

Multiline Accuracy Support System



**MLOCR
RVE
Encoding Station**

Technical Guide

**2004-2005
cycle**

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

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Purpose

CASS™ (Coding Accuracy Support System) certification is a process designed in cooperation with the mailing industry to improve the accuracy of carrier route, 5-digit ZIP, and ZIP+4® codes as well as the delivery point barcodes that appear on mailpieces.

CASS provides hardware and software manufacturers, service bureaus, and commercial mailers a means of testing and, upon achieving required accuracy scores, certifying the quality of their address-matching software. The Certification Department, located at the National Customer Support Center (NCSC) evaluates and grades CASS tests and returns the results to the customer, providing useful diagnostics for correcting software deficiencies. However, CASS does not measure the accuracy of ZIP+4, delivery point, 5-digit, or carrier route codes in a mailer's address file.

MASS™ (Multiline Accuracy Support System) certification is a process similar to CASS but is designed for certification for Multiline Optical Character Readers (MLOCs), Remote Video Encoding (RVE), Local Video Encoding (LVE), and encoding stations.

Overview

MASS/RVE is an extension of CASS. The MASS certification cycle is designed to evaluate the ability of MLOCs and encoding stations to process address information and apply an accurate delivery point barcode (DPBC) to a mailpiece. However, the RVE is designed to evaluate the ability of the entire remote video encoding operation to process address information and apply an accurate DPBC to a mailpiece. The MASS/RVE certification cycle is comprised of the following phases:

1. Software manufacturer certification
2. Hardware manufacturer certification
3. RVE manufacturer certification
4. User certification

All MASS/RVE tests are similar to CASS Stage II tests in that the performance of address-matching software and barcode application hardware is evaluated after it has processed a test file. If the required accuracy is achieved, MASS or RVE certification is issued.

MASS/RVE certification is an annual requirement and remains valid from the certification date until the end of any current period (i.e., from August 1 of one year through July 31 of the next). Customers must reapply for certification and meet the accuracy requirements each year to remain certified and avoid interrupted service to their customers. MASS certification is mandatory for mailers using MLOCs/RVE or encoding stations to print DPBCs on mailpieces submitted for mailing at discount automation rates (see *Domestic Mail Manual (DMM)*, Module A, Section 950).

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

Certification Requirements

The Certification Department understands that customers who purchase a new system often have legitimate reasons for wanting to operate it immediately: waiting for MASS™ certification is often impractical and costly. To address this issue, a 45-day courtesy certification period is provided for systems that are newly installed, moved, relocated, upgraded or reassembled. During this 45-day window, the customer can use the system to produce and submit mail and qualify for automation rates after receiving clearance from the Certification Department. The customer must receive MASS certification during this 45-day period; if the customer fails to MASS certify within this 45-day period, the system becomes ineligible to submit mail at automation rates after the 45th day.

Systems used for automation rates must be certified annually. In addition, recertification outside the normal annual testing periods may be required if changes are made to the following:

- The address-matching software utilized by the MLOCR
- The operating system (e.g., migrating from DOS to Windows NT)
- The camera configuration (e.g., from ATR to RAF), including switching from a single to a dual camera configuration
- Speed
- Model

Likewise, recertification may be required when a MASS certified system is moved, relocated, upgraded, or reassembled. The customer must notify the Certification Department within seven days of the change by submitting the MASS order form, with installation date.

Moving a system involves **any** movement from one position/place within the same area to another, while relocating a system involves movement from one floor or building to another. An upgrade is considered to be **any** change in the host computer's operating system, cameras, or software used to operate the system, unless a waiver has been granted at the manufacturer level.

***Note:** Machines used for demonstration are not eligible for the 45-day courtesy period and do not qualify for automation discount rates.*

Change of Ownership

If an MLOCR or an encoding station is sold or ownership is transferred, the new owner must notify the Certification Department in writing so that the customer master files can be maintained. The notification must include the following:

- Equipment model number, serial number and MASS ID

- Previous owner's name and address
- New owner's name, address, phone number, and FAX number

If the machine is not physically relocated, a new MASS certificate may be issued. If the machine is physically relocated, the customer must follow the machine relocation guidelines. (See Certification Requirements above)

Fee Policy for New, Upgraded or Transferred Machines

(After July 31st)

New systems initially deployed from a MASS™ manufacturer to an end-user at any time during a current MASS cycle will be charged a flat fee of \$300 for Multiline Optical Character Readers (MLOCs) and \$100 for Direct View Encoding Desk (DVEDs) if order is received after July 31st. These fees also apply to any barcoding equipment transferred, upgraded or sold to one company from another of which association between the companies does not exist. A new system is defined as barcoding equipment that is not in use or is not operational during the time for which certification is requested or during any previous MASS cycle.

Fee Policy for New, Upgraded or Transferred Machines

(Prior to July 31st)

All systems are required to be MASS certified by August 1 of each calendar year. Systems may be eligible for no-fee certification when the applicant promptly notifies the MASS Department that a new, transferred or upgraded system has been received, installed and is operational under the 45 day grace period prior to or during the month of May. After the month of May, new, transferred or upgraded systems will be charged a certification fee of half of the regular scheduled fee.

Cycle Changeover Policy

New MASS requirements are introduced each year, and the changeover from one cycle to the next typically occurs on April 1. After the changeover, the MASS Department cannot test customer compliance with the previous cycle, which creates difficulties for customers completing MASS testing under the previous cycle's requirements after April 1. In this case, a courtesy MASS certification is granted to help these customers maintain normal operations between April 1st and the time at which they can comply with the new cycle requirements. However, these customers must be recertified by July 31 to continue receiving automation discounts.

Hardware and Software Revisions, Upgrades, and Patches

If an MLOC or encoding station software manufacturer issues a revision, upgrade, or patch to existing address-matching software or hardware, the manufacturer must submit written notification to the Certification Department before distributing the software or hardware. The written notification must include a brief description of the changes being made and the expected results of those changes. The NCSC will evaluate the documentation and determine an appropriate course of action, which may include recertification of all users, a sample of the user base, hardware manufacturers only, or software manufacturers only. It is possible that no action will be taken following notification.

The MASS Process

The first step in the MASS™ certification process is notifying the Certification Department of the Manufacturer's interest to become MASS certified by providing a list or matrix of the configurations under which their equipment is running and the model numbers. The Manufacturer must also provide the name of the software, version number, serial number, and manufacturer MASS identifier code.

Software Manufacturer Certification

CASS™ certification of the address-matching software is the second step in MASS certification.

