

# Coding Accuracy Support System



## Technical Guide

2004-2005  
cycle

**Address  
Management**  
NATIONAL CUSTOMER SUPPORT CENTER  
6060 Primacy Pkwy Ste 201  
Memphis, TN 38188-0001

---

## Table of Contents

<b>Purpose</b> .....	<b>1</b>
<b>Overview</b> .....	<b>1</b>
“NEW”: Residential Delivery Indicator.....	2
Fee-Based Certification .....	3
<b>Stage File Overview</b> .....	<b>3</b>
Stage I Overview .....	3
Stage II Overview .....	4
<b>Certification Overview</b> .....	<b>5</b>
Manufacturer Certification .....	5
User Certification .....	6
Platform Certification Policy .....	6
Software Updates .....	6
Version Control .....	6
<b>Media Configurations</b> .....	<b>8</b>
Cartridge Configurations .....	8
Electronic Fulfillment .....	8
<b>Stage File Description</b> .....	<b>9</b>
Copyright Header Record .....	9
Completing PS Form 3553 .....	11
Qualitative Statistical Summary .....	11
Copyright Header Record Data Element Definitions .....	12
DPV Header Data Element Definitions: .....	15
DSF2 HHeader Data Element Definitions:.....	16
Test Address Record .....	16
Test Address Data Element Definitions .....	19
<b>CASS Electronic Report Record</b> .....	<b>29</b>
<b>Early Warning System (EWS) File Layout</b> .....	<b>30</b>
<b>Grading, Scoring, and Certification</b> .....	<b>31</b>
New Grading Requirements .....	31
Stage II File Evaluation .....	32
Scoring .....	34
Analysis .....	34
Certification .....	35
<b>National Deliverability Index</b> .....	<b>35</b>
NDI Processing .....	35
NDI Grading .....	36
<b>Software Analysis for Vendor Certification</b> .....	<b>38</b>
NDI Rating for Certification .....	38
Sample NDI Rating for NDI Stage II File .....	38
NDI Certification Grading Process Example .....	39
<b>Delivery Point Barcode Rules (Primary)</b> .....	<b>40</b>
Calculating Delivery Points for Military, RR, and HC Default Matches .....	41
<b>Delivery Point Barcode Rules (Secondary)</b> .....	<b>42</b>
Rule 1: Numeric Simple Rule .....	44
Rule 2: Alphabetic Rule .....	44
Rule 3: Alphanumeric Rule—Trailing Alpha .....	45
Rule 4: Alphanumeric Rule—Trailing Numeric .....	46

---

Rule 5: Numeric Computed Rule .....	46
Rule 6: Address Matched to a ZIP+4 Record with Blank Secondary Ranges .....	48
Rule 7: Address Matching to a Highrise Default Record .....	49
Rule 8: Fractional Only Secondary Addresses .....	50
Delivery Point Check Digit .....	50
<b>Product Types .....</b>	<b>51</b>
<b>Stage II File Processing .....</b>	<b>52</b>
<b>Ordering CASS Products .....</b>	<b>54</b>
State & National File .....	54
Products Requested .....	54
Media Configuration .....	54
Platform .....	54
Software .....	55
NDI Certification .....	55
Stage File .....	55
Processing Steps .....	55
Helpful Hints .....	56
<b>Coding Accuracy Support System Order Form .....</b>	<b>57</b>
<b>CASS Internet File Transfer Application .....</b>	<b>59</b>
<b>Appendix 1: PS Form 3553 .....</b>	<b>63</b>
<b>Appendix 2: CASS Version Control .....</b>	<b>65</b>
<b>Appendix 3: Translation of Error Codes and Flags .....</b>	<b>69</b>
<b>Appendix 4: Sample Statistical &amp; Error Message Summaries .....</b>	<b>73</b>
<b>Appendix 5: DPV-Delivery Point Validation and     DSF2 Second Generation Delivery Sequence File .....</b>	<b>81</b>
Data Element Definitions .....	83
DSF2 Header Records .....	86
CASS Electronic Report Record DPV/DSF2 Addendum .....	91
<b>Appendix 6: Z4CHANGE Certification.....</b>	<b>99</b>
Z4CHANGE Overview .....	101
Benefits .....	101
General Information .....	102
File Description .....	102
Using Z4Change .....	103
File Format .....	104
File Layout .....	105
Z4CHANGE Certification .....	106
Test File Format .....	107
Z4CHANGE Certification Order Form .....	109
<b>Appendix 7: Enhanced Line of Travel (eLoT) Utility Certification .....</b>	<b>111</b>
Enhanced Line Of Travel (eLOT) Utility .....	113
Ordering eLOT Certification .....	115
Stage II Processing Quick Reference .....	115
eLOT Order Form .....	117
<b>Appendix 8: Residential Delivery Indicator (RDI) Utility.....</b>	<b>119</b>
Residential Delivery Indicator (RDI) .....	121
Overview .....	121
Ordering RDI Certification .....	122
Stage II Processing Quick Reference .....	123
RDI Order Form .....	125

---

## Purpose

The CASS™ (Coding Accuracy Support System) process is designed in cooperation with the mailing industry to improve the accuracy of postal codes [i.e., carrier route, 5-digit ZIP™, ZIP + 4®, and delivery point codes (DPCs)] that appear on mailpieces. The CASS software certification program provides hardware and software manufacturers, service bureaus, and commercial mailers a common measure by which to test the quality of address-matching software. Software tests for CASS certification are graded by the US Postal Service® National Customer Support Center (NCSC), and the results are returned to the developer to provide useful diagnostics for correcting software deficiencies. However, CASS does not measure the accuracy of ZIP + 4, delivery point, 5-digit ZIP, or carrier route codes in a mailer's address file.

Another certification program offered by the CASS Department is Z4CHANGE. Z4CHANGE was developed in response to customers who wanted a cost-effective method to improve the deliverability of their mail by using the most current ZIP + 4/delivery point information. Z4CHANGE helps customers accomplish this goal by providing them with data that indicates which ZIP + 4 codes have had any transactions in the past twelve months. When a highrise (H record) or a firm (F record) is added, this product also shows a transaction for the supporting street ZIP + 4 code, which allows the customer the opportunity to upgrade the previously coded street-level matches. Customers must then develop their own software to access Z4CHANGE to determine which records on their address list need to be reprocessed by CASS Certified™ software. As a result, only the records that have had transactions will need to be reprocessed, which can be done on a monthly or bimonthly basis. For additional information on Z4CHANGE Certification see "Appendix 6" on page 99.

## Overview

The CASS certification process consists of two parts: Stage I is optional (but recommended) prior to attempting certification, while Stage II is required.

The Stage I is a self-test that helps developers measure and diagnose the performance of their address-matching software when it is applied to a CASS test address file. The Stage I results assist developers with software debugging and troubleshooting in preparation for Stage II of the CASS certification process. The results of Stage I processing are not reviewed by the NCSC and have no effect on CASS certification. The Stage I file can be downloaded electronically from the Rapid Information Bulletin Board System (RIBBS) at <http://ribbs.usps.gov/files/cass/>. For more information on downloading Stage I files from the Internet, call the CASS Department at 800-642-2914.

The Stage II is graded by the National Customer Support Center and is used to evaluate address-matching software performance by processing a test address file. To attain CASS certification, address-matching software must achieve a required

score on the Stage II test. The Stage II file(s) must be processed with address-matching software or hardware that is owned or leased by the developer seeking certification: developers are not permitted to allow another company or service bureau to process the Stage II file(s). The Stage II file can be ordered using the “Coding Accuracy Support System Order Form” on page 57.

CASS certification can apply individually to ZIP + 4/delivery point (DP), 5-digit ZIP Code, eLOT™ (Enhanced Line of Travel), or carrier route categories of software. Developers may order CASS files to test address-matching software in these categories in two ways: 1) Any single category or combination of categories may be tested by requesting individual category testing files, in which case each category test requires one processing run; or 2) all four categories can be tested with a single run (if the software can accommodate this type of processing) using the Merge/eLOT File, which incorporates the testing information for all four categories into a single file.

*Note: The selection of category testing file(s) applies to Stage II files only.*

CASS certification is valid until the end of the current annual period (i.e., from August 1 of one year through July 31 of the next). To remain CASS-certified for each annual period, developers must reapply for certification and meet the minimum accuracy requirements during Stage II testing.

MERLIN (Mailing Evaluation, Readability and Look-Up Instrument) is now verifying nine-digit ZIP Code information at the points of acceptance and has established zero tolerance for ZIP + 4 codes of ‘0000’ and ‘9999’. To maintain consistency, CASS and MASS certification requirements will change, effective immediately, in conjunction with the newly implemented ZIP + 4 verification on mailings processed by MERLIN. The return of ‘0000’ in the ZIP + 4 add-on, or the return on an **invalid** ‘9999’ in the ZIP + 4 add-on, will now be cause for CASS/MASS certification failure and will require retesting.

### “NEW”: Residential Delivery Indicator (RDI)

RDI™ (Residential Delivery Indicator) is a licensed product of the USPS® (United States Postal Service®) and is designed to be used in conjunction with CASS Certified ZIP + 4 or DPV™ (Delivery Point Validation) enabled address matching software.

The RDI licensees must be parcel shippers, their agents or analysts. The RDI user/licensee will attempt to determine the best cost for shipping their packages based upon the fact that some delivery services charge a higher price for residential delivery than they do for business delivery. RDI will help them shop for the lowest delivery cost for a specific address by identifying whether that address is listed as business or residential in the USPS Address Management System database. The RDI licensee is required to obtain RDI-enabled address matching software that is certified by the USPS. In order to enter into the process to develop RDI-enabled software, you must be a developer of currently CASS certified address matching software.

The process of certifying software for RDI processing is similar to the DPV certification process. As a developer of CASS-certified software, you can obtain the Developer’s Kit from the Address Management Department at the National Customer Support Center (NCSC) along with the Stage I files. Certification will

require that you process Stage II files supplied by the CASS Certification Department at the NCSC. The ability of your software to return the correct response from the RDI tables will determine whether your software will be RDI-certified.

For additional information on RDI utility certification, see Appendix 8 (pg 119).

## Fee-Based Certification

Fees for CASS and MASS certification are effective with cycle 04-05. These charges were established to cover costs of developing and issuing testing material and administering the overall CASS and MASS program.

Fee-Based Certification	DEC–JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
CASS	\$200	\$200	\$200	\$500	\$500	\$500	\$500	\$750
MASS Manufacturers (3500)		\$300	\$300	\$500	\$1,000	\$1,000	\$1,500	\$2,000
MASS End-Users (3500)			\$0	\$0	\$0	\$400	\$500	\$750
MASS Manufactures (350)		\$50	\$50	\$50	\$100	\$100	\$250	\$500
MASS End-Users (350)			\$0	\$0	\$0	\$100	\$150	\$300

For CASS certification, customers will be billed based on the number of separate software configurations certified, not on the number of Stage II files ordered. In contrast, MASS customers will be billed for each test deck ordered, regardless of the number of decks needed to achieve certification. Billing procedures are coordinated with our Accounts Receivable Department. Essentially, customers will be billed as certification is awarded.

This sliding-scale fee structure offers a financial incentive for CASS and MASS customers to obtain certification at the earliest opportunity. We understand that end users are at the mercy of their software/hardware vendors; however, with the new fee-based structure in place, we remain confident that manufacturers are committed to attempt manufacturer certification earlier than later.

## Stage File Overview

### Stage I Overview

The CASS Stage I files are tests with answers provided and are intended to enable businesses to measure and diagnose the accuracy of their address-matching software. All CASS Stage I files are created from data in the ZIP + 4 Product, a database containing accurate ZIP + 4 codes for the United States and its territories. Most Stage I records are altered for testing purposes.

Each CASS Stage I file contains one copyright header record and approximately 100,000 test address records assembled from national address data. Each test address record contains three major components:

- Miscellaneous elements (CASS key and customer ID)

- Input elements (test address information to be matched by the customer's address-matching software)
- Answer elements (the correct address information for use in comparing Stage I results).

For each test address record that requires a match against the ZIP + 4 Product, the address-matching software must evaluate and correct any missing or incorrect city names, state abbreviations, and/or 5-digit ZIP Codes and, if needed, correct and standardize the delivery address line (per Publication 28, *Postal Addressing Standards*). Stage I answers may then be compared to the information in the test address record's answer element fields.

CASS Stage I customers must reorder CASS files monthly or bimonthly if their organization is in the process of developing address-matching software and ZIP + 4 monthly transaction files are being applied to the database used for testing. Reordering files relieves customers of the task of determining whether non-match or incorrect match conditions encountered during testing are due to software deficiencies or an update to the ZIP + 4 Product.

## Stage II Overview

The CASS Stage II files (ZIP + 4/DP, 5-digit ZIP Code, Carrier Route, and Merge/eLOT) enable developers to demonstrate the accuracy of their address-matching software. The CASS Stage II files are tests for which customer answers are required.

Like Stage I files, CASS Stage II files are created from ZIP + 4 Product data, but most address records are altered for testing purposes. Each CASS Stage II file contains one copyright header record and approximately 100,000 test address records comprised of addresses from across the country. Each test address record contains three major components:

- Miscellaneous elements (CASS key and customer ID)
- Input elements (the test address information to be matched by the customer's address-matching software)
- Answer elements (empty fields that will contain the customer answers).

The answer fields are used in conjunction with the test addresses by the NCSC to determine the accuracy of the customer's address-matching software. The input elements must be returned with the answer elements. (See "Grading, Scoring, and Certification" on page 31.)

The test address records in the CASS Stage II files may or may not contain valid input. For example, the City and State fields may or may not contain valid data, and the Delivery Address field may or may not follow Publication 28, *Postal Addressing Standards* guidelines. Address-matching software must: 1) apply the correct ZIP + 4/DP, 5-digit ZIP, eLOT, and carrier route codes; 2) correct and/or standardize the Delivery Address, City, and State fields, and; 3) place the answers in the appropriate answer element fields.

To achieve certification, developers must follow all of the rules outlined in the following sections: "Product Types" (page 51), "Stage II File Processing" (page 52), and "Ordering CASS Products" (page 54).

---

## Certification Overview

CASS offers a manufacturer certification process that provides the mailing industry with a method whereby a software manufacturer's CASS certification can function as a blanket certification for all users of a particular address-matching software package. Throughout this process, the requirement that each user of address-matching software attain CASS certification is only necessary in certain situations.

*Note: Manufacturer certification is available only to software manufacturers (i.e., companies that develop address-matching software). All user modifications, such as new drivers, must be certified separately, i.e., check the user-defined box on the front of the Coding Accuracy Support System Order Form (page 57).*

### Manufacturer Certification

To attain manufacturer certification, order a CASS Stage II file using the *Coding Accuracy Support System Order Form* (page 57) and check the Manufacturer Certification box on the front of the form. Requesting manufacturer certification ensures that the company will be listed as a software manufacturer in USPS documents and on RIBBS (<http://ribbs.usps.gov/files/vendors/>). If the address-matching software attempting certification has optional processing parameters that affect the address-matching logic, a printed statement of the parameters to be used in processing the CASS Stage II file must be attached to the signed *Coding Accuracy Support System Order Form*.

The same version of address-matching software may be certified under various specific configurations and platforms. (A configuration is a 3-character alphabetic identifier associated with a software name and version number that represents a specific set of parameter settings.) The configuration must be specified on the *Coding Accuracy Support System Order Form*.

The address-matching software being certified must be capable of generating a facsimile of PS Form 3553, *Coding Accuracy Support System Report*, which identifies the specific configuration(s) and platform used in address file processing. (See Appendix 1, "PS Form 3553," on page 61.) The software must also contain technology that disables access to outdated US Postal Service data as described in the *Domestic Mail Manual* (DMM) A950, Section 3.0, and should not print PS Form 3553 if the software has undergone user modifications.

Return the computer-generated PS Form 3553 facsimile from the CASS Stage II file processing run with the answer file for evaluation. The software must be able to identify the current CASS-certified configurations and must not print a PS Form 3553 when a non-CASS-certified configuration is used to process an address list.

*Note: All CASS/MASS manufacturers are required to provide a PS Form 3553 hard copy to the CASS department for evaluation to ensure the facsimile meets USPS standards. This form may be faxed or sent as a '.pdf' or '.txt' file via the internet or as an attachment to an email.*

- User Certification** Vendors, service bureaus, or mailers who have special requirements for using address-matching software in a configuration that has not been CASS-certified by the manufacturer must apply for user-defined certification. Software service bureaus or mailers seeking CASS certification and using address-matching software in a configuration that has been manufacturer-certified must apply for user-defined certification by checking the User-Defined Certification box on the *Coding Accuracy Support System Order Form* and specifying the exact configuration used for manufacturer certification.
- Contact your manufacturer for more information on manufacturer-certified configurations and parameters.
- Note: Certificates issued will be differentiated by a manufacturer-certified statement on the certificate. The certificate format is subject to change without notice.*
- Platform Certification Policy** CASS requires all separate platforms for a single product to be individually CASS tested and certified. However, for those developers who successfully demonstrated their software's ability to achieve consistent scores will be able to request an exemption to separate platform testing based on their past cycles scores. This request should be submitted to the certification Department by email, fax or letter.
- The requirement for developers to obtain CASS certification for each operating system produced remains in effect. If a developer is uncertain as to whether a product must be independently certified, he or she should check with the CASS Department for clarification.
- Software Updates** The requirement to use standardized version numbering remains in effect. For the 2004–2005 cycle, software must increment the cycle field to 'I'. CASS will continue to require software to report the full version, revision, cycle number and optional manufacturer information on PS Form 3553. The *CASS/MASS Certified Products Guide* will indicate the version number up to the cycle field value. Business mail entry personnel will continue to confirm a product's certification via the *CASS/MASS Certified Products Guide*.
- Version Control** When a CASS-certified product is modified for any reason, the developer must contact the CASS Department to determine whether recertification is necessary. The CASS Department recognizes that all product modifications do not involve changes to the core functionality of the address-matching logic. Changes made to fix a specific problem, such as a program abend, or to provide a customer a specific interface, generally will not require recertification; however, the CASS Department requires that all changes be reported, regardless of their purpose. The CASS Department will review the proposed change and notify the developer as to whether they must submit for recertification.

The CASS Department will review and respond to any notice of a patch or modification within two business days. If the CASS Department fails to respond within this time, the developer can assume approval, but CASS reserves the right to require recertification of the specific release to verify continued compliance with CASS requirements.

Developers faced with an urgent need to provide a patch to their customer(s) may do so without prior notification and clearance by the CASS Department. However, developers must report the emergency release to the CASS Department within two days. Failure to notify CASS of patches or modifications may result in decertification of the modified product and rescinding of any postage discounts obtained using the modified product.

*Note: Postage discounts may be rescinded retroactively.*

Developers can now report modifications to CASS-certified products via a standard form available on the Internet. Call the CASS Department at 800-642-2914 for more information.

## Media Configurations

The CASS Stage II file product is available in cartridge format and on the internet.

### Cartridge Configurations

Recording Format	Character Technique	Set	Label Density	Option
E	Cartridge	IBM 3480	38K	No label
K	Cartridge	IBM 3490	38 K	No Label
I*	Internet	Web Site		

*\* Stage II test files may be ordered and received via the Internet. Call the CASS Department at 800-642-2914 for more information. 9-track tapes and diskette media are no longer supported by the NCSC.*

Attributes		
Record Length	=	600 Characters
Block Size	=	15,600 Characters
Records Per Block	=	26 Records

### Electronic Fulfillment

Attributes		
Record Length	=	600 Characters
Maximum Records Per Disk	=	12,500 Characters

## Stage File Description

### Copyright Header Record

The header record on the CASS Stage I and II test files is a copyright record. PS Form 3553 has been incorporated into the header record, and software developers may elect to return PS Form 3553 electronically (see record layout page 10). The following table also identifies header record components for DPV and DSF2. (See “Appendix 5” on page 81.)

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	3	001	003
2	File Version Month	2	004	005
3	File Version Day	2	006	007
4	File Version Year	4	008	011
5	Copyright Symbol	11	012	022
6	Sequence Number	3	023	025
7	Customer Name	9	026	034
8	System Name	5	035	039
9	Stage Number	6	040	045
10	3553 A1 CASS Z4Change Company Name	40	046	085
11	3553 A1 eLOT Company Name	40	086	125
12	3553 A1 CASS Z4Change Configuration	3	126	128
13	3553 A1 eLOT Configuration	3	129	131
14	3553 A1 CASS Z4Change Software Name	30	132	161
15	3553 A1 CASS Z4Change Software Version	16	162	177
16	3553 A1 eLOT Software Name	30	178	207
17	3553 A1 eLOT Software Version	16	208	223
18	3553 B1 List Processor Name	25	224	248
19	3553 B2 Master File Process Date	8	249	256
20	3553 B2 Z4Change Process Date	8	257	264
21	3553 B2 eLOT Process Date	8	265	272
22	3553 B2 Carrier Route Process Date	8	273	280
23	3553 B3 ZIP + 4 Database Date	8	281	288
24	Filler	8	289	296
25	3553 B3 eLOT Database Date	8	297	304
26	3553 B3 Carrier Route Database Date	8	305	312
27	3553 B4 Address List Name	25	313	337
28	3553 B5 Number Lists Processed	3	338	340
29	3553 B6 Total Records Submitted	6	341	346

## Stage File Description

Field Sequence Number	Field Description	Length	Position From/Through	
30	3553 C1 Total Records ZIP + 4 Coded	6	347	352
31	3553 C1 ZIP + 4 Valid From Date	8	353	360
32	3553 C1 ZIP + 4 Valid To Date	8	361	368
33	3553 C2 Total Records Z4Change Coded	6	369	374
34	Filler	16	375	390
35	3553 C3 Total DPBC Coded	6	391	396
36	3553 C3 DPBC Valid From Date	8	397	404
37	3553 C3 DPBC Valid To Date	8	405	412
38	3553 C4 Total Records 5-Digit Coded	6	413	418
39	3553 C4 5-Digit Valid From Date	8	419	426
40	3553 C4 5-Digit Valid To Date	8	427	434
41	3553 C5 Total Records Carrier Route Coded	6	435	440
42	3553 C5 Carrier Route Valid From Date	8	441	448
43	3553 C5 Carrier Route Valid To Date	8	449	456
44	3553 C6 Total Records eLOT Coded	6	457	462
45	3553 C6 eLOT Valid From Date	8	463	470
46	3553 C6 eLOT Valid To Date	8	471	478
47	Filler	8	479	486
48	Z4CHANGE Date	8	487	494
49	3553 Total High-rise Exact	6	495	500
50	3553 Total High-rise Default	6	501	506
51	3553 Total Rural Route Exact	6	507	512
52	3553 Total Rural Route Default	6	513	518
53	3553 Total LACS	6	519	524
54	3553 Total EWS	6	525	530
55	3553 Total DPV	6	531	536
56	3553 Total RDI	6	537	542
57	Filler	35	543	577
58	DPV Date – Format YYYYMMDD	8	578	585
59	Platform for Test	12	586	597
60	Configuration for Test	3	598	600

## Completing PS Form 3553

Completion and submission of PS Form 3553 is a requirement for CASS and Multiline Accuracy Support System (MASS) certification. Stage II tests or MASS test decks returned without a PS Form 3553 or the equivalent data embedded in the Stage II file header record will be disqualified, and the developer will be required to retest. Data returned on PS Form 3553 must agree with the data returned in the Stage II file or derived from the mailpieces read during the MASS grading press.

Software must populate the electronic Stage II file returned for official grading, with the PS Form 3553 summary information in the header record.

To accommodate developers, we have modified the Stage II record format to allow the revised PS Form 3553 field contents to be returned as part of the header record, which is the only way we accept electronic PS Form 3553 data. Do not return a separate data file on your media with the PS Form 3553 data embedded as a fixed-length record or a print-image file. We will not accept these files and will disqualify the Stage II test returned.

## Qualitative Statistical Summary

Software manufacturers must populate the Qualitative Statistical Summary information fields on the CASS Summary Report (PS Form 3553). This section comprises a summary count of highrise, rural route default and exact matches obtained on records on any processed list, and a count of those records converted through the Locatable Address Conversion System (LACS) program.

