

**precisely**

# CODE-1 Plus

Reference Guide For All Platforms

Version 5.0



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# 1 - CODE-1 Plus Reference Guide For All Platforms

Version 4.3.1

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# 2 - Parameter Reference

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# Defining Parameters

This section provides guidelines for defining your parameters including:

- Purpose and use of each parameter
- Whether each parameter is required or optional
- Description of each parameter field

## Parameter Field Formats

The following information is provided to help you define parameter fields.

- Field positions
- Field name
- Field description including:
  - Whether a field is required. If required, the field is designated “Required.”
  - Information and/or valid values for defining the parameter field
  - Where applicable, default values (if a field does not default to a specific value, no default information is included in the field description)
- All parameter input and output file locations are defined with a three-position parameter field. All name/address field lengths are defined with a two-position parameter field. To accommodate locations greater than 999 or field lengths that are greater than 99 bytes, in most instances you may extend your location definition one position to the left.
- Precisely requires up to 80 bytes for the definition of our product parameter records. If sequence numbers are posted in positions 73-80 of the defined parameter records, abnormal terminations may result when processing.

## Commenting Parameters

Place an asterisk (\*) in position 1 of any parameter to comment it. This is useful for altering jobs: you can modify one job by “commenting out” parameters instead of deleting the parameters.



This is also useful for documenting your parameters. After you place an asterisk in position 1, you can enter text in positions 2 through 80.

## Example Parameter Definition

This guide includes detailed descriptions for each CODE-1 Plus parameter including:

- Description of the purpose and use of each parameter
- Description of all fields available for defining each parameter including:
  - Field positions
  - Field name
  - Description for each field

For example, the following description for the CR OUT parameter appears later in this guide. Following the CR OUT parameter example is an example for defining each field of the CR OUT parameter.

### CR OUT

**Optional.** Use CR OUT to identify the location to store the carrier route data on the output record.

**Note:** iThe carrier route is stored in USPS standard format, as defined under positions 12-14 of this parameter.

Position	Field Name	Description
1-6	Keyword	Required. CR OUT is the only acceptable entry.

Position	Field Name	Description
8-10	Carrier Route Return Code Location	<p>Output record location for the 1-character carrier route return code. If defined, contains one of the following codes:</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address match information.</li> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• H — House/box number not found on street.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• N — The carrier route was not stored as specified by processing requirements.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• Z — ZIP Code not found in database.</li> <li>• Blank — The match attempt was successful.</li> </ul>
12-14	Carrier Route Code Location	<p>Output record location for the 4-character carrier route code. Stored in one of the following formats:</p> <ul style="list-style-type: none"> <li>• Bnnn — PO box address</li> <li>• Cnnn — Street address</li> <li>• Gnnn — General delivery address</li> <li>• Hnnn — Highway contract route address</li> <li>• Rnnn — Rural route address.</li> </ul>
60	Information Dropped Storage Conditions	<p>Code indicating whether the carrier route code should be stored in cases where information was dropped during the match process:</p> <ul style="list-style-type: none"> <li>• X — Do not store the carrier route code.</li> <li>• Blank — Store the carrier route code anyway.</li> </ul>

Position	Field Name	Description
62	Maximum Address Correctness	Maximum acceptable address probability of correctness to store the carrier route. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.
64	Maximum Overall Correctness	Maximum acceptable overall probability of correctness to store the carrier route. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.
68	Multiple Carrier Route Storage Conditions	Code indicating whether or not the standardized carrier route code should be stored if multiple matching carrier route codes were found: <ul style="list-style-type: none"> <li>• M — Store the returned carrier route code.</li> <li>• Blank — Do not store the returned carrier route code. Instead, store the information indicated in position 72.</li> </ul>
70	Multiple ZIP Code Storage Conditions	Code indicating whether the standardized carrier route code should be stored if multiple matching ZIP Codes were found: <ul style="list-style-type: none"> <li>• M — Store the returned carrier route code.</li> <li>• Blank — Do not store the returned carrier route code. Instead, store the information indicated in position 72.</li> </ul>
72	Disposition Indicator	Code indicating what to store when the standardized carrier route code was not stored because no match was found or due to storage conditions: <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• I — Store carrier route code from the input record.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>

### *Example Instructions for Defining CR OUT Parameter Fields*

The following is an example of a parameter definition for defining carrier route code storage using the CR OUT parameter.

1. Positions 1-6 are reserved for specifying the name of the parameter to be defined. In this example, to define the CR OUT parameter, enter CR OUT in the **Keyword** field, positions 1-6.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT
```

2. Define the output record location for the 1-character carrier route return code in the **Carrier Route Return Code Location** field, positions 8-10.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345
```

3. Define the output record location for the 4-character carrier route code in the **Carrier Route Code Location** field, positions 12-14.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350
```

4. Indicate whether the carrier route code should be stored in cases where information was dropped during the match process in the **Information Dropped Storage Conditions** field, position 60.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X
```

5. Define the maximum acceptable address probability of correctness to store the carrier route in the **Maximum Address Correctness** field, position 62.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5
```

6. Define the maximum acceptable overall probability of correctness to store the carrier route in the **Maximum Overall Correctness** field, position 64.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5 5
```

7. Indicate whether or not the standardized carrier route code should be stored if multiple matching carrier route codes were found in the **Multiple Carrier Route Storage Conditions** field, position 68.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5 5 M
```

8. Indicate whether the standardized carrier route code should be stored if multiple matching ZIP Codes were found in the **Multiple ZIP Code Storage Conditions** field, position 70.

```
.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5 5 M M
```

9. Indicate what to store when the standardized carrier route code was not stored because no match was found or due to storage conditions in the **Disposition Indicator** field, position 72.

```

.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5 5   M M B

```

### Sample Completed CR OUT Parameter Definition

```

.....1.....2.....3.....4.....5.....6.....7.....+CR
OUT 345 350                                     X 5 5   M M B

```

## ADDRDF

**Required.** Use ADDRDF to define the location, length, and format of the addresses in the input record. In this context, the term “field” means any continuous series of characters in the input file. You can define a field to start at any position in the input file, and extend fields for any length. For example, you could specify that positions 100-140 in the input file make up one field.

A line is also a continuous series of characters in the input file. The difference is that CODE-1 Plus assumes that a line contains all of the information that would appear on one line of an address label.

If you specify that your input address is in lines, define the lines in the order in which the USPS would like the lines displayed on a mailing label. The first line (left-most) is the least significant. The last line (right-most) is the most significant. CODE-1 Plus treats the last line defined (that actually contains data) as the primary address line unless you include the formatted City/State/ZIP in the last line. The length of an address cannot exceed 99 bytes.

Position	Field Name	Description
1-6	Keyword	Required. ADDRDF is the only acceptable entry.

Position	Field Name	Description
8	Street Address Format	Required. Specify a code to describe the format of the street address information in the input record: M — A single line L — 2, 3, 4, 5, or 6 lines (with or without city, state, and ZIP Code) F — 2, 3, 4, 5, or 6 fields. <b>Blank</b> — No default.
10-12	Address 1 Location	Required. Location of the first field or line. No default.
14-15	Address 1 Length	Required. Length of the first field or line. No default.
17-19	Address 2 Location	Location of the second field or line. No default.
21-22	Address 2 Length	Length of the second field or line. No default.
24-26	Address 3 Location	Location of the third field or line. No default.
28-29	Address 3 Length	Length of the third field or line. No default.
31-33	Address 4 Location	Location of the fourth field or line. No default.
35-36	Address 4 Length	Length of the fourth field or line. No default.
38-40	Address 5 Location	Location of the fifth field or line. No default.
42-43	Address 5 Length	Length of the fifth field or line. No default.
45-47	Address 6 Location	Location of the sixth field or line. No default.

Position	Field Name	Description
49-50	Address 6 Length	Length of the sixth field or line. No default.
52-54	Input Urbanization Location	Location of the urbanization name in the input record. No default. NOTE: If the urbanization name can be found among the address lines, enter a U in position 52. If you enter a U, CODE-1 Plus attempts to locate the name in the locations you have already identified for the address.
56-57	Input Urbanization Length	Length of the urbanization name in the input record. No default. NOTE: If you put a U in position 52, do not enter a value in this field.
59-61	Extracted Urbanization Name Location	Storage location for the extracted (input) urbanization name in the output record. No default.
63-64	Extracted Urbanization Name Length	Length of the extracted (input) urbanization name in the output record. No default.
65	Left Justify	Specify a code to indicate whether to left justify: <ul style="list-style-type: none"> <li>• Contents of the primary and secondary address lines</li> <li>• Firm name (if assigned)</li> <li>• Urbanization name (if assigned)</li> </ul> Enter one of the following codes: <ul style="list-style-type: none"> <li>• L — Left justify all fields listed above.</li> <li>• Blank — Do not left justify the fields listed above.</li> </ul>

## AE OUT

**Optional.** Use AE OUT to define the location on the output file to store the individual address elements. You must specify a length for the street name element and the Private Mailbox Number

only. Each of the other elements have predetermined lengths. The following figure shows the different address elements.

4235            N                    MAIN            ST                    NW                    STE                    100

House Number	Leading Directional	Street Name	Suffix	Trailing Directional	Apartment Designator	Apartment Number
--------------	---------------------	-------------	--------	----------------------	----------------------	------------------

RR	123	BOX	19
Rural Route/Highway Route Type	Rural Route/Highway Contract Number	Rural/Route Highway Contract or PO Box Number	

PMB	456
Private Mailbox Designator	Private Mailbox Number

**Note:** if you specify Y in column 51 of the SA OUT parameter, these elements are stored from the base street name (not the alias).

Position	Field Name	Description
1-6	Keyword	Required. AE OUT is the only acceptable entry.
8-10	Location for House Number	Optional. Location on the output record for the left-justified 10-character house number. No default.
12-14	Location for Leading Directional	Optional. Location on the output record for the left-justified 2-character leading directional. No default.



Position	Field Name	Description
16-18	Location for Street Name	Optional. Location on the output record for the left-justified street name. No default.
20-21	Length of Street Name	Optional. Length of the street name on the output record (the maximum is 40). No default.
23-25	Location for Suffix	Optional. Location on the output record for the left-justified 4-character street suffix. No default.
27-29	Location for Trailing Directional	Optional. Location on the output record for the left-justified 2-character trailing directional. No default.
31-33	Location for Apartment Designator	Optional. Location on the output record for the left-justified 4-character apartment designator. No default.
35-37	Location for Apartment Number	Optional. Location on the output record for the left-justified 8-character apartment number. No default.
39-41	Location for Rural Route/ Highway Contract Route Type	Optional. Location on the output record for the 2-character rural route/highway contract route type code. No default.
43-45	Location for Rural Route/Highway Contract Number	Optional. Location on the output record for the left-justified 3-character rural route/highway contract route number. No default.
47-49	Location for Box Number	Optional. Location on the output record for the left-justified 10-character box number. No default.

Position	Field Name	Description
51	Disposition Indicator	<p>Optional. Specify a code to indicate what to store in cases where standardized elements could not be stored (because no match was found):</p> <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• M — Store elements from normalized address merging secondary address line elements with primary address line elements. In cases where an element appears in both the primary and secondary address lines, use the element from the primary address line.</li> <li>• N — Store elements from normalized address using the primary address line only.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>
53-55	Location for Private Mailbox Designator	<p>Optional. Location on the output record for the left-justified 4-character Private Mailbox Designator.</p> <ul style="list-style-type: none"> <li>• PMB — Standard Private Mailbox Designator</li> <li>• # — Nonstandard Private Mailbox Designator</li> <li>• <b>Blank</b> — No default</li> </ul> <p>NOTE: To include a designator in your output record, you must specify a length and location for your Private Mailbox Number in positions 57-59 and 61-62.</p>
57-59	Location for Private Mailbox Number	<p>Required if location information exists in positions 53-55. Location on the output record for the Private Mailbox Number. No default.</p>
61-62	Length of Private Mailbox Number	<p>Required if data exists in positions 57-59. Length of the Private Mailbox Number on the output record (the maximum is 16 characters). No default.</p>

Position	Field Name	Description
64	Private Mailbox Designator/Number Storage Option	<p>Optional. Specify a code to indicate the storage option for Private Mailbox Designator/Numbers:</p> <ul style="list-style-type: none"> <li>• X — Store all Private Mailbox Designator/Numbers.</li> <li>• Blank — Store only Standard Private Mailbox Designator/Numbers.</li> </ul> <p><b>NOTE:</b> If you specify X, a non-CASS certified configuration is created. The USPS Form 3553 is not generated.</p>

**Note:** i CODE-1 Plus only produces a standardized address if an SA OUT parameter is used to store a standardized address. If you request elements of the standardized address on the AE OUT parameter, you must also complete the SA OUT parameter.

## AM OUT

**Optional.** Use AM OUT to identify the location on the output record to store the return codes. The address matching return codes provide you with the results of the attempt to match the records against the information in the CODE-1 Plus database. These codes are very useful for analyzing your CODE-1 Plus processing results. If you do not specify a location for a return code, CODE-1 Plus does not store that return code on the output record.

Delivery Sequence File (DSF<sup>2</sup>) footnotes are 2-character, USPS-defined codes that represent the changes that were made to the input address during the matching process. CODE-1 Plus can store up to 50 of these codes for each record, resulting in a 100-character output field. After CODE-1 Plus finishes processing, you can run your output file through a delivery sequence program (not provided by Precisely) to sort your records into delivery sequence. The delivery sequence program looks at these footnotes when sorting the records.

Position	Field Name	Description
1-6	Keyword	Required. AM OUT is the only acceptable entry.

Position	Field Name	Description
8-10	Location for USPS Record Type Code	<p>Optional. Location on the output record for the 1-character record type code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• F — Firm</li> <li>• G — General delivery</li> <li>• H — High rise (apartment complex)</li> <li>• P — Post office box</li> <li>• R — Rural route or highway contract</li> <li>• S — Normal street address</li> <li>• Blank — No match found</li> </ul> <p>NOTE: CODE-1 Plus will not produce the USPS Form 3553 if the USPS Record Type Code is posted.</p>
12-14	Location for General Return Code	<p>Optional. Location on the output record for the 1-character general return code. One of the following codes is stored.</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required</li> <li>• B — Insufficient (or blank) address informationNOTE: When CODE-1 Plus determines address information is insufficient (or blank) and returns a “B” for a specific address record, the record is skipped.</li> <li>• E — External match—auxiliary file processing</li> <li>• H — House/box number not found on street</li> <li>• M — Multiple matches were found</li> <li>• S — Street name not found in ZIP Code</li> <li>• X — The CODE-1 Plus Master File has expired</li> <li>• Z — ZIP Code not found in database</li> <li>• Blank — Successful address match attempt</li> </ul>

Position	Field Name	Description
16-18	Location for Directional Return Code	<p>Optional. Location on the output record for the 1-character directional return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• N — No directional was found on the input address, but a directional was present on the database.</li> <li>• F — The directional was correct, but was in the wrong location (e.g., trailing directional should have been leading directional).</li> <li>• D — The directional does not match the database.</li> <li>• L — New address obtained from LACS processing.</li> <li>• Blank — The directional match was successful, or no address match was found.</li> </ul>
20-22	Location for Suffix Return Code	<p>Optional. Location on the output record for the 1-character suffix return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• L — New address obtained from LACS processing.</li> <li>• N — No suffix was found on the input address, but a suffix was present on the database.</li> <li>• S — The suffix does not match the database.</li> <li>• Blank — The suffix match was successful, or no address match was found.</li> </ul>
24-26	Location for Apartment Return Code	<p>Optional. Location on the output record for the 1-character apartment return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• L — New address obtained from LACS processing.</li> <li>• N — No apartment was found on the input address, but an apartment was present on the database at the street address.</li> <li>• A — The apartment does not match the database.</li> <li>• F — Suite number appended due to a firm name match.</li> <li>• Blank — No address match was found, or the apartment (or lack thereof) matches the database.</li> </ul>

Position	Field Name	Description
28-30	Location for Firm Name Return Code	<p>Optional. Location on the output record for the 1-character firm name return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• F — The input firm name does not match the database.</li> <li>• L — New address obtained from LACS processing.</li> <li>• M — A firm name was present in the input record, but there were no firm names on the database for the matched address.</li> <li>• Blank — No address match was found, or the firm name match successful, or no input firm name was found.</li> </ul>
32-34	Location for Overall Probable Correctness Code	<p>Optional. Location on the output record for the 1-character overall probability of correctness. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• 0 — The match is exact.</li> <li>• 1-8 — The match has an intermediate probability of correctness on a sliding scale.</li> <li>• 9 — The match is least likely to be correct.</li> <li>• Blank — No match was found.</li> </ul>
36-38	Location for Alternate Address Scheme Indicator	<p>Optional. Location on the output record for the type of alternate address scheme to use to obtain a match. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• D — Delivery point alternate logic used.</li> <li>• E — Enhanced high rise alternate match logic used.</li> <li>• L — New address obtained from LACS processing.</li> <li>• U — Unique ZIP Code logic used.</li> <li>• Blank — No alternate address scheme used.</li> </ul>
40-42	Location for Street Name Match Score	<p>Optional. A 1-digit score, on a scale of 0 - 9, reflecting the closeness of the street-name match (after transformations by the analyzer, if any), where 0 indicates an exact match and 9 indicates the least likely match. If no match was found, this field is blank. No default.</p>
44-46	Location for Firm Name Match Score	<p>Optional. Location on the output record for the 1-character firm name match score. This number represents the number of "errors" that were found when matching the firm name to the database. No default.</p>

Position	Field Name	Description
48-50	Location for Address Probable Correctness Code	<p>Optional. Location on the output record for the 1-character address probability of correctness. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• 0 — The match is most likely to be correct.</li> <li>• 1-8 — The match has an intermediate probability of correctness on a sliding scale.</li> <li>• 9 — The match is least likely to be correct.</li> <li>• L — New address obtained from LACS processing.</li> <li>• Blank — No match was found.</li> </ul>

Position	Field Name	Description
52-54	Location for Delivery Sequence File Footnotes	<p>Optional. Location on the output record for up to 50 2-character delivery sequence footnotes.</p> <ul style="list-style-type: none"> <li>• AA — The record matched the ZIP+4 database the CODE-1 Plus database.</li> <li>• BB — The input address matched to DPV (all components).</li> <li>• CC — The input address primary number matched to DPV but secondary number did not match (present but invalid).</li> <li>• C1 — Input address primary number matched. Secondary number not matched. Secondary number required.</li> <li>• D — City name or state changed.</li> <li>• E — Primary address changed.</li> <li>• F — Secondary address changed.</li> <li>• F1 — Input address matched to a military ZIP Code.</li> <li>• G1 — Input address matched to a General Delivery Address.</li> <li>• H — ZIP Code changed.</li> <li>• IA — Informed address identified.</li> <li>• J — City, state, and ZIP Code could not be validated.</li> <li>• K — Multiple matches in primary address.</li> <li>• K1 — Multiple matches due to missing or incorrect directionals.</li> <li>• K2 — Multiple matches due to missing or incorrect suffix.</li> <li>• M1 — Missing street number.</li> <li>• M2 — Address not found.</li> <li>• M3 — No such primary number.</li> <li>• M4 — Firm name not matched.</li> <li>• N1 — Missing secondary address number.</li> <li>• N2 — Secondary address number not found on file.</li> <li>• P1 — Missing rural route/highway contract box number.</li> <li>• P2 — Rural route/highway contract box number not found on file.</li> <li>• Q1 — Missing PO Box number.</li> <li>• Q2 — PO Box number not found on file.</li> <li>• R7 — Addresses that are assigned to a phantom route of R777 or R779.</li> <li>• TA — Input address primary number matched by dropping trailing alpha.</li> </ul>



Position	Field Name	Description
56-58	Location for Output ZIP Code Status	<p>Optional. Location on the output record for the 1-character code indicating the status of the INPUT ZIP Code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Altered. The original ZIP Code was altered via an address match.</li> <li>• B — Blank. A unique address match could not be obtained; the original ZIP Code was blank.</li> <li>• C — Confirmed. The input ZIP Code was confirmed by an address match.</li> <li>• I — Invalid. No match could be obtained; the output ZIP code contains blanks because the input ZIP code was invalid.</li> <li>• O — Original. A unique address match could not be obtained; the original ZIP Code was kept.</li> <li>• U — Blank. A unique address match could not be obtained and there was no correlation between the input unique ZIP Code and the city/state. The original ZIP Code was blanked.</li> <li>• <b>Blank</b> — No default.</li> </ul>
60-62	Location for Alternate/Base Indicator	<p>Optional. Location on the output record for a 1-character code indicating whether the input address matched a ZIP + 4 base record or a ZIP + 4 alternate record. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Input address matched an alternate ZIP + 4 record.</li> <li>• B — Input address matched a base ZIP + 4 record.</li> <li>• <b>Blank</b> — No default.</li> </ul>
64-66	Location for Last Line Number	<p>Optional. Location on the output file for the USPS 6-character last line number from the output ZIP + 4 Code. No default.</p>
68-70	Location for Finance Number	<p>Optional. Location on the output file for the USPS 6-character finance number from the output city. No default.</p>
72-74	Location for 250 Bytes of Additional Information for VeriMove	<p>Optional. Location on the output file to attach 250 bytes of additional information codes to your output file. This parameter was designed for use with the Precisely VeriMove move update product. No default.</p>

# AM2OUT

**Optional.** Use AM2OUT, a continuation of AM OUT, to identify the location on the output record to store the return codes.

The USPS considers a match to a default record when the input address matches to a high rise default record OR when the input address had the potential to match a USPS high rise record, but is either missing an input secondary number or does not match the USPS high rise records and no high rise default record exists in the database. When this second circumstance occurs, the ZIP + 4 code is assigned according to the USPS street record type. This is also reported as a high rise default match. For rural route and military addresses with box numbers, the default is set when the input box number does not match the box range on the USPS database.

Position	Field Name	Description
1-6	Keyword	Required. AM2OUT is the only acceptable entry.
8-10	Location for Highrise Default	Optional. The output location for the High Rise default. One of the following codes is stored: <ul style="list-style-type: none"><li>• H — Record matched to a High Rise default record.</li><li>• Blank — No match was made. Matched record was not a default record.</li></ul>
12-14	Location for Rural Route Default	Optional. The output location for the Rural Route default. One of the following codes is stored: <ul style="list-style-type: none"><li>• R — Record matched to a Rural Route default record.</li><li>• Blank — No match was made. Matched record was not a default record.</li></ul>
16-18	Location for Military Default	Optional. The output location for the Military default. One of the following codes is stored: <ul style="list-style-type: none"><li>• M — Record matched to a Military default record.</li><li>• Blank — No match was made. Matched record was not a default record</li></ul>

Position	Field Name	Description
20-22	Location for Unique ZIP Code-City/State Correlation Return Code	Optional. The output location for the unique ZIP Code-City/State correlation return code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• U — The original ZIP Code was unique and did not correspond to the input city/state.</li> <li>• Blank — Input ZIP Code was either not unique or was unique and corresponded to the input city/state.</li> </ul>
28-30	Location for Auxiliary Filename Match	Optional. The output location for the Auxiliary File Name Match code. Only one code option: <ul style="list-style-type: none"> <li>• 1 — Early Warning System (EWS) File.</li> <li>• <b>Blank</b> — No default.</li> </ul>
32-34	Location for Secondary Component Processing Indicator	Optional. The output location for the Secondary Component processing indicator. One of the following codes is stored: <ul style="list-style-type: none"> <li>• E — Exact match.</li> <li>• S — Multiple secondary match logic used.</li> <li>• Blank — No multiple secondary component logic used.</li> </ul>
36-38	Location for Override City Name Indicator	Optional. The override city name refers to the city name for the Preferred Last Line Key (PLL) from the USPS ZIP + 4 File. The default city name refers to the city name for the PPL Key on the USPS City/State File. The output location for the override city name indicator. One of the following codes is stored: <ul style="list-style-type: none"> <li>• O — Override city name stored.</li> <li>• Blank — Default city name stored.</li> </ul>
40-42	Location for Input City Type Indicator	Optional. The output location for the input city type indicator. One of the following codes is stored: <ul style="list-style-type: none"> <li>• P — Primary city.</li> <li>• S — Secondary city.</li> <li>• V — Vanity city.</li> <li>• <b>Blank</b> — No default.</li> </ul>

Position	Field Name	Description
44-46	Location for Military Address Indicator	Optional. The output location for the Indicator of military address: <ul style="list-style-type: none"> <li>• M — Indicates a military address.</li> <li>• <b>Blank</b> — No default.</li> </ul>
48-50	Location for ESM or ASM Indicator	Optional. The output location for the Indicator that Enhanced Street Matching (ESM) or All Street Matching (ASM) was performed for matching. One of the following codes is stored: <ul style="list-style-type: none"> <li>• A — Matched using All Street Matching (matched misspelled first letter)</li> <li>• F — ASM performed but no match found</li> <li>• M — Matched using ESM</li> <li>• P — ESM performed but no match found.</li> <li>• Blank — No ASM or ESM performed.</li> </ul>
52-54	Location for LACS <sup>Link</sup> Return Code	Optional. The output location for the LACS <sup>Link</sup> process success indicator. One of the following codes is stored: <ul style="list-style-type: none"> <li>• A — LACS record match.</li> <li>• 00 — No match.</li> <li>• 09 — LACS<sup>Link</sup> was able to find the input address on its internal tables but for some reason did not return the new (converted) address.</li> <li>• 14 — Match found LACS record but would not convert.</li> <li>• 92 — Match with secondary information.</li> <li>• Blank — No LACS processing occurred.</li> </ul>
56-58	Location for LACS <sup>Link</sup> Indicator	Optional. The output location for the Indicator of whether a table was matched. One of the following codes is stored: <ul style="list-style-type: none"> <li>• F — LACS seed violation occurred.</li> <li>• N — No match occurred or a new address would not convert at run time.</li> <li>• S — Input address contained both primary and secondary information but match occurred using only primary information.</li> <li>• Y — Full match occurred.</li> <li>• Blank — No LACS processing occurred.</li> </ul>

Position	Field Name	Description
60-62	Location for Street Default Flag	Optional. The output location for the street default flag. One of the following codes is stored: <ul style="list-style-type: none"> <li>• <b>S</b> — Record is matched to a street default record.</li> <li>• <b>Blank</b> — Record matched is not a street default record.</li> </ul>

## AP OUT

**Optional.** Use AP OUT to identify the location on the output file to store the information that was dropped during the analysis process as well as the normalized address lines. Dropped address information is data that CODE-1 Plus ignored during the analysis and matching process. This parameter also defines how normalized address information is formatted to conform to USPS conventions.

Position	Field Name	Description
1-6	Keyword	Required. AP OUT is the only acceptable entry.

Position	Field Name	Description
8	Format of Extra Data in Output Record	<p>Optional. This field defines how two types of extra data display in the output record.</p> <ul style="list-style-type: none"> <li>• <b>Additional input data</b> - Any information that is defined on the input address lines but is not sent to the matcher for processing is identified as additional input data.</li> <li>• <b>Unmatched data</b> - Any information passed to the matcher that is not used in the matching process is identified as unmatched data.</li> </ul> <p>Enter one of the following codes:</p> <ul style="list-style-type: none"> <li>• <b>F</b> - Fixed length format. Extra data will be posted “as is” in eleven output fields: <ul style="list-style-type: none"> <li>• Six 100-byte length fields will contain additional input data (information that is defined on the input address lines but is not sent to the matcher for processing).</li> <li>• Five 100-byte length fields will contain unmatched data (information passed to the matcher that was not used in the matching process).</li> </ul> </li> <li>• <b>C</b> - Concatenated format. Additional input data (information that is defined on the input address lines but is not sent to the matcher for processing) is concatenated and written into one field that: <ul style="list-style-type: none"> <li>• Starts in the location specified in position 10 of this parameter.</li> <li>• Is separated by the character specified in position 26 of this parameter.</li> </ul> </li> </ul> <p>Any information passed to the matcher that is not used in the matching process is identified as unmatched data. Unmatched data is concatenated and written into one field that:</p> <ul style="list-style-type: none"> <li>• Starts in the location specified in position 18 of this parameter.</li> <li>• Is separated by the character specified in position 26 of this parameter.</li> <li>• <b>Blank</b> — Default is <b>F</b>.</li> </ul>
10-12	Location for Additional Input Data	<p>Optional. Location on the output record for additional input data. (Any information that is defined on input address lines but is not sent to the matcher for processing is identified as additional input data.) No default.</p>
14-16	Length of Additional Input Data	<p>Optional. Length of the additional input data specified in positions 10-12 of this parameter.</p> <ul style="list-style-type: none"> <li>• If you specify <b>F</b> in position 8 and a value other than 600 in this field, CODE-1 Plus generates an error and stops processing.</li> <li>• If you specify <b>C</b> in position 8, CODE-1 Plus truncates any data posted beyond the length specified here.</li> <li>• <b>Blank</b> — Default is <b>600</b>.</li> </ul>

Position Field Name Description

18-20	Location for Extra Data from Matcher	Optional. Location on the output record for extra data from the matcher. (Any information passed to the matcher that is not used in the matching process is identified as unmatched data.) No default.
22-24	Length of Extra Data from Matcher	Optional. Length of output extra data from the matcher (unmatched data) specified in positions 18-20. <ul style="list-style-type: none"> <li>• If you specified <b>F</b> in position 8 of this parameter and some value other than 500 is posted in this field, CODE-1 Plus generates an error and stops processing.</li> <li>• If you specified <b>C</b> in position 8 of this parameter, CODE-1 Plus truncates any data posted beyond the length specified here.</li> <li>• <b>Blank</b> — Default is <b>500</b>.</li> </ul>
26	Data Separator	Optional. If you specified <b>C</b> in position 8 of this parameter, specify a character to separate the additional input data or the extra data from the matcher (unmatched data). Default is semicolon “;”.
30	Storage Conditions — Normalized Primary Address Line	Optional. Specify a code to indicate the conditions under which the normalized primary address line should be stored: <ul style="list-style-type: none"> <li>• <b>A</b> — Store for all records.</li> <li>• <b>X</b> — Store only when standardized address is not stored.</li> <li>• <b>Blank</b> — Default is <b>X</b>.</li> </ul>
32-34	Location for Normalized Primary Address Line	Optional. Location on the output record for the normalized primary address line. No default.
36-37	Length of Normalized Primary Address Line	Optional. Length of the normalized primary address line. No default.

Position	Field Name	Description
39	Storage conditions — Normalized Secondary Address Line	Optional. Specify a code to indicate the conditions under which the normalized secondary address line should be stored: <ul style="list-style-type: none"> <li>• A — Store for all records.</li> <li>• D — Store dropped dual address from matched address.</li> <li>• X — Store only when standardized address is not stored.</li> <li>• Blank — Default is X.</li> </ul>
41-43	Location for Normalized Secondary Address Line	Optional. Location on the output record for the normalized secondary address line. No default.
45-46	Length of Normalized Secondary Address Line	Optional. Length of the normalized secondary address line. No default



Position	Field Name	Description
48-50	Location for Dropped Primary "Care Of" Data	<p>Optional. Location on the output record for the "Care of" data dropped from the primary address line. Valid "Care of" data includes:</p> <ul style="list-style-type: none"> <li>• C O</li> <li>• C/O</li> <li>• C/O/</li> <li>• ATTN</li> <li>• %</li> <li>• MC:</li> <li>• MS:</li> <li>• MAILSTOP</li> <li>• MAIL STOP</li> <li>• CAMPUS BOX</li> <li>• CAMPUS BX</li> <li>• COLLEGE BOX</li> <li>• HALL:</li> <li>• DORM:</li> <li>• LEAVE ON PORCH</li> <li>• REAR ENTRANCE</li> <li>• CIMS:</li> <li>• BLDG:</li> <li>• BLD:</li> <li>• FL:</li> <li>• FLR:</li> </ul> <p>No default.</p> <p><b>NOTE:</b> All "Care of" prefixes must be separated by a space from the content (e.g. C/O Mary, not C/OMary or "DORM: 123", not "DORM:123").</p>
52-53	Length of Dropped Primary "Care Of" Data	<p>Optional. Length of the "care of" data dropped from the primary address line. No default.</p>

Position	Field Name	Description
55-57	Location forDropped Secondary "Care Of" Data	<p>Optional. Location on the output record for the "Care of" data dropped from the secondary address line. Valid "Care of" data includes:</p> <ul style="list-style-type: none"> <li>• C O</li> <li>• C/O</li> <li>• C/O/</li> <li>• ATTN</li> <li>• %</li> <li>• MC:</li> <li>• MS:</li> <li>• MAILSTOP</li> <li>• MAIL STOP</li> <li>• CAMPUS BOX</li> <li>• CAMPUS BX</li> <li>• COLLEGE BOX</li> <li>• HALL:</li> <li>• DORM:</li> <li>• LEAVE ON PORCH</li> <li>• REAR ENTRANCE</li> <li>• CIMS:</li> <li>• BLDG:</li> <li>• BLD:</li> <li>• FL:</li> <li>• FLR:</li> </ul> <p>No default.</p> <p><b>NOTE:</b> All "Care of" prefixes must be separated by a space from the content (e.g. C/O Mary, not C/OMary or "DORM: 123").</p>
59-60	Length of Dropped Secondary "care Of" Data	<p>Optional. Length of the "care of" data dropped from the secondary address line. No default.</p>

Position	Field Name	Description
70	Normalization Type (No match)	<p>Optional. Code indicating whether all address types or only selected address types should be normalized. The selected address types are “GENERAL DELIVERY” keywords, PO BOX keywords, and RR/HC keywords.</p> <ul style="list-style-type: none"> <li>• X — Normalize select address types otherwise return input. If X is selected, SA OUT position 19 must be I.</li> <li>• Blank — Normalize specified address line regardless of address type.</li> </ul>

## Storing Additional Input Data/Unmatched Data - Fixed Format

This example stores the additional input data and unmatched data to the output (COK) file in a fixed format.

The AP OUT parameter looks like this:

```
....5...10....5...20....5...30....5...40....5...50....5...60....5...70....5...80
```

```
AP OUT F 701    1301
```

Where:

AP OUT position 8 = F (Fixed length format). Extra data will be posted “as is” in eleven output fields (six additional input data fields and five unmatched data fields).

Additional input data is stored in position 701 for the default length of 600.

Unmatched data is stored in position 1301 for the default length of 500.

### Input Address

GROUP 1

ATTN ALICE ROSE SMITH

VILLAGE LOCALE PROPERTY

4200 PARLIAMENT PL STE 600 PO BOX 8511

6 W GLEN ST SUITE 201

LANHAM MD 20706

### COK File - Additional Input Data

This example stores additional input data in position 701 for the default length of 600:

..701.. ... ..801.. ... ..901.. ...

ATTN ALICE ROSE SMITH VILLAGE LOCALE PROPERTY

### COK File - Unmatched Data

This example stores unmatched data in position 1301 for the default length of 500:

..1301.. ... ..1401.. ... ..1501..

PO BOX 8511 6 W GLEN ST SUITE 201

**Note:** All data used in these examples is for illustration purposes only and should not be interpreted as actual USPS address data.

## Storing Additional Input Data/Unmatched Data - Concatenated Format

This example stores additional input data and unmatched data to the output (COK) file in a concatenated format using the default semicolon as the data delimiter.

The AP OUT parameter looks like this:

```
....5...10....5...20....5...30..
```

```
AP OUT C 701 4001101 400
```

Where:

AP OUT position 8 = C (Concatenated format).

Additional input data is stored in position 701 for a length of 400.

Unmatched data is stored in position 1101 for a length of 400.

### *Input Address*

```
GROUP 1
```

```
ATTN ALICE ROSE SMITH
```

```
VILLAGE LOCALE PROPERTY
```

```
4200 PARLIAMENT PL STE 600 PO BOX 8511
```

```
6 W GLEN ST SUITE 201
```

```
LANHAM MD 20706
```

### *COK File - Additional Input Data*

This example stores additional input data in position 701 for a length of 400:

```
..701..
```

```
;ATTN ALICE ROSE SMITH;VILLAGE LOCALE PROPERTY OWNERS;...
```

### *COK File - Unmatched Data*

This example stores unmatched data in position 1101 for a length of 400:

```
..1101...
```

```
PO BOX 8511;6 W GLEN ST SUITE 201;...
```

**Note:** All data used in this example is for illustration purposes only and should not be interpreted as actual USPS address data.

## AUXIL1

Optional. Use AUXIL1 to identify the presence of an auxiliary reference file for matching purposes. This file must be preprocessed through the Precisely-supplied C1AUXBLD program (using the specified Precisely input format). There is flexibility in the record size that allows for additional user-defined data. For more information on using the C1AUXBLD program, refer to "Auxiliary File Processing" in your *CODE-1 Plus User's Guide*.

Position	Field Name	Description
1-6	Keyword	Required. AUXIL1 is the only acceptable entry.
70	Location of F ile	Optional. Specify a code to indicate where to write the auxiliary file in the output: <ul style="list-style-type: none"><li>• N — Write record to the NCO file.</li><li>• C — Write record to the COK file.</li><li>• <b>Blank</b> — Default is <b>N</b>.</li></ul>

## BUILD

Optional. Use BUILD to perform a call to major batch programs to retrieve the release version for those programs. If found anywhere in the parameter, the BUILD process:

1. Overrides any other coding.
2. Runs a quick query of major batch programs.
3. Exits without any I/O.

#### 4. Generates the Build Report.

C1P VERSION LISTING REPORT

-----

<i>VERSION</i>	<i>TYPE</i>	<i>DATE</i>	
-----	----	----	
<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>	<i>3 PROGRAMS</i>
<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>	

*13 PROGRAMS*

C1P PROGRAM VERSION REPORT

-----

<i>PROGRAM</i>	<i>VERSION</i>	<i>TYPE</i>	<i>DATE</i>
-----	-----	----	----
<i>C1BM00</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1PBLDV</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1MATCHS</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1BMVP00</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>

<i>AUX010</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1ANZADR</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1ANZFRM</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1MATNM</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1PCKDBX</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>C1PDSFN</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>DPV010</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>DPV040</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>G1LICENS</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>LTO10</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>
<i>MATAL2</i>	<i>VV.RR.MM</i>	<i>F01</i>	<i>MM/DD/YYYY</i>

Position	Field Name	Description
1-6	Keyword	Optional. BUILD is the only acceptable entry.



Position	Field Name	Description
8	Matcher Module to Call for Version Information	<p>Specify a code to indicate the batch matcher module to call to retrieve version information.</p> <ul style="list-style-type: none"> <li>• <b>B</b> — C1MATCHB</li> <li>• <b>H</b> — C1MATCHH</li> <li>• <b>L</b> — C1MATCHL</li> <li>• <b>M</b> — C1MATCHM</li> <li>• <b>S</b> — C1MATCHS</li> <li>• <b>Blank</b> — Default is <b>C1MATCHB</b>.</li> </ul> <p><b>NOTE:</b> If you specify a matcher that is missing, the message 'C1MATCHx Not Found' displays on the Build Report.</p>

## BYPEXP

Optional. Use BYPEXP to override an expired database. This parameter only takes effect when the database is truly expired (beyond the USPS grace period as defined in DMM 708). If your CODE-1 Plus database is expired and you use BYPEXP, CODE-1 Plus **does not** produce a USPS Form 3553.

**Note:** It is very important to use a current CODE-1 Plus database. The BYPEXP parameter is provided for use in an emergency situation only and should not be used in "normal" processing.

Position	Field Name	Description
1-6	Keyword	Required. BYPEXP is the only acceptable entry.

# CASSA1

Optional. Use CASSA1 to override the CASS certification data as it appears in box A1 of USPS Form 3553. This allows you to CASS-certify CODE-1 Plus and use your own company name and/or software name and version number.

Using CASSA1 invalidates the USPS Form 3553 if you have not previously received a CASS certificate from the USPS for the vendor name and software name.

Using CASSA1 without defining any values results in a parameter error. The three fields listed below are all optional. However, you must define at least one field or an error is generated. Fields that are not defined retain the current Precisely value.

- CASS-Certified Company Name
- CASS-Certified Software Name
- CASS-Certified Software Version Number

The software version number must be presented in the V.RR.MM format, including the periods. The software version number in box A1 of USPS Form 3553 is very specific and cannot be modified. This format is a USPS requirement.

If you specify a new software name, the new name will replace the CODE-1 Plus product name on all report headers with the exception of the parameter Listing report and the Execution Log. Any other information can be added to the report heading by using the UHDxx and UFTxx parameters.

**Note:** Your particular licensing agreement may not permit your company to certify the CODE-1 Plus product under your company name. See your software licensing agreement for permitted scope and use of the product.

Position	Field Name	Description
1-6	Keyword	Required. CASSA1 is the only acceptable entry.
8-32	CASS-Certified Company Name	Optional. CASS-certified company name as it appears on your CASS certificate (up to 25 characters). No default.
34-63	CASS-Certified Software Name	Optional. CASS-certified software name as it appears on your CASS certificate (up to 30 characters). No default.

Position	Field Name	Description
65-71	CASS-Certified Software Version Number	Optional. CASS-certified software version number, in V.RR.MM format. CASS requires the following information: <ul style="list-style-type: none"> <li>• V — Version number</li> <li>• R — Release number</li> <li>• M — Modification number</li> <li>• <b>Blank</b> — No default.</li> </ul>

## CASSA4

**Optional. Use** CASSA4 to override the Z4CHANGE certification data as it appears in boxes A4 - A5 of the USPS Form 3553.

The two fields listed below are optional. However, you must define at least one field or an error is generated. Any field not defined retains the current Precisely value.

- Z4CHANGE-Certified Company Name
- Z4CHANGE-Certified Software Name and Version Number

For more information on Z4CHANGE certification, refer to Chapter 6, Using the Z4CHANGE Option in your *CODE-1 Plus User's Guide*.

Position	Field Name	Description
1-6	Keyword	Required. CASSA4 is the only acceptable entry.
8-32	Z4CHANGE-Certified Company Name	Optional. Z4CHANGE-certified company name as it is to appear on your USPS certificate (up to 25 characters). No default.

Position	Field Name	Description
34-67	Z4CHANGE-Certified Software Name And Version Number	<p>Optional. Z4CHANGE-certified software name as it is to appear on your USPS certificate (up to 30 characters) and Z4CHANGE-certified software version number in V.RR.MM format.</p> <ul style="list-style-type: none"> <li>• V — Version number</li> <li>• R — Release number</li> <li>• M — Modification number</li> <li>• <b>Blank</b> — No default.</li> </ul>

## CASSA7

Optional. Use CASSA7 to override the LOT certification data that appears in boxes A7 - A8 of the USPS Form 3553.

The two fields listed below are optional. However, you must define at least one field or an error is generated. Any field not defined retains the current Precisely value.

- ELOT-Certified Company Name
- ELOT-Certified Software Name and Version Number

For more information on LOT certification, refer to Chapter 10, Using Line of Travel (LTO10) in your *CODE-1 Plus User's Guide*.

Position	Field Name	Description
1-6	Keyword	Required. CASSA7 is the only acceptable entry.
8-32	ELOT-Certified Company Name	Optional. LOT-certified company name as is to appear on your USPS certificate (up to 25 characters).

Position	Field Name	Description
34-67	ELOT-Certified Software Name And Version Number	<p>Optional. LOT-certified software name as it is to appear on your USPS certificate (up to 30 characters) and LOT-certified software version number in V.RR.MM format.</p> <ul style="list-style-type: none"> <li>• V — Version number</li> <li>• R — Release number</li> <li>• M — Modification number</li> <li>• <b>Blank</b> — No default.</li> </ul>

## CHCKPT

Optional. Use CHCKPT to define a checkpoint for every n records (where n is a number you specify). If your job is terminated for any reason, you can restart the job from the last successful checkpoint, instead of running the entire job again. A checkpoint is simply the number of records processed up to that point. For example, if you take a checkpoint every 500 records, and your job terminates in the middle, you could look at the checkpoint file and determine the last checkpoint taken. If the last checkpoint was 47,500, you would know that you can skip the first 47,500 records when you restart your job.

**Note:** i This parameter is only used in IBM mainframe environments. Refer to the IBM z/OS/DFP Checkpoint/Restart Manual for details on using checkpoints. Checkpoints cannot be issued using CBUF processing of VSAM files (shareoptions 3,3). You must ensure that your CODE-1 Plus database is defined with shareoptions specified as (1,3) or (2,3).

## z/OS Checkpoints

If you use the CHCKPT parameter, you must make modifications to your z/OS JCL. Define the checkpoint file with a C1BMCHK DD statement. To have your checkpoints written serially to the file, specify DISP=MOD. To store only the latest checkpoint, specify DISP=NEW.

**Note:** i If you use DISP=NEW to save only the latest checkpoint. If a checkpoint cannot be taken successfully, no checkpoint will be available for restart until another checkpoint is successfully taken.

Position	Field Name	Description
1-6	Keyword	Required. CHCKPT is the only acceptable entry.
8-16	Checkpoint Count	Required. Number of records to process before each checkpoint is taken. You must enter leading zeros. No default.

## CONFIG

**Optional.** Use CONFIG to identify the matching configuration that is being used in this job. If this configuration matches one of the configurations that Precisely has CASS-certified with the USPS, a USPS Form 3553 prints at the end of the CODE-1 Plus job. For more information on CASS-certified configurations, refer to Chapter 1 of your **CODE-1 Plus User's Guide**.

**Note:** If you do not include this parameter in your job, CODE-1 Plus does **not** generate the USPS Form 3553 CASS report.

This feature enables you to specify configuration information for CASS certification. Some of the information that is stored on this parameter is the same as information stored on other parameters. The specified CONFIG parameter values override the values specified on other parameters.

This configuration information is particularly useful when you want to use an existing job, but you want to make sure that it qualifies for automation-based discounts. Instead of checking all of the information stored on the other parameters, you could just add CONFIG information to override the information in the other parameters.

**Note:** iCODE-1 Plus only prints the USPS form 3553 when a job's parameter settings correspond to a Precisely certified configuration.

Position	Field Name	Description
1-6	Keyword	Required. CONFIG is the only acceptable entry.

Position	Field Name	Description
8	Street Name Match Code	<p>Optional. Specify a code to indicate the strictness of the street name match:</p> <ul style="list-style-type: none"> <li>• E — Equal</li> <li>• T — Tight</li> <li>• M — Medium</li> <li>• L — Loose</li> <li>• <b>Blank</b> — Default is <b>M</b>.</li> </ul>
10	Firm Name Match Code	<p>Optional. Specify a code to indicate the strictness of the firm name match:</p> <ul style="list-style-type: none"> <li>• E — Equal</li> <li>• T — Tight</li> <li>• M — Medium</li> <li>• L — Loose</li> <li>• <b>Blank</b> — Default is <b>M</b>.</li> </ul>
12	Directional/Suffix Match Code	<p>Optional. Specify a code to indicate the strictness of the directional/suffix match:</p> <ul style="list-style-type: none"> <li>• E — Equal</li> <li>• T — Tight</li> <li>• M — Medium</li> <li>• L — Loose</li> <li>• <b>Blank</b> — Default is <b>M</b>.</li> </ul>
14	Multiple Match Acceptance	<p>Optional. Specify a code to indicate if standardized components should be stored if multiple matches are found:</p> <ul style="list-style-type: none"> <li>• Y — Accept multiple matches. The standardized address returned is the last one in the stack of multiple matches that were found.</li> <li>• N — Do not accept multiple matches.</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul> <p>NOTE: A Y in this position results in a non-CASS certified configuration. CODE-1 Plus does not generate the USPS Form 3553.</p>

Position	Field Name	Description
16	Maximum Address Correctness	Optional. Maximum acceptable address probability of correctness. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. No default.
18	Maximum Overall Correctness	Optional. Maximum acceptable overall probability of correctness. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. No default.
20-21	User-Specified Configuration Number	Optional. Two-digit ID number to assign to this configuration. No default. NOTE: This has no relation to the Precisely CASS-certified configuration IDs. It is for your reference only.
23	Terminate If Non-CASS Certified	Optional. Specify a code to indicate whether to terminate the CODE-1 Plus job if an option has been selected that results in a non-CASS-certified configuration. <ul style="list-style-type: none"> <li>• Y — Terminate if non-CASS-certified configuration</li> <li>• N — Do not terminate if non-CASS-certified configuration.</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul>
25-27	Execution Log Counter	Optional. Number of records (in thousands) to trigger progress reporting in execution log (100=100,000). Default is 10,000.
36	Output Case Option	Optional. Specify a code to indicate whether to return mixed case in all address components: <ul style="list-style-type: none"> <li>• C — Return all address components that contain text in mixed case.</li> <li>• L — Return all address components that contain text in lower case.</li> <li>• Blank — Matched output is returned in all uppercase.</li> </ul>



Position	Field Name	Description
38	Dual Address Match Logic	<p>Optional. Specify a code to indicate how to handle addresses with multiple non-blank address lines or multiple address types on the same address line:</p> <ul style="list-style-type: none"> <li>• S — Return a street match, regardless of the address line.</li> <li>• P — Return a PO Box match, regardless of the address line.</li> <li>• Blank — Normal match scoring for street address elements, input ZIP Code, matching address line, and so on.</li> </ul> <p>NOTE: Under normal conditions, a PO Box cannot match if the city name and input ZIP Code are both changed.</p> <p>NOTE: If S or P is selected, a non-CASS-certified configuration will be generated. No PS Form 3553 will be generated.</p> <p>DMM 708 states to match to a PO Box first when on the same address line or the PO Box address is the primary address line.</p>
40	Unique ZIP Code Handling	<p>Optional. Specify a code to indicate whether the Input ZIP Code should be returned when there is no correlation between the input city/state and ZIP Code:</p> <ul style="list-style-type: none"> <li>• X — Store the Input ZIP Code.</li> <li>• Blank — Do NOT store the Input ZIP Code.</li> </ul> <p>NOTE: If you specify X, a non-CASS certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>
42	PMB Handling	<p>Optional. Specify a code to indicate whether to store non-standard private mailbox numbers:</p> <ul style="list-style-type: none"> <li>• X — Store ALL private mailbox numbers.</li> <li>• Blank — Store ONLY standard private mailbox numbers.</li> </ul> <p>NOTE: If you specify X, a non-CASS-certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>

Position	Field Name	Description
44	Enhanced High Rise Alternate Matching	<p>Optional. Specify a code to indicate whether to use Enhanced High Rise Alternate Matching to convert a building name used as a street address to the correct, USPS-preferred address street name associated with that building:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to match to the base record when an alternate match is made and the input address contains secondary address information.</li> <li>• N — No, do not attempt to match to the base record.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul> <p>NOTE: If you specify N, a non-CASS-certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>
46	Multiple Secondary Component Processing	<p>Optional. Specify a code to indicate how to handle multiple secondary component processing:</p> <ul style="list-style-type: none"> <li>• Y — Attempt secondary match.</li> <li>• N — Assign default ZIP+4 Code.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul> <p>NOTE: If you specify N, a non-CASS-certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>

Position	Field Name	Description
49	Use Non-Standard City Names	<p>Optional. Specify a code to indicate whether or not the matcher should return vanity city names when they most closely match the input record:</p> <ul style="list-style-type: none"> <li>• X — Yes, return vanity city names when they most closely match the input city names. When this option is selected, if you input a city name that is not a USPS primary city, but is a valid vanity name, the vanity name is returned.</li> <li>• Blank — No, never return vanity city names.</li> </ul> <p>NOTE: Please note the following when defining the Use Non-Standard City Names field:</p> <ul style="list-style-type: none"> <li>• If X is chosen, a CASS certified configuration will be created, but you will not be able to get a postal automation presort discount.</li> <li>• If you leave this field blank, and the only matching city on the database is a vanity city, the word "ZIP" and the ZIP Code is stored in the Standardized City location on your output record.</li> <li>• If you define this field to return the short city name, and a vanity city name is greater than 13 characters, CODE-1 Plus does not return the input vanity city name if CODE-1 Plus is set up to accept vanity city names. Instead, CODE-1 Plus returns the primary city name or, if the primary city name has a short city name, the primary short city name is returned. The USPS does not store short city names for vanity cities and CASS regulations state that the software will return the primary city name/primary short city name when the input vanity long city name is entered.</li> </ul>
51	Enhanced Street Matching Option	<p>Optional. Specify a code to indicate whether to use Enhanced Street Matching (ESM) or All Street Matching (ASM) during CODE-1 Plus processing:</p> <ul style="list-style-type: none"> <li>• A — Use All Street Matching (ASM).</li> <li>• S — Use Enhanced Street Matching (ESM).</li> <li>• Blank — Do not use enhanced street matching.</li> </ul>
53	Limited Locality Option	<p>Optional. Specify a code to indicate whether to perform address matching against multiple localities during CODE-1 Plus processing:</p> <ul style="list-style-type: none"> <li>• X — Limit address match to ZIP Code locality.</li> <li>• Blank — Conduct standard processing</li> </ul> <p><b>NOTE:</b> If you specify X, a non-CASS-certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>

Position	Field Name	Description
55	Split Indica	<p>Optional. Specify a code to indicate whether to perform Split Indicia processing:</p> <ul style="list-style-type: none"> <li>• Y — Perform split indicia processing</li> <li>• N — Do not perform split indicia processing.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul> <p><b>NOTE:</b> If you specify N, a non-CASS-certified configuration is created. CODE-1 Plus does not generate the USPS Form 3553.</p>
57	C/O Data Flag	<p>Optional. Specify a code to indicate whether to append care-of (C/O) data to the end of the output address line:</p> <ul style="list-style-type: none"> <li>• Y — Append C/O data.</li> <li>• Blank — Do not append C/O data</li> </ul>
59	Reserved	

**Note:** iThe “MMM” strictness code is the only CASS-certified configuration which generates the USPS Form 3553. Any other combination of strictness code (for example, “MEM”), does not generate a USPS Form 3553.

**Note:** iThe values in the Maximum Address Correction and Maximum Overall Correction fields must match the values in similar fields in the CR OUT, CS OUT, SA OUT, Z4 OUT, and Z5 OUT parameters. If these fields do not match in all parameters, an invalid USPS Form 3553 is generated.

## CONFIRM

**Optional.** Use CONFIRM to indicate that records containing either special ZIP Codes or “confirmation flag values” should be confirmed without undergoing the matching process. These special ZIP Codes are APO/FPO, military base, and government agency ZIP Codes.

This feature allows you to have special records automatically confirmed, without CODE-1 Plus attempting to match the records to the contents of the database. Often CODE-1 Plus is unable to successfully match APO/FPO, military base, and government agency ZIP Codes. This parameter

allows you to write these types of records to the "Coded OK" records output file instead of the "Non-coded" records output file.

Using confirmation flags in your records enables you to automatically confirm records you know are correct, even though CODE-1 Plus does not match the records.

For example, an insurance agency wants to mail solicitations to new homeowners. This agency has a standard mailing list, and has also bought lists of addresses from several builders that have just finished new housing developments. Because the streets in these new developments are so new, the streets have not yet been added to the USPS database. The insurance agency merges these new lists with its standard mailing list, but first inserts confirmation flags in the records on the builders' lists. The insurance agency includes a CONFRM parameter in their CODE-1 Plus job to look for these confirmation flags and confirm the records automatically. The records are confirmed even though the addresses are not on the CODE-1 Plus database.

You can enter up to four confirmation values on each parameter, up to a maximum of 250 confirmation values. You can use as many CONFRM parameters as are necessary to indicate the confirmation values you require. If a string of blank spaces is one of the confirmation values, it must be the first value on a parameter.

Position	Field Name	Description
1-6	Keyword	Required. CONFRM is the only acceptable entry.
8-10	Location For Output Confirmation Code	Optional. Location on the output record for the code indicating whether or not the record was confirmed without processing, and if so, why. One of the following codes is stored: <ul style="list-style-type: none"> <li>• V — Confirmed by comparison to an input confirmation flag value</li> <li>• A — Confirmed as an APO/FPO ZIP Code</li> <li>• M — Confirmed as a military ZIP Code</li> <li>• G — Confirmed as a government agency</li> <li>• Blank — Not confirmed (record was address-matched).</li> </ul>
12	Confirm APO/FPO ZIP Codes	Optional. Specify a code to indicate whether or not to confirm APO/FPO ZIP Codes automatically: <ul style="list-style-type: none"> <li>• A — Confirm APO/FPO ZIP Codes.</li> <li>• Blank — Process APO/FPO ZIP Codes as normal records.</li> </ul>

Position Field Name Description

14	Confirm Military Base ZIP Codes	Optional. Specify a code to indicate whether or not to confirm military base ZIP Codes automatically: <ul style="list-style-type: none"> <li>• M — Confirm military base ZIP Codes.</li> <li>• Blank — Process military base ZIP Codes as normal records.</li> </ul>
16	Confirm Government Agency ZIP Codes	Optional. Specify a code to indicate whether or not to confirm government agency ZIP Codes automatically: <ul style="list-style-type: none"> <li>• G — Confirm government agency ZIP Codes.</li> <li>• Blank — Process government agency ZIP Codes as normal records.</li> </ul>
18-20	Location of Confirmation Flag	Optional. Location in the input record of the confirmation flag. No default.
22	Length of Confirmation Flag	Optional. Length of the confirmation flag in the input record. Must be 9 or less. No default.
24-25	Equal/Not Equal Code	Optional. Specify a code to indicate whether the confirmation flag in the records should be equal to or not equal to the confirmation value(s) on this parameter: <ul style="list-style-type: none"> <li>• EQ — The confirmation flag in the record must be equal to one of the confirmation values on this parameter for the record to be confirmed automatically.</li> <li>• NE — The confirmation flag in the record must not be equal to any of the confirmation values on this parameter for the record to be confirmed automatically.</li> <li>• <b>Blank</b> — No default.</li> </ul> <p>NOTE: The EQUAL/NOT EQUAL CODE must be the same on all CONFRM parameters.</p>
27-35	Confirmation Value 1	Optional. A value to which the confirmation flag in the input record is compared. If positions 24-25 above are EQ, and the confirmation flag in the record is equal to this value, the record will be confirmed. Conversely, if positions 24-25 above are NE, and the confirmation flag in the record is not equal to this value, the record will be confirmed. No default.

Position    Field Name            Description

37-45	Confirmation Value 2	Optional. A value to which the confirmation flag in the input record is compared. If positions 24-25 above are EQ, and the confirmation flag in the record is equal to this value, the record will be confirmed. Conversely, if positions 24-25 above are NE, and the confirmation flag in the record is not equal to this value, the record will be confirmed. No default.
47-55	Confirmation Value 3	Optional. A value to which the confirmation flag in the input record is compared. If positions 24-25 above are EQ, and the confirmation flag in the record is equal to this value, the record will be confirmed. Conversely, if positions 24-25 above are NE, and the confirmation flag in the record is not equal to this value, the record will be confirmed. No default.
57-65	Confirmation Value 4	Optional. A value to which the confirmation flag in the input record is compared. If positions 24-25 above are EQ, and the confirmation flag in the record is equal to this value, the record will be confirmed. Conversely, if positions 24-25 above are NE, and the confirmation flag in the record is not equal to this value, the record will be confirmed. No default.

## CONTRL

**Required.** CONTRL is a required parameter with no individual fields. The keyword field is the only field on the CONTRL parameter.

Position    Field Name            Description

1-6	Keyword	Required. CONTRL is the only acceptable entry.
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# CR OUT

**Optional.** Use CR OUT to identify where to store the carrier route data on the output record.

**Note:** iThe carrier route is stored in USPS standard format, as defined under positions 12-14 of this parameter.

Position	Field Name	Description
1-6	Keyword	Required. CR OUT is the only acceptable entry.
8-10	Location for Carrier Route Return Code	Optional. Location on the output record for the 1-character carrier route return code. One of the following codes is stored: <ul style="list-style-type: none"><li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li><li>• B — Insufficient (or blank) address match information.</li><li>• C — The address probable correctness or overall probable correctness was too high.</li><li>• D — Information was dropped.</li><li>• H — House/box number not found on street.</li><li>• L — The standardized address was too long.</li><li>• M — Multiple matches of equal quality were found.</li><li>• N — The carrier route wasn't stored because the processing requirements specified that it was not to be stored.</li><li>• S — Street name not found in ZIP Code.</li><li>• U — Unavailable—auxiliary file processing.</li><li>• Z — ZIP Code not found in database.</li><li>• Blank — The match attempt was successful.</li></ul>



Position	Field Name	Description
12-14	Location for Carrier Route Code	<p>Optional. Location on the output record for the 4-character carrier route code, which is stored in one of the following formats:</p> <ul style="list-style-type: none"> <li>• Bnnn — PO box address</li> <li>• Cnnn — Street address</li> <li>• Gnnn — General delivery address</li> <li>• Hnnn — Highway contract route address</li> <li>• Rnnn — Rural route address.</li> <li>• <b>Blank</b> — No default.</li> </ul>
60	Storage Conditions — Information Dropped	<p>Optional. Specify a code to indicate whether the carrier route code should be stored in cases in which information was dropped during the match process:</p> <ul style="list-style-type: none"> <li>• X — Do not store the carrier route code.</li> <li>• Blank — Store the carrier route code anyway.</li> </ul>
62	Maximum Address Correctness	<p>Optional. Maximum acceptable address probability of correctness to store the carrier route. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
64	Maximum Overall Correctness	<p>Optional. Maximum acceptable overall probability of correctness to store the carrier route. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
68	Storage Conditions — Multiple Carrier Route	<p>Optional. Specify a code to indicate whether or not the standardized carrier route code should be stored if multiple matching carrier route codes were found:</p> <ul style="list-style-type: none"> <li>• M — Store the returned carrier route code.</li> <li>• Blank — Do not store the returned carrier route code. Instead, store the information indicated in position 72.</li> </ul>
70	Storage Conditions — Multiple ZIP Code	<p>Optional. Specify a code to indicate whether the standardized carrier route code should be stored if multiple matching ZIP codes were found:</p> <ul style="list-style-type: none"> <li>• M — Store the returned carrier route code.</li> <li>• Blank — Do not store the returned carrier route code. Instead, store the information indicated in position 72.</li> </ul>

Position	Field Name	Description
72	Disposition for Non-Stored Carrier Route	<p>Optional. Specify a code to indicate what should be stored when the standardized carrier route code was not stored, either because no match was found, or due to storage conditions:</p> <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• I — Store carrier route code from the input record.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>

## CS OUT

Optional. Use CS OUT to define the location in the output record to write the standardized city and state information.

**Note:** If a vanity city name is greater than 13 characters, CODE-1 Plus will not return the input vanity city name if CODE-1 Plus is set up to accept vanity city names. Instead, CODE-1 Plus will return the primary city name or, if the primary city name has a short city name, the primary short city name. The USPS does not store short city names for vanity cities and CASS regulations state that the software must return the primary city name/primary short city name when the input vanity long city name is entered.

Standardized city/state information is formatted to conform to USPS conventions and matched against the master file. Dropped information is data that was present in the input city/state line, but was ignored during the analysis process.

Position	Field Name	Description
1-6	Keyword	Required. CS OUT is the only acceptable entry.

Position	Field Name	Description
8-10	Location for City/State Return Code	<p>Optional. Location on the output record for the 1-character city/state return code. One of the following codes is stored to indicate the reason the output city and state were or were not stored.</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address match information.</li> <li>• C — The probable correctness was higher than the specified maximum.</li> <li>• D — Information was dropped during the match.</li> <li>• H — House/box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• P — Primary City/State information returned for input ZIP Code when no match found to database.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• X — The only match was the default record.</li> <li>• Z — ZIP Code not found in database.</li> <li>• Blank — An output city/state was stored.</li> </ul>
12-14	Location for City Name	Optional. Location on the output record for the returned city name.
16-17	Length of City Name	Optional. Length of the returned city name. No default.
18	Storage Conditions — Short City Name	<p>Optional. Specify a code to indicate what should be returned, on the output record, in the position pointed to by columns 12-14:</p> <ul style="list-style-type: none"> <li>• I — Return the short city name (regardless if it was the input city name).</li> <li>• Blank — Return the standardized city name anyway.</li> </ul>

Position	Field Name	Description
19	Storage Conditions — No Address Match	<p>Optional. Specify a code to indicate what should be returned when no address match is found:</p> <ul style="list-style-type: none"> <li>• I — Store the input city.</li> <li>• X — Return the missing primary city and state for the valid input ZIP Code. Also, return the locality county code for the valid input ZIP Code or valid input city/state. If you specify "X", CODE-1 Plus does not generate a USPS Form 3553 (CASS Summary Report).</li> <li>• Z — Return the primary city for the valid input ZIP Code. If you specify "Z", CODE-1 Plus does not generate a USPS Form 3553 (CASS Summary Report).</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
21-23	Location for Short City Name	<p>Optional. Location on the output record for the 13-character short city name. When no short city name available, ZIP xxxxx will be returned in this output area. No default.</p>
25-27	Location for State Abbreviation	<p>Optional. Location on the output record for the 2-character state abbreviation. No default.</p>
29	Storage Conditions — No State Match	<p>Optional. Specify a code to indicate what should be stored when no state match is found:</p> <ul style="list-style-type: none"> <li>• I — Store the input state abbreviation.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul> <p><b>NOTE:</b> These options are ignored when position 19 contains an I.</p>
31-33	Location for Standardized City/state Line	<p>Optional. Location on the output record for the standardized city/state line. Enter a 3-digit location, or "INP" to specify the standardized city/state line should be stored in the same location as the input city/state line. "INP" is only valid if CS ZIP position 8 is C or A. No default.</p>
35-36	Length of Standardized City/state Line	<p>Optional. Length of the standardized city/state line. No default.</p>

Position	Field Name	Description
38	Format of Standardized City/state Line	Optional. Specify a code to indicate format of the standardized city/state line. <ul style="list-style-type: none"> <li>• 9 — City, state, ZIP Code, and ZIP+4 Code</li> <li>• S — City and state only</li> <li>• Z — City, state, and 5-digit ZIP Code.</li> <li>• <b>Blank</b> — No default.</li> </ul>
40-42	Location of Standardized Urbanization Name	Optional. Location on the output record for the standardized urbanization name. No default.
44-45	Length of Standardized Urbanization Name	Optional. Length of the standardized urbanization name. No default.
47-49	Location for USPS County Name	Optional. Location for the 25-character USPS county name on the output record. No default.
51-53	Location for USPS FIPS County Code	Optional. Location for the 3-character USPS FIPS county code on the output record. No default.  NOTE: You may want to post the FIPS county code to your record if you plan on handling IN-COUNTY Periodicals Mailings in MailStream Plus. MailStream Plus needs the FIPS county code to determine the county for in and out of county presort coding.
55-57	Location for Congressional District	Optional. Location for the 2-character congressional district code on the output record. No default.

Position	Field Name	Description
59	Storage Conditions — Preferred Last Line City Name	<p>Optional. Specify a code to indicate whether the preferred last line city name should be stored:</p> <ul style="list-style-type: none"> <li>• C — Store the USPS-preferred City Name from USPS City/State File.</li> <li>• Z — Store the Preferred Last Line City Name from the USPS ZIP+4 File (Override City Name). (Refer to the AM2OUT parameter for a description of the Override City Name.)<b>NOTE:</b> If you select Z, CODE-1 Plus generates a CASS certified configuration and the USPS 3553 Report.</li> <li>• P — Store the Primary City Name from the USPS City/State File.</li> <li>• <b>Blank</b> — Default is Z.</li> </ul> <p><b>NOTE:</b> If you select C or P, CODE-1 Plus does <b>not</b> generate a CASS certified configuration and does <b>not</b> generate the USPS 3553 Report.</p>
60	Storage Conditions — Information Dropped	<p>Optional. Specify a code to indicate whether the standardized city/state line should be stored when information was dropped during the standardization process:</p> <ul style="list-style-type: none"> <li>• X — Do not store if information was dropped.</li> <li>• Blank — Store the information anyway.</li> </ul>
62	Maximum Address Correctness	<p>Optional. Maximum acceptable address probability of correctness to store the standardized city/state line. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
64	Maximum Overall Correctness	<p>Optional. Maximum acceptable overall probability of correctness to store the standardized city/state line. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
66	Storage Conditions — No City Match	<p>Optional. Specify a code to indicate what should be stored when no city name match was found:</p> <ul style="list-style-type: none"> <li>• X — Store the information indicated in position 72.</li> <li>• Blank — Store the default city name.</li> </ul>

Position	Field Name	Description
68	Storage Conditions — Multiple ZIP+4	Optional. Specify a code to indicate whether the standardized city/state line should be stored when multiple ZIP+4 matches were found: <ul style="list-style-type: none"> <li>• M — Store the standardized city/state line anyway.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
69	Storage Conditions — Multiple Urbanization Name	Optional. Specify a code to indicate whether to store the standardized urbanization name when multiple matches were found on the database. <ul style="list-style-type: none"> <li>• M — Store the standardized urbanization name.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
70	Storage Conditions — Multiple ZIP Code	Optional. Specify a code to indicate whether the standardized city/state line should be stored when multiple ZIP Code matches were found: <ul style="list-style-type: none"> <li>• M — Store the standardized city/state line anyway.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
72	Disposition Indicator	Optional. Specify a code to indicate what should be stored in cases where the standardized city/state line was not stored, either because no match was found or due to storage conditions: <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>

## CS ZIP

**Required.** Use CS ZIP to define the location, length, and format of the city, state, and ZIP Code in the input record.

**Note:** iCODE-1 Plus considers a ZIP Code of 00000 to be invalid. If you want to preserve an input ZIP Code that is all zeros, use a MOVE I parameter or an exit routine.

Position Field Name Description

1-6	Keyword	Required. CS ZIP is the only acceptable entry.
8	Format of City/State/ZIP Code	<p>Required. Specify a code to indicate the format of the city/state and ZIP Code information on the input record:</p> <ul style="list-style-type: none"> <li>• A — City/state/ZIP Code are amongst the address lines (position 8 on ADDRDF must be L). If you select this value, your city/state/ZIP must be together in the right-most (last) non-blank address line defined.</li> <li>• C — City/state mixed with address lines; ZIP separate.</li> <li>• M — City/state together in one field; ZIP in a separate field.</li> <li>• S — City, state, and ZIP in three separate fields.</li> <li>• X — City/state/ZIP in a single field separate from the address.</li> <li>• <b>Blank</b> — No default.</li> </ul>
10-12	Location of Separate ZIP Code	Optional. Location on the input record for the separate ZIP Code. Cannot be used with option A above. No default.
14	Format of Separate ZIP Code	<p>Optional. Specify a code to indicate the format of the separate ZIP Code:</p> <ul style="list-style-type: none"> <li>• 9 — ZIP Code is 9 digits binary stored in 4-character format.</li> <li>• B — ZIP Code is in 3-character binary format.</li> <li>• C — ZIP Code is stored in 5-character format.</li> <li>• P — ZIP Code is in a 3-character packed format (the sign digit is ignored so that the start of a 5-character packed 9-digit ZIP+4 Code can be used with this option).</li> <li>• <b>Blank</b> — No default.</li> </ul>
16-18	Location of City, City/State, or City/State/ZIP Code	Required if "M" is entered in position 8. Location on the input record for the field that contains the city, city/state, or city/state/ZIP Code. No default.
20-21	Length of City, City/State, or City/State/ZIP Code	Required if "M" is entered in position 8. Length of the city, city/state, or city/state/ZIP field. No default.



Position	Field Name	Description
23-25	Location of Separate State	Optional. Location on the input record for the separate state. No default.
27-28	Length of Separate State	Optional. Length of the separate state. No default.
30-32	Location for Storage of Extracted ZIP Code	Optional. Location on the output record where the extracted ZIP Code should be stored. If the input ZIP Code field is non-numeric, or is all zeros, then blanks are stored in the location you specify here. No default.
34-36	Location of Original ZIP+4 Code	Optional. Location on the input record of the ZIP + 4 add-on code. No default.
38	Format of Original ZIP+4 Code	Optional. Specify a code to indicate the format of the ZIP + 4 add-on code: <ul style="list-style-type: none"> <li>• C — 4-character format.</li> <li>• B — 3-character binary format.</li> <li>• P — 3-character packed format (the sign digit is ignored so that the start of a 5-character packed 9-digit ZIP+4 code can be used with this option).</li> <li>• <b>Blank</b> — No default.</li> </ul>
40-42	Location of Original Carrier Route Code	Optional. Location on input record of the carrier route code. No default.
44-46	Location of Master File Vintage Date	Optional. Location on the input records of the master file vintage date. This field or the vintage of Master File Literal in positions 50-55 activate Z4CHANGE processing. Specify a location in this field or a date in positions 50-55, but not both. No default.

Position	Field Name	Description
48	Format of Master File Vintage Date	<p>Required if a location is specified in positions 44-46; otherwise, optional. Specify a code to indicate the input format of the master file vintage date in the input records. This field is ignored if positions 44-46 are blank. Enter one of the following codes:</p> <ul style="list-style-type: none"> <li>• B — 2-byte binary format YYMM.</li> <li>• C — 4-byte character format YYMM.</li> <li>• P — 3-byte packed decimal format YYMM.</li> <li>• 3 — 3-byte binary format YYYYMM.</li> <li>• 6 — 6-byte character format YYYYMM.</li> <li>• 4 — 4-byte packed decimal format YYYYMM.</li> <li>• <b>Blank</b> — No default.</li> </ul>
50-55	Master File Literal Date	<p>Optional. Master file vintage date in YYYYMM format. Specify a literal date in this field or a location in positions 44-46, but not both. No default.</p>

**Note:** if you specify a location of original ZIP + 4 CODE and CARRIER ROUTE CODE, CODE-1 Plus tracks the number of times the returned ZIP + 4 Code and carrier code were identical to the originals. These statistics are printed on the Analysis of Matched Records Report.

## DPVIN

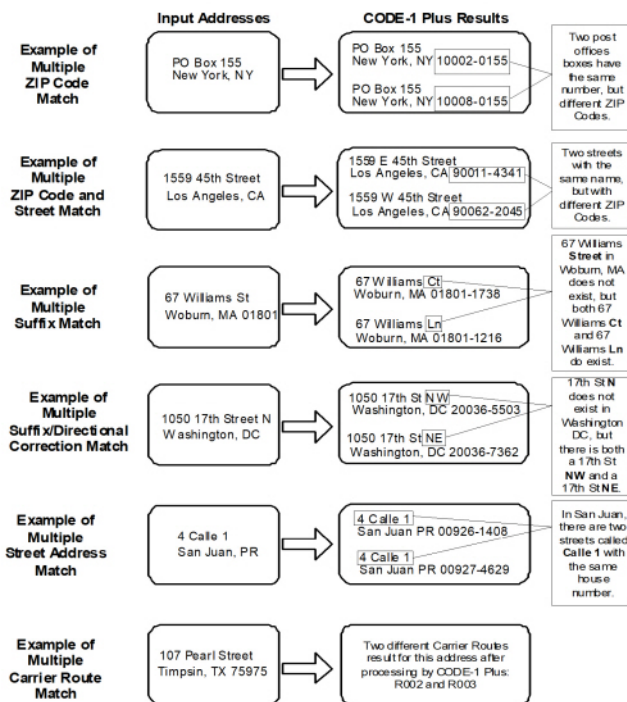
Optional. Use DPVIN to activate Delivery Point Validation (DPV) and Residential Delivery Indicator (RDI) processing and to process options on multiple matches to the ZIP + 4 database. DPV and RDI processing use a separate license from CODE-1 Plus. The license must be loaded in order for this parameter to properly function. For more information on DPV and RDI, refer to Chapter 7, Using Delivery Point Validation in your *CODE-1 Plus User's Guide*.

Currently, the USPS ZIP + 4 file consists of ranges of addresses. This means that if a given house number is entered on the input and that number falls within the range of the USPS ZIP + 4 file, the address will be validated regardless of whether the house number actually exists. DPV allows you to determine whether an actual address exists, right down to the apartment or suite level. DPV allows you to validate that your address information is a physical address served by the Postal Service. RDI allows you to determine if an address is a residential or business delivery point.

**Note:** iUSPS CASS regulations require Delivery Point Validation (DPV) processing for CASS certification and to generate the USPS Form 3553 (USPS CASS Summary Report).

## What is a Multiple Match?

A multiple match occurs when one part of an input address has the possibility of coding several different ways in CODE-1 Plus. Below are examples of the different types of multiple matches that can be Delivery Point Validated.



### Examples of Multiple Matches in CODE-1 Plus

Position	Field Name	Description
1-6	Keyword	Required. DPVIN is the only acceptable entry.

Position    Field Name                      Description

8	Multiple Match Option - ZIP Code and PO Box or Rural Route/Highway Contract Address Type	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the ZIP Code and the PO Box or Rural Route/Highway Contract:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
10	Multiple Match Option - ZIP Code and Street Address Type	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the ZIP Code and the street address type:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
12	Multiple Match Option - Carrier Route	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the Carrier Route inCODE-1 Plus:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
14	Multiple Match Option - Directional	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the directional:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
16	Multiple Match Option - Suffix	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the suffix:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>

Position	Field Name	Description
18	Multiple Match Option - Suffix/Directional Correction	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the suffix/directional correction:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
20	Multiple Match Option - Multiple Input Secondary Components with No Designator	<p>Optional. Specify a code to indicate whether to attempt to DPV confirm if your input file contains multiple matches of the secondary components with no designator:</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul> <p>NOTE: If you select N, you will generate a non-CASS-certified configuration. No USPS Form 3553 is generated.</p> <p>Below is an example of secondary components with no designator:</p> <pre>John Jones12 Main St. #12 #5New York, NY 10012</pre> <p>#12 and #5 have no indication of being an apartment, PO Box, or other.</p>
22	Unique ZIP/Small Town Default ZIP+4 Assignment Option	<p>Optional. Indicate whether to attempt to DPV confirm when a unique ZIP Code or a small town default ZIP + 4 has been assigned during regular processing.</p> <ul style="list-style-type: none"> <li>• Y — Yes, attempt to DPV confirm.</li> <li>• N — No, do not attempt to DPV confirm.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>

Position	Field Name	Description
24	DPV Secondary Address Validation	<p>Optional. DPV automatically attempts to validate primary and secondary information on input addresses. Then, if no match is made, DPV will attempt to validate using the primary information only. Turning off this option will reduce the number of look-ups to DPV files and may increase processing. Select one of the following:</p> <ul style="list-style-type: none"> <li>• Y — Perform DPV validation using secondary address information.</li> <li>• N — No, do not perform DPV validation using secondary address information. Selecting this value will generate a non-CASS certified configuration.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul> <p><b>NOTE:</b> If you select N, you will generate a non-CASS-certified configuration. No USPS Form 3553 is generated.</p>
26	CMRA Lookup	<p>Optional. Specify a code to indicate whether to determine if an input address is a Commercial Mail Receiving Agency (CMRA).</p> <ul style="list-style-type: none"> <li>• Y — Yes, perform CMRA lookup.</li> <li>• N — No, do not perform CMRA lookup.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
28	PBSA Lookup	<p>Optional. DPV processing uses the PBSA Table to identify P. O. Box™ Street Addresses (PBSA). PBSA addresses are street addresses that really represent a USPS P. O. Box. Specify a code to indicate whether CODE-1 Plus uses the PBSA Table to return the PBSA result in output.</p> <ul style="list-style-type: none"> <li>• Y — Yes, perform PBSA lookup.</li> <li>• N — No, do not perform PBSA lookup.</li> <li>• Blank — Do not perform PBSA lookup.</li> </ul> <p><b>NOTE:</b> If you specify "Y", you must define a location for the DPV PBSA Flag in positions 32-34 of the DPVOUT parameter (location on the output record for a 1-character code indicating whether this address was found in the PBSA table).</p>
30	DNA indicator	<p>A code indicating whether or not to perform a DNA lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform DNA lookup.</li> <li>• N — Do not perform DNA lookup.</li> <li>• Blank — Do not perform DNA lookup.</li> </ul>

Position Field Name Description

32	Throw Back indicator	<p>A code indicating whether or not to perform a Throw Back lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform Throw Back lookup.</li> <li>• N — Do not perform Throw Back lookup.</li> <li>• Blank — Do not perform Throw Back lookup.</li> </ul>
34	NSL indicator	<p>A code indicating whether or not to perform a NSL lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform NSL lookup.</li> <li>• N — Do not perform NSL lookup.</li> <li>• Blank — Do not perform NSL lookup.</li> </ul>
36	NDD indicator	<p>A code indicating whether or not to perform a NDD lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform NDD lookup.</li> <li>• N — Do not perform NDD lookup.</li> <li>• Blank — Do not perform NDD lookup.</li> </ul>
38	NSR indicator	<p>A code indicating whether or not to perform a NSR lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform NSR lookup.</li> <li>• N — Do not perform NSR lookup.</li> <li>• Blank — Do not perform NSR lookup.</li> </ul>
40	DPV Drop indicator	<p>A code indicating whether or not to perform a Drop lookup.</p> <ul style="list-style-type: none"> <li>• Y — Perform Drop lookup.</li> <li>• N — Do not perform Drop lookup.</li> <li>• Blank — Do not perform Drop lookup.</li> </ul>
52	RDI Indicator	<p>Optional. Specify a code to indicate whether to perform RDI processing.</p> <ul style="list-style-type: none"> <li>• Y — Attempt both DPV and RDI processing.</li> <li>• N — Do not attempt DPV processing. Perform RDI processing only. If you specify "N" in position 52, you will generate a non-CASS certified configuration and CODE-1 Plus <b>will not</b> generate a USPS Form 3553.</li> <li>• Blank — Do DPV processing only.</li> </ul>

Position	Field Name	Description
54	DPV File Option	<p>Required. Specify a code to indicate the DPV file to match against.</p> <ul style="list-style-type: none"> <li>• S — Process the DPV split file.</li> <li>• F — Process the DPV flat file.</li> <li>• H — Process the DPV full (hash) file.</li> <li>• Blank — Process the DPV split file.</li> </ul>
56	DPV Memory Module Size Indicator	<p>Required. Specify a code to indicate the size of DPV module.</p> <ul style="list-style-type: none"> <li>• P — Pico memory model (no files in memory).</li> <li>• U — Micro memory model (no files in memory, only indexes).</li> <li>• S — Small memory model (HSC and HSF in memory).</li> <li>• M — Medium memory model (LCD also in memory).</li> <li>• L — Large memory model (HSX also in memory).</li> <li>• H — Huge memory model (all files in memory).</li> <li>• Blank — DPV process will be using Medium memory model (default).</li> </ul>
58	CMRA/PMB Conversion Indicator	<p>Optional. Specify a code to indicate whether to convert secondary information to PMB when the primary address is a CMRA.</p> <ul style="list-style-type: none"> <li>• Y — Yes, convert secondary information to PMB where appropriate.</li> <li>• N — No, do not convert secondary information to PMB.</li> <li>• Blank — Do not convert secondary information to PMB (default).</li> </ul>

## DPVOUT

Optional. Use DPVOUT to post all answers from DPV and RDI processing. The DPV and RDI processing add-on options must be licensed in order for this parameter to properly function. For more information on DPV and RDI, refer to Chapter 7, Using Delivery Point Validation in your *CODE-1 Plus User's Guide*.



DPV Footnote Codes are 2-character, USPS-defined codes that represent the changes that were made to the input address during the matching process. Up to 10 of these codes can be stored by CODE-1 Plus for each record. Even if your address is not presented for DPV processing, those footnote codes pertaining to the match to the ZIP + 4 database will be returned.

**Note:** iUSPS CASS regulations require Delivery Point Validation (DPV) processing for CASS certification and to generate the USPS Form 3553 (USPS CASS Summary Report).

Position	Field Name	Description
1-6	Keyword	Required. DPVOUT is the only acceptable entry.
8-10	Location for DPV Return Code	<p>Optional. Location on the output record for a 1-character DPV Return Code. The DPV Return Codes are:</p> <ul style="list-style-type: none"> <li>• N — No Delivery Point Validation.</li> <li>• Y — Delivery Point validated. Primary number valid and second number (when present) valid.</li> <li>• S — Valid primary number; but secondary number (primary for Rural Route) present and is not confirmed. Also, can indicate that the house range contained a single trailing alpha that was dropped to attempt Delivery Point Validation.</li> <li>• D — Valid primary number; input missing secondary number (primary Rural Route).</li> <li>• M — Unable to Delivery Point validate due to multiple match results.</li> <li>• Blank — Address not presented to DPV table.</li> </ul>
12-14	Location for DPV CMRA Flag	<p>Optional. In this field, you indicate the location on the output record for a 1-character Commercial Mail Receiving Agency (CMRA) Flag (indicates a private business that acts as a mail-receiving agent for specific clients). This field contains the results of the call to the DPV CMRA Hash Table (dph.hsc):</p> <ul style="list-style-type: none"> <li>• Y — Yes, address was found in CMRA table.</li> <li>• N — No, address was not found in CMRA table.</li> <li>• Blank — Address not presented to hash table.</li> </ul> <p>NOTE: The CMRA lookup automatically occurs when the DPV return code is Y or S, unless otherwise specified in the DPVIN parameter record.</p>

Position	Field Name	Description
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16-18	Location for DPV False/Positive Flag	<p>Optional. If the DPV return code is N, CODE-1 Plus automatically begins a false/positive look-up. In this field, you indicate the location on the output record for a 1-character False/Positive Flag:</p> <ul style="list-style-type: none"> <li>• Y — False. Indicates that you have hit a “seed record” in your processing.</li> <li>• N — Not false.</li> <li>• Blank — Not presented.</li> </ul>
20-22	Location for DPV Footnote Codes	<p>Optional. Location on the output record for a 20-character area to accommodate the DPV Footnote Codes.</p> <ul style="list-style-type: none"> <li>• AA — Input address matched to the ZIP+4 file.</li> <li>• A1 — Input address not matched to the ZIP+4 file.</li> <li>• BB — Input address matched to DPV (all components).</li> <li>• CC — Input address primary number matched to DPV but secondary number not match (present but not valid).</li> <li>• C1 — Input address primary number matched, secondary number not matched; secondary number required</li> <li>• F1 — Input address is military; DPV bypassed.</li> <li>• G1 — Input address is general delivery; DPV bypassed.</li> <li>• IA — Informed Address identified.</li> <li>• M1 — Input address primary number missing.</li> <li>• M3 — Input address primary number invalid.</li> <li>• N1 — Input address primary number matched to DPV but high rise address missing secondary number.</li> <li>• P1 — Input address missing RR or HC Box number.</li> <li>• P3 — Input address missing PO, RR, or HC Box number.</li> <li>• PB — Input address is a P. O. Box Street Address (PBSA).</li> <li>• RR — Input address matched to CMRA.</li> <li>• R1 — Input address matched to CMRA but secondary number not present.</li> <li>• R7 — Input address matched to phantom carrier route R777 or R779 (not eligible for street delivery).</li> <li>• TA — Input address primary number matched to DPV by dropping trailing alpha.</li> <li>• U1 — Input address is unique ZIP; DPV bypassed.</li> <li>• Blank — No default.</li> </ul>

Position	Field Name	Description
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24-26	Location for No Stat Flag	<p>Optional. A 1-character code indicating the presence of statistics for this address. The value Y indicates that the address is not a valid delivery address even though it has been validated by DPV. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Found match to 'No Stat' DPV hash table.</li> <li>• N — No match found to "No stat" DPV hash table.</li> <li>• Blank — Not presented.</li> </ul> <p><b>NOTE:</b> If this option is present in the DPVOUT parameter, the DPV DLL looks up addresses in the No Stat table. If this position is blank, CODE-1 Plus does not look up address in the No Stat table.</p>
28-30	Location for Vacant Table Flag	<p>Optional. Location on the output record for a 1-character code indicating whether this address was found in the Vacant table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — The address has been vacant for at least last 90 days.</li> <li>• N — The address is not vacant.</li> <li>• Blank — Not presented</li> </ul> <p><b>NOTE:</b> If this option is present in the DPVOUT parameter, the DPV DLL performs an address search in the Vacant table; otherwise, for performance reasons, DPV does not look up the address in the Vacant table.</p>
32-34	Location for DPV PBSA Flag	<p>Optional. Location on the output record for the one-character code that indicates whether this address was found in the PBSA table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Found in the DPV PBSA Table.</li> <li>• N — Not found in the DPV PBSA Table.</li> <li>• Blank — Not presented</li> </ul> <p><b>NOTE:</b> If you specify a location for the DPV PBSA Flag, you must specify "Y" in position 28 of the DPVIN parameter (PBSA Lookup). DPVIN position 28 determines whether CODE-1 Plus uses the PBSA Table to return the PBSA result in output. If you specify a value for DPVOUT positions 32-34 and do not specify "Y" in position 28 of the DPVIN parameter (PBSA Lookup), a parameter error occurs.</p>

Position    Field Name                    Description

36-38	Location for Door not Accessible Flag	<p>Optional. Location on the output record for the one-character code that indicates whether this address was found in the Door Not Accessible (DNA) Table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Address was found in the table.</li> <li>• N — Address was not found in the table.</li> <li>• Blank — Address was not presented to the table.</li> </ul>
40-42	Location for Throwback Flag	<p>Optional. Location on the output record for the one-character code that indicates whether this address was found in the Throwback Table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Address was found in the table.</li> <li>• N — Address was not found in the table.</li> <li>• Blank — Address was not presented to the table.</li> </ul>
44-46	Location for No Secure Location Flag	<p>Optional. Location on the output record for the one-character code that indicates whether this address was found in the No Secure Location (NSL) table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Address was found in the table.</li> <li>• N — Address was not found in the table.</li> <li>• Blank — Address was not presented to the table.</li> </ul>
50-52	Location for Residential Flag	<p>Optional. Location on the output record for a 1-character Residential Flag. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• R — Yes, this address is a residential-only delivery point.</li> <li>• Blank — Not a residential delivery point.</li> </ul>
54-56	Location for Business Flag	<p>Optional. In this field, you indicate the location on the output record for a 1-character Business Flag. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• B — Yes, this address is a business-only delivery point.</li> <li>• M — Yes, this address is mixed residential and business delivery point.</li> <li>• Blank — Not a business delivery point.</li> </ul> <p>NOTE: You can only receive business flag M if you have enabled the business flag option in position 58.</p>

Position	Field Name	Description
58	Business Flag Option	<p>Optional. This option enables you to have two different business flag values returned in the Business Flag output location (specified in position 54-56):</p> <ul style="list-style-type: none"> <li>• R — Return Residential Delivery Points.</li> <li>• M — Return M for Mixed Business and Residential Delivery Points.</li> <li>• Blank — Return B for all Business Delivery Points.</li> </ul> <p><b>NOTE:</b> Option M is a combination of both residential and business deliveries for that ZIP + 4, but is considered a business delivery point by the USPS (i.e., a Highrise).</p>
59	Terminate DPV Processing	<p>Optional. Specify a code to indicate whether DPV stops batch jobs when a false-positive (seed record) is encountered:</p> <ul style="list-style-type: none"> <li>• S — Shut down CODE-1 Plus processing when a false-positive (seed record) is encountered.</li> <li>• W — Allow CODE-1 Plus to continue processing to completion of the entire job, generating form 3553. Processing continues but DPV processing is disabled.</li> <li>• <b>Blank</b> — Default is <b>W</b>.</li> </ul> <p><b>NOTE:</b> CODE-1 Plus writes the seed record information necessary to reactivate the DPV license to the execution log.</p>
62-64	Non-Delivery Flag	<p>Optional. Location on the output record for the one-character code that indicates whether this address was found in the Non-Delivery Days (NDD) table. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y - Address was found in the table.</li> <li>• N - Address was not found in the table.</li> <li>• Blank - Address was not presented to the table.</li> </ul>
66-68	Non-Delivery Days	Values of days that mail is not delivered.
70-72	NOSTAT Reason Code	Location for NOSTAT Reason Code.

# DP2OUT

DP2OUT is an extension of DPVOUT Parameter which comprised of Enhanced Return Code and DVP drop. Use DP2OUT to store the answers for Enhanced Return Code and DVP drop. This is an optional field.

Position	Field Name	Description
1-6	Keyword	Required. DP2OUT is the only acceptable entry.
8-10	Location of DPV Enhanced Return code	Optional. Location on the output record for the one-character code that indicates DPV Enhanced Return code.
12-14	Location of DPV DROP	Optional. Location on the output record for the one-character code that indicates whether this address was found in the Drop Table. One of the following codes is stored: <ul style="list-style-type: none"><li>• Y - Address was found in the table.</li><li>• N - Address was not found in the table.</li><li>• Blank - Address was not presented to the table.</li></ul>

# EXITOP

Optional. Use EXITOP to identify an operating exit routine for CODE-1 Plus to call after the record has been processed but before the record is written to an output file. The only system-defined field on this parameter contains the name of the operating exit routine. You can use the remaining 63 bytes to specify information that your exit routine needs.

Note that if you have also specified an output exit routine, the operating exit routine specified on the EXITOP parameter is called first. The operating exit routine does its processing and passes the record back to CODE-1 Plus. CODE-1 Plus then passes the same record to the output exit routine that you have specified for that specific output file.

CODE-1 Plus calls your exit routine with the following four parameters in the linkage section:

- **PARM1** — This parameter is 1-character, which will contain one of the following codes to tell your program what type of processing is to be performed:
  - **O** for open the output file
  - **W** for write a record to the output file
  - **C** for close the output file.
- **PARM2** — This parameter is the output file indicator.

If you are using a Precisely Barcoding Option or another exit routine with CODE-1 Plus, you must place a P in column 7 of the EXITOP parameter, and you must indicate the file identifiers on your parameter (refer to your Barcoding Option documentation for specific placement). CODE-1 Plus will then pass one of the following 2-byte file identifiers to your exit routine: OK for C1BMCOK; CO for C1BMNCO; ZP for C1BMIZP; or P4 for C1BMZP4.

If you are not using one of the Precisely exit routines, and you do not put a “P” in column 7, one of the following 7-byte file identifiers will be passed: C1BMCOK, C1BMNCO, C1BMIZP, or C1BMZP4.

- **PARM3** — This parameter contains the output record to be passed from CODE-1 Plus to your program. The length of this parameter will be the length of the output record as defined on the FILEDF parameter for the output file named in PARM2, above. This parameter is only valid when PARM1 is set to “W” in order to write a record to the output file.
- **PARM4** — This parameter contains the image of your EXITOP parameter, and is 80 bytes in length.

Position	Field Name	Description
1-6	Keyword	Required. EXITOP is the only acceptable entry.
7	CODE-1 Plus Identifier	Optional. If you are going to use this program with the Precisely Barcoding Option or the Geocoder, you must enter “P” in this position and then use the 2-character file identifiers as parameter 2. Use only if you are using 2-character file identifiers as parameter 2 in your linkage section. No default.
8-17	Operating Exit Routine Name	Required. Name of the exit routine to call before writing each record to an output file (or before calling an output exit routine). Name must be left-justified. No default.
18-80	User-Defined Data	Optional. Enter any information that you need CODE-1 Plus to pass to your exit routine. No default.

# FILEDF

Required. Use FILEDF to identify your input and output file structures, as well as any input or output exit routine to call with this job. This information indicates the files to use and the action to perform each time CODE-1 Plus is ready to read a record from the input file or write a record to an output file.

## File Names

CODE-1 Plus has five file names to use for your input file and output files, regardless of their actual dataset names. You use CODE-1 Plus-defined file names on the FILEDF parameter, but you will use your own file names in the JCL you write to run a CODE-1 Plus batch file.

The following file names are valid for the FILEDF parameter:

File Name	Description
C1BMNAM	Your input name-and-address file. C1BMNAM stands for CODE-1 Plus Batch Match Name file. This file is designated as C1BMNAM in the job control file (JCL, DCL, Script, etc.).
C1BMCOK	Output file to which CODE-1 Plus writes all of the records that are verified or corrected. C1BMCOK stands for CODE-1 Batch Match Coded OK. This file is designated as C1BMCOK in the job control file (JCL, DCL, Script, etc.).
C1BMNCO	Output file to which CODE-1 Plus writes all of the records that have valid input ZIP Codes (i.e., the ZIP Code was valid somewhere in the U.S.) but were not matched for some reason. C1BMNCO stands for CODE-1 Batch Match Not Coded. This file is designated as C1BMNCO in the job control file (JCL, DCL, Script, etc.).
C1BMIZP	Output file to which CODE-1 Plus writes all of the unmatched records that have invalid input ZIP Codes. An invalid input ZIP Code is one that is not valid anywhere in the U.S. C1BMIZP stands for CODE-1 Batch Match Invalid ZIP. This file is designated as C1BMIZP in the job control file (JCL, DCL, Script, etc.).



File Name      Description

File Name	Description
C1BMZP4	Output file to which CODE-1 Plus writes all of the records that were ZIP + 4 coded. C1BMZP4 stands for CODE-1 Batch Match ZIP + 4. This file is designated as C1BMZP4 in the job control file (JCL, DCL, Script, etc.).
C1BMSTA	Output file to which CODE-1 Plus writes all of the output statistics. These records are fixed length. The only required field on the parameter is record length, positions 19-22, and may be any numeric value.

### *Exit Routines*

The FILEDF parameter allows you to specify an input exit routine that CODE-1 Plus should call each time it is ready to read a record from your input name-and-address file, or the output exit routine that CODE-1 Plus should call each time it is ready to write a record to your output file. If you are using an input exit routine, CODE-1 Plus calls your exit routine—rather than reading the record—and waits for the exit routine to pass a record back. If you are using an output exit routine, CODE-1 Plus passes the record to the output exit routine, instead of writing the record to the file.

For example, you might have an input exit routine named CODEIT that adds a special code to a record. If you want to add that code to each record before the record is passed to CODE-1 Plus, you would specify CODEIT as the name of the exit routine. Then, every time CODE-1 Plus is ready to accept a record, it passes control to CODEIT, which reads the record, adds the code to the record, and then passes the record to CODE-1 Plus so that CODE-1 Plus can process that record.

When you use the FILEDF parameter to call an exit routine, CODE-1 Plus will call that exit routine with the following four parameters in the linkage section at each I/O request.

Parameter	Description
PARM1	<p>Total of 9 bytes with two components:</p> <ul style="list-style-type: none"> <li>• <b>Bytes 1-8</b> — File name (C1BMNAM, C1BMCOK, C1BMNCO, C1BMIZP, or C1BMZP4).</li> <li>• <b>Byte 9</b> — Function indicator. This byte contains one of the following codes to tell your program the type of processing to perform: <ul style="list-style-type: none"> <li>• <b>O</b> — Open the input or output file.</li> <li>• <b>R</b> — Read a record from the input file.</li> <li>• <b>W</b> — Write a record to the output file.</li> <li>• <b>C</b> — Close the input or output file.</li> </ul> </li> </ul>
PARM2	<p>A 5-digit length (less than or equal to 32,760) packed into a 3-byte field (COBOL "PIC S9(5) COMP-3"). This parameter must be filled in by your exit routine if byte 9 of PARM1 is O or R. When byte 9 of PARM1 is R, the input exit routine signals the end of the file by setting it to 0.</p>
PARM3	<p>Output record to be passed from CODE-1 Plus to your program (when EXITFC is W), or the input record to be passed from your program to CODE-1 Plus (when EXITFC is R). The length of this parameter will be the length specified by the exit routine in PARM2 above (maximum of 32,760).</p>
PARM4	<p>Image of your FILEDF parameter and is 80 bytes in length.</p>

## Limiting Processing With FILEDF

To limit the number of records CODE-1 Plus processes, use the following methods:

- Skip a portion of the file before any records are selected.
- Enter a fraction to select a portion of the records, evenly spaced throughout the file.
- Specify the maximum number of records to process. CODE-1 Plus will start at the beginning of the file and process every record until the maximum number is reached.

You can use these fields in conjunction with each other. For example, you could enter a number of records to skip, and a maximum number of records to read if you wanted to process the middle of the file, but not the beginning or the end.

### Fractional Record Selection

The fractional record selection feature enables you to sample records throughout the file, from beginning to end, without processing consecutive records. To determine the number to enter in this 7-byte field, divide the number of records you want to process by the number of records in the file. This will give you a decimal number. Drop the decimal, and enter the first 7 digits of the number. For example, you have a file with 102986 records, and you want to process 2000 records. You would divide 2000 by 102986 and get .0194201153. Dropping the decimal, you would enter 0194201 in the fractional record selection field. This will ensure that the 2,000 records processed are evenly distributed throughout the file.

**Note:** iThe maximum sample is every other record (half of the file). If you enter a fraction greater than .5000000, the record selection process yields every record in the file.

**Note:** iLimiting the number of records to process (by skipping records, specifying a maximum, or sampling the file) should be done on the input FILEDF parameter. If you limit processing on an output FILEDF parameter, CODE-1 Plus processes all of your input records, but limits the number of records written to the output file.

Position Field Name Description

Position	Field Name	Description
1-6	Keyword	Required. FILEDF is the only acceptable entry.
8-15	File Name	Required. Specify the name of the input or output file: <ul style="list-style-type: none"> <li>• C1BMNAM — Input file.</li> <li>• C1BMCOK — Matched records output file.</li> <li>• C1BMNCO — Unmatched records output file.</li> <li>• C1BMIZP — Invalid ZIP Code output file.</li> <li>• C1BMZP4 — ZIP+4 coded records output file.</li> <li>• C1BMSTA — Output statistics file. The only required field on the parameter is record length, positions 19-22, and may be any numeric value.</li> <li>• <b>Blank</b> — No default.</li> </ul>

Position Field Name Description

Position	Field Name	Description
17	Record Format	<p>Required. Specify a code to indicate the format of the input and output file records:</p> <ul style="list-style-type: none"> <li>• F — Fixed length with no end of record delimiter, pads with blanks to set record length (byte stream, mainframe fixed blocked and unblocked).</li> <li>• V — Mainframe (4-byte record) input and output files.</li> <li>• L — Line-sequential with delimiter(s) at end of record (for UNIX: new line, 1 byte).</li> <li>• U — Variable-length records. File contains an end-of-file indicator. (UNIX environments only).</li> <li>• <b>Blank</b> — Default is <b>F</b>.</li> </ul> <p>NOTE: Under UNIX and Windows, variable means ACUCOBOL-GT variable format files. Output files can also be variable in UNIX and Windows.</p> <p>NOTE: Not valid for file C1BMSTA.</p>
19-22	Record Length	<p>Required, except for z/OS. The length, in bytes, of the records in the file. For variable-length records, this is the maximum record length. Maximum is 32,760. No default.</p> <p>NOTE: If you need to enter a 5-digit number, use columns 18-22.</p>
24-28	Block Size	<p>Required, except for z/OS and UNIX. Specify the size, in bytes, of the blocks in the file. No default.</p> <p>NOTE: Not valid for file C1BMSTA.</p>
35	Label Type	<p>Optional. Specify a code to indicate whether the records on the file have standard or omitted labels:</p> <ul style="list-style-type: none"> <li>• N — No labels</li> <li>• S — Standard labels.</li> <li>• <b>Blank</b> — Default is <b>S</b>.</li> </ul> <p><b>NOTE:</b> Not valid for file C1BMSTA.</p>
39-46	Exit Routine Name	<p>Optional. Name of the input exit routine that should be called when CODE-1 Plus is ready to read a record from this file, or the name of the output exit routine that should be called when CODE-1 Plus is ready to write a record to the file. Name must be entered left-justified. No default.</p> <p><b>NOTE:</b> Not valid for file C1BMSTA.</p>

Position Field Name Description

50-56	Number of Records to Skip	Optional. Number of records CODE-1 Plus should skip before selecting the first record. No default. <b>NOTE:</b> Not valid for file C1BMSTA.
58-64	Fractional Record Selection	Optional. Number indicating the fraction of records in the file that should be processed. CODE-1 Plus assumes a decimal point before the first digit. No default. <b>NOTE:</b> A number greater than 5000000 selects the entire file. <b>NOTE:</b> Not valid for file C1BMSTA.
66-72	Maximum Number of Records	Optional. Maximum number of records CODE-1 Plus should read from or write to this file. No default. <b>NOTE:</b> Not valid for file C1BMSTA.

## FIRMNM

**Optional.** Use FIRMNM to define the location and length of firm names (company names) in the input record.

The *standardized firm name* is the firm name derived from an address match and is the firm name stored from the USPS ZIP+4 database file. Alternatively, it may be the input firm name in uppercase format when the standardized firm name could not be derived from a successful address match.

If you include the FIRMNM parameter in your job, when CODE-1 Plus processes a record, it compares the firm name in the input record with firm names that are associated with the matched address. Each firm name has a ZIP+4 Code associated with it. The ZIP+4 Codes associated with firm names are more specific than other ZIP+4 Codes. If a firm name match is found, CODE-1 Plus will assign that ZIP+4 Code to the record instead of the ZIP+4 Code that would be assigned based on the address alone.

**Note:** iUSPS CASS regulations require Suite<sup>Link</sup> processing for CASS certification and to generate the USPS Form 3553 (USPS CASS Summary Report).

**Note:** iThe FIRMNM parameter is required when you use the STELNK parameter to perform Suite<sup>Link</sup> processing.

Position	Field Name	Description
1-6	Keyword	Required. FIRMNM is the only acceptable entry.
8-10	Location of Firm Name	<p>Required. Specify one of the following to indicate the location of the firm name in the input record.</p> <ul style="list-style-type: none"> <li>• <b>nnn</b> — Specify 1-4 numerics to indicate the location of the firm name in your input record.</li> <li>• <b>U</b> — Specify <b>U</b> in position 8 to indicate the firm name is located within specified input address lines.</li> <li>• <b>Blank</b> — No default.</li> </ul> <p>NOTE: If U is used in this field, the option L is required in the ADDRDF parameter in position 8.</p>
12-13	Length of Firm Name	Required if an input location is specified in positions 8-10. Length of the firm name in the input record (the maximum is 40). No default.
15-17	Location for Standardized Firm Name	Optional. Location for the standardized firm name on the output record. No default.
19-20	Length of Standardized Firm Name	Optional. Length of the standardized firm name on the output record. No default.
72	Firm Name Disposition Indicator	<p>Optional. Specify a code to indicate what to store when the standardized firm name was not stored because no address match was found or a multiple address match was found:</p> <ul style="list-style-type: none"> <li>• <b>I</b> — Store the extracted input.</li> <li>• <b>B</b> — Store blanks.</li> <li>• <b>X</b> — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>I</b>.</li> </ul>

# G9 OUT

Optional. Use G9 OUT to define the output storage locations for the elements returned by Geographic Coding Plus and GeoTAX. These elements are written to records in the C1BMCOK and C1BMZP4 files for all records successfully coded by Geographic Coding Plus or GeoTAX. If you include this parameter in your CODE-1 Plus job, you must also include the G9ZIP9 parameter. For more information, refer to the your Geographic Coding or GeoTAX User's Guide.

**Note:** iYou must have Geographic Coding Plus or GeoTAX for CODE-1 Plus to process this parameter.

Position	Field Name	Description
1-6	Keyword	Required. G9 OUT is the only acceptable entry.
8-10	Location for General Return Code	Optional. Location on the output record for the 1-character General Return Code. One of the following codes is stored: <ul style="list-style-type: none"><li>• 5 — 5-Digit ZIP Code match was successful.</li><li>• 9 — 9-Digit ZIP Code match was successful.</li><li>• Blank — No 5-digit ZIP Code match was found.</li></ul>
12-14	Location for Census Geocode	Optional. The starting location on the output record for the following information: <ul style="list-style-type: none"><li>• 2-character FIPS state code.</li><li>• 3-character FIPS county code.</li><li>• 6-character census tract.</li><li>• 1-character census block group.</li><li>• No default.</li></ul>
16-18	Location for FIPS State Code	Optional. Location on the output record for the 2-character FIPS state code. No default.

Position Field Name Description

20-22	Location for FIPS County Code	Optional. Location on the output record for the 3-character FIPS county code. No default.
24-26	Location for Census Tract	Optional. Location on the output record for the 6-character census tract. No default.
28-30	Location for Census Block Group	Optional. Location on the output record for the 1-character census block group. No default.
32-34	Location for State Abbreviation	Optional. Location on the output record for the 2-character state abbreviation. No default.
36-38	Location for County Name	Optional. Location on the output record for the 20-character county name. No default.
40-42	Location for MSA Code	Optional. Location on the output record for the 4-character Metropolitan Statistical Area (MSA) code. No default.
44-46	Location for MSA Name	Optional. Location on the output record for the 50-character Metropolitan Statistical Area (MSA) name. No default.
48-50	Location for Latitude/ Longitude	Optional. Location on the output record for the 16-character latitude/longitude (4-decimal precision). No default.
52-54	Location for Latitude/ Longitude Level	Optional. Location on the output record for the 1-character latitude/longitude level. No default.
56-58	Location for Latitude/Longitude Coordinate	Optional. Location for latitude/longitude coordinate (6-decimal precision).The coordinate has a total length of 20 characters: 9 digits (decimal implied after sixth position), 1 directional, 9 digits (decimal implied after sixth position), 1 directional. No default.



# G9XOUT

Optional. Use G9XOUT to define output storage locations for elements returned by Geographic Coding Plus or GeoTAX. These elements are written records in the C1BMCOK and C1BMZP4 files for all records successfully coded by Geographic Coding Plus or GeoTAX and are in addition to those returned via the G9 OUT parameter. If you include this parameter in your CODE-1 Plus job, you must also include the G9ZIP9 parameter. You must have Open Systems Geographic Coding Plus or GeoTAX for CODE-1 Plus to process this parameter. For more information, refer to the your Geographic Coding or GeoTAX User's Guide.

Position	Field Name	Description
1-6	Keyword	Required. G9XOUT is the only acceptable entry.
8-10	Location for Place Code	Optional. Location on the output record for the 5-character place code. No default. NOTE: This option is only available for GeoTAX customers.
12-14	Location for Place Name	Optional. Location on the output record for the 40-character place name returned by Geographic Coding Plus. No default. NOTE: This option is only available for GeoTAX customers.
16-18	Location for MCD/CCD	Optional. Location on the output record for the 5-character Minor Civil Division/Census County Division (MCD/CCD) returned by Geographic Coding Plus. No default.
20-22	Location for Confidence Code	Optional. Location on the output record for the 4-character confidence code returned by Geographic Coding Plus. No default. NOTE: Spaces are used for the last three characters for compatibility with prior Geographic Coding releases.
24-26	Location for Prizm Cluster	Optional. Location on the output record for the 2-character PRIZM cluster returned by Geographic Coding Plus. No default. NOTE: This option is only available for Geographic Coding customers.

Position Field Name Description

28-30	Location for Prizm Cluster Code Name	Optional. Location on the output record for the 20-character PRIZM cluster code name returned by Geographic Coding Plus. No default. NOTE: This option is only available for Geographic Coding customers.
32-34	Location for Prizm Social Group Code	Optional. Location on the output record for the 2-character PRIZM cluster social group code returned by Geographic Coding Plus. No default. NOTE: This option is only available for Geographic Coding customers.
36-38	Location for Prizm Social Group Name	Optional. Location on the output record for the 20-character PRIZM cluster social group name returned by Geographic Coding Plus. No default. NOTE: This option is only available for Geographic Coding customers.
40-42	Location for Class Code	Optional. Location on the output record for the 2-character class code. No default. NOTE: This option is only available for GeoTAX customers.
44-46	Location for Incorporated Flag	Optional. Location on the output record for the 1-character incorporated flag, which specifies whether the place is incorporated or unincorporated as stored in the U.S. Department of Commerce FIPS Place Code Roster. One of the following codes is stored: <ul style="list-style-type: none"> <li>• I — Incorporated.</li> <li>• O — Unincorporated.</li> <li>• Blank — Not in a roster.</li> </ul> NOTE: This option is only available for GeoTAX customers.
48-50	Location for Last Annexed Date	Optional. Location in the output record for the 7-character last annexed date (MM/YYYY). No default. NOTE: This option is only available for GeoTAX customers.
52-54	Location for Last Updated Date	Optional. Location in the output record for the 7-character last updated date (MM/YYYY). No default. NOTE: This option is only available for GeoTAX customers.

Position	Field Name	Description
56-58	Location for Last Verified Date	Optional. Location in the output record for the 7-character last verified date. No default. NOTE: This option is only available for GeoTAX customers.
60-62	Location for GeoTAX Output Key	Optional. Location in the output record for the 9-character GeoTAX output key. No default. NOTE: This option is only available for GeoTAX customers.
64-66	Location for GeoTAX Return Code	Optional. Location in the output record for the GeoTAX return code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• E — Exact match using state/county/place/ZIP Code/place name.</li> <li>• P — Partial match using state/county/place.</li> <li>• A — Alternate match using ZIP Code and place name.</li> <li>• N — Record is default coded based on valid state code.</li> <li>• <b>Blank</b> — No matching GTMASTR GeoTAX record found.</li> </ul> NOTE: This option is only available for GeoTAX customers.

## G9ZIP9

Optional. Use G9ZIP9 to define the location and format of the ZIP Code and ZIP + 4 Code for Geographic Coding Plus or GeoTAX. If you include the G9 OUT and/or the G9XOUT parameters in your job, you must also include the G9ZIP9 parameter. You must have Geographic Coding Plus or GeoTAX for this parameter to be processed by CODE-1 Plus. For more information, refer to the your **Geographic Coding User's Guide** or **GeoTAX User's Guide**.

Position	Field Name	Description
1-6	Keyword	Required. G9ZIP9 is the only acceptable entry.

Position    Field Name    Description

8-10	Location of ZIP Code	<p>Required. The location on the record, after address matching has taken place, of the ZIP Code that should be used for Geographic Coding. No default.</p> <p>NOTE: In most cases, this is the output location you specified on the Z5 OUT parameter. However, you can specify the location of the input ZIP Code if your CODE-1 Plus output elements do not overwrite that location.</p>
12	Format of ZIP Code	<p>Optional. Specify a code to indicate the format of the ZIP Code found in the location specified in positions 8-10:</p> <ul style="list-style-type: none"> <li>• C — 5-character format.</li> <li>• P — 3-character packed decimal format.</li> <li>• <b>Blank</b> — Default is <b>C</b>.</li> </ul>
14-16	Location of ZIP+4 Code	<p>Optional. The location on the record, after address matching has taken place, of the ZIP + 4 Code that should be used for Geographic Coding. If you leave this field blank, the Geographic Coding results will be based on the 5-digit ZIP Code only. No default.</p> <p>NOTE: In most cases, this is the output location you specified on the Z4 OUT parameter. However, you can specify the location of the input ZIP + 4 Code if your CODE-1 Plus output elements do not overwrite that location.</p>
18	Format of ZIP+4 Code	<p>Optional. Specify a code to indicate the format of the ZIP + 4 Code found in the location specified in positions 14-16:</p> <ul style="list-style-type: none"> <li>• C — 4-character format.</li> <li>• P — 3-character packed decimal format.</li> <li>• <b>Blank</b> — Default is <b>C</b>.</li> </ul>

## HEADER

Required. Use HEADER to specify a date and text to be printed at the top of every page of each report and, if desired, to limit processing to a specified ZIP Code range.

**Note:** iThe HEADER parameter is validated for correct start/stop ZIP Code columns and for a blank in column 18 (between the date and heading text). An error occurs if your parameter is not adjusted from previous releases.

Position	Field Name	Description
1-6	Keyword	Required. HEADER is the only acceptable entry.
8-17	Date for all Reports	Optional. The date to print at the top line of the first page of each report. Default is to print the system date.
19-58	Heading for all Reports	Optional. The text to printed on the top line of every page of each report. No default.
60-64	Start ZIP Code	Optional. The lowest ZIP Code to process. Records with lower ZIP Codes are ignored. No default.
67-71	Stop ZIP Code	Optional. The highest ZIP Code to process. Records with higher ZIP Codes are ignored. No default.

## LACS

Optional. Use LACS to indicate whether to perform LACS<sup>Link</sup> processing and whether to perform LACS<sup>Link</sup> processing before or after ZIP + 4 processing.

**Note:** iUSPS CASS regulations require LACS<sup>Link</sup> processing for CASS certification and to generate the USPS Form 3553.

Position Field Name Description

Position	Field Name	Description
1-4	Keyword	Required. LACS is the only acceptable entry.
8	LACS <sup>Link</sup> Processing Type	Required. Type of LACS <sup>Link</sup> processing to be performed: <ul style="list-style-type: none"> <li>• Z — Perform the ZIP + 4 processing prior to LACS<sup>Link</sup>.</li> <li>• Default is <b>blank</b>.</li> </ul>
10	Terminate LACS	Required. This option allows LACS <sup>Link</sup> to stop batch jobs when a false-positive (seed record) has been encountered. For more information, refer to "Using LACS <sup>Link</sup> " in your <i>CODE-1 Plus User's Guide</i> . <ul style="list-style-type: none"> <li>• S — Shut down CODE-1 Plus processing when a false-positive (seed record) is encountered.</li> <li>• W — Allow CODE-1 Plus to continue processing to completion of the entire job, generating USPS Form 3553.</li> <li>• <b>Blank</b> — Default is <b>W</b>.</li> </ul>
14	LACS <sup>Link</sup> Seed Processing	Optional. Specify a code to indicate whether to produce a "99" return code for LACS seed record processing. <ul style="list-style-type: none"> <li>• Y — Do not produce "99" return code for LACS seed record processing.</li> <li>• N — LACS seed record processing results in "99" return code.</li> </ul> <p><b>NOTE:</b> An "S" in position 10 overrides this option.</p>
16	LACS <sup>Link</sup> Memory Module Size Indicator	Required. Specify the memory size of the LACS <sup>Link</sup> module: <ul style="list-style-type: none"> <li>• P — Pico memory model (no files in memory).</li> <li>• U — Micro memory model (no files in memory, only indexes).</li> <li>• S — Small memory model (Rv9 expansion in memory).</li> <li>• M — Medium memory model.</li> <li>• L — Large memory model.</li> <li>• H — Huge memory model (all files in memory).</li> <li>• Blank — Medium memory model (default).</li> </ul>

# L CODE

Optional. Use L CODE to define the location and length of a list code in the input record.

**Note:** There is an identical C1BM00XL driver program that allows for up to 10,000 list codes, and requires 2.25 MB of memory to run. (The standard C1BM00 driver program allows for 200 list codes, and requires 390 K of memory.) To take advantage of the additional list code processing, change your control language appropriately.

The term list code comes from the practice of merging several mailing lists together, using a code imbedded in the records to identify the source list of each record. You can use the L CODE parameter to designate any field of nine bytes or less in the input records. CODE-1 Plus has four reports that print information about your job by list code. The most common use of the L CODE parameter is to identify the list where a record originated. You can then use the list code reports to analyze the quality of the addresses on each of your original mailing lists.

Position	Field Name	Description
1-6	Keyword	Required. L CODE is the only acceptable entry.
8-10	Location of List Code	Required. Location on the input record of the list code. No default.
12	Length of List Code	Required. Length of the list code. Must be 9 bytes or less. No default.
14-22	Client Code	Optional. 1-9 character Client Code. No default.
24-31	Date Received	Optional. The date the file was received in CCYYMMDD format. Default is blank.
50-52	Location of System Date	Optional. Location on the output record of the system date. No default. <b>NOTE:</b> If only this field is specified, all other fields on this parameter record become optional. The format is MMDDCCYY.

# LISTID

Optional. Use LISTID to print the name or ID of the current name-and-address input file in box B4 of USPS Form 3553, and the number of name-and-address lists used to produce the current mailing in box B5.

**Note:** You can define one LISTID parameter in a job.

Position	Field Name	Description
1-6	Keyword	Required. LISTID is the only acceptable entry.
8-27	List ID	Required. The name or ID of the current name-and-address list. No default.
29-48	List ID Continued	Optional. More text indicating the name or ID for the current name-and-address list. No default.
50-54	Number of Lists	Optional. A 5-digit number indicating the number of lists used to produce the mailing. For example, to specify one list, enter 00001. No default.

# LISTNM

Optional. Use LISTNM to print the List Processor's name on USPS Form 3553 in box B1. The list processor's name is the name of the company who coded the name and address list(s) and/or performed the ZIP + 4 barcoding using CASS-certified software. You can define up to three lines of information to identify the list processor. You can define one LISTNM parameter in a job.



Position	Field Name	Description
1-6	Keyword	Required. LISTNM is the only acceptable entry.
8-27	List Processor Name	Required. 20-character name that identifies the organization that coded the name and address list(s) and/or performed the ZIP+4 barcoding using CASS-certified software. No default.
29-48	List Processor Name Continued 2	Optional. 20-character field that you can use to identify the list processor of this name-and-address list. No default.
50-69	List Processor Name Continued 3	Optional. 20-character field that you can use to identify the list processor of this name-and-address list. No default.

## LOTOUT

Optional. Use LOTOUT to identify the location on the output record to store the information returned from the Line of Travel Master file.

**Note:** iLine of Travel is NOT the same as a Walk Sequence Code. If you are trying to obtain Walk Sequence Codes, they are provided through licensed DSF<sup>2</sup> (Delivery Sequence File) Vendors.

Ordinarily, to sort mail in line of travel sequence, you must sort your mail by ZIP Code, Carrier Route, Line of Travel code, ZIP+4 Code, and DPBC (delivery point barcode) add-on. The DPBC must be sorted in either ascending or descending sequence based on the alphabetic portion of the Line of Travel code. Instead of doing this cumbersome task, two sequence fields are provided so the entire sortation string can be sorted in ascending sequence.

A two-character alternate alphanumeric sequence field is returned based upon the DPBC and the alphabetic portion of the Line of Travel Code. This two-character field consists of an uppercase letter followed by a single digit. The range of possible values is from A0 through T9. The one-character hexadecimal sequence field works the same way but has a range of values from hexadecimal "21" (binary numeric 33) to hexadecimal "E8" (binary numeric 232). Both alternate sequence fields work the same way to be used for sortation purposes. In other words, you do not need to post both alternate sequence fields.

Position	Field Name	Description
1-6	Keyword	Required. LOTOUT is the only acceptable entry.
8-10	Location of LOT Return Code	Optional. Location on the output record for the 1-character LOT return code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• 9 — ZIP + 4 matched the LOT master file.</li> <li>• C — Call to LOT matcher failed.</li> <li>• D — Default coded. ZIP + 4 not found in the LOT master file.</li> <li>• F — Master file access failure.</li> <li>• V — Incompatible Master file.</li> <li>• Blank — ZIP Code and/or ZIP + 4 was neither numeric nor zeroes.</li> </ul>
12-14	Location of Numeric Portion of LOT Code	Location on the output record for the 4-character LOT code (numeric portion). No default.
16-18	Location of Alphabetic Portion of LOT Code	Optional. Location on the output record for the 1-character USPS sequence code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• A — Ascending.</li> <li>• D — Descending.</li> <li>• Blank — No default.</li> </ul>
20-22	Location of 2-character Alternate Sequence Code (Alphanumeric)	Optional. Location on the output record for the 2-character alternate sequence code used for sortation purposes. No default.
24-26	Location of 1-character Alternate Sequence Code (Hexadecimal)	Optional. Location on the output record for the 1-character alternate sequence code used for sortation purposes. No default.
28	Disposition Indicator	Optional. Specify a code to indicate what to store when no LOT code is determined: <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>

# MAILER

Required if you are running DPV. Optional if you are not running DPV. Use MAILER to print the mailer's name and address on the USPS Form 3553 in box D2. The name and address is of the individual whose signature appears in box D1. In DPV, MAILER is used to supply information in the DPV SEED File in the unlikely event a DPV Seed is encountered.

**Note:** You can define up to six MAILER parameters in a job to accommodate up to six lines of information that prints on the form.

If you are running DPV, you must have a set of five MAILER parameter records as input to program C1BM00. The five parameters are necessary in case a DPV seed record violation occurs. The above information is required in such cases. The format must be as follows:

Record Contents of Positions 1-137  
No.

1	Company name
2	Street address
3	City
4	State abbreviation
5	9-digit ZIP Code

State abbreviation must be in positions 8-9. ZIP and ZIP + 4 may be separated by a space, a hyphen, or be contiguous.

Position	Field Name	Description
1-6	Keyword	Required. MAILER is the only acceptable entry.
8-37	Mailer Name and Address	Required. The 30-character name and address of the individual whose signature appears in box D1 of USPS Form 3553. If you leave this field blank, the corresponding line in box D2 on USPS Form 3553 remains blank. No default.

## MOVE I

**Optional.** Use MOVE I to rearrange the pieces of the input record before the record is processed. This feature enables you to rearrange the components of your input records before any other CODE-1 Plus processing takes place. Note that the information you identify is copied to the location you specify, but it is not removed from its original location in the input record. This feature is useful for “saving” data that might otherwise be overwritten by data returned by CODE-1 Plus. A maximum of 100 MOVE I parameters can be defined for a job. The parameters are processed one at a time, in sequence from top to bottom.

Before processing, CODE-1 Plus first copies the entire input record into an input record array. Then, if you specify any MOVE I operations, CODE-1 Plus copies the entire record into a temporary work area. It then takes data from a specified position in the work area, and puts it in a specified position in the input record array. Once CODE-1 Plus executes all of the MOVE I operations, it clears the work area and processes the record as it now appears in the input record array.

For example, the input record has the following structure:

```
AAAAABBBBBCCCCC
```

If we move the information in positions 11-15 to positions 1-5, CODE-1 Plus copies the record to the work area, and executes the move operation. When the operation is complete, our input record array and work area is:

**Input Record Array      Work Area**

```
CCCCBBBBBCCCCC      AAAAABBBBBCCCCC
```

Then, if we move the information from positions 1-5 to positions 11-15, our input record array and work area appear as follows:

**Input Record Array      Work Area**

```
CCCCCBBBBBAAAAA      AAAAABBBBBCCCCC
```

**Note:** This feature does not alter your input name-and-address file.

Position    Field Name    Description

1-6	Keyword	Required. MOVE I is the only acceptable entry.
8-10	Location of Source	Required. Specify the location in the work area of the information to be copied. Optionally, you can enter one of the following codes to copy one of the following types of generic information to the target location: <ul style="list-style-type: none"> <li>• SPC — Spaces.</li> <li>• X00 — Binary zeros.</li> <li>• ZRO — Character zeros.</li> <li>• No default</li> </ul>
12-13	Length of Source/Target	Required. Length of the information to be copied to the target location. No default.
15-17	Location of Target	Required. Location in the input array to which you want the source information copied. No default.

## MOVE O

Optional. Use MOVE O to rearrange pieces of the output record before the record is written to the output file. CODE-1 Plus processes the record and copies the record to an output record array. If you specify output move operations, CODE-1 Plus copies the entire record to a temporary work area, and then copies data from a specific location in the work area back to a specific location in the output record array. This information is then written directly to your output file (or passed to an output

exit routine). A maximum of 100 MOVE O parameters can be defined for a job. The MOVE O parameters are processed one at a time, in sequence from top to bottom.

Position	Field Name	Description
1-6	Keyword	Required. MOVE O is the only acceptable entry.
8-10	Location of Source	Required. Specify the location in the work area of the information to be copied. Optionally, you can enter one of the following codes to copy different types of generic information to the target location: <ul style="list-style-type: none"> <li>• SPC — Spaces</li> <li>• X00 — Binary zeros</li> <li>• ZRO — Character zeros</li> <li>• No default</li> </ul>
12-13	Length of Source/Target	Required. Length of the information to be copied to the target location. No default.
15-17	Location of Target	Required. Location in the output record to which you want the source information copied. No default.

## NTHSEL

**Optional.** Use NTHSEL to specify that CODE-1 Plus processes a fraction of your input records or every nth input record and ignores the remaining records.

**Note:** iYou can define one NTHSEL parameter per job. You can use the NTHSEL parameter in conjunction with the fractional sampling option on the FILEDF parameter.

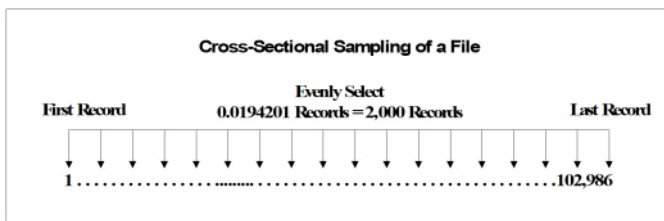
Position	Field Name	Description
1-6	Keyword	Required. Must be NTHSEL.
8-14 Sampling Method 1 — Including or Excluding Nth Number of Input Records		
8-10	Nth Number	Required if you do not use Sampling Method 2. The nth number of records the user wants to either include or exclude from the input records to be read. Valid numbers include 002 through 999. No default.
12-14	Include/Exclude Option	Required if you do not use Sampling Method 2. Specify whether to include or exclude the specified nth number of input records for processing: <ul style="list-style-type: none"> <li>• INC — Include the nth number of input records.</li> <li>• EXC — Exclude the nth number of input records.</li> <li>• No default.</li> </ul>
16-22 Sampling Method 2 — Selecting a Fraction of Input Records		
16-22	Fraction of Records	<b>Required</b> if you do not use Sampling Method 1. A 7-digit positive number specifying the fraction of total input records to process. A decimal point is implied before the first digit. If FILEDF fractional processing is also defined, CODE-1 Plus will select a fraction (defined by FILEDF) of a fraction (defined by NTHSEL). No default.

## Performing Cross-Sectional Sampling

Cross-sectional sampling allows you to sample records throughout the file, from beginning to end. You can specify cross-sectional sampling for the input name-and-address file using a FILEDF parameter. With the NTHSEL parameter, you can specify cross-sectional for the input name-and-address file only.

**Note:** If you specify cross-sectional sampling for the input name-and-address file on the FILEDF and the NTHSEL parameter, a fraction of a fraction of the file will be selected for processing.

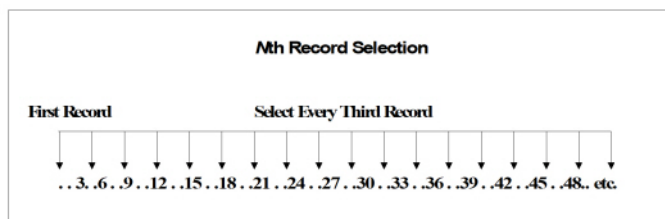
To determine the number to enter in the FILEDFs 7-character DECIMAL FRACTION field, divide the number of records you want to process by the number of records in the file. This gives you a decimal number. Drop the decimal, and type the first 7 digits of the number. For example, suppose you wanted to process 2,000 records from a file containing 102,986 records. To select 2,000 records for processing, divide 102,986 into 2,000. The answer is .0194201153. Drop the decimal and keep 7 digits (0194201) to type in the DECIMAL FRACTION field. This ensures that the 2,000 records processed are evenly distributed throughout the file. You can use this sampling with the NTHSEL parameter as well.



### Example - Skipping and Limiting Records

## Including/Excluding Nth Records

Including or excluding every nth record in the input name-and-address file allows you to process or bypass every user-specified number of records in the file. For example, we want to specify to process every third record in the input file.



### Example - Including Every Third Record

**Note:** For the input name-and-address file, you can use the NTHSEL inclusion and exclusion sampling function in conjunction with a FILEDF cross-sectional function. This allows you to include/exclude a fraction of every nth record.



These Specifications

Define the Following

NTHSEL in positions 1 through 6	KEYWORD — Specify record sampling specifications.
003 in positions 8 through 10	Nth NUMBER — Three is the user-specified “nth” number.
INC in positions 12 through 14	INCLUDE/EXCLUDE OPTION — CODE-1 Plus will process (include) every third record in the input name-and-address file.

## PAGESZ

**Optional.** Use PAGESZ to specify how many lines to print on each page of either the Execution Log or the reports in the reports file.

**Note:** if you want to specify the number of lines to print on each page for both the Execution Log and all of the other reports, you must include two PAGESZ parameters in your job.

Position    Field Name    Description

Position	Field Name	Description
1-6	Keyword	Required. PAGESZ is the only acceptable entry.
8-10	Lines-Per-Page	Required. Specify the number of lines to print on each page of the Execution Log or the other reports. <ul style="list-style-type: none"><li>• Minimum is 25.</li><li>• Maximum is 225.</li><li>• <b>Blank</b> — Default is 60.</li></ul>

Position	Field Name	Description
12-14	Report Or Log Code	<p>Required. Specify a code to indicate whether the specified line number applies to the Execution Log or to all of the other reports:</p> <ul style="list-style-type: none"> <li>• RPT — Reports.</li> <li>• XLG — Execution Log.</li> <li>• <b>Blank</b> — Default is <b>RPT</b>.</li> </ul>

## PERPET

**Optional.** PERPET is an optional parameter with no individual fields. The keyword field is the only field on the PERPET parameter.

**Note:** The PERPET parameter is only used with the RUNLMRPT License Report (program name LMRPT10) and is only valid for perpetual licenses on the z/OS platform. The PERPET parameter was specifically implemented for clients who only use CODE-1 Plus in an interactive environment and rarely run batch jobs. Running a batch job automatically rolls over the date.

You can use the PERPET parameter to rollover a perpetual license on the z/OS platform for another year within the three weeks prior to the actual license expiration. To rollover a perpetual license, follow these steps during the three week period prior to the license expiring:

1. Define the PERPET parameter.
2. Run the License Management Report (RUNLMRPT).
3. CODE-1 Plus rolls over the perpetual license for one year to the same end date in the next year.

For example, your perpetual license expires on 12/31/18. You can define the PERPET parameter and run the License Management Report (RUNLMRPT) anytime during the three week period prior to 12/31/18 to rollover your perpetual license for an additional year to 12/31/19.

Position	Field Name	Description
1-6	Keyword	Required. PERPET is the only acceptable entry.

# PGMNAM

**Optional.** Use PGMNAM to call an alternate address matching module instead of calling the standard C1MATCHB module. The alternate address matching modules offer different memory models, from which you can select one appropriate for your site. The default C1MATCHB module uses 3MB of memory. A larger memory model generally improves performance.

The alternate memory modules are:

- Small — 1 MB
- Medium — 6 MB
- Large — 12 MB
- Huge — 28 MB

**Note:** You can have multiple PGMNAM parameters in your C1BM00 job — one for each RDI large memory model and one for a CODE-1 Plus memory model.

Position	Field Name	Description
1-6	Keyword	Required. PGMNAM is the only acceptable entry.
8-15	Internal Program Name	Required. The only acceptable entries for this field is C1MATCHB (Address matching module). C1MATCHB is the internal program name of the CODE-1 Plus batch address matching module (Precisely delivered). The program in positions 17-24 will be called instead of C1MATCHB.
17-24	Memory Configuration Program Name	<p>Required. The name of the program called instead of C1MATCHB. You can choose the program with a memory model appropriate for your site. Enter one of the following program names (memory models):</p> <ul style="list-style-type: none"> <li>• C1MATCHS — Small memory model (1 MB).</li> <li>• C1MATCHM — Medium memory model (6 MB).</li> <li>• C1MATCHL — Large memory model (12 MB).</li> <li>• C1MATCHH — Huge memory model (28 MB).</li> </ul> <p>CODE-1 Plus customers should be aware that batch jobs running with DPV Split, LACS<sup>Link</sup>, and Suite<sup>Link</sup> may require up to 377M of GETVIS.</p>

# REPORT

Optional. Use REPORT to define the reports to print at the end of your CODE-1 Plus job. The default, in all cases except the NDI report and the separate USPS Form 3553, is to print the report. If you want to print all reports except the NDI report and the separate USPS Form 3553, you do not have to define this parameter.

The REPORT parameter also gives you the option to print the reports in all upper case or in mixed case (upper and lower case). If you want to print the reports in mixed case, you must specify the REPORT parameter at the top of the parameter list. If you include the REPORT parameter near the bottom of the parameter list, it is possible that some of the reports will still print in all upper case.

The following reports print automatically for all jobs. You cannot specify not to print these reports. You also cannot specify whether to print the USPS Form 3553. If you are using a CASS-certified configuration, the USPS Form 3553 prints. If you are not using a CASS-certified configuration, the USPS Form 3553 does not print.

- Parameter List
- Execution Log
- Control Totals
- Address Match Execution Statistics
- USPS Form 3553 (if using a CASS-certified configuration)

**Note:** iThe Line of Travel reports only print if you define the LOTOOUT parameter.

Position	Field Name	Description
1-6	Keyword	Required. REPORT is the only acceptable entry.
8	Analysis of Matched Records	Optional. Specify a code to indicate whether to print the report: <ul style="list-style-type: none"><li>• Y — Print the report.</li><li>• N — Do not print the report.</li><li>• <b>Blank</b> — Default is Y.</li></ul>

Position Field Name Description

10	ZIP+4 Coding by State	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
12	Carrier Coding by State	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
14	ZIP+4 Coding by List Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
16	Carrier Coding by List Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
18	ZIP+4 Coding by 3-digit ZIP Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>

Position Field Name Description

20	Carrier Coding by 3-digit ZIP Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
22	Summary by State	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
24	Summary by List Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
26	Summary by 3-digit ZIP Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
28	Print Upper/lower Case	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the reports in all upper case.</li> <li>• N — Print the reports in mixed case.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>

Position Field Name Description

30	National Deliverability Index (NDI) Report	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul>
32	Line Of Travel Coding by State	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is <b>Y</b>.</li> </ul>
34	Line Of Travel Coding by List Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is <b>Y</b>.</li> </ul>
36	Line Of Travel Coding by 3-digit ZIP Code	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is <b>Y</b>.</li> </ul>
38	Delivery Point Validation Processing Summary	<p>Optional. Specify a code to indicate whether to print the report:</p> <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is <b>Y</b>.</li> </ul>

Position	Field Name	Description
40	Delivery Point Validation Processing by List Code	Optional. Specify a code to indicate whether to print the report: <ul style="list-style-type: none"> <li>• Y — Print the report.</li> <li>• N — Do not print the report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
42	Residential Delivery Indicator (RDI) Processing Summary Counts	Optional. Specify a code to indicate whether to print the report: <ul style="list-style-type: none"> <li>• Y — Print RDI counts.</li> <li>• N — Do not print RDI counts.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
44	Residential Delivery Indicator (RDI) Processing Counts by List Code	Optional. Specify a code to indicate whether to print the report: <ul style="list-style-type: none"> <li>• Y — Print the RDI List Code Report.</li> <li>• N — Do not print the RDI List Code Report.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>
70	USPS Form 3553 Separate Print File	Optional. Specify a code to indicate whether to print the USPS CASS Form 3553 in a separate print file: <ul style="list-style-type: none"> <li>• Y — Print in a separate print file.</li> <li>• N — Do not print in a separate print file.</li> <li>• <b>Blank</b> — Default is N.</li> </ul>

## SA OUT

**Optional.** Use SA OUT to specify the location in the output file to store the standardized address. The standardized address information is formatted to conform to USPS conventions and matched against the master file. Dropped information is dropped from the address during the standardization process.



**Note:** iStandardized addresses with and without apartment information do not refer to individual records that can or cannot have apartment information included in the addresses. Rather, we assume that all records have apartment information, and we specify whether or not to store that information separately from the rest of the standardized address.

## Alias and Base Street Names

It is possible for a single street to have more than one name. In such cases, the USPS differentiates between a base street name and one or more alias street names. Typically, either the alias or the base refers to only a portion of the street (i.e., a particular house range or ranges). A base name is the preferred name for the entire street. Every street in the USPS database has one and only one base name. However, a base street can have multiple alias names. The USPS has identified three types of alias street names:

- USPS preferred street name
- Official street name change (as a result of a Chamber of Commerce Action)
- Other

If the alias street name is preferred, CODE-1 Plus always stores the alias name instead of the base name. If the alias street name is an official street name change, CODE-1 Plus always stores the base name. However, if the alias street name is of type “other,” CODE-1 Plus stores the alias or base, depending on the option you chose on the SA OUT parameter. Note that you never have the option of returning the alias street name if the input address matches the base street name. It is important to remember, however, that both the base street and the alias street are valid, deliverable addresses.

For example, in Bethesda, Maryland there is a street called Rockville Pike. Another valid name for Rockville Pike in Bethesda is Wisconsin Avenue. In this case, the USPS designated Rockville Pike as the base street name and Wisconsin as the alias street name.

The following example input addresses illustrate CODE-1 Plus returned output when processing alias and base street names (this example assumes that all alias street names are of type “other”).

Input Address	Return Base Street if Alias Street is Matched?	Output Address
9650 Wisconsin Avenue	Yes	9650 Rockville Pike
9650 Rockville Pike	Yes	9650 Rockville Pike

Input Address	Return Base Street if Alias Street is Matched?	Output Address
9650 Wisconsin Avenue	No	9650 Wisconsin Avenue
9650 Rockville Pike	No	9650 Rockville Pike

## Using the INP or INPA Option

The "INP" and "INPA" options allow the standardized address to be put into one of the input address lines. The difference between the two options is which input line is chosen to hold the standardized address.

### *Determining the Most Significant Address Line*

The ADDRDF parameter definition determines the "most significant" and the "next most significant" address line.

#### *Example 1*

In this example, the input address line defined as starting in column "083" for "34" bytes is the most significant input address line.