1. Before a software manufacturer distributes new or revised address-matching software to customers, the manufacturer must process a CASS Stage II file.
2. The NCSC evaluates the Stage II file and returns the results to the software manufacturer. Once the software displays the required level of accuracy, the NCSC issues the software manufacturer a CASS certificate.
3. The software manufacturer may distribute software to MLOCR/RVE and encoding station manufacturers.

Hardware Manufacturer Certification

The third step in the MASS certification cycle is hardware manufacturer certification, which takes place after the manufacturer receives and installs CASS-Certified™ address-matching software. During this phase, a manufacturer's hardware is tested to determine if it can 1) correctly read the address block on a test mailpiece, 2) process the address information through address-matching software, and 3) spray a machine-readable, accurate DPBC on the test mailpiece using software that has already been tested in a stand-alone environment.

1. The hardware manufacturer orders a MASS test deck from the NCSC using the MASS Order Form (see page 15).
2. The manufacturer processes the test deck on a representative model of MLOCR or encoding station and returns it to the NCSC for evaluation.
3. If the manufacturer passes certification testing, the NCSC issues a MASS certificate and allows the manufacturer to distribute software to users.

RVE Manufacturer Certification

The fourth step in the MASS certification cycle is RVE manufacturer certification. RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS certified before RVE system certification can be attempted.

RVE System Certification With MLOCR

- Deck 1 One test deck is processed with all systems (including MLOCR) turned on.

Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE. MLOCR coding must be deactivated during this part.

The RVE/LVE Certification Order Form is found on page 17.

Note: Successful scores are required on all test decks to attain RVE system Certification.

User Certification

The final step in the MASS™ certification cycle is user certification.

1. Upon receipt of updated address-matching software, the user must order a separate test deck for each MLOCR or encoding station via the MASS Order Form.
2. The user processes the test deck and returns it to the NCSC for evaluation.
3. If the user passes certification testing, the NCSC issues a MASS certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

RVE User Certification

RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS™ certified before RVE system certification can be attempted.

RVE System Certification With MLOCR

Deck 1 One test deck is processed with all systems (including MLOCR) turned on.

Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE. MLOCR coding must be deactivated during this part.

The RVE/LVE Certification Order Form is found on page 17.

Successful scores are required on all test decks to attain RVE system certification. If the user passes certification testing, the NCSC issues a RVE certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

Mailpiece Design Analyst

The Mailpiece Design Analyst (MDA) is an official representative observing the process of certifying MASS test decks. The MDA's role is essential as a neutral observer, not as an active participant. The MDA should not recommend any actions which would affect the results of the customer's test without our approval.

MASS Grading Changes

Fee-Based Certification

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

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

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

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

MASS Grading Changes

Grading for Standardization

The CASS test for hardware manufacturers will continue to grade for address standardization to verify that software does not lose or modify critical address elements. This issue is especially critical in *FASTforward*® equipped MLOCs.

Penalty for Misread/Miscodes

In an attempt to reduce the number of miscodes caused by variances in optical character recognition systems, the penalty for misreads/miscodes has been increased to 1.5 percent, while at the same time, the allowance for rejects has been increased to 7.5 percent. A misread/miscode is defined as an inaccurate barcode applied to the test piece caused by an erroneous interpretation of the primary address number (i.e. 100 Main St is incorrectly read as 10 Main St). Accurate character recognition is becoming a critical factor in successfully obtaining MASS certification.

As the percentage for certification is increased in future cycles, character recognition systems are challenged to improve their capabilities to accurately discern characters, and to not spray barcodes when clearly ambiguous conditions are present. By increasing the allowance for reject pieces in the MASS test, MASS is relaxing the number of pieces required to be coded to facilitate this approach.

Penalty for Default Matches in Keying Environments

MASS™ will assess penalties for default matches in keying environments only. Depth of coding is an issue when an operator fails to key the entire address, particularly when the secondary address information is excluded. The penalty will be doubled for each depth of coding error.

Unreadable Barcode Allowance

An unreadable barcode is any barcode on a MASS mailpiece that can be detected by reader equipment but cannot be interpreted correctly. Unreadable barcodes were allowed during previous CASS™ cycles. If less than 5 percent of the total pieces returned fell into this category, the unreadable pieces were set aside and not included in the grading process.

For the 2004-2005 cycle, the 2.5 percent allowance will remain in effect (i.e., if less than 2.5 percent of the barcodes are unreadable, they will be omitted from the grading process). If more than 2.5 percent are unreadable, all pieces containing unreadable barcodes will be checked on a production-worthy automated barcode evaluator (ABE) system. (See “Automated Barcode Evaluator (ABE) System” on page 7.)

Delivery Point Error Allowance

In past CASS cycles, MASS test mailpieces were allowed a delivery point error rate of 1 percent without penalty. A delivery point error was assessed only if the ZIP Code and add-on were correct but the delivery point values were incorrect. The delivery point error allowance is currently 0.5 percent of the total number of mailpieces available for grading.

Automated Barcode Evaluator (ABE) System

The automated barcode evaluator (ABE) system is used to grade MASS™ test decks that exceed the 2.5 percent unreadable barcode allowance. When more than 2.5 percent of the returned test deck’s mailpieces contain an unreadable barcode, all mailpieces with an unreadable barcode will be checked on the ABE system. If the system reports that a barcode is unreadable, the mailpiece will be graded as an automatic failure. If the system reports that the barcode is readable, the mailpiece will be manually graded and scored.

To assist MASS users in evaluating ABE performance, the Certification Department will offer a free, 100 piece test deck for system evaluation. The ABE test deck can be graded on a production-worthy ABE system by the Certification Department. The free ABE evaluation will not affect existing MASS certification status.

Fatal Add-On Error

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

MASS Certification Processes

The NCSC sends a letter to all MASS customers announcing the beginning of the manufacturer and end user certification period. Certified letters are sent to cus-

tomers who were MASS certified during the previous cycle, to each customer's postal account representative, and to all postal managers of customer service support at the area and district levels. The MASS Technical Guide is posted on the Rapid Information Bulletin Board System (RIBBS) at <http://ribbs.usps.gov/files/cass/MASSTECH.pdf>.

Software Vendor Certification

The software manufacturer certification process is documented in the CASS™ Technical Guide. When a new certification cycle begins, the NCSC offers a CASS Stage I test for self-evaluation and software development. Following software development, manufacturers can order a CASS Stage II file by completing the CASS Order Form located in the CASS Technical guide. The manufacturer processes the Stage II test file and returns it to the NCSC, where it is evaluated. Results are returned to the manufacturer. If the product meets current CASS requirements, the NCSC issues the manufacturer a CASS certificate. Upon receipt of the certificate, the manufacturer may begin distributing upgraded, certified software to customers.

