screen as shown in [Figure C-1-2](#). The user can cancel adding the record at any time by selecting the **Cancel** button. When the user selects the **Cancel** button:
 - i. A pop-up message window will appear to ask user to confirm their cancel (see [Figure C-1-3](#)).

Figure C-1-3: Cancel Add Address Confirmation Pop-up:

1. If the user selects the **Yes, Cancel** button from Figure C-1-3,
 - a. LAMI will return the user to the **Address List** screen.
 - b. No action will be taken on the address list.
 2. If the user selects the **No, Continue Adding Address** button from Figure C-1-3:
 - a. LAMI will return the user to the **Add Record** screen.
- g. The information required to add an address will most likely not fit on one screen, therefore the **Add Record** screen will contain a vertical scroll to show all of the editable fields as shown in Figure C-1-4.

Figure C-1-4: All Editable Fields in LAMI

Action Code: A

Map Spot:

Structure Type: ▼

Type of Living Quarters: HU ▼

LOCATION ADDRESS

House #:

Street Name: ▼

Unit Designation: ▼

ZIP Code: ▼

Physical Description:

MAILING ADDRESS

Same as LOCATION ADDRESS

City-Style Mailing Address

House #:

Street Name: ▼

Unit Designation:

ZIP Code: ▼

Rural Route Address:

Type: ▼

#: ▼

Box #:

ZIP Code: ▼

PO BOX Address

P.O. Box #:

ZIP Code: ▼

GQ Name: ▼

State: CA (06)

County: Santa Barbara (083)

RO:23 LCO:1234 CLD:0101

TRACT:2345.67 AA:540001 BLOCK:1748

- h. LAMI will make an **Undo** button available once any field in a record is added. The **Undo** button is located in the lower left hand corner of the **Add Record** screen as shown in Figure C-1-2 on [page 21](#). The **Undo button** will allow the user to undo the change they made to the last field they edited.
 - i. When the **Undo** button is selected:
 - 1. LAMI will revert to the field as it was before the user entered information into it.
- i. The user can modify entries to any field, not only the last field edited, by selecting the field with their stylus and typing over existing information.
- j. If any fields do not conform to the Address Record Update Rules LAMI will provide the user with feedback stating the user error. Appendix C: [Address Record Update Rules](#) of this document describes both the Address Record Update Rules and the user error that will appear to the user when they make entries that follow the rule.
- k. LAMI will make a **Save** button available any field in a record is added. The **Save** button is located in the **center** of the **Add Record** screen as shown in Figure C-1-2 on [page 21](#). This button replaces the **Action** button that was visible on the **Detailed Information** screen. The user will select the **Save** button as **a final step** when he/she is done adding the record to save the record. This will save the record and move the user to the next step in the process. Once the user selects the **Save** button:
 - i. All data entered in the added record will be saved.
 - ii. The **A –Add** action code is saved to the address record.
 - iii. The user is returned to the **Address List** screen.
 - iv. The action code section of both the **Address List** and **Detailed Information** screen display **A**.
 - v. LAMI will set the following address flags behind the scenes. prompt the user to collect a map spot as described in Section D.1 on [page 50](#).
 - 1. **City-style location flag:** If a house number and street name are present for the location address, flag will be set to “Y”. Otherwise, set to “N.”
 - 2. **City-style mailing flag:** When the **same as location address** radio button is selected, flag will be set to “Y,” else set to “N.”

3. **Noncity-style mailing flag:** If a complete P.O. Box address (Box number and ZIP) OR a complete Rural Route Address (Rural Route Descriptor, Route Number, Box Descriptor, and Box Number) are present, flag will be set to "Y," else set to "N."
4. LAMI will prompt the user to collect a map spot as described in Section D.1 on page 43. Moved as part of 1-K-ii above.

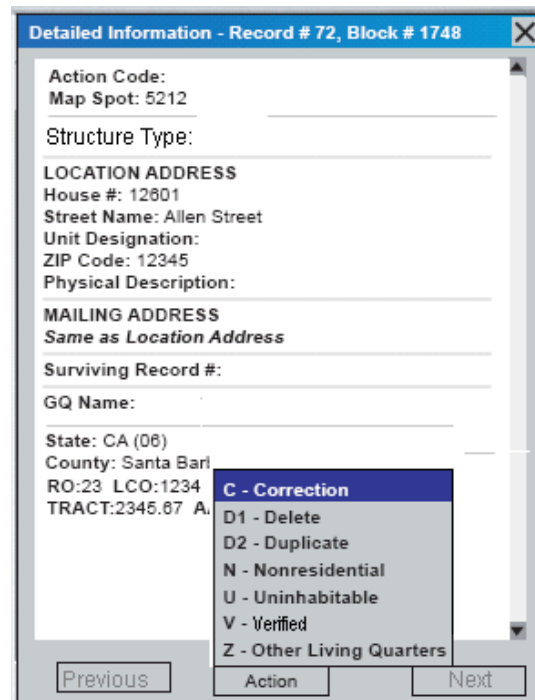
2. Editing Addresses Overview:

During Address Canvassing, the user must select an action code for each address within the blocks that are assigned to him/her. Additionally, the user may need to make **additional** edits to some of the addresses within the block she/he is working. Following are the details for **setting action codes**, and editing existing and newly added addresses within the LAMI. To set an action code, and edit an address record:

- a. Users will launch editing functions from the **Detailed Information** screen. This will ensure that the user sees an entire address record before selecting what action to take with the record. **The user will not be able to set an action code from the Address List screen.**
- b. Users will select action codes for each record in the address list using the submenu that appears when the **Action** button at the bottom of the **Detailed Information** screen is selected as shown in Figure C-2-1 on **page 25**. The selection of an action code will launch all subsequent editing actions available for the record. The editing actions available for the record will be dependent on the action code selected for/associated with the record shown.
- c. **After the user selects the Action button, the Next and Previous buttons will be grayed out so that the user cannot move between records while setting an action code or editing a record.**
- d. **To set the action code, the user will select the Save button from the bottom of the Detailed Information screen and then button in the confirmation pop-up that asks user to confirm their action code choice.**
- e. **After selecting an action code, but before saving (setting) the action code the users can select the Cancel button from the lower right hand side of the Detailed Information screen. LAMI will provide the user a confirmation pop-up that asks user to confirm their action code choice. This will cancel the action code selected and return the user to the Detailed Information screen where they will be able to select another action for the record.**

- f. After the initial action code for a record (other than an added record) is set, users can change the action code of an address record by using the **Restore Record** action detailed on pages 44-46. Then, once the record has been restored, they user can select a different Action code from Action button submenu.

Figure C-2-1: Launching Editing Functions from the Initial Address List Screen



3. Correcting Addresses (C-Correction): (REQALDOS: 0201.3/ 0201.3.1/ 0201.3.2/ 0201.3.4)

To indicate that an address shown on the **Detailed Information** screen exists but requires some corrections the user will select **C- Correction** from the **Action** submenu. Following are the details of the functionality associated with the **C-Correction** Action code:

- a. After the user chooses **C – Correction** from the **Action** button submenu, a **Correction** screen is brought up that allows users to make changes to editable fields in the record. (See Figure C-3-1.)
- b. Editable fields are shown in black, non-editable fields are grayed out. (REQALDOS: 0201.6)
- c. Details on the method for data entry for each data item are listed in Appendix B: LAMI Details/Edit Display and Update Details. (REQALDOS: 0201.3.3/ 0201.3.4)

- d. When editing the address the user will use the **same as location address** radio button from the **Correction** screen to indicate whether the mailing address is the same or different from the location address for the record. Details on the use of this radio button are shown in Appendix B: LAMI Details/Edit Display and Update Details.
- e. When the C action code has been selected, LAMI will make a **Cancel** button available in the left-hand side of the edit screen the **Correction** screen as shown in Figure C-3-1. The user can modify entries to any field by selecting the field with their stylus and typing over existing information.

Figure C-3-1: Correction Screen

Correction - Record # 5, Block # 1748

Action Code: C
Map Spot: 3

Structure Type:

LOCATION ADDRESS
House #:
Street Name:
Unit Designation:
ZIP Code:

Physical Description:

MAILING ADDRESS
 Same as LOCATION ADDRESS

City-Style Address
House #:
Street Name:
Unit Designation:

Undo Save Cancel

- i. When the user selects the **Cancel** button, the user will receive a pop-up window to confirm the cancellation of the address correction. (See Figure C-3-2.) (Note: Unlike other confirmation pop-ups, this pop-up should refer to the record # that was being changed as opposed to the address that was being changed.)

Figure C-3-2: Correction Cancel Confirmation Pop-up

Cancel Correction

Are you sure you want to cancel this correction?

Yes, Cancel No, Continue Correction

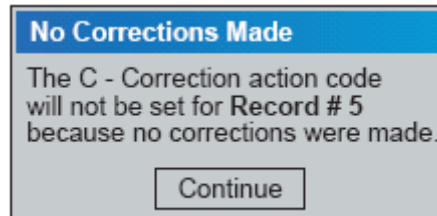
1. If the user selects the **Yes, Cancel** button from Figure C-3-2:
 - a. No action will be taken on the address list.
 - b. The user will be returned to the **Detailed Information** screen where they can select another action for the record.
2. If the user selects the **No, Continue Correction** button from Figure C-3-2:
 - a. The user will be returned to the **Correction** screen to continue the corrections to the record.
- f. After the user makes any change to the address record shown, LAMI will enable the **Undo** button in the lower left-hand corner of the **Correction** screen as shown in Figure C-3-1 on page 26. The user will select the **Undo button** to undo the change they made to the last field they edited. When the user selects this button:
 - i. LAMI will revert the information shown in the last field edited to the way it was before the user entered information into it.
- g. While the **Correction** screen is active, the user can modify entries to any field by selecting the field with their stylus and typing over existing information.
- h. After the user makes any change to the address record shown, LAMI will enable the **Save** button located in the center of the **Correction** screen as shown in Figure C-3-1 on page 26. The user will select the **Save** button as a final step when he/she is done correcting the record. This will save the record and move the user to the next step in the process. Once the user selects the **Save** button:
 - i. All changes made to the record will be saved to the address record:
 1. Any changes to the information are saved to the address record.
 - a. If the Location House Number field was changed, then the QC Flag will be set to H to indicate that the record will be verified. (REQALDOS: 0501.2.1)
 2. The *C-correction* action code is saved to the address record.
 - ii. Per GEO we will no longer be setting these flags.

- a. **City-style location flag:** If a house number and street name are present for the location address, then this flag will be set to “Y”. Otherwise, set to “N.”
- b. **City-style mailing flag:** When the **same as location address** radio button is selected, then this flag will be set to “Y,” else set to “N.”
- e. **Noncity-style mailing flag:** If a complete P.O. Box address (Box number and ZIP) OR a complete Rural Route Address (Rural Route Descriptor, Route Number, Box Descriptor, and Box Number) are present, then this flag will be set to “Y,” else set to “N.”

- iii. LAMI will prompt the user to collect a map spot as described in Section D.1 on page 50.

If no changes were made to the record and the user selects the **Save** button, LAMI will issue a pop-up warning that a **C – Correction** action code will not be set for the record because no corrections were made (see Figure C-3-4). (Note: Unlike other confirmation pop-ups, this pop-up should refer to the record # that was being changed as opposed to the address that was being changed.) (REQALDOS: 0201.6/ 0201.6.1)

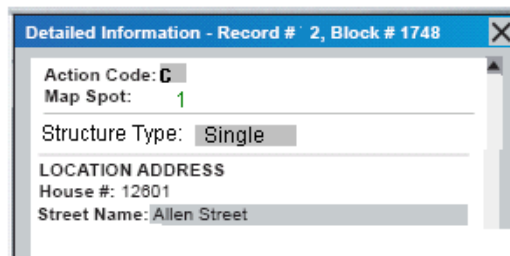
Figure C-3-4: No Corrections Made Pop-up



1. When the user selects the **Continue** button from Figure C-3-4:
 - a. LAMI will not record the **C** action code.
 - b. LAMI will return the user to the **Detailed Information** screen where the user will need to repeat the process of selecting an action code for the record.
- iv. If the user tries saving the action code and/or changes to the record prior to setting the structure type, LAMI will prompt the user to select a structure type before saving as shown in Figure C-3-4b:

Figure C-3-4b Structure Type Missing Warning Pop-up

- a. When the user selects the **Continue** button from the Structure Type Missing Warning Pop-up (Figure C-3-4b), they will be returned to the **Correction** screen to select a structure type.
- v. After the user has saved their changes to the record and collected a map spot for the record, LAMI will display the changes the user made to the record in the **Detailed Information** screen and **Address List** screen as described below:
 1. The **Detailed Information** screen will display a **C** in the Action Code field, and all fields that the user has made changes to will be shown on the **Detailed Information** screen in gray highlighting (see Figure C-3-5).

Figure C-3-5: Detailed Information Screen After Correction

The **Address List** screen will display a **C** in the Action code column, however changed fields will not be highlighted in this screen as they were on the **Detailed Information** screen (see Figure C-3-6).

Figure C-3-6: Address List Screen After Correction

 A screenshot of the "Address List - BLK:1748 AA:540001" window showing a table of address records. The table has columns: Rec#, AC, MS#, House #, Street Name, and Unit Des... The row with Rec# 2 and AC C is highlighted with a green oval.

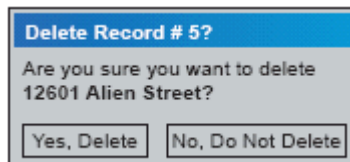
Rec#	AC	MS#	House #	Street Name	Unit Des...
1	V	5001	12801	Allen Street	Apt A
2	C	1	12801	Allen Street	Apt B
3	D		12605	Allen Street	Basement
4	D2	2	12603	Allen Street	
5		3	12807	Allen Street	
6			802	Plain Street	

4. Deleting Addresses (D1-Delete) (REQALDOS: 0201.2/ 0201.2.1/ 0201.2.2)

To indicate that the address shown in the **Detailed Information** screen does not exist in the block they are working in, the user will select will select **D1- Delete** from the **Action** submenu. Following are the details of the functionality associated with the **D1- Delete** Action code:

- a. After the user selects **D1 – Delete** from the **Action** button submenu they will have a chance to view the record they are deleting, but will not be able to edit any information on the address record.
- b. When the user is sure that they want to delete the record, they will select the **Yes Delete** button from **Save** button from the bottom of the **Detailed Information** screen and a pop-up window asks the user to confirm the deleted address (see Figure C-4-1). (REQALDOS: 0201.2.1)

Figure C-4-1: Delete Record Confirmation Pop-up



- i. If the user selects the **Yes, Delete** button from Figure C-4-1 LAMI will:
 1. The **D1 –Delete** action code is saved to the address record.
 2. The user is returned to the **Address List** screen.
 3. The action code section of both the **Address List** and **Detailed Information** screen display **D1**.
 4. The address data for the record is now grayed out and italicized on both the **Detailed Information** screen and the **Address List** screen (See Figure C-4-2 and C-4-3).
 5. The map spot associated with the record, if one exists, turns gray on the map.
 6. Behind the scenes, LAMI will set the **QC Flag** to **D** to indicate that the record will be verified. (REQALDOS: 0201.2.3/ 0501.2.1)

Figure C-4-2: Detailed Information Screen After Delete

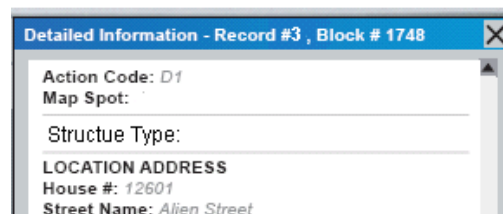
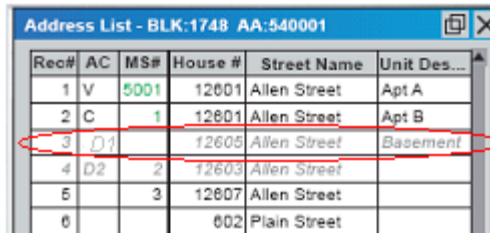
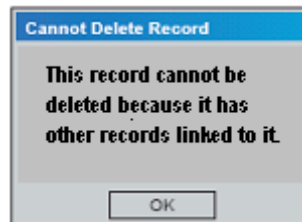


Figure C-4-3: Address List Screen After Delete


Rec#	AC	MS#	House #	Street Name	Unit Des...
1	V	5001	12601	Allen Street	Apt A
2	C	1	12601	Allen Street	Apt B
3	D1	1	12605	Allen Street	Basement
4	D2	2	12603	Allen Street	
5		3	12607	Allen Street	
6			602	Plain Street	

- ii. If the user selects the **No, Do Not Delete** button from Figure C-4-1 on page 30:
 1. No action is taken on the record.
 2. The user is returned to the **Detailed Information** screen where they must choose an action for the record.
- iii. If the user tries to delete a record that has been identified as a **Surviving Record**, (where the record has a survivor flag), LAMI will provide the user with a warning message as shown in Figure C-4-3. (REQALDOS: 0201.5.7/ 0201.6/ 0201.6.1)

Figure C-4-3: Cannot Delete Record Warning

1. After the user selects **OK** from Figure C-4-3:
 - a. The LAMI returns the user to the **Detailed Information** screen, where the user must either select a different action code, or remove the duplicate linkage to this record. More information unlinking records can be found on page 35 of this document.