```
ADDRDF L 011 35 047 35 083 34
```

The line defined as starting in column "047" for "35" bytes is the next most significant input address line.

```
ADDRDF L 011 35 047 35 083 34
```

#### *Example 2*

In this example, the input address line defined as starting in column "119" for "30" bytes is the most significant input address line.

```
ADDRDF L 011 35 047 35 083 34 119 30
```

The line defined as starting in column "083" for "34" bytes is the next most significant input address line.

```
ADDRDF L 011 35 047 35 083 34 119 30
```

In summary, the "most significant" input address line is the last one defined by the ADDRDF parameter while the "next most significant" input address line is the one immediately to the left of the "most significant" line.

### Using the INP Option

For the "INP" option, processing stores the standardized address in the address line that corresponds to the line originally occupied in the input file. Secondary information occurring in other address lines does not determine the storage location of the standardized address.

### Example

```
ADDRDF L 011 35 047 36 083 34
```

Address Line 1	Address Line 2	Address Line 3	City/State/ZIP Code
<b>Input</b>			
STE 200	9900 NICHOLAS ST		OHAMA, NE 68114
<b>Output</b>			
	9900 NICHOLAS ST STE 200		OHAMA, NE 68114-2259

### Using the INPA Option

For the "INPA" option, processing stores the standardized address in the "most significant" address line with one exception. The standardized address is output to the "next most significant" address line when the following conditions exist:

- The CS OUT parameter specifies "INP" in positions 31-33.
- The combined City/State/ZIP Code/ZIP+4 is output to the "most significant" address line.

### Example

```
ADDRDF L 011 35 047 36 083 34
```

Address Line 1	Address Line 2	Address Line 3	City/State/ZIP Code
----------------	----------------	----------------	---------------------

Input			
STE 200	9900 NICHOLAS ST		OHAMA, NE 68114
Output			
		9900 NICHOLAS ST STE 200	OHAMA, NE 68114-2259

### INP and INPA Length Considerations

For both the "INP" and "INPA" processing, if the length of the standardized address is longer than the length of the "most significant" address line as defined by the "ADDRDF" parameter:

- The standardized street address will be written to the "most significant" address line.
- The secondary information will be written to the "next most significant" address line.

### Alternative to INP or INPA Processing

If you are using either "INP" or "INPA" to save space on your output file, the following alternative accomplishes the same result, provides consistent results, and puts the standardized address in the same location for each coded record.

If your data set and input definition are similar to Example 1 and you use the SA OUT parameter to define your output as illustrated in Example 2, you can achieve consistent results without using "INP" or "INPA" processing.

### Example 1 - Input

```
ADDRDF L 011 35 047 36 083 34
```

Line 1 – Byte 11 for 35	Line 2 – Byte 47 for 36	Line 3 – Byte 83 for 34	City, State, and ZIP Code
RESIDENT	199 BROADWAY ST		CHICOPEE, MA 01020
RESIDENT	96 ROCKY HILL RD		HADLEY, MA 01035
RESIDENT	3 WAMPANOAG DR		HADLEY, MA 01035
RESIDENT		3 WAMPANOAG DR	HADLEY, MA 01035

*Example 2 - Output*

*SA OUT 0047 70*

In this example, the standardized address starts in column 47 and, since the output field was defined to overlay both input fields, no residual input data remains.

Line 1 – Byte 11 for 35	Line 2 – Byte 47 for 50	City, State, and ZIP Code
RESIDENT	199 BROADWAY ST	CHICOPEE, MA 01020-2642
RESIDENT	96 ROCKY HILL RD	HADLEY, MA 01035-9769
RESIDENT	3 WAMPANOAG DR	HADLEY, MA 01035-9748
RESIDENT	3 WAMPANOAG DR	HADLEY, MA 01035-9748

### Important Considerations

During the matching process, it is possible for the input street to be changed to an alias street in accordance with USPS requirements. As a result, the full output street address may be longer than the field into which it is to be stored. This can happen whether you use INP or INPA processing. The SA OUT parameter value in position 19 (Storage Conditions - Address with Apartment) determines what is written to the output field. If you choose to output the input address, then that address is not moved to the "most significant" address line for INPA processing. Instead, the address remains where originally located.

### Example

In the following example, the SA OUT parameter specifies "I" in position 19. The input address "31224 20TH AVE S APT D107" would be output as "31224 PETE VON REICHBAUER WAY S APT D107" (40 characters in length) if there had been sufficient room in the "most significant" address line (defined as 34 characters in length). Instead, because the SA OUT parameter specifies "I" in position 19, the input address is stored.

<b>Input</b>			
		31224 20 <sup>TH</sup> AVE S APT D107	FEDERAL WAY, WA 98003
<b>Output</b>			
		31224 20 <sup>TH</sup> AVE S APT D107	FEDERAL WAY, WA 98003-5600
<b>Input</b>			
	31224 20 <sup>TH</sup> AVE S APT D107		FEDERAL WAY, WA 98003
<b>Output</b>			
	31224 20 <sup>TH</sup> AVE S APT D107		FEDERAL WAY, WA 98003-5600

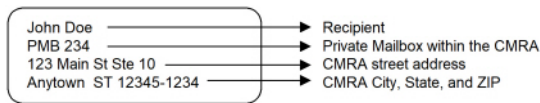
## The LACS Indicator

The Locatable Address Conversion Service (LACS) indicator describes records that have been converted to the LACS system (which allows mailers to identify and convert a rural route address to its new city-style address). Rural route addresses are being converted and some city-style addresses are being modified so that emergency vehicles (ambulances, police cars, etc.) can find these locations.

## Private Mailbox Designation (PMB)

Commercial Mail Receiving Agents (CMRA) are private companies offering mailbox rental services to individuals and businesses.

The USPS requires a private mailbox (PMB) designator within the address on mail destined for delivery through a CMRA. The PMB address information is required to exist separately from the delivery address of the CMRA, as shown in the following example address:



If a PMB is present, CODE-1 Plus concatenates the PMB to the Address with Apartment field.

Position	Field Name	Description
1-6	Keyword	Required. SA OUT is the only acceptable entry.

Position Field Name Description

Position	Field Name	Description
8-10	Location for Address Return Code	<p>Optional. Location on the output record for the 1-character address return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• C — The record's probable correctness was higher than the specified maximum.</li> <li>• D — Information was dropped during the address match attempt.</li> <li>• H — House/Box number not found on this street.</li> <li>• L — The returned address was too long to be stored.</li> <li>• M — Multiple matches were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• T — The complete standardized address was too long to be stored and there is no location specified in which to store the address with secondary information. This only occurs if you are storing the address without the secondary information.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• Z — ZIP Code was not found on database.</li> <li>• Blank — The address match attempt was successful.</li> </ul>
12-15	Location for Address With Apartment	<p>Required. Location on the output record for the standardized address, including apartment information. Enter a location, "INP", or "INPA" to store the standardized address in the same location as the input address. (INP/INPA are only valid if ADDRDF col. 8 is L or M.) No default.</p>
16-17	Length of Address With Apartment	<p>Required. Length of the standardized address with apartment information. No default.</p>
18	Blank Unused Address Lines	<p>Optional. This option is only allowed when the "INP" or "INPA" option is specified in columns 12-15.</p> <p><b>X</b> — <b>Blank out</b> the unused address lines.</p> <p><b>Blank</b> — Do not blank out the input address lines.</p>



Position Field Name Description

19	Storage Conditions — Address With Apartment	Optional. Specify a code to indicate what to store when the standardized address with apartment number is too long or no match was found: <ul style="list-style-type: none"> <li>• I — Store the input address.</li> <li>• Blank — Store information indicated in position 72.</li> </ul>
21-23	Location for Address Without Apartment	Optional. Location on the output file for the standardized address, excluding apartment information. No default.
25-26	Length of Address Without Apartment	Optional. Length of the standardized address without apartment information. No default.
28	Storage Conditions — Address Without Apartment	Optional. Specify a code to indicate whether to store the standardized address without apartment number if the standardized address with apartment has already been stored: <ul style="list-style-type: none"> <li>• X — Store the information anyway.</li> <li>• Blank — Store nothing.</li> </ul> <p>NOTE: If you enter "X," this information is stored even if it is longer than the specified length for the receiving field. If it is too long, the information will be truncated. A return code of "L" will not be stored.</p>
30-32	Location for Apartment/PMB	Optional. Location on the output record for the apartment information. Use this output area to store the PMB number when presented separately in secondary input address line. No default.
34-35	Length ofApartment/PMB	Optional. Length of the apartment/PMB information on the output record. No default.
37	Storage Conditions — Apartment/PMB	Optional. Specify a code to indicate what to store in positions 30-32: <ul style="list-style-type: none"> <li>• P — Store PMB number when unable to store in primary address line due to truncation.</li> <li>• X — Store the apartment information anyway.</li> <li>• Blank — Do not store apartment information if successfully stored in standardized address with apartment.</li> </ul>

Position Field Name Description

Position	Field Name	Description
39-41	Location for Address Source Code	<p>Optional. Location on the output record for the 1-character code indicating which input address line CODE-1 Plus used to obtain a standardized address. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• M — Both address lines.</li> <li>• P — Primary address line only.</li> <li>• S — Secondary address line only.</li> <li>• Blank — No match was found.</li> </ul>
43-45	Location for Dropped Information Code	<p>Optional. Location on the output record for the 1-character code indicating the type of information dropped during the standardization process. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — A street address was dropped in order to obtain a Rural Route/Highway Contract/or PO Box match.</li> <li>• R — A Rural Route/Highway Contract/PO Box/General Delivery address was dropped in order to obtain a street address match.</li> <li>• W — One or more characters were dropped during the address parsing process.</li> <li>• <b>Blank</b> — Either no match was obtained, or no information was dropped.</li> </ul>
47-49	Location for LACS Indicator	<p>Optional. Location for the Locatable Address Correction Service indicator on the output record. This indicator flags any rural addresses that changed to urban addresses, such as RR 4 BOX 1 changing to 2200 MAIN ST. The next time you process the file, you can identify and process only those records on the ZIP+4 database with rural address changes. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• L — Address was LACS converted (changed to an urban address).</li> <li>• Blank — Address was not LACS converted (no change).</li> </ul>
51	Alias/Base Return Option	<p>Optional. Code indicating whether or not you want CODE-1 Plus to return the base street name if the input address matched an alias street:</p> <ul style="list-style-type: none"> <li>• Y — Return the base street name.</li> <li>• N — Return the alias street name.</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul> <p>NOTE: This option is only used when the alias type code is "O" or "A". No CASS Report is generated if you enter Y. For a CASS-certified configuration, you must enter N.</p>

Position Field Name Description

53-55	Location for Alias Return Code	<p>Optional. Location on the output record for the 1-character alias return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — The address matched an alias street.</li> <li>• Blank — The address did not match an alias street name.</li> </ul>
57-59	Location for Alias Type Code	<p>Optional. Location on the output record for the 1-character alias type code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Street record was abbreviated.</li> <li>• C — Official street name change (Chamber of Commerce action).</li> <li>• O — Street record matched was a USPS “other” alias.</li> <li>• P — Street record matched was a USPS “preferred” alias.</li> <li>• Blank — Street record matched was not an alias street.</li> </ul>
60	Storage Conditions — Information Dropped	<p>Optional. Specify a code to indicate whether to store the standardized address when information was dropped during the standardization process:</p> <ul style="list-style-type: none"> <li>• X — Do not store if information was dropped.</li> <li>• Blank — Store the information anyway.</li> </ul>
62	Maximum Address Correctness	<p>Optional. Maximum acceptable address probability of correctness to store the standardized address. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
64	Maximum Overall Correctness	<p>Optional. Maximum acceptable overall probability of correctness to store the standardized address. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
66-68	Location for PMB Return Code	<p>Optional. Location on the output record for the 1-character code indicating the disposition of the PMB number. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Appended to standardized address.</li> <li>• S — Secondary address input.</li> <li>• L — Returned address was too long to be stored.</li> <li>• Blank — No PMB found.</li> </ul>

Position	Field Name	Description
69	Storage Conditions — Multiple Standardized Addresses	Optional. Specify a code to indicate whether to store the standardized address when multiple address matches were found: <ul style="list-style-type: none"> <li>• M — Store the standardized address anyway.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
70	Storage Conditions — Multiple Zip Code	Optional. Specify a code to indicate whether to store the standardized address when multiple ZIP Code matches were found: <ul style="list-style-type: none"> <li>• M — Store the standardized address anyway.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
72	Disposition Indicator	Optional. Specify a code to indicate what to store when the standardized address was not stored because no match was found or because of specified storage conditions: <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul>

## SA2OUT

Optional. Use SA2OUT (a continuation of SA OUT) to specify the location in the output file to store the standardized address.

Position	Field Name	Description
1-6	Keyword	Required. SA2OUT is the only acceptable entry.
8-10	Location for Private Mailbox (PMB)	Optional. Location on the output record for the formatted PMB when presented in a separately-defined input address line.

Position	Field Name	Description
12-13	Length of Private Mailbox (PMB)	Required if the location is specified in position 8-10. Length of the PMB information on the output record.
15	Preferred Alias Processing Indicator	<p>Required for CASS certification. Specify a code to indicate whether preferred alias processing should be performed:</p> <ul style="list-style-type: none"> <li>• Y — Perform preferred alias processing.</li> <li>• N — Do not perform preferred alias processing. (default)</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul> <p><b>NOTE:</b> A “Y” in this position is required to generate a CASS report. Selecting “N” will generate a non-CASS-certified configuration. No USPS FORM 3553 will be generated.</p>
17-19	Location for Preferred Alias Processing Return Code	<p>Optional. Location on the output record for a 1-byte flag. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• A — Input address matched to an alias (preferred alias processing is only attempted for base addresses).</li> <li>• N — Did not match to preferred alias.</li> <li>• Y — Matched to preferred alias.</li> <li>• Blank — No preferred alias processing attempted.</li> </ul>
21	Abbreviated Alias Processing Indicator	<p>Optional. Specify a code to indicate whether abbreviated alias processing should be performed:</p> <ul style="list-style-type: none"> <li>• Y — Perform abbreviated alias processing.</li> <li>• N — Do not perform abbreviated alias processing.</li> <li>• <b>Blank</b> — Default is <b>N</b>.</li> </ul>

Position Field Name Description

23-25	Location for Abbreviated Alias Processing Return Code	<p>Optional. Location on the output record for a 1-byte flag. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• B — Output address set to base address.</li> <li>• L — Original standardized address length already &lt;= max.</li> <li>• N — Abbreviated alias not found for input address.</li> <li>• Y — Abbreviated alias found for input address and used in output standardized address.</li> <li>• Blank — No abbreviated alias processing attempted.</li> </ul>
27	Invoke PreciselyID Processing	<p>Optional. Specify a code to indicate whether PreciselyID processing should be performed:</p> <ul style="list-style-type: none"> <li>• Y — Perform PreciselyID processing.</li> <li>• N — Do not perform PreciselyID processing.</li> </ul>
29-31	Location of PBKEY on Output Record	<p>Optional – the location on the output record for the 12-byte PreciselyID value.</p>
33-35	Location of PreciselyID Return Code	<p>Optional – the location on the output record for the 1-byte PreciselyID Return Code. When PreciselyID processing is invoked, one of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Unique identifier PreciselyID was found for the full address.</li> <li>• D — Unique identifier PreciselyID was found for the primary address (secondary information was dropped to find a match).</li> <li>• N — Unique identifier PreciselyID was not found.</li> <li>• Blank — PreciselyID database was not queried.</li> </ul>
50	Enhanced Alternate High Rise Match Storage Options	<p>Optional. Specify a code to indicate whether the enhanced alternate high rise match should be returned:</p> <ul style="list-style-type: none"> <li>• B — Return Base Address.</li> <li>• A — Return Alternate Address.</li> <li>• <b>Blank</b> — Default is <b>B</b>.</li> </ul> <p><b>NOTE:</b> Selecting A will generate a non-CASS-certified configuration. No USPS FORM 3553 will be generated.</p>

Position	Field Name	Description
52-54	Location for Seasonal Delivery Flags	Optional. Location of the 12-byte code indicating when mail can be delivered to a specific ZIP Code: <ul style="list-style-type: none"> <li>• Y — Mail can be delivered.</li> <li>• N — Mail cannot be delivered.</li> </ul>

## SEQCHK

Optional. Use SEQCHK to specify up to nine fields on the input record to use check the sequence of the input file. Sequence errors are indicated on the Execution Log, and if a record is bypassed, it does not affect the Control Totals report. Field segments contain pieces of data in the input record.

**Note:** iThe total length of all sequence field lengths cannot exceed 255 bytes.

Position	Field Name	Description
1-6	Keyword	Required. SEQCHK is the only acceptable entry.

Position	Field Name	Description
8	Sequence Error Treatment	<p>Optional. Code indicating the action to take when a sequence error is encountered in the input file. Enter one of the following codes:</p> <ul style="list-style-type: none"> <li>• B — (Bypass) Bypass the offending record and continue sequence checking.</li> <li>• C — (Continue) Continue processing the offending record and continue sequence checking.</li> <li>• E — (End of file) Bypass the offending record, and then gracefully end the process as if the input file had reached an end-of-file.</li> <li>• I — (Ignore) Continue processing the offending record, but abandon any further sequence checking.</li> <li>• <b>Blank</b> — No default.</li> </ul> <p>NOTE: If there is a sequence error, it is indicated in the Execution Log. If a record is bypassed, it does not affect the Control Totals report.</p>
(10-15) Sequence Field Segment 1		
<del>101792431334054559168</del>	Location of Sequence Field Segments	Required. Location of segments of the data to be checked for an input file sequence error. No default.
132027344148556269	Format of Sequence Field Segments	<p>Code indicating whether or not a field segment is in a packed format that should be unpacked before checking the sequence. Enter one of the following codes for each segment:</p> <ul style="list-style-type: none"> <li>• P — Field segment is packed.</li> <li>• Blank — Field segment is not packed.</li> </ul>
<del>14512282532498165634701</del>	Length of Sequence Field Segments	Required. Length of field segments. The total number of field segments cannot exceed 255 bytes. If the field segment is packed ("P" in previous field), the field length cannot exceed 9. No default.



# STELNK

**Optional.** Use STELNK to activate the Suite<sup>Link</sup> processing. To call Suite<sup>Link</sup>, the following conditions must be met

- The Suite<sup>Link</sup> parameter must be present.
- A firm name is present and a valid ZIP Code, ZIP+4 Code, and primary number exist.
- A match has been made to a high-rise default record.
- The CODE-1 Plus and Suite<sup>Link</sup> databases are current.

**Note:** iUSPS CASS regulations require Suite<sup>Link</sup> processing for CASS certification and to generate the USPS Form 3553 (USPS CASS Summary Report).

**Note:** iThe **FIRMNM** parameter is required when you use the STELNK parameter.

Position	Field Name	Description
1-6	Keyword	Required. STELNK is the only acceptable entry.
8	Suite <sup>link</sup> Error Shutdown Indicator	<p>Optional. Specify a code to indicate whether to shut down when Suite<sup>Link</sup> reports an error.</p> <ul style="list-style-type: none"> <li>• I — Ignore error and continue to attempt Suite<sup>Link</sup> processing. CODE-1 Plus <b>does not</b> generate a USPS Form 3553 (USPS CASS Summary Report) if you specify the value "I".</li> <li>• S — Shutdown when Suite<sup>Link</sup> reports an error (default). <b>To generate a USPS Form 3553 (USPS CASS Summary Report, specify "S").</b></li> <li>• W — Issue warning message and turn off Suite<sup>Link</sup> processing. CODE-1 Plus <b>does not</b> generate a USPS Form 3553 (USPS CASS Summary Report) if you specify the value "W".</li> <li>• <b>Blank</b> — Default is <b>S</b>.</li> </ul>

Position Field Name Description

Position	Field Name	Description
10	Suite <sup>link</sup> Memory Model Flag	<p>Required. Specify a code to indicate the size of Suite<sup>Link</sup> memory module.</p> <ul style="list-style-type: none"> <li>• <b>P</b> — Pico memory model (no files in memory).</li> <li>• <b>U</b> — Micro memory model (no files in memory, only indexes).</li> <li>• <b>S</b> — Small memory model (slkhdr, slknormal, slknoise in memory).</li> <li>• <b>M</b> — Medium memory model (slknine file also in memory).</li> <li>• <b>L</b> — Large memory model (lcd file also in memory).</li> <li>• <b>H</b> — Huge memory model (slk file also in memory).</li> <li>• <b>Blank</b> — Default is <b>M</b>.</li> </ul>
12-14	Suite <sup>link</sup> Return Code Location	<p>Optional. Location for Suite<sup>Link</sup> return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• <b>A</b> — Business name matched.</li> <li>• <b>00</b> — Business name not matched.</li> </ul>
16-18	Suite <sup>link</sup> Match Code Location	<p>Optional. Location for Suite<sup>Link</sup> match code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• <b>A</b> — Matched.</li> <li>• <b>B</b> — Not matched.</li> <li>• <b>C</b> — Business name was all noise.</li> <li>• <b>D</b> — Highrise default record not found.</li> <li>• <b>E</b> — Database is expired.</li> </ul>
20-22	Suite <sup>Link</sup> Fidelity Code Location	<p>Optional. Location for Suite<sup>Link</sup> match fidelity. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• <b>1</b> — Exact match.</li> <li>• <b>2</b> — Acceptable match (one word not matched).</li> <li>• <b>3</b> — Unacceptable match (more than one word not matched).</li> </ul> <p><b>NOTE:</b> You should ignore the Fidelity Code if the Match Code is not 'A'. The Fidelity Code is '0' if the Match Code is B (no match), C (business name consisted entirely of "noise" words), or D (9-digit zip not recognized as a high rise default).</p>

Position	Field Name	Description
24	Include/Exclude Secondary	<p>Optional. Specify a code to indicate whether to call Suite<sup>Link</sup> without appending the secondary information to the output address line. All other fields, ZIP + 4 value, DPC code, are determined using the secondary information returned by Suite<sup>Link</sup>.</p> <ul style="list-style-type: none"> <li>• <b>I</b> — Include secondary information from Suite<sup>Link</sup> on the output address line.</li> <li>• <b>E</b> — Exclude secondary information from Suite<sup>Link</sup> from the output address line.</li> <li>• <b>Blank</b> — Defaults to <b>I</b>.</li> </ul>
25	Include/Exclude Extraneous Input Secondary Information	<p>Optional. Specify a code to include or exclude any invalid (extraneous) input secondary information.</p> <ul style="list-style-type: none"> <li>• <b>I</b> — Include the invalid input secondary information.</li> <li>• <b>E</b> — Exclude the invalid input secondary information.</li> <li>• <b>Blank</b> — Defaults to <b>I</b>.</li> </ul>

## TESTIT

**Optional.** Use TESTIT to check the syntax of your job setup and parameters before you run the entire job. This parameter has no fields.

If you include this parameter in your job, CODE-1 Plus checks the syntax of your parameters, and prints a parameter report so that you can verify that the information stored on the parameters is really what you intended to store. Then, if all looks good and there are no errors, you can remove this parameter and submit the job to run.

Position	Field Name	Description
1-6	Keyword	Required. TESTIT is the only acceptable entry.

## UFTxx

**Optional.** Use UFTxx to specify up to four footer lines of text to print at the bottom of every page of each report.

Position	Field Name	Description
1-3	Keyword	Required. UFT is the only acceptable entry.
4	Line Number	Required. The footer line number. Enter 1, 2, 3, or 4. No default.
5	Line Side	Required. Specify a code to indicate the side of the footer line on which this text should appear: <ul style="list-style-type: none"><li>• A — Left side of the line.</li><li>• B — Right side of the line.</li><li>• <b>Blank</b> — No default.</li></ul>
7-72	Footer Text	Required. The text that you want to appear at the bottom of every page of each report. No default.

## UHDxx

**Optional.** Use UHDxx to specify up to four header lines of text to print at the top of every page of each report.

Position   Field Name   Description

1-3	Keyword	Required. UHD is the only acceptable entry.
4	Line Number	Required. The header line number. Enter 1, 2, 3, or 4. No default.
5	Line Side	Required. Specify a code to indicate the side of the header line on which this text should appear: <ul style="list-style-type: none"> <li>• A — Left side of the line.</li> <li>• B — Right side of the line.</li> <li>• <b>Blank</b> — No default.</li> </ul>
7-72	Header Text	Required. The text that you want to appear at the top of each page of every report. No default.

## Z4 OUT

**Optional.** Use Z4 OUT UHDxx to specify where on the output record to store the ZIP + 4 Code and Delivery Point Barcode (DPBC) information.

Position   Field Name   Description

1-6	Keyword	Required. Z4 OUT is the only acceptable entry.
-----	---------	--

Position Field Name Description

Position	Field Name	Description
8-10	Location for ZIP+4 Return Code	<p>Optional. Location on the output record for the 1-character ZIP+4 return code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Blank — The match attempt was successful.</li> <li>• 7 — The ZIP+4 was suppressed. Record matched to R777 or R779 (phantom) carrier route.</li> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address match information.</li> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• H — House/box number not found on street.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• N — The ZIP+4 Code wasn't stored because the processing requirements specified that it was not to be stored.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• V — The record was matched to a non-deliverable street address (in this case, the ZIP+4 will be blank, but the carrier route could have a value).</li> <li>• Z — ZIP Code not found in database.</li> </ul>
12-14	Location for ZIP+4 Code	Optional. Location on the output record for the ZIP+4 Code. No default.
16	Format of ZIP+4 Code	<p>Optional. Specify a code to indicate the format of the ZIP+4 Code on the output record:</p> <ul style="list-style-type: none"> <li>• C — 4-byte number.</li> <li>• P — 3-byte packed number.</li> <li>• - — 4-byte number stored with a preceding hyphen (-).</li> <li>• <b>Blank</b> — Default is C.</li> </ul>
18-20	Location for Delivery Point Barcode	Optional. Location on the output record for the 6-character delivery point barcode. No default.

Position    Field Name            Description

22-24	Location for Delivery Point Barcode Add-on With Check Digit	Optional. Location on the output record for the 2-character delivery point barcode add-on with the 1-character check digit (a total of 3 characters is stored). No default. If a location is specified in this position, a location for ZIP+4 Code and format of ZIP+4 Code must be specified in positions 12-14 and 16 of this parameter.
26-28	Location for Master File Vintage Date	Optional. Location on the output records for the master file vintage date of the current master file. No default.
30	Format of Master File Vintage Date	Optional. Specify a code to indicate the format of the master file vintage date on the output records: <ul style="list-style-type: none"> <li>• B — 2-byte binary format YYYYMM.</li> <li>• C — 4-byte character format YYYYMM.</li> <li>• P — 3-byte packed decimal format YYYYMM.</li> <li>• 3 — 3-byte binary format YYYYMM.</li> <li>• 6 — 6-byte character format YYYYMM.</li> <li>• 4 — 4-byte packed decimal format YYYYMM.</li> <li>• <b>Blank</b> — Default is C.</li> </ul>
32-34	Location for Z4 Change Return Code	Optional. Location on the output records for the Z4 Change Return Code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• 0 — Address matching was not performed for this record.</li> <li>• 4 — Address matching was performed for this record.</li> <li>• 8 — A fatal error occurred.</li> <li>• <b>Blank</b> — No default.</li> </ul>
36-38	Location for DPBC Add-on	Optional. Location on the output record for the 2-character DPBC Add-on. Valid only when positions 12-14 are defined. No default.
40-42	Location for DPBC Add-on Check Digit	Optional. Location on the output record for the 1-character DPBC Add-on Check Digit. Valid only when positions 18-20 or 36-38 are defined. No default.

Position Field Name Description

58	Storage Conditions — R777 or R779 Carrier Route Found	<p>Optional. Addresses with Carrier Route R777 and R779 are phantom routes and are not eligible for street delivery. Since these addresses are assigned a ZIP + 4 code by the USPS, CODE-1 Plus marks these addresses as deliverable. If you do not want addresses with Carrier Route R777 or R779 marked as deliverable, set this option to Y and the following actions are performed for the address:</p> <ul style="list-style-type: none"> <li>• No ZIP + 4 Code is assigned.</li> <li>• Address is not counted on the USPS Form 3553 (CASS Summary Report).</li> <li>• DPV Footnote of R7 is returned.</li> </ul> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Yes, if Carrier Route R777 or R779 is found, add to the ZIP + 4 Suppressed Count on the USPS Form 3553. R777 or R779 addresses are not deliverable. Do not store the ZIP + 4 (DPBC).</li> <li>• <b>Blank</b> — If Carrier Route R777 or R779 is found, do not add to the ZIP + 4 Suppressed Count on the USPS Form 3553. R777 or R779 addresses are deliverable. Store the ZIP + 4 (DPBC).</li> </ul>
60	Storage Conditions — Information Dropped	<p>Optional. Specify a code to indicate whether the standardized ZIP+4 and DPBC should be stored when information was dropped during the standardization process.</p> <ul style="list-style-type: none"> <li>• X — Do not store if information was dropped.</li> <li>• Blank — Store the information anyway.</li> </ul>
62	Maximum Address Correctness	<p>Optional. Maximum acceptable address probability of correctness to store the standardized ZIP+4 and DPBC. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
64	Maximum Overall Correctness	<p>Optional. Maximum acceptable overall probability of correctness to store the standardized ZIP+4 and DPBC. Enter a number between 0 and 9, where 0 indicates the best case and 9 indicates the worst case. Default is 9.</p>
68	Storage Conditions — Multiple ZIP+4	<p>Optional. Specify a code to indicate whether the standardized ZIP + 4 and DPBC should be stored when multiple ZIP + 4 matches were found.</p> <ul style="list-style-type: none"> <li>• Blank — Store the information indicated in position 72.</li> <li>• M — Store the standardized ZIP + 4 and DPBC anyway.</li> <li>• N — Store the information indicated in position 72 and write the record to the NCO file.</li> </ul>



Position	Field Name	Description
70	Storage Conditions — Multiple ZIP Code	<p>Optional. Specify a code to indicate whether the standardized ZIP + 4 and DPBC should be stored when multiple ZIP Code matches were found. Enter one of the following codes:</p> <ul style="list-style-type: none"> <li>• Blank — Store the information indicated in position 72.</li> <li>• M — Store the standardized ZIP+4 and DPBC anyway.</li> </ul>
71	File Allocation — ZIP+4 Of Zeros Or 9999	<p>Specify the output file to write the record when ZIP + 4 is zeros or “9999.”</p> <ul style="list-style-type: none"> <li>• Blank — Write the record to the COK file</li> <li>• N — Write the record to the NCO file.</li> </ul>
72	Disposition Indicator	<p>Optional. Specify a code to indicate what should be stored in cases where the standardized ZIP + 4 and DPBC were not stored, either because no match was found, or due to storage conditions.</p> <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• I — Store input ZIP + 4 Code.</li> <li>• X — Store nothing.</li> </ul> <p><b>NOTE:</b> If you specify I, and the input ZIP + 4 Code is non-numeric or all zeros, then blanks are stored.</p>

## Z5 OUT

**Optional.** Use Z5 OUT to specify the location on the output record to store the 5-digit ZIP Code information.

**Note:** iAlthough Z5 OUT is an optional parameter, if you run a job without Z5 OUT, CODE-1 Plus does not write any results to the C1BMCOK output file.

**Note:** iCODE-1 Plus considers an input ZIP Code of 00000 to be invalid. To preserve an input ZIP Code that is all zeros, use a MOVE I parameter or an exit routine.

Position    Field Name    Description

Position	Field Name	Description
1-6	Keyword	Required. Z5 OUT is the only acceptable entry.
8-10	Location for ZIP Code Return Code	Optional. Location on the output record for the 1-character ZIP Code return code. One of the following codes is stored: <ul style="list-style-type: none"> <li>• 7 — The ZIP + 4 was suppressed. Record matched to a Carrier Route R777 or R779 (phantom).</li> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address match information.</li> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• E — External match—auxiliary file processing.</li> <li>• H — House/box number not found on street.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• N — The ZIP Code wasn't stored because the processing requirements specified that it was not to be stored.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• Z — ZIP Code not found in database.</li> <li>• Blank — The match attempt was successful.</li> </ul>
12-14	Location for ZIP Code	Optional. Location on the output record for the standardized ZIP Code. No default.
16	Format of ZIP Code	Optional. Format of the standardized ZIP Code. <ul style="list-style-type: none"> <li>• C — 5-byte number.</li> <li>• P — 3-byte packed number.</li> <li>• <b>Blank</b> — Default is <b>C</b>.</li> </ul>

Position    Field Name    Description

Position	Field Name	Description
18-20	Location for Source of Final ZIP Code	<p>Optional. Location on the output record for a 1-character code that indicates the source of the final ZIP Code. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• B — No ZIP Code was determined.</li> <li>• F — Final ZIP Code determined from the finance number.</li> <li>• L — New address obtained from LACS processing.</li> <li>• M — Final ZIP Code determined from the ZIPMOVE database.</li> <li>• Z — The original ZIP Code was retained.</li> <li>• <b>Blank</b> — No default.</li> </ul>
22-24	Location for PO Box-only ZIP Code	<p>Optional. Location on the output record for the P. O. Box-only ZIP Code indicator. Addresses located within a P. O. Box-only delivery zone can only receive postal delivery through the use of a P. O. Box. No other postal delivery method is available for these addresses.</p> <ul style="list-style-type: none"> <li>• Y — P. O. Box-only ZIP Code.</li> <li>• Blank — Not a P. O. Box-only ZIP Code.</li> </ul>
26-28	Location for Valid ZIP Code Flag	<p>Optional. Location on the output record for the valid ZIP Code flag. One of the following codes is stored:</p> <ul style="list-style-type: none"> <li>• Y — Input City, State, and ZIP Code correspond.</li> <li>• N — Input city, state, ZIP Code do not correspond, or is invalid.</li> <li>• <b>Blank</b> — ZIP Code could not be determined for input address.</li> </ul>
60	Storage Conditions — Information Dropped	<p>Optional. Specify a code to indicate whether the standardized ZIP Code should be stored when information was dropped during the standardization process:</p> <ul style="list-style-type: none"> <li>• X — Do not store if information was dropped.</li> <li>• Blank — Store the information anyway.</li> </ul>
62	Maximum Address Correctness	<p>Optional. Maximum acceptable address probability of correctness to store the standardized ZIP Code. Enter a number between 0 and 9, where 0 indicates best case and 9 indicates worst case. Default is <b>9</b>.</p>

Position    Field Name    Description

Position	Field Name	Description
64	Maximum Overall Correctness	Optional. Maximum acceptable overall probability of correctness to store the standardized ZIP Code. Enter a number between 0 and 9, where 0 indicates best case and 9 indicates worst case. Default is <b>9</b> .
66	Unique ZIP Code Handling	Optional. Specify a code to indicate whether to return the input ZIP Code if it is unique and does not correlate with the input city/state: <ul style="list-style-type: none"> <li>• X — Store the information indicated in position 72.</li> <li>• Blank — Do not store the Input ZIP Code.</li> </ul> <p><b>NOTE:</b> If X is chosen, a non-CASS certified configuration is created. No USPS 3553 Form is generated.</p>
70	Storage Conditions — Multiple ZIP Code	Optional. Specify a code to indicate whether the standardized ZIP + 4 and DPBC should be stored when multiple ZIP Code matches were found: <ul style="list-style-type: none"> <li>• M — Store the standardized ZIP+4 and DPBC anyway.</li> <li>• Blank — Store the information indicated in position 72.</li> </ul>
72	ZIP Code Disposition Indicator	Optional. Specify a code to indicate what to store where the standardized ZIP Code was not stored either because no match was found or due to storage conditions. Enter one of the following codes: <ul style="list-style-type: none"> <li>• B — Store blanks.</li> <li>• I — Store input ZIP Code.</li> <li>• X — Store nothing.</li> <li>• <b>Blank</b> — Default is I.</li> </ul> <p><b>NOTE:</b> If you specify I, and the input ZIP Code is non-numeric or all zeros, blanks are stored.</p>

# 3 - Calling Matching, Analyzer, and Callable Batch Driver Modules

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# CODE-1 Plus Matching Modules

## What is C1MATCHx?

CODE-1 Plus uses callable matching modules to analyze your input addresses and attempt to match those addresses to the CODE-1 Plus database. These modules, designed to be called from your own applications, enable you to tailor CODE-1 Plus to meet very specific processing needs. The following callable modules match your input addresses against the CODE-1 Plus database.

Module	Description	Memory Used
<b>C1MATCHI</b>	Matcher for interactive processing	
<b>C1MATCHB</b>	Default matcher for batch processing	3 MB
<b>C1MATCHS</b>	Matcher for batch processing	1 MB (small memory model)
<b>C1MATCHM</b>	Matcher for batch processing	6 MB (medium memory model)
<b>C1MATCHL</b>	Matcher for batch processing	12 MB (large memory model)
<b>C1MATCHH</b>	Matcher for batch processing	28 MB (huge memory model).

**Note:** To call an optional C1MATCHx memory model, refer to **PGMNAM**. "Above the Line" mainframe users should assign a region size of 1 MB. The 12 and 28 MB memory models are not available for "Below the Line" and "Static Linked" Mainframe users.

These modules:

- Process instructions you specify
- Match the input record against the CODE-1 Plus database
- Store the match results (standardized addresses and return codes) and processing statistics

**Note:** *i* SMPLDRVR2, a sample COBOL batch program that demonstrates the techniques used to call C1MATCHx, the address line extraction module EXTADDR2, and the callable print program C1PRPT, have been provided for your convenience. You can find the source code for this program with the other sample files that you received with CODE-1 Plus.

**Note:** *iOn IBM i*, the program is called SMDR\* (SMDRC for the COBOL sample and SMDRR in ILE RPG).

**Note:** To incorporate PreciselyID we have added PBKEY and PBKEYC to LOABLIB.PDSE. Some components have been interchanged between LOADLIB and LOABLIB.PDSE libraries, and C1MATCHI, C1MATCHB, C1MATCHH, C1MATCHL, C1MATCHM, C1MATCHS have been moved to LOABLIB.PDSE.

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## What is C1ANZADR?

**C1ANZADR** is the callable module that analyzes an input address. C1ANZADR analyzes the elements of an address for use by the C1MATCHx modules during the matching process. The specialized nature of the analyzer implies that it cannot be used for standardizing mailing addresses. The analyzer performs various transformations on the input address to facilitate the matching process. These transformations make the output unusable for label printing, etc.

You can use the analyzer to normalize input addresses to USPS standards. C1ANZADR formats the address elements into a human-readable string that you can use on mailing labels, envelopes, etc.

## What is C1BMCBD?

**C1BMCBD** allows a user-supplied program to submit one address at a time to CODE-1 Plus for matching.



## What is EXTADDR2?

**EXTADDR2** uses up to six address lines to return two lines to be passed to the CODE-1 Plus matcher and can optionally return the Urbanization and Firm Name fields.

## Call Areas

When you call a CODE-1 Plus module, you must pass, as parameters (addresses), the names of the pre-defined call areas. These call areas are blocks of memory containing data that is used by both your program and the CODE-1 Plus Matcher. Each call area has a specific copybook with which it is associated. These copybooks describe the data that is stored in each byte of the call area. The copybooks are very specific, so that the driver and called module “know” where each piece of data is stored in the call area. Therefore, the copybooks must not be altered in any way.

Copybooks of the call areas are supplied to call the Batch Matchers (C1MATCHx) as:

- COBOL (P9IN, P9OUT, P9AUDIT, and P9INTRF)
- Assembler (ASMPARMI and ASMPARMO)
- PL/I (PLIP9I and PLIP9O)
- ILE RPG on IBM i (P9INR, P9OUTR, P9AUDITR, and P9INTRFR)

**Note:** iAssembler and PL/I versions of P9INTRF are not provided.

If you are calling the CODE-1 Plus matcher from a CICS application, you must use the C1MATCHI matcher and pass a single 01-level call area. The copybook P9COMM is supplied with the software and it combines the call areas previously described.

## Calling CODE-1 Plus on z/OS

When you call CODE-1 Plus from your own application in a z/OS environment, there are a few considerations.

If you are using non LE-programming languages, the Language Environment (LE) runtime environment must be initialized prior to the first call to CODE-1 Plus. You can do this by using either the COBxSTUB, or the COBxINI programs as described on the following page. Or you may write your

own routines to perform this task. The following sections explain how to initialize the runtime environment from programs written in other languages using COBxSTUB and COBxINI.

LE conforming languages, such as High-Level Assembler, RPG, and C are included for LE. You do not need to initialize the LE Runtime Environment for these languages.

**Note:** iWhen you call CODE-1 Plus from your own application in a z/OS environment, you must initialize the P9AUDIT and P9IN areas to SPACES before the first call to C1MATCHx. C1MATCHx then initializes all the numeric fields to the proper values. You should not initialize these structures after the initial call (including the last call which terminates the process).

### *Using COBxSTUB*

If the non-COBOL user-written program that calls CODE-1 Plus is a batch program, you can use the appropriate COBxSTUB program, which is shipped with CODE-1 Plus, to initialize the runtime environment. Use COBMSTUB for initializing the LE (z/OS) Runtime.

This method is easier to use than the COBxINI method described later. Using the COBxSTUB method, the name of the user-written program is passed as a parameter through JCL and that program is dynamically called. The COBxSTUB program is written in the appropriate COBOL language. In this fashion, COBxSTUB becomes the top program in the calling heap/stack and causes the LE runtime environment to be initialized before the user-written program is executed. We recommend that the user-written program perform a dynamic call to the CODE-1 Plus matcher.

## Sample z/OS JCL

```
//yourjobcard

//yourstep EXEC PGM=COBxSTUB,PARM='your_program_name',REGION=0M

//STEPLIB DD DSN=yourhlq.CODE1P.LOADLIB,DISP=SHR

//          DD DSN=yourRTlib,DISP=SHR

//SYSPRINT DD SYSOUT=*

//SYSOUT   DD SYSOUT=*

//*****

//* CODE-1 Plus DATABASE FILE DEFINITIONS

//*****

//CITYDB   DD DSN=yourhlq.CODE1P.CITYDB,DISP=SHR

//COUNTY DD DSN=yourhlq.CODE1P.COUNTY,DISP=SHR

//DTLDB    DD DSN=yourhlq.CODE1P.DTLDB,DISP=SHR

//G1C1AUX  DD DSN=yourhlq.CODE1P.G1C1AUX,DISP=SHR

//LCLDB    DD DSN=yourhlq.CODE1P.LCLDB,DISP=SHR

//LTMASTR  DD DSN=yourhlq.CODE1P.LOTDB,DISP=SHR

//ZIPIDX   DD DSN=yourhlq.CODE1P.ZIPIDX,DISP=SHR

//*****

//* DPV FILES
```

```
//*****
```

```
//DPVDB DD DSN=yourhlq.GROUP1.DPVE,DISP=OLD for Flat DPV DB
```

```
//DPVHDB DD DSN=yourhlq.GROUP1.DPVHE,DISP=OLD for Full DPV DB
```

```
//DPVSDE DD DSN=yourhlq.GROUP1.DPVSE,DISP=OLD for Split DPV DB
```

```
//
```

```
*****
```

```
//* GROUP 1 LICENSE FILE
```

```
//*****
```

```
//G1LICEN DD DSN=yourhlq.GROUP1.G1LICEN,DISP=OLD
```

```
//*****
```

```
//* STATISTICAL FILE
```

```
//*****
```

```
//G1STAT DD DSN=yourhlq.CODE1P.G1STAT,DISP=(,CATLG,DELETE),
```

```
// UNIT=SYSDA,
```

```
// DCB=(RECFM=U,RECL=1024,BLKSIZE=8192),
```

```
// SPACE=(CYL,(1,1))
```

```
//*****
```

```
//* INPUT, OUTPUT, AND PRINT REPORT DEFINITIONS
```

```
//*****
```

```
//C1BMNAM DD DSN=yourhlq.CODE1P.IVP.NAMEADDR,DISP=SHR
```

```
//C1BMCOK DD DSN=NULLFILE,
```

```
//          DCB=(RECFM=FBA,LRECL=133,BLKSIZE=133)

//PRNTRPT  DD SYSOUT=*,DCB=(RECFM=F,LRECL=133,BLKSIZE=133)

//PRNTXLG  DD SYSOUT=*,DCB=(RECFM=F,LRECL=133,BLKSIZE=133)

//PRNTCAS  DD SYSOUT=*,DCB=(RECFM=F,LRECL=133,BLKSIZE=133)

//*****//
CODE-1 Plus IVP FILE PARAMETER
RECORDS//*****//C1EMPRM
DD DSN=yourhlq.CODE1P.PARFILE,DISP=SHR/*//
```

## Using COBxINI

This section provides information for using the COBxINI program.

### Initializing the LE Runtime

If you are using non-LE-conforming languages, follow the steps below to initialize the LE runtime environment:

1. Add the following to the WORKING STORAGE SECTION:

**Note:** iReplace the x in the examples below with M for z/OS.