Manufacturer Certification

MLOCR, RVE, LVE, and encoding station manufacturers are first to receive updated software and must achieve MASS™ certification before distributing software to end users. Manufacturers must follow the user certification process below and the MASS test deck ordering steps (see page 13).

User Certification

Upon receipt of updated software, all encoding stations, RVE, LVE, and MLOCR users must submit a completed MASS Certification Order Form or RVE/LVE Certification Order Form to the Certification Department (see pages 15 - 17).

The Certification Department verifies the information on the order form, paying special attention to the software version, which must be the most current, CASS-Certified™ version. Once the information is verified and entered into the NCSC customer master file, a test deck is printed. Each test deck is assigned a unique customer tracking number specific to the equipment serial number. (See "Test Deck Specifications" on page 9.) Production of a MASS test deck normally requires three working days; however, during peak fulfillment periods, it may require as many as 10 working days. The NCSC recommends that customers order tests as soon as they receive updated software from their manufacturer. Orders are processed in the order in which they are received.

All test decks are trayed and placed in corrugated cardboard boxes. Each box is tagged with a bright red label that reads "TEST DECK—DO NOT OPEN." The customer tracking number is attached to a document on the top of each tray and printed on the Express Mail® label on each box. Also included on at least one of the trays is a computer printout that identifies the company name, machine manufacturer, model number, and serial number. The customer should verify this information before running the test deck.

Note: Every test deck MUST be opened and processed in the presence of a postal representative: Do not open the boxes until the postal representative is present.

Upon receipt of the test deck, end users must notify their postal representative of their intention to attempt MASS certification and schedule a specific day and time

with their postal representative to process the test. After processing, users must return test decks to the Certification Department — preferably by Express Mail — for evaluation; however, since the user is responsible for return shipping costs, Priority Mail® service is also acceptable. Test decks returned by other commercial carriers will be rejected.

The NCSC receives, evaluates, and grades processed test decks and usually makes results available to the customer within two working days; however, during peak periods, this process may require ten working days.

Note: All tests are processed in the order in which they are received.

The NCSC sends a certificate to all users who meet current certification requirements. Users who fail to certify will receive a copy of their error report and a second test deck for all machines that failed the first certification attempt.

Test Deck Specifications

MASS™ test decks are designed to exercise MLOCR/RVE/LVE and encoding station address-matching software look-up capabilities emulating the CASS™ Stage files. The input addresses represent the same type and approximate mix of questions in the CASS Stage files. Although the actual addresses on the test mailpiece may differ from one test deck to another, the type and number of records are similar.

All MLOCR test decks contain approximately 3,500 test mailpieces, while all encoding station tests contain approximately 350. The MLOCR test decks are packaged in six mail trays and shipped with three trays in each box while the encoding station test deck is shipped in one box.

Both test decks used to complete RVE system certification are printed in two fonts; half of each deck is printed in a Gothic text and half in a cursive script font designed to be rejected from MLOCR processing.

Each test mailpiece consists of one piece of 8 1/2 x 11 inch white, 20 pound paper folded and inserted into a 24-pound, white-wove, 5 3/4 x 9 inches window envelope. The envelope has two windows – one upper and one lower. The upper window measures 1 1/4 x 4 inches and is located 3/8 inch from the left edge and 3 11/16 inches from the bottom edge. The bottom window measures 1 3/8 x 4 1/2 inches and is located 2 1/16 inches from the left edge and 11/16 inch from the bottom edge. (see page 25 for an example of a test mailpiece).

Data elements internal to the Postal Service are printed on the insert and appear in the upper window. These elements identify the specific deck to which any test mailpiece belongs, the customer tracking number, and the exact question key number appearing on that mailpiece. The test address appears in the lower window.

RVE test decks are designed to exercise all portions of the RVE systems address-matching software look-up capabilities by emulating the CASS Stage II files. The addresses printed on the test mailpieces represent the same types of addressing anomalies found in the CASS Stage II test. Although the actual address represented on the test mailpiece may differ from one test deck to another, the type and number of anomalies are similar.

Test Deck Processing Procedures

All MASS™ certification tests must be conducted in a “normal operations” state, meaning that the system must be configured as it would be when it is used to produce mail for automation discounts.

For systems that are *FASTforward*® equipped, the *FASTforward* interface must be operational because the MASS test deck may include addresses that are forwardable. If processing does not forward any of the forwardable pieces, the graders will assume that the *FASTforward* system was not operational, and the test will be invalidated. If at least one forwardable mailpiece appears to have been produced by the *FASTforward* interface, the test deck will be considered valid and submitted for grading. MASS grading will not evaluate the accuracy of the *FASTforward* answers, only the fact that the interface was functioning. Any answer on forwardable mailpieces that are not assigned a new address will be graded based on the accuracy of the response to the input question.

Note: Where a MASS-certified system would normally spray a 5-digit ZIP Code on a production mailpiece, it must also spray a 5-digit ZIP Code on the MASS test mailpiece.

MLOCR Setup

The actual mail processing for a MASS test deck varies between manufacturers of MLOCR equipment and model types; therefore, these guidelines are general. To achieve optimum results from a MASS certification attempt, consult the equipment manufacturer regarding all processing-related issues.

First, clean the equipment according to the manufacturer’s instructions. Pay particular attention to the optics, and run the manufacturer’s diagnostic routine to optimize the character-recognition software. Next, run several pieces with the barcode turned off to verify the setup and ensure that the address block is reading properly.

Verify that the barcode is as clean as possible. The NCSC processes each test deck on a barcode reader, so the quality of the barcode returned on the test mailpieces is important. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, these mailpieces will be rejected, which will decrease the chance of certification.

Make further machine preparations, such as sort schemes, pick-off settings, and vacuum system and belt speed adjustments in accordance with the manufacturer’s instructions.

Note: MLOCR/RVE/LVE certifications must be attempted by the end user. No one besides the end users or his/her employee(s) may complete an MLOCR/RVE/LVE system test. If it is determined that unauthorized individuals completed the MLOCR/RVE/LVE test, the test deck will be disqualified.

MLOCR Test Deck Processing

Verify that the test deck corresponds to the machine manufacturer’s model and serial number. This information is listed in the computer-generated documents provided with the test deck.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After processing the entire deck once, all rejects may be reprocessed (when bad barcodes are sprayed, up to 100 pieces can be over labeled). After completely processing the test deck, create a computer-generated facsimile of the PS Form 3553, CASS™ Summary Report, and return it with the test deck to the NCSC for evaluation. All appropriate fields must be completed in PS Form 3553.

