CASS™ Technical Guide

2011-2016 cycle

UNITED STATES POSTAL SERVICE®

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Purpose

The CASS certification process is designed in cooperation with the mailing industry to improve the accuracy of addresses for mail qualifying for postal discounts. The CASS software program provides hardware and software manufacturing, 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 the U.S. Postal Service® National Customer Support Center (NCSC), and the results are returned to the developer to provide useful diagnostics for correcting software deficiencies.

Overview

The CASS certification process consists of two parts:

1. The Stage I file is optional and is used to measure and diagnose the performance of software to be certified.

   The Stage I file can be downloaded from our website at: https://ribbs.usps.gov/cassmass/documents/tech_guides/.
   This file is not returned to the CASS Department.

2. Stage II is the test file that is evaluated by the CASS Department and is used to acquire CASS certification. Developers are not permitted to allow another company or service bureau to process the Stage II file.

CASS certification includes DPV® or DSF²®, LACSLink®, and SuiteLink®. RDI™ and eLOT® products are optional but can be included with a CASS certification test.

If more information is needed, contact the CASS Department at 800-642-2914 or via email at cassman.ncsc@usps.gov.

Fee-Based Certification

Fees have been established to cover costs of developing and issuing testing material and administering the CASS and MASS™ program.

CASS customers are billed based on the number of separate software configurations certified, not the number of Stage II files ordered. Customers will be billed for all software upgrades. In contrast, MASS customers are billed for each test deck ordered or the number of tests needed to achieve certification.

Customers are billed as certification is achieved. Billing procedures are coordinated with our Accounts Receivable Department. **All certification test fees are payable within 30 days of the billing date.**

Fee Schedule

Fee-Based Certification	AUG/OCT (New Cycle)	NOV/ DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	After July 31, for Current Cycle
CASS	$210	$210	$210	$520	$520	$625	$730	$835	$940	$1,045
MASS MFG (MLOCR)		$520	$520	$520	$520	$520	$520	$520	$1,045	$1,565
MASS End-Users (MLOCR)								$520	$1,045	$1,565
MASS MFG (Encoder)		$315	$315	$315	$315	$315	$315	$315	$780	$1,045
MASS End-Users (Encoder)								$315	$780	$1,045

Products Needed for CASS Certification

Address Information System (AIS) Products

- ZIP + 4®
- City/State
- ZIPMove
- eLOT® (optional when using DPV licensed product)
- RDI™ (optional)

The AIS Products are available through Customer Care at the NCSC. Customer Care is available at 800-238-3150 option 0.

Licensed Products

- DPV® or DSF2®
- LACSLink®
- SuiteLink®

The licensed products cannot be shipped outside of the United States. These products are available through the Licensing Department at the NCSC. The Licensing Department is available at 800-589-5766 or via email at ncoalink@usps.gov.

The USPS® also offers an Application Program Interface (API) as an address matching engine through the Licensing Department at the NCSC. The API includes the AIS Products, DPV®, LACS$^{Link®}$ and Suite$^{Link®}$. eLOT® is optional.

Documentation and guidelines for CASS certification is available through the CASS Department. The CASS Department also administers and evaluates the CASS certification process.

To establish a CASS account, customers must complete the Electronic Product Fulfillment Web Access Request Form (EPF001). The form is available online at: https://ribbs.usps.gov/cassmass/documents/tech_guides/ in the CASS™MASS™ Forms link. The form can be faxed to 650-577-2509 or sent as an email attachment to cassman.ncsc@usps.gov.

The CASS Department is available at 800-642-2914 or via email at cassman.ncsc@usps.gov.

Data for Testing

The USPS provides static data to all software developers for every product that is used for testing. This data must be used for all CASS and MASS tests. The software developer must provide the static data to all end users and must advise them to use this data for all certification tests. Failure to use the static data will result in test failure.

DPV or DSF^2, LACS^{Link} and Suite^{Link} are mandatory for all tests. End users are required to use all of these products in a production environment.

Certification Testing

The CASS certification process consists of two parts. Stage I is a file with answers provided by the CASS Department. State II is the certification test that is required to achieve CASS certification.

Stage File Overview

Stage I

Stage I is a self-administered test that helps developers measure and diagnose the performance of their address matching software when it is applied to a CASS test address fie. The results of Stage I processing are not reviewed by the NCSC and have no effect on CASS certification.

The Stage I file contains one copyright header record, three DSF$^{2®}$ header records and 150,000 test address records. The Stage I file is available on our website for organizations that are developing address matching software at: https://ribbs.usps.gov/cassmass/documents/tech_guides/. Contact the CASS Department at 800-642-2914 or via email cassman.ncsc@usps.gov if there are questions about the file. If there is a question about specific records, please provide the CASS key assigned to the address record.

Stage II

The Stage II file is the test file used to evaluate address matching software performance. The Stage II file contains one copyright header record and 150,000 test address records. It is graded by the CASS Department. To attain CASS certification, address matching software must achieve the required score on the Stage II test. The file must be processed with static data that is provided by the USPS. The CASS Department will evaluate the test and the test results will be returned within ten (10) business days.

Test Types

The CASS Department provides and evaluated several types of tests. Each test will be evaluated in the order it is received and the results are returned within ten (10) business days.

Merge Test

Evaluates address matching software performance as it pertains to correcting and standardizing address for 5-digit, carrier route, ZIP + 4®, DPV® or DSF$^{2®}$, LACS$^{Link®}$, and Suite$^{Link®}$. RDI™ can be added as an option for this test type.

Merge/eLOT® Test

Same as above but includes eLOT.

Utility Tests

- Z4Change (appendix 6)
- eLOT (appendix 7)
- RDI (appendix 8)

- DirectDPV™ (appendix 11)

These tests allow certification for these specific products. The certifications do not expire until changes are made to the product data.

MERLIN®

MERLIN verifies 9-digit ZIP Code™ information at the point of acceptance and has a zero tolerance for ZIP + 4 add-on ‘0000’ and invalid add-on ‘9999’.

The return of add-ons ‘0000’ and invalid ‘9999’ will continue to be fatal add-on errors. These errors will result in failure for CASS and MASS™ and will require retesting.

Licensed Products

DPV®/DSF^2®

DPV or DSF^2 confirms addresses that are deliverable by the USPS and is mandatory for all users. Developers’ certifying both DPV and DSF^2 are required to take two separate tests. Developers should contact the Licensing Department for more information at 800-589-5766 and see Appendix 5 in this guide.

Vacant and no stat indicators must be returned in a DPV test.

LACS^{Link}®

LACS^{Link} is mandatory for all users. When a new LACS converted address is found the new address must be returned. If the new address is not returned, only the 5-digit ZIP Code™ associated with the original input address can be returned. Developers should contact the Licensing Department at 800-589-5766 for more information and see Appendix 9 in this guide.

Suite^{Link}®

The Suite^{Link} product should be queried when an address matches to a street or highrise default record. If a business name match is found and a secondary number is returned, the new suite information **must be appended to the original address for CASS testing**. See Appendix 10.

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. The requirement that each user of address matching software attain CASS certification is only necessary in certain situations.

Manufacturer certification is available only to companies that develop address matching software. The manufacturer box on the front of the CASS order Forms must be checked.

All user modifications to a CASS Certified™ product must be certified separately by the end user and information about the new derivers or APIs must be listed on the CASS Order Form.

Customers who wish to integrate certified software with another product or software driver must certify the integrated product as new software with a different name from the original packaged software. These customers are classified as integrators.

Customers who wish to take a CASS test to be listed as a Vendor Service Bureau would take a User-Defined Certification test.

The USPS has a policy of revoking certification of any user-modified address matching software that has not been CASS Certified by the end user.

Manufacturer Certification

To attain CASS certification, order a CASS Stage II file using the CASS Order Form and check the Manufacturer Certification box on page one (1) of the order form. A Terms and Conditions document must be completed for the first current certification requirement cycle test. New customers must also complete and Electronic Product Fulfillment Web Access Request Form (EPF001) to be given access to an internet account to receive and upload the Stage II files and CASS reports.

Requesting manufacturer certification ensures that the company will be listed as a software developer in USPS® documents and on RIBBS® in the Products Guide at: https://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 Stage II file must be attached to the CASS Order Form.

The same software version number may be certified for multiple specific configurations and platforms. A configuration is a three alphanumeric character identifier associated with a software name and version number that represents a specific set of parameter settings. The configuration is assigned by the software developer.

Static test data will be provided by the CASS Certification Department. This data must be used for all testing. Software developers **must** provide the static data to all end users for testing. Failure to use this data will result in test failure.

The address matching software being certified must be capable of generating a facsimile of the CASS Summary Report (PS Form 3553) located in Appendix 1. The software must also contain technology that disables access to outdated or expired USPS data as described in *DMM® 708*

Section 3.0, and should not print the PS Form 3553 if the software has undergone any modifications.

The PS Form 3553 that was computer generated from the Stage II file process has to be returned 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.

All CASS developers and MASS™ manufacturers are required to provide a hardcopy of the PS Form 3553 for evaluation to ensure the facsimile meets USPS® standards. The form may be faxed to 650-577-2509 or emailed to cassman.ncsc@usps.gov. The PS Form 3553 must be included in the answer file that is returned for grading as the first header record. The file layout for the header record is included in this guide.

User Certification

Vendors, service bureaus, and mailers who have special requirements for using address matching software in a configuration that has been CASS Certified by a software developer must apply for user defined certification and select the appropriate check boxes on the CASS Order Form.

This certification can include an integration of additional drivers not included in the original software developers CASS Certified product. Select the Integrator/Manufacturer box and any other check boxes that apply to this request on the CASS Order Form.

Static test data must be provided by the software developer for the CASS Certified software used in the integrated product. This data must be used for all testing. Failure to use this data will result in test failure.

Platform Certification

CASS requires that all separate platforms for a single product be individually CASS tested and certified. The term “platform” means any differently compiled version (operating system) with the same configuration.

Multiple platforms with different configurations are subject to all testing fees.

Waivers will not be considered. There will be a ten (10) day turnaround period for each test submission.

Software Updates

For CASS Cycle N, software must increment the cycle field to “N”. The software version number must change from the previous cycle with the left-most four numeric characters. See Appendix 2.

Since static data must be used for all testing, the product date will be 99992015. The ZIP + 4® file processed date will be the date the test is processed. The validation dates will be calculated from the file processed date.

Version Control

Business Mail Entry personnel will continue to confirm a product's certification status via the CASS/MASS Products Guide. The CASS/MASS Products Guide will display the version number up to the cycle field value and all platforms certified for a specific software product.

When a CASS Certified product is modified for any reason, the software developer must contact the CASS Department to determine if 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 like a program ABEND, or to provide a customer a specific interface generally will not require recertification. However, all changes must be reported regardless of their purposes.

The CASS Department will review the proposed change and notify the developer whether they must submit for recertification within five (5) business days. If the CASS Department fails to respond within this time, the developer can assume approval. However, the CASS Department reserves the right to require recertification of the specific release to verify continue compliance with CASS requirements.

Developers faced with an urgent need to provide a patch to their customers may do so without prior notification and clearance by the CASS Department. Developers must report the emergency release to the CASS Department within two days. Failure of notification may result in decertification of the modified product and rescinding of any postage discounts obtained while using the modified product.

Note: Postage discounts may be rescinded retroactively.

Developers must report modifications in writing via email notification to cassman.ncsc@usps.gov or fax to 650-577-2509. For more information, contact the CASS Department at 800-642-2914.

Media Configurations

The CASS Stage II file is only available via Electronic Product Fulfillment.

Electronic Fulfillment

Attributes		
Record Length	=	600 Characters

Add two bytes for CRLF.

Stage File Description

Copyright Header Record

The header record on the CASS Stage I and Stage II test files is a copyright record. The CASS Summary Report (PS Form 3553) has been incorporated into the header record. Software developers must return the PS Form 3553 electronically. The following table also identifies header record components for DPV® and DSF2®. See Appendix 5.

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	03	001	003
2	File Version Month	02	004	005
3	File Version Day	02	006	007
4	File Version Year	04	008	011
5	Copyright Symbol	11	012	022
6	Sequence Number	03	023	025
7	Customer Name	09	026	034
8	System Name	05	035	039
9	Stage Number	06	040	045
10	3553 A1 CASS Z4Change/DirectDPV Company Name	40	046	085
11	3553 A1 eLOT Company Name	40	086	125
12	3553 A1 CASS Z4Change/DirectDPV Configuration	03	126	128
13	3553 A1 eLOT Configuration	03	129	131
14	3553 A1 CASS Z4Change/DirectDPV Software Name	30	132	161
15	3553 A1 CASS Z4Change/DirectDPV Software Version	16	162	177
16	3553 A1 eLOT Software Name	30	178	207
17	3553 A1 eLOT Software Version	16	208	223
18	3533 B1 List Processor Name	25	224	248
19	3553 B2 Master File Process Date	08	249	256
20	3553 B2 Z4Change/DirectDPV Process Date	08	257	264
21	3553 B2 eLOT Process Date	08	265	272
22	3553 B2 Carrier Route Process Date	08	273	280
23	3553 B3 ZIP +4/DPV Database Date	08	281	288
24	Filler	08	289	296
25	3553 B3 eLOT Database Date (9999YYYY)	08	297	304
26	3553 B3 Carrier Route Database Date (9999YYYY)	08	305	312
27	3553 B4 Address List Name	25	313	337
28	3553 B5 Number Lists Processed	03	338	340
29	3553 B6 Total Records Submitted	06	341	346
30	3553 C1 Total Records ZIP +4/DPV Coded	05	347	352
31	3553 C1 ZIP +4/DPV Valid From Date (MMDDYYYY)	08	353	360

Field Sequence Number	Field Description	Length	Position From/Through	
32	3553 C1 ZIP +4/DPV Valid To Date (MMDDYYYY)	08	361	368
33	3553 C2 Total Records Z4Change Coded	06	369	374
34	Filler	16	375	390
35	3553 C3 Total DirectDPV Coded	06	391	396
36	3553 C3 DirectDPV Valid From Date (MMDDYYYY)	08	397	404
37	3553 C3 DirectDPV Valid To Date (MMDDYYYY)	08	405	412
38	3553 C4 Total Records 5-Digit Coded	06	413	418
39	3553 C4 5 Digit Valid From Date (MMDDYYYY)	08	419	426
40	3553 C4 5 Digit Valid To Date (MMDDYYYY)	08	427	434
41	3553 C5 Total Records Carrier Route Coded	06	435	440
42	3553 C5 Carrier Route Valid From Date (MMDDYYYY)	08	441	448
43	3553 C5 Carrier Route Valid To Date (MMDDYYYY)	08	449	456
44	3553 C6 eLOT Records eLOT Coded	06	457	462
45	3553 C6 eLOT Valid From Date (MMDDYYYY)	08	463	470
46	3553 C6 eLOT Valid To Date (MMDDYYYY)	08	471	478
47	Filler	08	479	486
48	Z4Change/DirectDPV Date (MMDDYYYY)	08	487	494
49	3553 Total High-rise Exact	06	495	500
50	3553 Total High-rise Default	06	501	506
51	3553 Total Rural Route Exact	06	507	512
52	3553 Total Rural Route Default	06	513	518
53	3553 Total LACS	06	519	524
54	3553 Total EWS	06	525	530
55	3553 Total Suite^{Link}	06	531	536
56	Filler	06	537	542
57	Filler	34	543	576
58	DPV/ DSF^{2} Data Used F=Full, L=Flat, S=Split	01	577	577
59	Filler	08	578	585
60	Platform for Test	12	586	597
61	Configuration for Test	03	598	600

Completing the PS Form 3553

Completion and submission of the PS Form 3553 is a requirement for CASS certification. Data returned on the PS Form 3553 must agree with the data returned in the Stage II file or derived from the mailpieces read during the CASS grading process.

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

Qualitative Statistical Summary

Software developers must populate the Qualitative Statistical Summary information fields on the CASS Summary Report (PS Form 3553). This section includes a summary of counts in specified areas obtained on records on any processed list.