5. **Indicating an Address is a Duplicate (D2-Duplicate)** (REQALDOS: 0201.5/0201.5.1/ 0201.5.3/ 0201.5.4/ 0201.5.5/ 0201.5.8/ 0201.5.9/ 0201.5.10)

To indicate that the address shown on the **Detailed Information** screen is a duplicate of another address within the block, the user will select the **D2 – Duplicate** from the **Action** button submenu and then indicate which record it duplicates. Following are the details of the functionality associated with the **D2- Duplicate** Action code:

After the user selects **D2 – Duplicate** from the **Action** button submenu, LAMI will launch the **Link Duplicate** screen that will enable the user to select the surviving record (the record that the D2 record duplicates). The **Link Duplicate** screen will contain a filtered list of all address records that are eligible to be surviving records. (Filter = no records with an action code of A, D1, D2, N and U). See Figure C-5-1. (Filter= REQALDOS: 0201.5.8/ 0201.6/ 0201.6.1)

Figure C-5-1: Link Duplicate Screen

Link Duplicate					
Rec#	AC	MS#	House #	Street Name	Unit Desig
1	V	5001	12601	Allen St	Apt A
2	V	5002	12601	Allen St	Apt B
6	C	5003	12603	Allen St	
7	Z	5004	12607	Allen	
8	V	5005	239	Flower Ct	Ap 1
9			243	Flower Ct	
10			245	Flower Ct	Ap 1
11			245	Flower Ct	Ap 1
12	C	5006	233	Aspen Ct	#1
13	C	5006	233	Aspen Ct	#2
19	C	5007	235	Aspen Ct	
19	C	5008	237	Aspen Ct	

Select the record that :

12601 Alien Street, 12345 garage

duplicates, and then select the Link button

i. To link a record from the **Link Duplicate** screen shown in Figure C-5-1 the user will:

1. Select the surviving record from the list, (for example Rec #2 in the list above has been selected.)
2. Select the **Link** button.
3. Continue with the Link process in step C.5.b below.

ii. To cancel the duplicate action code, the user will select **Cancel Action** button in Figure C-5-1 and: (REQALDOS 0201.5.2)

1. No action will be taken on the address list.
2. The user will be returned to the **Detailed Information** screen where they will select another action for the record.

b. After the user selects the appropriate surviving record, and then selects the **Link** button from the **Link Duplicate** screen shown in Figure C-5-1, LAMI will launch a **Confirm Duplicate Linkage** screen as shown in Figure C-5-2.

Figure C-5-2: Confirm Duplicate Linkage Screen

Confirm Duplicate Linkage

Record to Keep (Survivor):

Record #: 2
House #: 12601
Street Name: Allen Street
Unit Designation: Apt. B
ZIP Code: 12345
Physical Description: apartment over garage

Record to Mark as Duplicate:

Record #: 5
House #: 12601
Street Name: Alien Street
Unit Designation:
ZIP Code: 12345
Physical Description: garage apartment

Continue Choose Different Survivor Record Cancel Action

i. If the user selects the **Continue** button from the **Confirm Duplicate Linkage** screen (Figure C-5-2):

1. The user is returned to the duplicate record's **Detailed Information** screen where they can save the duplicate actions taken on the record.
2. The action code and linkage are saved to the record in the following manner: After selecting the **Save** button from the **Detailed Information** screen:

- a. The action code for the record will be set to **D2** and:
(REQALDOS: 0201.5.10)
 - b. Behind the scenes, LAMI does the following:
 - i. Copies the MAFID of the surviving record into the *Surviving MAFID* field for the retired record. (REQALDOS: 0201.5.4)
 - ii. LAMI will also place a “Y” in the *Survivor Flag* field of the surviving record. The Survivor Flag prevents this record from being deleted. (REQALDOS: 0201.5.7)
 - iii. Set the *QC Flag* to *D* to indicate that the record will be verified. (REQALDOS: 0501.2.1)
 - c. The **Surviving Record #** will be shown in the Detailed Information screen. (REQALDOS: 0201.5.5)
 - d. All of the text for the address record will be grayed out, indicating that the record has been marked as a duplicate. (REQALDOS: 0201.5.9)
 - e. If a duplicate is the only record associated with a map spot, the map spot will be grayed out on the map.
 - f. LAMI will return the user to the **Address List** screen.
- ii. If the user selects the **Choose Different Survivor Record** button from the **Confirm Duplicate Linkage** screen (Figure C-5-2): (REQALDOS 0201.5.2)
 1. The user will be returned to the previous **Link Duplicate screen shown in** Figure C-5-1 to select a different surviving record.
 - iii. If the user selects the **Cancel Action** button from the **Confirm Duplicate Linkage** screen (Figure C-5-2): (REQALDOS 0201.5.2)
 1. The user will be returned to the **Detailed Information** screen where they will select another action for the record.

c. Unlinking Duplicates: (REQALDOS: 0201.5.2/ 0201.5.2.1)

It is possible that after a user sets a D2 action code for an address record they may realize that the address record was not supposed to be a duplicate, or that they linked the D2 record to the wrong surviving record. In these cases, the user will do the following:

- i. From the **Address List** display the user will select the address they have erroneously marked as a duplicate and restore the record as described in section C.10 on [page 44](#).
- ii. After the user follows the restore process for the record that was previously identified as a duplicate:
 1. The record will be restored to its original form and any existing edits and action codes (D2), including linkages to other records, will be removed from the record and map. (Specific details on the linkages removed are detailed in Section C.10 on [page 44](#))
 2. Then the user is returned to the **Detailed Information** screen where the original record appears without any of the changes that were made (i.e. action code).
 3. After the record has been restored to its original form the user will have to reset the action code for the record:
 - a. If the user had selected the wrong action code, the user will select the correct action code from the **Action** button submenu and then follow the procedures for that action code.
 - b. If the duplicate linkage was incorrect, the user will select **D2 – Duplicate** from the **Action** button submenu and then follow the duplicate linkage process to select a different linkage.

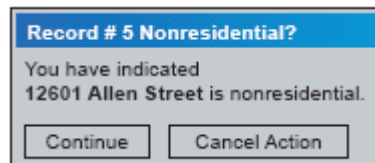
6. Indicating an Address is Nonresidential (N-Nonresidential)

(REQALDOS: 0201.13)

To indicate that the address shown on the **Detailed Information** screen is nonresidential the user will select *N – Nonresidential* from the **Action** button submenu. Following are the details of the functionality associated with the *N-Nonresidential* Action code:

- a. After the user selects *N-Nonresidential* from the **Action** button submenu, they will have a chance to view the record, but they will not be able to edit any information on the address record.
- b. When the user is sure that they want to mark the record as *Nonresidential* they will select the Continue button from the ~~Save button from the bottom of the Detailed Information screen~~ and a pop-up window that asks the user to confirm the Nonresidential action (see Figure C-6-1).

Figure C-6-1: Nonresidential Confirmation Pop-up



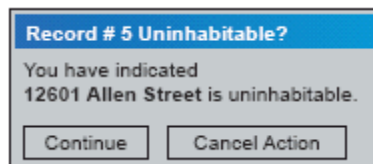
- i. If the user chooses the **Continue** button from Figure C-6-1:
 1. The *N-Nonresidential* Action code is saved to the address record.
 2. The user is returned to the **Address List** screen.
 3. The Action code section of both the **Address List** and **Detailed Information** screen display an *N*.
 4. The data for the record is now grayed out and italicized on both the **Detailed Information** screen and the **Address List** screen.
 5. The map spot associated with the record, if one exists, also turns gray on the map.
- ii. If the user chooses the **Cancel Action** button from Figure C-6-1:
 1. No action is taken on the record.
 2. The user will be returned to the **Detailed Information** screen where they will select another action for the record.

7. Indicating an Address is Uninhabitable (U-Uninhabitable) (REQALDOS: 0201.14)

To indicate that the address shown in the **Detailed Information** screen is uninhabitable the user will select *U-Uninhabitable* action code from the **Action** submenu. Following are the details of the functionality associated with the *U-Uninhabitable* Action code:

- a. After the user selects *U-Uninhabitable* from the **Action** button submenu, they will have a chance to view the record, but they will not be able to edit any information on the address record.
- b. When the user is sure that they want to mark the record as *Uninhabitable* they will select the Continue button from the **Save** button from the bottom of the **Detailed Information** screen and a pop-up window that asks the user to confirm the Uninhabitable action (see Figure C-7-1).

Figure C-7-1: Uninhabitable Confirmation Pop-up



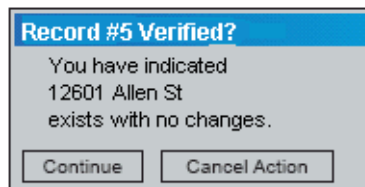
- i. If the user chooses the **Continue** button from Figure C-7-1:
 1. The *U-Uninhabitable* action code is saved to the address record.
 2. The user is returned to the **Address List** screen.
 3. The action code section of both the **Address List** and **Detailed Information** screen display a *U*.
 4. The data for the record is now grayed out and italicized on both the **Detailed Information** screen and the **Address List** screen.
 5. The map spot associated with the record, if one exists, also turns gray on the map.
- ii. If the user chooses the **Cancel Action** button from Figure C-7-1:
 1. No action is taken on the record.
 2. The user will be returned to the **Detailed Information** screen where they will select another action for the record.

8. **Indicating that a Record is “Verified” (V-Verified) (REQALDOS: 0201.12)**

To indicate that the address shown in the **Detailed Information** screen exists as it is shown on the list, with no edits or changes necessary, the user will select **V-Verified** from the **Action** submenu. Following are the details of the functionality associated with the **V-Verified** Action code:

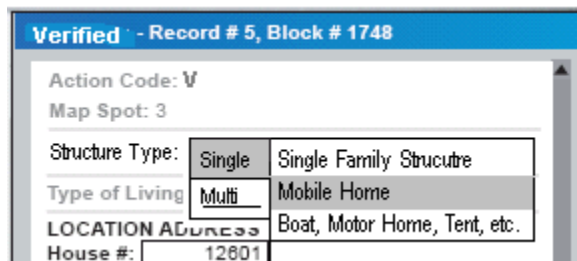
- a. After the user selects **V-Verified** from the **Action** button submenu, they will have a chance to view the record, but they will not be able to edit any information on the address record.
- b. When the user is sure that they want to mark the record as **V-Verified** they will select the **Continue** button from the **Save** button from the bottom of the **Detailed Information** screen and a pop-up window that asks the user to confirm the action (see Figure C-8-1).

Figure C-8-1: Verification Confirmation Pop-up



- i. If the user chooses the **Continue** button from Figure C-8-1,
 - 1. The **V-Verified** Action code is saved to the address record.
 - 2. LAMI will bring up the **Correction** screen from which the **Structure Type** field available for editing as shown in Figure C-8-2 below. This will allow the user to select the Structure type from the drop down list as described in Chapter E. Note: for verified records users will only be allowed to edit structure type.

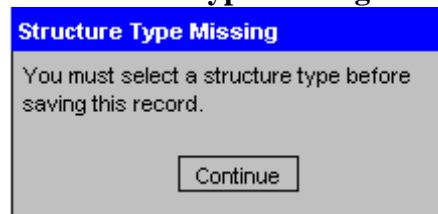
Figure C-8-2: Setting Structure Type on a Verified Record



- 3. After makes the appropriate selection from the from the **Structure Type** dropdown:

- a. The **Correction** screen will disappear from view:
 - b. LAMI will return the user is returned to the **Address List** screen.
 - c. The action code section of both the **Address List** and **Detailed Information** screen display a **V**.
 - d. The **Structure Type** field of **Detailed Information** will display the structure type selected.
 - e. LAMI will prompt the user to collect map spot as described in Section D.1 on page 50.
4. If the user tries saving the **V** action code prior to setting the structure type, LAMI will prompt the user to select a structure type before saving as shown in Figure C-8-3:

Figure C-8-3 Structure Type Missing Warning Pop-up



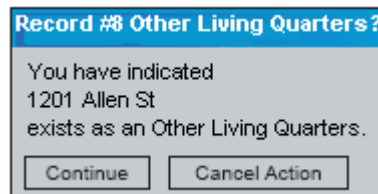
- a. When the user selects the **Continue** button from the Structure Type Missing Warning Pop-up (Figure C-3-4b), they will be returned to the **Correction** screen to establish a structure type.
- ii. If the user chooses **Cancel Action** button from Figure C-8-1:
1. No action is taken on the record.
 2. The user will be returned to the **Detailed Information** screen where they will select another action for the record.

9. **Indicating that a Record is an Other Living Quarters (OLQ) (Z-Other Living Quarters) (REQALDOS: 0201.4)**

To indicate that the address shown in the **Detailed Information** screen exists as an “Other Living Quarters”, the user will select the **Z- Other Living Quarters** from the **Action** submenu. Following are the details of the functionality associated with the **Z- Other Living Quarters** Action code:

- a. After the user selects **Z- Other Living Quarters** from the **Action** button submenu, LAMI will launch a pop-up window asks the user to confirm the Z action (see Figure C-9-0 (formerly Figure C-9-3)).

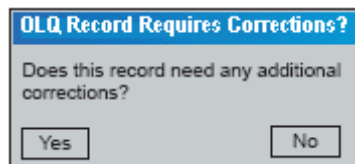
Figure C-9-0: (Formerly Figure C-9-3) Other Living Quarters Confirmation Pop-up



- i. If the user chooses the **Continue** button from Figure C-9-03 LAMI will:

b. Launches a pop-up asking the user if they have any corrections to make to the record as shown in Figure C-9-1.

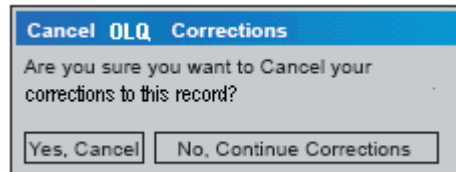
Figure C-9-1 Other Living Quarters Correction Pop-up (PER DISCUSSION WITH LAMI DEVELOPERS :REMOVE POP-UP USER WILL ALWAYS BE LEAD TO CORRECTIONS SCREEN)



- i. If the user selects the **Yes** button from Figure C-9-1 then LAMI:

1. Launches the **Correction** functionality described in Section C.3 on pages 25-29.
2. The editing process for records with a **Z** action code will be the same as the process for records with **C** action codes, however the cancel corrections process for these records is somewhat different. For records with **Z** action codes, when the user selects the **Cancel** button in the lower right hand corner of the **Correction** screen, LAMI will prompt the user to confirm the cancellation to the OLQ record as shown in Figure C-9-2.

Figure C-9-2: Other Living Quarters Correction Confirmation Pop-up



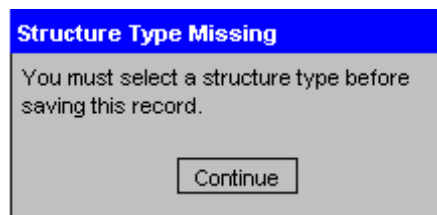
- a. If the user selects **Yes, Cancel** button from Figure C-9-2, LAMI will:
 - i. Cancel any corrections made to the address information of the record (other than the **Z** action code)
 - ii. LAMI will return the user to the **Correction** screen to allow the user to select the structure type from the Structure Type drop down list as show in Figure C-9-3 below and as described in Chapter E.

Figure C-9-3: Setting Structure Type on a OLQ Record

- iii. After makes the appropriate selection from the from the Structure Type dropdown and selects the **Save** button:
 1. The **Correction** screen will disappear from view:
 2. LAMI will return the user is returned to the **Address List** screen.
 3. The action code section of both the **Address List** and **Detailed Information** screen display a **Z**.

4. The **Structure Type** field of **Detailed Information** will display the structure type selected.
 5. LAMI will prompt the user to collect map spot as described in Section D.1 on page 50.
- iv. ~~Return user to the **Detailed Information** screen so that the user can complete the **Z** action code process.~~
- b. If the user selects **No, Continue Corrections** button from Figure C-9-2, LAMI will:
 - i. Return the user to the **Correction** screen so that they can make additional edits as needed.
 - ii.
 - c. If the user tries saving the **V** action code prior to setting the structure type, LAMI will prompt the user to select a structure type before saving as shown in Figure C-9-4:

Figure C-9-4 Structure Type Missing Pop-up



- i. When the user selects the **Continue** button from the Structure Type Missing Warning Pop-up (Figure C-3-4b), they will be returned to the **Correction** screen to establish a structure type.
- ii. ~~If the user selects the **No** button from Figure C-9-1 then LAMI:~~
1. ~~Return the user to the **Correction** screen so that they can make additional edits and set the structure type as needed. (PER DISCUSSION WITH LAMI DEVELOPERS :REMOVE POP-UP C-9-1 USER WILL ALWAYS BE LEAD TO CORRECTIONS SCREEN)~~
- iii. If the user chooses the **Continue** button from Figure C-9-03 LAMI will:
1. No action is taken on the record.

2. The user is returned to the **Detailed Information** screen where they can select another action for the record.

c. Once the user has selected the Z-Other Living Quarters action code and made the appropriate changes to the record (if any), and selected a structure type they will select the **Save** button from the bottom of the **Detailed Information** screen.

(Note: Per discussion with LAMI developers pop-up from Figure C-9-3 is now prior to the save and has been moved to Figure C-9-0.)
 set the Z-Other Living Quarters action code. Then a pop-up window asks the user to confirm the action (see Figure C-9-3). If the user chooses the **Continue** button from Figure C-9-3:

- i. Once the user selects the **Save** button:
 1. The action code for the record will be set to *Z –Other Living Quarters*.
 2. LAMI will automatically set the **Housing Unit Type Flag** to *OLQ* and **Structure type to Single-Family Structure**.
 3. The fields that the user has made changes to will be changed on both the **Address List** screen and the **Detailed Information** Screen and highlighted on the **Detailed Information** screen.
 4. The **Address List** and **Detailed Information** screens will display a Z action code.
 5. LAMI will prompt the user to collect map spot as described in Section D.1 on page 50.

ii. Per developer discussion, moved to beginning of section OLQ Section If the user chooses **Cancel Action**, button from Figure C-9-3:

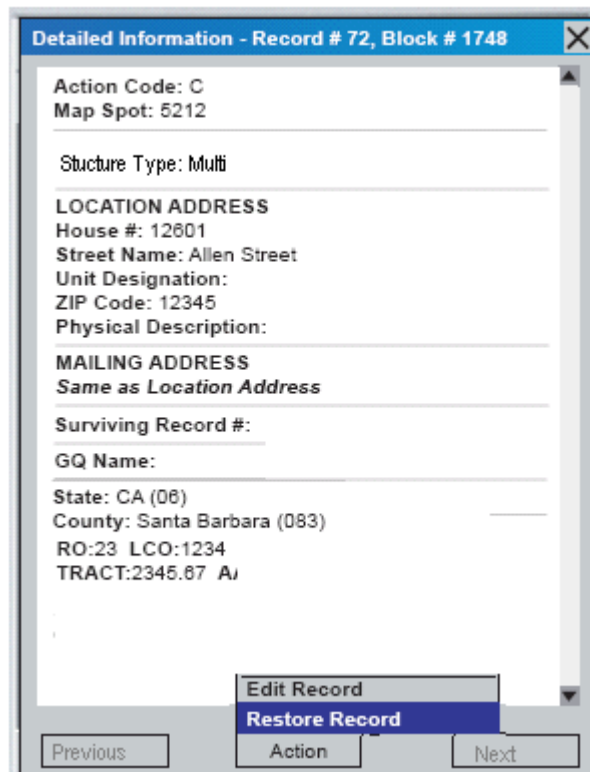
6. No action is taken on the record.