CASS certified software must identify matches to hi-rise default and rural route default addresses by populating a default indicator in the designated output answer field (see revised Stage File Description). In addition, the software is required to recognize when a hi-rise default record is not present, and as a result, match to the base street record and set the default flag accordingly. The default indicator flag is set when the output answer field is populated with the character 'Y'.

Beginning with CASS cycle 'H', one new field was added to the Qualitative Statistical Summary; RDI™ (Residential Delivery Indicator). RDI indicates a match to a residential delivery address. The RDI count reflects the number of address records that have been confirmed through RDI. CASS certified software must identify this match by setting a 'Y' flag in position 589. **RDI Fields will only be populated by RDI user/licensees.** Anyone else populating the RDI fields will automatically fail a CASS test.

Copyright  
Header Record  
Data Element  
Definitions

### **A1: CASS/Z4Change/eLOT Certified Company Name**

The name of the company seeking certification. End-user modification of any certified product requires independent certification by the end-user. Certified products must not print a PS Form 3553 if the product has undergone end-user modification or is used in a non-certified configuration.

### **A1: CASS/Z4Change/eLOT Software Name and Version**

The software name must be the name of the software product submitted for certification; the software version is the version number submitted for certification. The version number must adhere to the version control standard (see Appendix 2, page 65) and consists of a version number, revision number, CASS cycle alpha-identifier, and, if applicable, manufacturer number. The entire version, revision, and cycle number must be reflected on the PS Form 3553, but the *CASS/MASS Certified Products Guide* will list only the version number.

### **A1: CASS/Z4Change/eLOT Configuration**

A 3-character alphabetic identifier (associated with a specific software name and version number) that represents a set of software parameter settings.

### **A2: MASS-Certified Company Name**

The name of the company seeking MASS certification. If an end-user is attempting certification, the end-user's company name must be entered.

### **A2: MASS-Certified Software Name and Version**

The name and version of the product certified by the system manufacturer.

### **A2: MASS Configuration**

The configuration of the product certified by the system manufacturer.

### **A2: MASS MLOCR Serial Number**

The specific serial number of the device upon which the MASS test deck is processed.

### **B1: List Processor Name**

The name of the company or person(s) responsible for processing the address list(s) or mailpieces (if processing is performed on a MASS-certified system).

**B2: Date List Processed**

The date on which the address list is processed. If processing lasts for more than one day, list the first day of processing. For Z4Change processing, the Master File Date List Processed block must indicate the date the entire master file was first processed. The Z4Change Date List Processed block must indicate the date on which Z4Change processing occurred, and the date must not be older than three years after the Master File Date List Processed.

**B2 & B3: Z4Change Date**

This field contains the date of the Z4Change Product used to process against the stage 1 or 2 file provided by the CASS department. The Z4Change Product is used to ensure that the questions presented to developers on stage files have not experienced any transactions. This process is used to assist software manufacturers in analyzing and evaluating their address matching software. It is strongly recommended that software developers/manufacturers match up the same product dates for both the ZIP + 4 File and City–State File monthly products and the Z4Change Product in order to minimize differences in address matching results.

**B3: Date of Database**

The product release date of the USPS Address Information System (AIS) product. All certified software must contain technology that disables access to outdated Postal Service data as described in the *Domestic Mail Manual (DMM) A950*, Section 3.0. Products may show the date in either MM/YY or MM/DD/YY format. Where an MM/YY format is used, the assumed DD value is 15.

**B4: Address List Name or ID**

The 9-character customer/file identifier (e.g., 00251ZABU) supplied by the CASS Department.

**B5: Number of Lists**

If submitting for certification, enter 1.

**B6: Total Records Submitted**

The number of records in the address file or total number of mailpieces processed.

**C1: Total ZIP + 4 Coded**

The total number of records assigned an add-on (plus 4) by address-matching software. If a match to an “ND” record occurs, do not count it toward this total since no ZIP + 4 code is generated.

### **C1: ZIP + 4 Validation Period “From” Date**

Must be the same value as B2, Date List Processed. This date may not exceed 30 days before the ZIP + 4 Product release date (computed using the 15th) and no later than 105 days after the product file date. Products must show the validation period “From” and “To” dates in MMDDYYYY format.

### **C1: ZIP + 4 Validation Period “To” Date**

Calculated as the ZIP + 4 Valid From date plus 180 days. Products must show the validation period “From” and “To” dates in MMDDYYYY format.

### **C2: Total Z4Change Processed**

The total number of records extracted from an address file, including all address records with ZIP + 4 codes requiring Z4Change reprocessing and any address records with a blank ZIP + 4 code if they are reprocessed during the Z4Change processing.

### **C2: Z4Change Validation Period Dates**

Not applicable.

### **C3: Total Delivery Point Coded**

The total number of records to which a delivery point was assigned. This number cannot be greater than the value of C1: Total ZIP + 4 Coded. If the delivery point values are not assigned or stored at the same time as the ZIP + 4 codes, a separate PS Form 3553 documenting the Total Delivery Points Coded must be produced.

### **C3: Delivery Point Coded Validation Period Dates**

These fields must equal the ZIP + 4 Validation Period Dates when the delivery point values are assigned and/or stored when the ZIP + 4 values are assigned. Where the delivery point values are assigned separately from the ZIP + 4 code assignments, these fields must be documented on a separate PS Form 3553.

### **C4: Total 5-Digit Coded**

The total number of records for which a 5-digit ZIP Code was assigned or retained from the input address during processing.

### **C4: 5-Digit Validation Period “From” Date**

The effective processing date for records that were 5-digit coded. This date may be 30 days before the ZIP + 4, Five-Digit ZIP, or the Carrier Route Product dates (computed from the 15th) or up to 105 days after the product date.

### **C4: 5-Digit Validation Period “To” Date**

Calculated as the 5-Digit Valid From Date plus 365 days.

**C5: Total CR-RT Coded**

The total number of records assigned a carrier route during processing.

**C5: CR-RT Validation Period “From” Date**

The effective processing date for records that were carrier route coded. This date may be 30 days before the ZIP + 4 or the Carrier Route Product date (the 15th of each month or bimonthly) or up to 105 days after the ZIP + 4 or Carrier Route Product date.

**C5: CR-RT Validation Period “To” Date:**

Calculated as the CR-RT Valid From Date plus 90 days.

**C6: Total eLOT Assigned**

The total number of records assigned an eLOT sequence number and an ascending or descending code by address-matching software.

**C6: eLOT Validation Period “From” Date**

The effective processing date for records that were eLOT assigned. This date may be 30 days before the eLOT Product date (the 15th of each month or bimonthly) or up to 105 days after the eLOT Product date.

**C6: eLOT Validation Period “To” Date**

Calculated as the eLOT Valid From date plus 90 days.

DPV Header  
Data Element  
Definitions:

**55: DPV Date – Format YYYYMMDD**

Date of DPV files used to perform DPV confirmation.

**56: Platform for Test**

This field contains the platform for which a particular CASS test was ordered.

**57: Configuration For Test**

This field contains the configuration for which a particular CASS test was ordered.

**DSF<sup>2</sup> Header  
Data Element  
Definitions:****4: DSF<sup>2</sup> - License Number**

Assigned by Licensing Department upon receipt of Step 1 approval.

**5: DSF<sup>2</sup> - Report Date**

Date monthly report is prepared.

**6: DSF<sup>2</sup> - Received Date**

Date licensee received customer file.

**7: DSF<sup>2</sup> - Processed Date**

Date licensee processed customer file.

**Test Address  
Record**

The test address records in the CASS Stage I and II files contain miscellaneous elements, input elements, and answer elements comprising the actual test address records. Each test address record's individual input elements may or may not be correct in format, standardization, or accuracy. The following table identifies test address record components.

<b>Field Sequence Number</b>	<b>Field Description</b>	<b>Length</b>	<b>Position From/ Through</b>	
1	Customer ID	9	001	009
2	CASS Key	11	010	020
3	ZIP Code Answer	5	021	025
4	ZIP Code Alternate Answer Allowed*	1	026	026
5	ZIP Code Include In 3553 *	1	027	027
6	ZIP + 4 Add-On Answer	4	028	031
7	ZIP + 4 Add-On Include In 3553 *	1	032	032
8	Delivery Point Answer	2	033	034
9	Delivery Point Include In 3553*	1	035	035
10	Delivery Point Check Digit Answer	1	036	036
11	Carrier Route Answer	4	037	040
12	Carrier Route Alternate Answer Allowed*	1	041	041

Field Sequence Number	Field Description	Length	Position From/ Through	
13	Carrier Route Include In 3553*	1	042	042
14	City Name Answer	28	043	070
15	City Name Alternate Answer Allowed*	1	071	071
16	State Code Answer	2	072	073
17	Urbanization Answer	28	074	101
18	Firm Name Answer	40	102	141
19	Delivery Address Line 1 Answer	64	142	205
20	Delivery Address Line 1 Alternate Answer Allowed*	1	206	206
21	Delivery Address Line 2 Answer	64	207	270
22	Delivery Address Line 2 Alternate Answer Allowed*	1	271	271
23	Locatable Address Conversion Indicator	1	272	272
24	Enhanced Line of Travel (eLOT) Sequence Number Answer	4	273	276
25	Enhanced Line of Travel (eLOT) Ascending/ Descending Answer	1	277	277
26	Firm or Recipient Input	40	278	317
27	Urbanization Input	28	318	345
28	Delivery Address Line 1 Input	64	346	409
29	Delivery Address Line 2 Input	64	410	473
30	Last Line Input	42	474	515
31	National Deliverability Index Code*	1	516	516
32	Record Type Code	1	517	517
33	Category Subcategory Indicator*	2	518	519
34	USPS Internal Research Development Flag*	1	520	520
35	Non-Deliverable Record Indicator*	1	521	521
36	Multiple Response ZIP + 4 Answer 1*	9	522	530
37	Multiple Response ZIP + 4 Answer 2*	9	531	539
38	PMB-Designator	4	540	543
39	PMB-Number	8	544	551
40	Default Flag	1	552	552
41	Internal Use	1	553	553
42	Early Warning System (EWS) Flag	1	554	554
43	Internal Use	1	555	555
44	Enhanced Line of Travel (eLOT) Sequence	4	556	559
45	Enhanced Line of Travel (eLOT) Asc/Desc	1	560	560
46	DPV Confirmation Indicator	1	561	561

## Stage File Description

Field Sequence Number	Field Description	Length	Position From/ Through	
47	DPV CMRA Indicator	1	562	562
48	DPV False Positive Indicator	1	563	563
49	DSF <sup>2</sup> Delivery Type	1	564	564
50	DSF <sup>2</sup> No Stats Indicator	1	565	565
51	DSF <sup>2</sup> Business Indicator	1	566	566
52	DSF <sup>2</sup> Drop Indicator	1	567	567
53	DSF <sup>2</sup> Drop Count	3	568	570
54	DSF <sup>2</sup> Throwback Indicator	1	571	571
55	DSF <sup>2</sup> Seasonal Indicator	1	572	572
56	DSF <sup>2</sup> Vacant Indicator	1	573	573
57	DSF <sup>2</sup> LACS Indicator	1	574	574
58	DPV Footnote 1	2	575	576
59	DPV Footnote 2	2	577	578
60	DPV Footnote 3	2	579	580
61	DPV Footnote 4	2	581	582
62	DPV Footnote 5	2	583	584
63	DPV Footnote 6	2	585	586
64	DSF <sup>2</sup> Primary Number Error Flag	1	587	587
65	DSF <sup>2</sup> Secondary Number Error Flag	1	588	588
66	Residential Delivery Indicator	1	589	589
67	DSF <sup>2</sup> Pseudo Sequence Number	4	590	593
68	Internal Use	7	594	600

\* Fields populated within Stage I file only.

DPV Customers see Appendix 5 (page 81).

*Note: For Internet media, please add two bytes for CRLF.*

*Note: Pseudo Sequence Number applies only to DSF<sup>2</sup> licensees.*

Test Address  
Data Element  
Definitions

**Carrier Route Answer**

In the CASS Stage I file, this field contains the valid carrier route code; however, on the Stage II file, this field is blank. The customer's matching software must place the assigned carrier route code in this field.

Comments: Developers seeking Carrier Route or Merge certification must place the correct carrier route code (provided by the address-matching software for the test address) in this field. The carrier route answer must be returned exactly as it appears on the database. If the address-matching software is unable to determine the carrier route answer, fill the field with spaces. The 5-digit ZIP Code answer must also be placed in its appropriate answer field.

It is permissible to assign carrier route information in multiple-response conditions; however, a carrier route cannot be assigned unless a valid ZIP Code is assigned. When an input address produces a multiple response, a carrier-route ID can be assigned only when all multiple response candidate records contain the same 5-digit ZIP Code and carrier route ID. In all cases, if the ZIP answer is determined to be incorrect, the carrier route answer will be considered incorrect regardless of whether it is a valid carrier route. Failure to assign a carrier route answer will not be graded as incorrect in a multiple response situation.

Example: C001 H003  
R002 B004

**Carrier Route Alternate Answer Allowed**

This field indicates that an answer other than the one provided in the Stage I file is permitted.

Field Description: Y = An alternate answer is allowed  
N = An alternate answer is not allowed

Comments: An alternate answer may consist of a carrier route code or spaces. When multiple candidate records are available at the ZIP + 4 level and share the same ZIP Code and carrier route ID, the carrier route ID may be returned in the output record.

**Carrier Route Include In 3553 Indicator**

This field indicates whether to increment the Records Carrier Route Coded Total column in block C4 (or on the electronic form). (See "Copyright Header Record" on page 9.)

Field Description: Y = Increment the Records Carrier Route Coded Total column on PS Form 3553  
N = Do not increment the Records Carrier Route Coded Total column on PS Form 3553

### CASS Key

	A unique alphanumeric identifier associated with each test address record on the Stage I or II files.
Field Description:	Alphanumeric
Comments:	Use this key when referencing Stage file questions when discussing addressing issues with the CASS Department.
Examples:	L9945684587

### City Name Answer

	This field must contain an acceptable mailing name returned by the software.
Field Description:	Alphanumeric
Comments:	<p>The CASS Stage I file contains the answer for each test address for all product categories. If the input city name is a valid mailing name, the City Name Answer field must contain a potentially spell-checked version of the input city name or its official 13-character abbreviation.</p> <p>If the input city name IS a valid mailing name, this field must contain one of the following answers:</p> <ul style="list-style-type: none"><li>• Preferred last line city name associated with the ZIP + 4 record matched if override city name condition exists or its official 13-character abbreviation.</li><li>• Preferred last line city name at the 5-digit level, its official 13-character abbreviation or input city name if override condition does not exist.</li></ul> <p>If the input city name is NOT a valid mailing name, this field must contain one of the following answers:</p> <ul style="list-style-type: none"><li>• Preferred last line city name associated with the ZIP + 4 record matched or its official 13-character abbreviation.</li><li>• Preferred last line city name at the 5-digit level or its official 13-character abbreviation.</li></ul> <p>If the input address record results in a multiple-response condition (i.e., two or more candidate records), the software can either return the last line input or a valid city name for the input 5-digit ZIP Code.</p>
Examples:	FULTON CHICAGO

### City Name Alternate Answer Allowed

	This field indicates whether a city name other than the answer provided in the Stage I file is permitted in the City Name Answer field.
Field Description:	Y = An alternate city name answer is allowed N = An alternate city name answer is not allowed
Comments:	Alternate answers may consist of spaces, return of input, or a correctly spelled-out version of the input address record.

**Customer ID**

This field contains the customer identification number in the CASS system for Stage files. The ID is assigned by the CASS Department and should be used for all correspondence with the US Postal Service concerning CASS certification.

Field Description: Alphanumeric

Examples: 00009ZAB3

**Default Flag Indicator**

This field, when populated, indicates that the record processed obtained an exact match to a record in the ZIP + 4 file either to a hi-rise or a rural route default record. This field is also populated when a match is made to a base street record where hi-rise exact records exist and no hi-rise default record is present on the ZIP + 4 file.

Field Description: Y = The default indicator/flag is set

**Delivery Point Answer Include In 3553 Indicator**

This field indicates whether to increment the Records ZIP + 4 Coded and Records Delivery Point Coded columns in blocks C1 and C2, respectively (or electronic form). (See “Copyright Header Record” on page 9.)

Field Description: Y = Increment the Total Records Delivery Point Coded column on PS Form 3553

N = Do not increment the Total Records Delivery Point Coded column on PS Form 3553

**Delivery Point Check Digit Answer**

This field must contain the check digit (i.e., correction character) for the 11-digit delivery point barcode (DPBC) returned by the software. See page 50 for a complete definition of check digit and an example.

Field Description: Numeric (0 through 9)

Comments: The Delivery Point Answer and Delivery Point Check Digit Answer fields are graded for all ZIP + 4/DP or Merge Stage II files. The guidelines for assigning the delivery point answer begin on page 40.

**Delivery Address Answer Line 1/Line 2 Answer**

These fields (Line 1 and Line 2) must contain the correct, standardized delivery address line returned by the software. Guidelines for delivery address line standardization can be found in Publication 28, *Postal Addressing Standards*.

Field Description: Alphanumeric

Comments: To certify using any CASS Stage II products, you must place the correct, standardized delivery address line or return the delivery address input for each code-able test address.

If the test delivery address line is for a highrise or apartment building, then a suite, room, or floor number must be included if provided on ZIP + 4 Product and

## Stage File Description

---

should conform to the guidelines for secondary unit identifiers described in the *Address Information System Products Technical Guide* and Publication 28, *Postal Addressing Standards*.

Examples:            1925 N STATE ST E            HC 10  
                         1925 N STATE ST E APT 1            PO BOX 10  
                         POSTMASTER            RR 5 BOX 10  
                         GENERAL DELIVERY

### Delivery Address Line 1/Line 2 Alternate Answer Allowed Indicator

This field indicates whether a delivery answer other than the one provided in the Delivery Answer field is permitted.

Field Description:    Y = An alternate answer is allowed  
                         N = An alternate answer is not allowed

Comments:            The alternate answer may consist of spaces, return of input, or a correctly spelled version of the delivery address input record.

### Delivery Address Line 1/Line 2 Input

This field contains the test delivery address line information.

Subordinate Items:    See the *Address Information System Products Technical Guide* for an explanation of subordinate items.

Field Description:    Alphanumeric

Comments:            Each element in the Delivery Address Line 1 Input field may or may not be separated from each adjacent element by a single space. Elements may be spelled out or abbreviated, or they may also be incorrect.

Customers who wish to be certified for the CASS Stage II process for any CASS product category must place the correct, standardized version of the Delivery Address Input field into the Delivery Address Answer field. If the customer's address-matching software is unable to match to the correct address record and return the correct standardized delivery address answer, the delivery address input should be returned to the answer field.

If the test Delivery Address Input field contains a suite or room number, then a suite, room, or floor number must be included in the Delivery Address Answer field returned. Any Delivery Address Answer field generated from the test delivery address input should follow the guidelines discussed in Publication 28, *Postal Addressing Standards*.

Examples:            1925 N STATE ST APT E            24 MISSION # 21  
                         PO BOX 10            ROUTE 5

**Delivery Point Answer**

This field contains the last two digits of the house/box number, or if an “H” record is matched, the secondary unit number representing the delivery point information to form the 11-digit or delivery point barcode (DPBC).

Field Description: 00 through 99 or spaces

Comments: The Delivery Point Answer and Delivery Point Check Digit Answer fields are graded for all ZIP + 4/DP or Merge Stage II files. The guidelines for assigning the delivery point answer and delivery point check digit answer are stated in “Delivery Point Barcode Rules” (page 40).

Examples: See “Delivery Point Barcode Rules (Primary)” on page 40.

**Early Warning System (EWS) Flag**

This field indicates a match has been made to the Early Warning System File.

Field Description: Y = Address found in EWS data, thus resulting in a ZIP + 4 No Match.  
Blank = Address not found in EWS data.

**Enhanced Line of Travel (eLOT) Asc/Dsc Flag**

This field contains the correct eLOT ascending/descending code assignment for the corresponding ZIP + 4/CRID matched record on the Stage I file.

Field Description: A or D

**Enhanced Line of Travel (eLOT) Sequence**

This field reflects the correct eLOT sequence number assigned for the corresponding ZIP + 4 matched record on the stage I file.

*Note: The CRID that is assigned during ZIP + 4 matching **MUST** be used to input when querying the eLOT data files.*

Field Description: 4-digit numeric when populated, blank otherwise.

Examples: 0004 0023 0129

**Firm or Recipient Input**

This field may contain the real or fictitious name of an individual, company, building, apartment complex, shopping center, or other entity identifier.

Field Description: Alphanumeric

Comments: Information in this field may not be spelled correctly, may be abbreviated or spelled out, and may contain words from the Last Word Abbreviations Table in Publication 28 or words that are not valid for that firm.

Examples: PLAZA OFFICE BUILDING                      PLAZA OFFICE BLDG  
NUMBER ONE COMPANY                      NO 1 CO  
INTERNAL BUSINESS MACHINES    IBM

### Firm Name Answer

This field contains the correct, standardized firm name answer. Firm names may be output in the answer field in three ways: 1) Exactly as they appear in the ZIP + 4 Product Building or Firm Name field; 2) Abbreviated according to the Business Word Table in Publication 28, *Postal Addressing Standards*; 3) as they are shown in the Firm or Recipient Input field.

Field Description: Alphanumeric

Examples: Pine & Sap Inn      Acme Tool and Dye      Rubin Brothers

### Last Line Input

This field contains the test last line information, i.e., city name, state abbreviation, 5-digit ZIP Code, and possibly a ZIP + 4 code.

Field Description: Alphanumeric

Comments: For CASS Stages I and II, this field may contain a valid, standardized city name according to City State Product or Publication 28, *Postal Addressing Standards*.

Examples: FULTON NY  
CHICAGO IL 60601  
MEMPHIS TN 38188-0001  
38101

### Locatable Address Conversion System Indicator

The Locatable Address Conversion Service (LACS) indicator describes records that have been converted by LACS from rural route to city-style addresses so that emergency vehicles (e.g., ambulances, police cars, etc.) can more easily find these locations.

Field Definition: L or Blank

Comments: In the CASS Stage I file, this field (for applicable records) contains the indicator. For the Stage II file, address-matching software must identify the specific ZIP + 4 records that contain the LACS indicator and insert an “L” to the appropriate answer field to be scored correctly.

### Multiple Response ZIP + 4 Answer1/Answer2

These fields contain multiple ZIP + 4 codes that are considered potential candidate records for the delivery address input given.

Field Description: Numeric

Comments: These fields do not necessarily indicate all candidate records in ZIP + 4 Product that may be considered potential matches. They are intended to serve as a tool and to assist software developers in analyzing the quality of their software development.

Examples: 123456789

### National Deliverability Index Code

This field in the Stage I file indicates whether the record is a default (D), multiple box numbers (F), or single box number (E) record.

Field Description: D, F, E

### Non-Deliverable Record Indicator

This field on the Stage I file indicates that the address test question is a valid match to a record on ZIP + 4 Product; however, the match is made against a non-deliverable (ND) type record.

Field Description: Y = Record is an ND-type record within ZIP + 4 Product.

Blank = Record is not an ND-type record within ZIP + 4 Product.

Comments: The indicator assists in analyzing address-matching software.

### PMB–Designator Answer Field

This field is populated with the parsed PMB designator supplied by the customer’s software. This field is required when Delivery Address Line 1 or 2 contains a PMB designator and number regardless of whether the input address causes a match or no match condition. This confirms the ability of software to accurately identify addresses containing the new PMB designator.

### PMB–Number Answer Field

This field contains the parsed PMB number following the PMB designator that is supplied by the customer’s software. This field is required when the Delivery Address Line 1 or 2 contains a PMB number regardless of whether the input address causes a match or no match condition. This again verifies the ability of the software to accurately identify addresses containing the new PMB number.

### Record Type Code

CASS will continue to require certified software to return the Record Type Code in all ZIP + 4 matches. The level match code facilitates identifying or confirming certain software matches when delivery point assignment are erroneous. This field contains a single alpha character that indicates the record type.