Copyright Header Records Data Element Definitions

A1: CASS/Z4Change/eLOT Certified Company Name

- Name of the company seeking certification.
- End-user modification of any certified product requires independent certification by the end-user.

A2: 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 (Appendix 2) 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 alpha-numeric identifier associated with a specific software name a version number that represents a set of software parameter settings.

A2: MASS-Certified Company Name

- The name of the company seeking MASS certification.

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 that is MASS tested.

B1: List Processor Name

- The name of the company or person(s) responsible for processing the address list(s) or mailpieces.

B2: Date List Processed

- Enter the date 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 field must indicate the date the entire master file

was first processed. The Z4Change Date List Processed field 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.

- o Format: MM/DD/YYYY

B3: Date of Database

- The product release date of the USPS Address Information System (AIS) products. All certified software must contain technology that disables access to outdated Postal Service data as described I the *Domestic Mail Manual (DMM)* 708, Section 3.0. Products may show the date in either MM/YY or MM/DD/YYYY format. Where and MM/YY format is used, the assumed DD value is 15.
  - o Static Data 99/YY or 99/99/YYYY or MM/DD/YYYY (regular data date)
    Ex. 99/15 or 99/99/2017 or MM/15/2014

B2 & B3: Z4Change Date

- This field contains the date of the Z4change Product used to process against the Stage I or 2 files provided by the CASS Department. The Z4change Product is used to ensure that the questions presented to developers on stage files have not experience any transactions. This process is used to assist software manufactures in analyzing and evaluating their address matching software. It is strongly recommended that software developers and manufacturers match up the same product dates for both the ZIP + 4 and City State monthly products and the Z4Change product in order to minimize differences in addressing matching results.

B2 & B3: eLOT Date

- Date of the eLOT product used

B2 & B3: CRIS Date

- Date of the Carrier Route product used

B4: List Name or ID No.

- 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#”.

B5: Number of Lists

- Enter the number of lists used to produce the mailing. For CASS and MASS testing, the value should always be 1.

B6: Total Records submitted for Processing

- Number of records in the address file(s) or total number of mailpieces processed.

Ca1: ZIP +4/DPV Confirmed

- Total number of DPV confirmed records assigned a + 4 add-on

Ca2: ZIP +4/DPV Confirmed Validation Period “From” Date

- Must be the same date as B2/Date List Processed. This date is 30 days before the 15th of each month or bi-monthly or no late than 105 days after the file date.

Ca2: ZIP +4/DPV Confirmed Validation Period "To" Date

- 180 days after the ZIP + 4 "From" date

Cb1: Z4Change Processed

- Total number of Z4Change processed records when applicable is 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.

Cb2: Z4Change Processed "From" Date and "To" Date

- Blank unless a Z4Change file is processed

Cc1: DirectDPV

- Total number of records found in the DirectDPV file when applicable that have changed since the file was last ZIP + 4 certified.

Cc2: DirectDPV Validation Period "From" Date

- Must be the same date as B2/Date List Processed. This date is 30 days before the 15th of each month or bi-monthly or no late than 105 days after the file date.

Cc2: DirectDPV Validation Period "To" Date

- 180 days after the DirectDPV "From" date

Cd1: 5-Digit Total Coded

- Total number of 5-digit assigned or retained from the input address during processing.

Cd2: 5-Digit Validation Period "From" Date

- Must be the same date as B2/Date List Processed. This date is 30 days before the 15th of each month or bi-monthly or no later than 105 days after the file date.

Cd2: 5-Digit Validation Period "To" Date

- 365 days after the 5-Digit "From" Date

Ce1: CRRT Total Coded

- Total number of records assigned a carrier route during processing.

Ce2: CRRT Validation Period "From" Date

- Must be the same date as B2/Date List Processed. This date is 30 days before the 15th of each month or bi-monthly or no late than 105 days after the file date.

Ce2: CRRT Validation Period "To" Date

- 90 days after the CRRT "From" Date

Cf1: eLOT Assigned Total Coded

- Total number of eLOT sequence number and an ascending or descending codes assigned during processing

Cf2: eLOT Validation Period “From” Date

- Must be the same date as B2/Date List Processed. This date is 30 days before the 15th of each month or bi-monthly or no late than 105 days after the file date.

Cf2: eLOT Validation Period “To” Date

- 90 days after the eLOT “From” Date

Configuration for Test

- The 3-character alpha-numeric configuration assigned by the software developer for the software that’s being certified.

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.

Field Sequence Number	Field Description	Length	Position From/Through	
1	Customer ID	09	001	009
2	CASS Key	11	010	020
3	ZIP Code Answer	05	021	025
4	ZIP Code Alternate Answer Allowed*	01	026	026
5	ZIP Code Include in 3553	01	027	027
6	ZIP + 4 Add-On Answer	04	028	031
7	ZIP + 4 Add-On Include in 3553*	01	032	032
8	Delivery Point Answer	02	033	034
9	Filler	01	035	035
10	Delivery Point Check Digit Answer	01	036	036
11	Carrier Route Answer	04	037	040
12	Carrier Route Alternate Answer Allowed*	01	041	041
13	Carrier Route Include in 3553*	01	042	042
14	City Name Answer	28	043	070
15	City Name Alternate Answer Allowed*	01	071	071
16	State Code Answer	02	072	073
17	Urbanization Answer	28	074	101
18	Firm Name Answer	40	102	141
19	Primary Delivery Address Line Answer	64	142	205
20	Primary Delivery Address Line Alt. Answer Allowed*	01	206	206
21	Second Delivery Address Line Answer	64	207	270
22	Second Delivery Address Line Alt. Answer Allowed*	01	271	271
23	Locatable Address Conversion Indicator	01	272	272
24	Enhanced line of Travel (eLOT) Sequence Number Answer	04	273	276
25	Enhanced line of Travel (eLOT) Ascending/ Descending Answer	01	277	277
26	Firm or Recipient Input	40	278	317
27	Urbanization Input	28	318	345
28	Primary Delivery Address Line Input	64	346	409
29	Second Delivery Address Line Input	64	410	473
30	Last Line Input	42	474	515
31	Filler	01	516	516
32	Record Type Code	01	517	517
33	Category Subcategory Indicator*	02	518	519
34	USPS Internal Research Development Flag*	01	520	520
35	Non-Deliverable Record Indicator*	01	521	521

Field Sequence Number	Field Description	Length	Position From/Through	
36	Multiple Response ZIP + 4 Answer 1*	09	522	530
37	Multiple Response ZIP + 4 Answer 2*	09	531	539
38	PMB-Designator	04	540	543
39	PMB-Number	08	544	551
40	Default Flag	01	552	552
41	Internal Use	01	553	553
42	Early Warning System (EWS)	01	554	554
43	Internal Use	01	555	555
44	Enhanced Line of Travel (eLOT) Sequence Number Answer	04	556	559
45	Enhanced Line of Travel (eLOT) Ascending/ Descending Answer	01	560	560
46	DPV Confirmation Indicator	01	561	561
47	DPV CMRA Indicator	01	562	562
48	DPV False Positive Indicator	01	563	563
49	DSF^2 Delivery Type	01	564	564
50	DPV/ DSF^2 No Stats Indicator	01	565	565
51	DSF^2 Business Indicator	01	566	566
52	DSF^2 Drop Indicator	01	567	567
53	DSF^2 Drop Count	03	568	570
54	DSF^2 Throwback Indicator	01	571	571
55	DSF^2 Seasonal Indicator	01	572	572
56	DPV/ DSF^2 Vacant Indicator	01	573	573
57	DSF^2 LACS Indicator	01	574	574
58	DSF^2 Educational Indicator	01	575	575
59	DPV Footnote 1	02	576	577
60	DPV Footnote 2	02	578	579
61	DPV Footnote 3	02	580	571
62	Filler	05	582	586
63	DSF^2 Primary Number Error Flag	01	587	587
64	DSF^2 Secondary Number Error Flag	01	588	588
65	Residential Delivery Indicator	01	589	589
66	DSF^2 Pseudo Sequence Number	04	590	593
67	LACS^{Link} Indicator	01	594	594
68	LACS^{Link} Return Code	02	595	596
69	Suite^{Link} Return Code	02	597	598
70	Internal Use	02	599	600

* Fields populated within Stage I file only.

- DPV®/DSF$^{2®}$ – Appendix 5
- LACS$^{Link®}$ – Appendix 9
- Suite$^{Link®}$ – Appendix 10

Note: Add two bytes for CRLF.

Test Address Data Element Definitions

Carrier Route Answer

In the CASS Stage I file this field contains the valid carrier route code. This field is blank in the Stage II file.

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.

If 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 can be assigned only when all multiple response candidate records contain the same 5-digit ZIP Code and carrier routes. In all cases, when the ZIP Code 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.

Carrier Route Alternate Answer Allowed

An answer other than the one provided in the Stage I files is permitted.

Field Description	Y	=	Alternate answer is allowed
	N	=	Alternate answer is not allowed

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

Carrier Route Include in 3553 Indicator

Indicates whether or not to increment the records carrier route coded total column in block in Ce1 or on the electronic form

Field Description	Y	=	Increment the CRRT Coded Total Coded field on the 3553
	N	=	Do not increment the CRRT Total Coded field on the 3553

CASS Key

A unique alphanumeric identifier associated with each test address record on the Stage I and State II files.

Field Description: Alphanumeric

Comments: Use this key to reference Stage file questions when discussing address with the CASS Department.

Examples: L9945684587 (the alpha character at position ten (10) that represents the data month is no longer shown since static data is provided.)

Category/Subcategory Indicator

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

Field Description: See Appendix 3 “Translation of Error Codes and Special Flags”.

City Name Answer

Contains an acceptable mailing name returned by the software.

Field Description: Alphanumeric

Comments: The 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 standard version for the input city name or official 13-character abbreviation.

If the input city name is a valid mailing name, this field must contain one of the following answers:

- Preferred last line city name associated with the ZIP + 4 record matched if override city name condition exists or its official 13-character abbreviation.
- 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.

City Name Alternate Answer Allowed

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 = Alternate answer is allowed
N = Alternate 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.

Alternate answers may consist of spaces, return of input, or a correctly spelled-out version of the input address record.

Customer ID

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

Example: 00009ZAB3

Default Flag Indicator

Indicated the record processed obtained a match to a highrise, rural route or street default record in the ZIP + 4 product.

Field Description	Y	=	The default flag indicator is set

Delivery Address Answer Line1/Line 2 Answer

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

Delivery Address Line 1/Line 2 Alternate Answer Allowed Indicator

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

Field Description	Y	=	Alternate answer is allowed
	N	=	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

Contains the test delivery address line information

Field Description Alphanumeric

Comments: Each element of 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 input delivery address field contains a unit designator and/or secondary value, it 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 the *Postal Addressing Standards* (Publication 28).

Delivery Point Answer

Contains the last two digits of the house/box number, or when a "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	Numeric (0 through 9)
Comments:	The Delivery Point Answer and Delivery Point Check Digit Answer fields are graded for all Stage II files

DSF²® Delivery Type

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.

Field Description	1	=	Address was found in CURB table	dph.hs1
	2	=	Address was found in NDCBU table	dpn.hs2
	3	=	Address was found in Centralized table	dph.hs3
	4	=	Address was found in Other (Door Slot) table	dph.hd4
	Blank	=	Address was not presented to hash table	

DSF/DSF² No Stats Indicator

Contains the results of the call to the DPV SEASONAL table: dph.hss

Field Description	Y	=	Address was found in Seasonal table
	N	=	Address was not found in Seasonal table
	Blank	=	Address was not presented to hash table

DSF/DSF² Vacant Indicator

Contains the results of the call to the DPV Vacant table: dph.hsv

Field Description	Y	=	Address was found in Vacant table
	N	=	Address was not found in Vacant table
	Blank	=	Address was not presented to hash table

DSF²® LACS Indicator

Contains the results of the call to the DPV® LACS table: dph.hsl

Field Description	Y	=	Address was found in LACS table
	N	=	Address was not found in LACS table
	Blank	=	Address was not presented to hash table

DSF² Educational Indicator

Contains the results of the call to the DPV Educational table: dph.hse

Field Description	Y	=	Address was found in Educational table
	N	=	Address was not found in Educational table
	Blank	=	Address was not presented to hash table

DSF² Footnote 1 through DSF² Footnote 3

Fields are used to return one or more footnotes that must be set in accordance with DSF² License Requirements. See DPV/ DSF² Licensing materials for footnote flag values.

DSF² Primary Number Error Flag

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

DSF² Secondary Number Error Flag

Field Description	Y	=	Address had a Secondary Number error
	N or Blank	=	Address did not have a Secondary Number error

Early Warning System (EWS) Flag

Indicates a match has been made to the Early Warning System file.

Field Description	Y	=	Address found in EWS file which results in a ZIP + 4 no match
	Blank	=	Address not found in EWS file

eLOT® Asc/Dsc Flag

Contains the correct eLOT ascending/descending code assignment for the corresponding ZIP + 4/CRRT matched record on the Stage I file. CASS will accept answer in position 277 and 560

eLOT Sequence

Reflects the correct eLOT sequence number assigned for the corresponding ZIP + 4 matched record in the Stage I file. CASS will accept the answer in position 273 or position 556.

Field Description 4-digit numeric when populated, otherwise blank

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

Firm or Recipient Input

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 the Publication 28 or words that are not valid for that firm.

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

Firm Name Answer

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 Business or Firm Name field; 2) abbreviated according to the Business Word Table in the *Postal Addressing Standards* (Publication 28); 3) as shown in the Firm or Recipient Input field.

Field Description Alphanumeric

Last Line Input

Field contains the last line information, like the city name, state abbreviation, 5-digit ZIP Code™, and possibly a ZIP + 4 Code.

Field Description Alphanumeric

Comments: Field may contain a valid, standardized city name according to the City State Product or *Post Addressing Standards* (Publication 28).

Locatable Address Conversation System Indicator

The LACS indicator identified addresses that matched to a ZIP + 4® record with a LACS indicator. These address conversions are city-style addresses so that emergency vehicles (e.g. ambulances, police cars etc.) can more easily find these locations. See Appendix 9.

Field Description L or Blank

Comments: In the 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. Software must query the LACS$^{Link®}$ product.

If a new address is found in LACS^{Link}, the LACS indicator "L" should not be returned.

LACS$^{Link®}$ Indicator

LACS^{Link} indicators are used for CASS testing and should be populated when the LACS^{Link} hash tables are queried.

Indicator Values:

Y = LACS Record Match
- A new address could be furnished. The input record matched to a record in the master file

S = LACS record, secondary number dropped from the input address
- The record is a ZIP + 4 street level or highrise match. The input record matched to a master file record but the input address had a secondary number and the master file record did not.

N = No match
- A new address could not be furnished. The input record could not be matched to a record in the master file.

Y = Found LACS record, new address would not convert at run time
- The new address could not be converted to a deliverable address. The input record matched to a record in the master file.

F = A false positive record was detected

Note: Testers are required to email the false positive records to DSF2Stop@usps.gov. See the LACS^{Link} Software Developers Guide (SDG) for more information regarding the required format for the email.

LACS^{Link}® Return Codes

LACS^{Link} return code values are A, 00, 14, 92 or blank. See the LACS^{Link} SDG for more information on the return code values.

Return Code Values

A = LACS Record Match
- A new address could be furnished. The input record matched to a record in the master file.

00 = No Match
- A new address could not be furnished. The input record could not be matched to a record in the master file.

14 = Found LACS record, new address would not covert at run time
- The new address could not be converted to a deliverable address. The input record matched to a record in the master file.

92 = LACS record secondary number dropped from the input address
- The record is a ZIP + 4 street level or highrise match. The input record matched to a master file record, but the input address had a secondary number and the master file record did not.

Multiple response ZIP + 4 Answer 1/Answer 2

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

Field Description: Numeric

Comments: Fields do not necessarily indicate all candidate records in the 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.

Example: 123456789

Non-Deliverable Record Indicator

Field on the Stage I file indicates the address test question is a valid match to a record on the ZIP + 4® Product. However, the match is made to a non-deliverable (ND) type record.