7. The user is returned to the **Detailed Information** screen where they can select another action for the record.

10. Restore Record Function (REQALDOS: 0201.2.1/ 0201.2.1.1/ 0201.3.3/ 0201.5.2 0201.5.2.1/ 0201.3.3.1/ 0401.2.3.1)

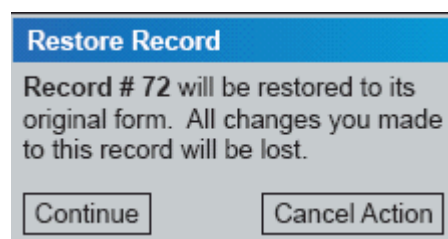
This function allows the user to restore an address record shown on the **Detailed Information** screen to its original state (as it existed when it was loaded on to the LAMI). This function is available for all records where an action code has been set. This is not available for records without an action code or for added records. The **Restore Record** function is launched using a submenu option from the **Action** button, (See Figure C-10-1). Following are the details of the functionality associated with the **Restore Record** function:

Figure C-10-1: Launching the Restore Record Function from the Action Button Sub-menu



- a. After the user selects **Restore** from the **Action** button submenu, a pop-up window asks the user to confirm the restore action (see Figure C-10-2). **Note:** Unlike other confirmation pop-ups, this pop-up should refer to the record # that is being restored as opposed to the address that was being restored.)

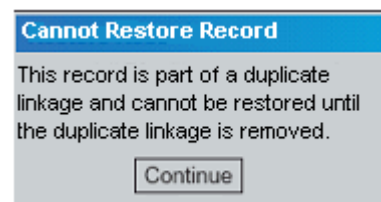
Figure C-10-2: Restore Confirmation Pop-up



- i. If the user chooses the **Continue** button from Figure C-10-2:
 1. The record will be restored to its original form and any existing edits and action codes will be removed from the record and map including:
 - a. Action codes
 - b. Edits to the record
 - c. Duplicate Linkages (REQALDOS: 0201.5.3)
 - i. For records with an action code of D2 the record will no longer retain Survivor Rec. #
 1. If there are no other records linked to, the former duplicate's surviving record LAMI should also remove the Y from the surviving record's Survivor Flag Field.
 2. If former duplicates surviving record has more than one duplicate linked to it, then the Survivor Flag Field should remain Y.

ii. For records marked with a C, V, or Z action code that are survivor records, (records that have duplicates linked to them) **Per Developer meeting:** LAMI will not allow the record to be restored until the duplicate linkage has been removed. To do this LAMI will supply the user with the pop-up in Figure C-10-2b below:

1. When the user selects the **Continue** button from Figure C-10-2b:



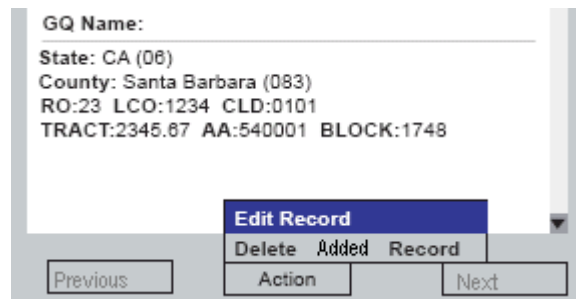
- a. No restore will occur on the record.
- b. The user will be returned to the Detailed Information screen.

- iii. the Survivor flag and linkages will continue to exist as they did before the restore.
 - d. Map spot coordinates (both GPS and map spot) on the address record.
 - e. Map spots on the map
2. The user will be returned to the **Detailed Information** screen where the record will appear as it did originally.
 3. If the address had a map spot before Address Canvassing, the map spot will now reappear on the map in its original color.
- ii. If the user chooses the **Cancel Action**, button Figure C-10-2:
 1. No change will be made to the record.
 2. The user will return to the **Detailed Information** screen where the record will appear as it did before restore was selected from the **Action** button submenu.

11. Edit Record Function:

This function allows the user to edit an address without changing the Action code already associated with that record. The *Edit Record* function is launched using a submenu pick from the **Action** button on the **Detailed Information** screen. (See Figure C-11-1.) This function is only available for records with an action code of A, C, or Z. This function **will not be available** as a submenu option under the **Action** button for records with a blank action code or an Action code of D1, D2, N, U, or V. Following are the details of the functionality associated with the *Edit Record* function:

Figure C-11-1: Launching the Edit Record Function from the Action Button Sub-menu



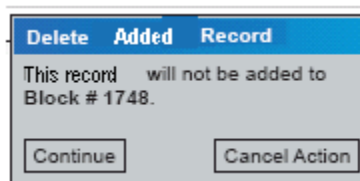
- a. After the user selects the *Edit Record* function from the **Action** button submenu, LAMI brings up correction functionality brought about by the **C action code**. This functionality is described in detail on **pages 25-29** of this document.
- b. The editing process for *Edit Record* will be the same as the process described on for **C** action code, however when the user selects the **Cancel** button in the lower right hand corner of the **Correction** screen, LAMI will:
 - i. Maintain all original edits made to the record including Action Code and Structure Type.
 - ii. Return the user to the Address List screen.
- c. When the user is finished editing the record he/she will tap the **Save** button to save changes to the record and to indicate to LAMI that all updates for the record are complete.
- d. After the record has been corrected and saved, the user will be returned to the **Address List** screen.
- e. The fields that the user has made changes to will be changed on both the **Address List** screen and the **Detailed information** screen and highlighted on the **Detailed Information** screen.

12. Delete Added Record Function (REQALDOS: 0201.1.2)

This function allows the user to delete added records. The *Delete Added Record* function is launched using a submenu pick from the **Action** button on the **Detailed Information** screen. This function is only available for records that were added to the block, and will not be available for records with a blank action code or an Action code of C, D1, D2, N, U, V or Z. Following are the details of the functionality associated with the *Delete Added Record* function:

- a. After the user selects the *Delete Added Record* function from the **Action** button submenu, the LAMI will launch a pop-up window to prompt the user to verify the delete (see Figure C-12-1).

Figure C-12-1: Delete Added Record Confirmation Pop-up



- i. If the user selects the **Continue** button in Figure C-12-1:
 1. The added address record will be deleted from the address database.
 2. Any map spots for the address record will be removed from the map screen.
 3. The user will be returned to the **Address List** screen in Figure C-12-1:
- ii. If the user selects **Cancel Action** button in Figure C-12-1:
 1. The user will be returned to the **Detailed Information** screen.
 2. No additional action is taken on the added record.

D. GPS AND MANUAL MAP SPOT CAPTURE (REQALDOS: 0401.1)**GPS and Manual Map Spot Capture Assumptions**

- A-1 GPS capture will utilize the GPS collection specifications in Appendix D: GPS Specifications for LAMI as well as general GPS collection protocols as specified in the Census Bureau's Generic GPS Technical Guidelines, Appendix E. (REQALDOS: 0401.1.1)
- A-2 GPS Coordinates will be captured for each structure. However, there may be multiple addresses within one structure. In these cases, the GPS coordinate captured for the structure will be attached to all addresses within the structure.
- A-3 Once the GPS receiver has been plugged into the hand held computer, the GPS signal availability will be indicated in the LAMI. (REQALDOS: 0401.1.3)
- A-4 The software will conduct a point and polygon check to determine if the GPS point falls inside or outside the active block.
- A-5 The LAMI user will collect GPS points according to the guidelines established by the GPSAS group. (REQALDOS: 0401.1.1)
- A-6 Every record with an A-Add, C-Correction, V-No Change, or Z-Other Living Quarters must contain a map spot, and either GPS collected or manually map-spotted coordinate pair, before the block can be considered complete.
- A-7 The LAMI will collect GPS coordinates for 10 seconds.
- A-8 Address records in Address Canvassing will not have GPS coordinates until they are collected during the operation.
- A-9 In most cases, the user will have selected the structure type, (single vs. multi), and action code before collecting the GPS coordinate.
- A-10 If an address record already has a map spot number associated with it then that number will be retained as the map spot number for the record.
- A-11 All new map spots will receive a map spot number in the 5000 series e.g. map spot numbers will begin with number 5001 for each census block.
- A-12 The term "Map Spot" refers to the process of collecting a GPS point and manual point.
- A-13 The map spotting process defined in this chapter assumes that structure type and number of units at map spot are not related to one another.
- A-14 LAMI will only display the manually collected map spot to lister.

1. Map Spot Capture Initiation for Single and Multi Unit Structures

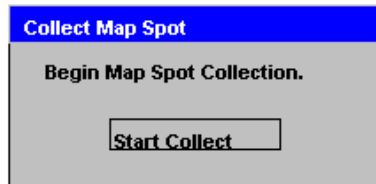
During Address Canvassing, the user must attempt to capture a Map Spot, using GPS, for every record with an A, C, V, and Z action code. In most cases, before collecting the Map Spot, the user will:

- 1) Select a valid action code for the record, and
- 2) Indicate the structure type. (See Section E on [page 64](#) for more information on this flag.)

The Map Spot collect function can be launched in two different ways in the LAMI software as described in D.1.a and D.1.b below.

- a. The user will be prompted to collect the map spot after they save their work on an address record.
 - i. For single-unit structures, after the user sets an action code, indicates that the structure type is single, and saves any changes to the address record the user will be prompted to collect a map spot. The action codes for which this prompt can occur are A, C, V, and Z. See Figure D-1-1 below.

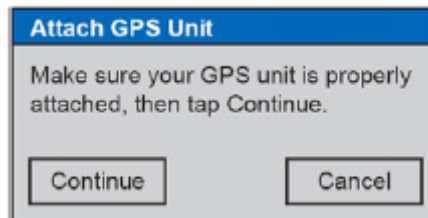
Figure D-1-1: Collect Map Spot Prompt After Editing Address Record -When Structure Type is “Single”



1. Once the user selects the **Start Collect** button from Figure D-1-1, LAMI will begin GPS collection as described in Section D.2 of this chapter on [page 53](#).

2. If the user selects the **Start Collect** button and the GPS receiver is not connected properly to the HHC or not connected at all, LAMI will let the user know. See Figure D-1-1A below.

Figure D-1-1A: Attach GPS Unit



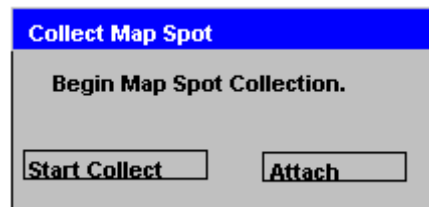
- a. Once the user makes sure the GPS unit is connected to the HHC, they will select

Continue. If the connection was successful then the pop-up message will disappear and the user will continue with steps 1.a.i.1 (Figure D-1-1) as noted above.

b. If the user selects **Continue** and receives the pop-up message in D-1-1A again, the user will select **Cancel**. By selecting Cancel, LAMI will bring the user back to Figure D-1-1 where they will proceed with the map spotting process. Cancel will also stop LAMI from displaying the pop-up in D-1-1A again. (Note: We will proceduralize how many times the user should go through the process in D-1-1 and D-1-1A if they hit Continue. If it appears that there is a problem with the users GPS unit, the user will be instructed to contact their supervisor.)

- ii. For multi-unit structures, after the user sets an action code, indicates that the structure type is multi, and saves any changes to the address record he/she will be prompted to collect a map spot. The action codes for which this prompt can occur are A, C, V, and Z. See Figure D-1-2.

Figure D-1-2: Collect Map Spot Prompt After Editing Address Record -When Structure Type is “Multi”

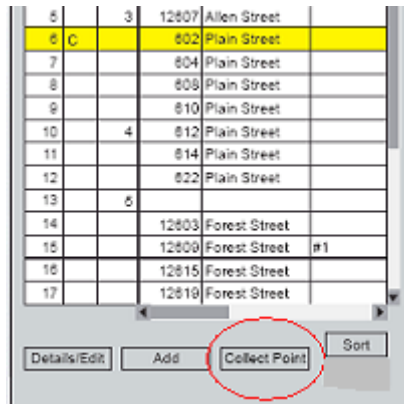


1. If the user selects the **Start Collect** button from Figure D-1-2, LAMI will begin the map spot collection as described in Section D.2 on page 53.

i. If the user selects the **Start Collect** button and the GPS receiver is not connected properly to the HHC or not connected at all, LAMI will let the user know. See Figure D-1-1A above and steps 1.a.i.2.a and b.

2. If the user selects the **Attach** button from Figure D-1-2, the LAMI will attach the map spot from one record to another record as described in Section D.4 on page 61.
- b. If the user wants to launch map spot collection from the **Address List** screen, they can select the **Collect Point** button as in Figure D-1-3 below:
- i. If no record is selected, or if user has already taken action on the record and it has an action code of D1, D2, N, or U, the **Collect Point** button will be grayed out and inaccessible.
 - ii. After the user has selected the **Collect Point** button, LAMI will launch the map spot collection as described in Section D.2 on page 53.
 1. If the record already contains a manual and GPS coordinate, LAMI will provide a pop-up asking the user if he/she wants to overwrite the map spot. (See Figure D-3-1 on page 59.)

Figure D-1-3: Collect Point Button Available from Address List Screen

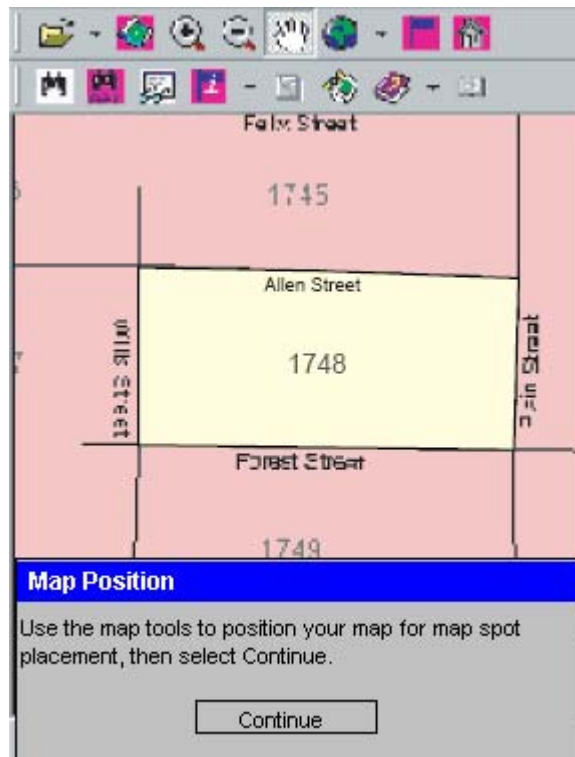


2. **Map Spot Collection** (REQALDOS: 0401.1/ 0401.2/ 0401.2.1/ 0401.2.2/ 0401.2.3/ 0401.2.4/ 0401.2.5/ 0401.2.8)

Once map spot collection is initiated, whether it is by the **Collect Point** button or the Collect Map Spot prompt pop-up shown in Figure D-1-1 or D-1-2 on pages 50 and 51 it will function as described below:

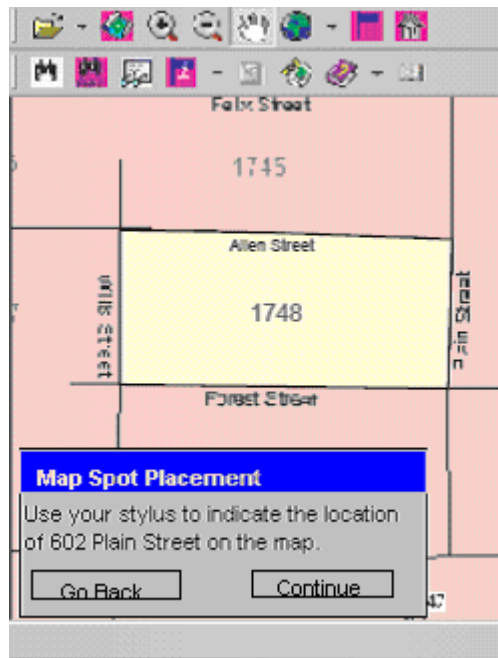
- a. When the user selects **Start Collect** from Figure D-1-1 or D-1-2, LAMI will:
 - i. Zoom to the GPS “You Are Here Indicator” in the active block. If the GPS “You Are Here Indicator” is not available then LAMI will center on the active block.
 - ii. Launch the **Map Position** screen as seen in Figure D-2-1. This screen will prompt the user to position the map for map spot placement.
 1. Within the **Map Position** screen the user can use map tools including pan, zoom in, zoom out if necessary, to position the map so they can place a map spot for the address record.

Figure D-2-1 Map Position Screen



- iii. Once the map is positioned, the user will select the **Continue** button from Figure D-2-1 to continue the map spot process.
- iv. After the user selects the **Continue** button, LAMI will display the **Map Spot Placement** screen in Figure D-2-2.