Field Description: Single alpha

Examples: S = Street, H = Highrise, etc.

See Appendix 3, “Translation of Errors Codes and Flags,” on page 69 or the *Address Information System Products Technical Guide* for examples.

## Stage File Description

---

### Residential Delivery Indicator (RDI) Flag

This field determines if a delivery point is residential.

Field Description: Y = Indicates residential delivery.  
Blank = Record is not a residential on ZIP + 4.

### Category/Subcategory Indicator

This field in the Stage I file contains a 2 byte code identifying the type of test address given.

Field Description: See Appendix 3, page 69, "Translation of Error Codes and Flats".

### Standard PMB–Designator

This field contains the standardized PMB designator as provided for in the Test Address Record. This field will be populated when either the Delivery Address Line 1 or Delivery Address Line 2 contains a PMB designator and PMB number whether it is a match or no match condition.

### Standard PMB–Number

This field contains the standardized PMB number as provided for in the Test Address Record. This field will be populated when either the Delivery Address Line 1 or Delivery Address Line 2 contains the PMB designator and PMB number whether it is a match or no match condition.

### State Code Answer

This field contains the standardized state or US territory abbreviation answer. US territory abbreviations may be found in the following publications: the *Address Information System Products Technical Guide*; Publication 28, *Postal Addressing Standards*; and the appendices of Publication 65, *National Five-Digit ZIP Code and Post Office Directory*.

Field Description: Alpha

Comments: For all products, the CASS Stage I file contains an answer for each test address in this field. For each test address, CASS requires that software place the correct, standardized state or US territory 2-character abbreviation in this field. If your address-matching software is unable to match to the correct record and return the correct, standardized, 2-character abbreviation, the input state abbreviation should be returned in the answer field.

Examples: MO IL AR

### Urbanization Answer

This field must contain the correct, standardized urbanization name. Guidelines for urbanization standardization can be found in Publication 28, *Postal Addressing Standards*.

Field Description: Alphanumeric

**Comments:** Codeable test address records in the Urbanization Answer field of the CASS Stage I file contain an answer where applicable.

For each codeable test address, address-matching software must place the correct, standardized urbanization name in this field. For grading purposes, when a match is made to a ZIP + 4 record for which no urbanization key exists, CASS will only accept return of the input urbanization in the Urbanization Answer field. Software developers are encouraged to implement the new policy and retain input urbanization as soon as possible to avoid data loss.

**Urbanization Input**

This field can contain either the real or fictitious name of an urban development within a geographic area.

**Field Description:** Alphanumeric

**Comments:** This element may contain information with a correct spelling. Information may be abbreviated or spelled out, and some common urbanization prefixes could be dropped.

**Examples:** URB VISTA VERDE  
URBANIZATION VICTORIA

**USPS Internal Research Development Flag**

This field contains test questions that have been developed to provide a foundation for analysis on how address-matching software responds to specific address types/styles that may be modified. Questions flagged with this indicator are not potential address constructs for the Stage II file.

**Field Description:** Y = Indicates that the test address record is for internal research and development only.  
Blank = This test question is not for internal research and development.

**ZIP Code Answer**

This field contains a code that identifies a specific geographic delivery area. A 5-digit ZIP Code can represent an area within a state, an area that crosses state boundaries (unusual condition), a single building, or a company that has a very high mail volume. "ZIP" is an acronym for Zone Improvement Plan.

**Field Description:** Numbers or spaces

**Comments:** Customers seeking CASS certification must place the correct ZIP Code provided by their matching software for the test address in this field or return input.

**Examples:** 65251      20211      18513

### ZIP Code Include In 3553 Indicator

This field specifies whether to increment the 5-digit coded total column on PS Form 3553 (or the electronic form). (See “Copyright Header Record” on page 9.)

Field Description: Y = Increment the total coded column for records 5-digit coded on PS Form 3553

N = Do not increment the total coded column for records 5-digit coded on PS Form 3553.

### ZIP + 4 Add-On Answer

This field contains the correct add-on assignment for the address input based on CASS matching guidelines.

Field Description: Numbers or spaces.

Examples: 1235          5589          7941

### ZIP Code Alternate Answer Allowed

This field indicates whether an answer other than the one in the ZIP Code Answer field on the Stage I file is allowed in the ZIP Code Answer field.

Field Description: Y = An alternate answer is permitted

N = An alternate answer is not permitted

Comments: An alternate answer may consist of either spaces or return of the input ZIP Code.

### ZIP + 4 Add-On Include in 3553

This field specifies whether to increment the ZIP + 4 coded total column on the PS Form 3553.

Field Description: Y = Increment the total coded column for records ZIP + 4 Coded on the PS Form 3553.

N = Do not increment the total coded column for records ZIP + 4 coded on the PS Form 3553.

## CASS Electronic Report Record

	Field Sequence Number	Field Description	Length	Position From/Through	
Question	1	Filler	01	001	001
	2	CASS Key	08	002	009
	3	Input ZIP Code	10	010	019
	4	Filler	04	020	023
	5	Input City Name	35	024	058
	6	Input State	02	059	060
	7	Input URB Name	40	061	100
	8	Input Firm Name	40	101	140
	9	Input Delivery Address*	64	141	204
Standard Answer	10	Standard Firm Name	40	205	244
	11	Standard Urbanization or Firm	40	245	284
	12	Standard Delivery Address*	64	285	348
	13	Standard City Name	28	349	376
	14	Standard State	02	377	378
	15	Standard ZIP Code	05	379	383
	16	Standard ZIP + 4 Add-On	04	384	387
	17	Standard Carrier Route	04	388	391
	18	Standard Delivery Point Barcode	02	392	393
	19	Standard Delivery Point Check Digit	01	394	394
Customer Information	20	CASS Finance Number	06	395	400
	21	Standard LACS Indicator	01	401	401
	22	Filler	02	402	403
	23	Customer ZIP + 4 Record Type	01	404	404
	24	ZIP + 4 Record Type	01	405	405
	25	ZIP + 4 Flag	02	406	407
	26	ZIP + 4 Odd/Even	01	408	408
	27	Error Codes	30	409	438
	28	Customer Firm Name	40	439	478
	29	Customer Urbanization Name	40	479	518
	30	Customer Delivery Address*	64	519	582
	31	Customer City Name	28	583	610
	32	Customer State	02	611	612
	33	Customer ZIP Code	05	613	617
	34	Customer ZIP + 4 Add-On	04	618	621

## Early Warning System (EWS) File Layout

Field Sequence Number	Field Description	Length	Position	
			From/Through	
35	Customer Carrier Route	04	622	625
36	Customer Delivery Point Barcode Answer	02	626	627
37	Customer Delivery Point Check Digit	01	628	628
38	Customer LACS Indicator	01	629	629
39	Customer eLOT Sequence Number	04	630	633
40	Customer eLOT Ascending/Descending	01	634	634
41	Filler	08	635	642
42	Standard eLOT Sequence	04	643	646
43	Standard eLOT Ascending/Descending	01	647	647
44	PMB Designator	04	648	651
45	Filler	01	652	652
46	PMB Number	08	653	660
47	Standard PMB Designator	04	661	664
48	Filler	01	665	665
49	Standard PMB Number	08	666	673
50	Standard Default Flag	01	674	674
51	Customer Default Flag	01	675	675
52	Standard RDI Flag	01	676	676
53	Customer RDI Flag	01	677	677
54	Filler	23	678	775
55	DPV/DSF <sup>2</sup> Addendum – See Appendix 5			

\* Questions with **one** address line will use the full 64 byte address field. Questions with **two** address lines will use bytes 1–32 and bytes 33–64 separately to represent multiple address lines.

*Note: For Internet media, please add two bytes for CRLF.*

## Early Warning System (EWS) File Layout

Field Sequence Number	Field Description	Length	Position	
			From/Through	
1	ZIP Code	5	01	05
2	Pre-Directional Abbreviation	2	06	07
3	Street Name	28	08	35
4	Suffix Abbreviation	4	36	39
5	Post Directional Abbreviation	2	40	41
6	Filler	46	42	87

## Grading, Scoring, and Certification

Only CASS Stage II product files are analyzed, graded, and scored to determine CASS certification. The test score may vary based on such factors as address-matching software performance and timeliness of customer database updates.

Each national Stage II subcategory (e.g., A1, B2, etc.) will normally contain a minimum of 100 test questions. Except for category L (which remains optional), all categories are mandatory and cannot be bypassed by address-matching software. If software attempts to code optional categories and the answers are incorrect, it will be counted as an error against the total in the final scoring. Likewise, if software attempts these questions and gets them right, it will count toward the total correct score. Software must attempt to match against every mandatory category, and each category requires a score of 98 percent accuracy. If one of the mandatory categories is failed (less than 98 percent accuracy), the entire test is failed. If a mandatory category is bypassed or not answered, the test is also considered a failure. Subcategories within a mandatory category cannot be bypassed.

All address-matching software developers attempting certification of their product are required to provide a PS Form 3553 within the header record of the CASS Stage II file. If no header record is present, the evaluation process will not occur.

CASS will compare and analyze the hard copy or electronic PS Form 3553 against the answer field information returned in the Stage II file. Computation of PS Form 3553 values must be based on the answers returned during the matching process—never from input fields. In normal operations, if a user chooses to overwrite input fields with output information, production of the PS Form 3553 must be able to discern between processed and unprocessed records. If CASS identifies any errors in the comparison, the grading process will continue; however, certification cannot be issued until a valid PS Form 3553 is submitted to the CASS Department.

### New Grading Requirements

For the 2004–2005 cycle, coding accuracy requirements for CASS and MASS will remain at 98 percent overall and for each category. However, percentage scores will no longer be released upon obtaining a passing score. For Stage II fails, percentage scores will continue to be provided.

We have revised our policy regarding disclosure of CASS scores on passing tests. The revised policy is as follows: for CASS the lowest five scores will be disclosed and for MASS the Scores below 98.5% will be provided to both manufacturers and end-users. To view passing scores by category see Header Record of the Electronic Error File. Again, we remind developers that CASS scores cannot be disclosed in the marketing of any certified address matching software.

Software may optionally transpose primary address number values that, when combined with secondary address information, obtains a highrise exact match by matching to a valid secondary address range in the ZIP + 4 file. CASS will also test for secondary address values transposed with other secondary address values that through recombination of highrise exact match is achieved. Recombination will be optional for this cycle, with bonus points issued when software clearly demonstrates a command of the various transposition questions offered in Stage II files.

CASS has determined that matches made to highrise delivery point alternate records, when the input address contains valid secondary address unit numbers, can not obtain optimum sequencing via automation since '99' is assigned as the delivery point. To improve the sequencing of this mail, CASS will require address-matching software to "Chase the Base" or to determine the highrise base record associated with the alternate record when presented with this condition.

Use of the ZIP + 4 Preferred Last Line (PLL) City-State Key by CASS software has been narrowly defined, and until now has had little value or importance in address matching. Output of the ZIP + 4 PLL was limited to cases where the input address is submitted with a ZIP Code only, or when the input city name is not in the City-State File or, is altogether unrecognizable. CASS is not changing these existing rules, nor is CASS changing the rules established two cycles ago for arriving at a match and how Last Line Logic supported software selecting the correct address records. This new policy only affects output; it has no bearing on the selection of candidate records in the matching process.

Please refer to the "Partnership in Tomorrow" Meeting Minutes available on the web at [ribbs.usps.gov/files/cass](http://ribbs.usps.gov/files/cass) for further information regarding new initiatives being introduced in the 2004–2005 CASS cycle.

### Fatal Add-On Error

To maintain consistency, CASS and MASS certification requirements will change, effective immediately, in conjunction with the newly implemented ZIP + 4 verification on mailings processed by MERLIN. The return of '0000' in the ZIP + 4 add-on, or the return on an **invalid** '9999' in the ZIP + 4 add-on, will now be cause for CASS/MASS certification failure and will require retesting.

### Stage II File Evaluation

Address-matching software evaluation is based on the CASS product answer requirements (see "Product Types" on page 51) and USPS *Domestic Mail Manual*, Module C, "Characteristics And Contents," Section 840.

An answer address record is deemed correct or incorrect based on individual answer fields. If a single answer field or portion of an answer field (for fields that require parsing, e.g., Delivery Address Answer) is incorrect, the entire address is considered incorrect and counts as a single error. The grading process generates reports containing statistical scoring information and detailed analysis of the problem areas encountered. (See "Analysis" on page 34.)

To calculate the total number of records and the number of records for each category, the following record types must be considered:

1. Must answer (i.e., special flag B0). These records must be coded correctly by matching software. If the record is coded incorrectly or left blank, it is counted towards the total number of incorrectly coded records.
2. Optional answer (i.e., special flag L0, where no answer is bypassed). It is not mandatory to code these records. If they are coded incorrectly, they are counted towards the total number of incorrectly coded records. If these records are coded correctly by matching software, they are counted towards the total number of correctly coded records. If they are not coded (left blank) or the input is returned, they are not counted towards the total number of cor-

rect or incorrectly coded records. Optional answer categories are identified by the single asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

3. Must return input (i.e., special flag K1) record and not assign an add-on code. A blank answer field will be considered an error and counted towards the number of incorrectly coded records. In addition, software tested against CASS Merge/eLOT must perform a 5-digit ZIP Code and carrier-route validation, if possible, when multiple candidate records exist at the ZIP + 4 level. DPV enabled software may elect to code where input address ambiguities (i.e. missing suffixes, misspelled street names, etc.) and data anomalies exist within the ZIP + 4 file. When all candidate records share the same 5-digit ZIP Code and carrier route indicator, the software may return a valid 5-digit ZIP Code and carrier route in the output record. Must Return input records are identified by the double asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
4. No grading for standardization records may or may not contain an input ZIP Code, may have a misspelled city name, and may contain a nonmailing name. The address also may contain a numeric street name, misspelled street name, or street names that could possibly be pre- or post-directional. Address-matching software must be able to correctly match the input address with the appropriate carrier route, 5-digit or ZIP + 4 record and return a properly standardized answer along with the ZIP Code, +4 add-on code, delivery point code, and the check digit. CASS accepts and grades the answer as correct in the standard abbreviated format, completely spelled out, exactly as presented in the USPS AIS product or the input record for non-matched records. These categories are identified by the three asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
5. Normalization required for subcategory MA. Some PO Box, Rural Route and Highway Contract input addresses often appear on a mailing list with the following words and must be converted as shown: This category is identified by the four asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

<b>INPUT</b>	<b>OUTPUT</b>
Drawer 10	PO Box 10
Drawer A	PO Box A
Caller 10	PO Box 10
Lockbox 10	PO Box 10
Firm Caller A	PO Box A
Bin A	PO Box A
Rural Route 1	RR 1
FDR Route 1	RR 1
Star Route 1	HC 1
Highway Contract 1	HC 1

Please refer to the “Partnership in Tomorrow” Meeting Minutes available on the web at [ribbs.usps.gov/files/cass](http://ribbs.usps.gov/files/cass) for further information regarding new initiatives being introduced in the 2004–2005 CASS cycle.

Record Type	Answer = NCSC Answer	Answer = Other Answer	Answer = Return of Input Address
Must Answer	Add 1 to Correct Count	Add 1 to Incorrect Count	Add 1 to Incorrect Count
Optional Answer	Add 1 to Correct Count	Add 1 to Incorrect Count	Add 0 to Incorrect Count and 1 to Correct Count
Must Return Input	Add 1 to Correct Count	Add 1 to Incorrect Count	Add 1 to Correct Count

### Scoring

Minimum accuracy percentages required to achieve a passing score for CASS product categories include the following:

5-Digit:	98% or higher
Carrier Route:	98% or higher
ZIP + 4/DP:	98% or higher
eLOT:	100%
DPV:	100%
RDI:	100%

*Note: Merge and Merge/eLOT require the same scores as above. However, you must correctly assign the delivery point code for 100 percent of all ZIP + 4 coded records. If you fail to achieve a passing score on any single category of the Merge file, you will fail all four categories regardless of other scores. eLOT will not be scored unless the 5-digit, carrier route, and ZIP + 4/DP codes are correct.*

### Analysis

A Grading Output Analysis Report package is provided when the required minimum score is not achieved. It contains the following reports:

- *CASS Statistical Summary*—Divided into two parts: Part 1 contains percentage-based information on address-matching software accuracy by CASS product category; Part 2 contains percentage-based information by special flag category within a CASS product category.
- *CASS Statistical Summary Error Message Summary*—Contains count-based information on the errors encountered on customer answer records. The information is presented according to code within a special flag.
- *Customer No Match Report*—Contains detailed information about the customer address records that have been graded and scored as incorrect. The report provides the original CASS input.

*Note: See Appendix 4, “Sample Statistical and Error Message Summaries,” page 73.*

## Certification

When the required minimum scoring levels are achieved for each CASS product processed, the software will be certified. Upon certification, the NCSC issues an official letter acknowledging certification and a CASS certificate for each product certified. In addition, your company's name will be included in the *CASS/MASS Certified Products Guide* (which you can order from the Customer Service Department at the NCSC or download from RIBBS at <http://ribbs.usps.gov/files/vendors>).

## National Deliverability Index

The National Deliverability Index (NDI) was developed by business leaders and the Postal Service to improve mailpiece deliverability by improving address quality. NDI evaluates the deliverability of an address list by asking questions about five critical address quality indicators. The NCSC has established vendor criteria, standardized reporting, testing, and certification for the NDI rating process. The address list owner provides NDI rating documentation to requesting clients. This information allows mailers to evaluate the quality of an address list before its contents enter the mailstream, providing a vehicle for reduced costs, fewer pieces of undeliverable mail, and optimum mail delivery.

The NDI rating process asks the following questions about the addresses on the lists:

1. Are the addresses correctly matched and standardized against ZIP + 4 Product?
2. Do building addresses contain apartment/suite numbers for accurate delivery?
3. Do rural and/or highway contract route addresses contain box numbers for accurate delivery?
4. Do the addresses contain correct 5-digit ZIP Codes?
5. Do the addresses contain correct carrier route codes?

To facilitate the NDI software development process for manufacturers who provide address-matching software and will be providing NDI information, the USPS has incorporated an NDI testing option into the CASS certification process.

## NDI Processing

The CASS NDI certification option is essentially identical to the regular CASS certification process. First, request NDI certification by ordering a CASS Stage II Merge file and checking the NDI certification box on the back of the *Coding Accuracy Support System Order Form*. There is also a Stage I file for NDI that provides the same useful diagnostics as a regular CASS Stage I file.

The CASS Stage II file for NDI certification must be processed by address-matching and NDI-calculating software to determine the percentages for each NDI category. The original CASS Stage II file must be returned along with the *NDI Vendor Certification Form* with the NDI percentages entered. Since NDI certification is based on the CASS certification process, follow the procedures for ordering and processing a CASS Stage II file. (See "Ordering CASS Products" on page 54.)

### NDI Grading

To calculate the total number of records and the number for each category, consider the following record types when grading:

1. Must answer (i.e., special flag B0). These records must be coded correctly by matching software. If coded incorrectly or left blank, the record is not counted towards the NDI percentage numerator.
2. Optional answer (i.e., special flag Y0, where no answer is bypassed). It is not mandatory to code these records, but if they are coded incorrectly or left blank, they will not be counted towards the NDI percentage numerator. If these records are coded correctly by matching software, count them towards the NDI percentage numerator.
3. Must return the input record (i.e., special flag K0, where the return of the input is the only correct answer). If the record is coded, it is not counted towards the NDI percentage numerator.

For a record to count towards the NDI percentage numerator, a correct answer must be returned by the matching software. If the answer is left blank or is incorrect, the record is not counted toward the NDI percentage numerator.

A total of all the records on the file (even blank ones) and all records for each category must be computed, after which the individual percentage numerators for each category can be determined. A single record may fall into one or more categories.

#### Category 1 Calculation: ZIP + 4

Take the total number of ZIP + 4 records coded correctly by matching software and divide by the total records in the file.

#### Category 2 Calculation: Highrise Records

1. From the mailing list, add the total number of highrise (type H) records found.
2. Determine the number of type H records that do not contain an apartment/suite number or contain an invalid apartment/suite number (i.e., one that does not fall within the secondary address low/high range on ZIP + 4 Product). Valid highrise apartment/suite records contain an apartment/suite number that falls within the secondary address low/high range on ZIP + 4 Product or matches to a single highrise record (i.e., one highrise record for a given delivery address) on ZIP + 4 Product.
3. Calculate the percent of total valid highrise records by subtracting the total number of highrise records with an invalid or missing apartment/suite number from the total number of highrise type records found. Then, divide the results by the total number of highrise records.

#### Category 3 Calculation: Rural Route and/or Highway Contract Record

From the mailing list, add the total number of rural route (type R) records found.

1. Determine the number of rural route records that contain an invalid box number (i.e., one that does not fall within the box range on ZIP + 4 Product or does not contain a box number). A valid rural route box record is one that con-

tains a box number that falls within the box low/high range on ZIP + 4 Product or matches to a single rural route record (e.g., one rural route record for a given rural route) on ZIP + 4 Product.

- Calculate the percent of total valid rural route records by subtracting the total number of rural route records with an invalid or missing box number from the total number of rural route records found. Then, divide the result by the total rural route records.

**Category 4 Calculation: 5-digit ZIP Code**

Divide the total number of 5-digit ZIP Code records coded correctly by matching software by the total number of records.

**Category 5 Calculation: Carrier Route**

Divide the total number of carrier route records coded correctly by matching software by the total number of records.

Example: ZIP + 4 Product

REC TYPE	STREET NAME	SUFFIX	DIR	PRIMARY RANGE		SEC RANGE		ZIP + 4 ADD-ON	
				LOW	HIGH	LOW	HIGH	LOW	HIGH
H	MAIN	ST	N	00001	00001			1234	1234
H	MAIN	ST	N	00001	00001	10	20	1235	1235
H	MAIN	ST	N	00010	00010			1236	1236
R	RR 01							9701	9701
R	RR 01			00001	00005			9702	9702
R	RR 01			00010	00015			9703	9703
R	HC 02							9812	9812

ADDRESS RECORDS	ZIP + 4	RESULTS
1 N MAIN ST APT 15	1235	Considered an Exact Match
1 N MAIN ST	1234	Considered a Default Match
10 N MAIN ST APT 1	1236	Considered an Exact Match
10 N MAIN ST	1236	Considered an Exact Match
RR 01 BOX 4	9702	Considered an Exact Match
RR 01	9701	Considered a Default Match
HC 02	9812	Considered a Default Match
HC 02 BOX 5	9812	Considered a Default Match

## Software Analysis for Vendor Certification

### NDI Rating for Certification

The following accuracy percentages are required to achieve a passing score for NDI by address category.

ZIP + 4	96%
5-Digit	98%
Carrier Route	98%
Rural or Highway Contract Route	98%
Highrise/Apartment	98%

An overall score of at least 96 percent is required for certification. The score is calculated as follows: The total percentage identified by NDI software by category (A) is subtracted from the total percentage by category (B), yielding the deviation by category (C). The sum of all deviations by category (D) is subtracted from 100, yielding the overall score (percentage of accuracy), i.e.,  $A - B = C$ ;  $C + C + C... = D$ ;  $100 - D = \text{NDI rating for certification}$ .

### Sample NDI Rating for NDI Stage II File

Total records on file	100,000
Total correct ZIP + 4 codes	67,500
Total highrise records	10,000
Total highrise records with apt. numbers	8,000
Total rural route records	10,000
Total rural route records with box numbers	8,000
Total correct ZIP Codes	70,500
Total correct carrier route codes	70,500

ZIP + 4	APT #	RURAL ROUTE	5-DIGIT	CARRIER ROUTE
0.90	0.80	0.80	0.94	0.94
ZIP + 4	APT #	RURAL ROUTE	5-DIGIT	CARRIER ROUTE
0.895	0.78	0.76	0.941	0.940

### NDI Certification Grading Process Example

NCSC Answer Rating	90.0	80.0	80.0	94.0	94.0
Customer Ratings	<u>89.5</u>	<u>78.0</u>	<u>76.0</u>	<u>94.1</u>	<u>94.0</u>
	0.5	2.0	4.0	0.1	0.0
$0.5 + 2 + 4 + 0.1 + 0 = 6.6$			$100 - 6.6 = 93.4 \implies$	NDI Rating	

In this example, the customer would fail NDI certification because the deviation for Category 3 exceeds the maximum percentage allowed and the overall NDI rating is less than 96.