Field Description

Y = Record is an ND type record on the ZIP + 4 Product
Blank = Record is not an ND type record on the ZIP + 4 Product

Comments: The indicator assists in analyzing address matching software.

PMB-Designator Answer Field

The field is populated with the parsed PMB designator supplied by the customer's software. The 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 PMG designator.

PMB-Number Answer Field

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 confirms the ability of the software to accurately identify addresses containing the PMB number.

Record Type Code

Software is required to return the record type in all ZIP + 4 matches that DPV confirm. The level match code facilitates identifying or confirming certain software matches when delivery point assignments are erroneous.

Field Description	Single alpha

RDI™ Flag

Determines if a delivery point is a business or resident

Field Description	Y	=	Residential Delivery
	N	=	Not Residential Delivery
	Blank	=	Did not query RDI

Standard PMB-Designator

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

Standard PMB-Number

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

Field Description	Alpha

Suite^{Link}® Indicator

Indicator is only populated when the Suite^{Link} tables are queried. The return codes are A, 00 and blank. See the Suite^{Link} SDG for more information on the return code values.

Indicator Values	Y	=	Suite^{Link} Record Match Business address improved. The input record matched to a record in the master file. An improved business address could be furnished.
	N	=	No Match Business address is not improved. The input record could not be matched to a record in the master file. An improved business address could not be furnished

Return Code Values	A	=	Suite^{Link} Record Match Business address improved. The input record matched to a record in the master file. An improved business address could be furnished.
	00	=	No Match Business address is not improved. The input record could not be matched to a record in the master file. An improved business address could not be furnished.

Urbanization Answer

Field must contain the correct standardized urbanization name. Guidelines for urbanization standardization can be found in the *Postal Addressing Standards* (Publication 28).

Field Description Alphanumeric

Comments: The Stage I file contains and urbanization answer where applicable

When applicable, address matching software must return the correct standardized urbanization name. 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 policy and retain input urbanization to avoid data loss.

Urbanization Input

Field contains either the real or fictitious name of an urban development within a geographic area.

Field Description Alphanumeric

Comments: Field may contain information with a correct spelling. Information may be abbreviated or spelled out, and some common urbanization prefixes

could be dropped.

USPS Internal Research Development Flag

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	=	test address record is for internal research and development only
	Blank	=	test record is not for internal research and development

ZIP Code™ Answer

Field contains a code that identified 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:	Customer seeking CASS certification must place the correct ZIP Code provided by their matching software for the test address in this field when the address DPV confirms or return the ZIP Code when it corresponds with the input city and state.

ZIP Code Include in 3553 Indicator

Field specifies whether to increment the 5-digit coded total column on PS Form 3553.

Field Description	Y	=	Increment the total coded column for records 5-digit coded on PS Form 3553
	N	=	Do not increment the total coded for records 5-digit coded on PS Form 3553

ZIP + 4® Add-On Answer

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

Field Description	Number or spaces

ZIP Code Alternate Answer Allowed

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	=	alternate answer is permitted
	N	=	alternate answer is not permitted

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

ZIP Code™ Include in 3553

Field represents whether or not the input 5-digit ZIP Code is valid for the city and state when a match is not made to the ZIP + 4® file.

Field Description	Y	=	ZIP Code validates for city and state. Increment the total 5-digit Coded on the PS Form 3553.
	N	=	ZIP Code is not valid for the city and state. Do not increment the total 5-digit Coded field on the PS Form 3553.

ZIP + 4 Add-On Include in 3553

Field specifies whether to increment the ZIP + 4/DPV confirmed tot column on the PS Form 3553.

Field Description	Y	=	Increment the total coded column for records ZIP + 4/DPV confirmed on PS Form 3553Coded on the PS Form 3553.
	N	=	Do not increment the total coded for records ZIP + 4/DPV confirmed on PS Form 3553

CASS Electronic Report Record

Field Sequence Number	Field Description	Length	Position From/Through	
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
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
20	CASS Finance Number	06	395	400
21	Standard LACS Indicator	01	401	401
22	Customer RDI	01	402	402
23	Standard RDI	01	403	403
24	Customer ZIP + 4 Record Type	01	404	404
25	ZIP +4 Record Type	01	405	405
26	Category Subcategory Indicator	02	406	407
27	ZIP + 4 Odd/Even/Both	01	408	408
28	Error Codes	30	409	438
29	Customer Firm Name	40	439	478
30	Customer Urbanization Name	40	479	518
31	Customer Delivery Address	64	519	582
32	Customer City Name	28	583	610
33	Customer State	02	611	612
34	Customer ZIP Code	05	613	617
35	Customer ZIP + 4 Add-On	04	618	621
36	Customer Carrier Route	04	622	625
37	Customer Delivery Point Barcode Answer	02	626	627
38	Customer Delivery Point Check Digit	01	628	628
39	Customer LACS Indicator	01	629	629
40	Customer eLOT Sequence Number	04	630	633
41	Customer eLOT Ascending/Descending	01	634	634
42	Filler	08	635	642
43	Standard eLOT Sequence	04	643	646
44	Standard eLOT Ascending/Descending	01	647	647

Field Sequence Number	Field Description	Length	Position From/Through	
45	PMB Designator	04	648	651
46	Filler	01	652	652
47	PMB Number	08	653	660
48	Standard PMB Designator	04	661	664
49	Filler	01	665	665
50	Standard PMB Number	08	666	673
51	Standard Default Flag	01	674	674
52	Customer Default Flag	01	675	675
53	Filler	25	676	700
54	Standard DPV Confirm Indicator	01	701	701
55	Standard DPV CMRA Indicator	01	702	702
56	Standard DPV False Positive Indicator	01	703	703
57	Standard DSF^2 Delivery Type	01	704	704
58	Standard DPV/ DSF^2 No Stats Indicator	01	705	705
59	Standard DSF^2 Business Indicator	01	706	706
60	Standard DSF^2 Drop Indicator	01	707	707
61	Standard DSF^2 Drop Count	03	708	710
62	Standard DSF^2 Throwback Indicator	01	711	711
63	Standard DSF^2 Seasonal Indicator	01	712	712
64	Standard DPV/ DSF^2 Vacant Indicator	01	713	713
65	Standard DSF^2 LACS Indicator	01	714	714
66	Standard DSF^2 Educational Indicator	01	715	715
67	Standard DPV Footnote 1	02	716	717
68	Standard DPV Footnote 2	02	718	719
69	Standard DPV Footnote 3	02	720	721
70	Standard DSF^2 Primary Number Error Flag	01	722	722
71	Standard DSF^2 Secondary Number Error Flag	01	723	723
72	Customer DPV Confirm Indicator	01	724	724
73	Customer DPV CMRA Indicator	01	725	725
74	Customer DPV False Positive Indicator	01	726	726
75	Customer DSF^2 Delivery Type	01	727	727
76	Customer DPV/ DSF^2 No Stats Indicator	01	728	728
77	Customer DSF^2 Business Indicator	01	729	729
78	Customer DSF^2 Drop Indicator	01	730	730
79	Customer DSF^2 Drop Count	03	731	733
80	Customer DSF^2 Throwback Indicator	01	734	734
81	Customer DSF^2 Seasonal Indicator	01	735	735
82	Customer DPV/ DSF^2 Vacant Indicator	01	736	736
83	Customer DSF^2 LACS Indicator	01	737	737
84	Customer DSF^2 Educational Indicator	01	738	738
85	Customer DPV Footnote 1	02	739	740
86	Customer DPV Footnote 2	02	741	742
87	Customer DPV Footnote 3	02	743	744
88	Customer Primary Number error Flag	01	745	745
89	Customer Secondary Number Error Flag	01	746	746
90	Standard LACS^{Link} Flag	01	747	747

Field Sequence Number	Field Description	Length	Position From/Through	
91	Standard LACS^{Link} Return Code	02	748	749
92	Customer LACS^{Link} k Flag	01	750	750
93	Customer LACS^{Link} k Return Code	02	751	752
94	Standard Suite^{Link} Return Code	02	753	754
95	Customer Suite^{Link} Return Code	02	755	756
96	Filler	19	757	775

Early Warning System (EWS) File Layout

The EWS file consists of records containing partial address information limited to the street name, pre-directionals and post-directionals, and a ZIP Code™. EWS records are culled from a weekly generate ZIP +4 file. URB info will not be added to the EWS file. Also, the EW file should be checked before going to an Alias record.

For an address record to be EWS eligible, the address is not present on the most recent monthly production ZIP + 4® file. As an input address is processed through address matching software and an inexact match is made, the EWS file should be queried to see if an exact match is available. If an exact match is found on the EWS file CASS expects software to return a no match and set a flag in the Stage II test address record. For CASS testing an exact match is defined as a match to all components of the EWS record including the ZIP Code.

Note: EWS supercedes Alias records.

Field Sequence Number	Field Description	Length	Position From/Through	
1	ZIP Code	05	01	05
2	Pre-Directional Abbreviation	02	06	07
3	Street Name	28	08	35
4	Suffix Abbreviation	04	36	36
5	Post Directional Abbreviation	02	40	41
6	Filler	46	42	87

Grading, Scoring, and Certification

CASS Stage II files are graded, analyzed and scored to determine CASS certification status. The test scores may vary based on such factors as address matching software performance

and the usage of static test data that is provided by the CASS Department to all software developers.

Software developers must use the static test data for all tests and must also provide this data to any end user who will take a CASS or MASS test using their software. Failure to use this data will result in test failure.

If software attempts to code optional categories and the answers are incorrect, the incorrect match will be counted as an error against the total of 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. Delivery Point Barcode, eLOT, Perfect Address, DPV®/DSF$^{2®}$, RDI and Suite^{Link} categories require a 100% score. All other categories require a score of 98.5% accuracy. If one of the mandatory categories score is less than 98.5% the entire test fails. If a mandatory category is bypassed or not answered, the test is also considered as a failed test. Subcategories within a mandatory category cannot be bypassed.

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

The CASS Department will compare and analyze the hardcopy and electronic PS Form 3553 against the answer field information returned in the State II file. Computation of the 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 For 3553 must be able to discern between processed and unprocessed records. If any errors are identified 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.

Fatal Add-On Error

CASS and MASS™ certification requirements will continue to support the verification of the ZIP + 4® for mailings processed by MERLIN®. The return of add-on ‘0000’ in the ZIP + 4 or the return of an invalid add-on ‘9999’ in the ZIP + 4 is 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 requirement and USPS® *DMM*®, “CASS” section 708.3.

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 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.

1. Must answer – 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 – where no answer is bypassed, is not mandatory. If these records are coded incorrectly, they are counted towards the total number of incorrectly coded records. If these records are coded correctly by address matching software, they are counted towards the total number of correctly coded records. If the records are not coded (left blank) or the input is returned, they are not counted towards the total number of correct or incorrectly coded records. Optional answer categories are identified by the sing asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
3. Return input record and not assign and add-on code unless the address DPB confirms. In some cases, DPV can be used a s tiebreaker. When a multiple response exists and DPV cannot break the tie, if all candidate record shares 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.
4. DPV® or DSF$^{2®}$, LACS$^{Link®}$ and Suite$^{Link®}$ are mandatory for all tests and production use for all end users. DPV/DSF^{2} return codes and confirmation codes must be returned for each address record. The new LACS$^{Link®}$ converted address and appended Suite$^{Link®}$ secondary must be returned when available for testing. If a mailer does not return the new address from LACS^{Link} only the 5-digit ZIP Code™ can be returned. The mailer may continue to use the input address with the 5-digit ZIP Code associated with the input address. This address does not qualify for automation discounts.
5. Grading for standardization records may or may not contain an input ZIP Code may have a misspelled city name, and may contain a non-mailing 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® 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 Address Information Systems 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.
6. Normalization is 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 to the proper format. This category is identified by the four asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

INPUT	OUTPUT
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	HC1

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	98.5% or higher
Carrier Route	98.5% or higher
ZIP + 4/DP	98.5% or higher
LACS$^{Link®}$	98.5% or higher
DPBC	100%
eLOT	100%
Perfect Address	100%
DPV®	100%
DSF$^{2®}$	100%
RDI™	100%
Suite^{Link} ®	100%

Note: Merge and Merge/eLOT require the same scores as above. However, the delivery point code must be correctly assigned for 100% of all ZIP + 4/DPV confirmed records. If a passing score is not achieved in any single category the entire test fails.

Analysis

A grading output analysis report is provided when the required minimum score is not achieved. The report contains the following reports:

- *CASS Statistical Summary* – Divided into two parts
  - Part 1 contains percentage based information on address matching software by CASS product categories
  - Part 2 contains percentage based information by special flag categories 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 provided the original CASS input.

Certification

When the required minimum scoring levels are achieved, the address matching software will be certified. The CASS Department issues a certification letter acknowledging certification has been achieved for a certified software product. In addition, the certified company's name will be included in the CASS MASS Certified Products Guide.

Delivery Point Barcode Rules (Primary)

1. General Rule

Address: 1234 MAIN ST (PO BOX 44, RR 1 BOX 154, HC 1 BOX 1264)
DPBC: 34 (44, 54, 64)

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).

2. No Numbers

Address: MAIN St (RR 1, HC 1)
DPBC: 99 (99, 99)

Use 99. Print code characters in DPBC representing last two digits of primary street number (or PO Box, rural route, or highway contract route number).

3. Single Digits

Address: 8 MIAN St (PO BOX 1, RR 1 BOX 2, HC 1 BOX 3)
DPBC: 08 (01, 02, 03)

Add leading zero. Print code characters in DPBC representing leading zero and single digit.

4. Fractional Number

Address: 1234 ½ MAIN ST (PO BOX 1 ½. RR 1 BOX 2 ¾, HC 1 BOX 10 ¼)
DPBC: 34 (01, 02, 10)

Ignore fraction. Print code characters in DPBC representing two digits to left of fraction. If single digit to left of fraction, add leading zero.

5. Trailing Alphas

Address: 1234A MAIN ST (PO BOX 4A, RR 1 BOX 154A, HC 1 BOX 12644AA)
DPBC: 34 (04, 54, 640

Ignoring 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.

6. Spaces and Alphas

Address: 1234 A MAIN ST (PO BOX 4 AA, RR 1 BOX 154 A, HC1 BOX 1264 AA)
DPBC: 34 (04, 54, 64)

Ignoring 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.

7. Alphas Only

Address : A Main St (PO Box AA, RR 1 Box X, HC 1 Box AB)
DPBC: 99 (99, 99, 99)

Ignore alphas and se 99. Print code characters in DPBC representing 99 when alphas appear as the only primary street number.

8. Leading/Embedded Alphas

Address: 23S41 MAIN ST (23S4 MAIN ST, 2W3S1 MAIN ST, MAINS ST, C8INT)
DPBC: 11 (04, 01, 01)

Print code characters in DPBC representing last two digits to right of alphas. If single digit to right of alphas, add leading zero.

9. Slashes (/)

Address: 123/4 MAIN ST (PO BOX ¼, RR 1 BOX 123/124/125, H 3 BOX 11/13)
DPBC: 23 (03, 23, 07)

Print code characters in DPBC representing 99 whenever a slash appears directly next to numeric in the primary street number.

10. Other Embedded Symbols

Address: 1.23 MAIN ST (PO BOX 1-3, RR 1 BOX 1.23, HC 3 BOX 11*7)
DPBC: 23 (03, 23, 07)

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.

11. Embedded Spaces

Address: 1 23 MAIN ST (PO BOX 1 3, RR 1 BOX 1 7, HC 1 BOX 12 34)
DPBC: 23 (03, 07, 34)

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.

12. Numeric Street Names

Address: 8 33 ST (123 7th ST)
DPBC: 08 (23)

Ignore numeric street name. Print code characters in DPBC representing last two digits of primary street number (Rule 1).

13. All other Anomalies

Use 99. Print code characters in DPBC representing 99 for conditions not covered by Rules 1 – 12.

Calculating Delivery Points for Military, RR, and HC Default matches

CASS grading procedure for calculating delivery points for military, RR, and HC matches require delivery point values be assigned based on the input box number when one is present. When an input box number is not present, the delivery point value is “99”.