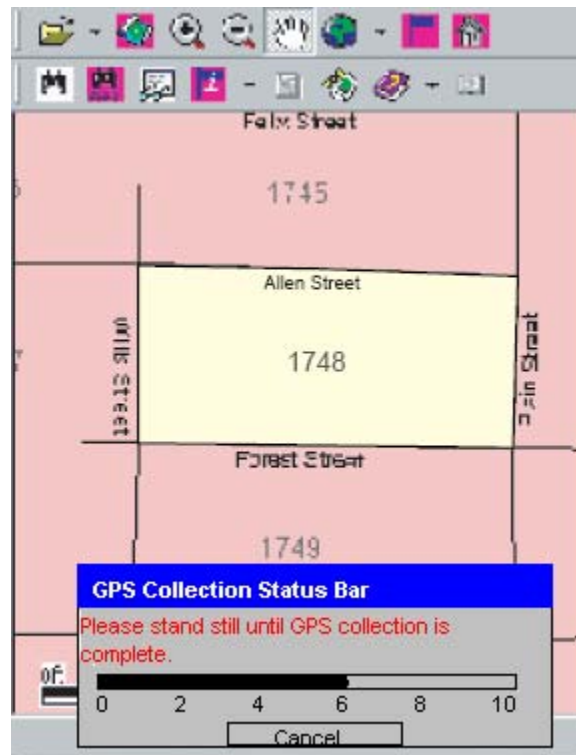
Figure D-2-2 Map Spot Placement Pop-up



- b. After the **Map Spot Placement** screen appears, will read the message, and select either the **Go Back** or **Continue** button.
 - i. If the user selects the **Go Back** button from Figure D-2-2, LAMI will return them to Figure D-2-1.
 - ii. If the user selects the **Continue** button from Figure D-2-2, then the pop-up will disappear and the user will use their stylus to map spot their location on the map. The action of tapping on the map will activate place a map spot on the map and then activate the GPS process. The new map spot will replace any existing map spots for the record and the old map spot will disappear. As soon as the user lifts their stylus from the map the GPS collection process will begin as described below:
 1. If a GPS signal is available:

- i. The software will begin collecting GPS coordinates for 10 seconds and recording the information described in Appendix E.
- ii. During the 10 seconds, a collection/countdown window will appear on the screen to notify the user that collection is taking place. During the GPS collect, the user will be “locked” out of any other function in the LAMI other than if they decide to **cancel** the GPS collect. See Figure D-2-3.

Figure D-2-3: GPS Collection Status Bar

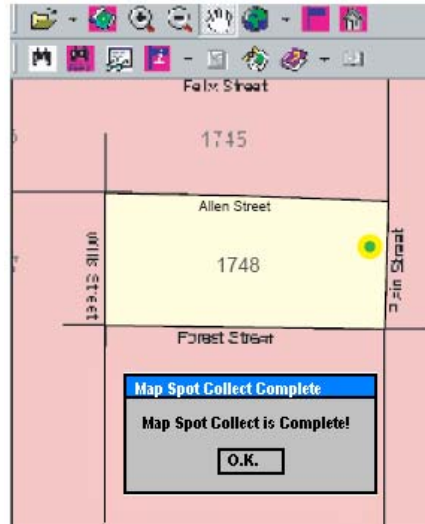


- iii. If the user selects the **Cancel** button from Figure D-2-3 during collection:
 1. LAMI will cancel GPS collection and remove the manually placed map spot from the map.
 2. LAMI will record A=Abort in the LAMI GPS transaction code field.

3. The user will be returned to Figure D-2-1, so that they can attempt GPS collection again.
- iv. After 10 seconds, when the software completes GPS point collection:
1. LAMI will retain and display the existing map spot number if one is already associated with the address record. If a map spot number is not associated with the address record then LAMI will populate the Map Spot Number field by using a number in the 5000 series.
 2. LAMI will record the GPS and manual coordinates in the map spot table in the LAMI data set. See Attachment F for more details.
 3. LAMI will record an S=Successful in the GPS transaction code field.
 4. LAMI will set the GPS Man Flag to “G” (GPS) if GPS coordinate pair is obtained and point-in-polygon geocode for the GPS map spot coordinates place the map spot inside of the active block.
 5. LAMI will set the GPS Man Flag to “M” (Manual) if the point-in-polygon geocode for the GPS map spot coordinates places the map spot outside of the active block. Note: If after the 10 second GPS point collection the point lands outside of the active block, the user will not need to know since LAMI is not displaying the GPS coordinates as a map spot on the map.
- v. The user will be shown the manually collected map spot (highlighted) on the map

and receive a pop-up box stating the map spot collection is complete. See Figure D-2-4 below.

Figure D-2-4 Map Spot Collection Complete Confirmation

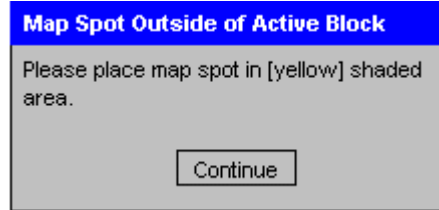


- vi. If the user selects the **OK** button from Figure D-2-4:
 1. LAMI will display a split screen view that shows the map with the map spot and its corresponding address record highlighted.
 2. The map spot on the map will appear in a different color **from** what was used for the existing map spot.
 3. The map spot # on the Address List screen will appear in the same color as the map spot.

2. If the user tries to place a manual map spot outside of the block boundary:
 - i. They will receive a pop-up message asking the user to place the map spot in the active (shaded) block. The example below, Figure

D-2-5, shows yellow. The map design group will determine the actual color.

Figure D-2-5 Map Spot Outside of Active Block Pop-up



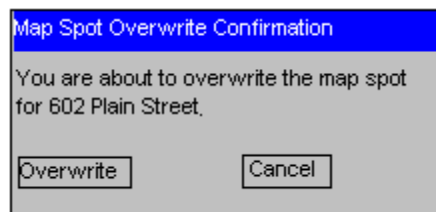
- ii. When the user selects the **Continue** button, LAMI will return them to Figure D-2-1 on **page 53**.
3. If no GPS signal is available:
 - i. The LAMI will still show the map spot on the map that the user created with their stylus and the collection process will appear the same to the user as when the GPS signal is available (see section D.2.b.ii.1 above) with the following exceptions:
 1. A GPS coordinate will not be recorded; only the manual coordinates will be attached to the record.
 2. LAMI will set the GPS Man Flag to "M" (Manual) since GPS is unavailable and the manual coordinate pair is the only one captured for the map spot.
 3. In the LAMI GPS transaction code field LAMI will record U=Unsuccessful.
 4. The map spot # on the Address List screen will appear in the same color as the map spot **shown on the map**.

3. **Detach/Disassociate/Recollect Map Spot from an Address Record for a Single Unit Structure (REQALDOS: 0401.2.3.1/ 0401.2.6/ 0401.2.7)**

It may be necessary to detach/disassociate/recollect a map spot for a record that already has a map spot attached to it. For instance, the user may find that they map spotted the wrong record or realized the point was put in the wrong spot. To do this the user will follow these steps:

- a. The user will highlight the record from the **Address List** screen for which they want to re-capture the map spot:
- b. The user will select the **Collect Point** button from the **Address List** screen.
- c. Behind the scenes LAMI will confirm that the record already has a GPS coordinate and/or manual coordinate. Once this has been confirmed, LAMI will display the warning message, as in Figure D-3-1 below.

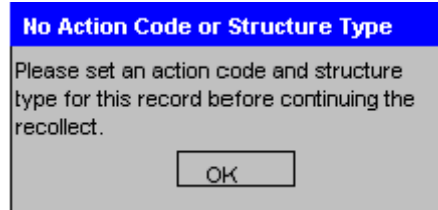
Figure D-3-1 Map Spot Overwrite Confirmation Pop-up



- i. If the user selects the **Cancel** button in Figure D-3-1, LAMI will bring them back to the **Address List** screen.
- ii. If the user selects the **Overwrite** button in Figure D-3-1, LAMI will:
 1. Remove the existing manual map spot from the map display.
 2. Remove existing GPS and manual coordinate information from the address list.
 3. Return the user to the pop-up in Figure D-1-1 or D-1-2 on **page 50 or 51** depending on the structure type code associated with the record.
 - i. If no structure type or action code exists on the address record, the user will be prompted

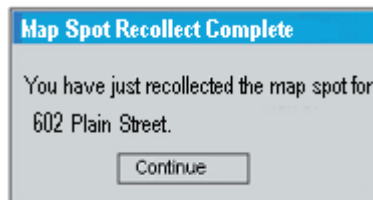
to set an action code and structure type before continuing. See Figure D-3-2.

Figure D-3-2: No Action Code or Structure Type Pop-up



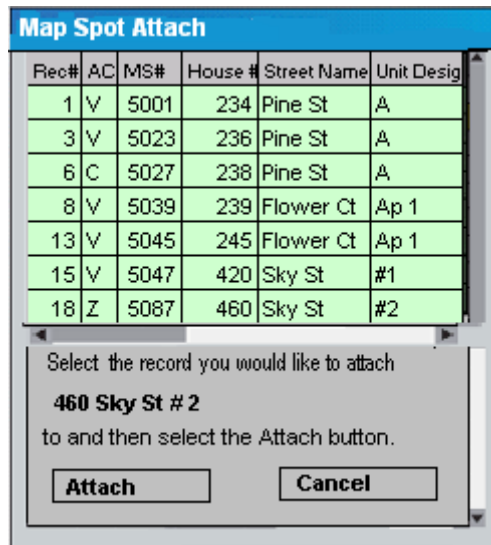
1. When the user selects the **OK** button from Figure D-3-2, it sends the user to the **Detailed Information** screen where the user can set an action code and structure type on a record as appropriate. The user will then have to restart the map spot collection process.
4. Lead the user through the process of map spot collection as described in Section D.2.
5. Display confirmation as shown in figure D-3-3.
6. Once the user selects the **Continue** button from Figure D-3-3, they will be returned to the **Address List** display screen.

Figure D-3-3 Map Spot Recollect Complete Pop-up



4. **Map Spot Point Collection for Multi Unit Structures (REQALDOS: 0401.2.4)**
 The user will be instructed to capture one map spot for address records in a multi-unit structure. To do this the user will complete the process of map spot collection described for a single unit structure (shown in section D.2 on page 53) for the first address in the multi-unit. After the user has collected a map spot for one address record within the structure, they will attach additional address records to that map spot. The following steps describe how to attach address records in a multi-unit to a single map spot:
- a. If the user selects the **Attach** button from the Collect Map Spot Pop-up, as shown in D-1-2 on page 51 and the LAMI will:
 - i. Launch the **Map Spot Attach** screen shown in Figure D-4-1. The top of this screen contains a list of address records that are multi-units with a map spot. The list will contain only one address record for every multi-unit with a map spot. (Behind the scenes LAMI will create a short list that is first filtered by structure type (= multi), map spot number (not null) then sort the list by "address" (house #, street name and unit designation) and then unduplicated by map spot #.) This list should be displayed uniquely from the address list to avoid confusion between the attach function and the address list. The bottom of the screen contains instructions for the user, and **Attach** and **Cancel** buttons.

Figure D-4-1: Map Spot Attach Function



- ii. To attach the record in question to a map spot, the user will need to select the address record that contains the map spot they would like to attach to, and then select the **Attach** button at the bottom of the **Map Spot Attach** screen. (See Figure D-4-1.)

1. If the user has not selected a record from the top of the screen, the **Attach** button will be grayed out and inaccessible.
- iii. Once the user selects the **Attach** button from the **Map Spot Attach** screen (Figure D-4-1):
 1. Behind the scenes, LAMI will insert the map spot number, GPS coordinates (if collected) and manual coordinates from the selected multi-unit address record to the attached address record.
 2. LAMI will display a pop-up that says, “Map spot attach complete” as shown in **Figure D-4-2**.

Figure D-4-2: Map Spot Attach Complete



3. When the user selects **OK** as shown in Figure D-4-2:
 - i. LAMI will display a split screen where both the map and address list will be shown. On the map the map spot will be highlighted. On the address list the record the user just attached to that map spot will be highlighted.
 - ii. The map spot shown on the map will be labeled with the map spot number and brackets next to it i.e. [2], that reflect the number of units attached to that map spot. For every record that is attached to that map spot, the map spot number will increase in the brackets.
- iv. If the user selects the **Cancel** button from the Map Spot Attach function (Figure D-4-1):

1. LAMI will return the user to the Collect Map Spot Pop-up shown in Figure D-1-2 on page 51 and the map spotting process will continue from that point.
5. **Detach/Disassociate/Recollect a Map Spot from an Address Record for a Multi-Unit Structure (REQALDOS: 0401.2.3.1/ 0401.2.6)**

It may be necessary to detach/disassociate/recollect a map spot for a record that already has a map spot attached to it. For instance, the user may find they map spotted the wrong record or realized the point was put in the wrong spot. In a multi-unit structure, LAMI will only overwrite the map spot for the specified address record. If multiple records in a multi-unit structure need a new map spot then the user will have to work with each record individually.

Please see Section D.3 of this document for instructions on how to detach/disassociate/recollect a map spot from an address record.

E. STRUCTURE TYPE CAPTURE (REQALDOS: 0201.9)**Structure Type Capture Assumptions**

A-1 Listers will indicate a structure type, either single or multi, for each address record that has an action code of A, C, V and Z.

A-2 When the lister indicates that a structure is “Single” the must also indicate type of Single Structure Subtype as either (1) Single-Family Structure, (2) Mobile Home, or (3) Boat, Motor Home, Tent, for each record that has an action code of A, C, or V.

A-3 For records with an action code of Z, the LAMI will automatically set the Structure Type as Single and Single Structure Subtype of Single Family Structure.

1. Introduction to Setting Structure Type

Address Canvassing listers will determine a structure type that best represents each valid address record in their listing assignment. Valid address records include those marked with action codes of A, C, V or Z. When setting the structure type for an address record, the listers will have two choices:

- a. **Single**, where there is only one housing unit or OLQ, at the physical structure and
- b. **Multi** where there is one physical structure, which contains multiple housing units or OLQ’s.

Address Canvassing listers will also determine Single Structure Subtype for single structures for those records marked with action codes of A, C, V and Z. The available Single Structure Subtypes include:

- a. Single-Family Structure
- b. Mobile Home
- c. Boat, Motor Home, Tent, etc.

Records with action codes set as Z will be flagged as Structure Type = Single Family Structure.

2. Setting Structure Type

To set the structure type for an address record the lister will do the following:

- a. From the **Correction** screen (the screen that appears after the user has set an action code using the options on the **Action** button submenu for an A, C, V or Z action code), the user will select structure type from a drop down menu as shown in Figure E-2-1.

Figure E-2-1: Structure Type Selection Drop Down

The screenshot shows a window titled "Correction - Record # 5, Block # 1748". It contains the following fields: "Action Code: C", "Map Spot: 3", "Structure Type:" with a dropdown menu showing "Single" and "Multi", "LOCATION ADDRESS" with "House #: 12601".

- i. If the user selects Single, the lister will have to select a structure subtype from a submenu that appears after they have selected Single from the Structure Type List. See Figure E-2-2.

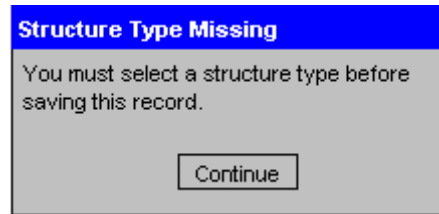
Figure E-2-2 Single Structure Subtype Menu

The screenshot shows the same window as Figure E-2-1, but with the "Structure Type:" dropdown menu open. The "Single" option is selected, and a submenu is displayed with the following options: "Single Family Structure", "Mobile Home", and "Boat, Motor Home, Tent, etc.". The "Multi" option is also visible in the dropdown menu.

1. After the user selects a subtype from Figure E-2-2, LAMI will populate the structure type field with the appropriate single structure type and (*Single Family Structure, Mobile Home, or Boat Motor Home, Tent etc*).
- ii. If the user selects the Multi structure type,
 1. No additional submenu will appear.
 2. LAMI will populate the structure type field with *Multi*.
- b. After all appropriate updates are made and the user selects the **Save** button at the bottom of the **Correction** screen:

- i. The structure type will be saved on the record.
 - ii. The LAMI will follow its normal course for the action code saved to the record as described in Chapter C of this document.
- c. If the user tries saving the action code and/or changes to the record prior to setting the structure type, LAMI will prompt the user to select a structure type before saving as shown in Figure E-2-3:

Figure E-2-3 Structure Type Missing Warning Pop-up



- i. When the user selects the **Continue** button from the Structure Type Missing Warning Pop-up (Figure E-2-3), they will be returned to the **Correction** screen to establish a structure type.

F. Quality Control Functionality (REQALDOS: 0501)**Quality Control Functionality Assumptions:**

- A-1 Separate QC field staff will conduct LAMI QC activities using the LAMI.
- A-2 The LAMI will support the Dependent Quality Control (QC) activities, and Delete Verification and House Number Change Verification.
- A-3 The LAMI will not be used to conduct the Initial Observation.
- A-4 The Dependent QC activity will be ground to book, therefore LAMI will only be able to select the starting point for the QC, and the user will have to select the other records that make up the Dependent QC sample.
- A-5 LAMI will automatically keep track of critical errors, non-critical errors, and tally only errors.
- A-6 Even when the critical error level has been reached, the user will complete QC on the number of records required for QC (12 in Travis, and 8 in the Cheyenne River Indian Reservation.)
- A-7 The Address List Table will contain a QC Flag that indicates whether a record has been part of the QC process for each record. (REQALDOS: 0501.2.1)
- A-8 The Address List Table will contain a QC Status that indicates whether a record has been part of the QC sample for each record. This flag will assist LAMI in calculating whether the AA passes or fails QC.
- A-9 The Address List Table will contain a QC Action Code
- A-8 Each record that is QCed will be part of a QC sub table that contains information linking the original case with the QC case (state, county, block and Rec#), the QC Flag, the QC Status Flag, as well as tallies for each type of critical, non-critical and tally error made to the record
- A-9 QC functionality will only be available to QC listers and QC Crew Leaders.
- A-10 QC flags will NOT be displayed to the production listers and/or Crew Leaders. (REQALDOS: 0501.1/ 0501.3)

1. Introduction to Quality Control (REQALDOS: 0501.1/ 0501.8)

The LAMI Address Canvassing QC software will have the same basic look and feel and functionality as the as the LAMI Address Canvassing Software. The primary difference between the Address Canvassing production LAMI and the Address Canvassing QC LAMI is the user of the software. The QC functionality will only be available to those staff working on the Quality Control portion of the Address Canvassing operation. This functionality as well as the items selected for QC should not be accessible for those working on the production portion of the Address Canvassing operation. Refer to chapters A-E of this document for details on the basic Address List Functionality, and to the 2006 Listing and Mapping Instrument (LAMI) Version 3.0 Listing Function Specifications, for information on the map functionality available to the QC user.