Note: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current Domestic Mail Manual (DMM) and must represent the test deck processed.

Encoding Station Setup

The processing of mail or a MASS™ test deck varies between manufacturers of encoding station equipment and model types. To achieve optimum results, consult the equipment manufacturer regarding all processing-related issues.

Verify that the encoding station is in proper operating order before processing a MASS test. The barcode produced must be as clean as possible because the NCSC processes each test deck on a barcode reader—its quality is vital. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, all mailpieces with unreadable barcodes will be rejected, decreasing the possibility of certification.

Note: Encoding station certification must be attempted by the end user: no one besides the end users or his/her employee(s) may complete an encoding system test. If it is determined that unauthorized individuals completed the encoding system test, the test deck will be disqualified.

Encoding Station Test Deck Processing

Before beginning the MASS test, the encoding station operator should be properly instructed by the equipment manufacturer or the equipment owner. For any operational or processing issues, consult the equipment manufacturer.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After completely processing the test deck, create a computer-generated facsimile of PS Form 3553 and return it along with the test deck to the NCSC for evaluation. **All appropriate fields must be completed in PS Form 3553.**

Note: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current Domestic Mail Manual (DMM) and must represent the test deck processed.

You must return the entire test deck, including all rejected, damaged, and non-coded mailpieces.

Shipping Instructions

The National Customer Support Center (NCSC) in Memphis, Tennessee, sends all test decks to customer sites by Express Mail® service. Return shipment of a completed test deck is the customer's responsibility. The NCSC prefers shipment via Express Mail due to its timeliness and traceability; however, since return shipment is the responsibility of the customer, Priority Mail® service is acceptable.

Please return completed test decks to the following address:

MULTILINE ACCURACY SUPPORT SYSTEM
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001

Note: Test decks returned by other commercial carriers will be rejected.

Evaluation and Grading

Each test deck received at the NCSC is scanned by a barcode reader. A customer grading file is created and uploaded to the mainframe, where it is processed against the current MASS™ grading scheme outlined later in this section. (See “Appendix 3: Translation of Errors Codes and Special Flags” on page 27.). Then, the NCSC grades the test, generates a grading report, and mails a copy of the report to the customer. A certificate is mailed when the customer achieves certification. (See “Appendix 4: Sample MASS Certificate” on page 31.)

Grading is based on the barcode sprayed by the MLOCR onto the test mailpiece and is deemed either correct or incorrect. If no answer is the correct answer, then the correct answer is blank (or spaces). In situations where the input causes a multiple-response condition and all candidate records share the same 5-digit ZIP Code, the vendor may elect to apply a 5-digit barcode or leave spaces on the test piece.

There are several types of records to consider when grading:

1. Must answer (i.e., special flag A5). These records must be barcoded correctly. If the record is barcoded incorrectly or left blank, it is counted towards the total number of incorrectly barcoded records.
2. Optional answer (i.e., special flag A9, where no answer is bypassed). It is not mandatory to code these records. If the records are barcoded correctly, they are counted towards the total number of correctly barcoded records. If they are not barcoded correctly (left blank), they are not counted towards the total number of correctly or incorrectly barcoded records. Optional answer categories are identified by the single asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
3. Must not answer (i.e., special flag KO, where no answer is the only correct answer). If these records are barcoded (not left blank), they are counted

toward the number of incorrectly barcoded records. Must Return input records are identified by the double asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

4. No grading for standardization records may or may not contain an input ZIP Code, may have a misspelled city name, and may contain a nonmailing name. The address also may contain a numeric street name, misspelled street name, or street names that could possibly be pre- or post-directional. Address-matching software must be able to correctly match the input address with the appropriate carrier route, 5-digit or ZIP + 4 record and return a properly standardized answer along with the ZIP Code, +4 add-on code, delivery point code, and the check digit. CASS accepts and grades the answer as correct in the standard abbreviated format, completely spelled out, exactly as presented in the USPS AIS product or the input record for non-matched records. These categories are identified by the three asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
5. Normalization required for subcategory MA. Some PO Box, Rural Route and Highway Contract input addresses often appear on a mailing list with the following words and must be converted as shown: This category is identified by the four asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

| 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 | HC 1 |

| | Answer = NCSC Answer | Answer = Other Answer |
|-----------------|---------------------------------|----------------------------------|
| Must Answer | Add 1 to correct count | Add 1 to incorrect count |
| Optional Answer | Add 1 to correct count | Add 1 to incorrect count |
| Must Not Answer | Add 1 to correct count | Add 1 to incorrect count |

$$\frac{\text{Correct}}{\text{Correct} + \text{Incorrect}} = \%$$

Note: The score required to achieve certification for MLOCRs, RVE, LVE, and encoding stations is 98 percent or higher.

Ordering a MASS Test Deck

To order a MASS™ certification test deck, complete the MASS Certification Order Form on page 15. The RVE/LVE Certification Order Form is on page 17.

Customers are responsible for ordering test decks. One test deck is required for each machine to be certified. The NCSC automatically sends a second test deck for any machine that fails to certify.

MASS™ (MULTILINE ACCURACY SUPPORT SYSTEM) ORDER FORM

CUSTOMER INFORMATION *(Required)*

| | | | |
|-------------------------|--|------------|---------|
| Company Official's Name | | | |
| Company Name | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | | FAX Number | |
| Sales Person | | | |
| Phone | | Email | |

UNITED STATES POSTAL SERVICE® ACCOUNT REPRESENTATIVE INFORMATION

| | | | |
|-----------|--|------------|---------|
| Attention | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | | FAX Number | |

EQUIPMENT INFORMATION

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

Service Bureau
 Mailer
 Manufacturer _____
 I do not wish to be listed in postal publication.

All MLOCR machines connected to a *FASTforward*® black box MUST process the MASS test deck with *FASTforward* mode turned on. Check here if a *FASTforward* black box is installed and this machine is operating with *FASTforward* turn on.

USER ACKNOWLEDGMENT STATEMENT

I hereby certify that all information on this application is accurate and correct. I also certify that the responses provided on the MASS certification test deck will be obtained using the same configuration as used in the processing of customer/client address files and that any modification to the products used to process this test will require retesting and recertification prior to use or release. The MASS test deck will be processed in-house with company-owned or leased software/hardware. I further certify that this address-matching product contains technology that disables access to outdated USPS® (United States Postal Service) data as stated in the *Domestic Mail Manual (DMM) A950*, section 3.0.