Unique ZIP Code Matrix

CONDITION	CRID/RECORD TYPE	DPC
Normal Matching (No input ZIP or No input + 4 or Input ZIP + 4 corresponds to Matched record)	**Use CRID/Record Type associated With ZIP + 4 record**	**Assign Based on Normal DPC Derivation Rules**
Input of Assigned ZIP + 4 Valid (doesn’t correspond to matched Record)	**Use CRIS/Record Type Associated With Input ZIP + 4**	**Assign Based on the Primary Street Number**
Input or Assigned ZIP + 4 invalid	**Default CRID to ‘C000’ and Record Type matches the style of input address**	**Assign Based on the Primary Street Number**

Note: Set the Default flag when the assigned ZIP + 4 Code matches to a highrise default or a default add-on ‘0001’ (default for Unique).

Delivery Point Barcode Rules (Secondary)

Special Characters and Fractions in Secondary Address Values

When the input secondary address contains embedded special characters like 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 allowed to exist in secondary address values. 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 on page 45 for secondary addresses consisting of only a fraction.

Examples:

Secondary Address Value	Secondary Range Matched	DPC	Rule
5 ½	1-10	05	1
2 1/3 C	2 1/3A-2 1/3D	02	1
A8 ¼	A6 ¼-A12 ¼	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 in the ZIP + 4® product. For example, an input address may be shown as "APT 5A" and matched to a secondary range of "1-10" in the 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 DPB 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 the 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 the ZIP + 4 product. A leading alpha character may not be swapped to make to an all numeric secondary range. When an input secondary address value requires swapping the alpha and numeric values to match to a corresponding pattern in the ZIP + 4 product, use the swapped format to calculate the DPC regardless of whether the swapped value is retained for output in the address.

Example:

Secondary Address Value	Swapped Format Of Input Secondary Address Value	ZIP + 4 Product Secondary Range Matched	DPC	Rule
A7	7A	1A-10A	71	3
6B	B6	B1-B10	26	4

Secondary Numbers Used As Primary Number Values

When a secondary numeric value is used as the primary number in an address, always calculate the DPC assignment based on the secondary number, regardless of how the number is presented in the address. For example, assuming an input address of

Input: 1800 IDS TOWER
MINNEAPOLIS MN 55402

Output: 80 S 8TH ST STE 1800
MINNEPOLIS MN 55402-2123

The DPC for the input address must be calculated based on the value 1800, regardless of how the address is ultimately displayed on a mailpiece.

Default Matches to Highrise Records with Secondary Ranges

There are cases in the ZIP + 4® product in which a single highrise record for a primary address with secondary ranges exists and there is no highrise default record, i.e. a "single-coded 'H' record condition."

The input address matches to a highrise default record. DPV® returns a "D" which indicated that secondary is missing. Software must query SuiteLink®. If no match is found, return the original ZIP + 4 match.

Example:

ZIP Code	Rec Type	DPV	Prim Range	Street Indicia	Unit	Secd Range	City
78840	S	Y	2201-2299	VETERANS BLVD			DEL RIO
78840	H	Y	2205	VETERANS BLVD	STE	D1-D9	DEL RIO

Developers are instructed to assign the street record ZIP + 4 code for those addresses in which the street name and primary number matches to a highrise record but the secondary number is out of range and cannot be assigned to a highrise default record. The DPC value will be based upon the primary address value since the match is made to a street record.

Example:

Input: D5-DALYS GOLD N CHAIN
2205 VETERANS BLVD
DEL RIO TX 78840

Output: D5-DALYS GOLD N CHAIN
2205 VETERANS BLVD STE D5 Appended Secondary
DEL RIO TX 78840-3137

SuiteLink return code: A

This policy applies when a street or highrise default record is present in the ZIP + 4® product. The highrise default or street default match must be queried with Suite Link®.

For CASS testing, the secondary number must be appended to the address. For production mail, if the mailer does not append the secondary number to their original address when one is available from Suite Link, the new secondary number must be included in the Intelligent Mail® Barcode to qualify for postal discounts. Otherwise, the address does not qualify for automation discounts and the 5-digit ZIP Code™ must be returned.

Rule 1: Numeric Simple Rule

The Numeric Simple Rule applies to situation 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 equal zero. The last two digits of the secondary number must become the DPC. See Rule 5, if the numeric value in either the hundreds or thousands place if greater than zero.

Secondary Value	DPC
1	01
2	02
98	98
99	99
7-2	72

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 ½	95
MEZZ	95

Rule 3: Alphanumeric Rule – Trailing Alpha

The Alphanumeric Numeric Rule – Trailing 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 · 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 · ^{Y})), which is the DPC.

1. Convert the trailing alphabetic character (X) to a numeric value sing 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.

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

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:

DPC = MOD ((X · 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 · 10) + Y)/100).

1. Convert the first alphabetic character (X) to a number using the Alphanumeric Conversion Table. See Rule 3.
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 · 1 = 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 = 2 R82	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, if the value in the hundreds and thousands place equals 0.

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

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

"X" equals the numeric value of the digits in the thousands and hundreds places, and "Y" equals the value of the digits in the tens and ones places. Within the formula "MOD" refers to the remainder derived from the division process.

1. Extract the numeric digits found in the thousands and hundreds 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.
4. 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.

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	750 + 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 R2 = 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 ½	12/4 = 3 R1 =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

When an input address is matched to a highrise record with a secondary designator but no secondary ranges, the software must return DPC 99. These “exceptional” designators do not require a secondary value.

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

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

Example (ZIP + 4 product):

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: JANE DOE
123 MAIN AVE OFFICE
WEST BLOOMFIELD MI 48322

Output: JANE DOE
123 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 does not have any 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 product):

ZIP	REC TYPE	CARRIER ROUTE ID	STREET	PRIM LOW/HIGH		SEC DESG	SEC LOW/HIGH		ZIP + 4 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: JOE DOE
101 MAIN ST APTE 405
AUBURN HILLS MI 48321

Output: JOE DOE
101 MAIN ST APTE 405
AUBURN HILLS MI 48321-1116 (DPC 99)

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.

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)		+ 4
Equals Multiple of 10		50

Ordering CASS Tests

All required information must be completed on the CASS Order Form. A Terms and Conditions document must also be completed for the first required certification test for the new cycle. CASS Stage II files are obtained through the Electronic Product Fulfillment (EPF) system. Software testers are required to complete an Electronic Product Fulfillment Web Access Request Form (EPF001). All of the required documents are available on our website at

https://ribbs.usps.gov/cassmass/documents/tech_guides/FORMS/.

Software developers must complete the Terms and Conditions document for CASS Developers. Service Bureaus and mailers who will certify CASS Certified™ without changes should complete the Terms and Conditions document for CASS end-users.

The completed order form and terms and conditions document can be faxed to 650-577-2509 or sent as an email attachment to cassman.ncsc@usps.gov.

Orders cannot be taken over the phone.

Optional parameter settings, configuration designators indicating the settings to be used when processing customer and/or client address files must be provided to the CASS Department.

When an EPF account is established, Stage II files can be downloaded directly from the EPF system. An email will be sent when the Stage II files is available. One ZIPped file per test requested will be provided that includes all files needed for that test.

State and National Files

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.

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.*

State File – The state abbreviation codes listed below should be used to order state tests.

State	Code	State	Code
Alabama	AL01	Nebraska	NE30
Alaska	AK02	Nevada	NV31
Arizona	AZ03	New Hampshire	NH32
Arkansas	AR04	New Jersey	NJ33
California	CA05	New Mexico	NM34
Colorado	CO07	New York	NY35
Connecticut	CT08	North Carolina	NC36

State	Code	State	Code
Delaware	DE09	North Dakota	ND37
District of Columbia	DC10	Ohio	OH38
Florida	FL11	Oklahoma	OK39
Georgia	GA12	Oregon	OR40
Guam	GU13	Pennsylvania	PA41
Hawaii	HI14	Puerto Rico	PR42
Idaho	ID15	Rhode Island	RI43
Illinois	IL16	American Samoa	AS44
Indiana	IN17	South Carolina	SC45
Iowa	IA18	South Dakota	SD46
Kansas	KS19	Tennessee	TN47
Kentucky	KY20	Texas	TX48
Louisiana	LA21	Utah	UT49
Maine	ME22	Vermont	VT50
Maryland	MD23	Virginia	VA51
Massachusetts	MA24	Virgin Island	VI52
Michigan	MI25	Washington	WA54
Minnesota	MN26	West Virginia	WV55
Mississippi	MS27	Wisconsin	WI56
Missouri	MO28	Wyoming	WY 57
Montana	MT29		

Media Configuration

The media configuration for the CASS test is available only via the internet through the EPF process.

Platform

Since CASS certification is no longer an annual requirement, each platform must be certified individually. No waivers will be granted.

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. The configuration consists of a 3-character alphanumeric field that identifies the parameter setting used by the address matching software. The version number must comply with CASS Certified™ address matching software version formats.

Stage II File Processing

1. Download the Stage II File from EPF at https://epf.usps.gov.
    - An email notification will be sent from EPF when the file is available
    - All stage files are compressed using the WinZip Utility. The ZIPped file includes all files needed for the test type ordered.

2. Process the Stage II File
    - Process the file in a batch processing mode. If applicable, report any false/positive hits by following the License Performance Requirements (LPR) guidelines.
3. Return Stage II File and CASS Summary Report (PS Form 3553)
    - The Stage II file must be returned via FTP until the EPF upload is available. The processed answer file must be returned as a ZIPped file with the same filename as the original ZIPped file. The answer file and any other file for the test must be ZIPped separately.

      The grading system will not recognize the file if the filename is not correct or if more than one file is returned with the answer file.

    - A hardcopy of the PS Form 3553 can be sent via email attachment to cassman.ncsc@usps.gov or fax to 650-577-2509.

Evaluating the Stage II File

The file will be graded and evaluated within ten business days. When the file achieves certification, a certification letter and invoice (when applicable) will be sent to the mailing address on the account.

If the file does not meet the certification requirement, an email will be sent with information pertaining to the reason for failure. Sometimes we will allow a retest of the same file if the errors are not extreme. If the error file is requested, a new test will be processed.

Helpful Hint

Always attempt to read the processed Stage II file before returning it to the NCSC for evaluation to ensure that there are no problems with the data and verify that all header files and records are populated and returned in the answer file.

UNITED STATES POSTAL SERVICE

CASS™ Order Form

Customer Information *(Please print)*

Company Official Contact Name	Email Address

Company Name

Physical Address	Apt/Suite

City	State	ZIP + 4® Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Salesperson (your company)	Telephone Number *(Include area code)*	Salesperson Email Address

Mailing Information *(Please print)*

Attention	Email Address

Company Name

USPS Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Billing Address *(If different from Customer and Mailing Information)*

Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Contact Number (if different)

I request that my certification be maintained in U.S. Postal Service® documents and records as:

- ❑ Integrator/Manufacturer
- ❑ User
- ❑ DPV® Licensee
- ❑ RDI™ Licensee
- ❑ Vendor/Service Bureau
- ❑ DSF²® 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 U.S. Postal Service data in accordance with *DMM*® 708.3. 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 Contact Signature	Date

NCSC Use Only

Customer Number	Date	PRDT Code

Product Information

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. The electronic version of PS Form 3553, *CASS Summary Report*, MUST be incorporated into the header record. Also, you **MUST** return a hardcopy of PS Form 3553 by fax, FTP, or email with the Stage II certification.

Address Matching Software

1. Geographic type. If state or area, please specify:
   ❑ National ❑ State _____ _____ _____ _____ _____

2. Type of Test: ❑ Merge ❑ Merge/eLOT®

   2A. DPV® Certification: ❑ Yes ❑ No

   2B. RDI™ Certification: ❑ Yes ❑ No

   2C. DSF²® Certification: ❑ Yes ❑ No

   2D. LACSLink® Certification: ❑ Yes

   2E. SuiteLink® Certification: ❑ Yes

3. Fill in all software information:

Product Title	Version Number	Configuration

4. Fill in all platform information *(If software is required to be recompiled to run on a platform, the platform must be certified)*:

Platform	Platform	Platform	Platform	Platform	Platform

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

   5A. 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 Number	Configuration	Platform

Mail or Fax Completed Form To

CASS DEPARTMENT
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS STE 501
MEMPHIS TN 38188-1001

Telephone Number: 800-642-2914
Fax Number: 650-577-2509

UNITED STATES POSTAL SERVICE®

Electronic Product Fulfillment Web Access Request Form

This form is used to create a Web-based account with the National Customer Support Center (NCSC) which will be utilized to receive *(download)* files for electronic product fulfillment from the Electronic Product Fulfillment (EPF) website. Multiple users within a single organization can download the product(s), however, each user must have a separate EPF account login. Please complete this form and return via United States Postal Service® mail or fax to the address or fax number listed at the bottom of this form. A representative will contact you with details regarding your approved access.

AIS Products

- ☐ Carrier Route national
- ☐ Carrier Route by state
- ☐ City State national
- ☐ Delivery Statistics
- ☐ eLOT® national
- ☐ eLOT by state
- ☐ Five-Digit
- ☐ RDI™
- ☐ Z4Change
- ☐ ZIP + 4® national
- ☐ ZIP + 4 by state
- ☐ ZIPMove
- ☐ AIS Viewer
- ☐ Other *(Specify)*: _____ _____

CDS Products

- ☐ Bi-Monthly
- ☐ Congressional
- ☐ No Stat
- ☐ Weekly
- ☐ Seeds

BMA Products

- ☐ MAC Batch
- ☐ PAVE

AEC Products

- ☐ AEC / AECII®

Other Products

- ☐ DMM Labeling Lists
- ☐ Zone Charts
- ☐ _____
- ☐ _____
- ☐ _____

Licensing/Certification Products

- ☐ ACS (acct. # _____)
- ☐ AMS API
- ☐ CASS™/MASS™ (cust # _____)
- ☐ DPV®
- ☐ DSF²®
- ☐ NCOA^Link®
- ☐ LACS^Link®
- ☐ Suite^Link®
- ☐ Other *(Specify)*: _____

A. Customer Information

1. Name

2. Job Title	3. Telephone Number *(include area code)*
4. Company Name	5. Email Address
6. Business Address	7. Corporate HQ Location *(if different from your Business Address)*

B. Customer Computer Access Authorization

User Responsibility Agreement Statement: I am responsible for Logon/Logoff, all actions pertaining to the use of my assigned logon ID, and will not provide my logon ID to another person. I agree that access to computer data or files not authorized to me is prohibited. I understand my logon ID may be suspended indefinitely if I violate security procedures or fail to provide update information for the information listed above whenever I change job positions. I agree that misuse of a USPS® computer system may result in disciplinary action and/or criminal prosecution. I understand that any detected misuse of a computer system will be reported to the Inspection Service.

Requester's Signature	Date

Manager Responsibility Agreement Statement: I agree that this logon ID will be used for authorized USPS work within the scope of my organization. I also agree that upon termination or transfer of the user, I will advise the Computer Systems Security Officer in writing as to the disposition of the computer files and/or data and logon ID. I will periodically review the use of the assigned logon ID and computer files and/or data.

1. Name	2. Date
3. Signature	4. Telephone Number *(include area code)*

If you have any questions regarding this Web access request form, please contact Electronic Product Fulfillment at 800-331-5747 or via e-mail at BXDMM0@usps.gov; otherwise, mail or fax this completed form with accompanying documentation to:

ADDRESS QUALITY PROGRAMS
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS BLVD STE 501
MEMPHIS TN 38188-1001
FAX: 901-681-4582

NCSC Use Only

NCSC Business Affiliation	
ID Assigned	
Date Customer Contacted	Initials
Comments	

Privacy Notice: For information regarding our Privacy Policy, visit www.usps.com.

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Appendix 1:
PS Form 3553, CASS Summary Report

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UNITED STATES POSTAL SERVICE

CASS™ Summary Report

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.