2. Determining the Quality Control Sample: (REQALDOS: 0501.2/ 0501.2.1)

The Address Canvassing Quality Control Listers (QCers) will perform a quality control verification on the following address records:

- a. All **deleted** address records, where the AC lister set the action code to D1-Delete. For these records LAMI will:
 - i. Display the QC Flag for these records with a **D** as described in section F.6 on [page 77](#). This flag was set in the address file when the D1 action code was set for the record as described in section C.4.b.i.3 on [page 30](#)
 - ii. Make these records visually distinguishable from records that do not need to be verified on the **Address List** screen.
- b. All **duplicate** address records, where the AC lister set the action code to D2-Duplicate, and linked the record to a surviving record.
 - i. Display the QC Flag for these records with a **D** as described in section F.6 on [page 77](#). This flag was set in the address file when the D2 action code was set for the record as described in section C.4.b.i.2.b.iii on [page 34](#).
 - ii. Make these records visually distinguishable from records that do not need to be verified on the **Address List** screen.
- c. All **house number changes**, address records where the AC listers set the action code to C –Correction and changed the house number field.
 - i. Display the QC Flag for these records with an **H** as described in section F.6 on [page 77](#). This flag was set in the address file when the C action code was set for the record, and the location house number was changed for the record as described in section C.3.h.i.1.d on [page 28](#).
 - ii. Make these records visually distinguishable from records that do not need to be verified on the **Address List** screen.
- d. **Dependent Quality Control sample**: A random sample of consecutive addresses on the ground. For these records LAMI will:

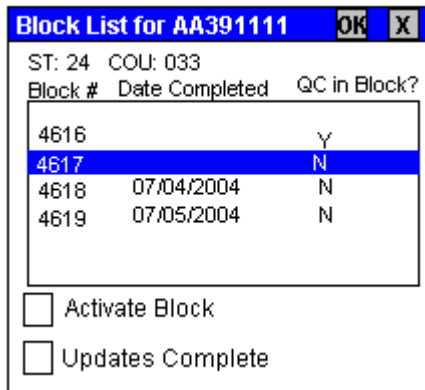
- i. Automatically select a “starting point” address record for Dependent QC by using a random number function.
- ii. Set the QC Flag for the selected record with a Q as described in section F.6 on page 77. Highlight “starting point” address record on the **Address List** screen.
- iii. Calculate the number of records that have been QCed (not including deletes and House Number Changes address records.)
- iv. Once the QC threshold has been set, (Travis =12 records, Cheyenne = 8 records) LAMI will automatically disable the user from accessing any additional QC records (with the exception of those that already have a QC flag as described in a, b and c above.)

3. **QC Block List:** (REQALDOS: 0501.8/ 0501.9)

The **QC Block List**, as shown in Figure F-3-1, will function as the standard LAMI **Block List** functions with the following additions (For more information on the standard LAMI block list see Chapter A on page 6 of this specification.):

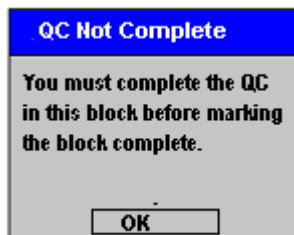
- a. The **QC Block List** will indicate which blocks have QC, either DQC or Verification. (Where the QC flag is not null for one or more records on the block.)
- b. The **Date Completed** field will now reflect the date the QC lister indicates the QC for the block is complete.

Figure F-3-1 QC Block List



- i. If the user tries to mark a block completed, and the QC has not been completed for each address marked with a QC Flag, or for the appropriate total of DQC records (8 or 12 respectively), the pop-up box shown in Figure F-3-2 will appear.

Figure F-3-2: QC Not Complete Error Pop-up



3. When the user selects the **OK** button from Figure F-4-2:

a. The pop-up will disappear.

b. The user will be returned to the **Block List** screen.

4. **Launching the QC Verification Within LAMI: (REQALDOS: 0501.1/ 0501.2.1/ 0501.2.2/ 0501.2.3/ 0501.4/ 0501.6)**

QC functions within the LAMI will be launched after the user has opened an AA. To launch this functionality the user will need to do the following:

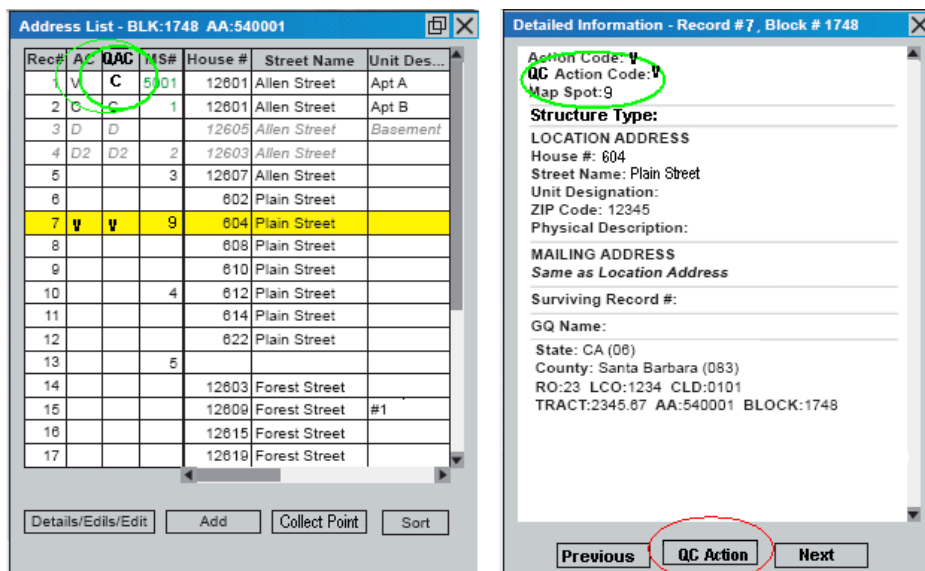
a. Select the **QC Function** button from the file button, button A, of the LAMI toolbar. This will:

- i. Automatically select the starting point address record for the Dependent QC (See step A-d above).
- ii. Activate the block in which the QC starting point is located.
- iii. Open the **Address List** for the block that contains the QC starting point.

b. After the user has selected the address record he/she would like to QC/verify from the **Address List**, The **QC Address List** and Detailed Information Screens, as shown in Figure F-4-1, will function as the standard LAMI **Address List** and **Detailed Information** screens do with the following additions: (Note: Additions are also circled in green in Figure F-4-1 .)

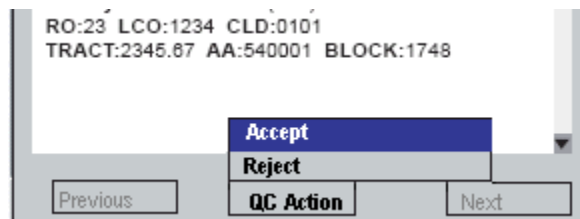
i. The QC Action Code will be shown on the Address List Screen and the Detailed Screen Right next to the Action Code that was set by the Address Canvassing Lister.

Figure F-4-1 QC Address List and Detailed Information Screens



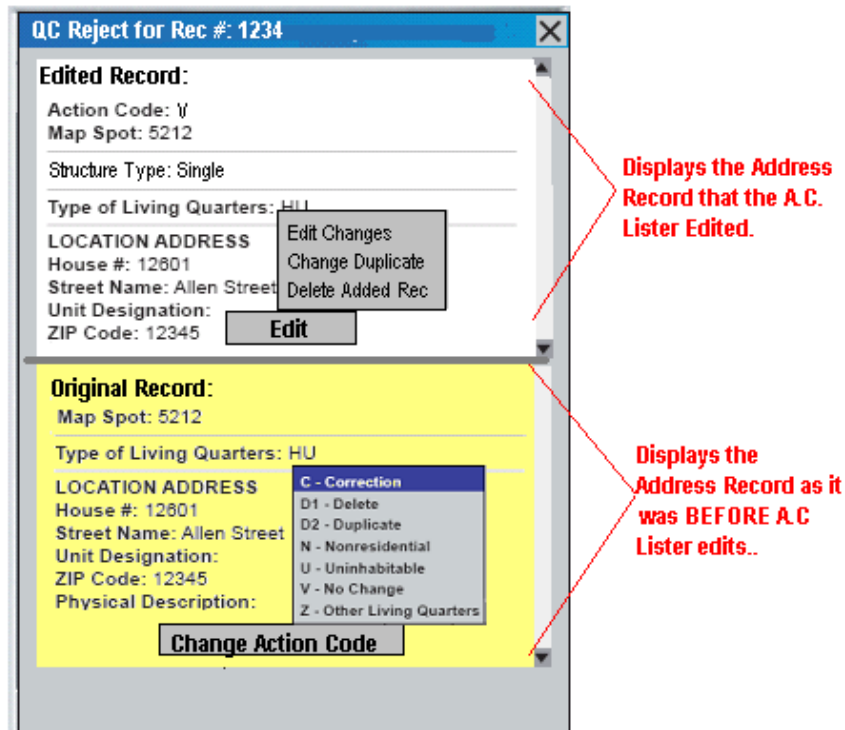
- c. After the user has selected the address record he/she would like to QC/verify from the **Address List**, (either the QC starting point or a deleted, or housing unit change record), they will follow these steps to verify the address:
 - i. Launch the Details/Edit button at the bottom of the **Address List** screen. This will display the **Detailed Information** screen, which will show the record with the AC Lister's action code, and any edits highlighted. At the bottom of the screen a **QC Action** button will replace the **Action** button as shown in the red-circled portion of Figure F-4-1.
- d. The QCer will use the **QC Action** button to set a QC Action for the record. This action will indicate whether the action code and changes made by the original lister are acceptable. The QCer will set the QC action by selecting the QC button from the **Detailed Information** screen, and then selecting the appropriate QC action from the submenu as shown in Figure F-4-2 below.

Figure F-4-2 Setting the QC Action for Record in LAMI



- i. If the QCer chooses **Accept**, from Figure F-4-2 LAMI will:
 - a. Indicate on the record that the record has been QCed.
 - b. Indicate the QC results for the record. (See section F.6 on page 77 for additional information on indicating QC results on a record.)
 - c. Launch the **Map Spot QC** screen for the record as described in section F.5 on page 76. (Only for records with a QC action code of A, C, V, or Z. For other action, codes LAMI will return user to the **Address List** screen.)
- ii. If the QCer chooses **Reject**, from Figure F-4-2 LAMI will:
 - a. Launch a **QC Reject** screen as shown in Figure F-4-3 on the next page. From this screen the user will be able to accept the edited record with changes, or revert to the original address record (pre-listing) and make changes as described below:

Figure F-4-3 LAMI QC Reject Screen



iii. If the action code is correct, but the address record is not correct, the QCer will choose the **Edit** button from the “Edited Record” (white) portion of the QC Reject screen and a submenu appears as is shown in Figure F-4-3.

1. If the QCer selects the *Edit Changes* submenu option from the **Edit** button of the Reject screen (as displayed in Figure F-4-3) then:
 - a. LAMI will provide the QCer with the same editing functions that it would bring up if the lister wanted to make corrections to a record. (For more information, see Chapter C on page 20). The QCer will use these functions to edit the record to reflect what is on the ground. Behind the scenes LAMI will capture these changes separate from the initial changes made to the record.
 - b. After saving edits to the record LAMI will ask the QCer to evaluate the change(s) they just made to the record through a series of pop-ups, if necessary. These pop-ups are driven by the changes the QCer made to the address record.
 - i. If changes are made to the Location House Number, LAMI will provide the following pop-up:

Was the House Number clearly posted?

- Yes (obs)
- No (no obs)

- ii. If changes are made to the Location Street Name, LAMI will provide the following pop-ups
First:

What change did you make to the street name?

- Corrected Street Name
- Corrected Street Name Spelling

Then:

Was the Street Name clearly posted?

- Yes (obs)
- No (no obs)

- c. After the QCer selects the radio button that best answers the question in the pop-up (s), LAMI will:
- i. Indicate on the record that the record has been QCed.
 - ii. Indicate the QC results for the record. (See Section F.6 for additional information on indicating QC results on a record.)
 - iii. Launch the **Map Spot QC** screen for the record as described in section F.5 on **page 76**. (Only for records with a QC action code of A, C, V, or Z for other Action codes LAMI will return user to the **Address List** screen)
4. If the QCer selects the **Change Duplicate** submenu option from the **Edit** button of the Reject screen (as displayed in Figure **F-4-3**) then LAMI will:
- a. Launch the Duplicate Linking process so that the user can select a different duplicate linkage (See section C.4 on **page 32**.)
 - b. Indicate on the record that the record has been QCed.

- c. Indicate the QC results for the record. (See Section F.6 on page 77 for additional information on reporting QC results on a record.)
 - d. Launch the Map Spot QC for the record as described in section F.5 on page 71.. (Only for records with a QC action code of A, C, V, or Z for other Action codes LAMI will return user to the Address List screen)
5. If the QCer selects the *Delete Added Record* submenu option from the **Edit** button of the Reject screen (as displayed in Figure F-4-3) then LAMI will:
- a. Indicate on the record that the record has been QCed.
 - b. Indicate the QC results for the record. (See Section F.6 for additional information on indicating QC results on a record.)
 - e. Launch the Map Spot QC for the record as described in section F.4 on page 67. (Only for records with a QC action code of A, C, V, or Z. For other Action codes LAMI will return user to the Address List screen)
- iv. If the QCer does not agree with the action code selected by the original lister, they will choose the **Edit Action Code** button from the Yellow portion of the reject screen and then:
1. Select the appropriate action code from the **Edit Action Code** button submenu based on what they see on the ground.
 2. Follow the process for setting the action code described in Chapter C on page 20.
 3. After saving edits to the record LAMI will ask the QCer to evaluate the changes they just made to the record through a series of pop-ups. These pop-ups are driven by the changes the QCer made to the address record.
 - i. If changes are made to the Location House Number, LAMI will provide the following pop-up:

<p>Was the House Number clearly posted?</p> <p><input type="radio"/> Yes (obs)</p> <p><input type="radio"/> No (no obs)</p>

- ii. If changes are made to the Location Street Name, LAMI will provide the following pop-ups

First:

<p>What change did you make to the street name?</p> <ul style="list-style-type: none"><input type="radio"/> Corrected Street Name<input type="radio"/> Corrected Street Name Spelling
--

Then:

<p>Was the Street Name clearly posted?</p> <ul style="list-style-type: none"><input type="radio"/> Yes (obs)<input type="radio"/> No (no obs)
--

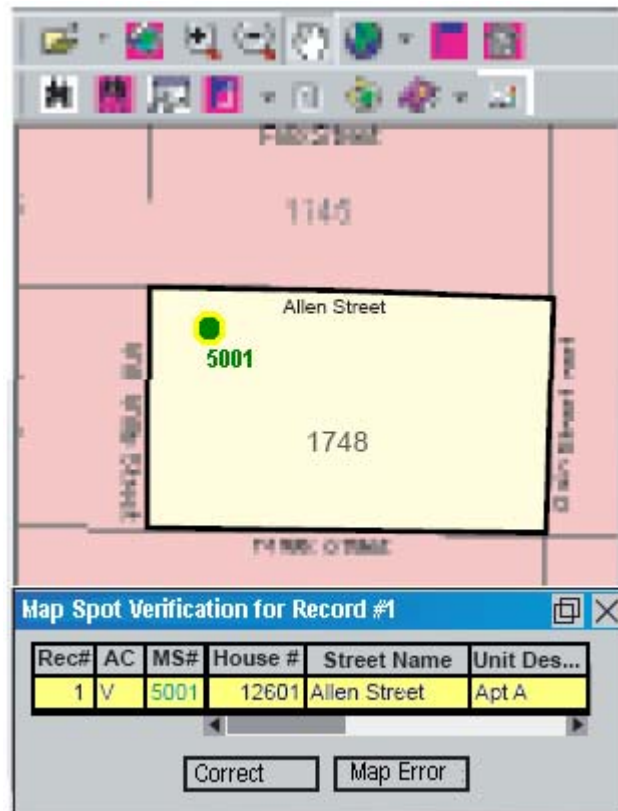
- b. After the QCer selects the radio button that best answers the question in the pop-up (s), LAMI will:
 - i. Indicate on the record that the record has been QCed.
 - ii. Indicate the QC results for the record. (See Section F.6 on page 77 for additional information on recording QC results on a record.)
 - iii. Launch the Map Spot QC for the record as described section F.5 on page 76. (Only for records with a QC action code of A, C, V, or Z for other Action codes LAMI will return user to the **Address List** screen)

5. LAMI Map Spot QC (REQALDOS: 0501.5 /0501.7)

Another component of QC is to determine whether the lister has placed the map spot in the correct location. This activity will only take place on those records eligible to have a map spot including records with a QC action code of A, C, V, or Z. No Map Spot QC is necessary for other action codes.

- a. LAMI will automatically launch the **Map Spot Verification** screen after the address verification has been completed for a record. The screen displays the map spot for the record that was just QCed, highlighted on a map with a split screen of the same record highlighted in the Address List. See Figure F-4-1.