<b>Category</b>	<b>Actual %</b>	<b>Customer % Returned</b>	<b>Deviation +/-</b>
1 – ZIP + 4 codes	90.0	89.5	0.5
2 – Highrise with apt. numbers	80.0	78.0	2.0
3 – Rural route with box numbers	80.0	76.0	4.0
4 – 5-digit ZIP Codes	94.0	94.1	0.1
5 – Carrier route codes	94.0	94.0	0.0
<b>Total Deviation</b>			<b>6.6</b>

## Delivery Point Barcode Rules (Primary)

<p><b>1. General Rule</b></p> <p>Address: 1234 MAIN ST (PO BOX 44, RR 1 BOX 154, HC 1 BOX 1264)</p> <p>DPBC: 34 (44, 54, 64)</p> <p>Use last two digits. Print code characters in DPBC representing last two digits of primary street number (or post office box, rural route box, or highway contract route number).</p>	<p><b>8. Leading/Embedded Alphas</b></p> <p>Address: 23S411 MAIN ST (23S4 MAIN ST, 2W3S1 MAIN ST, 2AA1 MAIN ST, C8INT)</p> <p>DPBC: 11 (04, 01, 01)</p> <p>Print code characters in DPBC representing last two digits to right of alphas. If single digit to right of alphas, add leading zero.</p>
<p><b>2. No Numbers</b></p> <p>Address: MAIN ST (RR 1, HC 1)</p> <p>DPBC: 99 (99, 99)</p> <p>Use 99. Print code characters in DPBC representing last two digits of primary street number (or PO box, rural route box, or highway contract route number).</p>	<p><b>9. Slashes (/)</b></p> <p>Address: 123/4 MAIN ST (POBOX 1/4, RR 1 BOX 123/124/125, HC 3 BOX 11/13)</p> <p>DPBC: 99 (99, 99, 99)</p> <p>Print code characters in DPBC representing 99 whenever a slash appears directly next to numerics in the primary street number.</p>
<p><b>3. Single Digits</b></p> <p>Address: 8 MAIN ST (PO BOX 1, RR 1 BOX 2, HC 1 BOX 3)</p> <p>DPBC: 08 (01, 02, 03)</p> <p>Add leading zero. Print code characters in DPBC representing leading zero and single digit.</p>	<p><b>10. Other Embedded Symbols</b></p> <p>Address: 1.23 MAIN ST (PO BOX 1–3, RR 1 BOX 1.23, HC 3 BOX 11*7)</p> <p>DPBC: 23 (03, 23, 07)</p> <p>Use last two digits to right of the symbol. Print code characters in DPBC representing last two digits to the right of all symbols (except slashes), such as periods and hyphens appearing in primary street numbers. If single digit to right, add leading zero.</p>
<p><b>4. Fractional Number</b></p> <p>Address: 1234 1/2 MAIN ST (PO BOX 1 1/2, RR 1 BOX 2 3/4, HC 1 BOX 10 1/4)</p> <p>DPBC: 34 (01, 02, 10)</p> <p>Ignore fraction. Print code characters in DPBC representing two digits to left of fraction. If single digit to left of fraction, add leading zero.</p>	<p><b>11. Embedded Spaces</b></p> <p>Address: 1 23 MAIN ST (PO BOX 1 3, RR 1 BOX 1 7, HC 1 BOX 12 34)</p> <p>DPBC: 23 (03, 07, 34)</p> <p>Treat embedded spaces like other symbols (Rule 10). Print code characters in DPBC representing last two digits to right of space. If single digit to right, add leading zero.</p>
<p><b>5. Trailing Alphas</b></p> <p>Address: 1234A MAIN ST (PO BOX 4A, RR 1 BOX 154A, HC 1 BOX 1264AA)</p> <p>DPBC: 34 (04, 54, 64)</p> <p>Ignore trailing alphas. Print code characters in DPBC representing last two digits to left of space and alphas. If single digit to left of space and alphas, add leading zero.</p>	<p><b>12. Numeric Street Names</b></p> <p>Address: 8 33 ST (123 7th ST)</p> <p>DPBC: 08 (23)</p> <p>Ignore numeric street name. Print code characters in DPBC representing last two digits of primary street number (Rule 1).</p>
<p><b>6. Space and Alphas</b></p> <p>Address: 1234 A MAIN ST (PO BOX 4 AA, RR 1 BOX 154 A, HC BOX 1264 AA)</p> <p>DPBC: 34 (04, 54, 64)</p> <p>Ignore space and alphas. Print code characters in DPBC representing two digits to left of space and alphas. If single digit to left of space and alphas, add leading zero.</p>	<p><b>13. All Other Anomalies</b></p> <p>Use 99. Print code characters in DPBC representing 99 for conditions not covered by Rules 1–12.</p>
<p><b>7. Alphas Only</b></p> <p>Address: A Main St (PO Box AA, RR1 Box X, HC 1 Box AB)</p> <p>DPBC: 99 (99, 99, 99)</p> <p>Ignore alphas and use 99. Print code characters in DPBC representing 99 when alphas appear as the only primary street number.</p>	

## Calculating Delivery Points for Military, RR, and HC Default Matches

The policy on delivery point calculations for matches to military, rural route (RR), and highway contract (HC) default records—which in past CASS cycles was inconsistent and vague—has been revised. The previous CASS grading procedures allowed the delivery point value to be based on the input box number or to be defaulted to a value of 99, which resulted in problems such as one product assigning a delivery point value of 99 while another computed the delivery point value based on the box number.

The new CASS grading procedure for calculating delivery points for military, RR, and HC default matches requires that delivery point values be assigned based on the input box number when it is present. When no input box number is present, the delivery point value should default to 99.

## Delivery Point Barcode Rules (Secondary)

### Special Characters and Fractions in Secondary Address Values

In each of the following rules, if the input secondary address contains embedded special characters (e.g., dashes or periods), they must be ignored when calculating the DPC. For example, when calculating the DPC for secondary address A2-5, use the same algorithm used for secondary address A25.

Slashes and embedded spaces are only allowed to exist in secondary address values with ZIP + 4 Product as part of a fractional value. Any input secondary address value should be treated as a fractional secondary address. Ignore any fractional components in the input secondary address when computing the DPC unless the fraction is the only value in the secondary address. (See Rule 8, page 50, for secondary addresses consisting of only a fraction.)

Examples:

Secondary Address Value	Secondary Range Matched	DPC	Rule
5 1/2	1–10	05	3
2 1/3C	2 1/3A–2 1/3D	02	3
A8 1/4	A6 1/4–A12 1/4	18	4

### Pattern Differences Between Input Secondary Addresses and ZIP + 4 Product

There can be situations in which the input secondary address pattern differs from the pattern for the secondary address found within ZIP + 4 Product. For example, an input address may be shown as “APT 5A” and matched to a secondary range of “1–10” in ZIP + 4 Product. This would be correct because a single trailing alpha character is considered to fall within an all-numeric range. When an input address contains a single trailing alpha character and is matched to an all-numeric range, calculate the DPC using the input secondary address format.

Example:

Secondary Address Value	Secondary Range Matched	DPC	Rule
5A	1–10	51	3

Another situation that can occur may require swapping the alpha and numeric components of the secondary address to match a corresponding pattern on ZIP + 4 Product. For example, an input secondary address value of A7 is considered a match to secondary range 1A–10A by swapping the input alpha and numeric values to create 7A. This is valid only when a similar pattern for the secondary address exists in ZIP + 4 Product; a leading alpha character may not be swapped to match to an all numeric secondary range. When an input secondary address value requires swapping the alpha and numeric values to match to a corresponding



## Delivery Point Barcode Rules (Secondary)

---

range and cannot be assigned to a highrise default record. The DP value will be based upon the primary address value since the match is made to a street record.

Example:

Input Address: 2758 BARTLETT BLVD STE 212  
BARTLETT TN 38134

Current Match: 2758 BARTLETT BLVD STE 212  
BARTLETT TN 38134-4500(99)

Revised Match: 2758 BARTLETT BLVD STE 212  
BARTLETT TN 38134-4530(58)

This new policy only applies when no highrise default record is present in ZIP + 4 Product. If a highrise default is present, developers must continue to match it when the input secondary is missing or out of range. The DP value will remain 99 on matches to highrise default records.

### Rule 1: Numeric Simple Rule

The Numeric Simple Rule applies to situations in which the secondary address value only contains numbers (0–9), excluding fractional values or special characters, and the numeric value in the hundreds' or thousands' place equals zero. The last two digits of the secondary number must become the DPC. (See Rule 5, page 47, if the numeric value in either the hundreds' or thousands' place is greater than zero.)

Example:

Secondary Value	DPC
1	01
2	02
98	98
99	99
7-2	72
4 1/2B	04

Secondary Value	DPC
10001	01
10002	02
10098	98
100 99	99
10007.2	72
10004 23/3	04

### Rule 2: Alphabetic Rule

The Alphabetic Rule is used when the secondary address value contains only alphabetic characters, excluding fractional values or special characters. Compute the DPC using only the rightmost alphabetic character. Each character of the alphabet is assigned a unique DPC based on a progressive substitution starting at 73 and continuing through 98 (e.g., A = 73, B = 74, Z = 98).

Example:

Secondary Value	DPC
A	73
B	74
C	75
W	95
Z	98

Secondary Value	DPC
LA	73
AAB	74
A-C	75
W 1/2	95
MEZZ	98

**Rule 3:  
Alphanumeric  
Rule—Trailing  
Alpha**

The Alphanumeric Rule—Trailing Alpha applies to alphanumeric secondary addresses in which the last character is an alphabetic character within the range A to Z. Form the DPC from the secondary address according to the following formula:  $DPC = MOD (X + (10 \cdot Y))$

In this equation, “X” equals the conversion value of the rightmost alphabetic character from the alphanumeric conversion table, and “Y” equals the rightmost non-fractional numeric form value. The term “MOD” refers to the remainder of  $(X + (10 \cdot Y))$ , which is the DPC.

Another means of describing the formula is as follows:

1. Convert the trailing alphabetic character (X) to a numeric value using the Alphanumeric Conversion Table below.
2. Find the rightmost, non-fractional digit (Y), and multiply it by 10.
3. Add the values yielded by steps 1 and 2.

**Alphanumeric Conversion Table**

A = 1	F = 6	K = 21	P = 26	U = 41
B = 2	G = 7	L = 22	Q = 27	V = 42
C = 3	H = 8	M = 23	R = 28	W = 43
D = 4	I = 9	N = 24	S = 29	X = 44
E = 5	J = 0	O = 25	T = 30	Y = 45
				Z = 46

## Delivery Point Barcode Rules (Secondary)

---

Examples:

*Note: The letter “R” followed by a number is translated as “remainder of.”*

SEC VALUE	STEP 1 X	STEP 2 10 • Y	STEP 3 ADD SUM STEP 1 + STEP 2	DPC
1A	A = 1	10 • 1 = 10	1 + 10 = 11	11
10D	D = 4	10 • 0 = 0	4 + 0 = 4	04
99Q	Q = 27	10 • 9 = 90	27 + 90 = 117	17
A4K	K = 21	10 • 4 = 40	21 + 40 = 61	61
2-4M	M = 23	10 • 4 = 40	23 + 40 = 63	63
A78Z	Z = 46	10 • 8 = 80	80 + 46 = 126	26

### Rule 4: Alphanumeric Rule—Trailing Numeric

The Alphanumeric Rule—Trailing Numeric applies to alphanumeric secondary addresses with trailing numbers. Derive the DPC from the secondary address according to the following formula:

$$\text{DPC} = \text{MOD} (((X \cdot 10) + Y)/100)$$

“X” equals the alphanumeric conversion value of the leftmost alphabetic character, and “Y” equals the rightmost non-fractional numeric value. Within the formula, “MOD” refers to the remainder of  $((X \cdot 10) + Y)/100$ .

The following is another method of describing the formula:

1. Convert the first alphabetic character (X) to a number using the Alphanumeric Conversion Table (see Rule 3, page 45).
2. Multiply the value yielded in step 1 by 10.
3. Add the rightmost, non-fractional digit (Y) to the value yielded by step 2.
4. Divide the value yielded by step 3 by 100. Take the remainder (MOD) as the DPC.

Example:

*Note: The letter “R” followed by a number is translated as “remainder of.”*

SEC VALUE	STEP 1 X	STEP 2 10 • Y	STEP 3 ADD SUM STEP 1 + STEP 2	STEP 4 MOD (STEP 3 ANS/100)	DPC
A1	A = 1	10 • 1 = 10	1 + 10 = 11	11/100 = 0 R11	11
B3	B = 2	10 • 2 = 20	20 + 3 = 23	23/100 = 0 R23	23
4G5	G = 7	10 • 7 = 70	70 + 5 = 75	75/100 = 0 R75	75
Q37	Q = 27	10 • 27 = 270	270 + 7 = 277	277/100 = 2 R77	77
D-33	D = 4	10 • 4 = 40	40 + 3 = 43	43/100 = 0 R43	43
3V-175	v = 42	10 • 42 = 420	420 + 5 = 425	425/100 = 4 R25	25
R2 1/4	R = 28	10 • 28 = 280	280 + 2 = 282	282/100 = 2R82	82
1A.2	A = 1	10 • 1 = 10	10 + 2 = 12	12/100 = 0 R12	12
44C102	C = 3	10 • 3 = 30	30 + 2 = 32	32/100 = 0 R32	32
B1A9	B = 2	10 • 2 = 20	20 + 9 = 29	29/100 = 0 R29	29

## Rule 5: Numeric Computed Rule

The Numeric Computed Rule applies to numeric secondary addresses when the value of the combination of digits in the hundreds’ and thousands’ places is greater than zero.

*Note: See Rule 1, page 44, if the value in the hundreds’ or thousands’ place equals 0.*

Computer the DPC from the secondary address according to the following formula:

$$DPC = 25 \cdot (\text{MOD } (X/4)) + \text{MOD } (Y/25)$$

“X” equals the numeric value of the digits in the thousands’ and hundreds’ places, and “Y” equals the value of the digits in the ten’s and one’s places. Within the formula, “MOD” refers to the remainder derived from the division process.

The following is another means of describing the formula:

1. Extract the numeric digits found in the thousand’s and hundred’s places (X) and divide those by 4.
2. Take the value of the remainder (MOD) from the division in step 1 and multiply that value by 25.
3. Extract the digits found in the tens’ and ones’ places (Y). Divide that value by 25 and take the remainder (MOD) to develop the DPC.

## Delivery Point Barcode Rules (Secondary)

- Add the values derived in steps 2 and 3 to create the DPC. If the sum of the two values derived from steps 2 and 3 is less than 10, add a leading 0 to create a 2-digit value.

Example:

*Note: The letter "R" followed by a number denotes "remainder of."*

SEC VALUE	STEP 1 VALUE OF THOU. & HUND./4	STEP 2 Value from STEP 1 • 25	STEP 3 VALUE OF TENS & ONES/25	STEP 4 ADD ANSW. STEP 2 + STEP 3	DPC
306	3/4 = 0 R3 = 3	3 • 25 = 75	6/25 = 0 R6 = 6	75 + 6 = 81	81
683	6/4 = 1 R2 = 2	2 • 25 = 50	83/25 = 3 R8 = 8	50 + 8 = 58	58
1001	10/4 = 2 R2 = 2	2 • 25 = 50	1/25 = 0 R1 = 1	50 + 1 = 51	51
8874	88/4 = 22 R0 = 0	0 • 25 = 0	74/25 = 2 R24 = 24	0 + 24 = 24	24
14-102	41/4 = 10 R1 = 1	1 • 25 = 25	2/25 = 0 R2 = 2	25 + 2 = 27	27
1234 1/2	12/4 = 3 R0 = 0	0 • 25 = 0	34/25 = 1 R9 = 9	0 + 9 = 9	09

### Rule 6: Address Matched to a ZIP + 4 Record with Blank Secondary Ranges

If an input address is matched to a highrise record with a secondary designator but no secondary ranges, the software must return DPC 99.

The secondary designators that exist without a secondary range include the following:

- BSMT
- LOWR
- SIDE
- LBBY
- FRNT
- PH
- REAR
- OFC
- UPPR

Example (ZIP + 4 Date):

ZIP	REC TYPE	CARRIER ROUTE ID	STREET	PRIM LOW/HIGH		O/E	SEC DESG	SEC LOW/HIGH		ZIP + 4 LOW/HIGH	
48322	S	C001	MAIN AVE	101	199	O				2111	2111
48322	H	C001	MAIN AVE	123	123	O				2115	2115
48322	H	C001	MAIN AVE	123	123	O	OFC			2116	2116
48322	H	C001	MAIN AVE	123	123	O	APT	101	108	2117	2117
48322	H	C001	MAIN AVE	123	123	O	APT	201	208	2118	2118

Input Address: JANE DOE  
123 MAIN AVE OFFICE  
WEST BLOOMFIELD MI 48322

Output Address: JANE DOE  
101 MAIN AVE OFC  
WEST BLOOMFIELD MI 48322-2116 (DPC 99)

In this example, the input address contains the secondary designator “OFFICE,” which is matched to the third record displayed containing the secondary designator “OFC.” Since the record that is matched to has no secondary ranges shown, the DPC assigned must be 99.

**Rule 7: Address Matching to a Highrise Default Record**

If a match is made to a default highrise record on ZIP + 4 Product, the DPC assigned must be 99. A default highrise record is a type “H” record that has no secondary designator value or secondary range values.

Example (ZIP + 4 Date):

ZIP	REC TYPE	CARRIER ROUTE ID	STREET	PRIM		SEC DESG	SEC		ZIP + 4	
				LOW	HIGH		LOW	HIGH	LOW	HIGH
48321	S	C001	MAIN ST	101	199				1111	1111
48321	H	C001	MAIN ST	101	101				1116	1116
48321	H	C001	MAIN ST	101	101	APT	101	108	1117	1117
48321	H	C001	MAIN ST	101	101	APT	201	208	1117	1117

Input Address: JANE DOE  
101 MAIN ST APT 405  
AUBURN HJLLS MI 48321

Output Address: JANE DOE  
101 MAIN ST APT 405  
AUBURN HILLS MI 48321-1116(DPC 99)

In this example, since the input secondary value 405 cannot be matched to any of the available secondary ranges, the match is made to the second record displayed, which is the highrise default record. This requires assignment of 99 for the DPC.

## Delivery Point Barcode Rules (Secondary)

---

### Rule 8: Fractional Only Secondary Addresses

If the input secondary address is a fraction without any other leading alphabetic or numeric value present, assign DPC 00. A single trailing alpha following a fractional value is considered part of the fraction.

Example:

SECONDARY ADDRESS VALUE	DELIVERY POINT CODE
1/2	00
2/3	00
3/4 A	00

### Delivery Point Check Digit

The delivery point check digit (or correction character) is a number that is added to the sum of the other digits in the delivery point barcode (DPBC) to yield a number that is a multiple of ten.

Example:

5-Digit ZIP Code	=	12345
ZIP + 4 Code	=	6789
Delivery Point Code	=	01
Sum of 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 0 + 1	=	46
Add check digit (4)		<u>+4</u>
Equals Multiple of 10		50

---

## Product Types

**CASS Stage I product files** provide assistance in measuring and analyzing address-matching software performance. Any input field on the Stage I file may be incorrect or missing, regardless of category type. Since answers are provided on the Stage I file, software performance can be evaluated by comparing the processing results to the Stage I answer fields. In some cases, the input fields are provided in the answer fields, indicating the input is not a ZIP + 4 codeable record.

*Note: Stage I address-matching results will not be graded by the NCSC and will not result in certification. Stage I is not a required step in the certification process; it is only provided as a diagnostic aid.*

**CASS Stage II product files** allow developers to demonstrate the address-matching software accuracy in an attempt to receive CASS certification. Any of the input fields on the Stage II file may be incorrect or missing altogether, regardless of category type. The address-matching software answers must be placed in the Stage II file answer fields so that CASS can evaluate the software's performance. In some cases, the input fields are moved to the answer fields, which may be graded as correct, indicating that the Stage II file input address fields should not have been capable of being corrected or standardized. Achieving an acceptable score on the CASS product being tested results in CASS certification for that product category.

*Note: All Stage II files will have an accompanying Early Warning System (EWS) file. For the EWS file layout see page 30.*

**CASS 5-Digit** is used to evaluate address-matching software performance as it pertains to correcting and standardizing addresses using a 5-digit ZIP Code. Customer answers are required. The ZIP Code Answer, City Name Answer, and State Code Answer fields are evaluated.

**CASS Carrier Route** is used to evaluate address-matching software performance as it pertains to correcting and standardizing addresses using a 5-digit ZIP Code and carrier route code. Customer answers are required, and the following answer fields are evaluated: ZIP Code Answer, Carrier Route Answer, City Name Answer, and State Code Answer.

**CASS ZIP + 4/DP/eLOT** (eLOT is optional) is used to evaluate address-matching software performance as it pertains to correcting and standardizing addresses using a 5-digit ZIP Code, a 4-digit ZIP add-on, and a delivery point code. Customer answers are required, and the following answer fields are evaluated: ZIP Code Answer, ZIP + 4 Add-On Answer, Delivery Point Answer, DPBC Check Digit Answer, City Name Answer, State Code Answer, Urbanization Name Answer, Firm Name Answer, and Delivery Address Answer.

**CASS MERGE/eLOT** (eLOT is optional) is used to evaluate address-matching software performance as it pertains to correcting and standardizing addresses for all four products mentioned above. This product requires a single processing run. However, be aware that when using this product during Stage II, if any category fails to achieve a passing score, the address-matching software will not be certified. Customer answers are required, and the following answer fields are evaluated: ZIP Code Answer, ZIP + 4 Add-On Answer, Delivery Point Answer, DPBC

Check Digit Answer, Carrier Route Answer, City Name Answer, State Code Answer, Urbanization Name Answer, Firm Name Answer, and Delivery Address Answer, eLOT Sequence Number, and eLOT Ascending/Descending Code.

**DPV (Delivery Point Validation)** is a quality tool that determines whether an address is a valid delivery in accordance with the USPS database, and if that delivery is a Commercial Mail Receiving Agency (CMRA). CASS will only evaluate DPV return codes when address-matching software achieves the required accuracy rates for CASS certification.

**DSF<sup>2</sup> (Delivery Sequence File Second Generation)** is an address list management tool that provides additional address attributes. CASS will only evaluate delivery statistics when address-matching software achieves the required accuracy rates for CASS certification.

**RDI (Residential Delivery Indicator)** is designed to be used in conjunction with CASS-Certified ZIP + 4 or DPV-enabled address-matching software. RDI is similar to the DPV process, in that the RDI data is supplied as hash tables. RDI is available as a separate utility or can be taken as part of a Merge or Merge/eLOT Stage II test. CASS will only evaluate RDI response when address-matching software achieves the required accuracy rates for CASS certification.

## Stage II File Processing

### 1. Copy the CASS Stage II File

Before processing the Stage II file, make a backup copy and store the original in a safe place. Depending on the type of software, processing the original file could delete all data. In addition, be advised that all Stage files provided are compressed using the PKZIP utility. *Do not process the original CASS Stage I file.* Depending upon the type of software, processing the original file could either overwrite the answers provided or delete all data.

Compare the original CASS Stage I file with the processed CASS Stage I file, and be sure to compare all answer fields on the processed file (e.g., ZIP Code, ZIP + 4 Code, Delivery Point Code, etc.) to the answer fields provided on the original CASS Stage I file to determine the level of accuracy of the address-matching software.

### 2. Process Stage II File

Process the original CASS Stage II product file through the address-matching software. If the original CASS Stage II file cannot be completely processed, order a new CASS Stage II file. *Do not process a backup copy of the CASS Stage II file; the NCSC will only accept the original CASS Stage II file for evaluation.*

### 3. Return Stage II File and Media for Evaluation

Customers must return CASS Stage II product files for certification within ten calendar days of receipt. Failure to do so will result in the certification attempt being voided and the customer being required to reorder the desired CASS Stage II files.