See DMM® Section 708 *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. DirectDPV™ Certified Company Name	8. DirectDPV Certified Software Name & Version	9. Configuration
	10. eLOT® Certified Company Name	11. eLOT Certified Software Name & Version	12. 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	2. Date List Processed	3. Date of Database Product Used
	a. Master File	a. ZIP + 4® File
	b. Z4Change	b. Z4Change
	c. DirectDPV	c. DirectDPV
	d. eLOT	d. eLOT
	e. CRIS	e. CRIS
4. List Name or ID No. (*If using ID No., number must start with ID #*)	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
a. ZIP + 4/DPV Confirmed ▶		From To	d. 5-Digit Coded ▶		From To
b. Z4Change Processed ▶			e. CRRT Coded ▶		From To
c. DirectDPV ▶		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 *DMM* Section 708.

1. Mailer's Signature	2. Date Signed

3. Name and Address of Mailer

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 U.S. 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	LACSLink®	EWS	SuiteLink®

Privacy Notice: For information regarding our Privacy Policy, visit USPS.COM®.

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 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 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®/DPV® confirmation 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/DPV Confirmed	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.
DirectDPV™	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 DirectDPV/ZIP + 4 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.
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 default/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.

Highrise Default/RR Default

Entries in this box show the number of addresses that were default matched. Defaults are matches made to addresses that contain invalid/missing secondary address or box information. A highrise default contains the building street address in the primary range field and spaces in the secondary range field. A rural route default contains the route number in the primary name but also has spaces in the primary address range.

LACS$^{Link®}$ System

Entries in this box show the number of addresses which have been converted through the LACS^{Link} process. LACS^{Link} is a data product provided by the Postal Service to allow addresses that have been converted due to USPS changes or for 911 emergency systems to be linked with their new address.

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 U.S. Postal Service® ZIP + 4 File. These addresses are, however, valid addresses as formatted and should not be changed in any way since the U.S Postal Service will assign ZIP + 4's to these addresses on the next monthly ZIP + 4 File.

Suite$^{Link®}$ System

Entries in this box show the number of ZIP+4/DPV confirmed addresses that matched to a highrise default, and the Suite^{Link} process returned the appropriate suite number. Only Suite^{Link} 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 U.S. 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. Mailers should make every effort to ensure the quality of their address list(s).

Appendix 2: CASS Version Control

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CASS Version Control

	06.03	**.05**	**.N**	**.08.07**
Fields	**A** **Version Number**	**B** **Revision Number**	**C** **CASS Cycle**	**D** **Manufacturer Number**

Field A

Software version number - The manufacturer assigns a two byte number-decimal-two byte number to this 4 byte field. If address matching logic is changed or updated for an existing address matching software product, the version number must be changed. All changes must be reported to the CASS Department in writing prior to releasing the new software. The CASS staff will evaluate the change to determine whether the version requires recertification.

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

Field B

Software revision number – The manufacturer assigns a decimal-two byte number to this 3 byte field. Revisions are changes that do not affect address matching logic of the certified product and does not require recertification.

Field C

Cycle Indicator – The CASS Department assigns the indicator for each cycle and sends out written notification prior to the beginning of certification testing. This 2-byte field contains a decimal and the letter associated with the cycle being tested.

Field D

Manufacturer Number – This field may be used by the developer to indicate internal tracking information such as bimonthly database releases that will not be published in the *CASS Certified Products Guide*. **This information should not be printed on the PS Form 3553.**

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.

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Appendix 3: Translation of Error Codes and Flags

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Customer No Match Record Translation of Error Codes & Special Flags

All categories except those with asterisks (*) are required. Address matching software must obtain a minimum accuracy rate of 98.5% in each required category to obtain CASS Certification.

Error Codes

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 eLOT sequence
13 eLOT A/D code
14 RDI
15 Fatal Error
16 LACSLink Indicator
17 LACSLink Return Code
18 SuiteLink Return Code
19 Incorrect delivery point barcode (Non-Fatal)
20 Incorrect delivery point barcode
21 PMB
22 Default flag error/Record type error
30 History
DB Business
DC CMRA
DD Drop
DE Educational
DF False-positive
DK Drop count
DL LACS
DN No Stats
DO Confirmation
DP PBSA
DR R777
DS Seasonal
DT Delivery Type
DV Vacant
DW Throwback
FT Footnote Code Error

Record Type

F Firm
G General Delivery
H Highrise
P PO Box
R Rural Route
S Street

Standard Address with Elements

(Spelled out or Abbreviated)

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
AG Firm Name not present – Valid Z4 on input match to firm
A0 5-difit
A1 Dropped 5-digit
A4 5-digit with non-mailing name
A5 Dropped 5-digit with non-mailing name
A8 5-digit misspelled city
* A9 Dropped 5-digit with misspelled city

Standard Address

(Includes reversed alphanumeric primary/secondary number, reversed pre/post directionals, and secondary number combined with primary number)

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

Standard Address with Post-Directional Dropped or Incorrect

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

Standard Address with Suffix Dropped

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 & non-mailing name
E8 5-digit with misspelled city
* E9 Dropped 5-digit with misspelled city

Dual Address

F0 Street address
F1 Box record
F2 Dual Address on separate line
F4 Street address with non-mailing name
F8 Street address with misspelled city
F9 Box record with misspelled city

Aliases

G0 5-digit – Base
G1 5-digit – Alias
G2 Dropped 5-digit – Base
G3 Dropped 5-digit – Alias
* G4 5-digit – Out of range
G5 30 character abbreviation alias

Alias/Multiple Response

**H0 5-digit - Base
**H1 5- digit - Alias

Small Town Default

I0 Exist in ZIP+4
**I1 No match in ZIP +4 P&G records exist
**I2 General delivery match in ZIP+4/G rec only – no match
**I3 No match in ZIP +4/City State

Last Line

JA Input city/ZIP Code correspond; exact match in ZIP Code
JB Input city/ZP Code correspond; input city is non-mailing name, exact match in ZIP Code
JC Input city/ZIP Code 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.
*J2 5-digit with misspelled street
*J3 Dropped 5-digit with misspelled street
J8 5-digit with misspelled city
*J9 Dropped 5-digit with misspelled city

Multiple Response

** 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 & misspelled street
** K7 Dropped 5-digit and/or incorrect component & misspelled street
** K8 5-digit with misspelled city
** K9 Dropped 5-digit with misspelled city

Inexact/Questionable Matching Logic

* L0 5-digit
* L1 Dropped 5-digit

Key Elements Also Known As

****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

*****NDF Position Error**

N0 5-digit
N1 Dropped 5-digit

Extra Information

OA Input contains double secondary. One is valid and the other is a PMB
OB Input contains double "#". One is valid sec the other is PMB
OC Input contains a sec and"#". One is valid sec the other is PMB
OD "#" or valid or invalid sec designator for PBSA
O0 5-digit
O1 Dropped 5-digit
O2 PMB on address line
O3 PMB on secondary address line
O4 Valid Secondary with
O5 PMB number is valid PO Box number – no match
O6 Invalid sec 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 the other is invalid

Syndrome

P0 Seattle Syndrome with 5-digit on input
P1 Seattle Syndrome dropped 5-digit on input
*** P2 Salt Lake Syndrome with 5-digit on input
*** P3 Salt Lake Syndrome dropped 5-digit on input
P4 Flushing NY Syndrome with 5-digit on input
P5 Flushing NY Syndrome dropped 5-digit on input

ZIP Correction

R0 Incorrect 5-digit within finance number
R1 Invalid 5-digit
R2 Incorrect 5-digit within finance number and incorrect +4
R4 Incorrect 5-digit within finance number and blank city/state
R5 Incorrect 5-digit not within finance number

Highrise Default or Delivery Point Alternate

S0 With 5-digit
S4 With 5-digit highrise
S5 "Chase the Base" – Delivery point alternate on input, return highrise exact
** S6 With 5-digit highrise multiple

Hyphenated Ranges

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 Sec 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 sec values into one – exact match only

APO/DPO/FPO

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

Delivery Address Line

**V0 Contains firm name
**V1 Contains highrise name

Multiple Finance Number Matching

**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 – Match in ZIP
**W4 City and ZIP Code from different finance numbers
W5 City and state does not agree with ZIP Code – match to ZIP Code
W6 City and ZIP Code agree, state from different finance number

Highrise

X0 With a firm suite number
*X2 With misspelled street
X8 With a firm suite number and misspelled city

Split/Combined Elements

Y0 Combine pre-directional with street name
Y1 Split pre-directional works off street name
Y2 Drop suffix words off street name
Y3 Drop suffix words off multi-word street name
Y4 Combine suffix with street name
Y5 Combine suffix with street name
**Y6 Invalid street name
*Y7 Street name spelling variations

ZIPMove

Z0 Valid match in new finance number – match
Z1 Invalid match in ZIPMove – match
Z2 Valid ZIPMove match; invalid in new finance number no match

Out of Range/Overlapping

**10 Bad PO Box for finance no/ZP
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 exact match to EWS record
23 LACSLink
**24 LACSLink no match
25 SuiteLink (optional category)
26 SuiteLink no match (optional category)
27 Match to R777 – do not count as valid ZIP+4 on 3553
28 Single Trailing Alpha – DPV w/o trailing alpha
29 Single Trailing Alpha –not allowed to drop trailing alpha because of address pattern

Unique ZIP Codes

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 Input Unique ZIP Code – can make an exact match in non-unique if no match found in Unique – match
4E No correlation between city and ZIP Code – match to city
**4F No correlation between city and ZIP Code – no match and delete ZIP Code
4G Input address line taken from unique ZIP+4 record, match into non-unique unless there is an exact match in a unique
4H No input ZIP can make exact match to unique – firm name only
4I Valid city and ZIP Code with invalid add-on – retain ZIP+4
4J Input ZIP+4 with add-on "0000" or invalid "9999" do return the input + 4. If no match is found, delete the input +4.

Puerto Rico

**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", "Casa" 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

Magnet Streets with Multiple Parse Variations

**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

Multiple Address Lines and Perfect Addresses

7A Address line split between two lines
7B Multiple field addresses with split indicia
70 Perfect Address

* No answer will be bypassed
** Return input record unless using DPV to break a tie
*** No grading for standardization
**** Normalization required

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Appendix 4: Statistical & Error Message Summaries

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USPS 47-2467

REPORT CII027P1

USPS

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

DATE: 04/22/2014
TIME: 20:02:12
PAGE:

LAST ZAP DATE: 03/99/9910
TRANS DATE: 99/99/2013
POOL DATE: 99/99/2013

CUSTOMER NAME: USPS
CUSTOMER IDENTIFICATION: 00421GABC
STAGE: NATIONAL

	5-DIGIT				ZIP+4				CARRIER ROUTE			
	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	149,041	99.365%			148,237	98.992%			147,758	98.996%		
INCORRECTLY CODED ADDRESSES	948	0.635%	5		1,503	1.008%	6		1,493	1.004%	6	
RECORDS BYPASSED	11	0.000%			260	0.000%			749	0.000%		
TOTAL ADDRESSES	150,000				150,000				150,000			

	DPBC		ELOT		PERFECT ADDRESS		DPV BASIC		RDI		FATAL ADDON		LACSLINK		SUITELINK	
	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		ADDRESSES WHICH ARE GRADED & SCORED		ADDRESSES WHICH ARE GRADED & SCORED	
	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT
CORRECTLY CODED ADDRESSES	147,335	99.988%	84,884	99.323%	752	99.339%	124,178	99.965%	146,249	99.840%	149,998	99.999%	2,016	78.719%	4,576	98.962%
INCORRECTLY CODED ADDRESSES	17	0.012%	579	0.677%	5	0.661%	44	0.035%	235	0.160%	2	0.001%	545	21.281%	48	1.038%
RECORDS BYPASSED	2,648	0.000%	64,537	0.000%	0	0.000%	25,778	0.000%	3,516	0.000%	0	0.000%	662	0.000%	116	0.000%
TOTAL ADDRESSES	150,000		150,000		757		150,000		150,000		150,000		3,223		4,740	

ERROR CODES

01 5-DIGIT ZIP	08 UNIQUE NOT FINEST OF CODE	15 FATAL ADDON	22 DEFAULT FLAG	DB BUSINESS
02 ZIP+4	09 LACS INDICATOR	16 LACSLink INDICATOR	30 HISTORY PENALTY	DD DROP
03 CARRIER ID	10 PERFECT ADDRESS	17 LACSLink RETURN CODE	DO CONFIRMATION	DK DROP COUNT
04 CITY NAME	11 GENERAL STANDARDIZATION	18 SuiteLink	DC CMRA	DW THROWBACK
05 STATE ABBREVIATION	12 ELOT SEQUENCE	19 DPBC (NON-FATAL)	DF FALSE-POSITIVE	DS SEASONAL
06 OUT OF RANGE	13 ELOT ASC/DES	20 DPBC	DT DELIVERY TYPE	DV VACANT
07 ADDRESS NON-DELIVERABLE	14 RDI	21 PMB PARSE	DN NO STATS	DL LACS

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

ADDRESSES WHICH ARE GRADED & SCORED

		5 DIGIT			ZIP+4			CARRIER ROUTE		
CATEGORY	TOTAL ADDRESSES	TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT	TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT	TOTAL CORRECT	TOTAL INCORRECT	PERCENT CORRECT
A	15,611	15,556	55	99.647	15,509	99	99.365	15,506	105	99.327
B	16,814	16,772	42	99.750	16,759	55	99.672	16,767	47	99.720
C	8,253	8,250	3	99.963	8,252	1	99.987	8,241	12	99.854
D	9,748	9,739	9	99.907	9,742	6	99.938	9,728	20	99.794
E	9,111	9,106	5	99.945	9,106	5	99.945	9,088	23	99.747
F	4,245	4,244	1	99.976	4,243	2	99.952	4,240	5	99.882
G	3,720	3,580	140	96.236	3,580	140	96.236	3,508	209	94.377
H	161	161	0	100.000	161	0	100.000	161	0	100.000
I	2,169	2,168	1	99.953	2,168	1	99.953	2,168	1	99.953
J	1,732	1,710	17	99.015	1,721	5	99.710	1,691	21	98.773
K	983	974	8	98.676	973	9	98.472	973	9	98.472
L	1,770	1,770	0	100.000	1,770	0	100.000	1,770	0	100.000
M	4,457	4,414	43	99.035	4,414	42	99.057	4,400	57	98.721
N	1,085	1,085	0	100.000	1,082	3	99.723	1,085	0	100.000
O	8,200	8,180	20	99.756	8,179	21	99.743	8,170	30	99.634
P	4,387	4,380	7	99.840	4,387	0	100.000	4,374	13	99.703
R	4,140	4,112	28	99.323	4,132	8	99.806	4,112	28	99.323
S	3,026	3,014	12	99.603	3,001	25	99.173	3,013	13	99.570
T	4,407	4,389	18	99.591	4,359	43	99.023	4,363	33	99.249
U	7,200	7,198	2	99.972	7,189	11	99.847	7,198	2	99.972
V	1,200	1,198	2	99.833	1,199	1	99.916	1,196	4	99.666
W	4,026	4,000	26	99.354	4,012	14	99.652	3,991	35	99.130
X	1,755	1,755	0	100.000	1,751	4	99.772	1,755	0	100.000
Y	4,680	4,677	3	99.935	4,677	3	99.935	4,672	8	99.829
Z	1,177	1,177	0	100.000	1,173	4	99.660	1,177	0	100.000
1	1,018	1,018	0	100.000	1,018	0	100.000	1,018	0	100.000
2	5,091	5,028	62	98.781	4,458	455	90.738	4,118	302	93.167
4	4,709	4,485	220	95.324	4,425	219	95.284	4,435	231	95.049
5	9,274	9,085	189	97.962	8,993	280	96.980	9,034	240	97.412
6	3,604	3,592	12	99.667	3,590	14	99.611	3,582	22	99.389
7	2,247	2,224	23	98.976	2,214	33	98.531	2,224	23	98.976
TOTAL	150,000	149,041	948	0.000	148,237	1,503	0.000	147,758	1,493	0.000