Figure F-4-1 LAMI Map Spot Verification Screen



After the QCer reviews of the placement of the map spot on the screen and determines if the placement is correct, they will select a button from the bottom of the **Map Spot Verification** screen (Figure F-4-1) to indicate the results of their review:

- b. If the Map Spot information is correct, the QCer will select the **Correct** button and LAMI will:
 - i. Indicate on the record that the record has been QCed.

- ii. Indicate the QC results for the record. (See Section F.6 for additional information on indicating QC results on a record.)
 - iii. Return user to the **Address List** screen, where they can select the next address record for QC.
- c. If the Map Spot information is not correct, the QCer will select the **Map Error** button and LAMI will:
- i. Ask the user to reposition (recollect) the map spot using the process described in Chapter D on [page 49](#).
 - ii. LAMI will ask the QCer to evaluate the changes they just made to the record through Map Spot Error pop-up.

What change did you make to the map spot?

Check **all** that apply

- Map Spot location
- Map Spot association

- iii. After the QCer selects the radio button that best answers the question in the pop-up, the pop-up will disappear and LAMI will:
 1. Indicate on the record that the record has been QCed.
 2. Indicate the QC results for the record. (See Section F.6 for additional information on indicating QC results on a record.)
 3. Return user to the **Address List** screen, where they can select the next address record for QC.

6. Recording QC Information in the LAMI (REQALDOS: 0501.2.4/ 0501.2.5/ 0501.4.1)

Address Record QC Information - During the QC process, the LAMI will need to record QC information on each address record involved in the QC process. Following is information on how the LAMI will record this information for each individual Address Record.

- a. **QC Flag** – This flag indicates that an address record was part of the QC process and will be set according to the following rules:
 - i. For the Duplicates, Deletes, and HU number changes, the code will be set at the time of the initial canvassing. The QC Flag for records with action Codes of **D1** and **D2** will be set as **D**, and the QC Flag for records with an action code of **C** or **Z** where a House Number field was changed will be set as **”**at the time the initial flag is set. (For **D** codes see section c.4.b.i.3 on [page 30](#) and section C.4.b.i.2.b.iii on [page 34](#) and for **H** codes see section C.3.h.i.1.d on [page 28](#)) QC LAMI can use these flags to show the user which records need verification during the QC process.

- ii. For records that are part of the Dependent QC sample, LAMI will set the flag to **Q** for the first record selected as part of the random number process, and then set the flag to **Q** for each additional address record selected by the QC lister for QC. QC LAMI can use this flag to keep track of how many units the QCer has completed.
- b. **Error**– This flag will indicate the overall status of the QC for the Address record and will be set according to the following rules:
 - i. This flag will indicate whether the record has a
 - 1. Non-Critical Error (1),
 - 2. Critical Error (2),
 - 3. Tally Only Error (3) or,
 - 4. No errors (0).
 - ii. This flag will be the composite result of the highest error for the record. In other words if the record contains multiple errors, this status flag will reflect the highest error made.
 - iii. Additional rules for determining what actions constitute what types of errors are shown in Appendices G and H of this document.
- c. **QC Action Code** – This is the action code that the record is given by the lister and will be set according to the following rules:
 - i. When the QCer “Accepts” the action code and/or edits of the Lister LAMI will copy the action code from the lister into the QC Action Code field.
 - ii. When the QCer “Rejects” the action code or edits from the Lister, LAMI will populate this field using the results shown in Appendices A and B of this document.
 - iii. When the QCer Adds a Record not discovered by the Lister, LAMI will set this Action Code to “A”.
- d. Classification of Error Types. In addition to capturing the flags described in a-c above, the LAMI will also record the types of errors made to each record (as described in Appendices G and H). **Note to Reader: Details on the capture of this information will be provided in a separate specification to GEO from DSSD.**
- e. After the QCer has completed the QC, LAMI will tally the errors and types of errors made, and using the criteria established below determine whether the AA has passed or failed the Dependent Quality Control Check.
- f. For Rural AA’s (Cheyenne River) the LAMI will
 - i. **Fail** an AA when the lister makes:

1. 1 or more critical errors within the 8 records selected for Dependent QC (QC Flag =Q) or
 2. 5 or more non-critical errors within the 8 records selected for Dependent QC (QC Flag =Q) or
 3. 1 or more errors in the Delete/ House Number Change verification (QC flag = D or H).
- ii. **Pass** an AA when the lister makes:
1. NO critical errors within the 8 records selected for Dependent QC (QC Flag =Q) or
 2. Fewer than 5 non-critical errors within the 8 records selected for Dependent QC (QC Flag =Q) or
 3. 0 or fewer errors in the Delete/House Number Change verification (QC flag = D or H).
- g. For Urban AA's (Travis County TX) the LAMI will
- i. **Fail** an AA when the lister makes:
 1. 1 or more critical errors within the 12 records selected for Dependent QC (QC Flag =Q) or
 2. 5 or more non-critical errors within the 12 records selected for Dependent QC (QC Flag =Q). Or
 3. For the Delete/Housing Number Change verification (QC flag = D or H):
 - a. If the number of deletes is fewer than 25 in the AA then 1 or more errors
 - b. If the number of deletes is between 25 and 38 in the AA then 2 or more errors
 - c. If the number of deletes is between 39 and 50 in the AA then 3 or more errors
 - d. If the number of deletes is between 51 and 61 in the AA then 4 or more errors
 - e. If the number of deletes is between 62 and 71 in the AA then 5 or more errors
 - f. If the number of deletes is between 72 and 80 in the AA then 6 or more errors
 - g. If the number of deletes is between 81 and 87 in the AA then 7 or more errors
 - h. If the number of deletes is between 88 and 94 in the AA then 8 or more errors
 - i. If the number of deletes is between 95 and 102 in the AA then 9 or more errors
 - j. If the number of deletes is between 103 and 108 in the AA then 10 or more errors
 - k. If the number of deletes is between 109 and 180 in the AA then 11 or more errors.

- ii. **Pass** an AA when the lister makes:
 1. NO critical errors within the 12 records selected for Dependent QC (QC Flag =Q) or
 2. Fewer than 5 non-critical errors within the 12 records selected for Dependent QC (QC Flag =Q) or
 3. For the Delete/House Number Change (QC flag = D or H):
 - a. If the number of deletes is fewer than 25 in the AA then 0 errors
 - b. If the number of deletes is between 25 and 38 in the AA then 1 or less errors
 - c. If the number of deletes is between 39 and 50 in the AA then 2 or less errors
 - d. If the number of deletes is between 51 and 61 in the AA then 3 or less errors
 - e. If the number of deletes is between 62 and 71 in the AA then 4 or less errors
 - f. If the number of deletes is between 72 and 80 in the AA then 5 or less errors
 - g. If the number of deletes is between 81 and 87 in the AA then 6 or less errors
 - h. If the number of deletes is between 88 and 94 in the AA then 7 or less errors
 - i. If the number of deletes is between 95 and 102 in the AA then 8 or less errors
 - j. If the number of deletes is between 103 and 108 in the AA then 9 or less errors
 - k. If the number of deletes is between 109 and 180 in the AA then 10 or less errors.

- h. If the AA **Passes** QC, LAMI will
 - i. Indicate the AA as passed in the LAMI_AMS_Work Unit Status File (QC Version if there needs to be one).
 - ii. **Enable all block files etc. to be transmitted back to HQ? The LAMI Work Unit Status File and AMS will enable transmission when QC is completed.**

- i. If the AA **Fails** QC, LAMI will
 - i. Indicate the as failed in the LAMI_AMS_Work Unit Status File (QC Version if there needs to be one).
 - ii. **Enable all block files etc. to be transmitted back to HQ? The LAMI Work Unit Status File and AMS will enable transmission when QC is completed.**

7. LAMI Feature QC (REQALDOS: 0501.7)

Due to time constraints all parties involved (DSSD, FLD, GEO) have agreed that it may not be possible to implement QC for feature updates in the Address Canvassing operation. We will explore QC for feature updates in future 2006 Census Test operations.

Appendix A: LAMI MAF Details

Address Information in the LAMI dataset VISIBLE to the user					
FIELD	TYPE	LENGTH	LEGAL VALUES	UPDATABLE IN LAMI	COMMENTS
RECNUM	NUM	4		N	
2006 Collection Block	NUM	5		N	
RO_CODE	NUM	2		N	
COLLECTION STATE CODE	ALPHA	2		N	
STATE ABBREVIATION	NUM	2		N	
LCO CODE	NUM	4		N	
COLLECTION COUNTY CODE	NUM	3		N	
COLL COUNTY NAME	ALPHA	40		N	
CLD CODE*	NUM	4		N	
TRACT CODE	NUM	4		N	
TRACT SUFFIX	NUM	2		N	
AA CODE	NUM	4		N	
MAPSPOT NUMBER	ALPHANUM	5		Y	New Mapspot numbers will be assigned to any record that doesn't already have a mapspot number. Any record that already has a mapspot number will keep that number
ACTION_CODE	ALPHANUM	2	A, C, D1, D2, N, U, V, Z	Y	
SURVIVOR_ID	ALPHANUM	4		Y	
MAIL_HOUSENUM_BLDGNUM	ALPHANUM	10		Y	House number field is now editable
MAIL_STR_BLDG_NAME	ALPHANUM	60		Y	Changed from 55 to 60 characters to allow for concatenation of 6 component fields
MAIL_UNIT	ALPHANUM	24		Y	
MAIL_ZIP	NUM	5		Y	
RR DESCRIPTOR	ALPHA	4	RR, HCR, SR, PSC	Y	
RR ID	ALPHANUM	4		Y	
BOX/POBOX DESC	ALPHA	6		N	Descriptor is displayed as a label only
BOX/POBOX ID	ALPHANUM	10		Y	
LOC_HOUSENUM_BLDGNUM	ALPHANUM	10		Y	House number field is now editable
LOC_STR_BLDG_NAME	ALPHANUM	60		Y	Changed from 55 to 60 characters to allow for concatenation of 6 component fields

LOC_UNIT	ALPHANUM	24		Y	
LOC_ZIP	NUM	5		Y	
Physical Location Description	ALPHANUM	100		Y	
GQ NAME	ALPHANUM	100		Y	Only editable for Z records and OLQ Adds
HU_OLQ_FLAG	ALPHA	1	HU, OLQ	Y	
HU_TYPE	ALPHA	1	S, M, T, O	Y	S = single, M = Multi-unit, T = Trailer (Mobile Home), O = Other
QC_Flag	ALPHA	1	D, H, Q	Y	New field. Needed to identify records that are to be QC'ed D = deletes and duplicates, H = house number changes, Q = the first sample record in the AA. Flag is <u>only</u> visible for QC lister.
QC ACTION CODE	ALPHANUM	2	A, C, D1, D2, N, U, V, Z	Y	Note: Only visible in Action Code Column when lister action code has been superceded by QC action code.

Address Information in the LAMI dataset NON-VISIBLE to the user

FIELD	TYPE	LENGTH	LEGAL VALUES	UPDATABLE IN LAMI	COMMENTS
MAFID	NUM	12		N	These fields are dealt with in the section on duplicates (p. 29)
Surv_MAFID	NUM	12		Y	
Surv_Flag	NUM	12		Y	
GPS_Latitude	NUM	10		Y	These are components of the mapspot collection process (p. 42). M = Manual, G = GPS
GPS_Longitude	NUM	11		Y	
C2K_Latitude	NUM	9		N	
C2K_Longitude	NUM	10		N	
Manual_Latitude	NUM	10		Y	
Manual_Longitude	NUM	11		Y	
GPS_Manual_Flag	ALPHA	1	M, G	Y	
Res_Stat	NUM	1		N	
Unit Stat	NUM	1		N	
City-style Location Flag	ALPHA	1	Y, N	Y	This field is used to indicate whether or not the "same as location address" button should be selected for EXISTING records.

City-style Mail Flag	ALPHA	1	Y, N	Y	This field may be used or modified during the MAFUF creation process. It may also be updated by the LAMI if the "same as location address" button is selected for ADDED records.
Noncity-style Mail Flag	ALPHA	1	Y, N	Y	This field must be carried in the LAMI dataset because it may be used or modified during the MAFUF creation process. It is NOT updated by the LAMI.
QC_Flag	ALPHA	1	D, H, Q	Y	New field. Needed to identify records that are to be QC'ed D = deletes and duplicates, H = house number changes, Q = the first sample record in the AA. This flag is NOT visible for the Address Canvassing Production Lister. In production this flag is captured behind the scenes.
Error	ALPHANUM	1	P, F	Y	Describes the type of errors discovered during QC where 0 = No Errors 1 = Non-Critical Errors 2= Critical Errors 3= Tally Only Errors. The address list will be populated with these errors from the LAMI QC file.

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	Action Code	ACTIONCODE	Action Code:	Action Code assigned during canvassing. Initially this field will be blank, as canvasser progresses in the block it will be filled.	Action Code Set by Action button	
2	Map Spot Identification	MSNUM	Map Spot:	Number associated with the physical representation of the address on the map.	Automatically set by LAMI by either GPS collect or Manual collection.	
--	Line Break		solid grey line	Shown between items 2 and 3.	Not Editable	
3	Structure Type	HU-TYPE	Structure Type	Flag set by the lister during canvassing to describe the type of structure for valid address records – single (including subtype) or multi.	Drop Down Pick List	Legal Values: M (multi), S (single unit), T (trailer), O (Other) Only editable for A, C, V or Z action codes.
--	Line Break		solid grey line	Shown between items 3 and 4.	Not Editable	
4	HU/OLQ Flag	HUOLQ_STAT	Type of Living Quarters:	Indication of whether the record is an HU or OLQ. Only displayed for Adds.	Drop Down Pick List for Added Records Only. Automatically set as OLQ for records marked as Z.	Legal Values: HU, OLQ Only editable for A action codes. Default value for C and V records is HU. Default value for Z records is OLQ
--	Line Break		solid grey line	Shown between items 4	Not Editable	

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				and 5.		
5	Location Address Header		LOCATION ADDRESS	Section Header.	Not Editable	
6	Location House Number	LOC_HSENUM	House #:	House number with the location address.	Manual Entry	Only editable for A, C or Z action codes.
7	Location Street Name	LOC_STREETNAME	Street Name:	Primary street name associated with the location address portion of the address record. Includes all components of the street name.	Pick List and Manual Entry	<p>1. Pick List containing:</p> <ul style="list-style-type: none"> Street Names that already exist in the block, “Unnamed Road” Blank for the user to enter Street Names not yet in the pick list. <p>2. User will be able to edit names already in pick list.</p> <p>3. Once the user enters a new street name, LAMI will make that name available in the pick list</p> <p>Only editable for A, C or Z action codes.</p>
8	Location Unit Designation	LOC_WS_LABEL	Unit Designation:	Display any unit designators associated with the location address.	Manual Entry	Only editable for A, C or Z action codes.
9	Location ZIP Code	LOC_ZIPCODE	ZIP Code:	5-digit ZIP Code associated with the house	Pick List Manual Entry	1. Pick List containing ZIP Codes that exist in the block.

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				number street name address shown in items 6 thru 8.		2. User will be able to edit items already in pick list. 3. Once the user enters a new item in the pick list, LAMI will make the item available in the pick list. Only editable for A, C or Z action codes.
10	Physical Description	LOCDESC	Physical Description:	Display the physical description associated with the location address portion of the address record. Display will allow for the number of characters for a physical description (100 char.) with a word wrap.	Manual Entry	Only available for A, C or Z action codes.
--	Line Break		solid grey line	Shown between items 10 and 11.	Not Editable	
11	Mailing Address Header		MAILING ADDRESS	Section Header	Not Editable	
12	Same as Location Address Flag	N/A	Same as Location Address	If the mailing address is the same as the location address, then the display will say "Same as Location Address" and items 13 to 26 will not	Radio Button	To indicate that the mailing address is the same as the location address, the user will select the "Same as Location Address" radio button and items 13 to 26 will not be

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				display. If the mailing address is different, items 13 to 26 will display when populated.		<p>editable.</p> <p>If address record does not contain a location address, LAMI will not allow the user to select the same as location address radio button</p> <p>To indicate that the address record has a different mailing address the user will leave the same as location address radio button unselected, and then select the radio button for the type of mailing address they would like to capture. Only editable for A, C or Z action codes.</p> <p>When displaying existing records, the only time this button should be selected is when the "CS_LOC" and CS_MAIL" flags are both "Y." For adds corrections or edits, if the user selects the "same as" button, the CS_LOC and CS_MAIL flags may not</p>

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
						already be set, so instead apply the first business rule for Mailing Address (Appendix C, pg. 85). If it meets the criteria of the business rule, the LAMI should display the button as selected, and the CS_MAIL flag should be set to "Y."
13	City-Style Mailing Address Indicator	N/A	City-Style Mailing Address	Radio button that indicates the record has a City-Style Mailing Address different from the Location Address.	Radio Button	The user will select this button if the address record has a city-style address that is different from the location address. After selecting this radio button LAMI will enable the Mailing House Number Mailing Street Name Mailing Unit Designation Mailing ZIP code fields for data entry. Only editable for A, C or Z action codes.
14	Mailing Address House Number	MAIL_HSENUM	House #:	House number associated with the mailing address portion of the address record.	Manual Entry	Only editable for A, C or Z action codes when city-style mailing address radio button selected.