```
10 COBx-RETURN-CODE          PIC S9(9) COMP  VALUE ZERO.88 COBxINI-OK
   VALUE ZERO.88 COBxINI-ALREADY VALUE +4,
```

2. Add the following to the PROCEDURE DIVISION to execute once before the first call to C1MATCHx or C1ANZADR:

```
CALL 'COBxINI' USING COBx-RETURN-CODE.IF COBxINI-OK NEXT SENTENCEELSEIF
COBxINI-ALREADY(display a message "LE already initialized" continue
the run)ELSE (handle error-condition and terminate the run).
```

3. Compile/Assemble your program and link with the library/sublibrary that contains the COBxINI object. If you use another language other than COBOL, you can apply the same techniques described above by converting the COBOL language syntax into the syntax of the programming language that you use.

# Calling C1MATCHx

The C1MATCHx modules (C1MATCHB, C1MATCHS, C1MATCHM, C1MATCHL, C1MATCHH) take, as parameters, the names of the following call areas:

- P9IN — 600-character input call area that contains the input address information and the processing requirements
- P9OUT — 5,000-character output call area that contains the match results and return codes
- P9AUDIT — 1025-character output call area that contains audit statistics.
- P9INTRF — Optional 2048-character output call area that contains unmatched data.

**Note: iNOTES:** You must initialize the P9AUDT area to SPACES before the first call to C1xMATCH. C1xMATCH will then initialize all the numeric fields. COBOL copy members of the call areas are provided in the sample library. These copybooks are named P9IN, P9OUT, P9AUDIT, and P9INTRF. You must initialize the call areas to SPACES before the first call to C1MATCHx. C1MATCHx then initializes all the numeric fields in P9AUDIT.

For IBMi customers, in addition to adding the global library and the product library to your CL, it is required to add the database library for any jobs that execute C1MATCHx callables. For example:

```
ADDLIBLE LIB(G1@@PGMS)
ADDLIBLE LIB(G1C1PGMS)
ADDLIBLE LIB(G1C1FILES) <add the database library>
```

You will need to add a RMVLIBLE in the CL that contains RMVLIBLE's for the global and product libraries. IBMi customers who have an RPG program calling C1MATCHx and using CRTBNDRPG when compiling, need to specify the following two options on the screen:

**Default Activation Group:** \*NO

**Activation Group:** QILE

If these options are not set properly, errors such as an MCH1202 or an MCH0601 may occur.

# Casing Your Output

You can choose to output your CODE-1 Plus results in upper, lower, or mixed case. This option is part of the input parameter to program C1MATCHx. Position 10, P9ICASE, may contain one of the following values to indicate whether or not to case the output results from calling program C1MATCHx.

- C - Perform mixed casing.
- L - Perform lower casing.
- Blank - Perform upper casing.

## Format of Cased Output

All fields that are returned in mixed case have the exception of known USPS addressing recommendations, including the following:

- All pre-and post-directionals are uppercase.
- All box numbers containing alphabetic characters are returned all uppercase.
- All state abbreviations remain all uppercase.
- PO, HC, and RR literals remain all uppercase.

There are no exceptions for fields returned in lower case.

## Special Casing Requirements

Keep in mind the following special casing requirements for mixed-case output:

- All words with a length greater than three characters and starting with “MC” are returned with the letter following “MC” uppercased. For example, MCKEE becomes McKee.
- An alphabetic character following a non-space, non-alphabetic character is returned uppercase. For example, F2F remains F2F. This rule has two exceptions:
- All ordinal numbers are recognized and cased properly. Both consonants following digits are lowercase. For example, 2ND becomes 2nd.
- All words ending with “S” are cased properly. For example, ALEXANDER’S becomes Alexander’s.

There are no special casing requirements for output returned in lower case.

## COBOL Call to Batch Version of C1MATCHx

The following is a sample COBOL call to C1MATCHx (including C1MATCHI).

```
CALL WS-C1MATCHx USING P9IN
```

```
P9OUT
```

```
P9AUDT
```

```
P9INTRF
```

**Note:** You must set P9I-PRM4 to “Y” to indicate the presence of P9INTRF (P9INTRF is not supported in C1MATCHI).

## The Input Call Area (P9IN)

The following table is a map of the positions in the 600-byte P9IN input call area.

Position	Name	Length	Contents
1	P9IFNC	1	<p>Indicates what action C1MATCHx performs on the information in this call area:</p> <ul style="list-style-type: none"> <li>• 5 — Perform an address match, including ZIP Code correction, if necessary.</li> <li>• 9 — Perform an address match, but will not attempt any ZIP Code correction (that is, the match will be restricted to those addresses in the original input ZIP Code, if there are any).</li> <li>• E — End-of-job indicator; do not perform an address match, but close files and subprograms.</li> </ul> <p><b>NOTE:</b> With this option, no standardized city and state is returned. Any other value is interpreted the same as 5, above.</p>



Position	Name	Length	Contents
2	P9ILLO	1	<p>Indicates whether to conduct a limited address match based on ZIP Code locality:</p> <ul style="list-style-type: none"> <li>• X — Limit Address Match to ZIP locality.</li> <li>• Blank — Standard Processing (default).</li> </ul> <p><b>NOTE:</b> Setting this option will to "X" produces a non-CASS certified configuration. No USPS Form 3553 is generated.</p>
3	P9ISTM	1	<p>Strictness of the street name match:</p> <ul style="list-style-type: none"> <li>• E — Input street name must match the database exactly.</li> <li>• T — Matching algorithm is "tight."</li> <li>• M — Matching algorithm is "medium" (default).</li> <li>• L — Matching algorithm is "loose."</li> </ul> <p>Any other value is treated as M. (To generate USPS Form 3553, a value must be specified.)</p>
4	P9IFMM	1	<p>Strictness of the firm name match:</p> <ul style="list-style-type: none"> <li>• E — Input firm name must match the database exactly.</li> <li>• T — Matching algorithm is "tight."</li> <li>• M — Matching algorithm is "medium" (default).</li> <li>• L — Matching algorithm is "loose."</li> </ul> <p>Any other value is treated as M. (To generate USPS Form 3553, a value must be specified.)</p>
5	P9IDSM	1	<p>Strictness of the directional/suffix match:</p> <ul style="list-style-type: none"> <li>• E — Input directional and suffix must match the database exactly.</li> <li>• T — Matching algorithm is "tight."</li> <li>• M — Matching algorithm is "medium" (default).</li> <li>• L — Matching algorithm is "loose."</li> </ul> <p>Any other value is treated as M. (To generate USPS Form 3553, a value must be specified.)</p>

Position	Name	Length	Contents
6	P9INAD	1	<p>Indicates whether the match should return normalized address information. You can obtain normalized address elements simultaneously with the regular address match call—a single call can provide both standardized and normalized address elements. Additionally, if normalized address information is requested, DSF<sup>2</sup> footnotes are also returned.</p> <ul style="list-style-type: none"> <li>• N — Provide normalized address elements for input address lines.</li> </ul> <p>Any other value does not return normalized address elements.</p>
7	P9ITEST	1	<p>Indicates whether to invoke a special database mode function:</p> <ul style="list-style-type: none"> <li>• V — Override database expiration.</li> </ul> <p>Any other value invokes the normal matching operations.</p>
8	P9IFC9	1	<p>Indicates whether the matcher should return a vanity city name if it is the best match for the input city name:</p> <ul style="list-style-type: none"> <li>• X — Return a vanity city if it is the best match.</li> <li>• Blank — Never return a vanity city (default).</li> </ul> <p>Any other value is treated as blank.</p> <p>NOTE: Setting this indicator to X (when calling the matcher directly from your own driver) produces a non-CASS-certified configuration. No USPS Form 3553 is generated.</p>
9	P9IDUAL	1	<p>Indicates how CODE-1 Plus should return a match if multiple non-blank address lines are present or multiple address types are on the same address line:</p> <ul style="list-style-type: none"> <li>• S — Return a street match, regardless of the address line.</li> <li>• P — Return a PO Box match, regardless of the address line.</li> <li>• Blank — Normal match scoring for street address elements, input ZIP Code, matching address line, and so on (default).</li> </ul> <p>NOTE: Under normal conditions, a PO Box cannot match if the city name and input ZIP Code are both changed.</p> <p>DMM 708 states to match to a PO Box first when on the same address line or the PO Box address is the primary address line.</p>

Position	Name	Length	Contents
10	P9ICASE	1	<p>Indicates whether to case the output results from calling program C1MATCHx:</p> <ul style="list-style-type: none"> <li>• C — Output returned in mixed case where appropriate.</li> <li>• L — All output returned in lower case.</li> <li>• Blank — All output returned in upper case (default).</li> </ul>
11	P9ILOT	1	<p>Indicates whether to perform Line of Travel matching:</p> <ul style="list-style-type: none"> <li>• X — Perform Line of Travel matching.</li> <li>• Blank — Do not perform Line of Travel matching (default).</li> </ul>
12	P9IEALT	1	<p>Indicates the matching preference when a match is made to an alternate highrise record and the input address contains secondary address data:</p> <ul style="list-style-type: none"> <li>• Y — Attempt to match to the base address (default).</li> <li>• N — Return the match to the alternate highrise record.</li> </ul> <p>NOTE: Setting this indicator to N produces a non-CASS-certified configuration. No USPS Form 3553 is generated.</p>
13	P9ISCM	1	<p>Indicates the matching preference when multiple secondary components are found on the input address:</p> <ul style="list-style-type: none"> <li>• Y — Attempt to find an exact ZIP+4 match to each secondary component (default).</li> <li>• N — Match to the default.</li> </ul> <p>NOTE: Setting this indicator to N produces a non-CASS-certified configuration. No USPS Form 3553 is generated.</p>

Position	Name	Length	Contents
14	P9IZCT	1	<p>Returned preferred city name:</p> <ul style="list-style-type: none"> <li>• Z — Return ZIP + 4 File preferred last line City Name (override city name).</li> <li>• C — Return city name from USPS City/State File (default city name).</li> <li>• P — Return the primary City.</li> </ul> <p><b>NOTE:</b> The default for this field is Z when calling C1MATCHx. The default for C1BM00 is Z.</p>
15	P9IDPV	1	<ul style="list-style-type: none"> <li>• X — Perform DPV processing.</li> <li>• Blank — Do not attempt to perform DPV processing (default).</li> </ul>
16	P9IDPV-ZCP	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to ZIP Code - PO Box/Rural/HC.</li> <li>• Blank — Perform DPV (default).</li> </ul>
17	P9IDPV-ZCA	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to ZIP Code – Street Address.</li> <li>• Blank — Perform DPV (default).</li> </ul>
18	P9IDPV-CR	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to Carrier Route.</li> <li>• Blank — Perform DPV (default).</li> </ul>
19	P9IDPV-DR	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to Directional (non-Cardinal rule).</li> <li>• Blank — Perform DPV (default).</li> </ul>

Position	Name	Length	Contents
20	P9IDPV-SFX	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to Suffix (none on input).</li> <li>• Blank — Perform DPV (default).</li> </ul>
21	P9IDPV-SDC	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when multiple condition is due to Suffix or Directional Correction.</li> <li>• Blank — Perform DPV (default).</li> </ul>
22	P9IDPV-SC	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV when Multiple Input Secondary Components with no Designator.</li> <li>• Blank — Perform DPV (default).</li> </ul>
23	P9IDPV-USD	1	<ul style="list-style-type: none"> <li>• N — Do not attempt to DPV confirm when small town default ZIP + 4 assigned or Unique ZIP default ZIP + 4 assigned.</li> <li>• Blank — Perform DPV (default).</li> </ul>
25	P9IDPV-CMRA	1	<p>Indicates whether to perform CMRA lookup:</p> <ul style="list-style-type: none"> <li>• N — Do not perform CMRA lookup.</li> <li>• Blank — Perform CMRA lookup (default).</li> </ul>
26	P9IDPV-BYS	1	<p>Indicates whether to perform DPV validation on secondary addresses:</p> <ul style="list-style-type: none"> <li>• N — Do not perform DPV validation on secondary addresses.</li> <li>• Blank — Perform DPV validation on secondary addresses (default).</li> </ul>
27	P9IRDI	1	<p>Controls whether to perform RDI processing:</p> <ul style="list-style-type: none"> <li>• X — Attempt RDI processing.</li> <li>• Blank — Do not attempt RDI processing (default).</li> </ul>

Position	Name	Length	Contents
29	P9ISTE	1	<p>Indicates how to treat Suite<sup>Link</sup> errors:</p> <ul style="list-style-type: none"> <li>• I — Ignore error and continue to attempt Suite<sup>Link</sup> processing. CODE-1 Plus <b>does not</b> generate a USPS Form 3553 if you specify the value "I".</li> <li>• S — Shutdown when Suite<sup>Link</sup> reports an error (default). Specify the value "S" if you want to generate a USPS Form 3553.</li> <li>• W — Issue warning message and turn off Suite<sup>Link</sup> processing. CODE-1 Plus <b>does not</b> generate a USPS Form 3553 if you specify the value "W".</li> </ul>
30	P9ISTE-BYP	1	<p>Indicates whether an expired Suite<sup>Link</sup> database will cause the job to terminate:</p> <ul style="list-style-type: none"> <li>• N — Do not bypass Suite<sup>Link</sup> database expiration date processing (default).</li> <li>• Y — Bypass Suite<sup>Link</sup> database expiration processing.</li> </ul>
31	P9ISTE-SMM	1	<p>Suite<sup>Link</sup> memory module size to use for processing:</p> <ul style="list-style-type: none"> <li>• P — Pico memory model (no files in memory).</li> <li>• U — Micro memory model (no files in memory, only indexes).</li> <li>• S — Small memory model.</li> <li>• M — Medium memory model.</li> <li>• L — Large memory model.</li> <li>• H — Huge memory model (all files in memory).</li> <li>• Blank — DPV process will be using Medium memory model (default).</li> </ul>
32	P9ICMRA-PMB	1	<p>Indicates whether to convert secondary information to PMB:</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Convert secondary information to PMB where appropriate.</li> <li>• <b>N</b> — Do not convert secondary information to PMB.</li> <li>• <b>Blank</b> — Do not convert secondary information to PMB.</li> </ul>

Position	Name	Length	Contents
33-35	Reserved	3	
36	P9IR777-ZP4	1	<p>Indicates whether to suppress ZIP + 4 for addresses assigned a phantom Carrier Route R777 (not eligible for street delivery):</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Yes, if Carrier Route R777 is found, add to the ZIP + 4 Suppressed Count on the USPS Form 3553. R777 addresses are not deliverable. Do not store the ZIP + 4 (DPBC).</li> <li>• <b>Blank</b> — If Carrier Route R777 is found, do not add to the ZIP + 4 Suppressed Count on the USPS Form 3553. R777 addresses are deliverable. Store the ZIP + 4 (DPBC).</li> </ul>
37	P9IDPV-PBSA	1	<p>Indicates whether to perform a P. O. Box Street Address (PBSA) Table lookup:</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Perform PBSA Table lookup.</li> <li>• <b>N</b> — Do not perform PBSA Table lookup.</li> <li>• <b>Blank</b> — Do not perform PBSA Table lookup.</li> </ul>
38	P9IDPV-NOST	1	<p>Indicates whether to perform a DPV No Stat Lookup:</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Perform DPV No Stat Lookup.</li> <li>• <b>N</b> — Do not perform DPV No Stat lookup (default).</li> </ul>
39	P9IDPV-VACT	1	<p>Indicates whether to perform a DPV Vacant Lookup:</p> <ul style="list-style-type: none"> <li>• <b>Y</b> — Perform DPV Vacant Lookup.</li> <li>• <b>N</b> — Do not perform DPV Vacant lookup (default).</li> </ul>

Position	Name	Length	Contents
40	P9I-ZLACS	1	<p>Indicates whether to perform LACS<sup>Link</sup> processing:</p> <ul style="list-style-type: none"> <li>• Y — Perform LACS<sup>Link</sup> processing.</li> <li>• L — Invoke limited LACS<sup>Link</sup> subsystem processing. Provides the CODE-1 Plus non-LACS converted street address, city, and state data to the output standardized address and parsed elements fields.</li> <li>• Blank — Do not attempt to perform LACS<sup>Link</sup> processing (default).</li> </ul>
41	P9I-PRM4	1	<p>Indicates whether the fourth parameter, P9INTRF, is present and to be processed:</p> <ul style="list-style-type: none"> <li>• Y — The fourth parameter, P9INTRF, is present and should be processed.</li> <li>• Blank — The fourth parameter, P9INTRF, is not present and should not be processed.</li> </ul>
42	P9ISIN	1	<p>Indicates whether to perform Split Indicia processing:</p> <ul style="list-style-type: none"> <li>• Y — Perform split indicia processing.</li> <li>• Blank — Do not perform split indicia processing (default).</li> </ul>
43	P9ICZO	1	<p>Controls the population of the CITY/STATE P9OUT areas for the input ZIP Code when there is no match to the US Postal Database. P9OUT areas are P9OCL9, P9OCS9, P9OCTL, P9OCTS, and P9OSTA.</p> <ul style="list-style-type: none"> <li>• I — Store the input city.</li> <li>• X — Return the missing primary city and state for the valid input ZIP Code. Also, return the locality county code for the valid input ZIP Code or valid input city/state. If you specify "X", CODE-1 Plus does not generate a USPS Form 3553 (CASS Summary Report).</li> <li>• Z — Return the primary city for the valid input ZIP Code. If you specify "Z", CODE-1 Plus does not generate a USPS Form 3553 (CASS Summary Report).</li> <li>• Blank — Do not return city/state for input ZIP Code (default).</li> </ul>



Position	Name	Length	Contents
44	P9ISSM	1	Indicates whether to do Enhanced Street Matching (ESM) or All Street Matching (ASM): <ul style="list-style-type: none"> <li>• A — Attempt match to all streets in locality (matches to misspelled first letter in street name).</li> <li>• S — Use enhanced street matching.</li> <li>• Blank — Do not use enhanced street matching (default).</li> </ul>
45	Reserved	1	
46-50	P9IZIP	5	5-digit ZIP Code for the address to be matched.
51-54	P9IZIP4	4	4-digit ZIP + 4 Code for the address to be matched.
55-154	P9IAD1	100	Primary address line.
155-254	P9IAD2	100	Secondary address line.
255-354	P9IFRM	100	Firm name, left-justified, in human-readable format. If no firm name is available, or if you do not wish firm-level ZIP + 4 matching to be performed, leave this field blank.
355-454	P9ICST	100	City/state information. (Each component must be separated by at least one blank.) You can use the first 99 bytes of this field, but do not use byte 100. It is reserved for internal processing.
455-489	P9IURB	35	Urbanization name (without state name).

Position	Name	Length	Contents
490	P9IENV	1	<p>Indicates the environment in which the C1MATCHx program is executing:</p> <ul style="list-style-type: none"> <li>• B — C1MATCHx is being called in a batch environment (default).</li> <li>• I — C1MATCHx is being called in an interactive environment.</li> </ul> <p>Any other value is treated as B.</p>
491-500	P9IDBL	10	Reserved for the IBMi platform.
501	P9IAUX	1	<p>Indicates whether to perform Auxiliary File processing:</p> <ul style="list-style-type: none"> <li>• X — Perform Auxiliary File processing.</li> <li>• Blank — Not performed (default).</li> </ul>
502-525	Reserved	24	
526	P9I-PREFER	1	<p>Indicates whether to perform Preferred Alias Processing:</p> <ul style="list-style-type: none"> <li>• Y — Perform Preferred Alias Processing.</li> <li>• N — Do not perform Preferred Alias Processing (default).</li> </ul> <p><b>NOTE:</b> A “Y” in this position is required to generate the USPS Form 3553.</p>
527	P9I-ABBREV	1	<p>Indicates whether to perform Abbreviated Alias Processing:</p> <ul style="list-style-type: none"> <li>• Y — Perform Abbreviated Alias Processing.</li> <li>• N — Do not perform Abbreviated Alias Processing (default).</li> </ul>
528	P9IDPV-FTI	1	<p>DPV file to match against:</p> <ul style="list-style-type: none"> <li>• S — Process the DPV split file.</li> <li>• F — Process the DPV flat file.</li> <li>• H — Process the DPV full (hash) file.</li> <li>• Blank — Process the DPV split file.</li> </ul>

Position	Name	Length	Contents
529-530	P9IDPB2	2	Two characters for the DPBC input add on.
531	P9I-CASSOK	1	Indicates whether a valid CASS configuration is intended: <ul style="list-style-type: none"> <li>• N — Force non-CASS configuration.</li> <li>• Y — CASS configuration (default).</li> </ul>
532	P9IDPV-MMS	1	DPV memory module size to use for processing: <ul style="list-style-type: none"> <li>• P — Pico memory model (no files in memory).</li> <li>• U — Micro memory model (no files in memory, only indexes).</li> <li>• S — Small memory model.</li> <li>• M — Medium memory model.</li> <li>• L — Large memory model.</li> <li>• H — Huge memory model (all files in memory).</li> <li>• Blank — Medium memory model (default).</li> </ul>
533	P9ILACS-MMS	1	LACS memory module size to use for processing: <ul style="list-style-type: none"> <li>• P — Pico memory model (no files in memory).</li> <li>• U — Micro memory model (no files in memory, only indexes).</li> <li>• S — Small memory model.</li> <li>• M — Medium memory model.</li> <li>• L — Large memory model.</li> <li>• H — Huge memory model (all files in memory).</li> <li>• Blank — Medium memory model (default).</li> </ul>
534	P9ISEASONAL	1	Indicates whether CODE-1 Plus should retrieve and return seasonal delivery flags: <ul style="list-style-type: none"> <li>• Y — Retrieve and return seasonal delivery flags.</li> </ul> <p><b>NOTE:</b> Any value other than Y does not retrieve seasonal flags.</p>

Position	Name	Length	Contents
535-536	Reserved	2	
537	P9IPRECISELYID	1	<p>Indicates whether CODE-1 Plus should retrieve and return the PreciselyID.</p> <ul style="list-style-type: none"> <li>• Y - Retrieve and return PreciselyID information</li> <li>• Blank - PreciselyID will not be invoked and no information pertaining to it will be available (default).</li> </ul>
538	P9IDPV-DNA	1	<p>Controls Door Not Accessible Lookup .</p> <ul style="list-style-type: none"> <li>• Y - Perform DNA Lookup.</li> <li>• N - Do not perform DNA Lookup.</li> </ul>
539	P9IDPV-THROW	1	<p>Controls Throwback Lookup .</p> <ul style="list-style-type: none"> <li>• Y - Perform Throwback Lookup.</li> <li>• N - Do not perform Throwback Lookup.</li> </ul>
540	P9IDPV-NSL	1	<p>Controls No Secure Location Lookup .</p> <ul style="list-style-type: none"> <li>• Y - Perform NSL Lookup.</li> <li>• N - Do not perform NSL Lookup.</li> </ul>
541	P9IDPV-NDD	1	<p>Controls Non-Delivery Days Lookup .</p> <ul style="list-style-type: none"> <li>• Y - Perform NDD Lookup.</li> <li>• N - Do not perform NDD Lookup.</li> </ul>
542	P9IDPV-NSR	1	<p>Controls Retrieval of NOSTAT Reason.</p> <ul style="list-style-type: none"> <li>• Y - Retrieve NSR.</li> <li>• N - Do not retrieve NSR.</li> </ul>
543	P9IDPV-DROP	1	<p>Controls Retrieval of DROP Lookup.</p> <ul style="list-style-type: none"> <li>• Y - Retrieve DROP.</li> <li>• N - Do not retrieve DROP.</li> </ul>
544-600	Reserved	57	

# The Output Results Call Area (P9OUT)

## P9OFNT-DPV-GRP

The following table is a map of the 5,000-byte P9OUT output call area. You should initialize this area to blank spaces before your first call to C1MATCHx.

When C1MATCHx processing does not find a valid match for an address:

1. The address is sent for LACS<sup>Link</sup> processing.
2. If LACS<sup>Link</sup> finds that the address is convertible, the LACS<sup>Link</sup> converted address is written back to the P9IAD1 field.
3. The P9IAD2 field is filled with blank spaces.
4. The LACS<sup>Link</sup> converted address in the P9IAD1 field is sent back through C1MATCHx processing for another matching attempt.

**Note:** The output parsed A1 elements will not be blank when an address has been LACS<sup>Link</sup> converted.

Position	Name	Length	Contents
1	P9OGRC	1	<p>Indicates the success or reason for failure of the address-match attempt:</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• C — Critical error (CICS and IMS only).</li> <li>• E — External match—auxiliary file processing.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple address matches were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• X — Database access issue. One example of a database access issue would be that the database has expired. This value may also indicate a license issue.</li> <li>• Z — ZIP Code not found in database.</li> <li>• Blank — Address-match attempt successful.</li> </ul>
2	P9OPRB	1	<p>Indicates the (relative) probable correctness of the overall match that was found:</p> <ul style="list-style-type: none"> <li>• 0 — Match is most likely correct.</li> <li>• 1-8 — These values represent intermediate values on a sliding scale.</li> <li>• 9 — Match is least likely to be correct.</li> <li>• Blank — No match was found.</li> </ul> <p>NOTE: These values reflect the program's estimate of "relative probable correctness" only. It is possible that some matches given a score of 0 are not correct, and probable that matches given a score of 9 are correct.</p>
3	P9OSSC	1	<p>1-digit score, on a scale of 0 - 9, reflecting the closeness of the street-name match (after transformations by the analyzer, if any), where 0 indicates an exact match and 9 indicates the least likely match. If no match was found, this field is blank.</p>

Position	Name	Length	Contents
4	P9ODRC	1	<p>Result of the directional match:</p> <ul style="list-style-type: none"> <li>• D — Directional does not match the database at all.</li> <li>• F — Complete directional does not match the database, but its first character does (for example, N versus NW).</li> <li>• N — No directional was found on the input address, but a directional was present on the database.</li> <li>• Blank — No address match, or directional (or lack thereof) matches the database.</li> </ul>
5	P9OSRC	1	<p>Result of the suffix match:</p> <ul style="list-style-type: none"> <li>• N — No suffix was found on the input address, but a suffix was present on the database.</li> <li>• S — The suffix does not match the database.</li> <li>• Blank — No address match or suffix (or lack thereof) matches the database.</li> </ul>
6	P9OARC	1	<p>Result of the apartment match:</p> <ul style="list-style-type: none"> <li>• A — Apartment does not match the database.</li> <li>• F — Apartment appended because of firm name match.</li> <li>• N — No apartment was found on the input address, but an apartment was present on the database at the street address.</li> <li>• Blank — No address match or apartment (or lack thereof) matches the database.</li> </ul>
7-10	P9O-LB-AM	4	<p>Number of attempts required to match the address. The number will be right-justified, with leading blanks.</p>
11	P9OAPR	1	<p>Indicates whether an apartment number was detected in the input address:</p> <ul style="list-style-type: none"> <li>• Y — An apartment number was detected in the input address.</li> <li>• N — No apartment number was detected in the input address.</li> </ul>

Position	Name	Length	Contents
12	P9OPRA	1	<p>Indicates the (relative) probable correctness of the address match (only):</p> <ul style="list-style-type: none"> <li>• 0 — Address match is most likely to be correct.</li> <li>• 1-8 — These values represent intermediate values on a sliding scale.</li> <li>• 9 — Address match is least likely to be correct.</li> <li>• Blank — No address-match was found.</li> </ul> <p>NOTE: These values reflect the program's estimate of "relative probable correctness" only; it is possible that some matches given a score of 0 are not correct, and probable that most matches given a score of 9 are nevertheless correct.</p>
13	P9OFRC	1	<p>Result of the firm name match:</p> <ul style="list-style-type: none"> <li>• F — Input firm name does not match the database.</li> <li>• M — Input firm name was present, but there were no firm names on the database for the matched address.</li> <li>• Blank — No address match or firm name matches, or no firm name is present on the input.</li> </ul>
14	P9OFSC	1	<p>1-digit score, on a scale of 0 - 9, reflecting the closeness of the firm-name match, where 0 indicates an exact match and 9 indicates the least likely match. If no (firm) match was obtained, this field will be blank.</p>
15	P9OSMA	1	<p>Source of the matched address:</p> <ul style="list-style-type: none"> <li>• M — Matched address was synthesized from information in both the primary and secondary address lines.</li> <li>• P — Matched address was taken from the primary address line.</li> <li>• S — Matched address was taken from the secondary address line.</li> <li>• Blank — No match was found.</li> </ul>



Position	Name	Length	Contents
16	P9ODIT	1	<p>Type of information, if any, dropped to make a match:</p> <ul style="list-style-type: none"> <li>• A — A street address was dropped in order to make an RR/HC or PO Box match.</li> <li>• R — RR/HC or PO Box information was dropped in order to make a street address match.</li> <li>• W — One or more characters were dropped during the address parsing process. These characters are placed in positions 201-300 and/or 401-500 described below.</li> <li>• Blank — Either no match was made, or no information was dropped.</li> </ul>
17	P9ODFR	1	<p>Indicates whether a default record was matched:</p> <ul style="list-style-type: none"> <li>• H — Highrise default.</li> <li>• M — Military default.</li> <li>• R — Rural Route default.</li> <li>• S — Street default.</li> <li>• Blank — Record matched was not default record, or no match was obtained.</li> </ul>
18	P9OALT-ADDR	1	<p>Alternate addressing scheme:</p> <ul style="list-style-type: none"> <li>• D — Delivery point alternate logic used.</li> <li>• E — Enhanced Highrise Alternate Match logic used.</li> <li>• S — Small town default logic used.</li> <li>• U — Unique ZIP Code logic used.</li> <li>• Blank — No alternate address scheme used.</li> </ul>
19	P9OSCM	1	<p>Multiple secondary component use for matching:</p> <ul style="list-style-type: none"> <li>• E — Exact match to secondary component.</li> <li>• S — Used multiple secondary component logic.</li> <li>• Blank — Did not use multiple secondary component logic.</li> </ul>

Position	Name	Length	Contents
20	P9OALT	1	<p>Indicates whether the input record matched to a base ZIP + 4 record or an alternate ZIP + 4 record.</p> <ul style="list-style-type: none"> <li>• A — An alternate ZIP + 4 record was matched.</li> <li>• B — A base ZIP + 4 record was matched.</li> </ul>
21	P9O9RC	1	<p>Success or reason for failure of the ZIP+4 coding attempt:</p> <ul style="list-style-type: none"> <li>• 7 — ZIP + 4 matched to a Carrier Route R777 or R779 (phantom) and was suppressed.</li> <li>• A — An apartment number was missing or not found in the database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name was not found in the ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• V — Record matched a non-deliverable address. NOTE: A non-deliverable ZIP + 4 Range is typically a new ZIP range where the USPS has not finalized assignments of ZIP + 4 codes, thus not permitting assignment of postal code information at this time.</li> <li>• Z — ZIP Code was not found in the database.</li> <li>• Blank — The address-match attempt was successful.</li> </ul>

Position	Name	Length	Contents
22	P9OCRC	1	<p>Success or reason for failure of the carrier route coding attempt:</p> <ul style="list-style-type: none"> <li>• A — An apartment number was missing or not found in the database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• N — Carrier Route coding not attempted - auxiliary processing.</li> <li>• S — Street name was not found in the ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• Z — ZIP Code was not found in the database.</li> <li>• Blank — The address-match attempt was successful.</li> </ul>
23	P9OOGER-N	1	For internal use only.
24	P9OCIT	1	<p>Indicates whether the input city name was standardized:</p> <ul style="list-style-type: none"> <li>• C — The input city name was standardized to the long or short city name returned in fields P9OCTL and P9OCTS.</li> <li>• I — Input city name was identical to short city name.</li> <li>• Blank — No match, or the input city name was the same as either the long or short city name returned in fields P9OCTL and P9OCTS.</li> </ul>
25	P9OSAB	1	<p>Indicates whether the input state was standardized:</p> <ul style="list-style-type: none"> <li>• S — The state abbreviation was standardized to the value returned in the P9OSTA field.</li> <li>• Blank — No match, or the input state name was the same as the state name returned in the P9OSTA field.</li> </ul>

Position	Name	Length	Contents
26	P9OURC	1	Result of the urbanization name match attempt: <ul style="list-style-type: none"> <li>• M — Multiple matches were found.</li> <li>• Blank — No urbanization name match, or urbanization name matches, or no urbanization is present on the input.</li> </ul>
27	P9ONTP	1	Matched alias street name type: <ul style="list-style-type: none"> <li>• A — Street record was abbreviated.</li> <li>• C — Official street name change (Chamber of Commerce action).</li> <li>• O — Street record matched was a USPS “other” alias.</li> <li>• P — Street record matched was a USPS “preferred” alias.</li> <li>• Blank — Street record matched was not an alias street.</li> </ul>
28	P9ODPC	1	Check-digit for the 11-digit delivery point barcode (DPBC).
29-34	P9ODPBC	6	Delivery point barcode (DPBC) determined for the input address, or blanks if none could be determined. The ZIP + 4 Code can be taken from the first four characters of this field.
35-38	P9OCRT	4	Carrier route code, in Cnnn format, determined for the input address. This field is blank if no match could be obtained.

Position	Name	Length	Contents
39	P9ORTP	1	<p>USPS record type of the ZIP + 4 record that was matched. If no match could be obtained, this field is blank. Otherwise, the field contains one of the following record types:</p> <ul style="list-style-type: none"> <li>• F — Firm record.</li> <li>• G — General delivery record.</li> <li>• H — High Rise (apartment complex) record.</li> <li>• P — Post office box record.</li> <li>• R — Rural Route or Highway Contract record.</li> <li>• S — Normal street address record.</li> <li>• Blank — No match found.</li> </ul> <p><b>NOTE:</b> Electing to store the record type will produce a non-CASS-certified configuration. No USPS Form 3553 will be generated.</p>
40	P9OSNA	1	<p>Alias return code:</p> <ul style="list-style-type: none"> <li>• A — Record matched an alias street name.</li> <li>• Blank — Record matched a base street name.</li> </ul>
41	P9OLACS	1	<p>Matched address Locatable Address Correction Service (LACS) indicator:</p> <ul style="list-style-type: none"> <li>• L — Record LACS converted and moved to an urban address.</li> <li>• Blank — Record not LACS converted and did not move to an urban address.</li> </ul>
42	P9OAUX-M	1	<p>Auxiliary file match:</p> <ul style="list-style-type: none"> <li>• 1 — Early Warning System (EWS) File.</li> <li>• Blank — Non-match.</li> </ul>

Position	Name	Length	Contents
43	P9ODPV-RC	1	Type of match to the Delivery Point Validation file: <ul style="list-style-type: none"> <li>• E — Expired database.</li> <li>• F — Open/Read failure on DPV database.</li> <li>• V — Software not compatible with ZIP + 4 software.</li> <li>• S — Seed record encountered.</li> <li>• X — DPV software/database incompatible.</li> <li>• Blank — Not attempted or processing successful.</li> </ul>
44	P9ODPV	1	DPV confirmation results: <ul style="list-style-type: none"> <li>• <b>D</b> — Valid primary; input missing secondary (primary rural route).</li> <li>• <b>M</b> — Unable to DPV confirm multiple condition.</li> <li>• <b>N</b> — No Delivery Point Validation.</li> <li>• <b>S</b> — Valid primary; however, secondary (primary for rural route) and/or single trailing alpha present and is not confirmed.</li> <li>• <b>Y</b> — Delivery Point Validated. Primary valid and secondary number (when present) valid.</li> <li>• <b>Blank</b> — Not presented.</li> </ul>
45	P9ODPVC	1	DPV CMRA (Commercial Mail Receiving Agency) results: <ul style="list-style-type: none"> <li>• Y — Yes CMRA.</li> <li>• N — Not CMRA.</li> <li>• Blank — Not presented.</li> </ul>
46	P9ODPVF	1	DPV False/Positive results: <ul style="list-style-type: none"> <li>• Y — False.</li> <li>• N — Not false.</li> <li>• Blank — Not presented.</li> </ul>

Position	Name	Length	Contents
47-48	P9OSWM	2	Modification level of the matching program C1MATCHx.
49-52	P9OSWV	4	Release number of the matching program C1MATCHx.
53-62	P9OSWD	10	Date on which the matching program was installed.
63-82	P9ODBV	20	Version of the CODE-1 Plus database used to obtain matches.
83-102	P9OCSV	20	Software used to create the CODE-1 Plus database.
103-302	Reserved	200	Filler
303-402	P9OCO1	100	100-byte output area returned by C1ANZADR containing "care of" data dropped from the primary address line. This field is cased if there is a value of "C" in P9ICASE.
403-602	Reserved	200	Filler
603-702	P9OCO2	100	100-byte output area returned by C1ANZADR containing "care of" data dropped from the secondary address line. This field is cased if there is a value of "C" in P9ICASE.
703-704	P9OSAL	2	Length of the standardized address string in the P9OSAD field.
705-802	P9OSAD	98	Contains the complete standardized address, including apartment information. This field is cased if there is a value of "C" in P9ICASE.

The following fields contain isolated elements of the standardized address, as noted.

Position	Name	Length	Contents
803-812	P9OHS-LB	10	House number.
813-814	P9ODI1	2	Leading directional.
815-842	P9OSTR	28	Street name. This field is cased if there is a value of "C" in P9ICASE.
843-846	P9OSFX	4	Street suffix. This field is cased if there is a value of "C" in P9ICASE.
847-848	P9ODI2	2	Trailing directional.
849-887	P9OSTN	39	Complete street name (a combination of fields P9ODI1-P9ODI2, above). This field is cased if there is a value of "C" in P9ICASE.
888-937	P9OSTH	50	Street address, without apartment information. This field is cased if there is a value of "C" in P9ICASE.
938-941	P9OATP	4	Apartment designator. This field is cased if there is a value of "C" in P9ICASE.
942-949	P9OAP-LB	8	Apartment number.
950-962	P9OAT-LB	13	Apartment number, preceded by the apartment designator, if required. This field is cased if there is a value of "C" in P9ICASE.
963-968	P9ORR-LB	6	Rural route or highway contract number extracted from the matched address, in the standard USPS form (RR1, for example).



Position	Name	Length	Contents
969-978	P9ORB-LB	10	Box number associated with the RR or HC route in field P9ORR-LB.
979-988	P9OBX-LB	10	Post office box number.
989-990	P9OSAL-BASE	2	Number of bytes used for the base address information.
991-1088	P9OSAD-BASE	98	Base address information. This field is cased if there is a value of "C" in P9ICASE.
1089-1090	P9ODI1-BASE	2	Base leading directional.
1091-1118	P9OSTR-BASE	28	Base street name. This field is cased if there is a value of "C" in P9ICASE.
1119-1122	P9OSFX-BASE	4	Base street suffix. This field is cased if there is a value of "C" in P9ICASE.
1123-1124	P9ODI2-BASE	2	Base trailing directional.
1125-1163	P9OSTN-BASE	39	Base complete street. This field is cased if there is a value of "C" in P9ICASE.
1164-1213	P9OSTH-BASE	50	Base address without apartment information. This field is cased if there is a value of "C" in P9ICASE.
1214	P9OCITY-TYPE-IN	1	Input city type: <ul style="list-style-type: none"> <li>• P — Primary city name.</li> <li>• S — Secondary city name.</li> <li>• V — Vanity city name.</li> </ul>

Position	Name	Length	Contents
1215	P9OLACSLINK-IND	1	<p>Indicates whether a table was matched:</p> <ul style="list-style-type: none"> <li>• F — LACS seed violation has occurred.</li> <li>• N — No match occurred or a new address would not convert at run time.</li> <li>• S — Input address contained both primary and secondary information but match occurred using only primary information.</li> <li>• Y — Full match occurred.</li> <li>• Blank — No LACS processing occurred.</li> </ul>
1216-1217	P9OLACSLINK-RC	2	<p>Success of LACS<sup>Link</sup> processing:</p> <ul style="list-style-type: none"> <li>• A — LACS record match.</li> <li>• 00 — No match.</li> <li>• 0 — Address was passed to LACS process, but could not be coded by LACS.</li> <li>• 1 — Address was successfully coded through the LACS process.</li> <li>• 2 — A LACS False/Positive record was encountered, but software is operating in a NCOA/No Stop Capacity. As such, NCOA/No Stop Capacity allows for the LACS function to continue processing when a seed record is encountered.</li> <li>• 09 — LACS<sup>Link</sup> was able to find the input address on its internal tables but for some reason did not return the new (converted) address.</li> <li>• 14 — Match found LACS record but would not convert.</li> <li>• 92 — Match with secondary information.</li> <li>• Blank — No LACS processing occurred.</li> </ul>

Position	Name	Length	Contents
1218-1226	P9OLACSLINK-DB-INFO	9	<p>Date of the database in YYYYMM format. Also contains error codes for LACS<sup>Link</sup>. If the value of P9OERR is "K", the first five bytes of this field contain the error code.</p> <ul style="list-style-type: none"> <li>• 20120: LACS DB EXPIRATION</li> <li>• 20121: CAN'T OPEN SECURITY FILE</li> <li>• 20122: CORRUPTED SECURITY FILE</li> <li>• 20123: CHECK DIGIT VIOLATION ON SECURITY KEY</li> <li>• 20124: PREVIOUS SEED VIOLATION, SYSTEM LOCKED</li> <li>• 20126: RESTART KEY OR SECURITY FILE NOT CORRECT</li> <li>• 20127: UNKNOWN</li> <li>• 30000: LACS SEED VIOLATION</li> <li>• 31000: LACS SYSTEM ERROR</li> <li>• 32000: UNKNOWN as due to missing or corrupted LACS<sup>Link</sup> security file or key file.</li> </ul>
1227-1239	P9OLACSLINK-VERSION	13	Version number of the LACS <sup>Link</sup> database.
1240-1244	P9ODPV-DB-TY	5	<p>DPV database type.</p> <ul style="list-style-type: none"> <li>• FLAT — Indicates a DPV flat file.</li> <li>• SPLIT — Indicates a DPV split file.</li> <li>• FULL — Indicates a DPV full file.</li> </ul>
1245	P9OVALID-ZIP	1	<p>ZIP Code status.</p> <ul style="list-style-type: none"> <li>• Y — Valid ZIP Code.</li> <li>• N — Invalid ZIP Code.</li> </ul>

Position	Name	Length	Contents
1246	P9ODPV-PBSA	1	Indicates whether a P. O. Box Street Address (PBSA) was found. <ul style="list-style-type: none"> <li>• Y — PBSA found.</li> <li>• N — No PBSA found.</li> </ul>
1247	P9OPOBZIP	1	Indicates whether this is a P. O. Box only ZIP Code. <ul style="list-style-type: none"> <li>• Y — P. O. Box only ZIP Code.</li> <li>• Blank — Not P. O. Box only ZIP Code.</li> </ul>
1248-1259	P9OSEASONAL	12	A 12-byte code indicating when mail can be delivered to a specific ZIP Code.
1260	P9ODPV-VACT	1	Presence of a DPV vacant address. <ul style="list-style-type: none"> <li>• Y — Vacant address.</li> <li>• N — Not vacant address.</li> <li>• Blank — Not presented.</li> </ul>
1261	P9ODPV-NOST	1	Presence of statistics for this address. A “Y” indicates that the address is not a valid delivery address even though it has been validated by DPV. <ul style="list-style-type: none"> <li>• Y — Found match to ‘No Stat’ DPV hash table.</li> <li>• N — No match found to “No stat” DPV hash table.</li> <li>• Blank — Not presented.</li> </ul>
1262	P9ORDI	1	Type of match to the Residential Delivery Indicator (RDI) file: <ul style="list-style-type: none"> <li>• M — Mixed Residential/Business.</li> <li>• B — Business only.</li> <li>• R — Residential.</li> <li>• Blank — Not presented.</li> </ul>

Position	Name	Length	Contents
1263	P9ORDI-RC	1	<p>Success or failure of RDI processing:</p> <ul style="list-style-type: none"> <li>• E — Expired database.</li> <li>• F — Open/Read failure.</li> <li>• V — Software not compatible with ZIP + 4 software.</li> <li>• S — Executing DPV040 — Table(s) &gt; 8 MB.</li> <li>• Blank — Not attempted or processing successful.</li> </ul>
1264	P9OSAR	1	<p>Success or reason for failure of the standardized address match attempt:</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found in database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches were found of equal quality.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Unavailable—auxiliary file processing.</li> <li>• Z — ZIP Code not found in database.</li> <li>• Blank — The address match attempt was successful.</li> </ul>
1265	P9OD1R	1	<p>Indicates whether multiple values were found for the leading directional segment of the standardized address:</p> <ul style="list-style-type: none"> <li>• M — Multiple values were found.</li> <li>• Blank — Only one value was found.</li> </ul>
1266	P9OSNR	1	<p>Indicates whether multiple values were found for the root street name:</p> <ul style="list-style-type: none"> <li>• M — Multiple values were found.</li> <li>• Blank — Only one value was found.</li> </ul>

Position	Name	Length	Contents
1267	P9OSFR	1	Indicates whether multiple values were found for the street suffix: <ul style="list-style-type: none"> <li>• M — Multiple values were found.</li> <li>• Blank — Only one value was found.</li> </ul>
1268	P9OD2R	1	Indicates whether multiple values were found for the trailing directional: <ul style="list-style-type: none"> <li>• M — Multiple values were found.</li> <li>• Blank — Only one value was found.</li> </ul>
1269-1270	P9OFRM-LN	2	The length of the standardized firm name.
1271-1310	P9OFRM	40	The standardized firm name. This field is cased if there is a value of "C" in P9ICASE.

The following A1 elements pertain to the input primary address.

NOTE: The output parsed A1 elements will not be blank for addresses that have been LACS<sup>Link</sup> converted.

1311-1320	HOUSE-NR	10	Left-justified, primary normalized house number.
1321-1322	P9O-A1-PRE-DIR	2	Normalized pre-directional indicator.
1323-1367	P9O-A1-STREET-NAME	45	Normalized street name, which is any information that remains after the address is matched. This field is cased if there is a value of "C" in P9ICASE.
1368-1371	P9O-A1-SUFFIX	4	Normalized street suffix. This field is cased if there is a value of "C" in P9ICASE.
1372-1373	P9O-A1-POST-DIR	2	Normalized post directional indicator.

Position	Name	Length	Contents
1374-1377	P9O-A1-APT-TYPE	4	Normalized apartment type (designator). This field will be cased if there is a value of "C" in P9ICASE.
1378-1385	P9O-A1-APT-NR	8	Left-justified, normalized apartment string.
1386-1387	P9O-A1-RR-TYPE	2	Normalized rural route/highway contract type: <ul style="list-style-type: none"> <li>• HC — The address contains a highway contract number.</li> <li>• RR — The address contains a rural route number.</li> <li>• Blank — No type was stored.</li> </ul>
1388-1390	P9O-A1-RRT-NR	3	Normalized rural route number, rural route/highway contract number.
1391-1400	P9O-A1-BOX-NR	10	Left-justified. Normalized box number.
1401-1404	P9O-A1-PMB-D	4	Left-justified. Private Mailbox (PMB) designator.
1405-1420	P9O-A1-PMB-NR	16	Left-justified. Private Mailbox (PMB) number.
1421-1422	P9O-A1-STREET-LEN	2	Normalized length of the street name.
1423-1443	Reserved	21	
1444	P9O-A1-STD-PRE-DIR	1	Pre-directional standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>

Position	Name	Length	Contents
1445	P9O-A1-STD-SUFFIX	1	<p>Suffix standard format indicator:</p> <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1446	P9O-A1-STD-POST-DIR	1	<p>Post-directional standard format indicator:</p> <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1447	P9O-A1-STD-RR-TYPE	1	<p>Rural route/highway contract type standard format indicator:</p> <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1448	P9O-A1-STD-GD	1	<p>General delivery standard format indicator:</p> <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1449	P9OP9O-A1-STD-APT-TYPE	1	<p>Apartment type standard format indicator:</p> <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>



Position      Name                                      Length    Contents

1450	P9O-A1-STD-PMB	1	PMB type standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1451	P9O-A1-STD-BOX	1	Box number type standard format indicator: <ul style="list-style-type: none"> <li>• B — Input was a box number.</li> <li>• N — Input was present, but was neither a box or Post Office Box.</li> <li>• P — Input was a Post Office Box.</li> <li>• Blank — There was no box number.</li> </ul>
1452-1460	Reserved	9	

The following A2 elements pertain to the input secondary address:

1461-1470	P9O-A2-HOUSE-NR	10	Left-justified. Normalized house number.
1471-1472	P9O-A2-PRE-DIR	2	Normalized pre-directional indicator.
1473-1517	P9O-A2-STREET-NAME	45	Normalized street name, which is any information that remains after the address is matched. This field is cased if there is a value of "C" in P9ICASE.
1518-1521	P9O-A2-SUFFIX	4	Normalized street suffix. This field will be cased if there is a value of "C" in P9ICASE.
1522-1523	P9O-A2-POST-DIR	2	Normalized post directional indicator.
1524-1527	P9O-A2-APT-TYPE	4	Normalized apartment type (designator).

Position	Name	Length	Contents
1528-1535	P9O-A2-APT-NR	8	Left-justified. Normalized apartment string.
1536-1537	P9O-A2-RR-TYPE	2	Normalized rural route/highway contract type: <ul style="list-style-type: none"> <li>• HC — The address contains a highway contact number.</li> <li>• RR — The address contains a rural route number.</li> <li>• Blank — No type was stored.</li> </ul>
1538-1540	P9O-A2-RRT-NR	3	Left-justified, normalized rural route number, rural route/highway contract number.
1541-1550	P9O-A2-BOX NR	10	Left-justified. Normalized box number.
1551-1554	P9O-A2-PMB-D	4	Left-justified. Private Mailbox (PMB) Designator.
1555-1570	P9O-A2-PMB-NR	16	Left-justified. Private Mailbox (PMB) Number.
1571-1572	P9O-A2-STREET-LEN	2	Normalized length of the street name.
1573-1593	Reserved	21	
1594	P9O-A2-STD-PRE-DIR	1	Pre-directional standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1595	P9O-A2-STD-SUFFIX	1	Suffix standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>

Position	Name	Length	Contents
1596	P9O-A2-STD-POST-DIR	1	Post-directional standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1597	P9O-A2-STD-RR-TYPE	1	Rural route/highway contract type standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1598	P9O-A2-STD-GD	1	General delivery standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1599	P9O-A2-STD-APT-TYPE	1	Apartment type standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>
1600	P9O-A2-STD-PMB	1	Private Mailbox (PMB) standard format indicator: <ul style="list-style-type: none"> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> <li>• Blank — The element was not present in the input.</li> </ul>

Position	Name	Length	Contents
1601	P9O-A2-STD-BOX	1	Box number type standard format indicator: <ul style="list-style-type: none"> <li>• B — Input was a box number.</li> <li>• N — Input was present, but was neither a box or Post Office Box.</li> <li>• P — Input was a Post Office Box.</li> <li>• Blank — There was no box number.</li> </ul>
1602-1610	Reserved	9	
1611-1620	P9OPRG-LOW	10	Low primary range for the matching address.
1621-1630	P9OPRG-HIGH	10	High primary range for the matching address.
1631	P9OPRG-PARITY	1	Primary odd/even indicator for the matching address.
1632-1639	P9OSRG-LOW	8	The low secondary range for the matching address.
1640-1647	P9OSRG-HIGH	8	The high secondary range for the matching address.
1648	P9OSRG-PARITY	1	The secondary odd/even indicator for the matching address.

Position	Name	Length	Contents
1649	P9O5RC	1	<p>Success or reason for failure of the ZIP Code to be corrected:</p> <ul style="list-style-type: none"> <li>• A — Apartment number missing or not found on database, and an apartment-level match was required.</li> <li>• B — Insufficient (or blank) address match information.</li> <li>• E — External match—auxiliary file processing.</li> <li>• H — House/Box number was not found on street.</li> <li>• M — Multiple ZIP matches were found of equal quality.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• Z — ZIP Code was not found on database.</li> <li>• Blank — The match attempt was successful.</li> </ul>
1650-1651	P9O-LB-ZL	2	<p>Number of best-fit ZIP Codes found. If the number is less than 10, the left-most character is blank.</p>
1652	P9OICR	1	<p>City match condition which resulted when the input city name was used to find a locality:</p> <ul style="list-style-type: none"> <li>• B — No input city could be found.</li> <li>• C — No match could be found for the input city/state.</li> <li>• N — No locality attempt was made.</li> <li>• Blank — Match successful.</li> </ul>

Position	Name	Length	Contents
1653	P9OOCR	1	<p>Success or reason for failure of the final output city match attempt (trying to find the right city name for the ZIP Code determined):</p> <ul style="list-style-type: none"> <li>• N — Not used.</li> <li>• B — Input city is blank (could not be found).</li> <li>• C — City/state mismatch.</li> <li>• I — Input used, no cities available for ZIP Code.</li> <li>• S — Spelling error(s) in input were corrected.</li> <li>• Blank — City name/state used in the match process matches a city name in the locality to which the address was matched.</li> </ul> <p><b>NOTE:</b> For certain large cities (for example, New York), CODE-1 Plus extrapolates the state if only the city is provided on the input.</p>
1654	P9OCAO	1	<p>Status of the output ZIP Code field (P9OCZP):</p> <ul style="list-style-type: none"> <li>• A — P9OCZP contains a ZIP Code other than the original, due to the address match found.</li> <li>• B — P9OCZP contains blanks; no match was available, and the original ZIP Code was blank.</li> <li>• C — P9OCZP contains the original ZIP Code that was confirmed by address match.</li> <li>• I — P9OCZP contains blanks; no match was available, and the original ZIP Code was invalid.</li> <li>• O — P9OCZP contains the original ZIP Code, because no address match was found.</li> <li>• U — P9OCZP contains the original ZIP Code. The original ZIP Code was unique and did not correspond to the input city/state.</li> </ul>
1655	P9OOVC	1	<p>ZIP + 4 override city name indicator:</p> <ul style="list-style-type: none"> <li>• O — ZIP + 4 override city name stored.</li> <li>• Blank — Not stored.</li> </ul>

Position	Name	Length	Contents
1656	P9OSFZ	1	Source of the final ZIP Code: <ul style="list-style-type: none"> <li>• B — No ZIP Code was determined.</li> <li>• M — The final ZIP Code was based on a match to the USPS ZIPMOVE database.</li> <li>• F — The final ZIP Code was determined from the finance number locality.</li> <li>• Z — The original ZIP Code was retained.</li> </ul>
1657	P9OOZA	1	Results of the match attempt in the original ZIP Code (only): <ul style="list-style-type: none"> <li>• I — Attempted, improved (a match was obtained).</li> <li>• N — Attempted, no match found.</li> <li>• Blank — Not attempted.</li> </ul>
1658	P9OCBA	1	Results of the match attempt in the city-based locality: <ul style="list-style-type: none"> <li>• I — Attempted, improved (a match was obtained).</li> <li>• N — Attempted, no match found.</li> <li>• Blank — Not attempted.</li> </ul>
1659	P9OFBA	1	Results of the match attempt in the finance number-based locality: <ul style="list-style-type: none"> <li>• I — Attempted, improved (a match was obtained).</li> <li>• N — Attempted, no match found.</li> <li>• Blank — Not attempted.</li> </ul>

Position Name Length Contents

Position	Name	Length	Contents
1660-1679	P9OFNT-DPV-GRP	20	<p>DPV footnote codes.</p> <ul style="list-style-type: none"> <li>• AA — Input address matched to the ZIP + 4 file.</li> <li>• A1 — Input address not matched to the ZIP + 4 file.</li> <li>• BB — Input address matched to DPV (all components).</li> <li>• CC — Input address primary number matched to DPV but secondary number not match (present but not valid).</li> <li>• C1 — Input address primary number matched to DPV but secondary number not match (present but not valid).</li> <li>• F1 — Input address is military; DPV bypassed.</li> <li>• G1 — Input address is general delivery; DPV bypassed.</li> <li>• IA — Informed Address identified.</li> <li>• M1 — Input address primary number missing.</li> <li>• M3 — Input address primary number invalid.</li> <li>• N1 — Input address primary number matched to DPV but high rise address missing secondary number.</li> <li>• P1 — Input address missing RR or HC Box number.</li> <li>• P3 — Input address missing PO, RR, or HC Box number.</li> <li>• PB — Input address is a P. O. Box Street Address (PBSA).</li> <li>• RR — Input address matched to CMRA.</li> <li>• R1 — Input address matched to CMRA but secondary number not present.</li> <li>• R7 — Input address matched to phantom Carrier Route R777 or R779 (not eligible for street delivery).</li> <li>• U1 — Input address is unique ZIP Code; DPV bypassed.</li> </ul>
1680-1681	P9OLIA-RC	2	<p>License Management return code:</p> <ul style="list-style-type: none"> <li>• F1 — License file not found.</li> <li>• F2 — Client record missing.</li> <li>• F9 — Unknown function requested.</li> <li>• G1 — Generic I/O failed.</li> <li>• Blank — Successful.</li> </ul>



Position	Name	Length	Contents
1682-1683	P9OLIA-STATUS-RC	2	License Management status code: <ul style="list-style-type: none"> <li>• XX — Product/key combination is not good.</li> <li>• Blank — Product/key combination is good.</li> </ul>
1684	P9OLIA-KEY-STATUS	1	License Management product key status: <ul style="list-style-type: none"> <li>• <b>B</b> — Product key is marked bad.</li> <li>• <b>N</b> — Product key not found.</li> <li>• <b>S</b> — License ID does not match system.</li> <li>• <b>X</b> — Product key expired.</li> <li>• <b>Blank</b> — Product/key combination is good.</li> </ul>
1685-1686	Reserved	2	
1687	P9OCSS	1	Status of city/state information in the P9OCL9, P9OCS9, P9OCTL, P9OCTS, and P9OSTA output fields. <ul style="list-style-type: none"> <li>• M — Fields populated based on match to database.</li> <li>• Z — No match to database; based on input ZIP Code.</li> <li>• Blank — No information available.</li> </ul>
1688-1693	P9OFIN	6	USPS finance number from the output matched city.
1694-1699	P9OLLN	6	USPS last line number from matched ZIP + 4 record.
1700-1719	P9OZ-GRP	20	The first four additional ZIP Codes found, (that is, in addition to the ZIP Code returned in field P9OCZP below) if multiple ZIP matches were obtained. Each ZIP Code is presented as a 5-digit number. If fewer than five ZIP Code matches were obtained, the unused fields contain zeros.

Position	Name	Length	Contents
1720-1724	P9OCZP	5	Final ZIP Code, as best as it could be determined. This field will be blank if no ZIP Code could be determined and the original ZIP Code was invalid.
1725-1767	P9OCL9	43	Standardized City/State/ZIP + 4 line, constructed using the long (28-byte maximum) city name. This field is cased if there is a value of "C" in P9ICASE.
1768-1795	P9OCS9	28	Standardized City/State/ZIP + 4 line, constructed using the short (13-byte maximum) city name. This field is cased if there is a value of "C" in P9ICASE.
1796-1823	P9OCTL	28	Long city name. This field is cased if there is a value of "C" in P9ICASE.
1824-1836	P9OCTS	13	Short city name. This field is cased if there is a value of "C" in P9ICASE.
1837-1838	P9OSTA	2	USPS standard state abbreviation.
1839	P9OCITY-TYPE	1	USPS standardized city name type: <ul style="list-style-type: none"> <li>• P — Primary. Preferred mailing name (the USPS last line name).</li> <li>• S — Secondary. Allowable mailing name (not the USPS last line name).</li> <li>• V — Vanity. Non-mailing name.</li> </ul>
1840-1859	P9OPMB	20	Formatted Private Mailbox (PMB) (from input).
1860	P9OPMB-TYP	1	Return code indicating the type of Private Mailbox (PMB): <ul style="list-style-type: none"> <li>• S — Standard PMB number.</li> <li>• N — Non-standard PMB number.</li> <li>• # — Non-standard, pound sign PMB number.</li> </ul>

Position	Name	Length	Contents
1861	P9OZIP-CLASS	1	ZIP Code classification: <ul style="list-style-type: none"> <li>• M — Military ZIP Code.</li> <li>• P — P.O. Box.</li> <li>• U — Unique ZIP Code.</li> <li>• Blank — Regular ZIP Code.</li> </ul>
1862	P9OESM-FLAG	1	Indicates whether Enhanced Street Matching (ESM) or All Street Matching (ASM) processing was performed: <ul style="list-style-type: none"> <li>• A — Matched using ASM (matched misspelled first letter).</li> <li>• F — ASM performed but no match found.</li> <li>• M — Matched using ESM.</li> <li>• P — ESM performed but no match found.</li> <li>• Blank — No ESM performed.</li> </ul>
1863-1864	P9OSTELNK-RC	2	Suite <sup>Link</sup> return code: <ul style="list-style-type: none"> <li>• A — Business name matched.</li> <li>• 00 — Business name not matched.</li> </ul>
1865	P9OSTELNK-MATCH-RC	1	Suite <sup>Link</sup> match code: <ul style="list-style-type: none"> <li>• A — Matched.</li> <li>• B — Not matched.</li> <li>• C — Business name was all noise.</li> <li>• D — Highrise default record not found.</li> <li>• E — Database is expired.</li> </ul>

Position	Name	Length	Contents
1866	P9OSTELNK-MATCH-FID	1	Suite <sup>Link</sup> match fidelity: <ul style="list-style-type: none"> <li>• 1 — Exact match.</li> <li>• 2 — Acceptable match (one word not matched).</li> <li>• 3 — Unacceptable match (more than one word not matched).</li> </ul>
1867-1878	P9OSTELNK-RLS-NUM	12	Suite <sup>Link</sup> release number.
1879	Reserved	1	
1880	P9OLOT-RC	1	Level of match obtained against the Line of Travel master file: <ul style="list-style-type: none"> <li>• 9 — 9-digit ZIP + 4 match successful.</li> <li>• C — Call to LTO10/LTO10C failed.</li> <li>• D — Unsuccessful 9-digit match, default coded.</li> <li>• F — Open/read failure on Line of Travel master file.</li> <li>• V — Line of Travel matcher software not compatible with the Line of Travel master file.</li> <li>• Blank — Invalid input (zero or non-numeric ZIP/ZIP + 4 add-on).</li> </ul>
1881-1884	P9OLOT-CODE-NUM	4	Numeric portion of Line of Travel code.
1885	P9OLOT-CODE-SEQ	1	USPS Line of Travel sequence: <ul style="list-style-type: none"> <li>• A — Ascending.</li> <li>• D — Descending.</li> </ul>
1886-1887	P9OLOT-ALT-SEQ	2	Alternate alphanumeric sequence code (A0-T9).
1888	P9OLOT-ALT-HEX	1	Alternate hexadecimal sequence code (X'21' - X'E8').

Position	Name	Length	Contents
1889	P9OXRC	1	<p>Master file expiration code:</p> <ul style="list-style-type: none"> <li>• W — The master file is in the USPS grace period (60-105 days old). Check P9OMFX for the number of days left until the end of the grace period.</li> <li>• B — Master file expiration has been bypassed.</li> <li>• V — Database and software are incompatible.</li> <li>• X — Master file has expired (over 105 days old).</li> <li>• Blank — The master file is still “fresh.”</li> </ul>
1890-1892	P9OMFX	3	Number of days left until the master file expires.
1893-1902	P9OMFD	10	Master file expiration date in MM/DD/YYYY format.
1903-1912	P9OMFV	10	Master file vintage date in MM/DD/YYYY format.
1913	P9OCASS	1	<p>CODE-1 Plus CASS cycle expiration return code.</p> <ul style="list-style-type: none"> <li>• C — The CASS cycle that certified this version of CODE-1 Plus has expired.</li> <li>• Blank — CODE-1 Plus is certified for the current CASS cycle.</li> </ul>
1914	P9OEXP	1	<p>Master file expiration return code.</p> <ul style="list-style-type: none"> <li>• W — Master file has exceeded its life-cycle and is within the USPS grace period (check P9OMFX for days left until the end of the grace period).</li> <li>• B — Master file expiration bypassed.</li> <li>• X — Master file has expired (grace period exceeded).</li> <li>• Blank — Master file is valid (within USPS file life-cycle).</li> </ul>
1915-1924	P9OCASS-X-DATE	10	USPS CASS cycle expiration date. This is the date that CODE-1 Plus will stop providing a USPS Form 3553 for this CASS cycle. You can bypass this expiration date.

Position	Name	Length	Contents
1925	P9OERR	1	Database for which an error occurred: <ul style="list-style-type: none"> <li>• Z — ZIPIDX</li> <li>• L — LCLDB</li> <li>• D — DTLDB</li> <li>• U or C — CITYDB</li> <li>• N — COUNTY</li> <li>• S — C1STRDB</li> <li>• V — DPVMST</li> <li>• F — SLKDB</li> <li>• Blank — Unknown</li> </ul>
1926	P9OERR-TYPE	1	Operation being attempted: <ul style="list-style-type: none"> <li>• C — Close</li> <li>• O — Open</li> <li>• R — Read</li> <li>• N — Record Number</li> </ul>
1927-1928	P9OFST	2	File status code returned by COBOL.
1929-1934	Reserved	6	
1935-1940	P9ODPV-DB-VINTAGE	6	DPV Database Vintage Date — MMYYYY format: <ul style="list-style-type: none"> <li>• P9ODPV-DB-MONTH 2</li> <li>• P9ODPV-DB-YEAR 4</li> </ul>
1941-1945	P9ODPV-DBSFV	5	Software version used to create DPV file.

Position	Name	Length	Contents
1946-1951	P9ORDI-DB-VINTAGE	6	RDI Database Vintage Date — MMYYYY format: <ul style="list-style-type: none"> <li>• P9ORDI-DB-MONTH 2</li> <li>• P9ORDI-DB-YEAR 4</li> </ul>
1952-1956	P9ORDI-DBSFW	5	Software version used to create RDI file.
1957-1961	P9ODB-VERS	5	Database vintage for "database incompatible" condition.
1962	Reserved	1	
1963-1990	P9OURB	28	USPS urbanization name. This field is cased if there is a value of "C" in P9ICASE.
1991-1993	P9OCOUNTY-NR	3	USPS FIPS county number.
1994-2018	P9OCOUNTY	25	USPS county name. This field is cased if there is a value of "C" in P9ICASE.
2019-2020	P9OCONGRESS	2	Congressional district.
2021-2120	P9OFNT-GRP	100	Up to 50, 2-character Delivery Sequence Footnotes (DSF <sup>2</sup> ).
2121-2150	P9OSTELNK-RLS-NAME	30	Suite <sup>Link</sup> release name.
2151-2160	P9OSTELNK-DB-DATE	10	Suite <sup>Link</sup> database date (MM/DD/YYYY).
2161-2170	P9OSTELNK-DB-EXP-DATE	10	Suite <sup>Link</sup> expiration date (MM/DD/YYYY).

Position	Name	Length	Contents
2171	P9OMATAL2-PREFER-RC	1	Location on the output record for a 1-byte flag. <ul style="list-style-type: none"> <li>• A — Input address matched to an alias (preferred alias processing is only attempted for base addresses).</li> <li>• N — Preferred alias not found for input address.</li> <li>• Y — Preferred alias found for input address and used in output standardized address.</li> <li>• Blank — No preferred alias processing attempted.</li> </ul>
2172	P9OMATAL2-ABBREV-RC	1	Location on the output record for a 1-byte flag. <ul style="list-style-type: none"> <li>• Blank — No abbreviated alias processing attempted.</li> <li>• B — Output address set to base address.</li> <li>• L — Original standardized address length already &lt;= max.</li> <li>• N — Abbreviated alias not found for input address.</li> <li>• Y — Abbreviated alias found for input address and used in output standardized address.</li> </ul>
2173-2192	P9OAPMB	20	Formatted Alternate Private Mail Box (From Input)
2193	P9OAPMB-TYP	1	Alternate PMB Type <ul style="list-style-type: none"> <li>• S - Standard PMB Number</li> <li>• N - Non-Standard PMB Number</li> <li>• # - Non-Standard but Pound Sign PMB Number</li> </ul>
2194	P9ODPV-DNA	1	Door Not Accessible Flag
2195	P9ODPV-THROW	1	Throwback Flag
2196	P9ODPV-NSL	1	No Secure Location Flag
2197	P9ODPV-NDD	1	Non-Delivery Days Flag
2198-2204	P9ODPV-NDD-DAYS	7	Non-Delivery Days Indicators



Position Name Length Contents

2205-2206	P9ODPV-NSR	2	No Stat Reason Code <ul style="list-style-type: none"> <li>• IDA</li> <li>• CDS</li> <li>• COLLISION</li> <li>• CMZ</li> <li>• Regular</li> </ul>
2207	P9ODPV-DROP	1	DPV Drop Flag
2208	P9ODPV-ENH-RC	1	DPV Enhanced RC
2209-2220	Reserved	12	
2221-2222	P9OSTACK-USED	2	Number of entries in address stack.

The following fields (positions 2223-2475) occur 10 times. The previous field, P9OSTACK-USED, indicates the number of occurrences that are non-blank. Only the first occurrence of each field is listed.

2223	P9OAS-RC	1	Return code.
2224	P9OAS-OPRB	1	Overall probability of correctness.
2225	P9OAS-RTP	1	USPS record type.
2226	P9OAS-DFR	1	Code indicating the "default" match: <ul style="list-style-type: none"> <li>• H — High rise default.</li> <li>• M — Military default.</li> <li>• R — Rural route default.</li> <li>• S — Street default.</li> <li>• Blank — Not a default record.</li> </ul>
2227-2290	P9OAS-SAD	64	Formatted standard address.

Position      Name                                      Length    Contents

2291-2292	P9OAS-SAL	2	Length of standardized address.
2293-2302	P9OAS-PRG-LOW	10	Primary range (low).
2303-2312	P9OAS-PRG-HIGH	10	Primary range (high).
2313	P9OAS-PRG-PARITY	1	Primary range parity.
2314-2321	P9OAS-SRG-LOW	8	Secondary range (low).
2322-2329	P9OAS-SRG-HIGH	8	Secondary range (high).
2330	P9OAS-SRG-PARITY	1	Secondary range parity.
2331-2370	P9OAS-FIRM	40	Firm name.
2371-2398	P9OAS-CTL	28	Long city name.
2399-2411	P9OAS-CTS	13	Short city name.
2412-2439	P9OAS-URB	28	Puerto Rico Urbanization name.
2440-2441	P9OAS-STA	2	State abbreviation.
2442-2446	P9OAS-ZIP	5	ZIP Code.
2447-2450	P9OAS-ZP4	4	ZIP + 4 Add-on.

Position      Name                                  Length    Contents

2451-2452	P9OAS-DP	2	Delivery point add-on.
2453	P9OAS-DPC	1	Delivery point check digit.
2454-2457	P9OAS-CRT	4	Carrier route code.
2458-2460	P9OAS-COUNTY	3	County number.
2461-2462	P9OAS-CONGRESS	2	Congressional district.
2463-2468	P9OAS-LL	6	Last line number.
2469-2474	P9OAS-FIN	6	Finance number.
2475	P9OAS-SCORE	1	Score: 0-9 0 is the best score

Positions 2476-4752 contain the Address Stack return fields for each entry in the address stack.

4753-4882	Reserved	130	
4883	P9OPRECISELYID-STATUS	1	PreciselyID Status
4884-4901	P9OPRECISELYID-RELEASE-NAME	18	PreciselyID Release Name
4902-4905	P9OPRECISELYID-RELEASE-NUM	4	PreciselyID Release Number
4906-4915	P9OPRECISELYID-RELEASE-DATE	10	PreciselyID Release Date

Position	Name	Length	Contents
4916-4927	P9OPRECISELYID-PBKEY	12	PreciselyID
4928-4929	P9ODPBC-ORIGINAL	2	Original DPC Value
4930-5000	Reserved	71	

## Output Audit Call Area (P9AUDIT)

The following table is a map of the 1025-byte Audit call area, which consists of subfields (counters) that are maintained by C1MATCHx. You must initialize the P9AUDIT area with blank spaces before your first call to C1MATCHx.

When C1MATCHx is first called, all numeric fields in this area are set to zero. Thereafter, these fields are incremented as indicated by the field usage. You can, however, clear all or some of these fields to zero after each match attempt, so that you can report on the resource requirements of individual match attempts.

Each counter is a nine-digit packed number occupying five bytes, unless otherwise noted.

Positions	Name	Length	Contents
1-5	P9AZPX	5	Database read operations for the ZIP Index file.
6-10	P9ACTX	5	Database read operations for the City Details file.
11-15	P9ALCL	5	Database read operations for the Locality file.

Positions	Name	Length	Contents
16-20	P9ADTL	5	Database read operations for the Street Details file.
21-25	P9ACNT	5	Database read operations for the County file.
26-30	P9ASTR	5	Database read operations for street information.
31-85	Reserved	55	
86-90	P9ARZPX	5	Database read requests (whether or not an I/O operation resulted) for the ZIP Index file.
91-95	P9ARCTX	5	Database read requests (whether or not an I/O operation resulted) for the City Details file.
96-100	P9ARLCL	5	Database read requests (whether or not an I/O operation resulted) for the Locality file.
101-105	P9ARDTL	5	Database read requests (whether or not an I/O operation resulted) for the Street Details file.
106-110	P9ARCNT	5	Database read requests (whether or not an I/O operation resulted) for the County file.

Positions	Name	Length	Contents
111-115	P9ARSTR	5	Database read operations for Street Name details.
116-1025	Reserved	910	

## Unmatched Data Call Area (P9INTRF)

A map of the optional 2048-byte P9INTRF unmatched data call area is shown next.

**Note:** iYou must set P9I-PRM4 to "Y" to indicate the presence of P9INTRF.

Positions	Name	Length	Contents
1-100	P9INT-EXTRA-ADD1	100	Any unmatched data returned by the matcher that was taken from the primary address line.
101-200	P9IINT-EXTRA-ADD2	100	Any unmatched data returned by the matcher that was taken from the secondary address line.
201-300	P9INT-EXTRA-DUAL	100	Unmatched/unused portion of a dual address (e.g. 123 MAIN ST PO BOX 456).
301-400	P9INT-EXTRA-FRM	100	Not used at this time.
401-500	P9INT-EXTRA-CST	100	Not used at this time.

Positions	Name	Length	Contents
501	P9INT-DUAL-SOURCE	1	Indicates the source of the dual address line (P9INT-EXTRA-DUAL): <ul style="list-style-type: none"> <li>• <b>P</b> — Primary input line.</li> <li>• <b>S</b> — Secondary input line.</li> </ul>
502-2048	Reserved	1547	

## CICS Processing

If you are calling CODE-1 Plus under CICS, you must pass one, 01-level call area that is 6,625 bytes long and encompasses P9IN, P9OUT, and P9AUDIT instead of passing three individual call areas.

**Note:** iP9INTRF is not supported in CICS.

G1CPDMI is provided as a sample program to interface with C1MATCHI under CICS. The “2000-SETUP-FUNCTION-RTN” paragraph is almost identical to the area used in G1CPMAT to link to the interactive matcher. You can invoke G1CPDMI by defining a CSD transaction entry to it. For example, “G1MI” is assigned in C1PCSD1. You can pass data to the program in a comma-delimited string after the transid. If no data is passed, the program emulates the following string using working storage variables:

```
G1MI,4200 PARLIAMENT PL #600,LANHAM,MD,207061882,WIDGET INC
```

The following screen shows the G1CPDMI output.

```

Data Returned from CODE-1 Plus NN.N      DATE:      TIME:HH:MM:SS
      DATABASE EXPIRES:      DATABASE VINTAGE:
REQUEST:
      ** INPUT FIELDS **      ** RETURNED VALUES **
STREET  : 4200 PARLIAMENT PL #600      USPS REC TYPE: F
FIRM    : WIDGET INC                  GEN RETURN CD:
CTY/ST/ZIP: LANHAM MD      207061882    PROB CORRECT : 0
      ** OUTPUT FIELDS **      FINAL ZIP SRC: Z
STREET  : 4200 PARLIAMENT PL STE 600   ZIP CORR RC:
FIRM    : WIDGET INC                  RANGE PARITY : B
CTY/ST/ZIP: LANHAM MD      20706-1882
URB/COUNTY: PRINCE GEORGES      033
LAST LINE: V23825
FINANCE #: 235076      CARRIER #: C059

```

## COBOL Call to CICS Version of C1MATCHI

A sample COBOL call to C1MATCHI in a CICS environment follows.

```

PROCEDURE DIVISION
.
.
.
MOVE SPACES      TO P9COMM-AREA
MOVE 'I' TO P9IENV

EXEC CICS LINK
PROGRAM ('C1MATCHI')
COMMAREA (P9COMM-AREA)
LENGTH (LENGTH OF P9COMM-AREA)
.
.
.
01 P9COMM-AREA.

```

**Note:** iP9-COMM-AREA is contained in member P9COMM from the sample library.

**Note:** iA value of “C” in P9OGRC indicates a VSAM file access problem. Refer to the table in the last 50 bytes of P9OUT to resolve the problem. The table contains five occurs of the file name (8 bytes) with the problem and the EIBRESP value (2 bytes numeric).

## IMS Processing

When using C1MATCHx with IMS, in addition to call areas, you must also include Program Control Blocks (PCB) in your 01-level linkage section. When calling any matcher module, you must include



the CODE-1 Plus database PCBs that are coded in the PSBs distributed with the CODE-1 Plus IMS system installation. The PCB is shown below.

### Batch Process PCB List

```
*-----*
* IMS PSB USED WITH THE BATCH IMS PROGRAM C1BM00
*-----*
*
*      COUNTY DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPCNY,PROCOPT=GO,KEYLEN=5
*      SENSEG  NAME=CNVSEG,PARENT=0
*
*      CITY DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPCTY,PROCOPT=GO,KEYLEN=2
*      SENSEG  NAME=CTYSEG,PARENT=0
*
*      LOCALITY DETAILS DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPDTL,PROCOPT=GO,KEYLEN=2
*      SENSEG  NAME=DTLSEG,PARENT=0
*
*      LOCALITY HEADER DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPLCL,PROCOPT=GO,KEYLEN=2
*      SENSEG  NAME=LCLSEG,PARENT=0
*
*      CITY NAME DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=4
*      SENSEG  NAME=CNMSEG,PARENT=0
*
*      CITY NAME DATA BASE USING
*      SECONDARY INDEX MADE FROM CITY NAME
*
*      PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=32,X
*      PROCSEQ=G1CPXAA
*      SENSEG  NAME=CNMSEG,PARENT=0
*
*      CITY NAME DATA BASE USING
*      SECONDARY INDEX MADE FROM STATE CODE AND CITY NAME
*
*      PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=34,X
*      PROCSEQ=G1CPXAS
*      SENSEG  NAME=CNMSEG,PARENT=0
*      ZIP INDEX DATA BASE
*
*      PCB      TYPE=DB,NAME=G1CPZIP,PROCOPT=GO,KEYLEN=1
*      SENSEG  NAME=ZIPSEG,PARENT=0
*
```

```

*      LINE OF TRAVEL DATA BASE
*
PCB      TYPE=DB,NAME=G1CPLOT,PROCOPT=GO,KEYLEN=2
SENSEG  NAME=LOTSEG,PARENT=0
*
*      AUXILARY DATA BASE
*
PCB      TYPE=DB,NAME=G1C1AUX,PROCOPT=GO,KEYLEN=50
SENSEG  NAME=AUXCSEG,PARENT=0
*
*      LICENSE MANAGEMENT DATA BASE
*
PCB      TYPE=DB,NAME=G1LICEN,PROCOPT=A,KEYLEN=23
SENSEG  NAME=LMSSEG,PARENT=0
*
*      DELIVERY POINT VALIDATION (DPV) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      DELIVERY POINT VALIDATION SPLIT (DPVS) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVSDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      DELIVERY POINT VALIDATION HASH/FULL(DPVH) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVHDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      RESIDENTIAL DELIVERY INDICATOR DATA BASE
*
PCB      TYPE=DB,NAME=G1CPRDI,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      MATCHER STREET POINTER DATA BASE
*
PCB      TYPE=DB,NAME=G1CPSTR,PROCOPT=GO,KEYLEN=2
SENSEG  NAME=STRSEG,PARENT=0
*
*      PRECISELYID DATA BASE
*
PCB      TYPE=DB,NAME=G1PBKDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      SUITELINK DATA BASE
*
PCB      TYPE=DB,NAME=G1SLKDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      LACSLINK DATA BASE
*
PCB      TYPE=DB,NAME=G1LLKDB,PROCOPT=GO,KEYLEN=4

```

```

SENSEG NAME=SEGMENT , PARENT=0
*
*   LACSLINK SECURITY DATA BASE
*
PCB      TYPE=DB , NAME=G1CPSUD , PROCOPT=GR , KEYLEN=7
SENSEG NAME=SEGMENT , PARENT=0
*
*   LACSLINK KEY DATA BASE
*
PCB      TYPE=DB , NAME=G1CPLKY , PROCOPT=GR , KEYLEN=19
SENSEG NAME=SEGMENT , PARENT=0
*
*   ABBREVIATED AND PREFERRED ALIAS DATA BASE #1
*
PCB      TYPE=DB , NAME=C1PALA , PROCOPT=GO , KEYLEN=5
SENSEG NAME=AL2SEG , PARENT=0
*
*   ABBREVIATED AND PREFERRED ALIAS DATA BASE #2
*
PCB      TYPE=DB , NAME=C1PALP , PROCOPT=GO , KEYLEN=5
SENSEG NAME=AL2SEG , PARENT=0
*
*   GEO MASTER DATA BASE
*
PCB      TYPE=DB , NAME=GCMaster , PROCOPT=GO , KEYLEN=3
SENSEG NAME=GCMAS , PARENT=0
*
*   GEO ZIP+4 MASTER DATA BASE
*
PCB      TYPE=DB , NAME=GCZ4MAST , PROCOPT=GO , KEYLEN=3
SENSEG NAME=GCZ4MAST , PARENT=0
*
*   GEO ROOF TOP MASTER DATA BASE
*
PCB      TYPE=DB , NAME=GCZ6MAST , PROCOPT=GO , KEYLEN=3
SENSEG NAME=GCZ6MAST , PARENT=0
*
*   GEO TAX MASTER DATA BASE
*
PCB      TYPE=DB , NAME=GTMASTR , PROCOPT=GO , KEYLEN=40
SENSEG NAME=VTSEG , PARENT=0
*
*   GEO TAX SECONDARY INDEX DATA BASE (ALTERNATE KEY)
*
PCB      TYPE=DB , NAME=GTMSTALT , PROCOPT=GO , KEYLEN=34
SENSEG NAME=VTSEG , PARENT=0
*
PSBGEN  PSBNAME=C1BM00 , LANG=COBOL , CMPAT=YES
END

```

### COBOL Call to IMS Version of C1MATCHx

The following is a sample COBOL call to the IMS version of C1MATCHx (C1MATCHB, C1MATCHS, C1MATCHM, C1MATCHL, C1MATCHH).

**Note:** You must set P9I-PRM4 to "Y" to indicate the presence of P9INTRF.

```
CALL WS-C1MATCHx USING P9IN
                        P9OUT
                        P9AUDT
                        P9INTRF
                        G1CPCNY-PCB
                        G1CPCTY-PCB
                        G1CPDTL-PCB
                        G1CPLCL-PCB
                        G1CPCNM-PCB
                        G1CPXAA-PCB
                        G1CPZIP-PCB
                        G1CPLOT-PCB
                        G1C1AUX-PCB
                        G1LICEN-PCB
                        G1DPVDB-PCB
                        G1DPVSDB-PCB
                        G1DPVHDB-PCB
                        G1CPRDI-PCB
                        G1CPSTR-PCB
                        G1SLKDB-PCB
                        G1LLKDB-PCB
                        G1CPSUD-PCB
                        G1CPLKY-PCB
                        G1CPALA-PCB
                        G1CPALP-PCB
```

### Interactive Process PCB List

```
* -----
*   IMS PSB USED WITH THE ON-LINE IMS PROGRAM G1CPC10
* -----
*
*   ALTERNATE PCB USED FOR MSG SWITCH, ERROR MSGS, ETC.
*
*   PCB      TYPE=TP,MODIFY=YES
*
*   COUNTY DATA BASE
*
*   PCB      TYPE=DB,NAME=G1CPCNY,PROCOPT=GO,KEYLEN=5
*   SENSEG  NAME=CNYSEG,PARENT=0
*
*   CITY DATA BASE
*
```

```

PCB      TYPE=DB,NAME=G1CPCTY,PROCOPT=GO,KEYLEN=2
SENSESEG NAME=CTYSEG,PARENT=0
*
*      LOCALITY DETAILS DATA BASE
*
PCB      TYPE=DB,NAME=G1CPDTL,PROCOPT=GO,KEYLEN=2
SENSESEG NAME=DTLSEG,PARENT=0
*
*      LOCALITY POINTER DATA BASE
*
PCB      TYPE=DB,NAME=G1CPPTR,PROCOPT=GO,KEYLEN=2
SENSESEG NAME=PTRSEG,PARENT=0
*
*      LOCALITY HEADER DATA BASE
*
PCB      TYPE=DB,NAME=G1CPLCL,PROCOPT=GO,KEYLEN=2
SENSESEG NAME=LCLSEG,PARENT=0
*
*      CITY NAME DATA BASE
*
PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=4
SENSESEG NAME=CNMSEG,PARENT=0
*
*      CITY NAME DATA BASE USING
*      SECONDARY INDEX MADE FROM CITY NAME
*
PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=32,           X
          PROCSEQ=G1CPXAA
SENSESEG NAME=CNMSEG,PARENT=0
*
*      CITY NAME DATA BASE USING
*      SECONDARY INDEX MADE FROM STATE CODE AND CITY NAME
*
PCB      TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=34,           X
          PROCSEQ=G1CPXAS
SENSESEG NAME=CNMSEG,PARENT=0
*
*      ZIP INDEX DATA BASE
*
PCB      TYPE=DB,NAME=G1CPZIP,PROCOPT=GO,KEYLEN=1
SENSESEG NAME=ZIPSEG,PARENT=0
*
*      LINE OF TRAVEL DATA BASE
*
PCB      TYPE=DB,NAME=G1CPLOT,PROCOPT=GO,KEYLEN=2
SENSESEG NAME=LOTSEG,PARENT=0
*
*      COMM AREA (TEMP STORAGE) DATA BASE
*
PCB      TYPE=DB,NAME=G1CPCOM,KEYLEN=16,PROCOPT=PA
SENSESEG NAME=LTERMSEG,PARENT=0,PROCOPT=PA
SENSESEG NAME=TYPESEG,PARENT=LTERMSEG,PROCOPT=PA
SENSESEG NAME=QUEUESEG,PARENT=TYPESEG,PROCOPT=A

```

```

*
*      CUSTOMIZATION DATA BASE
*
PCB      TYPE=DB,NAME=G1CPFDF,KEYLEN=16,PROCOPT=A
SENSEG  NAME=G1CPDFT,PARENT=0,PROCOPT=A
*
*      LICENSE MANAGEMENT DATA BASE
*
PCB      TYPE=DB,NAME=G1LICEN,PROCOPT=A,KEYLEN=23
SENSEG  NAME=LMSSEG,PARENT=0
*
*      DELIVERY POINT VALIDATION (DPV) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      DELIVERY POINT VALIDATION SPLIT (DPVS) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVSDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      DELIVERY POINT VALIDATION HASH/FULL(DPVH) DATA BASE
*
PCB      TYPE=DB,NAME=G1DPVHDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      RESIDENTIAL DELIVERY INDICATOR DATA BASE
*
PCB      TYPE=DB,NAME=G1CPRDI,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      MATCHER STREET POINTER DATA BASE
*
PCB      TYPE=DB,NAME=G1CPSTR,PROCOPT=GO,KEYLEN=2
SENSEG  NAME=STRSEG,PARENT=0
*
*      PRECISELYID DATA BASE
*
PCB      TYPE=DB,NAME=G1PBKDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      SUITELINK DATA BASE
*
PCB      TYPE=DB,NAME=G1SLKDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      LACSLINK DATA BASE
*
PCB      TYPE=DB,NAME=G1LLKDB,PROCOPT=GO,KEYLEN=4
SENSEG  NAME=SEGMENT,PARENT=0
*
*      LACSLINK SECURITY DATA BASE
*

```

```

PCB      TYPE=DB,NAME=G1CPSUD,PROCOPT=GR,KEYLEN=7
SENSEG  NAME=SEGMENT,PARENT=0
*
*      ABBREVIATED AND PREFERRED ALIAS DATA BASE #1
*
PCB      TYPE=DB,NAME=C1PALA,PROCOPT=GO,KEYLEN=5
SENSEG  NAME=AL2SEG,PARENT=0
*
*      ABBREVIATED AND PREFERRED ALIAS DATA BASE #2
*
PCB      TYPE=DB,NAME=C1PALP,PROCOPT=GO,KEYLEN=5
SENSEG  NAME=AL2SEG,PARENT=0
*
*
*      BATCH NOT CODED (BNC) INPUT DATA BASE
*
PCB      TYPE=DB,NAME=G1CPBNCI,PROCOPT=GO,KEYLEN=8
SENSEG  NAME=BNCSEG,PARENT=0
*
*      BATCH NOT CODED (BNC) OUTPUT DATA BASE
*
PCB      TYPE=DB,NAME=G1CPBNCO,PROCOPT=A,KEYLEN=8
SENSEG  NAME=BNCSEG,PARENT=0,PROCOPT=A
*
*      GEO MASTER DATA BASE
*
PCB      TYPE=DB,NAME=GCMaster,PROCOPT=GO,KEYLEN=3
SENSEG  NAME=GCMAS,T,PARENT=0
*
*      GEO ZIP+4 MASTER DATA BASE
*
PCB      TYPE=DB,NAME=GCZ4MAST,PROCOPT=GO,KEYLEN=3
SENSEG  NAME=GCZ4MAST,PARENT=0
*
*      GEO ROOF TOP MASTER DATA BASE
*
PCB      TYPE=DB,NAME=GCZ6MAST,PROCOPT=GO,KEYLEN=3
SENSEG  NAME=GCZ6MAST,PARENT=0
*
*      GEO TAX MASTER DATA BASE
*
PCB      TYPE=DB,NAME=GTMASTR,PROCOPT=GO,KEYLEN=40
SENSEG  NAME=VTSEG,PARENT=0
*
*      GEO TAX SECONDARY INDEX DATA BASE (ALTERNATE KEY)
*
PCB      TYPE=DB,NAME=GTMSTALT,PROCOPT=GO,KEYLEN=34
SENSEG  NAME=VTSEG,PARENT=0
*
PSBGEN  PSBNAME=G1CPC10,LANG=COBOL
END

```

## COBOL Call to IMS Version of C1MATCHI

A sample COBOL call to the IMS version of C1MATCHI (interactive matcher only) follows.

**Note:** iC1MATCHI does not support P9INTRF.