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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	15,611	6	50	56	130	0	0
B	16,814	2	15	7	252	0	0
C	8,253	3	1	12	74	0	0
D	9,748	6	3	17	86	0	0
E	9,111	3	3	21	218	0	0
F	4,245	0	1	4	22	0	0
G	3,720	3	3	72	0	0	0
H	161	0	0	0	0	0	0
I	2,169	0	0	0	0	0	0
J	1,732	15	3	19	0	0	0
K	983	5	6	6	0	0	0
L	1,770	0	0	0	0	0	0
M	4,457	3	2	17	0	0	0
N	1,085	0	3	0	0	0	0
O	8,200	6	7	16	0	0	0
P	4,387	7	0	13	0	0	0
R	4,140	20	0	20	0	0	0
S	3,026	0	13	1	0	0	0
T	4,407	3	28	18	0	0	0
U	7,200	2	11	2	0	0	0
V	1,200	2	1	4	0	33	0
W	4,026	22	10	31	0	0	0
X	1,755	0	4	0	0	0	0
Y	4,680	0	0	5	0	0	0
Z	1,177	0	4	0	0	0	0
1	1,018	0	0	0	0	0	0
2	5,091	10	403	250	0	0	0
4	4,709	127	126	138	0	0	0
5	9,274	0	91	51	0	0	0
6	3,604	1	3	11	0	0	0
7	2,247	0	10	0	0	0	0
TOTAL	150,000	246	801	791	782	33	0

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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	15,611	0	0	49	0	0	
B	16,814	3	0	37	0	0	
C	8,253	0	0	0	0	0	
D	9,748	1	0	2	0	0	
E	9,111	1	0	2	0	0	
F	4,245	0	0	1	24	0	
G	3,720	0	0	137	122	0	
H	161	0	0	0	0	0	
I	2,169	0	0	1	0	0	
J	1,732	0	0	2	0	0	
K	983	0	0	3	0	0	
L	1,770	0	0	0	0	0	
M	4,457	0	0	40	0	0	
N	1,085	0	0	0	0	0	
O	8,200	1	0	13	0	0	
P	4,387	0	0	0	0	0	
R	4,140	1	0	8	0	0	
S	3,026	0	0	12	0	0	
T	4,407	2	0	14	0	0	
U	7,200	0	0	0	0	0	
V	1,200	0	0	0	0	0	
W	4,026	0	0	4	0	0	
X	1,755	0	0	0	0	0	
Y	4,680	0	0	3	0	0	
Z	1,177	0	0	0	0	0	
1	1,018	0	0	0	0	0	
2	5,091	2	0	50	432	0	
4	4,709	0	0	93	1	0	
5	9,274	0	0	178	0	0	
6	3,604	0	0	11	0	0	
7	2,247	1	5	22	0	0	
TOTAL	150,000	12	5	682	579	0	

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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	15,611	1	0	0	0	34	0
B	16,814	1	0	0	0	36	0
C	8,253	0	0	0	0	0	0
D	9,748	0	0	0	0	0	0
E	9,111	0	0	0	0	0	0
F	4,245	0	0	0	0	0	0
G	3,720	0	0	0	0	0	0
H	161	1	0	0	0	0	0
I	2,169	0	0	0	0	0	0
J	1,732	0	0	0	0	1	0
K	983	0	0	0	0	0	0
L	1,770	0	0	0	0	0	0
M	4,457	0	0	0	0	40	0
N	1,085	0	0	0	0	0	0
O	8,200	0	0	0	1	4	0
P	4,387	0	0	0	0	0	0
R	4,140	0	0	0	0	8	0
S	3,026	0	0	0	0	0	0
T	4,407	0	3	0	0	4	0
U	7,200	0	0	0	0	0	0
V	1,200	0	0	0	0	0	0
W	4,026	0	0	3	0	3	0
X	1,755	0	0	0	0	0	0
Y	4,680	0	0	3	0	3	0
Z	1,177	3	0	0	0	0	0
1	1,018	16	0	0	0	0	0
2	5,091	1	8	0	0	39	0
4	4,709	0	0	0	0	92	0
5	9,274	521	0	11	0	5	0
6	3,604	0	0	0	0	2	0
7	2,247	1	0	0	0	0	0
TOTAL	150,000	545	11	17	1	271	0

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Appendix 5: DPV® & DSF²® Products

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DPV® and DSF²®

Move "Y" to the DPV confirmation indicator when a ZIP + 4 match is made to a military, general delivery, or a unique address. Spaces should be moved to all other DPV/DSF² fields and one of the footnotes listed below should be used. In these cases a ZIP + 4 match is considered to be equivalent to a delivery point match.

Software may optionally use DPV to make inexact matches to magnet street records. If only one DPV confirms, a match is allowed to the inexact record.

No Delivery Type on Match

If DPV footnote BB (input address matched to all components) or footnote CC (secondary invalid) is present and there is no delivery type, footnote N1 should replace the footnote BB or CC.

Footnote code:

N1 – Input Address Primary Number matched to DPV but Address missing secondary number or no delivery type on match.

PO Box, rural route and highway contract records should not be included in the process. DPV validates the address when there is no highrise default record present in the database. If there are only records with secondary information and no highrise default, the DPV file build creates a highrise default record with no delivery type in order to validate these addresses. This is also done on street records with secondary information but no default record is in the database. Matches to these created defaults can be recognized by the lack of a delivery type for the address.

False positive records may be included in the test. Software testers are required to email the false positive records to DSF2Stop@usps.gov. The subject line for the email should be CASS Test. For more information, developers should check the License Performance Requirement document or contact the Licensing Department at 800-589-5766. End users who are testing should contact their software provider for these guidelines.

Licensee Performance Requirements DSF² Licensed Service

The following standard footnotes are returned based on the output from DPV and DSF² tables.

AA	Input address matched to the ZIP + 4 product
A1	Input address not matched to the ZIP + 4 product
BB	Input address matched to DPV (all components)
CC	Input address primary number matched to DPV but secondary number not matched (present but invalid)
F1	Input address matched to a military address
G1	Input address matched to a general delivery address
N1	Input address primary number matched to DPV but address missing secondary number

M1	Input address primary number missing
M3	Input address primary number invalid
P1	Input address PO, RR, or HC box number missing
P3	Input address PO, RR, or HC box number invalid
RR	Input address matched to CMRA but PMB designator present (PMB 123 or # 123)
R1	Input address matched to CMRA but PMB designator not present (PMB 123 or # 123)
U1	Input address matched to a unique ZIP Code

DPV Error Codes

DB	Business
DC	CMRA
DD	Drop
DE	Educational
DF	False Positive
DK	Drop Count
DL	LACS
DN	No Stats
DO	Confirmation
DS	Seasonal
DT	Delivery Type
DV	Vacant
DW	Throwback
FT	Footnote Code

DPV Data Element Definitions

Test Address Data Element Definitions

DPV/DSF^2 fields are populated by software that is licensed, or is in the process of applying for a license to perform DPV/ DSF^2 confirmation. For more details, see DPV/ DSF^2 licensing material.

DPV Confirmation Indicator

Field contains the results of the call to the DPV confirmation hash table (dph.hsa).

Field Description	Y	Address was DPV confirmed for both primary and (if present) secondary numbers.
	D	Address was DPV confirmed for the primary number only, and the secondary number information was missing.
	S	Address was DPV confirmed for the primary number only, and the secondary number information was present by not confirmed.
	N	Both primary and (if present) secondary number information failed to DPV confirm
	Blank	Address not presented to the hash table

DPV CMRA Indicator

Field contains the results of the call to the DPV CMRA hash table (dph.hsc)

Field Description	Y	Address was found in the CMRA table
	N	Address was not found in the CMRA table
	Blank	Address not presented to the hash table

DPV False Positive Indicator

Field contains the results of the call to the DPV False Positive hash table (dph.hsf)

Field Description	Y	Address was found in the False Positive table
	N	Address was not found in the False Positive table
	Blank	Address not presented to the hash table

DSF$^{2®}$ False Positive Header Record

Field Sequence Number	Field Description	Length	Position From/Through	
1	Mailer's Company Name	40	01	40
2	Mailer's Address Line	58	41	98
3	Mailer's City Name	28	99	126
4	Mailer's State Name	02	127	128
5	Mailer's 9-Digit ZIP Code	09	129	137
6	Total Records Processed	09	138	146
7	Total Records DPV Matched	09	147	155
8	% Match Rate to DSF^2	09	156	164
9	% Match Rate to ZIP + 4	09	165	173
10	Number of ZIP Codes on File	05	174	178
11	Number of False Positives	02	179	180

DSF²® False Positive Record

Field Sequence Number	Field Description	Length	Position From/Through	
1	Street Pre-Directional	02	01	02
2	Street Name	28	03	30
3	Street Suffix Abbreviation	04	31	34
4	Street Post-Directional	02	35	36
5	Address Primary Number	10	37	46
6	Address Secondary Number	04	47	50
7	Address Secondary Number	08	51	58
8	Matched ZIP Code	05	59	63
9	Matched Plus4	04	64	67
10	Filler	113	68	180

DSF² Header Record 1

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	03	001	003
2	DSF² Header ID, must be DSF1	04	004	007
3	DSF² Licensee Name	40	008	047
4	DSF² License Number	04	048	051
5	DSF² Report Date – YYYYMMDD	08	052	059
6	DSF² File Received Date – YYYYMMDD	08	060	067
7	DSF² File Processed Date – YYYYMMDD	08	068	075
8	Field Description DSF2 Access Mode*	01	076	076
9	Filler	02	077	078
10	DSF² Customer Name	40	079	118
11	DSF² Customer Tax ID Number	12	119	130
12	DSF² Customer NAIC	06	131	136
13	DSF² Customer Number	06	137	142
14	Filler	458	143	600

* Processing Mode

- O = Online Inquiry Processing
- B = Batch Processing (use for CASS test)

DSF$^{2®}$ Header Record 1 Data Element Definitions:

4	DSF^2 – License Number	Assigned by Licensing Department upon receipt of approval
5	DSF^2 – Report Date	Date monthly report is prepared
6	DSF^2 – Received Date	Date licensee received customer file
7	DSF^2 – Processed Date	Date licensee processed customer file

DSF^2 Header Record 2

The DSF^2 header records 2 and 3 contain counts for records that were ZIP + 4 coded and flagged for LACS conversions, along with those counts tallied by ZIP + 4 record type. In addition, there are counts broken down by the 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. All numeric fields are right justified and zero filled.

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	03	001	003
2	DSF2 Header ID, must be DSF2	04	004	007
3	Total Records Presented	09	008	016
4	Total LACS	09	017	025
5	Total Records ZIP + 4 Coded	09	026	034
6	Total Street Records ZIP + 4 Coded	09	035	043
7	Total Street Records LACS	09	044	052
8	Total Highrise Records ZIP + 4 Coded	09	053	061
9	Total Highrise Records LACS	09	062	070
10	Total PO Box Records ZIP + 4 Coded	09	071	079
11	Total PO Box Records LACS	09	080	088
12	Total RR Records ZIP + 4 Coded	09	089	097
13	Total RR Records LACS	09	098	106
14	Total Firm Records ZIP + 4 Coded	09	107	115
15	Total General Delivery Records ZIP + 4 Coded	09	116	124
16	Total Records DPV Validated	09	125	133
17	Total Street Records DPV Validated	09	134	142
18	Total Street Records Presented to CMRA	09	143	151
19	Total Street Records CMRA Validated	09	152	160
20	Total Street Records Presented to Drop	09	161	169
21	Total Street Records Drop Validated	09	170	178
22	Total Street Records Presented to Business	09	179	187
23	Total Street Records Business Validated	09	188	196
24	Total Street Records Presented to Throwback	09	197	205
25	Total Street Records Throwback Validated	09	206	214
26	Total Street Records Presented to Seasonal	09	215	223
27	Total Street Records Seasonal Validated	09	224	232
28	Total Street Records Presented to Vacant	09	233	241
29	Total Street Records Vacant Validated	09	242	250
30	Total Street Records Presented to Curb	09	251	259

Field Sequence Number	Field Description	Length	Position From/Through	
31	Total Street Records Curb Validated	09	260	268
32	Total Street Records Presented to NDCBU	09	269	277
33	Total Street Records NDCBU Validated	09	278	286
34	Total Street Records Presented to Centralized	09	287	295
35	Total Street Records Centralized Validated	09	296	304
36	Total Street Records Presented to Other	09	305	313
37	Total Street Records Other Validated	09	314	322
38	Total Street Records Presented to No Stat	09	323	331
39	Total Street Records No Stat Validated	09	332	340
40	Total Street Records Presented to Educational	09	341	349
41	Total Street Records Educational Validated	09	350	358
42	Total Highrise Records DPV Validated	09	359	367
43	Total Highrise Records Presented to CMRA	09	368	376
44	Total Highrise Records CMRA Validated	09	377	385
45	Total Highrise Records Presented to Drop	09	386	394
46	Total Highrise Records Drop Validated	09	395	403
47	Total Highrise Records Presented to Business	09	404	412
48	Total Highrise Record Business Validated	09	413	421
49	Total Highrise Records Presented to Throwback	09	422	430
50	Total Highrise Records Throwback Validated	09	431	439
51	Total Highrise Records Presented to Seasonal	09	440	448
52	Total Highrise Records Seasonal Validated	09	449	457
53	Total Highrise Records Presented to Vacant	09	458	466
54	Total Highrise Records Vacant Validated	09	467	475
55	Total Highrise Record Presented to Curb	09	476	484
56	Total Highrise Record Curb Validated	09	485	493
57	Total Highrise Records Presented to NDCBU	09	494	502
58	Total Highrise Records NDCBU Validated	09	503	511
59	Total Highrise Records Presented to Centralized	09	512	520
60	Total Highrise Records Centralized Validated	09	521	529
61	Total Highrise Records Presented to Other	09	530	538
62	Total Highrise Records Other Validated	09	539	547
63	Total Highrise Records Presented to No Stat	09	548	547
64	Total Highrise Records No Stat Validated	09	548	556
65	Total Highrise Records Presented to Educational	09	557	565
66	Total Highrise Records Educational Validated	09	566	574
67	Filler	17	584	600

DSF²® Header Record 3

Field Sequence Number	Field Description	Length	Position From/Through	
1	Filler	03	001	003
2	DSF² Header ID, must be DSF3	04	004	007
3	Total PO BOX Records DPV Validated	09	008	016
4	Total PO BOX Records Presented to Business	09	017	025
5	Total PO BOX Records Business Validated	09	026	034
6	Total PO BOX Records Presented to Vacant	09	035	043
7	Total PO BOX Records Vacant Validated	09	044	052
8	Total PO BOX Records Presented to Educational	09	053	061
9	Total PO BOX Records Educational Validated	09	062	070
10	Total RR Records DPV Validated	09	071	079
11	Total RR Records Presented to CMRA	09	080	088
12	Total RR Records CMRA Validated	09	089	097
13	Total RR Records Presented to Drop	09	098	106
14	Total RR Records Crop Validated	09	107	115
15	Total RR Records Presented to Business	09	116	124
16	Total RR Records Business Validated	09	125	133
17	Total RR Records Presented to Throwback	09	134	142
18	Total RR Records Throwback Validated	09	143	151
19	Total RR Records Presented to Seasonal	09	152	160
20	Total RR Records Seasonal Validated	09	161	169
21	Total RR Records Presented to Vacant	09	170	178
22	Total RR Records Vacant Validated	09	179	187
23	Total RR Records Presented to Curb	09	188	196
24	Total RR Records Curb Validated	09	197	205
25	Total RR Records Presented to NDCBU	09	206	214
26	Total RR Records NDCBU Validated	09	215	223
27	Total RR Records Presented to Centralized	09	224	232
28	Total RR Records Centralized Validated	09	233	241
29	Total RR Records Presented to Other	09	242	250
30	Total RR Records Other Validated	09	251	259
31	Total RR Records Presented to No Stat	09	260	268
32	Total RR Records No Stat Validated	09	269	277
33	Total Firm Records DPV Validated	09	278	286
34	Total Firm Records Presented to CMRA	09	287	295
35	Total Firm Records CMRA Validated	09	296	304
36	Total Firm Records Presented to Drop	09	305	313
37	Total Firm Records Drop Validated	09	314	322
38	Total Firm Records Presented to Business	09	323	331
39	Total Firm Records Business Validated	09	332	340
40	Total Firm Records Presented to Throwback	09	341	349
41	Total Firm Records Throwback Validated	09	350	358