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
15	Mailing Address Street Name	MAIL_STREETNAME	Street Name:	Primary street name associated with the mailing address portion of the address record. Includes all components of the street name.	Pick List and Manual Entry	1. Pick List containing: <ul style="list-style-type: none"> Street Names that already exist in the block, DO NOT MAKE "Unnamed Rd Available Blank for the user to enter Street Names not yet in the pick list. 2. User will be able to edit names already in pick list. 3. Once the user enters a new name in pick list LAMI will make that name available in the pick list Only editable for A, C or Z action codes when city-style mailing address radio button selected.
16	Mailing Address Unit Designation	MAIL_WS_LABEL	Unit Designation:	Display any unit designators associated with the mailing address portion	Manual Entry	Only editable for A, C or Z action codes when city-style mailing address radio button

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				of the address record.		selected.
17	Mailing Address ZIP Code	MAIL_ZIPCODE	ZIP Code:	5 digit ZIP Code associated with associated with the house number street name mailing address portion of the address record.	Pick List Manual Entry	<ol style="list-style-type: none"> 1. Pick List containing ZIP Codes that exist in the block. 2. User will be able to edit items already in pick list. 3. Once the user enters a new item pick list LAMI will make item available in the pick list. <p>Only editable for A, C or Z action codes when city-style mailing address radio button selected.</p>
18	Rural Route Mailing Address Indicator	N/A	Rural Route Address	Radio button that indicates the record has a Rural Route mailing address.	Radio Button	<p>The user will select this button if the address record has a Rural Route mailing address. After selecting this radio button LAMI will enable the Rural Route Descriptor Rural Route # Box Number and Rural Route ZIP Code fields for data entry.</p>

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
19	Rural Route Descriptor	RR_DESC	RR Type:	Rural Route (RR) descriptor.	Pick List	Legal Values: RR, HCR, SR, PSC Only editable for A, C, or Z action codes when Rural Route Address radio button selected.
20	Rural Route Number	RR_ID	Rural Route #:	Rural Route Number associated with the RR address portion of the record.	Pick List and/or Manual Entry	1. Pick List containing RR #'s that exist in the block. 2. User will be able to edit items already in pick list. 3. Once the user enters a new item pick list LAMI will make item available in the pick list. Only editable for A, C, or Z action codes when Rural Route Address radio button selected.
21	Box Number	BOX_ID	Box #:	Box number for the Rural Route Number associated with the RR address portion of the record.	Manual Entry	Only editable for A, C, or Z action codes when Rural Route Address radio button selected.
22	ZIP Code	MAIL_ZIPCODE	ZIP Code:	5-digit ZIP code associated with the RR address portion of the record.	Pick List and/or Manual Entry	1. Pick List containing ZIP Codes that exist in the block. 2. User will be able to edit items already in pick list. 3. Once the user enters a new item pick list LAMI will make

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
						item available in the pick list. Only editable for A, C, or Z action codes when Rural Route Address radio button selected.
23	Post Office Box Address Indicator		P.O. Box Address	Radio button that indicates the record has a P.O. Box mailing address.	Radio Button	The user will select this button if the address record has a City-Style address that is different from the location address. A After selecting this radio button LAMI will enable the P.O Box Type PO Box # PO Box ZIP code fields for data entry.
24	Post Office Box Type	BOX_DESC	P.O. Box Type	P.O. Box Type (Note: this is not currently in screen shots).	Pick List	Legal Values: Box, PO Box Only editable for A, C or Z action codes when PO Box Address radio button selected.
25	Post Office Box Number	BOX_ID	P.O. Box #:	P.O. Box number associated with the P.O. Box address.	Manual Entry	Only editable for A, C or Z action codes. When PO Box Address button selected.
26	ZIP Code	MAIL_ZIPCODE	ZIP Code:	5-digit ZIP Code associated with the P.O.	Pick List and/or Manual Entry	1. Pick List containing ZIP Codes that exist in the block.

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				Box address portion of the record.		2. User will be able to edit items already in pick list. 3. Once the user enters a new item pick list LAMI will make item available in the pick list. Only editable for A, C or Z action codes when PO Box Address radio button selected.
	Line Break		solid grey line	Shown between items 26 and 27.	Not Editable	
27	Survivor Rec #	SURV_ID	Surviving Record #:	If the record is a duplicate (D2 action code), the record number of the surviving address that the record is a duplicate of will be shown in this column.	LAMI sets as part of duplicate process/ User cannot edit directly.	Only displayed for D2 records.
	Line Break		-----	Shown between items 27 and 28.	Not Editable	
28	GQ Name	GQ_NAME	GQ Name:	Name of GQ associated with the record.	Manual Entry	Only available on items with Z – Other Living Quarters Action Code
	Line Break		-----	Shown between items 28 and 29.	Not Editable	
29	State Abbreviation And FIPS Code	ST	State:	Two character state abbreviation and then in parentheses the state's	Not Editable	

REQALDOS: 0101.1/ 0101.2/ 0201.1.1/ 0201.1.5/ 0201.3.4/ 0201.6/ 0201.6.1						
#	Data Item	Field Name	LAMI Display Label	Item Description	Edit Mechanism	Editing Details
(A)	(B)	(C)	(D)	(E)	(F)	(G)
				FIPS code.		
30	County Name and FIPS Code	COU	County:	County Name and then in parentheses the county's FIPS code.	<i>Not Editable</i>	
31	Record Identification	RO_CODE, LCO, CLD, TRACTBAS, TRACTSUF, AA, BLOCK, BLOCKSUF	RO: RR LCO: LLLL CLD: CCCC TRACT: TTT T.TT AA: AAAAAA BLOCK: BBBBB	The identification portion of the record shows the geographic codes associated with the address records selected including RO, LCO, CLD, TRACT, AA and Block.	<i>Not Editable</i>	

Following is a table containing Address Update Rules that will be enforced by LAMI and the action LAMI will take to enforce them. Any questions about these rules should be referred to Frank McPhillips x39168. (REQALDOS: 0201.1.4/ 0201.1.5)

Rules for both Location and Mailing Address

Business Rule	Action Taken By LAMI
For A, C, V, and Z actions , if two or more records in the block have the same House Number and Street Name, only one of them may have a blank unit number. In addition, the remaining records (those with non-blank unit numbers) MUST have <i>unique</i> unit numbers.	After attempting to save the second record that contains same house number, street name, and same unit number (including blanks), warning message to user: <i>"Addresses with the same house number and street name must have different unit numbers"</i>
For A, C, and Z actions , a lister must not place the word "NONE" as the only entry in any field(s).	After attempting to save, warning message to user: <i>"The word 'None' is an invalid entry for any field"</i>
For A, C, and Z actions , a lister must not be permitted to enter five zeros for the location or mailing address ZIP Code.	After attempting to save, warning message to user: "00000 is an invalid entry for ZIP Code"

Pop-up messages should be dismissed with an "OK" button, which will allow the user to fix the problem in the edit record screen. The user will continue to get the pop-up until the fix the problem.

Rules for Location Address Only

Business Rule	Action Taken By LAMI
For adds , if a house number is entered, the user must also enter a street name or building name or, if no street/bldg name is available, select "Unnamed Road" from the dropdown pick list.	After attempting to save, warning message to user: <i>"A street name must be entered"</i>
For A, C, and Z actions , if no house/bldg number is entered, the user must enter a street name and physical location.	After attempting to save, warning message to user: <i>"A Street Name and Physical Description must be entered"</i>
For A, C, and Z actions , if the user has selected "Unnamed Rd" from the drop-down list, a physical location description must also be entered.	After attempting to save, a pop-up warning message to user (if physical description is blank): <i>"A physical description must be entered"</i>
For A, C, and Z actions , if a physical location description is present and there is no entry in the street name field, the user must enter a street name or select "Unnamed Road" from the dropdown list.	After attempting to save, warning message to user: <i>"A street name must be entered"</i>

Pop-up messages should be dismissed with an "OK" button, which will allow the user to fix the problem in the edit record screen. The user will continue to get the pop-up until the fix the problem.

Rules for Mailing Address Only

Business Rule	Action Taken By LAMI
<p>For A, C, and Z actions, the user may select "same as location address" if the location house number, location street name, and location ZIP Code are all not blank. The one exception to this rule is if "Unnamed Road" is listed as the location street name, the user may not select "same as location address."</p>	<p>If the user selects the radio button and the non-blank criteria are not met, the pop-up warning message to the user: <i>"A house number, street name, and ZIP Code are all required for mailing address"</i></p> <p>If the "unnamed road" is detected, the pop-up message: <i>"Unnamed Road is not a valid street name for a mailing address"</i></p>
<p>For adds, if the user makes an entry in any of the component fields of the Rural Route address (Rural Route Type, Route Number, Box #, or ZIP Code), the software shall require an entry in all other component fields. Unless all four fields have entries, the LAMI will not save the Rural Route Address data entries to the added record.</p>	<p>After attempting to save, warning message to user: <i>"You have entered an incomplete Rural Route address. All fields are required for a valid mailing address. Select Edit to fix, or Cancel"</i> ("Edit" and "Cancel" buttons included in pop-up. "Edit" returns the user to the Address Details screen, and "Cancel" blanks out all of the rural route address fields)</p>
<p>For adds, if the user enters either component of a PO Box address (Box number or ZIP Code), the software will require an entry in the other field. Unless both fields contain entries, LAMI will not save the PO Box address data entries.</p>	<p>After attempting to save, warning message to user: <i>"You have entered an incomplete PO Box address. Both fields are required for a valid mailing address. Select Edit to fix, or Cancel"</i> ("Edit" and "Cancel" buttons included in pop-up. "Edit" returns the user to the Address Details screen, and "Cancel" blanks out all of the P.O. Box address fields)</p>

GPS Specifications for LAMI

Note: this document provides general guidelines for the incorporation of GPS technology into the 2006 Census Test Address Canvassing operation. If you have any questions related to this document please contact Kevin Donnalley at x39181 or Kevin.Edward.Donnalley@census.gov

Most of the 2004 NRFU HHC GPS capture tools meet the requirements for LAMI V1. Changes that may be needed are listed below:

1. The LAMI will display a “You Are Here” icon on the map. The NRFU 2004 HHC capability will suffice. Additional details about You Are Here indicator can be found in the LAMI Map Specification Version 3.0.
2. The LAMI will collect data for 10 seconds. For LAMI V1, 10 seconds will suffice.
3. The LAMI will average and return the average latitude and longitude of the captured points. These data will be put in the ATU7 as well as the Address List table. This data format is provided in Appendix F.
4. The LAMI will display a symbol (on the map) at the location of the manual point collect by the user. GPS coordinates will be captured and stored behind the scenes.
5. The LAMI GPS structure point collection will be launched at the end of editing the action code etc. for a record or from a button on the Address List screen.
6. The LAMI will record how many times the user attempted to capture a GPS structure point.
7. The LAMI will inform the user if the GPS receiver is ‘on’ or ‘off’. Additional details can be found in the LAMI Map Specification Version 3.0.
8. The LAMI will begin capturing GPS structure point data as soon as a signal is received. Additional details about GPS capture can be found in Chapter D of this specification can be found in the LAMI Map Specification Version 3.0.
9. The LAMI will stop capturing GPS structure points after 10 seconds. Additional details about GPS capture can be found in Chapter D of this specification can be found in the LAMI Map Specification Version 3.0.
10. The LAMI will inform the user when to begin and end data collection. Additional details about GPS capture can be found in Chapter D of this specification can be found in the LAMI Map Specification Version 3.0.
11. The LAMI will populate the fields in Record Type ATU7L. This data table format is provided in Appendix F.

CENSUS BUREAU GPS TECHNICAL GUIDELINES

(REQALDOS: 0401.1.1)

Note: this document provides general technical guidelines for the incorporation of GPS technology into any Census Activity. If you have any questions related to this document please contact Kevin Donnalley at x39181 or Kevin.Edward.Donnalley@Census.gov

Assumed: Basic Receiver Requirements

Protocol:	NMEA-0183 (V2.20)-GGA, GSA, GSV, RMC, VTG, GLL, ZDA if necessary a proprietary file format may be used.
General:	L1, L2 or L5 CA Code Continuous Tracking, WAAS enabled. Signal priority is: DGPS, WAAS, pure GPS (3D). The receiver will take advantage of any GNSS signals, including CA, available at time of procurement or upgraded before deployment. Firmware must allow remote upgrades. To speed up acquisition time the receiver will be loaded with appropriate Almanac and Latitude/Longitude information for the operational area
Accuracy:	3 meters or less – uncorrected. Data can be differentially corrected
Coordinate System:	Latitude/Longitude
Datum:	WGS-84
Antenna:	External Antenna (retractable or detachable with dedicated port, must work inside a vehicle) OPTIONAL

Standard GPS Collection Receiver Settings

Position Mode	WAAS or other DGPS is the preferred mode but manual 3D or 3D over determined mode can be used if Census Bureau GPS standards are met.
Number of Satellites	4 or more for 3D horizontal measurements. 6 or more for 3D vertical measurements
Elevation Mask	15 degrees above horizon.
PDOP Mask	6
Signal to Noise Ratio Mask (SNR)	6 (receiver dependent 6 is used as an example)

Minimum Positions for Point Features	TBD for 3 meter or better
Logging Intervals	Intervals for point features will be 1 second or faster. Intervals for line and area features depend on the velocity at which the receiver will be traveling and the nature of the feature and the operating environment. Under normal circumstances (i.e., when the user is walking with the receiver) the interval for line and area features will be set to a 5 second interval.
Logging of DOP	Turned On.

Under circumstances where collection is being performed using real time differential corrections the following additional parameters will be set accordingly:

Additional Real-Time Differential GPS Collection Receiver Settings

Logging of Post Process Data	Yes. This parameter setting is set to enable the real-time differentially corrected data to be optionally differentially corrected in a post process step.
RTCM Station	Auto-Range. This parameter is set so that the receiver will use RTCM GPS correction signals from the closest beacon. (Receiver dependent)

NMEA Sentences – Only Sentences with Pertinent Data are Listed in Their Entirety

All \$GPxxx sentence codes and short descriptions

- \$GPAAM - Waypoint Arrival Alarm
- \$GPALM - GPS Almanac Data
- \$GPAPA - Autopilot format "A"
- \$GPAPB - Autopilot format "B"
- \$GPASD - Autopilot System Data
- \$GPBEC - **Bearing & Distance to Waypoint, Dead Reckoning**
- \$GPBOD - Bearing, Origin to Destination
- \$GPBWC - Bearing & Distance to Waypoint, Great Circle
- \$GPBWR - Bearing & Distance to Waypoint, Rhumb Line
- \$GPBWW - Bearing, Waypoint to Waypoint
- \$GPDPT - Depth Below Transducer
- \$GPDCN - Decca Position
- \$GPDPT - Depth

- \$GPFSI - Frequency Set Information
- **\$GPGGA - Global Positioning System Fix Data**
- \$GPGLC - Geographic Position, Loran-C
- **\$GPGLL - Geographic Position, Latitude/Longitude**
- \$GPGRS - GPS Range Residuals
- **\$GPGSA - GPS DOP and Active Satellites**
- \$GPGST - GPS Pseudorange Noise Statistics
- **\$GPGSV - GPS Satellites in View**
- \$GPGXA - TRANSIT Position
- \$GPHDG - Heading, Deviation & Variation
- \$GPHDT - Heading, True
- \$GPHSC - Heading Steering Command
- \$GPLCD - Loran-C Signal Data
- \$GPMSK - Control for a Beacon Receiver
- \$GPMSS - Beacon Receiver Status
- \$GPMTA - Air Temperature (to be phased out)
- \$GPMTW - Water Temperature
- \$GPMWD - Wind Direction
- \$GPMWV - Wind Speed and Angle
- \$GPOLN - Omega Lane Numbers
- \$GPOSD - Own Ship Data
- \$GPR00 - Waypoint active route (not standard)
- \$GPRMA - Recommended Minimum Specific Loran-C Data
- \$GPRMB - Recommended Minimum Navigation Information
- **\$GPRMC - Recommended Minimum Specific GPS/TRANSIT Data**
- \$GPROT - Rate of Turn
- \$GPRPM - Revolutions
- \$GPRSA - Rudder Sensor Angle
- \$GPRSD - RADAR System Data
- \$GPRTE - Routes
- \$GPSFI - Scanning Frequency Information
- \$GPSTN - Multiple Data ID
- \$GPTRF - Transit Fix Data
- \$GPTTM - Tracked Target Message
- \$GPVBW - Dual Ground/Water Speed
- \$GPVDR - Set and Drift

- \$GPVHW - Water Speed and Heading
- \$GPVLW - Distance Traveled through the Water
- \$GPVPW - Speed, Measured Parallel to Wind
- **\$GPVTG - Track Made Good and Ground Speed**
- \$GPWCV - Waypoint Closure Velocity
- \$GPWNC - Distance, Waypoint to Waypoint
- \$GPWPL - Waypoint Location
- \$GPXDR - Transducer Measurements
- \$GPXTE - Cross-Track Error, Measured
- \$GPXTR - Cross-Track Error, Dead Reckoning
- **\$GPZDA - UTC Date / Time and Local Time Zone Offset**
- \$GPZFO - UTC & Time from Origin Waypoint
- \$GPZTG - UTC & Time to Destination Waypoint

26 interpreted sentences transmitted by GPS unit

\$GPGGA – RECORD USED BY ARCPAD IF USING TMO’s GPS MANAGER.