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.

| | |
|------------------------------|------|
| Company Official's Signature | Date |
|------------------------------|------|

| RETURN ORDER FORM TO | USPS USE ONLY |
|--|---------------|
| MULTILINE ACCURACY SUPPORT SYSTEM NATIONAL CUSTOMER SUPPORT CENTER UNITED STATES POSTAL SERVICE 6060 PRIMACY PKWY STE 201 MEMPHIS TN 38188-0001 Fax: 901-681-4440 | Customer No. |
| | Date |
| | Prdt Code |

MULTILINE OPTICAL CHARACTER READER (MLOCR) EQUIPMENT INFORMATION

If the matching software/hardware has optional parameters, you **MUST** return a list of the parameters that will be used to process the MASS™ test with this form. A computer-generated form (PS Form 3553) **MUST** be returned with each test deck.

Note: *This page may be copied for multiple MLOCR systems. A completed form must be submitted for each MLOCR system that will utilize FASTforward® processing.*

MLOCR

| | | | |
|------------------------|-------------|---------------|--------|
| Software Product | Version No. | Configuration | MASSID |
| Equipment Manufacturer | Model No. | Serial No. | |

ENCODING STATIONS

| | | | |
|------------------------|-------------|---------------|--------|
| Software Product | Version No. | Configuration | MASSID |
| Equipment Manufacturer | Model No. | Serial No.* | |

* List all serial numbers for networked systems and indicate which one is the server.

Complete the required information below if a FASTforward® black box is installed and this machine is operating with FASTforward turn on.

FASTforward MANUFACTURER INFORMATION

| | | | |
|--------------|------------|-------|---------|
| Contact Name | | | |
| Vendor Name | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | FAX Number | | |

HARDWARE INFORMATION

| | |
|------------------------------------|------------------------------|
| Transport and Belt Speed | Inkjet Printer and Model No. |
| Optics (<i>List all cameras</i>) | |
| _____ | |
| _____ | |

Check here if this machine is multiplexed and list all serial numbers for this multiplex system below.

| | | |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

REMOTE/LOCAL VIDEO ENCODING CERTIFICATION ORDER FORM

CUSTOMER INFORMATION *(Required)*

| | | | |
|-------------------------|------------|-------|---------|
| Company Official's Name | | | |
| Company Name | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | FAX Number | Email | |

UNITED STATES POSTAL SERVICE® ACCOUNT REPRESENTATIVE INFORMATION

| | | | |
|-----------|------------|-------|---------|
| Attention | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | Fax Number | | |

REMOTE/LOCAL VIDEO ENCODING SITE INFORMATION

| | | | |
|--------------|------------|---------------|---------|
| Contact Name | | | |
| Company Name | | | |
| Address | | | |
| City | | State | ZIP + 4 |
| Phone | Fax Number | | |
| Software | Version | Configuration | |

EQUIPMENT INFORMATION

| | | | |
|--|--------------|---------------|---------|
| Image Capturing Equipment Manufacturer | Model Number | Serial Number | MASS ID |
| Barcoding Equipment Manufacturer | Model Number | Serial Number | MASS ID |

MASS Certification Date *(If applicable)*

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

Service Bureau
 Mailer
 Manufacturer _____
 I do not wish to be listed in postal publication.

USER ACKNOWLEDGMENT STATEMENT

I hereby certify that all information on this application is accurate and correct. I also certify that the responses provided on the RVE certification test deck will be obtained using the same configuration as used in the processing of customer/client address files and that any modification to the products used to process this test will require retesting and recertification prior to use or release. I have read the Remote/Local Video Encoding Certification Guide and will process 1 or 2 (circle one) test deck(s) to meet system certification requirements.

| | |
|------------------------------|------|
| Company Official's Signature | Date |
|------------------------------|------|

| RETURN ORDER FORM TO | USPS USE ONLY |
|---|---------------|
| CERTIFICATION DEPARTMENT NATIONAL CUSTOMER SUPPORT CENTER UNITED STATES POSTAL SERVICE 6060 PRIMACY PKWY STE 201 MEMPHIS TN 38188-0001 Fax: 901-681-4440 | Customer No. |
| | Date |
| | Prdt Code |



Appendix 1:

PS Form 3553





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

See Domestic Manual Section A950 for more information.

CASS™ Summary Report

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

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

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

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

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

Instructions

A. Software

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

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

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

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

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

B. List

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

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

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

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

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

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

C. Output

1. Total Coded: Enter the total number coded.

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

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

D. Mailer

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

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

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

E. Qualitative Statistical Summary (QSS)

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

Locatable Address Conversion System (LACS)

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

Early Warning System (EWS)

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

Delivery Point Validation (DPV)

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

Residential Delivery Indicator (RDI)