The original CASS Stage II product file and media (i.e. cartridge) must always be returned with the colored label enclosed in the original CASS Stage II file package affixed. *Only the CASS Stage II files with a label affixed will be evaluated.*

The CASS Stage II file will be evaluated, and the customer will be notified of the results. For an explanation of the scoring methodology, see “Grading, Scoring, and Certification” on page 31.

When the CASS Stage II file has been processed, return it to the address below along with your name, company name, address, and telephone number. To be CASS certified, customers must return a completed facsimile of PS Form 3553 electronically in the copyright header record along with your Stage II file.

*Note: If the address-matching software to be certified has optional processing parameters that affect the address-matching logic, a printed statement of the parameters to be used in processing the CASS Stage II file must be attached to the signed Coding Accuracy Support System Order Form.*

The completed PS Form 3553 must represent the address records processed from the Stage II file returned for evaluation. All Stage II files returned for evaluation become the property of the US Postal Service.

CASS CERTIFICATION  
NATIONAL CUSTOMER SUPPORT CENTER  
UNITED STATES POSTAL SERVICE  
6060 PRIMACY PKWY STE 101  
MEMPHIS TN 38188-0001

*Note: CASS Stage files must be returned via the United States Postal Service unless transmitted electronically via the Internet. Stage files returned by other commercial characters will not be accepted.*

## Ordering CASS Products

All required information must be entered on the *Coding Accuracy Support System Order Form* as the developer/customers wishes it to appear in any Postal Service publication. Please specify whether you want the notice of certification to appear in Postal Service documents, and if so, the designation to be used. Also specify whether you are applying for vendor or user-defined certification. If manufacturer certification is sought, your company will automatically be listed as a software and/or hardware manufacturer.

*Note: The salesperson listed in the first section on the front of the form is the contact for sales and product information reflected in the CASS/MASS Certified Products Guide.*

### State & National File

Specify the geographical areas to be included in the CASS product Stage II file. Each group can be ordered, but they are sent as individual files.

**State File**—One to five states may be ordered (all states; Washington, DC; and Puerto Rico). Indicate which states by specifying the state abbreviations in the space provided.

**National File**—All areas in the United States, including Puerto Rico.

*Note: CASS Stage files are not available for geographical areas smaller than an individual state.*

### Products Requested

To select a product/test, check the appropriate box in the Address-Matching Software section on the back of the *Coding Accuracy Support System Order Form*. Each product requires separate processing.

### Media Configuration

The desired media configuration for the CASS category products being ordered should be specified by completing the appropriate box using the media configuration table on the back of the *Coding Accuracy Support System Order Form*. The customer must make only one selection per order form.

### Platform

Indicate the platform in which the software is designed to operate (e.g., DOS, Windows, mainframe, etc.).

- Software** The name, version number, and configuration must be provided for the address-matching software intended for testing, whether it is purchased or internally written (see Appendix 2, page 65, for more information). The configuration consists of a 3-character alpha field that identifies the parameter settings used by the address-matching software in processing the CASS Stage II file. The version number must comply with CASS-certified address-matching software version formats.
- NDI Certification** To request NDI certification, check the appropriate box when ordering a CASS Merge product. NDI certification is optional.
- Stage File** Stage I product files may be downloaded from RIBBS at <http://ribbs.usps.gov/files/cass>. Stage I is optional (but recommended) prior to attempting certification. Stage II is required.  
*Note: For assistance, call the CASS Department at 800-642-2914.*
- Processing Steps**
1. Complete and mail or fax the *Coding Accuracy Support System Order Form*.
    - a. No orders are taken over the phone.
    - b. The order form must be signed and dated by a company official.
    - c. If the address-matching software and/or hardware has optional parameter settings, configuration designators indicating the settings to be used when processing customer and/or client address files must be provided.
  2. CASS Stage II test file can be uploaded and downloaded directly from the internet using a Web Browser. To participate in this program, please provide the information requested on the application form. This information will serve as a basis for establishing internet service and the electronic transfer of data files via the internet. Upon receipt of the completed form, the Certification Department will establish an internet account for you to transfer stage files electronically. You will receive a call from one of our support specialists who will provide the URL, customer number, and a password to access your files on the internet.
    - a. When transferring processed stage files to the CASS Department, please use the original file name provided to you.
    - b. This naming convention consists of a 5-digit number that identifies the customer, a single alpha character that denotes the test type, another single alpha character that identifies the increment, and two alpha characters that specifically identify the manufacturer's software and version number.

- c. Files will be transferred using the file compression utility Pkzip<sup>®</sup> Fast! Again, you must use the file name originally provided to you when uploading the processed test file for grading.
  3. Process the CASS product file through the address-matching software and/or hardware.
    - a. Set the address-matching software and/or hardware parameters exactly the way you run your files or client address files.
    - b. Process the original CASS Stage II file and media. No backup copies or alternate media are acceptable.
    - c. Update the appropriate fields for Stage II NCSC evaluation.
    - d. Be sure that the colored tape label provided is attached to the original media version of the CASS product file so that the NCSC will evaluate it.
  4. Mail the Stage II file to the National Customer Support Center for evaluation.

### Helpful Hints

1. Always attempt to read the processed Stage II file media before returning it to the NCSC for evaluation to ensure that there are no physical problems with the media and that the exact number of records originally sent is returned to the NCSC.
2. Be sure the file is configured (block size, record length, BPI) exactly as it was requested.

# CODING ACCURACY SUPPORT SYSTEM ORDER FORM

## CUSTOMER INFORMATION (REQUIRED)

Company Official Name: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_\_\_ ) \_\_\_\_\_  
Salesperson: \_\_\_\_\_ Phone: ( \_\_\_\_ ) \_\_\_\_\_  
Email: \_\_\_\_\_

## MAILING INFORMATION

(if different from above)

Attention: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_\_\_ ) \_\_\_\_\_

I request that my certification be maintained in US Postal Service documents and records as:

- Integrator/Manufacturer     NCOA Licensee     User     DPV Licensee     RDI Licensee  
 Vendor/Service Bureau     DSF<sup>2</sup> Licensee     MLC Licensee     DPV User  
 I do not wish to be listed in USPS pubs.

I am applying for:

- Manufacturer Certification (*Software/Hardware*)     User-Defined Certification

All information furnished on this application is complete and correct. The responses provided on the CASS Stage II certification file will be obtained using the same configuration used for processing customer/client address files. Any modification to the software or the configuration used to process the Stage II file will require recertification prior to use or release. The CASS Stage II file will be processed in-house with company-owned or leased software/hardware. All answers will be written to the Stage II file via batch processing without manual intervention. The software used to process the CASS Stage II file contains technology that disables access to outdated US Postal Service data in accordance with **Domestic Mail Manual** (DMM) A950. When used interactively, this product does not allow automated selection of an individual record from a list of multiple candidates. Users of this software are advised that any modification voids CASS certification.

**CASS/MASS certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.**

I have read and understand the requirements above and realize that any misrepresentation or failure to comply with these requirements will result in decertification.

\_\_\_\_\_  
**Company Official Signature (Required)**

\_\_\_\_\_  
Name (*please print*)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## NCSC USE ONLY

Customer #: \_\_\_\_\_ Date: \_\_\_\_\_ PRDT Code: \_\_\_\_\_

## PRODUCT INFORMATION

(REQUIRED)

If the matching software/hardware has optional parameters, you **MUST** return a list of the parameters used to process the CASS Stage II file with this form. Also, you **MUST** return a facsimile PS Form 3553 or FTP or email an electronic version in the header record with the Stage II certification file/test deck.

## ADDRESS-MATCHING SOFTWARE

1. Specify Stage type:

Stage II

2. For geographic type, select one only.\* (If state or area, please specify):

National

State \_\_\_\_\_

3. Type of Test:  5-Digit  Carrier Route  NDI Certification\*\*  ZIP+4/DP  
 Merge  Merge/eLOT  ZIP+4/DP/eLOT

3A. This software performs DPV Certification:  Yes  No

3B. This software performs RDI Certification:  Yes  No

4. Media Configuration Code (please choose from media configuration table at bottom of form):

5. Fill in all software information:

\_\_\_\_\_ Product Title \_\_\_\_\_ Version #\*\*\* \_\_\_\_\_ Configuration \_\_\_\_\_ Platform

6. This software provides access to candidate record stacks:  Yes  No

6A. If this product incorporates software certified under another manufacturer (i.e., driver or application interface), please fill in all information for each software used:

Product Title	Version #	Configuration	Platform
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

\* Applies only to address-matching software

\*\* Applies only to Merge files

\*\*\* Refer to Appendix 2, "CASS Version Control," for a list of version numbers

## MEDIA CONFIGURATIONS TABLE

Code	Description	Code	Description
E	Cartridge IBM 3480 38K	I	Internet
K	Cartridge IBM 3490E 38K		

(Note: For internet/FTP service, call the CASS Department at 800-642-2914)

## MAIL OR FAX FORM TO

CODING ACCURACY SUPPORT SYSTEM  
NATIONAL CUSTOMER SUPPORT CENTER  
UNITED STATES POSTAL SERVICE  
6060 PRIMACY PKWY STE 201  
MEMPHIS TN 38188-0001  
TELEPHONE: 800-642-2914  
FAX NUMBER: 901-681-4440

# CASS INTERNET FILE TRANSFER APPLICATION

## Technical Contact (One contact per company/physical location for MASS customers.)

Requestor's Name:		Job Title:	
Company Name:		Urbanization:	
Address:			
City:		State:	ZIP+4:
Phone Number: (     )	Fax Number: (     )	Email Address:	

## Administrative/General Contact (Complete this section only if information differs from above.)

Requestor's Name:		Job Title:	
Company Name:		Urbanization:	
Address:			
City:		State:	ZIP+4:
Phone Number: (     )	Fax Number: (     )	Email Address:	

## Marketing/Sales Contact (Complete this section only if information differs from above.)

Requestor's Name:		Job Title:	
Company Name:		Urbanization:	
Address:			
City:		State:	ZIP+4:
Phone Number: (     )	Fax Number: (     )	Email Address:	

## CASS Customers

I request that my certification be maintained in US Postal Service documents and records as (select one):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Integrator/Manufacturer  | <input type="checkbox"/> Vendor/Service Bureau  | <input type="checkbox"/> I am applying for user-defined certification. |
| <input type="checkbox"/> I do not wish to be listed in any postal publication or on the internet. | <input type="checkbox"/> I am applying for manufacturer certification (Software/Hardware) |  |

Please initial by each requirement.

- \_\_\_\_\_ The responses provided on CASS Stage II certification files will be obtained using the same configuration used for processing customer/client address files.
- \_\_\_\_\_ Any modifications to software or to the configuration used to process a Stage II file will require recertification prior to use or release.
- \_\_\_\_\_ CASS Stage II files will be processed with in-house, company-owned or leased software/hardware.
- \_\_\_\_\_ All answers will be written to Stage II files via batch processing without manual intervention.
- \_\_\_\_\_ The software used to process CASS Stage II files contain technology that disables access to outdated US Postal Service data in accordance with Domestic Mail Manual (DMM) A950.
- \_\_\_\_\_ When software attempting certification is used interactively, it does not allow automated selection of an individual record from a list of multiple candidates.
- \_\_\_\_\_ End-users of this address matching software product are advised that any modification voids CASS certification.
- \_\_\_\_\_ I have read and understand the requirements above and realize that any misrepresentation or failure to comply with these requirements will result in decertification.

Company Official Name (Please print):
Company Official Signature:

For first-time CASS Customers

**Mail this completed form to:**  
 CASS INTERNET SERVICE REQUESTS  
 ADDRESS MANAGEMENT  
 UNITED STATES POSTAL SERVICE  
 6060 PRIMACY PKWY STE 201  
 MEMPHIS TN 38188-0001



---

# **Appendix 1**

## **PS Form 3553**





This form may be generated as the output of address matching processing using CASS-Certified™ software in conjunction with current USPS® address database files. Any facsimile must contain the same information in the same format as the printed form.

# CASS™ Summary Report

See Domestic Manual Section A950 for more information.

A. Software			
CASS A1	1. CASS-Certified Company Name	2. CASS-Certified Software Name & Version	3. Configuration
	4. Z4Change Certified Company Name	5. Z4Change Certified Software Name & Version	6. Configuration
	7. eLOT Certified Company Name	8. eLOT Certified Software Name & Version	9. Configuration
MASS A2	1. MASS™ Certified Company Name	2. MASS Certified Software Name, Version & Model No.	3. Configuration
			4. MLOCR Serial No.

B. List		
1. List Processor's Name	<b>2. Date List Processed</b>	<b>3. Date of Database Product Used</b>
	a. Master File	a. ZIP + 4® File
	b. Z4Change	b. Z4Change
	c. eLOT	c. eLOT
	d. CRIS	d. CRIS
4. List Name or ID No.	5. Number of Lists	6. Total Records Submitted for Processing

C. Output							
Output Rating	1. Total Coded	2. Validation Period		Output Rating	1. Total Coded	2. Validation Period	
		From	To			From	To
a. ZIP + 4 Coded ▷				d. 5-Digit Coded ▷			
b. Z4Change Processed ▷				e. CRRT Coded ▷		From	To
c. DPBC Assigned ▷		From	To	f. eLOT Assigned ▷		From	To

D. Mailer		
I certify that the mailing submitted with this form has been coded (as indicated above) using CASS-Certified software meeting all of the requirements listed in the <i>Domestic Mail Manual</i> Section A950.		3. Name and Address of Mailer
1. Mailer's Signature	2. Date Signed	

E. Qualitative Statistical Summary (QSS)							
For informational purposes only: QSS is solely made available for the list processor's review and analysis. This information is not to be considered by the Postal Service™ personnel in determining rate eligibility under any circumstances. See reverse for a detailed explanation.							
High Rise Default	High Rise Exact	RR Default	RR Exact	LACS	EWS	DPV	RDI

# Instructions

## A. Software

**A1.1, 1.4, 1.7, & A2.1 — Company Name:** Enter the name for *each kind of software* as it appears on the CASS/MASS certificate.

**A1.2, 1.5, 1.8, & A2.2 — Software Name and Version:** Enter name and version used for *each kind of software* as it appears on the CASS/MASS certificate.

**A1.3, 1.6, 1.9, & A2.3 — Configuration:** Enter the specific software configuration parameter settings as it as it appears on the CASS/MASS certificate.

**A2.4 — MLOCR:** Enter the MLOCR serial number as it appears on the MASS Certificate.

**NOTE:** If information entered in this section represents the list processing of more than one certified company, attach a list of company names, software names and versions, as well as the configuration to code the address information used in the mailing.

## B. List

**1. List Processor's Name:** Enter the company name that coded the address list(s) and/or performed ZIP + 4® barcoding using CASS-Certified software. Attach a list if additional space is required.

**2. Date List Processed:** Enter the processing date for each list. If multiple lists, enter the oldest date from the list.

**3. Date of Database Product Used:** Enter the version date of each database package used for processing. If multiple lists, enter the oldest version date from the lists.

**4. List Name or ID No.:** Print the name or identification number of the address list. If more than one list is used, leave blank. If the identification number is used, the number **MUST** be preceded by "ID#".

**5. Number of Lists:** Enter the number of lists used to produce the mailing.

**6. Total Records Submitted for Processing:** Enter the total number of address records (from all lists in item B5) submitted at the time the list(s) was coded.

## C. Output

**1. Total Coded:** Enter the total number coded.

**2. Validation Period:** Enter the effective dates as shown below:

Product Name	From Date	To Date
ZIP + 4 Coded	30 days before (the 15th of each month or bi-monthly) or no later than 105 days after the file date.	180 days after the ZIP + 4 valid "From" date.
Total Delivery Point Barcoded	30 days before (the 15th of each month or bimonthly) or no later than 105 days after the ZIP + 4 product file date.	180 days after the DPBC valid "From" date.
Five-Digit Coded	30 days before (the 15th of each month or bimonthly) or no later than 105 days after the ZIP + 4, Five-digit ZIP, or the Carrier Route product date.	365 days after the Five-Digit Valid "From" date.
Total Carrier Route Coded	30 days before or up to 105 days after the ZIP + 4, Five-Digit ZIP, or the Carrier Route product date (the 15th of each month or bimonthly) or up to 105 days after the file date.	90 days after the Carrier Route Valid "From" date.
Enhanced Line of Travel (eLOT) Sequence No. Assigned	30 days before or up to 105 days after the eLOT file product date (the 15th of each month or bimonthly).	90 days after the eLOT valid "From" date.

## D. Mailer

**1. Signature:** Signature of individual who processed the list, or the mailer's representative.

**2. Date Signed:** Enter the date this form is signed.

**3. Name & Address of Mailer:** Enter the name and address of the individual whose signature appears in item D1.

## E. Qualitative Statistical Summary (QSS)

This information allows mailers and list processors to evaluate the quality of their address list processed through CASS software before its contents enter the mailstream. A significant number of highrise and/or rural route default matches, although these addresses remain eligible for postal automation rate discounts at this time, increase the costs and reduce the efficient delivery of this mail. Mailer's should research to obtain secondary unit designator address information or highrise addresses and specific box number information for rural route addresses which are coded to default records on the National ZIP + 4 File.

### Locatable Address Conversion System (LACS)

Entries in this box show the number of addresses which have been converted from primarily rural route and box number to standard city style addresses under the National Emergency 911 program. Mailers should make every effort to obtain current address information from a LACS vendor. Please visit our web site at [ribbs.usps.gov/files/lacs](http://ribbs.usps.gov/files/lacs) for more information.

### Early Warning System (EWS)

Entries in this box show the number of addresses on the processed address list that are new addresses not in the current US Postal Service's ZIP + 4 File. These addresses are, however, valid addresses as formatted and should not be changed in any way since the Postal Service will assign ZIP + 4's to these addresses on the next monthly ZIP + 4 File.

### Delivery Point Validation (DPV)

Entries in this box show the number of records delivery point confirmed. Only DPV enabled software will return a value in this box (Check with your software vendor for obtaining this option). These address records are valid delivery points by the US Postal Service. Addresses that are not confirmed by DPV are either new addresses not available on the current Delivery Sequence File, or are not valid and the list holder should further investigate to determine the accuracy of these addresses. Presently, the Postal Service is not requiring delivery point validation for rate eligibility. However, this policy is subject to change and mailers should make every effort to ensure the quality of their address list(s).

### Residential Delivery Indicator (RDI)

Entries in this box show the number of addresses on the processed address list that are residential. RDI is designed to be used in conjunction with CASS-Certified ZIP + 4 or DPV enabled address matching software. RDI will assist user's/licensees in shopping for the lowest delivery cost for a specific address by identifying whether that address is listed as business or residential in the Address Matching System database. In order to enter into the process to develop RDI-enabled software, you must be a developer of currently CASS-Certified address matching software.

---

# **Appendix 2**

## **CASS Version Control**



## CASS Version Control

	<b>6.02</b>	<b>.04</b>	<b>.I</b>	<b>.95.07</b>
	A	B	C	D
<b>Fields</b>	Version Number	Revision Number	CASS Cycle	Manufacturer Number

### Field A

Contains the software version number. The manufacturer assigns number-decimal-number to this 4-byte field.

*Note: Any new release of address-matching software must include a new version number. All new releases require CASS certification.*

### Field B

Contains the software revision number. The manufacturer assigns decimal-number-decimal to this 3-byte field. If an existing address-matching software product is modified or updated, the revision number must be updated. All changes must be reported to the CASS Department in writing prior to release. The CASS staff will evaluate the change to determine whether the version requires recertification.

### Field C

Contains the cycle indicator. The CASS Department assigns the indicator each year and sends out written notification before certification testing begins each January. This 2-byte field contains a decimal and the letter "I."

### Field D

Contains the manufacturer number. This field may be used by the manufacturer to indicate internal tracking information such as bimonthly database releases, which will not be published in the *CASS Certified Product Guide*.

*Note: If Field D is used to indicate database release dates, the USPS recommends using a 2-byte number to indicate the year followed by a decimal and another 2-byte number to indicate the month.*



---

# **Appendix 3**

## **Translation of Error Codes and Flags**



**US Postal Service's National Customer Support Center Coding Accuracy Support System  
Customer No Match Record Translation of Error Codes & Special Flags**

All categories except L are required. Address-matching software must obtain a minimum accuracy rate of 98% in each required category to obtain CASS Certification

<p align="center"><b>Error Codes</b></p> <p>01 5-digit ZIP not match                  02 ZIP+4 not match                  03 Carrier ID not match                  04 City name not match                  05 State abbreviation not match                  06 Out of range                  07 Address is non-deliverable                  08 Unique ZIP Code not finest level of code                  09 LACS indicator                  10 Perfect address                  11 General standardization error                  12 LOT sequence                  13 LOT A/D code                  14 RDI                  15 Fatal Error                  19 Incorrect delivery point barcode (Non-Fatal)                  20 Incorrect delivery point barcode                  21 PMB                  22 Default flag error/Record type error                  30 History</p>
<p align="center"><b>Record Type</b></p> <p>S Street                  P PO Box                  R Rural Route                  H Highrise                  F Firm                  G General Delivery</p>
<p align="center"><b>Standard Address with Elements (Spelled out or Abbreviated)</b></p> <p>AA Firm Name - Abbreviation                  AB Firm Name - Noise words                  AC Firm Name - Address similar to firm name                  AD Firm Name - Swap firm name and Address field                  AE Normalized street name                  AF Street Name - Spelling variation                  A0 5-digit                  A1 Dropped 5-digit                  A4 5-digit with non-mailing name                  A5 Dropped 5-digit with non-mailing name                  A8 5digit misspelled city                  * A9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Standard Address (Includes Reversed Alphanumeric Primary/Secondary Numbers, Reversed Pre/Post Directionals, and Secondary Number Combined with Primary Number)</b></p> <p>B0 5-digit                  B1 Dropped 5-digit                  * B2 5-digit with misspelled street                  * B3 Dropped 5-digit with misspelled street                  B4 5-digit with non-mailing name                  B5 Dropped 5-digit with non-mailing name                  * B6 5-digit with misspelled street and non-mailing name                  * B7 Dropped 5-digit with misspelled street and non-mailing name                  B8 5-digit with misspelled city                  * B9 Dropped 5-digit with misspelled city                  BE Normalized street names</p>

<p align="center"><b>Standard Address with Post-Directional Dropped or Incorrect</b></p> <p>CC Post-directional changed to a non-cardinal directional - no match                  C0 5-digit                  C1 Dropped 5-digit                  * C2 5-digit with misspelled street                  * C3 Dropped 5-digit with misspelled street                  C4 5-digit with non-mailing name                  C5 Dropped 5-digit with non-mailing name                  * C6 5-digit with misspelled street and non-mailing name                  * C7 Dropped 5-digit with misspelled street and non-mailing name                  C8 5-digit with misspelled city                  * C9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Standard Address with Pre-Directional Dropped or Incorrect</b></p> <p>DC Pre-directional changed to a non-cardinal directional - no match                  D0 5-digit                  D1 Dropped 5-digit                  * D2 5-digit with misspelled street                  * D3 Dropped 5-digit with misspelled street                  D4 5-digit with non-mailing name                  D5 Dropped 5-digit with non-mailing name                  * D6 5-digit with misspelled street and non-mailing name                  * D7 Dropped 5-digit with misspelled street and non-mailing name                  D8 5-digit with misspelled city                  * D9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Standard Address with Suffix Dropped</b></p> <p>E0 5-digit                  E1 Dropped 5-digit                  * E2 5-digit with misspelled street                  * E3 Dropped 5-digit with misspelled street                  E4 5-digit with non-mailing name                  E5 Dropped 5-digit with non-mailing name                  * E6 5-digit with misspelled street and non-mailing name                  * E7 Dropped 5-digit with misspelled street and non-mailing name                  E8 5-digit with misspelled city                  * E9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Dual Address</b></p> <p>F0 Street address                  F1 Box record                  F4 Street address with non-mailing name                  F8 Street address with misspelled city                  F9 Box record with misspelled city</p>
<p align="center"><b>Aliases</b></p> <p>G0 5-digit - Base                  G1 5-digit - Alias                  G2 Dropped 5-digit - Base                  G3 Dropped 5-digit - Alias                  ** G4 5-digit - Out of range</p>