```
CALL WS-C1MATCHI USING P9IN
                        P9OUT
                        P9AUDT
                        G1CPCNY-PCB
                        G1CPCTY-PCB
                        G1CPDTL-PCB
                        G1CPLCL-PCB
                        G1CPCNM-PCB

                        G1CPXAA-PCB
                        G1CPZIP-PCB
                        G1CPLOT-PCB
                        G1LICEN-PCB
                        G1DPVDB-PCB
                        G1DPVSD-PCB
                        G1DPVHDB-PCB
                        G1CPRDI-PCB
                        G1CPSTR-PCB
                        G1PBKDB-PCB
                        G1SLKDB-PCB
                        G1LLKDB-PCB
                        G1CPALA-PCB
                        G1CPALP-PCB
```

**Note:** iTo call the IMS version of C1MATCHI from your CICS application, you must first move 'C' to P9IENV in P9IN before making the call. This signals the matcher to call program C1PGETDT to obtain the current date using CICS facilities as opposed to obtaining it by a non-CICS compliant method. You must also add to your CICS CSD a program entry for the COBOL program C1PGETDT.

## Calling CODE-1 Plus from UNIX, Linux, or Windows

The instructions in this chapter assume that the application calling CODE-1 Plus is written in COBOL. If your application is not written in COBOL, please refer to the programmer documentation for that language for instructions on calling programs outside your application. The documentation provided with the COBOL compiler on your system should also be consulted for details about calling COBOL programs from programs written in other languages.



The UNIX, Linux, or Windows versions of these routines use the ACUCOBOL-GT environment. The variables are also defined in bin/setup.

### Sample COBOL Batch Program

The sample COBOL batch program, SMPLDRVR2, demonstrates the techniques used to call the following modules.

Module	Description
C1MATCHx	Callable matching module
EXTADDR2	Address line extraction module
C1PRPT	Callable print program

You can find the source code for SMPLDRVR2 with the sample files distributed with CODE-1 Plus.

## Calling C1ANZADR

The C1ANZADR module analyzes the 2,512-byte ANALYSIS-PARAMETERS call area that contains the input address. C1ANZADR returns normalized address information through the 150-byte ANALYSIS-NORMALIZATION parameter. Based on the analysis, CODE-1 Plus determines the appropriate address standardization.

## ANALYSIS-PARAMETERS Call Area

The following table is a map of the positions in the call area passed to C1ANZADR.

Position	Name	Length	Contents
1	ANALYZE-FNC	1	Analyze control function. Specify one of the following codes: <ul style="list-style-type: none"> <li>• E — End the program, close the tables, and do not return any output.</li> <li>• P — Analyze the input address string and return analyzed output (default).</li> </ul>
2	ADDR-ORIGIN	1	Input address string origination: <ul style="list-style-type: none"> <li>• U — This is user address data.</li> <li>• Z — This is the USPS ZIP + 4 street name.</li> </ul>
3	DIR-SPLIT	1	Indicates whether to split a complete directional word from the beginning of the word (i.e., "WESTERN" becomes "W ERN"): <ul style="list-style-type: none"> <li>• Y — Attempt to split the complete directional word (default).</li> <li>• N — Do not attempt to split the complete directional word.</li> </ul>
4	SUFFIX-SPLIT	1	Indicates whether to split a complete street suffix word from the end of the word (for example, "BROADWAY" becomes "BROAD WAY"): <ul style="list-style-type: none"> <li>• Y — Attempt to split the complete suffix word (default).</li> <li>• N — Do not attempt to split the complete suffix word.</li> </ul>

Position	Name	Length	Contents
5	NORMALIZE-FNC	1	Indicates the normalize control function: <ul style="list-style-type: none"> <li>• N — Analyze the input address string and return "normalized" output.</li> <li>• X — Do not return "normalized" address elements (default).</li> </ul>
6-10	Reserved	5	
11-110	ADDRESS-STRING	100	Input address string. C1ANZADR assumes that the last byte is always blank.
111-2512	N/A	2,402	These bytes are reserved for internal matching variables.

## ANALYSIS-NORMALIZATION Call Area

The following table is a map of the positions in the call area passed to C1ANZADR.

Position	Name	Length	Contents
Normalized Address Elements			
1-10	HOUSE-NR	10	Left-justified, normalized house number.
11-12	PRE-DIR	2	Normalized pre-directional indicator.

Position	Name	Length	Contents
13-57	STREET-NAME	45	Normalized street name, which is any information that remains after all other address elements are identified and extracted.
58-61	SUFFIX	4	Normalized street suffix.
62-63	POST-DIR	2	Normalized post directional indicator.
64-67	APT-TYPE	4	Normalized apartment type (designator).
68-75	APT-NR	8	Left-justified, normalized apartment string.
76-77	RR-TYPE	2	Normalized rural route/highway contract type: <ul style="list-style-type: none"> <li>• Blank — No type was stored.</li> <li>• HC — The address contains a highway contract number.</li> <li>• RR — The address contains a rural route number.</li> </ul>
78-80	RRT-NR	3	Left-justified, normalized rural route/highway contract number.
81-90	BOX-NR	10	Left-justified, normalized box number.

Position	Name	Length	Contents
91-94	PMB-D	4	Private Mailbox descriptor: <ul style="list-style-type: none"> <li>• # — Nonstandard Private Mailbox designator.</li> <li>• PMB — Standard Private Mailbox designator.</li> </ul>
95-110	PMB-NR	16	Left-justified, formatted Private Mailbox (PMB) string. This does not include the Private Mailbox descriptor.
111-112	STREET-LEN	2	Normalized length of the street name.
113-133	Reserved	21	
134	STD-PRE-DIR	1	Pre-directional standard format indicator: <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>
135	STD-SUFFIX	1	Suffix standard format indicator: <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>

Position	Name	Length	Contents
136	STD-POST-DIR	1	<p>Post-directional standard format indicator:</p> <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>
137	STD-RR-TYPE	1	<p>Rural route/highway contract type standard format indicator:</p> <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>
138	STD-GD	1	<p>General delivery standard format indicator:</p> <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>
139	STD-APT-TYPE	1	<p>Standard format indicator:</p> <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>

Position	Name	Length	Contents
140	STD-PMB	1	Private Mailbox (PMB) string indicator: <ul style="list-style-type: none"> <li>• Blank — The element was not present in the input.</li> <li>• N — The input was in a non-standard format.</li> <li>• S — The input is in a standard format.</li> </ul>
141	STD-BOX	1	Box number type standard format indicator: <ul style="list-style-type: none"> <li>• Blank — There was no box number.</li> <li>• B — Input was the literal "Box."</li> <li>• N — Input was present, but was neither of the above.</li> <li>• P — Input was the literal "Post Office Box."</li> </ul>
142-150	Reserved	9	

## Calling C1BMCBD

The callable batch driver C1BMCBD allows a user-supplied program to submit one address at a time to CODE-1 Plus for matching. The batch driver analyzes the address and attempts a match with the database. When an "END" call is issued to C1BMCBD, it produces the same reports as batch driver C1BM00. The USPS Form 3553 is also produced. C1BMCBD runs with all parameters used by C1BM00.

The ADDRDF, CS ZIP, FILEDF, HEADER, and at least one xx OUT parameters are required. When calling C1BMCBD for matching, send a space in the CBD-ACTION-CODE and the input record in CBD-INPUT. C1BMCBD uses the input file parameters (ADDRDF, CS ZIP, and FIRNM) to define

the input and returns an output record formatted as described by any xx OUT parameters in CBD-OUTPUT. C1BMCBD closes processing and produce reports when an “E” is sent in CBD-ACTION-CODE.

The following parameters do not function with C1BMCBD. The data is ignored.

- FILEDF—except for C1BMSTA
- CHCKPT
- NTHSEL
- SEQCHK

However, if present, these parameters must be in proper format to pass the edits. The FILEDF parameter for C1BMNAM must be present, although data from it is ignored (instead, the program supplied by the user defines the input file).

**Note:** iThe source code for SMPLCBD, a sample COBOL batch program for calling C1BMCBD, is included with the other sample files you received with CODE-1 Plus. On IBM i, the COBOL program is called SMCBDC, and the ILE RPG version is called SMCBDR.

The parameters to pass to C1BMCBD are supplied as a COBOL copybook (CBDPARM) with the software as described below.

Positions	Name	Length	Contents
1	CBD-ACTION-CODE	1	Code indicating whether C1BMCBD should match address or print reports. <ul style="list-style-type: none"> <li>• Blank — Match address given in input area.</li> <li>• E — End processing, close files, and print reports.</li> </ul>



Positions	Name	Length	Contents
2-3	CBD-RC	2	Return code from C1BMCBD <ul style="list-style-type: none"> <li>• 1 — Parameter Error</li> <li>• 4 — Z4Change Error</li> <li>• 8 — Z4Change Error</li> <li>• 12 — Parameter Error</li> <li>• 16 — Parameter Error</li> <li>• 22 — General CODE-1 Plus Error</li> <li>• 24 — Geographic Coding Error</li> <li>• 26 — Z4Change Error</li> <li>• 99 — General Error</li> </ul>
4-32763	CBD-INPUT	32760	Input record of name and address file.
32764-65523	CBD-OUTPUT	32760	Output record.

## Calling C1BMCBD in IMS

The call to C1BMCBD in IMS must also include the PCBs used by C1BMCBD. Calling the IMS version of C1BMCBD in COBOL would look like the following example.

```
CALL "C1BMCBD" USING CBD-ACTION CODE
      CBD-RC
      CBD-INPUT
      CBD-OUTPUT
      IO-PCB
      G1CPCNY-PCB
      G1CPCTY-PCB
      G1CPDTL-PCB
      G1CPLCL-PCB
      G1CPCNM-PCB
      G1CPXAA-PCB
      G1CPZIP-PCP
      G1CPLOT-PCP
      G1C1AUX-PCB
```

```
G1LICEN-PCB
G1CPDPM-PCP
G1CPDPL-PCB
GCMaster-PCB
GCZ4MAST-PCB
GCZ6MAST-PCB
GTMASTR-PCB
GTMSTALT-PC
```

## Calling the Address Line Extraction Module (EXTADDR2)

The CODE-1 Plus Address Line Extraction Module (EXTADDR2):

1. Accepts up to six address lines as input.
2. Processes the input address lines and returns the following fields:
  - Primary address field
  - Secondary address field
  - Firm name field
  - Urbanization name field for Puerto Rican addresses
  - City/state
  - ZIP Code
3. Passes the returned fields to the CODE-1 Plus matcher to code the address.
4. Returns input information not used to create the returned fields. This unused information is not necessary for the matcher to code an address and is provided for your convenience.

## Calling EXTADDR2

EXTADDR2 is a separate routine that can be called independently of the CODE-1 Plus matcher. The EXT2PARAM and EXT2DATA parameters are required to call EXTADDR2. Precisely supplies the EXT2PARAM and EXT2DATA parameters as COBOL copybooks with the CODE-1 Plus software. For more information on these copybooks, please refer to [Supplied Copybooks](#). When first calling EXTADDR2:

1. The entire EXT2PARAM copybook structure should be initialized to spaces before being called and not thereafter.
2. The "Input Types" value should be set to "A " (uppercase "A" and five spaces) and not modified thereafter.
3. EXT2-ADDR-LINES-GRP, EXT2-P9IADR and the EXT2DATA copybook structure may be modified as desired in between transactions.

### *Sample COBOL Batch Program*

Precisely supplies a sample COBOL batch program, SMPLDRV2, that demonstrates techniques for calling:

- C1MATCHx
- EXTADDR2
- C1PRPT (callable print program)

You can find the source code for the SMPLDRV2 program with the other sample files included with your CODE-1 Plus software.

### *Special Processing Switches*

EXTADDR2 parses the input lines and returns the primary address field, secondary address field, Firm name field, city and state in one field, and the ZIP Code in a separate field.

- If you do not need EXTADDR2 to identify the input line that contains the Firm name, set the "Firm Identification Switch" to "S".
- If you do not need EXTADDR2 to identify the City, State, and ZIP Code, set the "City/State/ZIP Identification Switch" to "S".
- If you do not need EXTADDR2 to identify the Urbanization name, set the "Urbanization Identification Switch" to "S".

## Supplied Copybooks

The two call areas for EXTADDR2 are defined in the supplied EXT2PARAM copybook and as a 600-byte array defined in the EXT2DATA copybook. On IBM i, the ILE RPG versions are named EXT2PARMR and EXT2DATAR.

Position      Field Name                      Length      Description

Input Fields			
1	EXT2-ADDR-LINE-1	100	Address Line 1.
101	EXT2-ADDR-LINE-2	100	Address Line 2.
201	EXT2-ADDR-LINE-3	100	Address Line 3.
301	EXT2-ADDR-LINE-4	100	Address Line 4.
401	EXT2-ADDR-LINE-5	100	Address Line 5.
501	EXT2-ADDR-LINE-6	100	Address Line 6.
601	Reserved	20	
621	EXT-NO-MERGE-SEC-PMB	1	Secondary and PMB merge switch: <ul style="list-style-type: none"> <li>• <b>Blank</b> — Merge any secondary or PMB information with the primary address.</li> <li>• <b>S</b> — Do not merge secondary or PMB information with the primary address line.</li> </ul>
622	EXT-SKIP-FIRM	1	Firm identification switch: <ul style="list-style-type: none"> <li>• <b>Blank</b> — Identify the likely firm line from the input lines.</li> <li>• <b>S</b> — Do not attempt to identify the firm from the input lines.</li> </ul>

Position	Field Name	Length	Description
623	EXT-SKIP-URB	1	Urbanization identification switch: <ul style="list-style-type: none"> <li>• <b>Blank</b> — Attempt to identify the urbanization line from the input lines.</li> <li>• <b>S</b> — Do not attempt to identify the urbanization line from the input lines.</li> </ul>
624	EXT-SKIP-CSZ	1	City, State, and ZIP Code identification switch: <ul style="list-style-type: none"> <li>• <b>S</b> — Do not try to identify the city, state, and ZIP Code from the input lines.</li> <li>• <b>Blank</b> — Attempt to identify the city, state, and ZIP Code from the input lines.</li> </ul>
625	Reserved	76	

Output Fields

701	EXT2-P9IZIP	5	Output ZIP Code. ZIP Code identified unless the City/State/ZIP identification switch was set to "S".
706	EXT2-P9IZIP4	4	Output ZIP+4 add-on. ZIP + 4 add-on code identified unless the City/State/ZIP identification switch was set to "S".
710	EXT2-P9IAD1	100	Primary address line.
810	EXT2-P9IAD2	100	Secondary address line.
910	EXT2-P9IFRM	100	Firm name.
1010	EXT2-P9ICST	100	City/state.

Position	Field Name	Length	Description
1110	EXT2-P9IURB	35	Urbanization name.
1145	Reserved	11	
1156	EXT2-INPUT-TYPES	6	Input types. Should be set to "A " (uppercase "A" and five spaces) to activate processing using the Firm, Urbanization, and City/State/ZIP identification switches.
1162	Reserved	39	

### *EXT2PARM Copybook*

### *EXT2DATA Copybook*

The second parameter that must be passed to EXTADDR2 is defined in the table below and in the EXT2DATA copybook. EXTADDR2 returns information from the six input lines that was not used to create the data fields that are passed to the matcher to code an address (this data is referred to as Additional Input Data). This call area is required but the information is returned for your convenience and is not needed to code an address.

Position	Field Name	Length	Description
1	EXTRA-DATA-LINE1	100	Extra data from input line 1
101	EXTRA-DATA-LINE2	100	Extra data from input line 2
201	EXTRA-DATA-LINE3	100	Extra data from input line 3
301	EXTRA-DATA-LINE4	100	Extra data from input line 4

Position	Field Name	Length	Description
401	EXTRA-DATA-LINE5	100	Extra data from input line 5
501	EXTRA-DATA-LINE6	100	Extra data from input line 6

# 4 - CODE-1 Plus Callable Subroutines

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# What is C1PRPT?

C1PRPT is a callable routine that generates the CODE-1 Plus reports when you call CODE-1 Plus from your own batch driver. The CODE-1 Plus batch driver provided by Precisely prints these reports:

- NDI Report
- Control Totals Report
- Analysis of Matched Records Report
- Address-Match Execution Statistics Report
- ZIP+4 Coding by State
- Carrier Route Coding by State
- Line of Travel Coding by State
- ZIP+4 Coding by List Code
- Carrier Route Coding by List Code
- Line of Travel Coding by List Code
- ZIP+4 Coding by 3-Digit ZIP Code
- Carrier Route Coding by 3-Digit ZIP Code
- Line of Travel Coding by 3-Digit ZIP Code
- Processing Summary by State
- Processing Summary by List Code
- Processing Summary by 3-Digit ZIP Code

You can specify the reports to print based on call area information passed to C1PRPT. You also have the option of producing these reports in all upper case or in upper and lower case.

**Note:** The USPS Form 3553 is not printed from C1PRPT. Current USPS regulations require any user-written program calling CODE-1 Plus for the purpose of claiming automation discounts to undergo CASS certification. The user-written program must generate and print the USPS Form 3553.

## Calling C1PRPT

When you call C1PRPT, you must pass the following call areas in the order shown.

1. P9IN
2. P9OUT
3. P9AUDIT
4. C1PRPT

The P9IN, P9OUT, and P9AUDIT areas are the same areas that you use to call the C1MATCHx modules.

**Note:** You must initialize the C1PRPT call area to spaces and the counters to zeros prior to your first call to C1PRPT. The COBOL copy member RPTPARM is provided for the C1PRPT call area. On IBM i, the ILE RPG version is called RPTPARMR.

Each time you place a call to the C1MATCHx, you must also call C1PRPT (for example, call C1PRPT once for each input record in your file, plus once more to close processing). On all but the last call to C1PRPT, C1PRPT compiles statistics based on the match results of each record. On the last call (as indicated by an E in P9IFNC), C1PRPT prints the requested reports, using the statistics compiled on previous calls.

Between each call to C1MATCHx and C1PRPT, you must increase the counters for the number of input records read (RP-CT-AMA) and the number of input records processed (RP-CT-PRC). Additionally, you must reset the return code fields in the C1PRPT call area to reflect the return codes from C1MATCHx for your input record. These return code fields are RP-BM0ARC, RP-BM0CRC, RP-BM0SRC, RP-BM05RC, RP-BM09RC, and RP-BM0LOT.

### Example Call Program

```
0050-INITIALIZE.* INITIALIZE FOR C1PRPT ROUTINE
MOVE SPACES TO
C1PRPT-CALL
MOVE ZEROS
TO RPTNAM RPTFC RPTBP RPTCK RPTNO RPTIP RPTI RPTMA RPTVA RPTAO RPTML RPTO*
OTHER INITIALIZATION LOGIC...0050-EXIT. EXIT.0100-MAIN-LOOP.* READ INPUT
RECORD PERFORM 0200-GET-INPUT-RECORD THRU 0200-EXIT IF
END-OF-FILE PERFORM 0800-WRAPUP THRU 0800-EXIT ELSE ADD 1 TO RP-CT-NAM*
MANIPULATE INPUT PERFORM 0300-PROCESS-RECORD THRU 0300-EXIT IF
BYPASS-THIS-RECORD ADD 1 TO RP-CT-BYP PERFORM 0350-BYPASS-PROCESS THRU
0350-EXIT ELSE* INITIALIZE P9IN FIELDS PERFORM 0400-SETUP-P9IN THRU
0400-EXIT CALL 'C1MATCHx' USING P9IN P9OUT P9AUDIT ADD 1 TO
RP-CT-AMA ADD 1 TO RP-CT-PRC MOVE P9OSAR TO RP-BM0ARC MOVE P9OCRC TO
RP-BM0CRC MOVE P9OSRC TO RP-BM0SRC MOVE P9O5RC TO RP-BM05RC MOVE
```

```
P909RC TO RP-BM09RC  MOVE P90LOT TO RP-BM0LOT* THE RP-BMOXXX CODES ABOVE
CAN BE ADJUSTED AS REQUIRED...  CALL 'C1PRPT' USING P9IN P9OUT P9AUDIT
RPTPARM* PROCESS OUTPUT AND WRITE IT  ADD 1 TO RP-CT-COK  PERFORM
0500-WRITE  THRU 0500-EXIT.0100-EXIT. EXIT...0800-WRAPUP. MOVE 'E' TO
P9IFNC CALL 'C1MATCHx' USING P9IN P9OUT P9AUDIT* SET THE REPORT SELECTION
FLAGS MOVE 'Y' TO RP-RPNDI...* SET THE REPORT DATE, HEADER, ADDITIONAL
HEADERS & FOOTERS... CALL 'C1PRPT' USING P9IN P9OUT P9AUDIT
RPTPARM.0800-EXIT. EXIT.
```

## The C1PRPT Call Area

The following table maps the 1,348-byte C1PRPT call area.

**Note:** iA copybook (RPTPARM) for this area is included with your installation in the sample library.

Position	Name	Length	Contents
----------	------	--------	----------

The following detail-level parameters are used for all but the last call to C1PRPT.

1	<del>RETURN</del> CODE	1	<p>C1PRPT fills in this code when control passes back to your driver program:</p> <ul style="list-style-type: none"> <li>• E — C1PRPT encountered an error. Look for a message in your print file.</li> <li>• Blank — C1PRPT encountered no problems during processing.</li> </ul>
---	------------------------	---	--

Position Name Length Contents

Position	Name	Length	Contents
2	RP-BM0ARC	1	<p>Indicates whether the standardized address was stored in the output record and, if not, provides an explanation. Your driver should construct this field by moving the value that is in the P9OSAR area (as returned by C1MATCHx) to the RP-BM0ARC area. RP-BM0ARC will then contain one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — The standardized address was stored successfully.</li> <li>• A — Apartment number missing or not found in database, and an apartment level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Auxiliary file processing unavailable.</li> <li>• Z — ZIP Code not found in database.</li> </ul> <p>Additionally, if P9OSAR was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — Standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — The standardized address was not stored because the processing requirements specified that it was not to be stored.</li> </ul> <p>If any other value is in RP-BM0ARC, the report program assumes that the standardized address was not stored for some unknown reason.</p>

Position Name Length Contents

Position	Name	Length	Contents
3	RP-BM0CRC	1	<p>Indicates whether the carrier route was stored in the output record and, if not, provides an explanation. Your driver should construct this field by moving the value that is in the P9OCRC area (as returned by C1MATCHx) to the RP-BM0CRC area. RP-BM0CRC then contains one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — The carrier route was stored successfully.</li> <li>• A — Apartment number missing or not found in database, and an apartment level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Auxiliary File Processing unavailable.</li> <li>• Z — ZIP Code not found in database.</li> </ul> <p>Additionally, if P9OCRC was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — The carrier route wasn't stored because the processing requirements specified that it was not to be stored.</li> </ul> <p>If any other value is in RP-BM0CRC, the report program will assume that the carrier route was not stored for some unknown reason.</p>

Position Name Length Contents

Position	Name	Length	Contents
4	RP-BM0SRC	1	<p>Indicates whether the standardized city and state were stored in the output record and, if not, provides an explanation. Your driver should construct this field by moving the value that is in the P9O5RC area (as returned by C1MATCHx) to the RP-BM0SRC area. This field is constructed from the P9O5RC, which is the return code for the 5-digit ZIP Code. RP-BM0SRC then contains one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — The input ZIP Code was stored successfully.</li> <li>• Z — ZIP Code not found in database.</li> <li>• A — Apartment number missing or not found in database, and an apartment level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name not found in ZIP Code.</li> </ul> <p>Additionally, if P9O5RC was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — The standardized city and state were not stored because the processing requirements specified that it was not to be stored.</li> <li>• X — No city match was found and we chose not to store the default name (i.e, P9OOCR was not a blank and the default name returned by C1MATCHx was not stored).</li> </ul> <p>If any other value is in RP-BM0SRC, the report program assume that the standardized city and state were not stored for some unknown reason.</p>

Position Name Length Contents

Position	Name	Length	Contents
5	RP-BM05RC	1	<p>Indicates whether the matched 5-digit ZIP Code was stored in the output record and, if not, provides an explanation. Your driver should construct this field by moving the value that is in the P9O5RC area (as returned by C1MATCHx) to the RP-BM05RC area. RP-BM05RC then contains one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — The ZIP Code was stored successfully.</li> <li>• A — Apartment number missing or not found in database, and an apartment level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• E — External match — Auxiliary file processing.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• Z — ZIP Code not found in database.</li> </ul> <p>Additionally, if P9O5RC was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — Standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — Matched ZIP Code was not stored because the processing requirements specified that it was not to be stored.</li> </ul> <p>If any other value is in RP-BM05RC, the report program assumes that the matched ZIP Code was not stored for some unknown reason.</p>

Position Name Length Contents

Position	Name	Length	Contents
6	RP-BM09RC	1	<p>Indicates whether the matched ZIP +4 Code was stored in the output record and, if not, provides an explanation. Your driver should construct this field by moving the value that is in the P9O9RC area (as returned by C1MATCHx) to the RP-BM09RC area. RP-BM09RC then contains one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — The ZIP + 4 Code was stored successfully.</li> <li>• A — Apartment number missing or not found in database, and an apartment level match was required.</li> <li>• B — Insufficient (or blank) address information for a match.</li> <li>• H — House/Box number not found on street.</li> <li>• M — Multiple matches of equal quality were found.</li> <li>• S — Street name not found in ZIP Code.</li> <li>• U — Auxiliary File Processing unavailable.</li> <li>• V — The input record matched a non-deliverable address. NOTE: A non-deliverable ZIP + 4 range is typically a new ZIP range where the USPS has not finalized assignments of ZIP +4 codes, thus not permitting assignment of postal code information at this time.</li> <li>• Z — ZIP Code not found in database.</li> </ul> <p>Additionally, if P9O9RC was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — The matched ZIP + 4 Code was not stored because the processing requirements specified that it was not to be stored.</li> </ul> <p>If any other value is in RP-BM09RC, the report program will assume that the matched ZIP+4 Code was not stored for some unknown reason.</p>



Position Name Length Contents

Position	Name	Length	Contents
7	RP-BM0LOT	1	<p>Indicates the level of match obtained against the Line of Travel masterfile. Your driver should construct this field by moving the value that is in the P9OLOT area (as returned by C1MATCHx) to the RP-BM0LOT area. RP-BM0LOT then contains one of the following values:</p> <ul style="list-style-type: none"> <li>• Blank — Invalid input (zero or non-numeric ZIP/ZIP + 4 add-on)</li> <li>• 9 — 9-digit ZIP + 4 match successful</li> <li>• C — Call to LTO10/LTO10C failed</li> <li>• D — Unsuccessful 9-digit match, default coded</li> <li>• F — Open/read failure on Line of Travel master file</li> <li>• V — Line of Travel matcher software not compatible with the Line of Travel master file</li> </ul> <p>Additionally, if P9OLOT was blank, your driver program may place one of the following codes in this area:</p> <ul style="list-style-type: none"> <li>• C — The address probable correctness or overall probable correctness was too high.</li> <li>• D — Information was dropped.</li> <li>• L — The standardized address was too long.</li> <li>• M — Multiple ZIP Codes or multiple standardized addresses were found.</li> <li>• N — The matched ZIP+4 Code was not stored because the processing requirements specified that it was not to be stored.</li> </ul> <p>If any other value is in RP-BM0LOT, the report program assumes that the matched LOT code was not stored for some unknown reason.</p>
8-16	RP-LCDNEW	9	List code for the current record.
17	RP-INP-ZP4	1	A code indicating if an input ZIP+4 Code was defined for the input file. Moved for every record whether it was a blank or not.
18-21	<del>RP-INP-ZP4</del>	4	ZIP + 4 Code in the input record, if RP-INP-ZP4 is Y.
22-57	Reserved	36	

Position Name Length Contents

The following total-level parameters are used for the last call to C1PRPT. These areas are not referenced for any call to C1PRPT except the last. NOTE: All of these fields should be initialized to zero and then updated by your own program, as necessary.

58-67	RP-CT-NAM	10	Number of input records read.
68-77	RP-CT-PRC	10	Number of input records processed.
78-87	RP-CT-BYP	10	Number of input records bypassed.
88-97	RP-CT-COK	10	Number of records written to the C1BMCOK (or equivalent) output file.
98-107	RP-CT-ZP4	10	Number of records written to the C1BMZP4 (or equivalent) output file.
108-117	RP-CT-NCO	10	Number of records written to the C1BMNCO (or equivalent) output file.
118-127	RP-CT-IZP	10	Number of records written to the C1BMIZP (or equivalent) output file.
128-137	RP-CT-AMA	10	Number of calls made to the address match routine.
138-147	RP-CT-VAL	10	Number of records that were confirmed without processing due to a flag in the records.
148-157	RP-CT-APO	10	Number of records that were confirmed without processing due to APO ZIP Codes.
158-167	RP-CT-MIL	10	Number of records that were confirmed without processing due to military ZIP Codes.
168-177	RP-CT-GOV	10	Number of records that were confirmed without processing due to government agency ZIP Codes.

Position Name      Length    Contents

178-227	Reserved	50	
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**NOTE: All report flags listed below default to Y except the RP-RPNDI report flag (defaults to N).**

228	RP-RPNDI	1	<p>Indicates whether or not the National Deliverability Index (NDI) Report should be printed.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
229	RP-RPANMR	1	<p>Indicates whether to print the Analysis of Matched Records Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
230	RP-RPZ4ST	1	<p>Indicates whether to print the ZIP + 4 Coding by State Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
231	RP-RPCRST	1	<p>Indicates whether to print the Carrier Route Coding by State Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
232	RP-RPLTST	1	<p>Indicates whether to print the Line of Travel Coding by State Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
233	RP-RPZ4LC	1	<p>Indicates whether to print the ZIP + 4 Coding by List Code Records Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>

Position Name Length Contents

Position	Name	Length	Contents
234	RP-RPCRLC	1	<p>Indicates whether to print the Carrier Route Coding by List Code Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
235	RP-RPLTLC	1	<p>Indicates whether to print the Line of Travel Coding by List Code Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
236	RP-RPZ43D	1	<p>Indicates whether to print the ZIP + 4 Coding by 3-Digit ZIP Code Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
237	RP-RPCR3D	1	<p>Indicates whether to print the Carrier Route Coding by 3-Digit ZIP Code Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
238	RP-RPLT3D	1	<p>Indicates whether to print the Line of Travel Coding by 3-Digit ZIP Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
239	RP-RPSMST	1	<p>Indicates whether to print the Summary by State Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
240	RP-RPSMLC	1	<p>Indicates whether to print the Summary by List Code Report.</p> <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>

Position Name Length Contents

Position	Name	Length	Contents
241	RP-RPSM3D	1	Indicates whether to print the Summary by 3-Digit ZIP Code Report. <ul style="list-style-type: none"> <li>• Y — Print the report (default).</li> <li>• N — Do not print the report.</li> </ul>
242	RP-RPUPLO	1	Indicates whether to print the reports in all upper case. <ul style="list-style-type: none"> <li>• Y — Print the reports in all upper case (default).</li> <li>• N — Print the reports in mixed case.</li> </ul>
243-252	RP-DATE	10	Date to print at the top of reports.
253-292	RP-HEADER	40	Main header to print at the top of the reports.
293-424	RP-UHD-(1)	132	First line of the additional header to print at the top of the reports.
425-556	RP-UHD-(2)	132	Second line of the additional header to print at the top of the reports.
557-688	RP-UHD-(3)	132	Third line of the additional header to print at the top of the reports.
689-820	RP-UHD-(4)	132	Fourth line of the additional header to print at the top of the reports.
821-952	RP-UFT-(1)	132	First line of the footer to print at the bottom of the reports.
953-1084	RP-UFT-(2)	132	Second line of the footer to print at the bottom of the reports.
1085-1216	RP-UFT-(3)	132	Third line of the footer to print at the bottom of the reports.
1217-1348	RP-UFT-(4)	132	Fourth line of the footer to print at the bottom of the reports.

# What is C1CTYLKx?

There are two versions of C1CTYLKx:

- C1CTYLKP (COBOL)
- C1CTYLKC (CICS)

**Note:** iOn IBM i, the COBOL version is called SMCTYC, and the ILE RPG version is SMCTYR.

You can call the C1CTYLKP COBOL subroutine from your own program. C1CTYLKP uses your copy of the CODE-1 Plus database to match ZIP Codes to city/state combinations. You can use C1CTYLKP to have CODE-1 Plus:

- Retrieve a city/state for a given ZIP Code.
- Retrieve a ZIP Code for a given city/state (see important restrictions below).
- Verify that a given ZIP Code and city/state combination is correct.
- Retrieve detailed information for a given city/state including the short city name.

C1CTYLKC performs the identical functions on the CICS platform.

**Note:** iC1CTYLKx can return a correct ZIP Code for a given city/state only if the city/state has a unique ZIP Code. Many cities are assigned more than one ZIP Code. In this case, C1CTYLKx returns the lowest ZIP Code in the range of the ZIP Codes for the input city/state and all ZIP Codes that the city/state falls within. This answer must be considered unreliable because C1CTYLKx has no way to determine the correct ZIP Code. In this situation, the only reliable information returned is the short city name, long city name, and state abbreviation. For the best performance, sort your input file in ZIP Code sequence before running the input file through C1CTYLKx. If this is not possible, sort the input file by city name to produce the next best performance level.

C1CTYLKx can provide three different functions, depending upon the type of data that is passed from the calling program. The functions for each data type are described in the following sections.

## ZIP Code Only

When C1CTYLKx is passed only a ZIP Code with no city/state, C1CTYLKx attempts to return a city/state for that ZIP Code, as follows:

1. If a primary city/state is found on the database for the ZIP Code, the primary city/state is returned.

2. If no primary city/state is found for that ZIP Code, the first secondary city/state combination is returned, if one exists.
3. If no primary or secondary city/state is found for the input ZIP Code, the first city/state on the database that matches the ZIP Code is returned.

**Note:** iUnder certain conditions, no city/state is returned. For example, if vanity city names are not allowed, and only vanity cities are found for a ZIP Code, no city/state is returned.

## City and State Only

When C1CTYLKx is passed the city and state without a ZIP Code, C1CTYLKx attempts to return the ZIP Code for that city and state. C1CTYLKx can return a correct ZIP Code for a given city/state **only** if the city/state has a unique ZIP Code. Many cities are assigned more than one ZIP Code. When this is the case, C1CTYLKx returns the lowest ZIP Code in the range of the ZIP Codes for the input city/state and all ZIP Codes that the city/state fall within. This answer must be considered to be unreliable, as C1CTYLKx has no way to determine which ZIP Code is the correct one. When this is the case, the only reliable information returned is the short city name, long city name, and state abbreviation.

## ZIP Code and City/State

When C1CTYLKx is passed the ZIP Code and the city and state, C1CTYLKx attempts to find a match for the ZIP Code as if only the ZIP Code was passed. If a match is found, C1CTYLKx attempts to find the input city/state on the list of city/states for the input ZIP Code. If the city/state is not found within the ZIP Code, a new city/state is returned (following the rules for determining a city/state when only a ZIP Code is passed). If the input ZIP Code is not on the database, C1CTYLKx performs as if only a city and state were passed. If neither the input ZIP Code nor the input city and state are found on the database, no match is returned.

**Note:** iPlease read the previous section, entitled “City and State Only.”

## Output Results

When a match is found for an input ZIP Code, city and state, or combination, the following information is returned to your program:

- USPS city name.

- USPS short city name.
- USPS state abbreviation.
- City type (primary, secondary, or vanity).
- USPS finance number.
- USPS last line number.
- A table of up to 100 cities that are found to be within the returned ZIP Code. Each entry in the table contains the information listed above.
- A table of up to 999 ZIP Codes that a city/state falls within. Each entry includes the information listed above including the USPS ZIP Code.
- USPS ZIP Code.
- Return codes indicating the results of the match attempt.
- Audit trail information showing I/O counts.

### *Vanity City Names*

A field has been provided in the calling interface that indicates whether vanity city names are to be allowed or not allowed. Not allowing vanity city names can prevent any city names from being returned, if the only cities for the ZIP Code are vanity cities. If the input city name is a vanity city name, and vanity city names are allowed, the output city name can be a vanity city name if one is found on the database. If vanity city names are not allowed, only primary or secondary city names are returned.

## Calling C1CTYLKx

When you call C1CTYLKx, you must pass a ZIP Code, a city and state, or all of the above. In addition, you can set the Vanity City flag to "X" if you want to allow vanity city names to be returned. Finally, there is also a function code that should be set to "E" when making the last call to C1CTYLKx to have C1CTYLKx close its open files. This should be done after the last match attempt has been made, but before terminating the calling program.

A COBOL copy member called CSPRM is supplied with the CODE-1 Plus software. Please use this copy member when calling C1CTYLKx.

A sample driver, SMPLCKP, that calls the CICTYLKB program is distributed with the software.



For CICS, the logic is identical except for the call:

```
CALL C1CTYLKC' USING DFHEIBLK
```

```
DFHCOMMAREA
```

```
CS-PRM-DATA
```

## Calling C1CTYLKP from an IMS Application

If you are calling C1CTYLKP from an IMS application, please include the PCBs as calling parameters, as shown below.

```
CALL 'C1CTYLKP' USING CS-PRM-DATA
```

```
IO-PCB
```

```
G1CPCNY-PCB
```

```
G1CPCTY-PCB
```

```
G1CPDTL-PCB
```

```
G1CPLCL-PCB
```

```
G1CPCNM-PCB
```

```
G1CPZIP-PCB
```

Your application can use the PSB shown below to define the PCBs presented above:

\*

\* COUNTY DATA BASE

\*

PCB TYPE=DB,NAME=G1CPCNY,PROCOPT=GO,KEYLEN=5

SENSEG NAME=CNYSEG,PARENT=0

\*

\* CITY DATA BASE

\*

PCB TYPE=DB,NAME=G1CPCTY,PROCOPT=GO,KEYLEN=2

SENSEG NAME=CTYSEG,PARENT=0

\*

\* LOCALITY DETAILS DATA BASE

\*

PCB TYPE=DB,NAME=G1CPDTL,PROCOPT=GO,KEYLEN=2

SENSEG NAME=DTLSEG,PARENT=0

\*

\* LOCALITY HEADER DATA BASE

\*

PCB TYPE=DB,NAME=G1CPLCL,PROCOPT=GO,KEYLEN=2

SENSEG NAME=LCLSEG,PARENT=0

\*

\* CITY NAME DATA BASE

\*

PCB TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=4

SENSEG NAME=CNMSEG,PARENT=0

\*

\* ZIP INDEX DATA BASE

\*

PCB TYPE=DB,NAME=G1CPZIP,PROCOPT=GO,KEYLEN=1

SENSEG NAME=ZIPSEG,PARENT=0

\*

\* LINE OF TRAVEL DATA BASE

\*

PCB TYPE=DB,NAME=G1CPLOT,PROCOPT=GO,KEYLEN=2

SENSEG NAME=LOTSEG,PARENT=0

\*

PSBGEN PSBNAME=SMPLCLKP,LANG=COBOL,CMPAT=YES

END

## C1CTYLKx Call Area

The following table provides a map of the 14,523-byte C1CTYLKx call area.

**Note:** iA copybook (CSPRM) for this area is included with your installation in the sample library.

Position	Name	Length	Contents
1-5	CS-PRM-ZIPI	5	Input ZIP Code.
6-105	CS-PRM-CSTI	100	Input city and state.
106	CS-PRM-FNC	1	Input function code. Leave this blank for a match call, set this to E for the final call.
107	CSPRM-VANITYCTY	1	Vanity city name flag. If you want C1CTYLKx to return vanity city names, set this to X. Otherwise, when C1CTYLKx matches a vanity city, it will return the primary or secondary city name.
108-117	CS-PRM-DBL	10	Database library name (IBM i specific).
118-150	Reserved	33	
151	CS-PRM-GRC	1	<p>General return codes for the match attempt:</p> <ul style="list-style-type: none"> <li>• Blank — Match was successful.</li> <li>• A — Original ZIP Code was altered to match a single-ZIP city.</li> <li>• B — Insufficient information for a match.</li> <li>• D — City-state mismatch (different spelling found, or city-state was a vanity name and vanity matching was not allowed, or city-state did not match ZIP Code).</li> <li>• E — End of job encountered, so the job was terminated.</li> <li>• L — Original ZIP Code was altered to be the lowest ZIP Code of the matched city's ZIP Code range. This is an unreliable answer.</li> <li>• M — Multiple matches on city-state.</li> <li>• X — CODE-1 Plus master file has expired; processing aborted.</li> <li>• Z — ZIP Code not found in the database.</li> </ul>

Position      Name              Length    Contents

152	CSFRMINPUTZPRC	1	<p>Input ZIP Code return code:</p> <ul style="list-style-type: none"> <li>• Blank — Match was successful.</li> <li>• B — Original ZIP Code not valid or blank.</li> <li>• Z — ZIP Code not found in database.</li> </ul>
153	CSFRMOUTPUZPRC	1	<p>Output ZIP Code return code:</p> <ul style="list-style-type: none"> <li>• A — Original ZIP Code was altered to match a single-ZIP city.</li> <li>• B — Original ZIP Code no good, or blank.</li> <li>• C — Original ZIP Code was confirmed.</li> <li>• L — Original ZIP Code was altered to be the lowest ZIP Code of the matched city's ZIP Code range. This is an unreliable answer.</li> <li>• Z — ZIP Code was not found in the database.</li> </ul>
154	CSFRMINPUTCITYRC	1	<p>Input city return code:</p> <ul style="list-style-type: none"> <li>• Blank — Match was successful.</li> <li>• B — Input city was blank, or no match found.</li> </ul>
155	CSFRMOUTPUCITYRC	1	<p>Output city return code:</p> <ul style="list-style-type: none"> <li>• Blank — Match was successful.</li> <li>• B — Input city was blank, or no match found.</li> <li>• D — City-state mismatch (different spelling found, or city-state was a vanity name and vanity matching was not allowed, or city-state did not match ZIP Code).</li> <li>• M — Multiple matches on city-state.</li> </ul>
156-170	Reserved	15	
171-198	CS-PRM-CITYO	28	Output USPS full city name

Position      Name              Length    Contents

199-211	CSFRMSHORTCITY	13	Output USPS short city name.
212-213	CS-PRM-STATEO	2	Output USPS state abbreviation.
214	CS-PRM-CTYPEO	1	Output city type for the matched city name. One of the following codes is stored: <ul style="list-style-type: none"> <li>• P — Primary</li> <li>• S — Secondary</li> <li>• V — Vanity</li> </ul>
215-220	CS-PRM-FINO	6	Output USPS finance number for the matched city name.
221-226	CS-PRM-LL-LBO	6	USPS last line number for the output city/state/ZIP Code combination.
227-231	CS-PRM-ZIPO	5	Output USPS ZIP Code.
232	CS-PRM-SZIP	1	Indicates whether there is more than one ZIP Code in the input city. If a successful match based on the input ZIP Code is obtained, this code will not be set. One of the following codes is stored: <ul style="list-style-type: none"> <li>• Blank — This city has more than one ZIP Code.</li> <li>• S — This city has only a single ZIP Code.</li> </ul>
233-235	CS-PRM- <del>NUM-ZIP-ENTRIES</del>	3	Number of ZIP Codes in the output table of ZIP Codes for the input city/state.

**The following CSP-ZIP CODE field occurs 999 times.**

**The previous CS-PRM-~~NUM-ZIP-ENTRIES~~ field indicates the number of occurrences that are non-blank.**

236-240 (1st occurrence)	CSP-ZIP-CODE	5	Output USPS ZIP Code.
--------------------------	--------------	---	-----------------------

Position      Name              Length    Contents

5231-5233	CS-PRM-NUM-CITY-ENTRIES	3	Number of cities that are in the output table of cities for the input ZIP Code. The maximum is 150 times.
-----------	-------------------------	---	---

**The following fields occur 150 times.**

**The previous CS-PRM-NUM-CITY-ENTRIES field indicates the number of occurrences that are non-blank.**

5234 (1st occurrence)	CSP-CITYO	28	Output USPS city name.
5262 (1st occurrence)	CSP-SHORTCITYO	13	Output USPS short city name.
5275 (1st occurrence)	CSP-STATEO	2	Output USPS state name.
5277 (1st occurrence)	CSP-CTYPEO	1	Output city type: <ul style="list-style-type: none"> <li>• P — Primary</li> <li>• S — Secondary</li> <li>• V — Vanity</li> </ul>
5278 (1st occurrence)	CSP-FINO	6	Output USPS finance number.
5284 (1st occurrence)	CSP-LL-LBO	6	Output USPS last line number.
5290 (1st occurrence)	CSP-ZIP-TABLE	5	Output USPS ZIP Code.
14384-14433	Reserved	50	

Position      Name              Length    Contents

**The following fields are statistical fields for the audit trail.**

14,434 -14,442	CS-PRM-READ-CTY	9	Number of times a read request was made for the cities in a ZIP Code logical file.
14,443 -14,451	CS-PRM-READ-ZPX	9	Number of times a read request was made for the ZIP Codes in a city logical file.
14,452 -14,460	CS-PRM-READ-LCL	9	Number of times a read request was made for the locality street directory logical file.
14,461 - 14,478	Reserved	18	
14,479 - 14,487	CS-PRM-IO-CTY	9	Number of actual I/O calls that were made to the cities in a ZIP Code logical file.
14,488 - 14,496	CS-PRM-IO-ZPX	9	Number of actual I/O calls that were made to the ZIP Codes in a City logical file.
14,497 - 14,505	CS-PRM-IO-LCL	9	Number of actual I/O calls that were made to the locality street directory logical file.
14,506 - 14,523	Reserved	18	



# What is G1CPLKx?

The G1CPLKx callable module enables you to browse the contents of the CODE-1 Plus database. G1CPLKC is a CICS application. G1CPLKB is a batch lookup program. The following is a list of the three areas that G1CPLKx uses:

- G1CPLK-USER-REQUEST-AREA - Controlled by the caller, this area contains all information pertinent to the input request (150 bytes).
- G1CPLK-USER-RESULT-AREA - This area is accessed by the caller and should not be modified. It contains all information necessary to produce the output (2,450 bytes).
- G1CPLK-IPC-AREAS - This area is used and accessed by G1CPLKx and should not be modified (a minimum of 0 bytes and maximum of 10,000 bytes).

## Calling G1CPLKC

The G1CPDSM sample program calls the G1CPLKC callable routine for your platform. The following example is from G1CPDSM. For the most current version, please refer to G1CPDSM included with your installation in the sample library.

```
01 WS-C1P-DBLOOK-PGM          PIC X(8) VALUE 'G1CPLKC' .  
  
01 WS-MISC-LENGTHS.05 WS-LENGTH-DBLOOK-AREAS      PIC S9(04) COMP .  
  
.  
  