Global Positioning System Fix Data

eg1. \$GPGGA,170834,4124.8963,N,08151.6838,W,1,05,1.5,280.2,M,-34.0,M,,*75

Name	Example Data	Description
Sentence Identifier	\$GPGGA	Global Positioning System Fix Data
Time	170834	17:08:34 UTC
Latitude	4124.8963, N	41d 24.8963' N or 41d 24' 54" N
Longitude	08151.6838, W	81d 51.6838' W or 81d 51' 41" W
Fix Quality: - 0 = Invalid - 1 = GPS fix - 2 = DGPS fix	1	Data is from a GPS fix
Number of Satellites	05	5 Satellites are in view
Horizontal Dilution of Precision (HDOP)	1.5	Relative accuracy of horizontal position
Altitude	280.2, M	280.2 meters above mean sea level

Height of geoid above WGS84 ellipsoid	-34.0, M	-34.0 meters
Time since last DGPS update	blank	No last update
DGPS reference station id	blank	No station id
Checksum	*75	Used by program to check for transmission errors

Global Positioning System Fix Data. Time, position and fix related data for a GPS receiver.

eg2. \$GPGGA,hhmmss.ss,ddmm.mmm,a,dddmm.mmm,b,q,xx,p,p,a.b,M,c.d,M,x.x,nnnn

hhmmss.ss = UTC of position

ddmm.mmm = latitude of position

a = N or S, latitude hemisphere

dddmm.mmm = longitude of position

b = E or W, longitude hemisphere

q = GPS Quality indicator (0=No fix, 1=Non-differential GPS fix, 2=Differential GPS fix, 6=Estimated fix)

xx = number of satellites in use

p.p = horizontal dilution of precision

a.b = Antenna altitude above mean-sea-level

M = units of antenna altitude, meters

c.d = Geoidal height

M = units of geoidal height, meters

x.x = Age of Differential GPS data (seconds since last valid RTCM transmission)

nnnn = Differential reference station ID, 0000 to 1023

\$GPGLL

Geographic Position, Latitude / Longitude and time.

eg1. \$GPGLL,3751.65,S,14507.36,E*77

eg2. \$GPGLL,4916.45,N,12311.12,W,225444,A

```

4916.46,N   Latitude 49 deg. 16.45 min. North
12311.12,W  Longitude 123 deg. 11.12 min. West
225444      Fix taken at 22:54:44 UTC
A           Data valid

```

eg3. \$GPGLL,5133.81,N,00042.25,W*75

```

1 2 3 4 5

```

```

1 5133.81 Current latitude
2 N       North/South
3 00042.25 Current longitude
4 W       East/West
5 *75     checksum

```

\$-GLL,lll.ll,a,yyyyy.yy,a,hhmmss.ss,A llll.ll = Latitude of position

a = N or S

yyyyy.yy = Longitude of position

a = E or W

hhmmss.ss = UTC of position

A = status: A = valid data

\$GPGSA

GPS DOP and active satellites

eg1. \$GPGSA,A,3,,,,,,,,,16,18,,22,24,,,3.6,2.1,2.2*3C

eg2. \$GPGSA,A,3,19,28,14,18,27,22,31,39,,,,,1.7,1.0,1.3*34

1 = Mode:

M=Manual, forced to operate in 2D or 3D

A=Automatic, 3D/2D

2 = Mode:

1=Fix not available

2=2D

3=3D

3-14 = PRN's of Satellite Vehicles (SV's) used in position fix (null for unused fields)

15 = Position Dilution of Precision (PDOP)

16 = Horizontal Dilution of Precision (HDOP)

17 = Vertical Dilution of Precision (VDOP)

\$GPGSV

GPS Satellites in view

eg. \$GPGSV,3,1,11,03,03,111,00,04,15,270,00,06,01,010,00,13,06,292,00*74

\$GPGSV,3,2,11,14,25,170,00,16,57,208,39,18,67,296,40,19,40,246,00*74

\$GPGSV,3,3,11,22,42,067,42,24,14,311,43,27,05,244,00,,,,*4D

\$GPGSV,1,1,13,02,02,213,,03,-3,000,,11,00,121,,14,13,172,05*62

1 = Total number of messages of this type in this cycle

2 = Message number

3 = Total number of SVs in view

4 = SV PRN number

5 = Elevation in degrees, 90 maximum

6 = Azimuth, degrees from true north, 000 to 359

7 = SNR, 00-99 dB (null when not tracking)

8-11 = Information about second SV, same as field 4-7

12-15 = Information about third SV, same as field 4-7

16-19= Information about fourth SV, same as field 4-7

\$GPRMC

Recommended minimum specific GPS/Transit data

eg1. \$GPRMC,081836,A,3751.65,S,14507.36,E,000.0,360.0,130998,011.3,E*62
 eg2. \$GPRMC,225446,A,4916.45,N,12311.12,W,000.5,054.7,191194,020.3,E*68

	225446	Time of fix 22:54:46 UTC
	A	Navigation receiver warning A = Valid position, V =
Warning	4916.45,N	Latitude 49 deg. 16.45 min. North
	12311.12,W	Longitude 123 deg. 11.12 min. West
	000.5	Speed over ground, Knots
	054.7	Course Made Good, degrees true
	191194	UTC Date of fix, 19 November 1994
	020.3,E	Magnetic variation, 20.3 deg. East
	*68	mandatory checksum

eg3. \$GPRMC,220516,A,5133.82,N,00042.24,W,173.8,231.8,130694,004.2,W*70
 1 2 3 4 5 6 7 8 9 10 11 12

1	220516	Time Stamp
2	A	validity - A-ok, V-invalid
3	5133.82	current Latitude
4	N	North/South
5	00042.24	current Longitude
6	W	East/West
7	173.8	Speed in knots
8	231.8	True course
9	130694	Date Stamp
10	004.2	Variation
11	W	East/West
12	*70	checksum

FORRr NMEA 0183 version 3.00 active the Mode indicator field is added
 \$GPRMC,hhmmss.ss,A,llll.ll,a,yyyy.yy,a,x.x,x.x,ddmmyy,x.x,a,m*hh
 Field #

1	= UTC time of fix
2	= Data status (A=Valid position, V=navigation receiver warning)
3	= Latitude of fix
4	= N or S of longitude
5	= Longitude of fix
6	= E or W of longitude
7	= Speed over ground in knots
8	= Track made good in degrees True
9	= UTC date of fix
10	= Magnetic variation degrees (Easterly var. subtracts from true course)
11	= E or W of magnetic variation

12 = Mode indicator, (A=Autonomous, D=Differential, E=Estimated, N=Data not valid)
 13 = Checksum

\$GPVTG

_Track Made Good and Ground Speed.

eg1. \$GPVTG,360.0,T,348.7,M,000.0,N,000.0,K*43
 eg2. \$GPVTG,054.7,T,034.4,M,005.5,N,010.2,K*41

054.7,T	True course made good over ground, degrees
034.4,M	Magnetic course made good over ground, degrees
005.5,N	Ground speed, N=Knots
010.2,K	Ground speed, K=Kilometers per hour

eg3. for NMEA 0183 version 3.00 active the Mode indicator field is added at the end
 \$GPVTG,054.7,T,034.4,M,005.5,N,010.2,K,A*53
 A Mode indicator (A=Autonomous, D=Differential, E=Estimated, N=Data not valid)

\$GPZDA

UTC Date / Time and Local Time Zone Offset

Example 1: \$GPZDA,hhmmss.ss,xx,xx,xxxx,xx,xx

hhmmss.ss = UTC
 xx = Day, 01 to 31
 xx = Month, 01 to 12
 xxxx = Year
 xx = Local zone description, 00 to +/- 13 hours
 xx = Local zone minutes description (same sign as hours)

Example 2: \$GPZDA,024611.08,25,03,2002,00,00*6A

Field	Example	Comments
Sentence ID	\$GPZDA	
UTC Time	024611.08	UTC time
UTC Day	25	UTC day (01 to 31)

UTC Month	03	UTC day (01 to 12)
UTC Year	2002	UTC year (4 digit format)
Local zone hours	00	Offset to local time zone in hours (+/- 00 to +/- 59)
Local zone minutes	00	Offset to local time zone in minutes (00 to 59)
Checksum	*6A	

More sentences may be needed for feature collection and future LAMI versions.

This document is a delivery for LAMI V2.0

LAMI ATUFL Technical Specifications

Note: this document provides technical guidelines for the incorporation of GPS captured coordinates into the LAMI ATUFL. If you have any questions related to this document please contact Kevin Donnalley at x39181 or Kevin.Edward.Donnalley@census.gov

Table 1 Automated TIGER Update File LAMI (ATUFL) Acton Codes

Version code	Description
6001	New map spot
6003	Moved map spot
6004	Updated map spot = any data may have been changed, including, but not limited to, latitude and longitude coordinates and geocoding
6005	Verified map spot
8001	New map spot, added using GPS (converted from activity code by ALMI-US)

Each ATUFL consists of a set of formatted ASCII files. The ATUFL layouts are almost identical to the ATUF layouts. Record Length is: 136 characters.

TABLE 2 ATU7L

Position	Length	Type	Justify	Description	Data Source
1-1	1			Indicates ATUFL file type	7
2-5	5			ATUFL action code	See Address List action codes
6-10	5			Used like line number on paper field form	RECNUM 1 st Level: Address List View Layout

Position	Length	Type	Justify	Description	Data Source
					Layout
11-11	1			LAMI GPS Transaction code.	S = Successful, U = Unsuccessful and A = Aborted
12-21	10			TLID linked to map spot	Blank
22-22	1			Operation Code:	ADDRESS LIST = 1
23-25	3			2006 Collection Census Feature Class Code	See TIGER documentation. Chapter 16.
26-27	2			2006 Collection State where map spot is located	See Address List Workgroup Layout
28-30	3			2006 Collection County where map spot is located	See Address List Workgroup Layout
31-34	4			2006 Collection tract	See Address List Workgroup Layout
35-36	2			Suffix of tract where map spot is located	See Address List Workgroup Layout
37-41	5			2006 Collection Block where map spot is located	See Address List Workgroup Layout
42-42	1			Suffix of block where map spot is located	See Address List Workgroup Layout
43-47	5			Map Spot ID number	See Address List Workgroup Layout
48-55	8			Blank	Blank
56-65	10			Longitude (Manual, TIGER, Relative, etc.)	See Address List Workgroup Layout
66-74	9			Latitude (Manual, TIGER, Relative, etc.)	See Address List Workgroup Layout
75-75	1			GPS_Manual Flag	See Address List Workgroup Layout
76-85	10			Averaged GPS longitude	See Address List Workgroup Layout
86-94	9			Averaged GPS latitude	See Address List Workgroup Layout
95-108	14			Date and time when first GPS point was collected	Receiver
109-109	1			Indicates the type of signal used to capture GPS points. Also called "MODE"	W=DGPS, G = GPS L1, H = GPS L2, I = GPS LR2, J=GPS L5

Position	Length	Type	Justify	Description	Data Source
110-123	14			Date and time when last GPS point was collected	See Address List Workgroup
124-125	2			Number of GPS points used to calculate Lat/Long	Calculated
126-127	2			Number of GPS capture attempts	Receiver
128-129	2			Average number of satellites in view	Calculated
130-134	5			Firmware version of receiver	Calculated
135-136	2			Total number satellites used for AVG_GPSLONG and AVG_GPSLAT calculation	Calculated
137-170	42			Receiver Brand and Model	Receiver

QC Action Code Final Decision Table

AC Lister Action Code	QC Accept or Reject?	QC Action Code	Critical, Noncritical, or Tally	Final Action Code	Comments / Issues
Blank	--	A	C	A	Error of Omission
A	Accept	--	--	A	
A	Reject	A	C/NC	A	Not an Action Code Error see Appendix H
A	Reject	Delete	C		Delete Added Record
C	Accept	--	--	C	
C	Reject	C	C/NC	C	Not an Action Code Error see Appendix H
C	Reject	D1	C	D1	
C	Reject	D2	NC	D2	The QC Lister will have to check and see if the AC person actually selected this record as the survivor.
C	Reject	N	C	N	
C	Reject	U	C	U	
C	Reject	V	C	V	See Appendix H
C	Reject	Z	T	Z	
D1	Accept	--	--	D1	
D1	Reject	C	C	C	The Lister failed to identify a valid residential unit.
D1	Reject	D2	T	D2	The Lister failed to determine the unit was a duplicate. However, since the status would not change for subsequent operations, the group decided not to consider this a critical error.
D1	Reject	N	N	N	See above.
D1	Reject	U	N	U	See above.
D1	Reject	V	C	V	The Lister failed to identify a valid residential unit.
D1	Reject	Z	C	Z	The Lister not only failed to identify it as an OLQ, but they also made the unit invalid for future operations when it should be.
D2	Accept	--	--	D2	
D2	Reject	C	C/NC	C	Not an Action Code error
D2	Reject	D1	T	D1	
D2	Reject	N	NC	N	The QC Lister is verifying that the unit uniquely exists (but it's Nonresidential). When the opposite happens N then D2, we are not considering it critical. Should it be more critical that the Lister incorrectly linked a unit?

AC Lister Action Code	QC Accept or Reject?	QC Action Code	Critical, Noncritical, or Tally	Final Action Code	Comments / Issues
D2	Reject	U	NC	U	The QC Lister is verifying that the unit uniquely exists (but it's Uninhabitable)
D2	Reject	V	NC	V	The QC Lister is verifying that the unit uniquely exists!
D2	Reject	Z	C	Z	The Lister not only failed to identify it as an OLQ, but they also made the unit invalid for future operations when it should be.
N	Accept	--	--	N	
N	Reject	C	C	C	The Lister incorrectly determined that a valid residential unit was nonresidential.
N	Reject	D1	NC	D1	The Lister incorrectly determined that a unit was nonresidential. However, since the record would not move on to subsequent operations in either case, the group did not want to consider these critical.
N	Reject	D2	NC	D2	See above.
N	Reject	U	NC	U	See above.
N	Reject	V	C	V	The Lister incorrectly determined that a valid residential unit was nonresidential.
N	Reject	Z	C	Z	The Lister not only failed to identify it as an OLQ, but they also made the unit invalid for future operations when it should be.
U	Accept	--	--	U	
U	Reject	C	C	C	The Lister incorrectly determined that a valid residential unit was uninhabitable.
U	Reject	D1	NC	D1	Since the both the QC action and the Lister's action would keep the unit out of the next operation (no universe change) we said it should not be C.
U	Reject	D2	C	D2	
U	Reject	N	NC	N	See above
U	Reject	V	C	V	The Lister incorrectly determined that a valid residential unit was uninhabitable.
U	Reject	Z	C	Z	
V	Accept	--	--	V	
V	Reject	C	C/NC	C	Not an Action Code Error see Appendix H
V	Reject	D1	C	D1	

AC Lister Action Code	QC Accept or Reject?	QC Action Code	Critical, Noncritical, or Tally	Final Action Code	Comments / Issues
V	Reject	D2	NC	D2	Do we need to check the links, what if the Lister picked this record as the survivor? Treat the same as C-D2
V	Reject	N	C	N	
V	Reject	U	C	U	
V	Reject	Z	NC	Z	The Lister failed to identify the address as an OLQ. We didn't want this to be C since there may be no obvious signs and the Lister wouldn't have known without an interview.
Z	Accept	--	--	Z	
Z	Reject	C	NC	Z	In the last meeting we decided that we wanted all units identified as an OLQ at any point to go to GQV. Hence, we wouldn't consider any of these C. Once the QC Lister rejects a record, he/she should assign an action code for analysis
Z	Reject	D1	C	Z	See above.
Z	Reject	D2	NC	Z	See above.
Z	Reject	N	NC	Z	See above.
Z	Reject	U	NC	Z	See above.
Z	Reject	V	NC	Z	See above.
Z	Reject	Z	NC	Z	Not an Action Code Error see Appendix H

Legend

C = Critical Error
 NC = Noncritical Error
 T = Tally (No Error)

Action Codes

A = Add
 C = Correction
 D1 = Delete
 D2 = Duplicate
 N = Nonresidential
 U = Uninhabitable
 V = Verify
 Z = Other Living Quarters

Critical/Noncritical Error Decision Table

Existing Address Record				Added Address Record
Field	From (Lister)	To (QC)	Critical or Noncritical	Critical or Noncritical
Location House Number	blank	nonblank	obs = NC	obs = NC
			noobs = T	noobs = T
	nonblank	changed	obs = T	obs = NC
			noobs = T	noobs = T
Location Street Name	blank	nonblank	obs = C	
			noobs = NC	
	unnamed	different	obs = C	obs = C
			noobs = NC	noobs = NC
	nonblank	different (pop-up)	obs = C	obs = C
			noobs = NC	noobs = NC
spelling change (pop-up)		obs = NC	obs = NC	
		noobs = T	noobs = T	
Location Unit Designation	blank	nonblank	NC	NC
	nonblank	changed	T	T
Location Zip Code	blank	nonblank	T	T
	nonblank	changed	T	T
Physical Description	blank	nonblank	T	T
	nonblank	different	T	T
Mailing Address	blank	same	T	T
	blank	nonblank	T	T
	same	nonblank	T	T
	nonblank	change	T	T

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Appendix H: Critical/Noncritical Error Decision Table

Survivor (D2)	nonblank	changed	NC	
GQ/OLQ Name (Z)	blank	nonblank	T	T
	nonblank	change	T	T
Manual Map spot	location (pop-up)		NC	NC
	association (pop-up)		C	C
Type of LQ	HU	OLQ	NC	NC
	OLQ	HU	NC	NC
Structure Type	Single	Multi	T	T
	Multi	Single	T	T

Legend

C = Critical Error

NC = Noncritical Error

T = Tally (No Errors)

Obs = Observation

Noobs = No Observation

Address List Help Topics (REQALDOS: 0101.7)

The Help screen for the Address List should be titled/labeled “ **Address List Buttons and Corresponding Functions**”. Help topics should be “hot linked” from the help screen that appears when the Help button is selected from the LAMI.

Graphics of the various address list buttons placed before the definition of the button. The following details the items we would like to include in the help.

1) **Details/Edit:** Replaces the **Address List** screen with the **Detailed Information** screen. Select to edit a record.

- **Action:** Used to select an action for an address record.
 - List of Action Codes:
 - C- Correction: Indicates an address exists, but requires some corrections.
 - D1- Delete: Indicates an address does not exist.
 - D2- Duplicate: Indicates that the address is a duplicate of another in the block.
 - N- Nonresidential: Indicates an address in nonresidential.
 - U- Uninhabitable: Indicates that the address is uninhabitable.
 - V- Verified: No edits or changes to the address are necessary.
 - Z- Other Living Quarters: Indicates an address is an other living quarters.
 - **Next:** Forwards to the next address record.
 - **Previous:** Goes back to the previous address record.
 - **Close:** Goes back to Address List screen.

2) **Sort:** Organizes address records by method selected.

3) **Collect Point:** Used to collect a GPS/Manual coordinate.

4) **Add:** Select to add an address record to the address list.

5) **Reset:** Resets address list columns to their original size.

6) **Max/Min:** Minimizes or maximizes the address list.

7) **Close:** Closes the address list.