<p align="center"><b>Alias/Mult Response</b></p> <p>** H0 5-digit - Base                  ** H1 5-digit - Alias</p>
<p align="center"><b>Small Town Default</b></p> <p>I0 Exist in ZIP+4                  ** I1 No match in ZIP+4 P&amp;G records exist                  I2 General Delivery match in ZIP+4/ G rec only                  ** I3 No match in ZIP+4/City State</p>
<p align="center"><b>Last Line</b></p> <p>JA Input city/ZIP Code correspond; exact match in ZIP Code                  JB Input city/ZIP Code correspond; Input City is non-mailing name, exact match in ZIP Code                  JC Input city/ZIP Code don't correspond; inexact match in ZIP Code                  JD Input city/ZIP Code don't correspond; inexact match in city                  JE Input city equals 5-digit PLL, ZIP+4 PLL is different                  JI Input city/ZIP Code don't correspond; best candidate is inexact match in finance number, but not in either City or ZIP Code. No Match.                  J0 5-digit                  J1 Dropped 5-digit                  * J2 5-digit with misspelled street                  * J3 Dropped 5-digit with misspelled street                  J4 5-digit with dropped component                  J5 Dropped 5-digit and component                  * J6 5-digit with dropped component and misspelled street                  * J7 Dropped 5-digit and component with misspelled street                  J8 5-digit with misspelled city                  * J9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Multiple Response*</b></p> <p>** K0 5-digit                  ** K1 Dropped 5-digit                  ** K2 5-digit with misspelled street                  ** K3 Dropped 5-digit with misspelled street                  ** K4 5-digit with dropped or incorrect component                  ** K5 Dropped 5-digit and/or incorrect component                  ** K6 5-digit with dropped/incorrect component &amp; misspelled street                  ** K7 Dropped 5-digit and/or incorrect component with misspelled street                  ** K8 5-digit with misspelled city                  ** K9 Dropped 5-digit with misspelled city</p>
<p align="center"><b>Inexact/Questionable Matching Logic</b></p> <p>* L0 5-digit                  * L1 Dropped 5-digit</p>
<p align="center"><b>Key Elements Also Known As</b></p> <p>**** MA Out of range - no match                  M0 With 5-digit                  M1 Dropped 5-digit                  M8 5-digit with misspelled city                  M9 Dropped 5-digit with misspelled city</p>
<p>* No answer will be bypassed                  ** Return input record (Unless using DPV to break the tie)                  *** No grading for standardization                  **** Normalization required                  + Double penalty                  ++ DPV Tiebreaker</p>

## Customer No Match Record Translation of Error Codes & Special Flags (cont.)

<b>*** NDF Position Error</b>
N0 5-digit N1 Dropped 5-digit
<b>Extra Information</b>
O0 5-digit O1 Dropped 5-digit O2 PMB on address line O3 PMB on secondary address line O4 Valid Secondary with '#' sign; exact match O5 PMB number is a valid PO Box Number - no match O6 Invalid secondary with '#' sign; default match O7 Double '#' signs at the end of address line – invalid O8 Double '#' signs at the end of address line, one valid value, one invalid value
<b>Seattle Syndrome</b>
P0 5-digit P1 Dropped 5-digit
<b>*** Salt Lake Syndrome</b>
Q0 5-digit Q1 Dropped 5-digit
<b>ZIP Correction</b>
R0 Incorrect 5-digit within finance no. R1 Invalid 5-digit R2 Incorrect 5-digit within finance no. and incorrect +4 R4 Incorrect 5-digit within finance no. and blank city/state R5 Incorrect 5-digit not within finance no.
<b>Highrise Default or Delivery Point Alternate</b>
S0 With 5-digit S4 With 5-digit highrise S5 "Chase the Base" – Delivery point alternate on input, return high-rise exact ** S6 With 5-digit highrise multiple
<b>Hyphenated Ranges</b>
T1 Numeric alpha no match to numeric/numeric alpha exists T2 Alphanumeric/numeric alpha-transpose to make match T3 Delete hyphen T4 Add hyphen T5 Secy alphanumeric insert hyphen and transpose – default T6 Add alpha to match to numeric range only ** T7 Add double alphas and validate no match to numeric ** T8 Transpose alpha to beginning/no match to numeric range * TA Recombine hyphenated trailing primary alpha with secondary number * TB Recombine non-hyphenated trailing primary alpha with secondary number * TC Recombine hyphenated trailing primary numeric with secondary number * TD Recombine hyphenated trailing alphanumeric/numeric alpha with secondary number * TE Recombine secondary values into one; exact match only
<b>APO / FPO</b>
UA Bad org info in address line without ZIP Code UB Out of range records for PSC box numbers U0 Clean military addresses with 5-digit U1 Reversed box/PSC number with ZIP Code U2 Reversed box/PSC number without ZIP Code

U3 Good address/ZIP Code with invalid city name *** U4 PSC box turned into PO Box with ZIP Code ** U5 Missing PSC, CMR, unit number with good box number U6 Good military address with invalid ZIP Code U7 Bad org info in Firm Name field with good ZIP Code U8 Bad org info in Firm Name field without ZIP Code U9 Bad org info in address line with ZIP Code
<b>Delivery Address Line</b>
** V0 Contains firm name ** V1 Contains highrise name
<b>Multiple Finance Number Matching</b>
** W0 Multiple response within finance no. - dropped 5-digit W1 Single response within finance no.- dropped 5-digit W2 Altered street name * W3 No correlation between city and ZIP Code - match in ZIP Code ** W4 City and ZIP Code from different finance numbers ** W5 State does not agree with ZIP Code
<b>Highrise</b>
X0 With a firm suite number * X2 With misspelled street X8 With a firm suite number and misspelled city
<b>Split/Combined Elements</b>
Y0 Combine pre-directional with street name Y1 Split pre-directional words off street name Y2 Split suffix words off street name Y3 Drop suffix words off multi-word street names Y4 Combine suffix with street name Y5 Shift street name to pre-directional suffix to street name
<b>ZIPMove</b>
Z0 Valid match in new finance number/Match. Z1 Invalid match in ZIPMove/No Match. Z2 Valid ZIPMove match; invalid in new finance number/No Match.
<b>Out of Range/Overlapping</b>
** 10 Bad PO Box for finance no./ZIP 11 Overlapping PO Box ranges/return lowest ZIP+4 ** 15 Bad rural route for finance no./ZIP ** 20 Invalid primary number 21 Invalid secondary number 22 "EWS" No match; Input is an exact match to an EWS record
<b>Unique ZIP Codes</b>
4A Valid city and ZIP Code 4B Valid city and ZIP Code with valid add-on (match) 4C Valid city and ZIP Code - default match 4D Valid city and ZIP code with add-on (retain ZIP+4) 4E No correlation between city and ZIP Code; match to city ** 4F No correlation between city and ZIP Code (no match; delete ZIP Code) 4G Input address line taken from unique ZIP+4 record, match into non-unique

<b>Puerto Rico</b>
** 5A Missing noise URB - end address/multiple with valid or invalid URB 5B Drop or abbreviate leading suffix 5C Alpha or numeric - end address 5D Numeric house number - end address preceded by "#," "No.," or "Num" 5E Alphanumeric house number - end address preceded by "Blq" 5F Alphanumeric house number - begin/end address space alphanumeric 5G Alphanumeric house number - begin/end address hyphen alphanumeric 5H Hyphen house number/"Blq" and "Casa," "Blq" and "#" ** 5J Address contains standalone word "Buzon" (no normalization) * 5K No URB input - Match to address with blank URB 51 No URB input - single response ** 52 No URB input - multiple response 53 Valid URB on input - single response with valid/invalid URB ** 54 Valid URB on input - multiple response with valid/invalid URB 55 Missing noise URB - single response with valid/invalid URB ** 56 Missing noise URB-multiple response with valid/ invalid URB 57 Valid URB end address-single response with valid or invalid URB ** 58 Valid URB end address - multiple response with valid or invalid URB 59 Missing URB noise end address - single valid/invalid URB
<b>Magnet Streets With Multiple Parse Variations</b>
** 6E Parsed street name or ZIP+4 street name contains directional or suffix 6F Variation in directional or suffix presentation 6G Suffix or directional dropped 6H Street name incorrectly split into multiple words 6K Trailing numeric/alpha value following a valid suffix
<b>Multiple Address Lines and Perfect Addresses</b>
7A Address line split between two lines 70 Perfect address * 7B Multiple field addresses with split-indicia
* No answer will be bypassed ** Return input record (Unless using DPV to break the tie) *** No grading for standardization **** Normalization required + Double penalty

---

# **Appendix 4**

## **Sample Statistical & Error Message Summaries**



US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM  
 NATIONAL CUSTOMER SUPPORT CENTER  
 CASS STATISTICAL SUMMARY

CUSTOMER NAME: U S P S  
 CUSTOMER IDENTIFICATION: 00826GME0  
 STAGE: NATIONAL

	ZIP+4				CARRIER ROUTE				5-DIGIT			
	ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WITH PENALTIES ASSESSED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WITH PENALTIES ASSESSED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WITH PENALTIES ASSESSED	
	TOTAL	PERCENT	TEST	VENDOR	TOTAL	PERCENT	TEST	VENDOR	TOTAL	PERCENT	TEST	VENDOR
CORRECTLY CODED ADDRESSES	98,938	98.927%			99,004	98.995%			99,309	99.306%		
INCORRECTLY CODED ADDRESSES	1,061	1.073%	12		995	1.005%	10		690	0.694%	4	
RECORDS BYPASSED	1	0.000%			1	0.000%			1	0.000%		
TOTAL ADDRESSES	100,000				100,000				100,000			

	DPBC		ELOT		PERFECT ADDRESS		DPV BASIC		RDI		FATAL ADDON	
	ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED	
	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT
CORRECTLY CODED ADDRESSES	99,041	99.667%	96,442	99.487%	1,503	100.000%	88,702	99.467%	99,999	99.999%	100,000	100.000%
INCORRECTLY CODED ADDRESSES	331	0.333%	497	0.513%	0	0.000%	475	0.533%	1	1.000%	0	0.000%
RECORDS BYPASSED	628	0.000%	3,061	0.000%	0	0.000%	10,823	0.000%	0	0.000%	0	0.000%
TOTAL ADDRESSES	100,000		100,000		1,503		100,000		100,000		100,000	

ERROR CODES			
01 5-DIGIT ZIP	06 OUT OF RANGE	11 GENERAL STANDARDIZATION	19 DPBC (NON-FATAL)
02 ZIP+4	07 ADDRESS NON-DELIVERABLE	12 ELOT SEQUENCE	20 DPBC
03 CARRIER ID	08 UNIQUE NOT FINEST OF CODE	13 ELOT ASC/DES	21 PMB PARSE
04 CITY NAME	09 LACS INDICATOR	14 RDI	22 DEFAULT FLAG
05 STATE ABBREVIATION	10 PERFECT ADDRESS	15 FATAL ADDON	30 HISTORY PENALTY

ADDRESSES WHICH ARE GRADED & SCORED

CATEGORY	TOTAL ADDRESSES	ZIP+4			CARRIER ROUTE			5 DIGIT		
		TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT	TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT	TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT
A	6,738	6,643	95	98.590%	6,685	53	99.213%	6,722	16	99.762%
B	5,319	5,307	12	99.774%	5,310	9	99.830%	5,314	5	99.905%
C	5,450	5,411	39	99.284%	5,405	45	99.174%	5,438	12	99.779%
D	5,281	5,258	23	99.564%	5,251	30	99.431%	5,266	15	99.715%
E	4,500	4,480	20	99.555%	4,474	26	99.422%	4,490	10	99.777%
G	3,250	3,225	25	99.230%	3,223	27	99.169%	3,233	17	99.476%
H	1,808	1,808	0	100.000%	1,808	0	100.000%	1,808	0	100.000%
I	2,883	2,854	29	98.994%	2,854	29	98.994%	2,882	1	99.965%
J	3,346	3,329	17	99.491%	3,329	17	99.491%	3,338	8	99.760%
K	3,333	3,325	8	99.519%	3,330	3	99.819%	3,332	1	99.939%
L	1,500	1,500	0	100.000%	1,500	0	100.000%	1,500	0	100.000%
M	3,500	3,470	30	99.142%	3,472	28	99.200%	3,475	25	99.285%
N	902	901	1	99.889%	902	0	100.000%	902	0	100.000%
O	5,840	5,815	25	99.571%	5,806	34	99.417%	5,827	13	99.777%
P	186	186	0	100.000%	186	0	100.000%	186	0	100.000%
Q	1,500	1,500	0	100.000%	1,487	13	99.133%	1,500	0	100.000%
R	3,248	3,223	25	99.230%	3,223	25	99.230%	3,223	25	99.230%
S	2,579	2,504	75	97.091%	2,517	62	97.595%	2,565	14	99.457%
T	4,078	4,055	23	99.435%	4,059	19	99.534%	4,060	18	99.558%
U	4,080	4,053	27	99.338%	4,056	24	99.411%	4,075	5	99.877%
V	1,510	1,509	1	99.933%	1,509	1	99.933%	1,510	0	100.000%
W	3,000	2,978	22	99.266%	2,984	16	99.466%	2,996	4	99.866%
X	2,400	2,393	7	99.708%	2,394	6	99.750%	2,400	0	100.000%
Y	3,600	3,585	15	99.583%	3,585	15	99.583%	3,595	5	99.861%
Z	1,429	1,419	10	99.300%	1,419	10	99.300%	1,421	8	99.440%
1	2,235	2,231	4	99.821%	2,235	0	100.000%	2,235	0	100.000%
2	1,894	1,884	10	99.472%	1,882	12	99.366%	1,892	2	99.894%
4	3,672	3,660	12	99.673%	3,660	12	99.673%	3,662	10	99.727%
5	7,024	6,899	124	98.234%	6,901	122	98.262%	7,008	16	99.772%
6	2,704	2,671	33	98.779%	2,688	16	99.408%	2,698	6	99.778%
7	1,211	1,211	0	100.000%	1,211	0	100.000%	1,211	0	100.000%
TOTAL	100,000	99,287	712	0.000%	99,345	654	0.000%	99,764	236	0.000%

UNITED STATES POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM  
 NATIONAL CUSTOMER SUPPORT CENTER  
 CASS STATISTICAL SUMMARY  
 ERROR MESSAGE SUMMARY

**GRADED & SCORED ONLY**

CATEGORY	TOTAL ADDRESSES	1 ZIPCODE NOT MATCH	2 ZIP4 NOT MATCH	3 CARR ID NOT MATCH	4 CITY NOT MATCH	5 STATE NOT MATCH	6 OUT OF RANGE
A	6,738	0	79	37	83	0	0
B	5,319	4	11	8	69	0	0
C	5,450	8	35	41	66	0	0
D	5,281	5	13	20	167	0	0
E	4,500	4	14	20	161	0	0
G	3,250	2	10	12	0	0	0
H	1,808	0	0	0	0	0	0
I	2,883	0	28	28	0	0	0
J	3,346	5	14	14	0	0	0
K	3,333	1	8	3	0	0	0
L	1,500	0	0	0	0	0	0
M	3,500	1	6	4	0	0	0
N	902	0	1	0	0	0	0
O	5,840	0	12	21	0	0	0
P	186	0	0	0	0	0	0
Q	1,500	0	0	13	0	0	0
R	3,248	2	2	2	14	0	0
S	2,579	3	64	51	0	0	0
T	4,078	0	5	1	0	0	0
U	4,080	4	26	23	0	0	0
V	1,510	0	1	1	0	0	0
W	3,000	4	22	16	0	0	0
X	2,400	0	7	6	0	0	0
Y	3,600	2	12	12	28	0	0
Z	1,429	8	10	10	0	0	0
1	2,235	0	4	0	0	0	0
2	1,894	2	10	12	0	0	0
4	3,672	6	8	8	0	0	0
5	7,024	1	109	107	0	0	0
6	2,704	5	32	15	0	0	0
7	1,211	0	0	0	0	0	0
TOTAL	100,000	67	543	485	588	0	0

UNITED STATES POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM  
 NATIONAL CUSTOMER SUPPORT CENTER  
 CASS STATISTICAL SUMMARY  
 ERROR MESSAGE SUMMARY

**GRADED & SCORED ONLY**

CATEGORY	TOTAL ADDRESSES	9 LACS INDICATOR	10 PERFECT ADDRESS	11 GENERAL STANDARD ERROR	12 INCORRECT ELOT-SEQ #	13 INCORRECT ELOT-ASC-DEC	
A	6,738	0	0	16	0	0	
B	5,319	0	0	1	0	0	
C	5,450	0	0	4	0	0	
D	5,281	0	0	10	0	0	
E	4,500	0	0	6	0	0	
G	3,250	0	0	15	0	0	
H	1,808	0	0	0	0	0	
I	2,883	0	0	1	0	0	
J	3,346	0	0	3	0	0	
K	3,333	0	0	0	0	0	
L	1,500	0	0	0	0	0	
M	3,500	0	0	24	0	0	
N	902	0	0	0	0	0	
O	5,840	0	0	13	3	0	
P	186	0	0	0	0	0	
Q	1,500	0	0	0	0	0	
R	3,248	0	0	23	0	0	
S	2,579	0	0	11	0	0	
T	4,078	0	0	18	2	0	
U	4,080	0	0	1	0	0	
V	1,510	0	0	0	0	0	
W	3,000	0	0	0	0	0	
X	2,400	0	0	0	0	0	
Y	3,600	0	0	3	0	0	
Z	1,429	0	0	0	0	0	
1	2,235	0	0	0	0	0	
2	1,894	0	0	0	0	0	
4	3,672	0	0	3	0	0	
5	7,024	4	0	5	0	0	
6	2,704	0	0	1	0	0	
7	1,211	0	0	0	0	0	
TOTAL	100,000	4	0	158	5	0	

UNITED STATES POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM  
 NATIONAL CUSTOMER SUPPORT CENTER  
 CASS STATISTICAL SUMMARY  
 ERROR MESSAGE SUMMARY

GRADED & SCORED ONLY

CATEGORY	TOTAL ADDRESSES	17 INCORRECT SECONDARY UNIT	19 INCORRECT DPBC NON-FATAL	20 INCORRECT DPBC	21 INCORRECT PMB PARSE	22 INCORRECT DEFAULT FLAG	30 HISTORY PENALTY
A	6,738	0	0	0	0	12	0
B	5,319	0	0	0	0	0	0
C	5,450	0	0	0	0	0	0
D	5,281	0	0	0	0	0	0
E	4,500	0	0	0	0	1	0
G	3,250	0	0	0	0	0	0
H	1,808	0	0	0	0	0	0
I	2,883	0	0	0	0	1	0
J	3,346	0	0	0	0	3	0
K	3,333	0	0	0	0	0	0
L	1,500	0	0	0	0	0	0
M	3,500	0	0	0	0	24	0
N	902	0	0	0	0	0	0
O	5,840	0	0	0	10	3	0
P	186	0	0	0	0	0	0
Q	1,500	0	0	0	0	0	0
R	3,248	0	0	0	0	23	0
S	2,579	0	0	0	0	0	0
T	4,078	0	1	0	0	3	0
U	4,080	0	0	0	0	0	0
V	1,510	0	0	0	0	0	0
W	3,000	0	0	0	0	0	0
X	2,400	0	0	0	0	0	0
Y	3,600	0	0	0	0	0	0
Z	1,429	0	0	0	0	0	0
1	2,235	0	0	0	0	0	0
2	1,894	0	0	0	0	0	0
4	3,672	0	0	1	0	3	0
5	7,024	0	0	6	0	0	0
6	2,704	0	0	0	0	0	0
7	1,211	0	0	0	0	0	0
TOTAL	100,000	0	1	7	10	73	0



---

# **Appendix 5**

## **DPV–Delivery Point Validation**

### **DSF<sup>2</sup>–Second Generation Delivery Sequence File**



## Data Element Definitions

**Test Address Data Element Definitions** DPV/DSF<sup>2</sup> fields are populated by software that is licensed, or is in the process of applying for a license, to perform DPV/DSF<sup>2</sup> Confirmation. For more details, see DPV/DSF<sup>2</sup> Licensing materials.

### DPV Confirmation Indicator

Field Description: Field contains the results of the call to the DPV Confirmation Hash Table: dph.hsa

Y = Address was DPV confirmed for both primary and (if present) secondary numbers.

D = Address was DPV confirmed for the primary number only, and Secondary number information was missing.

S = Address was DPV confirmed for the primary number only, and Secondary number information was present but unconfirmed.

N = Both Primary and (if present) Secondary number information failed to DPV Confirm.

Blank = Address not presented to hash table.

### DPV CMRA Indicator

Field Description: Field contains the results of the call to the DPV CMRA Hash Table: dph.hsc

Y = Address was found in CMRA table.

N = Address was not found in CMRA table.

Blank = Address not presented to hash table.

### DPV False Positive Indicator

Field Description: Field contains the results of the call to the DPV False Positive Hash Table: dph.hsf

Y = Address was found in False Positive table.

N = Address was not found in False Positive table.

Blank = Address not presented to hash table.

### DSF<sup>2</sup> Delivery Type

Field Description: Field contains the results of the call to the DPV Delivery Type Hash Tables: dph.hs1, dph.hs2, dph.hs3, and dph.hs4. When a 'Y' is returned from one of these tables, software must indicate which table in which the address was found.

1 = Address was found in CURB table: dph.hs1.

2 = Address was found in NDCBU table: dph.hs2.

3 = Address was found in CENTRALIZED table: dph.hs3.

4 = Address was found in OTHER(DOOR SLOT) table: dph.hs4

Blank = Address not presented to hash tables.

### **DSF<sup>2</sup> No Stats Indicator**

Field Description: Field contains the results of the call to the DPV NOSTATS Hash Table: dph.hsx  
Y = Address was found in NOSTATS table.  
N = Address was not found in NOSTATS table.  
Blank = Address not presented to hash table.

### **DSF<sup>2</sup> Business Indicator**

Field Description: Field contains the results of the call to the DPV BUSINESS Hash Table: dph.hsb  
Y = Address was found in BUSINESS table.  
N = Address was not found in BUSINESS table.  
Blank = Address not presented to hash table.

### **DSF<sup>2</sup> Drop Indicator**

Field Description: Field contains the results of the call to the DPV DROP Hash Table (dph.hsd)  
Y = Address was found in DROP table.  
N = Address was not found in DROP table.  
Blank = Address not presented to hash table.

### **DSF<sup>2</sup> Drop Count**

Field Description: Field contains the results of the call to the DPV DROP COUNT Hash Table: dph.hsk  
000 thru 999 Three Digit count found in DPV DROP COUNT table.  
Blank = Address not presented to hash table.

### **DSF<sup>2</sup> Throwback Indicator**

Field Description: This field contains the results of the call to the DPV THROWBACK Hash Table: dph.hst  
Y = Address was found in THROWBACK table.  
N = Address was not found in THROWBACK table.  
Blank = Address not presented to hash table.

**DSF<sup>2</sup> Seasonal Indicator**

Field Description: Field contains the results of the call to the DPV SEASONAL Hash Table: dph.hss  
Y = Address was found in SEASONAL table.  
N = Address was not found in SEASONAL table.  
Blank = Address not presented to hash table.

**DSF<sup>2</sup> Vacant Indicator**

Field Description: Field contains the results of the call to the DPV VACANT Hash Table: dph.hsv  
Y = Address was found in VACANT table.  
N = Address was not found in VACANT table.  
Blank = Address not presented to hash table.

**DSF<sup>2</sup> LACS Indicator**

Field Description: Field contains the results of the call to the DPV LACS Hash Table: dph.hsl  
Y = Address was found in LACS table.  
N = Address was not found in LACS table.  
Blank = Address not presented to hash table.