Field Sequence Number	Field Description	Length	Position From/Through	
42	Total Firm Records Presented to Seasonal	09	359	367
43	Total Firm Records Seasonal Validated	09	368	376
44	Total Firm Records Presented to Vacant	09	377	385
45	Total Firm Records Vacant Validated	09	386	394
46	Total Firm Records Presented to Curb	09	395	403
47	Total Firm Records Curb Validated	09	404	412
48	Total Firm Records Presented to NDCBU	09	413	421
49	Total Firm Records NDCBU Validated	09	422	430
50	Total Firm Records Presented to Centralized	09	431	439
51	Total Firm Records Seasonal Validated	09	440	448
52	Total Firm Records Presented to Other	09	449	457
53	Total Firm Records Other Validated	09	458	466
54	Total Firm Records Presented to No Stat	09	467	475
55	Total Firm Records No Stat Validated	09	476	484
56	Total Firm Records Presented to Educational	04	485	488
57	Total Firm Records Educational Validated	04	489	492
58	Total GEN DEL Records DPV Validated	09	493	501
59	Total Records w/ Primary Number Errors	09	502	510
60	Total Street Records w/ Primary Number Errors	09	511	519
61	Total Highrise Records w/ Primary Number Errors	09	520	528
62	Total PO Box Records w/ Primary Number Errors	09	529	537
63	Total RR Records w/ Primary Number Errors	09	538	546
64	Total Firm Records w/ Primary Number Errors	09	547	555
65	Total Records w/ Secondary Number Errors	09	556	564
66	Total Street Records w/ Secondary Number Errors	09	565	573
67	Total Highrise Records w/ Secondary Number Errors	09	574	582
68	Total Firm Records w/ Secondary Number Errors	09	583	591
69	Total Records False Positive Validated	09	592	600

DSF$^{2®}$ Header Record 2 and 3 Data Element Definitions

Total Records Presented	Total number of records in the input file
Total LACS	Total number of records with LACS flag set
Total Records ZIP + 4 Coded	Total number of DPV confirmed records
Total “S” Records ZIP + 4 Coded	Total number of “S” DPV confirmed records
Total “S” Records LACS	Total number of “S” records with a LACS flag
Total “H” Records ZIP + 4 Coded	Total number of “H” DPV confirmed records
Total “H” Records LACS	Total number of “H” records with LACS flag
Total “P” Records ZIP + 4 Coded	Total number of “P” DPV confirmed records
Total “P” Records LACS	Total number of “P” records with a LACS flag
Total “RR” Records ZIP + 4 Coded	Total number of “RR” DPV confirmed records
Total “RR” Records LACS	Total number of “RR” records with a LACS flag
Total Firm Records ZIP + 4 Coded	Total number of “F” DPV confirmed records
Total “G” Records ZIP + 4 Coded	Total number of “G” DPV confirmed records
Total Records DPV Validated	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 types S, H, P, R, F, G and are used to supply counts for tables.

DPV confirmed Y, S or D	dph.hsa
Presented to the CMRA table	dph.hsc
Number confirmed in the CMRA table	dph.hsc
Presented to the Drop table	dph.hsd
Number confirmed in the Drop table	dph.hsd
Present to the Business table	dph.hsb
Number confirmed in the Business table	dph.hsb
Present to the Throwback table	dph.hst
Number confirmed in the Throwback table	dph.hst
Presented to the Seasonal table	dph.hss
Number confirmed in the Seasonal table	dph.hss
Presented to the Vacant table	dph.hsv
Number confirmed in the Vacant table	dph.hsc
Presented to the Curb table	dph.hs1
Number confirmed in the Curb table	dph.hs1
Presented in the NDCBU table	dph.hs2
Number confirmed in the NDCBU table	dph.hs2
Presented in the Centralized table	dph.hs3
Number confirmed in the Centralized table	dph.hs3
Presented in the Other (Doorslot) table	dph.hs4
Number confirmed in the Other (Doorslot) table	dph.hs4
Presented in the No Stat table	dph.hsx
Number confirmed in the No Stat Table	dph.hsx

Total records with Primary Number Errors	Total number of records with Primary Number errors. Footnotes M1 and M3
Total Street records with Primary Number Errors	Total number of S records with Primary Number errors. Footnotes M1 and M3
Total Highrise records with Primary Number Errors	Total number of H records with Primary Number errors. Footnotes M1 and M3
Total PO Box records with Primary Number Errors	Total number of P records with Primary Number errors. Footnotes M1 and M3
Total RR records with Primary Number Errors	Total number of R records with Primary Number errors. Footnotes P1 and P3
Total Firm records with Primary Number Errors	Total number of F records with Primary Number errors. Footnotes M1 and M3
Total records with Secondary Number Errors	Total number of records with Secondary Number errors. Footnotes CC and N1
Total Street records with Secondary Number Errors	Total number of S records with Secondary Number errors. Footnotes CC and N1
Total Highrise records with Secondary Number Errors	Total number of H records with Secondary Number errors. Footnotes CC and N1
Total Firm records with Secondary Number Errors	Total number of F records with Secondary Number errors. Footnotes CC and N1
Total records False Positive Validated	Total number of records that were found in the False Positive hash table dph.hsf

Appendix 6: Z4Change Certification

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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®/DPV® confirmed 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 or a firm record is added, this product also shows a transaction for the supporting street ZIP + 4. 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 Post Service® regulations such as maintenance of current updates and pooper 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 the mailing customer the following benefits.

- Reduce costs in meeting automation based requirements by reducing the time and expense of reprocessing your address file.
- Eliminates responsibility to meet the requirements of the *DMM®* for matching address lists with current CASS Certified software within one year of the date of mailing.
- Allow ability to process address files more frequently, thus producing an address list that is current to within 45 days on the average if processing quarterly or within 180 days.
- Enhances competitiveness in the marketplace by improving the deliverability of 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 product used the previous time an address list was processed with CASS Certified software. The customer must also know the cycle date of the ZIP + 4® product that was used for the current reprocessing. The CASS Certified software vendor should be able to provide this information.

The Z4Change product is offered as a monthly or bimonthly update. Therefore, customers must know the update cycle for their CASS Certified™ software vendor. If a customer receives monthly updates of the ZIP + 4® product they should subscribe to the monthly Z4Change product.

Load the Z4Change product that corresponds with the same cycle date of the ZIP+4 product. Calculate the difference in months between the ZIP + 4 product last used to process your address list and the one that is currently being used.

Customers must develop their own Z4Change file access software. In addition, Z4Change certification must be obtain to take advantage of the continuous qualification for the automation postage rates. However, a customer does not have to be certified to purchase or use the Z4Change product.

File Description

Each record in the Z4Change products 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 “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 product is dated November the first flag represents November, the second flag represents October and the third flag represents September, etc.

Illustrations

Figure 1 uses ZIP+4 Code 38018-7740 to illustrate the second flag is set to “Y” indicating the ZIP+4 code changed in October.

Current Month	November											
ZIP + 4 Code	38018-7740											
	November	**October**	September	August	July	June	May	April	March	February	January	December
38018-7740	N	**Y**	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, the record has to be reprocessed with CASS Certified™ software.

Using Z4Change

To use the Z4Change product, the cycle date must be known for the ZIP + 4® product that was used for address matching and the 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 the last address matching cycle used the March ZIP+4 product. Find the appropriate ZIP+4 Code. In the example, the ZIP + 4 is 12345-0009. Figure 2 indicates that a change has occurred to the ZIP + 4 Code since March. Therefore, the address requires processing through CASS Certified software.

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

ZIP + 4 Code 12345-0009 has a transaction in August

Figure 2 – ZIP + 4 Code Transaction in August, the record has to be reprocessed with CASS Certified software.

Figure 3 focuses on the ZIP + 4® Code 12345-0010 which no changes occurred. This address does not require processing through CASS Certified software.

Current Month	November											
ZIP + 4 Code	12345-0100											
	November	October	September	August	July	June	May	April	**March**	February	January	December
12345-0100	N	N	N	N	N	N	N	N	**N**	N		N

ZIP + 4 Code 12345-0100 has no new transactions

Figure 3 – The record does not have to be reprocessed with CASS Certified software.

The Stage II file consists of ZIP + 4 records. Each of the ZIP + 4 records must be compared to the Z4Change file. A flag of “Y” or “N” must be returned in the answer filed to indicate whether or not the ZIP + 4 Code experienced a change.

Processing the Stage II File

Process the Z4Change Stage II file through the Z4Change software. 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 Z4Change Stage II file cannot be completely processed, a new file must be ordered.

When the Z4Change Stage II file has been processed, return the file for grading. A completed facsimile of the PS Form 3553 must be returned with the Stage II file.

Z4Change Certification

When the Stage II file achieves certification, a certification letter and invoice (when applicable) will be sent to the customer’s mailing address.

Z4Change certification does not expire until a change is made to the certification process or data structure of the product file.

Test File Format

The Z4Change Stage II file is available through EPF processing.

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

Scoring

The required passing score for Z4Change is 100%. If a passing score is not achieved on any single category, the entire test fails.

When the Stage II files does not meet the certification requirement an email will be sent with information pertaining to the reason for failure. If the errors are not extreme, we may allow the same test file to be corrected and resubmitted. A new file will be sent when an Error Report has been sent.

Reprocessing the Address File

The entire address file must be reprocessed through CASS Certified software at the end of the third year following the date of the Z4Change certification.

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UNITED STATES POSTAL SERVICE®

Z4CHANGE Order Form

Customer Information *(Please print)*

Company Official Contact Name	Email Address
Company Name	
Physical Address	Apt/Suite
City / State	ZIP + 4® Code
Telephone Number *(Include area code)*	Fax Number *(Include area code)*
Salesperson (your company) / Telephone Number *(Include area code)*	Salesperson Email Address

Mailing Information *(Please print)*

Attention	Email Address
Company Name	
USPS Mailing Address	Apt/Suite
City / State	ZIP + 4 Code
Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Billing Address *(If different from Customer and Mailing Information)*

Mailing Address	Apt/Suite
City / State	ZIP + 4 Code
Contact Number (if different)	

I request that my certification be maintained in U.S. Postal Service® documents and records as:

- ❑ Integrator/Manufacturer
- ❑ User
- ❑ DPV® Licensee
- ❑ RDI™ Licensee
- ❑ Vendor/Service Bureau
- ❑ DSF2® 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 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 U.S. Postal Service data in accordance with *DMM*® 708.3. 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 Contact Signature	Date

NCSC Use Only

Customer Number	Date	PRDT Code

Product Information

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

Fill in all software information:

Product: _____

Version: _____

Configuration: _____

Platform: _____

Mail or Fax Completed Form To

Z4CHANGE CERTIFICATION
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS BLVD STE 501
MEMPHIS TN 38188-1001

Telephone Number: 800-642-2914
Fax Number: 650-577-2509

Appendix 7: eLOT® Utility Certification

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Certification Procedures

CASS uses the Stage file format for the eLOT® utility. All of the necessary address fields are populated to reflect the normal assignment by a CASS Certified™ ZIP + 4® engine (i.e. ZIP Code™, Carrier Route, 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 or highest DPC. The sort sequence will then be ZIP Code, Carrier Route, 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. Implement the following, assuming the use of a ZIP + 4 engine's results, to successfully achieve eLOT 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
- If items 1 through 3 above are found, software assigns the eLOT Sequence Number and eLOT Ascending/Descending Flag. Otherwise, the input data element was not located and software assigns the default of "0000D".
- In cased 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.

Example

eLOT	ZIP Code	CRID	+4 LOW	+4 HIGH	DPC LOW	DPC HIGH	A/D	SEQ
	38111	C002	0500	1000	10	20	A	0002

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

38111-0009

38111-0500

38111-0888

Assuming the DPC is the same; the mailpieces would be assigned the same eLOT 0002A, and sorted according to the eLOT sorting rule.

38111-0500	0002A
38111-0888	0002A
38111-0999	0002A
38111-1000	0002A

Stage II Processing Quick Reference

Processing Steps

1. Developers seeking eLOT® certification can process a Stage II file with eLOT or test eLOT as a separate utility. If tested with the Stage II file, eLOT must be recertified whenever the address matching software is certified. The eLOT utility certification does not expire until a change is made to the product.
2. Stage II or the eLOT utility files must be processed and returned to the CASS Department within ten (10) business days from the date of receipt.

The file will be graded and evaluated within ten business days. When the file achieves certification a certification letter will be sent to the mailing address.

Scoring

The required passing score for eLOT is 100%. If a passing score is not achieved on any single category, the entire test fails.

When the Stage II files does not meet the certification requirement an email will be sent with information pertaining to the reason for failure. If the errors are not extreme, we may allow the same test file to be corrected and resubmitted. A new file will be sent when an Error Report has been sent.

UNITED STATES POSTAL SERVICE®

eLOT® Order Form

Customer Information *(Please print)*

Company Official Contact Name	Email Address

Company Name

Physical Address	Apt/Suite

City	State	ZIP + 4® Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Salesperson (your company)	Telephone Number *(Include area code)*	Salesperson Email Address

Mailing Information *(Please print)*

Attention	Email Address

Company Name

USPS Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Billing Address *(If different from Customer and Mailing Information)*

Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Contact Number (if different)

I request that my certification be maintained in U.S. Postal Service® documents and records as:

- ❑ Integrator/Manufacturer
- ❑ User
- ❑ DPV® Licensee
- ❑ RDI™ Licensee
- ❑ Vendor/Service Bureau
- ❑ DSF2® 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 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 U.S. Postal Service data in accordance with *DMM*® 708.3. 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 Contact Signature	Date

NCSC Use Only

Customer Number	Date	PRDT Code

Product Information

If the matching software/hardware has optional parameters, you MUST return a list of the parameters used to process the eLOT® Stage II file with this form. The electronic version of PS Form 3553, *CASS™ Summary Report*, MUST be incorporated into the header record. Also, you MUST return a hardcopy of PS Form 3553 by fax, FTP, or email with the Stage II certification.

eLOT Software

Fill in all software information:

Product: _____

Version: _____

Configuration: _____

Platform: _____

Mail or Fax Completed Form To

ELOT CERTIFICATION
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS STE 501
MEMPHIS TN 38188-1001

Telephone Number: 800-642-2914
Fax Number: 650-577-2509

Appendix 8: RDI™ Utility

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RDI™ Utility

The RDI product allows customers to determine whether an address is classified as residential or business in the USPS® Address Management System (AMS) database. Addresses processed using the RDI data return an indicator denoting if an address is business or residential.

RDI product updates are provided on a monthly basis.

Additional information can be found online at https://ribbs.usps.gov/index.cfm?page=rdi.

Overview

RDI is designed to be used in conjunction with CASS Certified™ software or an address matching lookup tool. RDI data is supplied as hash tables. The hash algorithm is only determined for the 9-digit and 11-digit ZIP Code™.

The hash tables provide information regarding business deliveries. The residential status of an input address that a ZIP Code is assigned is recognized by the fact that it does not match to a record in either RDI table.

The RDI data files are the following approximate sizes.

9-Digit	=	8mb
11-Digit	=	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 a Disk Lookup.

Developers seeking RDI certification can process a Stage II file with RDI or test RDI as a separate utility. If tested with a Stage II file, RDI must be recertified whenever the address matching software is certified. The RDI utility certification does not expire until a change is made to the product data.

Field Description	Y	=	Residential Delivery
	N	=	Not Residential Deliver
	Blank	=	Did not query RDI

Scoring

The required passing score for RDI is 100% to achieve certification.

When the Utility test does not meet the certification requirement an email will be sent with information pertaining to the reason for failure. If the errors are not extreme, we may allow the same test file to be corrected and resubmitted. A new file will be sent when an Error Report has been sent.

Order and Process Quick Reference

1. Complete RDI™ Utility order form.
2. Stage II or RDI utility files must be processed and returned to the CASS Department within ten (10) business days from the date of receipt.