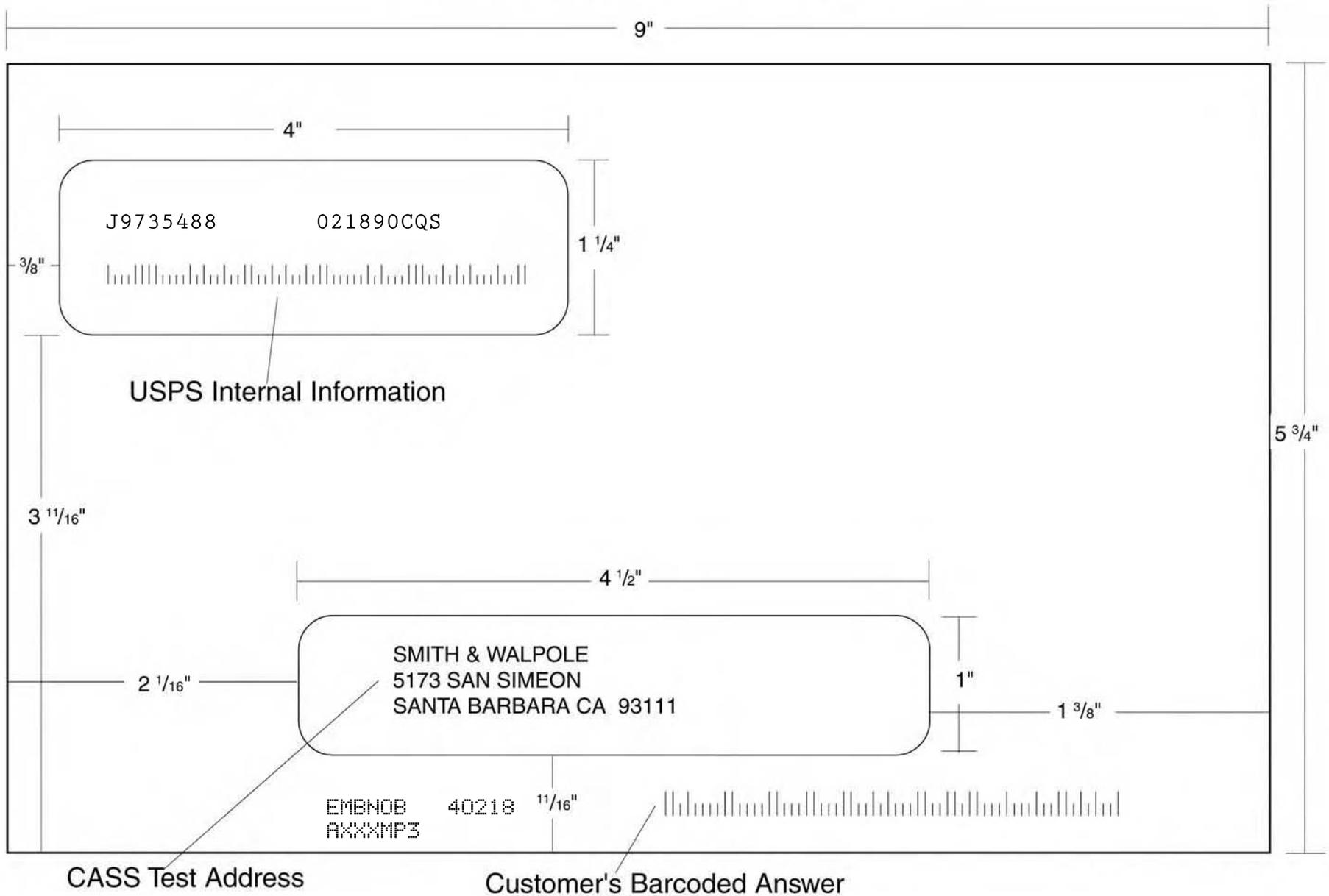
Entries in this box show the number of addresses on the processed address list that are residential. RDI is designed to be used in conjunction with CASS-Certified ZIP + 4 or DPV enabled address matching software. RDI will assist user's/licensees in shopping for the lowest delivery cost for a specific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

Appendix 2:

Test Mailpiece Example



Test Mailpiece Example





Appendix 3:

Translation of Error Codes and Special Flags



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

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

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

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

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

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

| |
|---|
| *** NDF Position Error |
| N0 5-digit N1 Dropped 5-digit |
| Extra Information |
| O0 5-digit O1 Dropped 5-digit O2 PMB on address line O3 PMB on secondary address line O4 Valid Secondary with '#' sign; exact match O5 PMB number is a valid PO Box Number - no match O6 Invalid secondary with '#' sign; default match O7 Double '#' signs at the end of address line – invalid O8 Double '#' signs at the end of address line, one valid value, one invalid value |
| Seattle Syndrome |
| P0 5-digit P1 Dropped 5-digit |
| *** Salt Lake Syndrome |
| Q0 5-digit Q1 Dropped 5-digit |
| ZIP Correction |
| R0 Incorrect 5-digit within finance no. R1 Invalid 5-digit R2 Incorrect 5-digit within finance no. and incorrect +4 R4 Incorrect 5-digit within finance no. and blank city/state R5 Incorrect 5-digit not within finance no. |
| 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 high-rise 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 Secy alphanumeric insert hyphen and transpose – default T6 Add alpha to match to numeric range only ** T7 Add double alphas and validate no match to numeric ** T8 Transpose alpha to beginning/no match to numeric range * TA Recombine hyphenated trailing primary alpha with secondary number * TB Recombine non-hyphenated trailing primary alpha with secondary number * TC Recombine hyphenated trailing primary numeric with secondary number * TD Recombine hyphenated trailing alphanumeric/numeric alpha with secondary number * TE Recombine secondary values into one; exact match only |
| APO / 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 Code - match in ZIP Code ** W4 City and ZIP Code from different finance numbers ** W5 State does not agree with ZIP Code |
| 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 words off street name Y2 Split suffix words off street name Y3 Drop suffix words off multi-word street names Y4 Combine suffix with street name Y5 Shift street name to pre-directional suffix to street name |
| ZIPMove |
| Z0 Valid match in new finance number/Match. Z1 Invalid match in ZIPMove/No Match. Z2 Valid ZIPMove match; invalid in new finance number/No Match. |
| Out of Range/Overlapping |
| ** 10 Bad PO Box for finance no./ZIP 11 Overlapping PO Box ranges/return lowest ZIP+4 ** 15 Bad rural route for finance no./ZIP ** 20 Invalid primary number 21 Invalid secondary number 22 "EWS" No match; Input is an exact match to an EWS record |
| 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 Valid city and ZIP code with add-on (retain ZIP+4) 4E No correlation between city and ZIP Code; match to city ** 4F No correlation between city and ZIP Code (no match; delete ZIP Code) 4G Input address line taken from unique ZIP+4 record, match into non-unique |

| |
|--|
| 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" and "Casa," "Blq" and "#" ** 5J Address contains standalone word "Buzon" (no normalization) * 5K No URB input - Match to address with blank URB 51 No URB input - single response ** 52 No URB input - multiple response 53 Valid URB on input - single response with valid/invalid URB ** 54 Valid URB on input - multiple response with valid/invalid URB 55 Missing noise URB - single response with valid/invalid URB ** 56 Missing noise URB-multiple response with valid/ invalid URB 57 Valid URB end address-single response with valid or invalid URB ** 58 Valid URB end address - multiple response with valid or invalid URB 59 Missing URB noise end address - single valid/invalid URB |
| 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 70 Perfect address * 7B Multiple field addresses with split-indicia |
| * No answer will be bypassed ** Return input record (Unless using DPV to break the tie) *** No grading for standardization **** Normalization required + Double penalty |

Appendix 4:

Sample MASS Certificate



Multiline Optical Character Reader Accuracy Support System (MASS) Quality Certification

for

System Certification

ZIP + 4 Delivery Point Code Matching Software

MLOCR MAILER / USER
TEST SAMPLE
COURTESY TEST
NCSC COURTESY TEST
KRIER - 1

Serial Number: 123-123456

Configuration: ABC

This certificate is valid 12/2002 thru 07/31/2003.