**DSF<sup>2</sup> Footnote 1 through DSF<sup>2</sup> Footnote 6**

Fields are used to return one or more footnotes that must be set in accordance with DSF<sup>2</sup> License requirements. For footnote flag values, see DPV/DSF<sup>2</sup> Licensing materials.

**DSF<sup>2</sup> Primary Number Error Flag**

Field Description: Y = Address had a Primary Number error.  
N or Blank = Address did not have a Primary Number error.

**DSF<sup>2</sup> Secondary Number Error Flag**

Field Description: Y = Address had a Primary Number error.  
N or Blank = Address did not have a Primary Number error.

## DSF<sup>2</sup> Header Records

### DSF<sup>2</sup> Header Record 1

The DSF<sup>2</sup> header record 1 contains information about the license and their customer.

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	3	001	003
2	DSF <sup>2</sup> Header ID, must be DSF1	4	004	007
3	DSF <sup>2</sup> Licensee Name	40	008	047
4	DSF <sup>2</sup> License Number	4	048	051
5	DSF <sup>2</sup> Report Date – YYYYMMDD	8	052	059
6	DSF <sup>2</sup> File Received Date – YYYYMMDD	8	060	067
7	DSF <sup>2</sup> File Processed Date – YYYYMMDD	8	068	075
8	DSF <sup>2</sup> Access Mode	1	076	076
9	Filler	2	077	078
10	DSF <sup>2</sup> Customer Name	40	079	118
11	DSF <sup>2</sup> Customer Tax ID Number	12	119	130
12	DSF <sup>2</sup> Customer SIC	6	131	136
13	DSF <sup>2</sup> Customer Number	6	137	142
14	Filler	458	143	600

## DSF<sup>2</sup> Header Record 2

The DSF<sup>2</sup> header records 1 and 2 contain counts for records that were ZIP + 4 coded and flagged for LACS conversions, along with these counts tallied by ZIP + 4 record type. In addition, there are counts, broken down by ZIP + 4 record type, for records that were presented to each of the DPV hash tables, as well as counts of matches to each of the hash tables.

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	3	001	003
2	DSF <sup>2</sup> Header ID, must be <b>DSF2</b>	4	004	007
3	Total Records Presented	9	008	016
4	Total LACS	9	017	025
5	Total Records ZIP + 4 Coded	9	026	034
6	Total Street Records ZIP + 4 Coded	9	035	043
7	Total Street Records LACS	9	044	052
8	Total Highrise Records ZIP + 4 Coded	9	053	061
9	Total Highrise Records LACS	9	062	070
10	Total POBOX Records ZIP + 4 Coded	9	071	079
11	Total POBOX Records LACS	9	080	088
12	Total RR Records ZIP + 4 Coded	9	089	097
13	Total RR Records LACS	9	098	106
14	Total Firm Records ZIP + 4 Coded	9	107	115
15	Total General Delivery Records ZIP + 4 Coded	9	116	124
16	Total Records DPV Validated	9	125	133
17	Total Street Records DPV Validated	9	134	142
18	Total Street Records Presented to CMRA	9	143	151
19	Total Street Records CMRA Validated	9	152	160
20	Total Street Records Presented to DROP	9	161	169
21	Total Street Records DROP Validated	9	170	178
22	Total Street Records Presented to BUSINESS	9	179	187
23	Total Street Records BUSINESS Validated	9	188	196
24	Total Street Records Pres to THROWBACK	9	197	205
25	Total Street Records THROWBACK Validated	9	206	214
26	Total Street Records Presented to SEASONAL	9	215	223
27	Total Street Records SEASONAL Validated	9	224	232
28	Total Street Records Presented to VACANT	9	233	241
29	Total Street Records VACANT Validated	9	242	250
30	Total Street Records Pres to CURB	9	251	259

## DSF2 Header Records

Field Sequence Number	Field Description	Length	Position From/Through	
31	Total Street Records CURB Validated	9	260	268
32	Total Street Records Pres to NDCBU	9	269	277
33	Total Street Records NDCBU Validated	9	278	286
34	Total Street Records Pres to CENTRALIZED	9	287	295
35	Total Street Records CENTRALIZED Validated	9	296	304
36	Total Street Records Pres to OTHER	9	305	313
37	Total Street Records OTHER Validated	9	314	322
38	Total Street Records Pres to NOSTAT	9	323	331
39	Total Street Records NOSTAT Validated	9	332	340
40	Total Highrise Records DPV Validated	9	341	349
41	Total Highrise Records Presented to CMRA	9	350	358
42	Total Highrise Records CMRA Validated	9	359	367
43	Total Highrise Records Presented to DROP	9	368	376
44	Total Highrise Records DROP Validated	9	377	385
45	Total Highrise Records Presented to BUSINESS	9	386	394
46	Total Highrise Records BUSINESS Validated	9	395	403
47	Total Highrise Records Pres to THROWBACK	9	404	412
48	Total Highrise Records THROWBACK Validated	9	413	421
49	Total Highrise Records Presented to SEASONAL	9	422	430
50	Total Highrise Records SEASONAL Validated	9	431	439
51	Total Highrise Records Presented to VACANT	9	440	448
52	Total Highrise Records VACANT Validated	9	449	457
53	Total Highrise Records Pres to CURB	9	458	466
54	Total Highrise Records CURB Validated	9	467	475
55	Total Highrise Records Pres to NDCBU	9	476	484
56	Total Highrise Records NDCBU Validated	9	485	493
57	Total Highrise Records Pres to CENTRALIZED	9	494	502
58	Total Highrise Records CENTRALIZED Validated	9	503	511
59	Total Highrise Records Pres to OTHER	9	512	520
60	Total Highrise Records OTHER Validated	9	521	529
61	Total Highrise Records Pres to NOSTAT	9	530	538
62	Total Highrise Records NOSTAT Validated	9	539	547
63	Filler	53	548	600

DSF<sup>2</sup>  
Header Record 3

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	3	001	003
2	DSF <sup>2</sup> Header ID, must be <b>DFS3</b>	4	004	007
3	Total POBOX Records DPV Validated	9	008	016
4	Total POBOX Records Presented to BUSINESS	9	017	025
5	Total POBOX Records BUSINESS Validated	9	026	034
6	Total POBOX Records Presented to VACANT	9	035	043
7	Total POBOX Records VACANT Validated	9	044	052
8	Total RR Records DPV Validated	9	053	061
9	Total RR Records Presented to CMRA	9	062	070
10	Total RR Records CMRA Validated	9	071	079
11	Total RR Records Presented to DROP	9	080	088
12	Total RR Records DROP Validated	9	089	097
13	Total RR Records Presented to BUSINESS	9	098	106
14	Total RR Records BUSINESS Validated	9	107	115
15	Total RR Records Pres to THROWBACK	9	116	124
16	Total RR Records THROWBACK Validated	9	125	133
17	Total RR Records Presented to SEASONAL	9	134	142
18	Total RR Records SEASONAL Validated	9	143	151
19	Total RR Records Presented to VACANT	9	152	160
20	Total RR Records VACANT Validated	9	161	169
21	Total RR Records Pres to CURB	9	170	178
22	Total RR Records CURB Validated	9	179	187
23	Total RR Records Pres to NDCBU	9	188	196
24	Total RR Records NDCBU Validated	9	197	205
25	Total RR Records Pres to CENTRALIZED	9	206	214
26	Total RR Records CENTRALIZED Validated	9	215	223
27	Total RR Records Pres to OTHER	9	224	232
28	Total RR Records OTHER Validated	9	233	241
29	Total RR Records Pres to NOSTAT	9	242	250
30	Total RR Records NOSTAT Validated	9	251	259
31	Total Firm Records DPV Validated	9	260	268
32	Total Firm Records Presented to CMRA	9	269	277

## DSF2 Header Records

Field Sequence Number	Field Description	Length	Position From/Through	
33	Total Firm Records CMRA Validated	9	278	286
34	Total Firm Records Presented to DROP	9	287	295
35	Total Firm Records DROP Validated	9	296	304
36	Total Firm Records Presented to BUSINESS	9	305	313
37	Total Firm Records BUSINESS Validated	9	314	322
38	Total Firm Records Pres to THROWBACK	9	323	331
39	Total Firm Records THROWBACK Validated	9	332	340
40	Total Firm Records Presented to SEASONAL	9	341	349
41	Total Firm Records SEASONAL Validated	9	350	358
42	Total Firm Records Presented to VACANT	9	359	367
43	Total Firm Records VACANT Validated	9	368	376
44	Total Firm Records Pres to CURB	9	377	385
45	Total Firm Records Curb Validated	9	386	394
46	Total Firm Records Pres to NDCBU	9	395	403
47	Total Firm Records NDCBU Validated	9	404	412
48	Total Firm Records Pres to CENTRALIZED	9	413	421
49	Total Firm Records CENTRALIZED Validated	9	422	430
50	Total Firm Records Pres to OTHER	9	431	439
51	Total Firm Records OTHER Validated	9	440	448
52	Total Firm Records Pres to NOSTAT	9	449	457
53	Total Firm Records NOSTAT Validated	9	458	466
54	Total GENDEL Records DPV Validated	9	467	475
55	Total Records with Primary Number Errors	9	476	484
56	Total Street Records with Primary Num Errors	9	485	493
57	Total Highrise Records with Primary Num Errors	9	494	502
58	Total POBOX Records with Primary Num Errors	9	503	511
59	Total RR Records with Primary Num Errors	9	512	520
60	Total Firm Records with Primary Num Errors	9	521	529
61	Total Records with Secondary Number Errors	9	530	538
62	Total Street Records w/Secondary Num Errors	9	539	547
63	Total Highrise Records w/Secondary Num Errors	9	548	556
64	Total Firm Records w/Secondary Num Errors	9	557	565
65	Total Records FALSE POSITIVE Validated	9	566	574
66	Filler	26	575	600

## CASS Electronic Report Record DPV/DSF<sup>2</sup> Addendum

Field Sequence Number	Field Description	Length	Position From/Through	
52	Standard DPV Confirm Indicator	1	701	701
53	Standard DPV CMRA Indicator	1	702	702
54	Standard DPV False Positive Indicator	1	703	703
55	Standard DSF <sup>2</sup> Delivery Type	1	704	704
56	Standard DSF <sup>2</sup> No Stats Indicator	1	705	705
57	Standard DSF <sup>2</sup> Business Indicator	1	706	706
58	Standard DSF <sup>2</sup> Drop Indicator	1	707	707
59	Standard DSF <sup>2</sup> Drop Count	3	708	710
60	Standard DSF <sup>2</sup> Throwback Indicator	1	711	711
61	Standard DSF <sup>2</sup> Seasonal Indicator	1	712	712
62	Standard DSF <sup>2</sup> Vacant Indicator	1	713	713
63	Standard DPV Footnote 1	2	714	715
64	Standard DPV Footnote 2	2	716	717
65	Standard DSF <sup>2</sup> Primary Number Error Flag	1	718	718
66	Standard DSF <sup>2</sup> Secondary Number Error Flag	1	719	719
67	Customer DPV Confirm Indicator	1	720	720
68	Customer DPV CMRA Indicator	1	721	721
69	Customer DPV False Positive Indicator	1	722	722
70	Customer DSF <sup>2</sup> Delivery Type	1	723	723
71	Customer DSF <sup>2</sup> No Stats Indicator	1	724	724
72	Customer DSF <sup>2</sup> Business Indicator	1	725	725
73	Customer DSF <sup>2</sup> Drop Indicator	1	726	726
74	Customer DSF <sup>2</sup> Drop Count	3	729	729
75	Customer DSF <sup>2</sup> Throwback Indicator	1	730	730
76	Customer DSF <sup>2</sup> Seasonal Indicator	1	731	731
77	Customer DSF <sup>2</sup> Vacant Indicator	1	732	732
78	Customer DPV Footnote 1	2	733	734
79	Customer DPV Footnote 2	2	735	736
80	Customer DSF <sup>2</sup> Primary Number Error Flag	1	737	737
81	Customer DSF <sup>2</sup> Secondary Number Error Flag	1	738	738
82	Filler	37	739	775

### **Total Records Presented**

This field contains the total number of records in the input file.

### **Total LACS**

This field contains the total number of records with LACS flag set.

### **Total Records ZIP + 4 Coded**

This field contains the total number of records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

### **Total Street Records ZIP + 4 Coded**

This field contains the total number of S records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

### **Total Street Records LACS**

This field contains the total number of S records with LACS flag set.

### **Total Highrise Records ZIP + 4 Coded**

This field contains the total number of H records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

### **Total Highrise Records LACS**

This field contains the total number of H records with LACS flag set.

### **Total POBOX Records ZIP + 4 Coded**

This field contains the total number of P records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

### **Total POBOX Records LACS**

This field contains the total number of P records with LACS flag set.

### **Total RR Records ZIP + 4 Coded**

This field contains the total number of R records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

### **Total RR Records LACS**

This field contains the total number of R records with LACS flag set.

**Total Firm Records ZIP + 4 Coded**

This field contains the total number of F records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

**Total General Delivery Records ZIP + 4 Coded**

This field contains the total number of G records that were successfully coded against the ZIP + 4 file and assigned an add-on (plus 4).

**Total Records DPV Validated**

This field contains the total number of records in the file that DPV Confirmed (Y, S, or D).

The next group of fields are broken down by ZIP + 4 record type (S, H, P, R, F, and G) and are used to supply counts for:

Records that were DPV Confirmed (Y,S, or D):	dph.hsa
Records that were presented to the CMRA table	dph.hsc
Records that were confirmed in the CMRA table	
Records that were presented to the DROP table	dph.hsd
Records that were confirmed in the DROP table	
Records that were presented to the BUSINESS table	dph.hsb
Records that were confirmed in the BUSINESS table	
Records that were presented to the THROWBACK table	dph.hst
Records that were confirmed in the THROWBACK table	
Records that were presented to the SEASONAL table	dph.hss
Records that were confirmed in the SEASONAL table	
Records that were presented to the VACANT table	dph.hsv
Records that were confirmed in the VACANT table	
Records that were presented to the CURB table	dph.hs1
Records that were confirmed in the CURB table	
Records that were presented to the NDCBU table	dph.hs2
Records that were confirmed in the NDCBU table	
Records that were presented to the CENTRALIZED table	dph.hs3
Records that were confirmed in the CENTRALIZED table	
Records that were presented to the OTHER (DOORSLOT) table	dph.hs4
Records that were confirmed in the OTHER (DOORSLOT) table	
Records that were presented to the NOSTAT table	dph.hsx
Records that were confirmed in the NOSTAT table	

These fields are:

Total Street Records DPV Validated  
Total Street Records Presented to CMRA  
Total Street Records CMRA Validated  
Total Street Records Presented to DROP  
Total Street Records DROP Validated  
Total Street Records Presented to BUSINESS  
Total Street Records BUSINESS Validated  
Total Street Records Pres to THROWBACK  
Total Street Records THROWBACK Validated  
Total Street Records Presented to SEASONAL  
Total Street Records SEASONAL Validated  
Total Street Records Presented to VACANT  
Total Street Records VACANT Validated  
Total Street Records Pres to CURB  
Total Street Records CURB Validated  
Total Street Records Pres to NDCBU  
Total Street Records NDCBU Validated  
Total Street Records Pres to CENTRALIZED  
Total Street Records CENTRALIZED Validated  
Total Street Records Pres to OTHER  
Total Street Records OTHER Validated  
Total Street Records Pres to NOSTAT  
Total Street Records NOSTAT Validated

Total Highrise Records DPV Validated  
Total Highrise Records Presented to CMRA  
Total Highrise Records CMRA Validated  
Total Highrise Records Presented to DROP  
Total Highrise Records DROP Validated  
Total Highrise Records Presented to BUSINESS  
Total Highrise Records BUSINESS Validated  
Total Highrise Records Pres to THROWBACK  
Total Highrise Records THROWBACK Validated  
Total Highrise Records Presented to SEASONAL  
Total Highrise Records SEASONAL Validated

Total Highrise Records Presented to VACANT  
Total Highrise Records VACANT Validated  
Total Highrise Records Pres to CURB  
Total Highrise Records CURB Validated  
Total Highrise Records Pres to NDCBU  
Total Highrise Records NDCBU Validated  
Total Highrise Records Pres to CENTRALIZED  
Total Highrise Records CENTRALIZED Validated  
Total Highrise Records Pres to OTHER  
Total Highrise Records OTHER Validated  
Total Highrise Records Pres to NOSTAT  
Total Highrise Records NOSTAT Validated

Total POBOX Records DPV Validated  
Total POBOX Records Presented to BUSINESS  
Total POBOX Records BUSINESS Validated  
Total POBOX Records Presented to VACANT  
Total POBOX Records VACANT Validated

Total RR Records DPV Validated  
Total RR Records Presented to CMRA  
Total RR Records CMRA Validated  
Total RR Records Presented to DROP  
Total RR Records DROP Validated  
Total RR Records Presented to BUSINESS  
Total RR Records BUSINESS Validated  
Total RR Records Pres to THROWBACK  
Total RR Records THROWBACK Validated  
Total RR Records Presented to SEASONAL  
Total RR Records SEASONAL Validated  
Total RR Records Presented to VACANT  
Total RR Records VACANT Validated  
Total RR Records Pres to CURB  
Total RR Records CURB Validated  
Total RR Records Pres to NDCBU  
Total RR Records NDCBU Validated

Total RR Records Pres to CENTRALIZED  
Total RR Records CENTRALIZED Validated  
Total RR Records Pres to OTHER  
Total RR Records OTHER Validated  
Total RR Records Pres to NOSTAT  
Total RR Records NOSTAT Validated

Total Firm Records DPV Validated  
Total Firm Records Presented to CMRA  
Total Firm Records CMRA Validated  
Total Firm Records Presented to DROP  
Total Firm Records DROP Validated  
Total Firm Records Presented to BUSINESS  
Total Firm Records BUSINESS Validated  
Total Firm Records Pres to THROWBACK  
Total Firm Records THROWBACK Validated  
Total Firm Records Presented to SEASONAL  
Total Firm Records SEASONAL Validated  
Total Firm Records Presented to VACANT  
Total Firm Records VACANT Validated  
Total Firm Records Pres to CURB  
Total Firm Records CURB Validated  
Total Firm Records Pres to NDCBU  
Total Firm Records NDCBU Validated  
Total Firm Records Pres to CENTRALIZED  
Total Firm Records CENTRALIZED Validated  
Total Firm Records Pres to OTHER  
Total Firm Records OTHER Validated  
Total Firm Records Pres to NOSTAT  
Total Firm Records NOSTAT Validated

Total GENDEL Records DPV Validated

**Total Records with Primary Number Errors**

This field contains the total number of records with Primary Number errors, i.e., footnote M1, M3.

**Total Street Records with Primary Number Errors**

This field contains the total number of S records with Primary Number errors, i.e., footnote M1, M3.

**Total Hirise Records with Primary Number Errors**

This field contains the total number of H records with Primary Number errors, i.e., footnote M1, M3.

**Total POBOX Records with Primary Number Errors**

This field contains the total number of P records with Primary Number errors, i.e., footnote M1, M3.

**Total RR Records with Primary Number Errors**

This field contains the total number of R records with Primary Number errors, i.e., footnote M1, M3.

**Total Firm Records with Primary Number Errors**

This field contains the total number of F records with Primary Number errors, i.e., footnote M1, M3.

**Total Records with Secondary Number Errors**

This field contains the total number of records with Secondary Number errors, i.e., footnote CC, N1.

**Total Street Records w/Secondary Number Errors**

This field contains the total number of S records with Secondary Number errors, i.e., footnote CC, N1.

**Total Hirise Records w/Secondary Number Errors**

This field contains the total number of H records with Secondary Number errors, i.e., footnote CC, N1.

**Total Firm Records w/Secondary Number Errors**

This field contains the total number of F records with Secondary Number errors, i.e., footnote CC, N1.

**Total Records FALSE POSITIVE Validated**

This field contains the total number of records that were found in the FALSE POSITIVE hash table, dph.hsf



---

# **Appendix 6**

## **Z4CHANGE Certification**



## Z4Change Overview

Z4CHANGE was developed in response to customers who wanted a cost-effective method to improve the deliverability of their mail by using the most current ZIP + 4/delivery point information. Z4CHANGE helps customers accomplish this goal by providing them with the data that indicates which ZIP + 4 Codes have had any transactions in the past twelve months. When a highrise (H record) or a firm (F record) is added, this product also shows a transaction for the supporting street ZIP + 4 Code. This allows the customer the opportunity to upgrade the previously coded street-level matches. Customers must then develop their own software to access the Z4CHANGE file to determine which records on their address list need to be reprocessed by CASS-certified software. As a result, only the records that have had transactions will need to be reprocessed, and this can be done on a monthly or quarterly basis.

Using the Z4CHANGE product and becoming Z4CHANGE certified eliminates the need to reprocess an entire address list every year by providing a method to maintain continuous qualification for the discounted automation rates. As a Z4CHANGE user, the customers' address files are maintained in compliance with United States Postal Service regulations, i.e., maintenance of current updates and proper use of the product.

If the United States Postal Service determines that a significant change has been made in the CASS requirements, customers will be required to reprocess their entire address list. Otherwise, it will be necessary that customers reprocess their entire file at the end of the third year following Z4CHANGE certification.

## Benefits

Z4CHANGE offers you, the mailing customer, the following benefits:

- Reduces your costs in meeting automation-based requirements by reducing the time and expense of reprocessing your address file.
- Eliminates your responsibility to meet the requirements of the Domestic mail Manual (DMM) for matching address lists with current CASS-certified software within one year of the date of mailing.
- Allows you to process your address files more frequently, thus producing an address list that is current to within 45 days (on the average) if you process quarterly or within 180 days if you process annually.
- Enhances your competitiveness in the marketplace by improving the deliverability of your mail and adding to the promptness of mail delivery.

## General Information

To use the Z4CHANGE product, it is vitally important that you know the cycle date of the ZIP + 4 database used the *previous* time you processed your address list with CASS-certified software. You must also know the cycle date of the ZIP + 4 database you are using for your current reprocessing. Your CASS-certified software vendor should be able to provide this information.

The Z4CHANGE product is offered in either a monthly or bimonthly update cycle. Therefore, you must know the update cycle for your CASS-certified software vendor. Generally, if you receive monthly updates of the ZIP + 4 database from your CASS-certified software vendor, you need to subscribe to the monthly installment of Z4CHANGE even if you are only matching bimonthly.

When you have established the correct cycle date of your ZIP + 4 database, be sure to load the Z4CHANGE product that corresponds to the same cycle date. You must then calculate the difference in months between the ZIP + 4 database you used the last time you processed your address list and the one you are currently using. For example, if you are processing bimonthly and your vendor uses bimonthly update cycles, this number should be two.

To use the Z4CHANGE product, you must develop your own Z4CHANGE file access software. In addition, you must obtain certification for your Z4CHANGE software to take advantage of the continuous qualification for the automation postage rates. However, you do not have to be certified to purchase or use the Z4CHANGE product.

Z4CHANGE certification test includes two test files consisting of ZIP + 4 records marked *Stage I* and *Stage II*, respectively. To ensure that you have correctly installed the product and correctly implemented your Z4CHANGE software, you should process the Stage I test file and compare your answers to the answers provided.

After completing Stage I, process the Stage II test file and return it to the National Customer Support Center (NCSC) for grading. Please refer to the section in this document on Z4CHANGE certification for more details.

## File Description

Each record in the Z4CHANGE product contains 21 bytes. The first 9 bytes represent a valid ZIP + 4 Code. The remaining 12 bytes are flags for each month indicating whether a ZIP + 4 Code has had any type of transaction (add or delete) and the month that the transaction occurred.

Each flag is set either to "N" to indicate the ZIP + 4 Code had no transactions for the month or "Y" to indicate the ZIP + 4 Code had transactions for the month. The first flag represents the current month. For example, if the current Z4CHANGE cycle is November, then the first flag represents November, the second flag represents October and the third flag represents September, etc.

Figure 1 uses ZIP + 4 Code 38018-7740 to illustrate that the second flag is set to "Y," indicating that the ZIP + 4 Code changed in October.