When certification is achieved a certification letter will be sent to the mailing address.

This utility certification does not expire until a change is made to the product data.

UNITED STATES POSTAL SERVICE®

RDI™ Order Form

Customer Information *(Please print)*

Company Official Contact Name	Email Address
Company Name	
Physical Address	Apt/Suite
City	State / ZIP + 4® Code
Telephone Number *(Include area code)*	Fax Number *(Include area code)*
Salesperson (your company) / Telephone Number *(Include area code)*	Salesperson Email Address

Mailing Information *(Please print)*

Attention	Email Address
Company Name	
USPS Mailing Address	Apt/Suite
City	State / ZIP + 4 Code
Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Billing Address *(If different from Customer and Mailing Information)*

Mailing Address	Apt/Suite
City	State / ZIP + 4 Code
Contact Number (if different)	

I request that my certification be maintained in U.S. Postal Service® documents and records as:

- ❑ Integrator/Manufacturer
- ❑ I do not wish to be listed in USPS® pubs.

I am applying for:

- ❑ Manufacturer Certification *(Software/Hardware)*

All information furnished on this application is complete and correct. The responses provided on the 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 *DMM*® 708.3. 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 Contact Signature	Date

NCSC Use Only

Customer Number	Date	PRDT Code

Product Information

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. The electronic version of PS Form 3553, *CASS Summary Report*, MUST be incorporated into the header record. Also, you MUST return a hardcopy of PS Form 3553 by fax, FTP, or email with the Stage II certification.

RDI Software

Fill in all software information:

Product: _____

Version: _____

Configuration: _____

Platform: _____

Mail or Fax Completed Form To

CASS DEPARTMENT
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS BLVD STE 501
MEMPHIS TN 38188-1001

Telephone Number: 800-642-2914
Fax Number: 650-577-2509

Appendix 9: LACS$^{Link®}$ Product

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LACS^{Link}® Product

LACS^{Link} is a data product that allows addresses that have been converted due to 911 emergency systems to be linked to their new address. The input to a LACS^{Link} lookup is a display of the old address (not parsed) of fifty (50) characters in length, and a 5-digit ZIP Code™. The output will be a new 11-digit Delivery Point Code with a Hint Byte to allow the reversing of the DPC into a text address.

For additional information about LACS^{Link}, contact the Licensing Department at 800-589-5766.

LACS^{Link} Requirements

False positive records may be included in the CASS test. Software testers are required to email the false positive records to DSF2Stop@usps.gov. The subject line should be CASS Test LACS^{Link}. For more information, developers should check the License Performance Requirement (LPR) document or contact the Licensing Department at 800-589-5766. End users who are testing should contact their software provider for these guidelines.

LACS^{Link} is mandatory for all end-users. It is not available as a utility certification.

If a mailer does not return the new address when one is available from LACS^{Link}, they cannot use the ZPP + 4 associated with the new address. The mailer may continue to use the input address with the 5-digit ZIP Code associated with the input address. This address does not qualify for automation discounts.

LACS^{Link} Indicator

LACS^{Link} indicators are used for CASS testing and should be populated when the LACS^{Link} hash tables are queried.

Indicator Values:

- Y = LACS Record Match
  - A new address could be furnished. The input record matched to a record in the master file
- S = LACS record, secondary number dropped from the input address
  - The record is a ZIP + 4 street level or highrise match. The input record matched to a master file record but the input address had a secondary number and the master file record did not.
- N = No match
  - A new address could not be furnished. The input record could not be matched to a record in the master file.
- Y = Found LACS record, new address would not convert at run time
  - The new address could not be converted to a deliverable address. The input record matched to a record in the master file.
- F = A false positive record was detected

LACS$^{Link®}$ Return Codes

LACS^{Link} return code values are A, 00, 14, 92 or blank. See the LACS^{Link} SDG for more information on the return code values.

Return Code Values

A = LACS Record Match
- A new address could be furnished. The input record matched to a record in the master file.

00 = No Match
- A new address could not be furnished. The input record could not be matched to a record in the master file.

14 = Found LACS record, new address would not covert at run time
- The new address could not be converted to a deliverable address. The input record matched to a record in the master file.

92 = LACS record secondary number dropped from the input address
- The record is a ZIP + 4 street level or highrise match. The input record matched to a master file record, but the input address had a secondary number and the master file record did not.

LACS^{Link} return code values are A, 00, 14, 92 or blank. See the LACS^{Link} Software Developer's

LACS^{Link} Indicator Value and Return Code Value Combinations

LACS^{Link} Indicator	LACS^{Link} Return Codes	Condition
Y	A	New address furnished
S	92	Secondary dropped from input address
N	00	No Match
Y	14	LACS record found, new address not available
F	Blank	False positive – send email
Blank	Blank	Not queried

Appendix 10: SuiteLink® Product

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Suite^{Link}® Product

Suite^{Link} improves business addresses by adding secondary suite numbers to candidate records where there is a known secondary deficiency. Given a business name and an associated ZIP + 4 coded address that matches to a highrise or street default, the Suite^{Link} process returns the appropriate suite number when available.

The Suite^{Link} product should be queried when an address matches to a street or highrise default record. If a business name match is found and a secondary number is returned, the new suite information **must be appended to the original address for CASS testing**.

Example:

Input:

ARMY CAREER CENTER

217 AVE UNIV INTER STE 100

SAN GERMAN PR 00683-3988

Correct Match: Must be returned for CASS testing

Output:

ARMY CAREER CENTER

217 AVE UNIV INTER STE 105

SAN GERMAN PR 00683-3988

For live production mail, the suite number does not have to be appended to the address but must be included in the barcode that is sprayed on the mailpiece to qualify for automation rates.

The USPS will allow developers to return Suite^{Link} address in different manners for production software. However, for CASS testing the new address must be returned in the Stage II file.

Production Options:

Example:

Input: ARMY CAREER CENTER
217 AVE UNIV INTER STE 100 (invalid secondary)
SAN GERMAN PR 00683

Output: ARMY CAREER CENTER
217 AVE UNIV INTER STE 105 Dropped invalid input secondary
SAN GERMAN PR 00683-3988

Suite^{Link} Return Code: A

Building an Enhanced Modified Delivery Point (EMDP)

Keys are built using the significant words in a business name and the building's Enhanced Modified Delivery Point (EMDP).

The EMDP is a numeric representation of a delivery point. It is created using the street level 9-digit ZIP Code™ and the primary number. The secondary number or descriptor should not be used when building the EMDP for Suite$^{Link®}$.

Sample EMDP

5-Digit ZIP Code	4-Digit Add-On	7 Digits of Primary #	2 Alphas from Primary #
12345	6789	0000123	A

Example of Keys

Input Record:
Investment Bank of America
123 Main St
12345-6789

Businesses at 123 Main St:

Poplar Medical Sales	Ste 212
Poplar Auto Sales Memphis	Ste 214
Poplar Auto Repair	Ste 216
Wilson Law Firm	Ste 218
Boyce's Kayaks	Ste 220

Keys built to probe the Suite^{Link} Product:
EMDP-America Bank Investment
EMDP-America
EMDP-Bank
EMDP-Investment
**Note that "of" is omitted because it appears in the noise word table.*

Suite^{Link} Example (cont.)

Input:
Poplar Auto Sales
123 Main St (Suite Missing)
12345-6790 (Highrise Default)

Lookup Key: SHA of EMDP-Auto Poplar Sales
Returns: No Matches
Lookup Key: SHA of EMDP-Poplar
Returns: 212, 214, 216
Lookup Key: SHA of EMDP-Auto
Returns: 214, 216
Lookup Key: SGA of EMDP-Sales
Returns: 212, 214

Output: 214

Each key that successfully returns a suite number is used to build confidence in the match.

Suite$^{Link®}$ Matching Confidence Rules

The following rules determine if a match is valid and the secondary number may be returned. A match to the complete input after testing the noise word table results in a valid match.

Number of Non-Excluded Words on Input	Number of Words that Must Return the Same Secondary Number
1	1
2	2
3	2
4	3
5 or more	4

After the lookup is complete, when a valid match is obtained update the Address List. After a valid match is obtained, you must process the address with the new secondary information through CASS Certified™ software.

The Suite$^{Link®}$ indicator is populated when the Suite^{Link} tables are queried. The Suite^{Link} return codes

Indicator Values

Y = Suite^{Link} Record Match
Business address improved. The input record matched to a record in the master file. An improved business address could be furnished.

N = No Match
Business address not improved. The input record COULD NOT be matched to a record in the master file. An improved business address could not be furnished.

Return Code Values

A = Suite^{Link} Record Match
Business address improved. The input record matched to a record in the master file. An improved business address could be furnished.

00 = No Match
Business address not improved. The input record COULD NOT be matched to a record in the

Suite^{Link} File Layout

Detail Field	Col	Length
Suite^{Link} Return Code	597	02

For all administration and technical information regarding this product, please contact the Licensing Department at 800-589-5766 or email ncoalink@usps.gov.

Example: New Secondary Available

Rec Type	Firm	DPV	Prim Range	Street Indicia	Unit	Sec Range	City	ZIP Code	Unique	ZIP+4 Range	CRID
H		Y	910	MADISON			MEMPHIS	38103	N	3403	C029
H		Y	910	MADISON	STE	823-826	MEMPHIS	38103	N	3435	C029

Example:

Input:
UT Animal Research
910 Madison Ave
Memphis TN 38103

Output:
UT ANIMAL RESEARCH
910 MADISON AVE STE 823 Appended Secondary
MEMPHIS TN 38103-3435

Suite^{Link} Return Code: A

Optional Formats in Production Product

Based on the input address, CASS software can return invalid extraneous information in several optional formats.

We encourage mailers to append the secondary Suite^{Link} matched information to the mailpiece to help ensure the mail reaches the intended recipient. However, this is optional. The mailer can choose not to append the valid secondary information to the mailpiece. However, the 11-digit barcode must match the appended Suite^{Link} address.

Example:

Input:	UT Animal Research 910 Madison Ave Ste 9 (invalid secondary) Memphis TN 38103	
Output:	UT ANIMAL RESEARCH 910 MADISON AVE STE 823 MEMPHIS TN 38103-3435	Dropped invalid input secondary
Output:	UT ANIMAL RESEARCH 910 MADISON AVE STE 823 STE 9 MEMPHIS TN 38103-3435	Appended invalid input secondary to the end of the address
Output:	UT ANIMAL RESEARCH STE 9 910 MADISON AVE STE 823 MEMPHIS TN 38103-3435	Moved invalid input secondary To second address line

The extraneous info can also be changed to a pound sign.

Output:	UT ANIMAL RESEARCH 910 MADISON AVE STE 823 # 9 MEMPHIS TN 38103-3435	Invalid input secondary changed to a pound sign (#)
Output:	UT ANIMAL RESEARCH # 9 910 MADISON AVE STE 823 MEMPHIS TN 38103-3435	Moved invalid input secondary to Second address line and changed To a pound sign (#)

We encourage mailers to append the secondary Suite^{Link} matched information to the mailpiece to help ensure the mail reaches the intended recipient. This is optional. The mailer can choose not to append the valid secondary information to the mailpiece. However, the 11-digit barcode must match the appended Suite^{Link} address

Appendix 11: DirectDPV™

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DirectDPV™ Utility

DirectDPV is a product to allow mailers to prescreen address records that have previously been ZIP + 4® coded using CASS Certified™ software in an authorized mode. DirectDPV contains either a ZIP + 4 or a ZIP+ 4 and a delivery point value for addresses known to the Postal Service™ to have undergone a change which would require an update to the address maintained in the mailer's file. Addresses that have not changed will not require reprocessing.

Requirement

The mailer must store the complete ZIP + 4 code or Zip + 4/DPV® for each address. If the ZIP + 4 code is not present in an address record, DirectDPV cannot be used and the address needs to be resubmitted for CASS processing. It is recommended that the delivery point value be stored in addition to the ZIP + 4 code. If the delivery point value is not stored, the address can be looked up in the DirectDPV process sig only the ZIP + 4 code.

When the comparison of the ZIP + 4 or the ZIP + 4 code and delivery point value from the mailer's address record do not appear in the DirectDPV data, the address retains its eligibility to be counted as a ZIP + 4 or ZIP + 4 code and delivery point value is found in the DirectDPV data, the address must be either recreated from the DirectDPV data or must be resubmitted to CASS software and updated to qualify for automation rates.

Any process involving the use of DirectDPV requires certification prior to its authorized use. A utility test will be provided that exercises the DirectDPV function and verify the process has been correctly implemented and the tabulation of statistics on the PS Form 3553 is correct.

Use of DirectDPV does not alter the mailer requirement to validate addresses every 180 days using CASS Certified™ software to qualify for automation rates except that DirectDPV is an authorized process to use in meeting the 180 days validation process. The Postal Service will require all addresses in the mailer's file be resubmitted to a CASS Certified address matching process on an annual basis regardless whether DirectDPV is used to maintain the address file.

Note: Refer to the DPV License Performance Requirements (LPR) for additional information.

Fulfillment

DirectDPV is available only as part of the DPV product fulfillment to DPV licensed CASS Certified address matching software authors.

Certification Procedures

Any process involving the use of DirectDPV requires certification prior to authorize use. A utility test will be provided that exercises the DirectDPV functions and verifies that they have been correctly implemented and the tabulation of statistics on PS Form 3553 is correct.

Although the DirectDPV Utility certification can be requested independently of CASS Certification, DirectDPV can only be used in conjunction with CASS Certified™ software.

Order and Process DirectDPV Stage II File

The test file consists of records that contain a ZIP + 4® and delivery point, ZIP + 4 only, and no match records.

- A score of 100% is required to pass.
- Software must return a DirectDPV flag indicating the record was presented to DirectDPV. The values for the flag are "Y" (found), 0 (not found with all zeros) or N (not found).
- Software must return the new 11-digit and address information for records that are found in the DirectDPV table. If the record is not found in the DirectDPV table then the original input should be returned in the answer fields for the utility test.
- The PS Form 3553 will be graded for accuracy and completion.

Direct DPV utility files must be processed and returned to the CASS Department within ten (10) business days from the date of receipt.

Processing Steps

Stage files must be processed and returned to the NCSC within ten business days from the date or receipt.

Set software parameters exactly as if processing a customer's address file or an internal address file. Process the original stage file.

Scoring

The required passing score for DirectDPV is 100% to achieve certification.

When the Utility test does not meet the certification requirement an email will be sent with information pertaining to the reason for failure. If the errors are not extreme, we may allow the same test file to be corrected and resubmitted. A new file will be sent when an Error Report has been sent.

This utility certification does not expire until a change is made to the product data.

DirectDPV™ Order Form

Customer Information *(Please print)*

Company Official Contact Name	Email Address

Company Name

Physical Address	Apt/Suite

City	State	ZIP + 4® Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Salesperson (your company)	Telephone Number *(Include area code)*	Salesperson Email Address

Mailing Information *(Please print)*

Attention	Email Address

Company Name

USPS Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Telephone Number *(Include area code)*	Fax Number *(Include area code)*

Billing Address *(If different from Customer and Mailing Information)*

Mailing Address	Apt/Suite

City	State	ZIP + 4 Code

Contact Number (if different)

I request that my certification be maintained in U.S. Postal Service® documents and records as:

- ❑ Integrator/Manufacturer
- ❑ Vendor/Service Bureau
- ❑ 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 DirectDPV 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 DirectDPV 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 DirectDPV Stage II file contains technology that disables access to outdated U.S. Postal Service data in accordance with *DMM*® 708.3. 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 DirectDPV certification.

DirectDPV 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 Contact Signature	Date

NCSC Use Only

Customer Number	Date	PRDT Code

Product Information

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

DirectDPV™ Software

Fill in all software information:

Product: _____

Version: _____

Configuration: _____

Platform: _____

Mail or Fax Completed Form To

DIRECTDPV CERTIFICATION
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
225 N HUMPHREYS STE 501
MEMPHIS TN 38188-1001

Telephone Number: 800-642-2914
Fax Number: 650-577-2509

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