Jamie E Caldwell

Manager
Address Management



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Appendix 5:

Sample Customer No Match Report



US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM
 NATIONAL CUSTOMER SUPPORT CENTER
 CUSTOMER NO MATCH REPORT
 ADDRESSES WHICH ARE GRADED AND SCORED

CUSTOMER NAME:

CUSTOMER ID: 099990AAL

| CASS RECORD GIVEN | | | | | CASS STANDARDIZATION ANSWER | | | | CUSTOMER RECORD RETURNED | | |
|--|--------|-----------|------|------------|--|-----------------|---------------|------------------|---|------------------|--|
| ALEXANDER GARDENS APTS 235 RIVER ROAD APARTMENT 6B BOGOTA NJ 07603 | | | | | ALEXANDER GARDENS APTS 235 RIVER RD APT 6B BOGOTA NJ 07603 - 1278 62 | | | | 07603 - 9999 62# | | |
| CASS KEY A9800004 | SIZE A | BARCODE N | Z9 N | CASE UPPER | FONT A | SPECIAL FLAG A0 | RECORD TYPE H | ZIP+4 ODD/EVEN 0 | RECORD TYPE | ZIP+4 ODD/EVEN | |
| DEWEY SCHOOL 241 RIVER ROAD APARTMENT 1A BOGOTA NJ 07603 | | | | | DEWEY SCHOOL 241 RIVER RD APT 1A BOGOTA NJ 07603 - 1280 11 | | | | 07603 - 0000 11# | | |
| CASS KEY A9800005 | SIZE A | BARCODE N | Z9 N | CASE UPPER | FONT A | SPECIAL FLAG A0 | RECORD TYPE H | ZIP+4 ODD/EVEN 0 | RECORD TYPE | ZIP+4 ODD/EVEN | |
| CHERRY HILL APTS GENERAL DELIVERY PLYMOUTH MA 02360 | | | | | CHERRY HILL APTS GENERAL DELIVERY PLYMOUTH MA 02360 - 9999 99 | | | | REJ | | |
| CASS KEY A9800010 | SIZE A | BARCODE N | Z9 N | CASE UPPER | FONT A | SPECIAL FLAG A0 | RECORD TYPE G | ZIP+4 ODD/EVEN B | RECORD TYPE | ZIP+4 ODD/EVEN | |
| ARROW & SNYDER INC 434 WEST PINE AVENUE N WILDWOOD NJ 08260 | | | | | ARROW & SNYDER INC 434 W PINE AVE N WILDWOOD NJ 08260 - 3015 34 | | | | 1 - 99 SPRING WAY 34472 - 2722 27 | | |
| CASS KEY A9800057 | SIZE A | BARCODE * | Z9 N | CASE UPPER | FONT B | SPECIAL FLAG A0 | RECORD TYPE S | ZIP+4 ODD/EVEN E | RECORD TYPE S | ZIP+4 ODD/EVEN 0 | |
| ALDRICH SCHOOL 151 SALEM HILL ROAD HOWELL NJ 07731 | | | | | ALDRICH SCHOOL 151 SALEM HILL RD HOWELL NJ 07731 - 2130 51 | | | | 27 - 39 SPRING ST 14787 - 1559 33 | | |
| CASS KEY A9800089 | SIZE A | BARCODE * | Z9 N | CASE MIXED | FONT D | SPECIAL FLAG A0 | RECORD TYPE S | ZIP+4 ODD/EVEN 0 | RECORD TYPE S | ZIP+4 ODD/EVEN 0 | |



Appendix 6:

Customer Statistics



CUSTOMER NAME:
FASTFORW CUST:

CUSTOMER ID: 099990AAL
SERIAL: 001234
ID ASSIGNED: XXX
ID RETURNED: XXX

| GRADING STATISTICS | COUNT | | |
|---|----------------------|---------|--|
| INITIAL TOTAL CASS RECORDS | 3,500 | | |
| AVAILABLE FOR GRADING | 3,494 (FF= 0) | | |
| RECS BYPASSED | 235 (FF= 0 / OLD= 0) | | |
| Z4CHANGE/NON-DELIVERABLE | 178 | | |
| MANUAL OVERRIDES | 0 | | |
| REJECT < 7.5 % | 53 | | |
| NO BARCODE SPRAYED | 53 | | |
| ONLY CORRECT 5DIGIT SPRAYED | 0 | | |
| BARCODE UNREADABLE (UNRD) < 2.5 % | 4 | | |
| NO PLUS4 ON MAIL PIECE | 0 | | |
| TOTAL RECORDS AVAILABLE FOR GRADING | 3,259 | 100.00% | |
| | | | |
| CORRECTLY CODED RECORDS | 3,226 (FF= 0) | 98.99% | |
| PENALTY FOR MISREAD/MISCODE ERRORS | 3 X .5 | 1.50 | |
| PENALTY DEFAULT (KEYING) DEPTH/CODE ERR | 0 | 0 | |
| CORRECTLY CODED ADJUSTED FOR PENALTIES | 3,224.50 | 98.94% | |
| BONUS POINTS AWARDED (NOT ENOUGH BONUS QUESTIONS CORRECT) | | 0.00% | |
| | | | |
| TOTAL RECORDS COUNTED INCORRECT | 34.50 | 1.06% | |
| INCORRECTLY CODED RECORDS | 33 | | |
| BARCODE UNREADABLE (UNRD) > 2.5 % | 0 | | |
| REJECTS > 7.5% COUNTED INCORRECT | 0 | | |
| PENALTY FOR MISREAD/MISCODE ERRORS | 1.50 | | |
| PENALTY DEFAULT (KEYING) DEPTH/CODE ERR | 0 | | |
| ***** | | | |
| INCORRECTLY CODED PERFECT ADDRESSES | 0 (MAX= 0) | | |
| INCORRECTLY CODED FATAL ADDON | 2 | | |
| INCORRECTLY CODED DPBC | 2 (MAX= 16) | | |

FINAL SCORE (MINIMUM 98%): 98.94%

* A FATAL ADDON ERROR RESULTED IN THE FAILURE OF TEST # *



Appendix 7:

Electronic Data File Description



Electronic Data File Description

The electronic error report for MASS is shown below in COBOL copybook format. The first seven lines are HEADER information.