<b>Current Month</b>	November											
<b>ZIP + 4 Code</b>	38018-7740											
<b>38018-7740</b>	November	<b>October</b>	September	August	July	June	May	April	March	February	January	December
	N	Y	N	N	N	N	N	N	N	N	N	N

**ZIP + 4 Code 38018-7740 has a transaction in October**

**Figure 1**—ZIP + 4 Code Transaction in October

## Using Z4Change

To use the Z4CHANGE product, you must know the cycle date of the ZIP + 4 database used for address matching. You must also know the cycle date of the current Z4CHANGE product. To determine the number of months since the last address-matching cycle, check the ZIP + 4 Code. If any flags have been set to “Y” during that time frame, reprocess the address through CASS-certified software.

For example, if the current Z4CHANGE product is November, the first flag is November and the last flag is December of the previous year. Assume that the last address-matching cycle used the March Z IP+4 database. Find the appropriate ZIP + 4 Code. In the example, the ZIP + 4 Code is 12345-0009. Figure 2 indicates that a change has occurred to the ZIP + 4 Code since March. Therefore, this address requires processing through CASS-certified software.

<b>Current Month</b>	November											
<b>ZIP + 4 Code</b>	12345-0009											
<b>12345-0009</b>	November	October	September	<b>August</b>	July	June	May	April	March	February	January	December
	N	N	N	Y	N	N	N	N	N	N	N	N

**ZIP + 4 Database**

**Figure 2**—Address Requiring Reprocessing

Figure 3 focuses on the ZIP + 4 Code 12345-0100, in which no changes occurred. This address *does not* require processing through CASS-certified software.

<b>Current Month</b>	November											
<b>ZIP + 4 Code</b>	November	October	September	August	July	June	May	April	<b>March</b>	February	January	December
<b>12345-0100</b>	N	N	N	Y	N	N	N	N	<b>N</b>	N		N

**ZIP + 4 Database**

**Figure 3—Address Not Requiring Reprocessing**

## File Format

Z4CHANGE is available in one cartridge format. See description below:

### Available Cartridge Configurations

Format	Recording Technique	Attributes	Density	Label Option
E	Cartridge	IBM 3480	38K	No Labels

Z4CHANGE consists of approximately 8 cartridges at 38K BPI.

*Note: The number of cartridges depends upon the number of transactions.*

Cartridges are available in only one block size. Data set attributes include the following:

Attributes		
Record Length	=	21 Characters
Block Size	=	32760 Characters
Records per block	=	1560 Records

Z4CHANGE Product ID Summary	
Z4CHANGE Base Monthly Product ID	ZC215C—Cartridge
Z4CHANGE Base Bimonthly Product ID	ZC205C—Cartridge
Z4CHANGE Technical Guide Product ID	ZC250D—Documentation

## File Layout

Header Record, Cobol Example			
01	COPYRIGHT-RECORD		
	05 FILLER	PIC X(03)	001 – 003
	05 COPYRIGHT	PIC X(07) VALUE ‘© USPS’	004 – 010
	05 FILLER	PIC X(02)	001 – 012
	05 FILE-YEAR	PIC X(02)	013 – 014
	05 FILE-MONTH	PIC X(02)	015 – 016
	05 FILE-DAY	PIC X(02)	017 – 018
	05 FILLER	PIC X(03)	019 – 021

Detail Record, Cobol Example			
01	Z4CHANGE-RECORD		
	05 ZIP9.		
	10 ZIP5	PIC X(04)	001 – 005
	10 ZIP4	PIC X(04)	006 – 009
	05 MONTH-SWITCHES		010 – 021
	10 MONTH		
	OCCURS 12 TIMES	PIC X(01)	

After you have developed your Z4CHANGE software and installed the test Z4CHANGE product provided, you must qualify your Z4CHANGE process by certification. The Z4CHANGE process includes two test files consisting of ZIP + 4 records marked *Stage I* and *Stage II*, respectively. Process the Stage I test file and compare your answers to the answers provided to assure that you have correctly installed the product and correctly implemented your Z4CHANGE software. After completing Stage I, process the Stage II test file and return it to the NCSC for grading.

### Stage I

A Stage I file similar to the Stage I file used in CASS certification has been developed for Z4CHANGE software. Stage I is a “test with answers”, and its purpose is to enable you to compare your answers to those provided. This evaluation will assist with software debugging in preparation for Stage II. The Stage I file consists of ZIP + 4 records with a flag indicating whether the ZIP + 4 record has experienced a change. The flag contains a “Y” to indicate that a change has occurred or an “N” to indicate that no change has occurred.

---

## Stage II

Stage II is a “test without answers.” The Stage II file consists of ZIP + 4 records. Your Z4CHANGE software must process each ZIP + 4 record, compare each to the Z4CHANGE file, and return a “Y” or “N” in the answer field to indicate whether the ZIP + 4 Code has experienced a change.

## Processing the Stage II File

Process the original Z4CHANGE Stage II product file through your Z4CHANGE software. Your software must be able to evaluate the Stage II file data and determine whether a change has occurred to the ZIP + 4 records during the previous five months. Stage II requires a 100% match rate. If the original Z4CHANGE Stage II file cannot be completely processed, you must order a new one.

When you have completed processing the Z4CHANGE Stage II file, please return it to the following address along with your customer ID number, name, company name, address, and telephone number:

Z4CHANGE CERTIFICATION  
NATIONAL CUSTOMER SUPPORT CENTER  
UNITED STATES POSTAL SERVICE  
6060 PRIMACY PKWY STE 101  
MEMPHIS TN 38188-0001

## Z4CHANGE Certification

When the required level of accuracy (100%) is achieved for the Z4CHANGE software, you become certified. Certification consists of issuing an official notification letter, Z4CHANGE certificate, and inclusion of your company's name in a list of certified companies (which you may order from the Customer Support Department at the NCSC). We will send you an AIS Product pricing sheet and an order form for the Z4CHANGE product with your letter of notification and Z4CHANGE certification.

*Note: If the USPS determines that a significant change has been made in the CASS certification process, you will be required to reprocess your entire address file and produce a new form 3553. Otherwise, it will be necessary for you to reprocess your entire file at the end of the third year following the date of your Z4CHANGE certification.*

## Test File Format

The Z4CHANGE Stage I and Stage II file products is available in one cartridge format.

### Cartridge Confirmation Options

Format	Recording Technique	Attributes	Density	Label Option
A	Cartridge	EBCDIC	38K	No labels
I	Internet			

Attributes			
Record Length	=	21 Characters	
Block Size	=	32760 Characters	
Records per block	=	1560 Records	

Each record consists of a 9-digit ZIP + 4 Code followed by a one-character answer. A header record does not exist in this file.

## Record Layout

Field Sequence Number	Field Description	Length	Position From/Through	
1	CUSTOMER ID	09	001	009
2	ZIP-CODE	05	010	014
3	ADD-ON-CODE	04	015	018
4	ANSWER	01	019	019
5	FILLER	01	020	020



# Z4CHANGE CERTIFICATION ORDER FORM

## CUSTOMER INFORMATION (REQUIRED)

Company Official Name: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_\_\_ ) \_\_\_\_\_  
Salesperson: \_\_\_\_\_ Phone: ( \_\_\_\_ ) \_\_\_\_\_  
Email: \_\_\_\_\_

## MAILING INFORMATION

(if different from above)

Attention: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_\_\_ ) \_\_\_\_\_

I request that my certification be maintained in US Postal Service documents and records as (select **one**):

- Integrator/Manufacturer     NCOA Licensee     User     DPV Licensee  
 Vendor/Service Bureau     DSF<sup>2</sup> Licensee     MLC Licensee  
 I do not wish to be listed in USPS pubs.

I am applying for:

- Manufacturer Certification (*Software/Hardware*)     User-Defined Certification

All information furnished on this application is complete and correct. The responses provided on the Z4CHANGE Stage II certification file will be obtained using the same configuration used for processing customer/client address files. Any modification to the software or the configuration used to process the Stage II file will require recertification prior to use or release. The Z4CHANGE Stage II file will be processed in-house with company-owned or leased software/hardware. All answers will be written to the Stage II file via batch processing without manual intervention. The software used to process the Z4CHANGE Stage II file contains technology that disables access to outdated US Postal Service data in accordance with **Domestic Mail Manual** (DMM) A950. When used interactively, this product does not allow automated selection of an individual record from a list of multiple candidates. Users of this software are advised that any modification voids Z4CHANGE certification.

**Z4CHANGE certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.**

I have read and understand the requirements above and realize that any misrepresentation or failure to comply with these requirements will result in decertification.

\_\_\_\_\_  
**Company Official Signature (Required)**

\_\_\_\_\_  
Name (*please print*)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## NCSC USE ONLY

Customer #: \_\_\_\_\_ Date: \_\_\_\_\_ PRDT Code: \_\_\_\_\_

**PRODUCT INFORMATION**  
(REQUIRED)

If the software has optional parameters, you **MUST** return a list of the parameters used to process the Z4CHANGE file with this form.

**Z4CHANGE SOFTWARE**

1. Specify Stage type:

Stage I                       Stage II                       Both

2. Fill in all software information:

Product: \_\_\_\_\_

Version: \_\_\_\_\_

Configuration: \_\_\_\_\_

Platform: \_\_\_\_\_

3. Z4CHANGE Product Cycle Date: \_\_\_\_\_

**MEDIA CONFIGURATIONS TABLE**

Code	Description	Code	Description
E	Cartridge IBM 3480 38K	I	Internet
K	Cartridge IBM 3490E 38K		

*(Note: For internet/FTP service, call the CASS Department at 800-642-2914)*

**Return this form to:**

Z4CHANGE CERTIFICATION  
NATIONAL CUSTOMER SUPPORT CENTER  
UNITED STATES POSTAL SERVICE  
6060 PRIMACY PKWY STE 201  
MEMPHIS TN 38188-0001

---

# **Appendix 7**

## **eLOT Utility Certification**



## Enhanced Line Of Travel (eLOT) Utility

With the introduction of Enhanced Line Of Travel (eLOT), CASS no longer offers standard LOT Utility certification, effective February 1, 2002. All certified LOT customers and new customers seeking this specific utility certification must use the new eLOT product for certification purposes beginning cycle 2–03.

The current LOT product sequences by the ZIP + 4 code, LOT sequence number, then ascending or descending order. Since this did not always accurately reflect the sequence of delivery, the Postal Service enhanced the LOT product to ensure that Enhanced Carrier Route mailings be sorted to virtually match the actual delivery sequence.

The new eLOT file contains new fields. The file layout and sample data are available on the web in the eLOT folder in the RIBBS file libraries located at <http://ribbs.usps.gov/files>.

LOT subscribers have received both LOT and eLOT files since the September 2001 file release. Fulfillment of eLOT data is only available on CD-ROM. Either product may be used to prepare Enhanced Carrier Route Basic Standard and Periodicals mailings while the products are available. The last LOT product will be on the April 2002 file release.

### Certification Procedures

CASS will use the Stage File format for eLOT utilities. All of the necessary address fields will be populated to reflect the normal assignment by a CASS certified ZIP + 4 engine: ZIP Code, Carrier ID, ZIP + 4 code and the Delivery Point Code (DPC). Software must locate the record in the eLOT Master file in which the first three items match, and the DPC fits within the range of the lowest/highest DPC. The sort sequence will then be ZIP Code; Carrier ID, eLOT Sequence, ZIP + 4 code and DPC, then ascending or descending based on the flag in the eLOT Master file.

The following guidelines should be used for software to accurately determine the correct eLOT Sequence Number and Ascending/Descending Flag from the eLOT product. This process differs slightly from the previous LOT matching logic approach. Please implement the following (assuming the use of a ZIP + 4 engine's results) to successfully achieve eLOT Utility or Merge/eLOT certification:

- Locate the corresponding ZIP Code/CRID in the eLOT Master file matching the input ZIP Code/CRID
- Locate the ZIP Add On Low/ZIP Add On High Number range that your input falls
- Locate the eLOT Low DPC/High DPC range that your input DPC falls
- If Items 1 through 3 above are found, software assigns the eLOT Sequence Number and eLOT Ascending/Descending Flag. Otherwise, your input data element was not located and software assigns the default of "0000D".

- 
- In cases where the Add On Low/Add On High are not equal, the Add On must still be considered in the sort sequence after the eLOT Sequence/Add On are assigned.

Below is an example to assist you in your software development:

eLOT	ZIP	CRID	+4LO	+4HI	DPLO	DPHI	A/D	SEQ
	38111	C002	0500	1000	10	20	A	0002

If ZIP + 4's appear in the following order:

38111-0999

38111-0500

38111-0888

Then pieces would be assigned same eLOT 0002A, and sorted according to eLOT sorting rules (assuming same DPC):

38111-0500 0002A

38111-0888 0002A

38111-0999 0002A

38111-1000 0002A

## Scoring

A score of 100% is required to achieve eLOT certification.

---

## Ordering eLOT Certification

Customer Information	Complete all information on the order form exactly as it should appear in any United States Postal Service (USPS) publication. If your company name should not appear in the USPS publications, please check the appropriate box. Specify whether the certification being attempted is manufacturer or user-defined. A company official must sign and date the eLOT Order Form.
Media Configuration	The desired media configuration for the eLOT certification product ordered must be specified by completing the appropriate box on the order form using the Media Configuration Table. Make only one selection.
Software	<p>The software name, version and configuration must be provided for the software being tested. The configuration consists of a three-character alphabetic field that identifies the parameter settings used by the software processing the eLOT Stage II file.</p> <p><i>Note: For assistance with ordering the eLOT certification product, call the CASS Department at 1-800-642-2914.</i></p>

## Stage II Processing Quick Reference

Processing Steps	<p>Stage I and II product files may be ordered individually or jointly. Stage I is optional (but recommended) prior to attempting certification, while Stage II is required. Stage II product files must be processed and returned to the NCSC within ten calendar days from the date of receipt.</p> <p>Complete the order form and mail or fax it to the National Customer Support Center (NCSC) Certification Department. Orders will not be accepted via telephone. Orders must be signed and dated by a company official. If the software has optional parameter settings, configuration designators indicating the settings to be used when processing customer and/or client address files must be provided.</p> <p>Process the eLOT Stage II file using the software being certified. Set software parameters exactly as if processing a customer or internal address file. Process the original Stage II file. Backup copies or alternate media will be rejected. Update the appropriate fields in the Stage I file for NCSC evaluation.</p> <p>Upload or mail the completed Stage II product file to the NCSC for evaluation. Certification results will be returned when the evaluation is complete.</p>
------------------	---

### Helpful Hints

Always attempt to read the processed Stage II file before returning it to the NCSC for evaluation. This will ensure that there are no physical problems with the media and verify the number of records.

Verify the file is configured (block size, record length, BPI) exactly as it was requested.

# ENHANCED LINE OF TRAVEL (eLOT) ORDER FORM

## CUSTOMER INFORMATION (REQUIRED)

Company Official Name: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_ ) \_\_\_\_\_  
Salesperson: \_\_\_\_\_ Phone: ( \_\_\_\_ ) \_\_\_\_\_  
Email: \_\_\_\_\_

## MAILING INFORMATION

(if different from above)

Attention: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP+4: \_\_\_\_\_  
Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX Number: ( \_\_ ) \_\_\_\_\_

I request that my certification be maintained in US Postal Service documents and records as (select **one**):

- Integrator/Manufacturer       NCOA Licensee       User       DPV Licensee  
 Vendor/Service Bureau       DSF<sup>2</sup> Licensee       MLC Licensee  
 I do not wish to be listed in USPS pubs.

I am applying for:

- Manufacturer Certification (*Software/Hardware*)       User-Defined Certification

All information furnished on this application is complete and correct. The responses provided on the eLOT Stage II certification file will be obtained using the same configuration used for processing customer/client address files. Any modification to the software or the configuration used to process the Stage II file will require recertification prior to use or release. The eLOT Stage II file will be processed in-house with company-owned or leased software/hardware. All answers will be written to the Stage II file via batch processing without manual intervention. The software used to process the eLOT Stage II file contains technology that disables access to outdated US Postal Service data in accordance with **Domestic Mail Manual** (DMM) A950. When used interactively, this product does not allow automated selection of an individual record from a list of multiple candidates. Users of this software are advised that any modification voids eLOT certification.

**eLOT certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.**

I have read and understand the requirements above and realize that any misrepresentation or failure to comply with these requirements will result in decertification.

\_\_\_\_\_  
**Company Official Signature (Required)**

\_\_\_\_\_  
Name (*please print*)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## NCSC USE ONLY

Customer #: \_\_\_\_\_ Date: \_\_\_\_\_ PRDT Code: \_\_\_\_\_



---

# **Appendix 8**

## **Residential Delivery Indicator (RDI) Utility**



## Residential Delivery Indicator (RDI)

The Residential Delivery Indicator (RDI) is a licensed product of the United States Postal Service. RDI licensees must be parcel shippers, their agent or analysis. The RDI user/licensee attempts to determine the best cost for shipping their packages based upon the fact that some delivery services charge a higher price for a residential delivery than a business delivery.

RDI will help users/licensees shop for the lowest delivery cost for a specific address by identifying whether that address is listed as business or residential in the US Postal Service Address Management System (AMS) database. In order to enter into the process to develop RDI-enabled software, you must be a developer of address matching software that has been currently CASS Certified.

The process of certifying software for RDI processing is similar to the DPV certification process. Additional information on RDI can be found at [ribbs.usps.gov/files/rdi](http://ribbs.usps.gov/files/rdi).

### Overview

RDI is designed to be used in conjunction with the CASS certified ZIP + 4 or DPV enabled address matching software. It works similar to the DPV process, in that the RDI data is supplied as hash tables. It is a much simpler process in that the standard hash algorithm is only determined for the 9-digit and 11-digit ZIP Code rather than the entire address.

While this process is called “Residential Delivery Indicator”, the tables themselves provide information regarding business deliveries. The residential status of an input address to which a ZIP + 4 Code is assigned is recognized by the fact that it does not match to a record in either RDI tables.

The Residential Delivery Indicator data files are the following approximate sizes:

9-Digit table = 8mb

11-digit table = 8mb

The 9-digit hash table consists of ZIP + 4 Codes that contain only business deliveries. The 11-digit table consists of the Delivery Point codes for the business deliveries where the ZIP + 4 Code contains both business and residential deliveries.

The data file may be loaded on any platform. Speed of operation will depend on the amount of RAM and the speed of the processor. Depending on the interface written and the hardware available, the validation inquiry can be done in RAM or as Disk Lookup.

Developers seeking RDI certification must process a stage II file from CASS. The ability of the software to return the correct response from the RDI tables will determine whether the software will be RDI-certified. CASS certified software must identify this match by setting a “Y” flag in position 589. This field determines if a delivery point is residential

## Ordering RDI Certification

---

Field Description: Y = Residential Delivery  
Blank = Not Residential Delivery

Minimum accuracy percentage required achieving a passing score on either Merge/RDI or RDI Utility is 100%. However, you must correctly assign the delivery point code for 100% of all ZIP + 4 coded records. If you fail to achieve a passing score on any single category of the mere file, you will fail all four categories regardless of other scores. RDI will not be scored unless the 5-digit, carrier route, and ZIP + 4/DP codes are correct.

When the required level of accuracy (100%) is achieved for the RDI software, you become certified. Certification consists of issuing an official notification letter, RDI certificate and inclusion of your company's name in a list of certified companies (which can be ordered from the National Customer Support Center).

### Scoring

A score of 100% is required to achieve RDI certification.

## Ordering RDI Certification

### Customer Information

Complete all information on the order form exactly as it should appear in any United States Postal Service (USPS) publication. If your company name should not appear in USPS publications, please check the appropriate box. Specify whether the certification being attempted is manufacturer or user-defined. A company official must sign and date the RDI Order Form.

### Media Configuration

The desired media configuration for the RDI certification product ordered must be specified by completing the appropriate box on the order form using the Media Configuration Table. Make only one selection.

### Software

The software name, version and configuration must be provided for the software being tested. The configuration consists of a three-character alphabetic field that identifies the parameter settings used by the software processing the RDI Stage II file.

*Note: For assistance with ordering the RDI certification product, call the CASS Department at 1-800-642-2914.*

## Stage II Processing Quick Reference

- Processing Steps**
- Stage II product files must be processed and returned to the NCSC within ten calendar days from the date of receipt.
  - Complete the order form and mail or fax it to the National Customer Support Center (NCSC) Certification Department. Orders will not be accepted via telephone. Orders must be signed and dated by a company official.
  - Process the RDI Stage II file using the software being certified. Set software parameters exactly as if processing a customer or internal address file. Process the original Stage II file. Backup copies or alternate media will be rejected.
  - Upload or mail the completed Stage II product file to the NCSC for evaluation.
  - Certification results will be returned when the evaluation is complete.
- Helpful Hints**
- Always attempt to read the processed Stage II file before returning it to the NCSC for evaluation. This will ensure that there are no physical problems with the media and verify the number of records.
  - Verify the file is configured (block size, record length, BPI) exactly as it was requested.



# RESIDENTIAL DELIVERY INDICATOR (RDI) ORDER FORM

## CUSTOMER INFORMATION

(Required)

Company Official Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: ZIP+4®: \_\_\_\_\_

Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX: ( \_\_\_\_ ) \_\_\_\_\_

Salesperson: \_\_\_\_\_ Phone: ( \_\_\_\_ ) \_\_\_\_\_

Email: \_\_\_\_\_

## MAILING INFORMATION

(If different from above)

Attention: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: ZIP+4®: \_\_\_\_\_

Phone: ( \_\_\_\_ ) \_\_\_\_\_ FAX: ( \_\_\_\_ ) \_\_\_\_\_

I request that my certification be maintained in US Postal Service documents and records as (select **one**):

Integrator/Manufacturer

I am applying for:

Manufacturer Certification (*Software/Hardware*)

All information furnished on this application is complete and correct. The responses provided on the Residential Delivery Indicator (RDI) Stage II certification file will be obtained using the same configuration used for processing customer/client address files. Any modification to the software or the configuration used to process the Stage II file will require recertification prior to use or release. The RDI Stage II file will be processed in-house with company-owned or leased software/hardware. All answers will be written to the Stage II file via batch processing without manual intervention. The software used to process the RDI Stage II file contains technology that disables access to outdated U.S. Postal Service® data in accordance with **Domestic Mail Manual** (DMM) A950. When used interactively, this product does not allow automated selection of an individual record from a list of multiple candidates. Users of this software are advised that any modification voids RDI certification.

**RDI certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.**

I have read and understand the requirements above and realize that any misrepresentation or failure to comply with these requirements will result in decertification.

\_\_\_\_\_  
Company Official Signature (Required)

\_\_\_\_\_  
Name (please print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## NCSC USE ONLY

Customer #: \_\_\_\_\_ Date: \_\_\_\_\_ PRDT Code: \_\_\_\_\_

## PRODUCT INFORMATION

(Required)

Applicants **MUST** return a facsimile PS Form 3553 or FTP or email an electronic version in the header record with the Stage II certification file/test deck.

### RESIDENTIAL DELIVERY INDICATOR (RDI) SOFTWARE

1. Specify Stage type:

Stage II

2. For geographic type, select one only.\* (If state or area, please specify):

Full

State \_\_\_\_\_

3. Media Configuration Code (please choose from media configuration table at bottom of form):

4. Fill in all software information:

\_\_\_\_\_ Product Title \_\_\_\_\_ Version #\*\* \_\_\_\_\_ Configuration \_\_\_\_\_ Platform

\* Applies only to address-matching software

\*\* Refer to Appendix 2, "CASS Version Control," for a list of version numbers

### MEDIA CONFIGURATIONS TABLE

Code	Description	Code	Description
E	Cartridge IBM 3480 38K	I	Internet
K	Cartridge IBM 3490E 38K		

(Note: For internet/FTP service, call the CASS Department at 800-642-2914)

### MAIL OR FAX FORM TO

CODING ACCURACY SUPPORT SYSTEM  
NATIONAL CUSTOMER SUPPORT CENTER  
UNITED STATES POSTAL SERVICE  
6060 PRIMACY PKWY STE 201  
MEMPHIS TN 38188-0001  
TELEPHONE: 800-642-2914  
FAX NUMBER: 901-681-4440