Header Information:

```
*****
USPS 47-2467

REPORT CII030P2
CUSTOMER NAME: ABC COMPANY
CUSTOMER ID: 05123OAAG
*****
```

Header Record:

```
01 CII030P2-REPORT-HEADER.
  05 P2-LINE-1.
    10 FILLER PIC X(300) VALUE ALL '*'.
  05 P2-LINE2.
    10 FILLER PIC X(05) VALUE SPACES.
    10 FILLER PIC X(12) VALUE 'USPS 47-2467'.
    10 FILLER PIC X(73) VALUE SPACES.
    10 FILLER PIC X(50) VALUE
    'US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM'.
    10 FILLER PIC X(71) VALUE SPACES.
    10 FILLER PIC X(06) VALUE 'DATE'.
    10 CII030P2-MM PIC X(02).
    10 FILLER PIC X(01) VALUE '/'.
    10 CII030P2-DD PIC X(02).
    10 FILLER PIC X(01) VALUE '/'.
    10 CII030P2-CC PIC X(02).
    10 CII030P2-YY PIC X(02).
    10 FILLER PIC X(08) VALUE SPACES.
  05 P2-LINE-3.
    10 FILLER PIC X(75) VALUE SPACES.
    10 FILLER PIC X(50) VALUE
    ' NATIONAL CUSTOMER SUPPORT CENTER '.
    10 FILLER PIC X(71) VALUE SPACES.
    10 FILLER PIC X(06) VALUE 'TIME'.
    10 CII030P2-HH PIC X(02).
    10 FILLER PIC X(01) VALUE ':'.
    10 CII030P2-MN PIC X(02).
    10 FILLER PIC X(01) VALUE ':'.
    10 CII030P2-SS PIC X(02).
    10 FILLER PIC X(01) VALUE SPACES.
  05 P2-LINE-4.
    10 FILLER PIC X(05) VALUE SPACES.
    10 FILLER PIC X(15) VALUE
    'REPORT CII030P2'.
    10 FILLER PIC X(70) VALUE SPACES.
    10 FILLER PIC X(50) VALUE
```

Electronic Data File Description

```
      ' ADDRESSES WHICH ARE GRADED AND SCORED '
      10 FILLER                               PIC X(95) VALUE SPACES.
05 P2-LINE-5.
      10 FILLER                               PIC X(05) VALUE SPACES.
      10 FILLER                               PIC X(16) VALUE
      'CUSTOMER NAME: '
      10 CII030P2-NAME                         PIC X(40).
      10 FILLER                               PIC X(374) VALUE SPACES.
05 P2-LINE-6.
      10 FILLER                               PIC X(05) VALUE SPACES.
      10 FILLER                               PIC X(16) VALUE
      'CUSTOMER ID: '
      10 CII030P2-NUM                         PIC X(9).
```

Data Record:

Data records will start in record 8 and follow this format:

```
01 ERR-RPT2-WORK-RECD.
   05 ERR-RPT2-CARR-CNTL     PIC X(01).
   05 ERR-RPT2-CASS-KEY     PIC X(08).

*---- ORIGINAL INPUT FIELDS -----
   05 ERR-RPT2-IFIRST-FIRM  PIC X(40).
   05 ERR-RPT2-IZIP        PIC X(10).
   05 ERR-RPT2-ICITY       PIC X(28).
   05 ERR-RPT2-ISTATE      PIC X(02).
   05 ERR-RPT2-ISEC-URB-FIRM PIC X(30).
   05 ERR-RPT2-IDELADDR    PIC X(64).

*---- STANDARDIZED POSTAL ANSWER FIELDS -----
   05 ERR-RPT2-SFIRST-FIRM  PIC X(40).
   05 ERR-RPT2-SSEC-URB-FIRM PIC X(40).
   05 ERR-RPT2-SADDRESS    PIC X(64).
   05 ERR-RPT2-SCITY       PIC X(28).
   05 ERR-RPT2-SSTATE      PIC X(02).
   05 ERR-RPT2-SZIP        PIC X(05).
   05 ERR-RPT2-SHYPHEN     PIC X(01).
   05 ERR-RPT2-SADDON      PIC X(04).
   05 ERR-RPT2-SDELPT      PIC X(02).
   05 FILLER                PIC X(01).

*---- MISCELLANEOUS REPORT FIELDS -----
   05 ERR-RPT2-MCONTROL.
      10 ERR-RPT2-MCNTL-SIZE     PIC X(02).
      *      Size values:   A   C
      10 ERR-RPT2-MCNTL-BARCODE  PIC X(01).
      *      Invalid BARCODE Present on mailpiece in WIDEAREA
      *      Values:       Y   N
      10 ERR-RPT2-MCNTL-ZIP9     PIC X(01).
      *      Invalid ZIP+4 Present on mailpieces:
```

```

*           Values:          Y    N
      10 ERR-RPT2-MCNTL-CASE          PIC X(05).
*           Case values:  Upper  Mixed
      10 ERR-RPT2-MCNTL-FONT          PIC X(01).
*           Font values:   A    B    C    D
      05 ERR-RPT2-MRECTYPE            PIC X(01).
      05 ERR-RPT2-FILLER1             PIC X(01).
      05 ERR-RPT2-MSPECIAL            PIC X(02).
      05 ERR-RPT2-MODDEVEN            PIC X(01).

*----- CUSTOMER RETURNED ANSWER -----
      05 ERR-RPT2-CZIP                PIC X(05).
      05 ERR-RPT2-CHYPHEN             PIC X(01).
      05 ERR-RPT2-CADDON              PIC X(04).
      05 ERR-RPT2-CDPBC.
      10 ERR-RPT2-CDPBC-ANS           PIC X(02).
      10 ERR-RPT2-CDPBC-CHKDGT       PIC X(02).
      05 ERR-RPT2-FILLER2            PIC X(12).

*----- DATA RELATING TO CUST RETURNED ZIP+4 ANSWER -----
* This is the parsed information associated with the returned ZIP+4 from
* the customer. It is taken from ZIP+4 information that may be different
* from the customer's due to timing of the ZIP+4 data.
      05 ERR-RPT2-LINE1.
      10 ERR-RPT2-FIRM                PIC X(50).
      05 ERR-RPT2-LINE2.
      10 ERR-RPT2-PRIMLO              PIC X(10).
      10 FILLER                       PIC X(03) VALUE ' - '.
      10 ERR-RPT2-PRIMHI              PIC X(10).
      10 FILLER                       PIC X(27).
      05 ERR-RPT2-LINE3.
      10 ERR-RPT2-PREDIR              PIC X(02).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-STRNAME             PIC X(28).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-SUFFIX              PIC X(04).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-POSTDIR             PIC X(02).
      10 FILLER                       PIC X(11) VALUE SPACE.
      05 ERR-RPT2-LINE4.
      10 ERR-RPT2-SECUNIT             PIC X(04).
      10 FILLER                       PIC X(01).
      10 ERR-RPT2-SECLO               PIC X(08).
      10 FILLER                       PIC X(03) VALUE ' - '.
      10 ERR-RPT2-SECHI               PIC X(08).
      10 FILLER                       PIC X(26).
      05 ERR-RPT2-CRECTYPE            PIC X(01).
      05 ERR-RPT2-CODDEVEN            PIC X(01).

```