01 WS-C1P-DBLOOK-AREAS COPY LOOKREQ. .  
  
MOVE LENGTH OF WS-C1P-DBLOOK-AREAS TO WS-LENGTH-DBLOOK-AREAS.EXEC CICS  
LINKPROGRAM (WS-C1P-DBLOOK-PGM)COMMAREA (WS-C1P-DBLOOK-AREAS) LENGTH  
(WS-LENGTH-DBLOOK-AREAS)END-EXEC .
```

To ensure the integrity of the database to be passed, initialize the following areas in the calling program, along with any other fields accessing data to be passed:

- Move spaces to G1CPLK-USER-REQUEST-AREA
- Move LOW-VALUES to G1CPLK-MAX-RETURN-CONTROL.

**Note:** iThe CODE-1 Plus installation provides sample source code for COBOL only.

## G1CPLK-USER-REQUEST-AREA

The following table provides a map of the user input call area for G1CPLKx.

Name Length Contents

Name	Length	Contents
<del>CMAD</del>	6	<p>This field is required for all G1CPLKx calls, and specifies the command executed by G1CPLKx. Enter one of the following:</p> <ul style="list-style-type: none"> <li>• AH — G1CPLKx returns all the apartments within a specific house range. For each apartment, the results rows display the address, ZIP Code range, apartment number ranges, ZIP Codes, ZIP + 4 Code ranges, carrier route codes, USPS record types, and number of firms. You may execute this command only immediately after an HS command.</li> <li>• CM — G1CPLKx returns an alphabetical listing of all the cities within the CODE-1 Plus database. For each city, the results row displays the state abbreviation and the ZIP Code (or range of ZIP Codes) valid for the city.</li> <li>• CS — G1CPLKx returns an alphabetical listing of all the cities within the specified state. For each city, the results row displays the state abbreviation state and the ZIP Code (or range of ZIP Codes) valid for the city.</li> <li>• CZ — G1CPLKx returns an alphabetical listing of all cities within the specified ZIP Code. For each city, the results row displays the long city names, short city names, and city type.</li> <li>• FM — G1CPLKx returns all firms within the specified street. The result rows display the house number ranges, apartment number ranges within a dwelling, the name of the firm located at each apartment/suite, ZIP Codes, ZIP+4 Codes, and carrier route codes. You may execute this command only immediately after an HS or AH command.</li> </ul>

Name Length Contents

		<ul style="list-style-type: none"> <li>• <b>HS</b> — G1CPLKx returns all the house ranges within the specified street. In addition to even/odd house number ranges, the results rows display ZIP and ZIP+4 Code ranges, carrier routes, number of apartments, and number of firms. You may execute this command only immediately after an SC or SZ command.</li> <li>• <b>SC</b> — G1CPLKx returns an alphabetical listing of all the streets within the specified city. For each street, the results rows display directionals (NE, SW, etc.), suffixes (ST, BLVD, etc.), number of houses, number of firms, and ZIP Code ranges. You may execute this command only immediately after a CM or CS command.</li> <li>• <b>ZC</b> — G1CPLKx returns all ZIP Codes within a specified city. You may execute this command only immediately after a CM or CS command.</li> <li>• <b>SZ</b> — G1CPLKx returns an alphabetical listing of all the streets within the specified ZIP Code. For each street, the results rows display directionals (NE, SW, etc.), suffixes (ST, BLVD, etc.), number of houses, number of firms, and ZIP Code ranges.</li> <li>• <b>OPEN</b> — G1CPLKx validates the database version and returns the database “signature” of the CODE-1 Plus database currently in use.</li> <li>• <b>QUIT</b> — G1CPLKx closes the database and relinquishes all work areas.</li> <li>• <b>*</b> — Use the asterisk (*) to continue searching.</li> <li>• <b>BOT</b> — Moves to bottom of current data list — all data positions.</li> <li>• <b>TOP</b> — Moves to top of current data list — all data positions.</li> <li>• <b>DOWN</b> — Moves down in data at same level (equivalent to *).</li> <li>• <b>UP</b> — Moves up in data at same level.</li> <li>• <b>BACK</b> — Returns to previous level. NOTE: If you use the BACK command, CS and CZ display the Cities screen, because the Cities screen cannot move back any farther.</li> <li>• <b>LOCAT</b> — Generally positions the database inquiry to the first entry that starts with &lt;string&gt;.</li> </ul>
		<ul style="list-style-type: none"> <li>• <b>ALIAS</b> — Displays alias information in G1CPLK-ALIASINFO field. You may execute this command only immediately after an AH or FM command.</li> <li>• <b>RIGHT</b> — Scrolls to right of firm/alias name field. You may execute this command only immediately after an HS command.</li> <li>• <b>LEFT</b> — Scrolls to original position for firm/alias name field. You may execute this command only immediately after an HS command.</li> </ul>

Name Length Contents

<del>G1CPLKX</del>	105	<p>This element specifies the various address components used in the address search for the following commands:</p> <ul style="list-style-type: none"> <li>• CM — Specify the leading characters of a city name. Blanks cause the search to begin from the beginning of the database.</li> <li>• CS — Specify the state abbreviation in the first two characters. You can specify the leading characters of a city name.</li> <li>• CZ — Specify a ZIP Code.</li> <li>• HS — Specify the leading characters of a house range returned in the results.</li> <li>• SC — Specify the leading characters of a street name returned in the results.</li> <li>• SZ — Specify the leading characters of a street name returned in the results.</li> </ul>
<del>G1CPLKX</del>	2 (x 6)	<p>This field is required for all G1CPLKx calls (except OPEN) and consists of six, 2-byte binary fields. Specify the number of data rows you want returned by the current command. The maximum is 25. You may access additional rows by subsequently invoking G1CPLKx multiple times (using the "*" (asterisk) command). Specify the count desired in the appropriate counter. There is one counter for each of the address elements that can be returned. The counters include the following: G1CPLKx-MAX-CITIES, G1CPLKx-MAX-STREETS, G1CPLKx-MAX-ZIPS, G1CPLKx-MAX-HOUSES, G1CPLKx-MAX-APTS, and G1CPLKx-MAX-FIRMS. Populate the desired counter with a value and clear out the rest.</p>
<del>G1CPLKX</del>	2	<p>Specify the occurrence of data to be used for browsing further into the database. For example, "02" for second city name to be used for a street lookup.</p>
Reserved	25	

## G1CPLK-USER-RESULT-AREA

The following table provides a map of the returned information area for G1CPLKx.

Name	Length	Contents

G1CPLK-RMSG	79	This field contains any returned error or informational message.
G1CPLKRETURNCODES	4	<p>G1CPLKx returns one of the following codes:</p> <ul style="list-style-type: none"> <li>• blank — The command was successful.</li> <li>• IN01 through IN09 Non-fatal error — An invalid command string was specified in G1CPLK-COMMAND. The command may be invalid for one of two reasons: 1 - It is an illegal command string. 2 - The requested command is not allowed from this point in the database hierarchy.</li> <li>• IN11 — Attempt to back up a level when none exists.</li> <li>• LK01 — Fatal error — Invalid command requested.</li> <li>• LK02 — Fatal error — Non-numeric SELECT FIELD passed.</li> <li>• LK03 — Fatal error — MAX-RETURN-CONTROL counter was out of range.</li> <li>• LK04 — Fatal error — Incompatible database found.</li> <li>• 0040 — Non-fatal error — ZIP Codes do not exist for the selected item.</li> <li>• 0041 — Non-fatal error — No firms exist for the selected item.</li> <li>• 0042 — Non-fatal error — No houses/apartments exist for the selected item.</li> <li>• 0043 — Non-fatal error — No apartments exist for the selected item.</li> <li>• 0045 — Non-fatal error — No streets exist for the selected item.</li> <li>• 0050 — Information — Alias information was returned in the G1CPLK-ALIASINFO field only. (Usually information is returned to the table in G1CPLK-DATA-TABL.)</li> </ul>
G1CPLKPCARELENGTH	2	This 2-byte binary field contains the length of a communication area used internally. Do not modify this field.

G1CPLKDBSIGNATURE	95	<p>The fields in this group item are populated as the result of the “OPEN” command. The field contains the month and year string of the vintage date of the database, as well as the expiration data. This field includes the following subfields:</p> <ul style="list-style-type: none"> <li>• G1CPLK-DB-DATE-STRING. This field contains the database month and year string for a length of 15.</li> <li>• G1CPLK-DB-PRODUCT. This field contains the software product name and version for a length of 50.</li> <li>• G1CPLK-DB-VINTAGE-DATE. This field contains the database vintage date in the MM/DD/YY format for a length of 10.</li> <li>• G1CPLK-DB-QUARTER-DATE. This field contains the database quarterly vintage date in the MM/DD/YY format for a length of 10.</li> <li>• G1CPLK-DB-EXPIRATION-DATE. This field contains the database expiration date in the MM/DD/YY format for a length of 10.</li> </ul>
G1CPLKLINEBROW	79	Used by the caller to examine lines returned by the call. Once a result set is returned, move each line here for further examination.
Name	Length	Contents
G1CPLKBEGCOUNT	4	<p>Position of the first database element reserved relative to all successive data in the database. For example, 40 for the 40th city in Maryland.</p> <p><b>NOTE:</b> This field is packed decimal consisting of 7 nibbles of binary-coded decimal digits and one nybble of sign.</p>
G1CPLKENDCOUNT	4	<p>Relative position of the last data elements available on the database.</p> <p><b>NOTE:</b> This field is packed decimal consisting of 7 nibbles of binary-coded decimal digits and one nybble of sign.</p>
G1CPLK-ALIASINFO	80	Type and street name of the house range alias.
G1CPLKRESULTDATA	96	Data identified by G1CPLKx as required by the user (through G1CPLK-SELECT) to search further into the data.
G1CPLK-DATA-TABLE	25 (X 79)	25 occurrences of 79 bytes of data returned from the current request. The number of occurrences of valid data depends on the applicable G1CPLK-MAX-RETURN-CONTROL value.

Filler	32	Reserved.
--------	----	-----------

---

## G1CPLK-IPC-AREAS-LENGTH

The following table provides a map of the last area used for G1CPLKx.

Name	Length	Contents
G1CPLK-IPC-AREAS	10,000	This area is reserved for inter-program communications.(THIS FIELD MUST NEVER BE MODIFIED BY THE CALLER)



## Calling G1CPLKB from an IMS Application

If you are calling G1CPLKB from an IMS application, include the following PCBs as calling parameters:

```
CALL "G1CPLKB" USING LOOKREQ
```

```
IO-PCB
```

```
G1CPCNY-PCB
```

```
G1CPCTY-PCB
```

```
G1CPDTL-PCB
```

```
G1CPPTR-PCB
```

```
G1CPLCL-PCB
```

```
G1CPCNM-PCB
```

```
G1CPZIP-PCB
```

```
G1CPLOT-PCB
```

```
G1CPXAA-PCB
```

```
G1CPXAS-PCB
```

```
G1PCCOM-PCB
```

Your application can use the PSB shown below to define the PCBs presented above:

```
* -----
```

```
*   SAMPLE IMS PSB TO BE USED WITH THE DB PRINT
```

```
* -----
```

```
*
```

```
*   COUNTY DATA BASE
```

```
*
```

```
PCB   TYPE=DB,NAME=G1CPCNY,PROCOPT=GO,KEYLEN=5
```

```
SENSEG NAME=CNYSEG,PARENT=0
```

```
*
```

```
*   CITY DATA BASE
```

```
*
```

```
PCB   TYPE=DB,NAME=G1CPCTY,PROCOPT=GO,KEYLEN=2
```

```
SENSEG NAME=CTYSEG,PARENT=0
```

```
*
```

```
*   LOCALITY DETAILS DATA BASE
```

```
*
```

```
PCB   TYPE=DB,NAME=G1CPDTL,PROCOPT=GO,KEYLEN=2
```

```
SENSEG NAME=DTLSEG,PARENT=0
```

```
*
```

```
*   LOCALITY POINTER DATA BASE
```

\*

PCB TYPE=DB,NAME=G1CPPTR,PROCOPT=GO,KEYLEN=2

SENSEG NAME=PTRSEG,PARENT=0

\*

\*

LOCALITY HEADER DATA BASE

\*

PCB TYPE=DB,NAME=G1CPLCL,PROCOPT=GO,KEYLEN=2

SENSEG NAME=LCLSEG,PARENT=0

\*

\*

CITY NAME DATA BASE

\*

PCB TYPE=DB,NAME=G1CPCNM,PROCOPT=GO,KEYLEN=4

SENSEG NAME=CNMSEG,PARENT=0

\*

\*

ZIP INDEX DATA BASE

\*

PCB TYPE=DB,NAME=G1CPZIP,PROCOPT=GO,KEYLEN=1

SENSEG NAME=ZIPSEG,PARENT=0

\*

\*

LINE OF TRAVEL DATA BASE

\*

PCB TYPE=DB , NAME=G1CPLOT , PROCOPT=GO , KEYLEN=2

SENSEG NAME=LOTSEG , PARENT=0

\*

\* CITY NAME DATA BASE USING

\* SECONDARY INDEX MADE FROM CITY NAME

\*

PCB TYPE=DB , NAME=G1CPCNM , PROCOPT=GO , KEYLEN=32 , X

PROCSEQ=G1CPXAA

SENSEG NAME=CNMSEG , PARENT=0

\*

\* CITY NAME DATA BASE USING

\* SECONDARY INDEX MADE FROM STATE CODE AND CITY NAME

\*

PCB TYPE=DB , NAME=G1CPCNM , PROCOPT=GO , KEYLEN=34 , X

PROCSEQ=G1CPXAS

SENSEG NAME=CNMSEG , PARENT=0

\*

\* COMM AREA (TEMP STORAGE) DATA BASE

\*

PCB TYPE=DB , NAME=G1CPCOM , KEYLEN=16 , PROCOPT=PA

```
SENSEG NAME=LTERMSEG , PARENT=0 , PROCOPT=PA
```

```
SENSEG NAME=TYPESEG , PARENT=LTERMSEG , PROCOPT=PA
```

```
SENSEG NAME=QUEUESEG , PARENT=TYPESEG , PROCOPT=A
```

```
*
```

```
PSBGEN PSBNAME=psbname , LANG=COBOL , CMPAT=YES
```

```
END
```

## What is C1PDBPRT?

C1PDBPRT is a callable routine that generates the CODE-1 Plus Database Print Report. You can select up to 100 ZIP Code ranges from the database and print the addresses residing within those ZIP Code ranges. For each selected ZIP Code, you can also produce the following reports.

Report	Description
City Report	Lists all of the cities that are cross-referenced by the ZIP Codes within the specified ranges.
Related ZIP Report	Lists all of the ZIP Codes that are in the localities of each ZIP Code within the specified ranges.
Address Report	Lists detail records, such as firms, streets, house ranges, apartments, that are cross-referenced by each ZIP Code within the specified ranges. Available in a 1- or 2-column format.
Alias Street Report	Lists every alias record that is cross-referenced by each ZIP Code within the specified ranges.

To produce the CODE-1 Plus Database Print Report, follow these steps:

1. Define the C1PDBPRT parameters to specify the ZIP Code ranges to include in the Database Print Report and any additional reports to generate for each ZIP Code.

2. C1PDBPRT calls program G1CPLKB and passes a parameter call area that contains the information that G1CPLKB requires to generate the report. Some of this information originates from the parameters.
3. G1CPLKB passes back to C1PDBPRT the information that C1PDBPRT requires to print the appropriate reports.
4. C1PDBPRT prints the Parameter Record Listing, Database Print Report, and the City, Related ZIP Code, Address, and Alias Street Report as specified.

This chapter presents the parameter layouts needed to use C1PDBPRT as well as the parameter call area and control language that you need to use G1CPLKB.

## Defining Parameters for C1PDBPRT Processing

To generate a CODE-1 Plus Database Print Report, you must define the parameters described in this section. The presence of this parameter file invokes the G1CPLKB routine that obtains the appropriate addresses to print on the report.

### CONTRL

Required. The CONTRL parameter passes control information to the C1PDBPRT program.

Position	Field Name	Description	Comments
1-6	KEYWORD	CONTRL is the only acceptable entry.	Required.
8	CITY REPORT SELECTION	Indicate whether to generate a City Report for each ZIP Code that falls within a range defined by the SELZIP parameter. N Do not generate City Reports. Y Generate City Reports.	Optional.Default is Y.
10	RELATED ZIP CODE REPORT SELECTION	Indicate whether to print the Related ZIP Code Report for each ZIP Code that falls within a range defined by the SELZIP parameter. N Do not generate Related ZIP Code Reports. Y Generate Related ZIP Code Reports.	Optional.Default is Y.

Position	Field Name	Description	Comments
12	ADDRESS REPORT SELECTION	Indicate whether to generate an Address Report for each ZIP Code that falls within a range defined by the SELZIP parameter. N Do not generate Address Reports. Y Generate Address Reports.	Optional.Default is Y.
14	ADDRESS REPORT COLUMNS SELECTION	Indicate whether to generate an Address Report in a 1- or 2-column format for each ZIP Code that falls within a range defined by the SELZIP parameter. 1 Generate a 1-column format. 2 Generate a 2-column format.	Optional.Default is 2.
16	ALIAS STREET SELECTION	Indicate whether to generate an Alias Report for each ZIP Code that falls within a range defined by the SELZIP parameter. N Do not generate Alias Reports. Y Generate Alias Reports.	Optional.Default is Y.
18	PAGE EJECT SELECTION	Indicate whether the City Report and the Related ZIP Code Report should begin on a new page. N Print without starting a new page. Y Start printing on a new page.	Optional.Default is Y.

## HEADER

**Required.** The HEADER parameter defines the date and header text to display on the first page of each report.

Position	Field Name	Description	Comments
1-6	KEYWORD	HEADER is the only acceptable entry.	Required.
8-17	DATE	Define the date to print on the top of the report. If you leave this field blank, the current system date prints on your report.	Optional.Default is current system date.

19-58	HEADER TEXT	Define text to identify the report.	Optional.No default.
-------	-------------	-------------------------------------	----------------------

### PAGESZ

**Optional.** The PAGESZ parameter defines the number of lines to print on each page of the report.

Position	Field Name	Description	Comments
1-6	KEYWORD	PAGESZ is the only acceptable entry.	Required.
8-10	LINES-PER-PAGE	Indicate the number of lines to print on each page of the report.	Optional.Default is 60.Minimum is 25.Maximum is 225.
12-14	REPORT	Indicate whether the specified line number applies to the reports. Enter the following code: RPT Reports.	Optional.Default is RPT.

### SELZIP

**Required.** The SELZIP parameter defines up to 100 ranges of ZIP Codes to include in the database reports.

**Note:** iYou can specify up to five ranges per SELZIP parameter, and you can define up to 100 SELZIP parameters. The ZIP Code values can overlap across ranges.

Position	Field Name	Description	Comments
----------	------------	-------------	----------



1-6	KEYWORD	SELZIP is the only acceptable entry.	Required.
-----	---------	--------------------------------------	-----------

### ZIP Code Range 1

8-12	LOW ZIP CODE 1	Define the lowest 5-digit ZIP Code in ZIP Code range 1.  NOTE: The lowest ZIP Code that can be entered is 00001. Five zeros in this position will result in an error.	Required.No default.
14-18	HIGH ZIP CODE 1	Define the highest 5-digit ZIP Code in ZIP Code range 1.	Required.No default.

### ZIP Code Range 2

20-24	LOW ZIP CODE 2	Define the lowest 5-digit ZIP Code in ZIP Code range 2.  NOTE: The lowest ZIP Code that can be entered is 00001. Five zeros in this position will result in an error.	Optional.No default.
26-30	HIGH ZIP CODE 2	Define the highest 5-digit ZIP Code in ZIP Code range 2.	Optional.No default.

### ZIP Code Range 3

32-36	LOW ZIP CODE 3	Define the lowest 5-digit ZIP Code in ZIP Code range 3.  NOTE: The lowest ZIP Code that can be entered is 00001. Five zeros in this position will result in an error.	Optional.No default.
38-42	HIGH ZIP CODE 3	Define the highest 5-digit ZIP Code in ZIP Code range 3.	Optional.No default.

### ZIP Code Range 4

44-48	LOW ZIP CODE 4	Define the lowest 5-digit ZIP Code in ZIP Code range 4.  NOTE: The lowest ZIP Code that can be entered is 00001. Five zeros in this position will result in an error.	Optional.No default.
50-54	HIGH ZIP CODE 4	Define the highest 5-digit ZIP Code in ZIP Code range 4.	Optional.No default.

### ZIP Code Range 5

56-60	LOW ZIP CODE 5	Define the lowest 5-digit ZIP Code in ZIP Code range 5.  NOTE: The lowest ZIP Code that can be entered is 00001. Five zeros in this position will result in an error.	Optional.No default.
62-66	HIGH ZIP CODE 5	Define the highest 5-digit ZIP Code in ZIP Code range 5.	Optional.No default.

### UFTxx

**Optional.** The UFTxx parameter defines text to print at the bottom of every page of each report. You can specify up to four footer lines.

Position	Field Name	Description	Comments
1-3	KEYWORD	UFT is the only acceptable entry.	Required.
4	LINE NUMBER	Specify the footer line number. Enter 1, 2, 3, or 4.	Required.No default.

Position	Field Name	Description	Comments
5	LINE SIDE	Indicate the side of the footer line on which this text should appear. A Left side of the line. B Right side of the line.	Required.No default.
7-72	FOOTER TEXT	Define the text to display at the bottom of every page of each report.	Required.No Default.

### *UHDxx*

**Optional.** The UHDxx parameter defines text to print at the top of each page of each report. You can specify up to four additional header lines.

Position	Field Name	Description	Comments
1-3	KEYWORD	UHD is the only acceptable entry.	Required.
4	LINE NUMBER	Indicate the header line number. Enter 1, 2, 3, or 4.	Required.No default.
5	LINE SIDE	Specify the side of the header line on which this text should appear. A Left side of the line. B Right side of the line.	Required.No default.
7-72	HEADER TEXT	Define the text to display at the top of each page of every report.	Required.No Default.

## C1PDBPRT Reports

The C1PDBPRT produces the following reports.

Report	Description
Parameter Record Listing	Lists all the parameters used to define a Database Print job.
City Report	Lists all of the cities that are cross-referenced by the ZIP Codes within the specified ranges.
Related ZIP Report	Lists all of the ZIP Codes that are in the localities of each ZIP Code within the specified ranges.
Address Report	Lists detail records, such as firms, streets, house ranges, apartments, that are cross-referenced by each ZIP Code within the specified ranges. Available in a 1- or 2-column format.
Alias Street Report	Lists every alias record that is cross-referenced by each ZIP Code within the specified ranges.

## Executing C1PDBPRT

This section lists the file names used in your platform control language to run C1PDBPRT. Each platform section lists the file(s) in your product directories that you should modify according to your site and any procedures to follow to run C1PDBPRT. To minimize maintenance, the file layouts are not included here.

### *File Names*

The following table lists the file name assignments to use in your control language when you generate a Database Print Report.

File Name	Description
PRNTRPT	Report output file
PRNTXLG	Execution log file
ZIPIDX	ZIP Code index database
CITYNM	City name database
CITYNM1	City name database (NAS)
CITYNM2	City name database (NAA)
LCLDB	Localities database
DTLDB	Details database
C1DBPRM	Parameter file

### *z/OS/IMS JCL*

To run C1PDBPRT in an z/OS or IMS environment, modify the RUNDBPR member in the SAMPLE library according to your site's needs.

## What is C1DBSTSZ?

C1DBSTSZ is a callable routine that generates the CODE-1 Plus State Sizes Report. You can use this program to determine the total size in bytes of the CODE-1 Plus database and the approximate sizes for each state's data. The total size of the database is not equal to the sum of the state sizes,

because there is global data that is common to all states. You can also produce this report for a database that is created by the CODE-1 Plus database reduction process.

## State Sizes Report

The C1DBSTSZ generates the State Sizes Report. To determine the size of a state, refer to "TOTALS," the right-most column on the report.

## Executing C1DBSTSZ

This section lists the file names used in your platform control language to run C1DBSTSZ. Each platform section lists the file(s) (e.g., JCL, BAT, CMD) in your product directories that you should modify according to your site and any procedures to follow to run C1DBSTSZ. To minimize maintenance, the file layouts are not included here.

### *File Names*

The following table lists the file name assignments to use in your control language when you generate the Database State Size Report.

File Name	Description
ZIPIDX	ZIP Code Index file
COUNTY	County file
LCLDB	Localities database
LTMASSTR	Line of Travel file
PRNTRPT	State Sizes Report

### *IMS JCL*

To run C1DBSTSZ in an IMS environment, modify the C1PSTSZ member in the INSTALL library according to your site's needs.

### *z/OS JCL*

To run C1DBSTSZ in an z/OS environment, modify the C1PSTSZ member in the INSTALL library according to your site's needs.

### *UNIX Environment*

To run C1DBSTSZ in a UNIX environment:

1. Source the setup script to set up the CODE-1 Plus environment variables. The setup script sets all the CODE-1 Plus environment variables. For more information on the bin/setup file, see your Installation Instructions.
2. Modify and run the rundbstsz script and execute C1DBSTSZ. The rundbstsz script is in your product \$PBC1P\bin. Modify the paths, file names, and record lengths for your site.

### *Windows Environment*

The batch job bin\C1PSTS.BAT is used to execute the C1DBSTSZ program. You can invoke the batch job via the command line or the Database State Size Report icon. Unmodified, this job processes the full national database and produces the report in the data\C1DBSTSZ.RPT file. You can edit the batch job as needed to process different databases and/or change the report destination.

# 5 - Using G1G001

## In this section

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# Using the G1G001 Routine

You can use the G1G001 executable routine to:

- Print customized reports of records from the CODE-1 Plus output files (the CODE-1 Plus output file becomes the G1G001 input file).
- Define the record elements to print on the report.
- Format the input elements with constant data.
- Print multiple 132-character print lines per input record.
- Print a main header and a date on your reports.
- Print up to three lines of additional header.
- Select or reject records to print based on a list code or a mismatch reason code. If you use a mismatch reason code, you also have the option of printing a 20-character reason (derived from the reason code).
- Select records by comparing pairs of fields in a single record. If the value of the first field is different from the value of the second field, the record prints.
- Include or exclude a specific number of records.
- Limit the report to a specific number of pages.

## Using G1G001

To use G1G001, you must define parameters to:

- Identify your input file.
- Print header information on your report.
- Identify the content and layout of your print lines.
- Select or reject records for processing.

When printing multiple print lines for each input record, the order of the parameters makes a difference. Parameters that affect a print line should be grouped together. After defining your parameters, write control language and submit the job.

# Input File and Header/Footer Parameters

The following parameters define your input file and the header and footer lines to print on reports

Parameter	Description
FILEDF	Defines the input file for the G1G001 program.
HEADER	Defines a date and header text that identifies the report.
HEADxx	Defines up to three additional header lines to print at the top of the report. You can define up to six HEADxx parameters (two for each line).
UFTxx	Defines the text to print at the bottom of every page of each report. You can specify up to four footer lines.
UHDxx	Defines additional text to print at the top of each page of each report. You can specify up to four additional header lines.

## FILEDF

**Required.** Use FILEDF to define the input file for the G1G001 program.

Position	Field Name	Description
1-6	KEYWORD	Required. FILEDF is the only acceptable entry.
8-15	FILE NAME	Required. Name of the input or output file. Enter the following name: <ul style="list-style-type: none"> <li>• G1GNAM — Input file.</li> <li>• <b>Blank</b> — No default.</li> </ul>
17	RECORD FORMAT	Required. Code indicating whether the records in the file are fixed-length. <ul style="list-style-type: none"> <li>• F — Records are fixed-length.</li> <li>• <b>Blank</b> — Default is <b>F</b>.</li> </ul>
19-22	RECORD LENGTH	Required. The length, in bytes, of the records in the file. No default.
24-28	BLOCK SIZE	Required. The size, in bytes, of the blocks in the file. No default.
35	LABEL TYPE	Code indicating whether the records on the file have standard or omitted labels. Enter one of the following codes: <p>N — No labels.</p> <p>S — Standard labels.</p> <ul style="list-style-type: none"> <li>• <b>Blank</b> — Default is <b>S</b>.</li> </ul>
39-46	EXIT ROUTINE NAME	Optional. Name of the input exit routine that should be called when G1G001 is ready to read a record from this file, or the name of the output exit routine that should be called when G1G001 is ready to write a record to the file. Name must be entered left-justified. No default.

Position	Field Name	Description
50-56	NUMBER OF RECORDS TO SKIP	Optional. Number of records G1G001 should skip before selecting the first record. No default.
58-64	CROSS-SECTIONAL SAMPLING	Optional. Number indicating the portion of the records in the file that should be processed. G1G001 assumes a decimal point before the first digit. No default.
66-72	MAXIMUM NUMBER OF RECORDS	Optional. Maximum number of records G1G001 should read from or write to this file. No default.

## HEADER

Required. Use HEADER to define a date and header text that identifies the report.

Position	Field Name	Description
1-6	Keyword	Required. HEADER is the only acceptable entry.
8-17	Report Date	Optional. The date that G1G001 was executed. If you leave this field blank, the current system date prints on your report. Default is current system date.
19-58	Report Heading	Optional. The text you want to print on the top line of every page of each report. No default.

# HEADxx

**Optional.** Use HEADxx to define up to three additional header lines to print at the top of the report. You can define up to six HEADxx parameters (two for each line).

Position	Field Name	Description
1-4	Keyword	Required. HEAD is the only acceptable entry.
5-6	Heading Line Designator	Required. One of the following codes to determine the line number and line side on which this header text should be printed: <ul style="list-style-type: none"><li>• <b>1A</b> — Left side - line 1</li><li>• <b>1B</b> — Right side - line 1</li><li>• <b>2A</b> — Left side - line 2</li><li>• <b>2B</b> — Right side - line 2</li><li>• <b>3A</b> — Left side - line 3</li><li>• <b>3B</b> — Right side - line 3</li></ul> Left side refers to positions 1-66. Right side refers to positions 67-132.
7	Space Before Header (for this heading print line)	Optional. Enter one of the following codes to tell G1G001 how many blank lines should be printed before this header line: <ul style="list-style-type: none"><li>• <b>S</b> — Single space (no blank lines).</li><li>• <b>D</b> — Double space (one blank line).</li><li>• <b>T</b> — Triple space (two blank lines).</li><li>• <b>Blank</b> — Default is <b>S</b>.</li></ul>

Position	Field Name	Description
8-73	Header Text	Optional. Any text that you want printed on the top of your report. If you include the string "MM/DD/YY" or "MM/DD/YYYY" in this field, G1G001 will print the date specified in columns 8-17 of the HEADER parameter in your header text. If columns 8-17 on the HEADER record are blank, the current system date will be used. For example, if MM/DD/YY is specified, then columns 8-15 will be "05/19/09". If MM/DD/YYYY is specified, then columns 8-17 will be "05/19/2009".

## UFTxx

**Optional.** Use UFTxx to specify up to four footer lines of text to print at the bottom of every page of each report.

Position	Field Name	Description
1-3	Keyword	Required. UFT is the only acceptable entry.
4	Line Number	Required. The footer line number. Enter 1, 2, 3, or 4. No default.
5	Line Side	Required. Specify a code to indicate the side of the footer line on which this text should appear: <ul style="list-style-type: none"> <li>• A — Left side of the line</li> <li>• B — Right side of the line</li> <li>• <b>Blank</b> — No default.</li> </ul>

Position	Field Name	Description
7-72	Footer Text	Required. The text that you want to appear at the bottom of every page of each report. No default.

## UHDxx

**Optional.** Use UHDxx to specify up to four header lines of text to print at the top of every page of each report.

Position	Field Name	Description
1-3	Keyword	Required. UHD is the only acceptable entry.
4	Line Number	Required. The header line number. Enter 1, 2, 3, or 4. No default.
5	Line Side	Required. Specify a code to indicate the side of the header line on which this text should appear: <ul style="list-style-type: none"> <li>• A — Left side of the line.</li> <li>• B — Right side of the line.</li> <li>• <b>Blank</b> — No default.</li> </ul>
7-72	Header Text	Required. The text that you want to appear at the top of each page of every report. No default.

# Report Layout and Content Parameters

The following parameters define how the report lines look and what data prints on the report lines.

**Note:** iG1G001 does not generate the Execution Log.

## CONTRL

**Required.** Use the CONTRL parameter to define the following information:

- Location and length of the key code in the input records. The key code is compared to the value entered on the SELECT parameter to determine whether to print the record)
- Number of pages that are to be printed.
- Whether or not page numbers are to be printed on the report.
- Location of the mismatch reason code in the input record, and the location on the print line for the mismatch reason.
- Whether to print the report in mixed case or upper case.

The following table lists the mismatch reason codes for G1G001. These are codes that CODE-1 Plus stores as General Return Codes. You can identify the mismatch reason code location in your input record as the location where CODE-1 Plus stored the General Return Code.

A	Apartment match required	M	Multiple matches
B	Insufficient address	P	Unmatched post-code
C	Unmatched city name	R	Rte Srvc not found
D	Out of sequence	S	Unmatched street
E	External File Match	U	Not attempted



F	Unmatched FSA	V	Non-deliverable ZIP+4
H	Unmatched house/box	X	Out of sequence
I	Unmatched initial	Z	Unmatched ZIP Code
L	Locality failure		

**Note:** iAll input record position fields can be extended one column to the left to accommodate 4-byte positions, if necessary.

Position	Field Name	Description
1-6	Keyword	Required. CONTRL is the only acceptable entry.
8-10	Key Code Location	Required. Starting position in the input record of the key code. No default.
12	Length Of Key Code	Required. The length of the key code in the input record. No default.
14-16	Number Of Pages	Optional. The maximum number of pages of the report that are to be printed. Default is to print the entire file.
18	Page Numbers	Optional. Enter a "P" in this column if you want page numbers printed on your report. These page numbers will be printed in positions 125-132 of the first header line. No default.

Position	Field Name	Description
20-22	Mismatch Reason Code Location	Optional. Starting position in the input record of the 1-character mismatch reason code. Only records with a non-blank character in this position will be eligible for printing. If you do not enter a location, all records will be eligible for printing. No default.
24-26	Mismatch Reason Print Position	Optional. Starting position on the print line for the 20-character mismatch reason (derived from the mismatch reason code). No default.
28	Print Upper/lower Case	Optional. Enter one of the following codes to specify whether your report is to be printed in all upper case or in mixed case. <ul style="list-style-type: none"> <li>• N — Print in mixed case.</li> <li>• Y — Print in all upper case.</li> <li>• <b>Blank</b> — Default is Y.</li> </ul>

## CONSTANT

**Optional.** Use CONSTANT to define constants to print on the reports. You can define the data that is the constant, but not where on the report line that constant is to be printed. You can use MOVE and FORMAT parameters to specify where to print the constants on the report line. There are up to eight CONSTANT parameters available, each specifying a single constant.

Position	Field Name	Description
1-8	Keyword	Required. CONSTANT is the only acceptable entry.

9-10	Constant Id Number	Required. The number that identifies this constant: 01 - 08. The constant will later be referenced by C01-C08. No default.
12-21	Constant Data	Required. The data string that is to be associated with this CONSTANT ID NUMBER. You can use leading and trailing blanks. However, depending on the length you specify for printing the constant on the MOVE or FORMAT parameters, trailing blanks can be truncated. No default.

## FORMAT

**Optional.** Use FORMAT to specify print line locations for elements of your input file and/or constants. G1G001 concatenates these fields and constants according to the following rules:

- FORMAT parameters are executed in the order in which defined.
- The first field to be formatted must not be a constant.
- There must be at least two fields to be formatted.
- Two consecutive non-constant fields (i.e., input record elements) automatically have a space between them.
- All leading blanks of non-constant fields (i.e., input record elements) are suppressed and are not printed on the print line.
- No spaces print between constants and input record elements unless enabled for in the length of the constant. (In other words, if there is a 2-byte constant, and you want to print a space between the constant and the input record element that follows it, define a length of 3 for the constant.)

**Note:** iAll input record position fields can be extended one column to the left to accommodate 4-byte positions, if necessary.

Position	Field Name	Description
1-6	Keyword	Required. FORMAT is the only acceptable entry.
7-8	Comment	Optional. You can enter any value you wish here to identify this format operation; G1G001 will ignore this field. No default.
10-12	Print Location	Required. Location on the print line to which you want the input record elements or constants moved. No default.
14-15	Total Length	Required. The length the data concatenated with this format is to occupy on the print line. You can enter a number between 1 and 99. No default.
17-1925-2733-3541-4349-5157-5965-6773-75	Location Of Fields To Be Formatted	Required. The starting position in the input record for the data that is to print on the print line, or the constant ID number. You can enter an input position or C01-C08 for each of these LOCATION fields. You must enter at least 2 fields, and no more than 8. The first blank field will terminate the processing of this line. No default.
2028364452606876	Constant Treatment	Required. A code controlling the formatting of the constant (this is only valid if the corresponding LOCATION field is a constant): <ul style="list-style-type: none"> <li>• * — Do not print this constant if the preceding field contains only blanks.</li> <li>• Blank — Do not print this constant if the succeeding field contains only blanks.</li> </ul>

Position	Field Name	Description
21-2229-3037-3845-4653-5461-6269-7077-78	Length Of Fields To Be Formatted	Required. The length of each of the input record elements or constants defined in the LOCATION fields. No default.
2331394755637179	Zero Suppression	Optional. Code indicating whether to suppress leading zeros from the corresponding input record element or constant. Enter a Z if leading zeros should be suppressed. Default is to not print leading zeros.
80	Force Print Of Current Line	Optional. Enter one of the following codes to indicate whether or not you want to force the current line to be printed: <ul style="list-style-type: none"> <li>• P — Print the current line.</li> <li>• Blank — Do not print the current line.</li> </ul>

## MOVE

**Optional.** Use MOVE to specify locations on the print line for input file elements or constants defined with the CONSTANT parameter. You can define up to 100 MOVE parameters.

**Note:** iAll input record position fields can be extended one column to the left to accommodate 4-byte positions, if necessary.

Position	Field Name	Description
1-4	Keyword	Required. MOVE is the only acceptable entry.

5-6	Comment	Optional. Enter a value to identify this move operation. G1G001 ignores this field. No default.
8-10	Destination	Required. Location on the print line to move the input record element or constant. No default.
12-13	Length	Required. Length of the data is to occupy on the print line. Enter a number between 1 and 99. No default.
15-17	Source	Required. Starting position in the input record for the data that is to print on the print line, or the constant ID number. Enter an input position or C01-C08. No default.
19	Force Print Of Current Line	Optional. Indicate whether to force the current line to be printed: <ul style="list-style-type: none"> <li>• P — Print the current line.</li> <li>• Blank — Do not print the current line.</li> </ul>

## PAGESZ

**Optional.** Use PAGESZ to specify how many lines to print on each report page.

Position	Field Name	Description
1-6	Keyword	Required. PAGESZ is the only acceptable entry.

Position	Field Name	Description
8-10	Lines-per-page	Required. Number of lines to print on each report page. Minimum is 25. Maximum is 225. Default is 60.
12-14	Report	Required. Code indicating whether the specified line number applies to the reports. Enter the following code: <ul style="list-style-type: none"> <li>• RPT — G1G001 report.</li> <li>• <b>Blank</b> — Default is <b>RPT</b>.</li> </ul>

## TESTIT

**Optional.** Use TESTIT to check the syntax of the parameters before running the entire job. This parameter has no fields.

If you include this parameter in your job, CODE-1 Plus checks the syntax of your parameters, and prints a parameter report for you to verify that the information stored on the parameters is correct. After verifying that there are no errors, you can remove this parameter and submit the job to run.

Position	Field Name	Description
1-6	Keyword	Required. TESTIT is the only acceptable entry.

## UNPK

**Optional.** Use UNPK to print, in an unpacked format, data that is in the input record in a packed format. You can enter up to 100 UNPK parameters.

**Note:** iAll input record position fields can be extended one column to the left to accommodate 4-byte positions, if necessary.

Position	Field Name	Description
1-4	Keyword	Required. UNPK is the only acceptable entry.
5-6	Comment	Optional. Enter a value you to identify this unpack operation. G1G001 will ignore this field. No default.
8-10	Destination	Required. Location on the print line to print the input record element in unpacked format. No default.
12-13	Destination Length	Required. Length this unpacked data is to occupy on the print line. This number cannot exceed 18. No default.
15-17	Source	Required. Starting position in the input record of the packed data that is to be unpacked and printed. No default.
19-20	Source Length	Required. Length this packed data occupies in the input record. This length cannot exceed 10. No default.

## Record Selection Parameters

The following parameters select or reject records to print, or limit the number of records to print.

### SELECT

**Required.** Use SELECT to specify a value in the input record key code field to use for selecting records to print. If the value in the input record matches the value you specify on the SELECT



parameter, the record is selected for printing. If the value in the record is different than the value on the SELECT parameter, the record is not selected. You can also choose to select all records, regardless of the value in the key code field, or you can choose to select all records that do not contain blanks in the key code field. You can define up to 200 SELECT parameters. The key code location and length are specified on the CONTRL parameter.

Position	Field Name	Description
1-6	Keyword	Required. SELECT is the only acceptable entry.
8-16	Key Code Comparison Value	<p>Required. Value that should be compared to the key code in the input record. Or, you can enter one of the following special values:</p> <ul style="list-style-type: none"> <li>• ALLKEYS—Select every record regardless of the data in the input record key code.</li> <li>• NON BLANK—Select only records with non-blank key codes.</li> <li>• <b>Blank</b> — No default.</li> </ul> <p>NOTE: If you enter one of these special values, you can only define one SELECT parameter.</p>

## CHANGE

Optional. Use CHANGE to specify a pair of fields to use when determining whether to select a record to print. For each record, the data in the first field is compared to the data in the second field. If the data in the two fields is different, the record is selected for printing. If the data is identical, the record is not selected for printing. You can enter up to 10 CHANGE parameters.

**Note:** iAll input record position fields can be extended one column to the left to accommodate 4-byte positions, if necessary.

Position	Field Name	Description
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1-6	Keyword	Required. CHANGE is the only acceptable entry.
8-10	First Comparison Field	Required. Location in the input record of the first field that is to be used for comparison. No default.
12-13	Length	Required. The length of the two fields that are to be used for comparison. No default.
15-17	Second Comparison Field	Required. Location in the input record for the second field that is to be used for comparison. No default.

## Sample Control Language

This section lists the file names used in your platform control language to run G1G001. Each platform section lists the file(s) (JCL, BAT, CMD, etc.) in your product directories that you should modify according to your site and any procedures to follow to run G1G001. To minimize maintenance, the files are not listed.

**Note:** iOn IBM i, the CL sample program is SMG01CL.

## File Names

Regardless of the environment in which you are running CODE-1 Plus, the following file assignments are used for executing the G1G001 program:

File Name	Description
G1GPRM	The input parameter file

File Name	Description
PRNTRPT	The output printer file
G1GNAM	The input file

## IMS JCL

To run G1G001 in an IMS environment, modify the EXG1G001 member in the SAMPLE library according to your site's needs.

## z/OS JCL

To run G1G001 in an z/OS environment, modify the EXG1G001 member in the SAMPLIB library according to your site's needs.

## UNIX Environment

To run G1G001 under UNIX, you must complete three steps:

1. Edit the /data/samprt.g1prm file.

The /data/samprt.g1prm file contains parameters that you can edit for your G1G001 job.

2. Source the setup script to setup the CODE-1 Plus environment variables.

The setup script sets all the CODE-1 Plus environment variables. The setup script is in your product \$PBC1P\bin directory.

3. Source the job (samprt) script to setup the G1G001 job variables.

The samprt job script assigns file names to all the G1G001 file variables. You will need to modify the paths, file names, and record lengths for your site. The setup script is in your product \$PBC1P\bin.

4. Execute the rung1g001 script to execute the G1G001 batch driver.

The rung1g001 script executes the G1G001 batch driver. The rung1g001 script is in your product \$PBC1P\bin.

## Windows Environment

To run the G1G001 program in the Windows environment, you will perform the following steps:

1. Edit the SAMGRW.BAT file to create your own job file.

Precisely provides the SAMGRW.BAT file in your bin directory. Copy and modify this file to meet your needs. To edit this file, click on the Edit Job File icon and specify SAMGRW as the job to edit.

2. Edit the SAMGRW.PRM parameter file.

Precisely provides the SAMGRW.PRM file in your data directory. Copy and modify this file to meet your needs. To edit this file, click on the Edit Parm File icon and specify SAMGRW as the file to edit.

3. Run the Generalized Report Writer job.

To run your job, click on the Generalized Report Writer icon. When prompted for the name of the job to run, enter SAMGRW, (or the name under which you saved your job file.) When the job completes running, you are prompted to press a key to continue so that the window is not refreshed before you read any error messages.

# 6 - Sample Library Member Reference

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# Sample Library Member Reference

This chapter describes the sample library members that are included with your software. Precisely is not responsible for any changes you make to the sample members.

**Note:** iNot all members are available on all platforms.

Member	Description of Contents
\$\$READSM	An index, along with an associated definition/usage, of each member in the sample library.
ANZPARAM	COBOL copybook that describes the interface area used when calling the CODE-1 Plus Analyzer program (C1ANZADR).
ANZPARMR	ILE RPG version of ANZPARAM.
ASMPARMA	Assembler copybook that describes the audit area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
ASMPARMI	Assembler copybook that describes the input area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
ASMPARMO	Assembler copybook that describes the output area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
CASSPARAM	Parameters used by CODE-1 Plus to pass USPS CASS certification.
CBDPARAM	Calling area for c1bmcbd (callable batch driver).

Member	Description of Contents
CBDPARMR	ILE RPG version of CBDPARM.
CBLSTUB	COBOL stub program to maintain invocation stack activity. First parameter is a 10-byte program name to be called and the second parameter is a 2000-byte user-defined string.
CBLSTUB1	Same as CBLSTUB but with only the 10-byte program name parameter.
CSPRM	COBOL copybook that describes the interface area used when calling the CODE-1 Plus City Lookup program (C1CTYLKP).
CSPMR	ILE RPG version of CSPRM.
DRPARM	COBOL copybook that describes the interface area used when calling the CODE-1 Plus callable database reduction program.
DRPARMR	ILE RPG version of DRPARM.
EXCMPR	COBOL program that illustrates how to code an EXITOP routine. This program is used by the CODE-1 Plus developers to verify test results.
EXG1G001	JCL that can be used to execute a CODE-1 Plus customized report generator job using the sample data file provided with your installation.
EXTADDR2	CODE-1 Plus address line extraction program.
EXT2DATA	Second COBOL copybook that describes the interface area used when calling the CODE-1 Plus Address Extraction program (EXTADDR2).

Member	Description of Contents
EXT2DATAR	ILE RPG version of EXT2DATA.
EXT2PARM	Calling area for program EXTADDR2 (address line extraction program).
EXT2PARMR	ILE RPG version of EXT2PARM.
G1CPBNC	COBOL program that illustrates how to code a “batch not coded” interface program for the CODE-1 Plus interactive system.
G1CPDMI	COBOL program that illustrates how to code a “CODE-1 Plus online matcher driver” to match a specific address from a CICS application.
G1CPDSM	COBOL program that illustrates how to code a “CODE-1 Plus callable interface driver” to browse the contents of the CODE-1 Plus database from a CICS application.
G1CPSMS	Sample BMS Map used with G1CPDSM.
LACCOMM	CICS linkage area for G1CPDLA (LACS <sup>Link</sup> interface program).
LOOKREQ	COBOL copybook that describes the interface area used when calling the CODE-1 Plus database inquiry program (G1CPLKC).
LOOKREQR	ILE RPG version of LOOKREQ.



Member	Description of Contents
LTOCOMM	COBOL copybook that describes the CICS communication area used when calling the Line of Travel program (LTO10). LTOIN and LTOOUT are combined under a single 01-level field.
LTOIN	COBOL copybook that describes the input area parameter used when calling the Line of Travel program (LTO10).
LTOINR	ILE RPG version of LTOIN.
LTOOUT	COBOL copybook that describes the output area parameter used when calling the Line of Travel program (LTO10).
LTOOUTR	ILE RPG version of LTOOUT.
PLIP9A	PL/I include layout that describes the audit area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
PLIP9I	PL/I include layout that describes the input area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
PLIP9O	PL/I include layout that describes the output area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
P9AUDIT	COBOL copybook that describes the audit area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).
P9AUDITR	ILE RPG version of P9AUDIT.

Member	Description of Contents
P9COMM	<p>COBOL copybook that describes the CICS communication area used when calling the CODE-1 Plus matcher program C1MATCHI.</p> <p>P9IN, P9OUT, and P9AUDT are combined under a single 01 level field.</p>
P9IN	<p>COBOL copybook that describes the input area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).</p>
P9INR	<p>ILE RPG version of P9IN.</p>
P9OUT	<p>COBOL copybook that describes the output area parameter used when calling the CODE-1 Plus matcher program (C1MATCHx).</p>
P9OUTR	<p>ILE RPG version of P9OUT.</p>
RPTPARM	<p>COBOL copybook that describes the interface area used when calling the CODE-1 Plus standard reports callable program (C1PRPT).</p>
RPTPARMR	<p>ILE RPG version of RPTPARM.</p>
RUNCBD	<p>JCL executes the CODE-1 Plus callable batch driver using the sample program (SMPLCBD).</p>
RUNCLKP	<p>JCL that can be used to execute the sample driver program (SMPLCLKP) that calls the City Lookup program (C1CTYLKP).</p>
RUNDBPR	<p>JCL that may be used to print information for selected ZIP Codes from the CODE-1 Plus database. It executes the sample driver program SMPLDBPR.</p>

Member	Description of Contents
RUNDBPRT	JCL that may be used to print information for selected ZIP Codes from the CODE-1 Plus database. It executes the driver program C1PDBPRT.
RUNDLOT	JCL that may be used to execute the sample driver program (SMPLDLOT) that calls the Line of Travel program (LTO10).
RUNDRVR	JCL that may be used to execute the batch matcher (C1MATCHB) via a sample driver program (SMPLDRVR).
RUNEXOP	JCL that may be used to run a CODE-1 Plus job using the sample exit routine (SMPLXEOB).
RUNLMRPT	JCL that executes the License Management reporting program.
SMBNCC	COBOL program that illustrates how to write a program to perform the Batch-not-Coded function (UR/UW commands) by interfacing with the interactive address match/inquiry module (G1CPC00).
SMBNCR	ILE RPG version of SMBNCC. Currently, only 1 program name is recognized for this process by G1CPC00. This source should be compiled, with appropriate site-specific modifications, to program name G1CPBNC.
SMCBDC	COBOL program that illustrates how to call the CODE-1 Plus callable batch driver (C1BMCBD).
SMCBDCCL	CL program to invoke SMCBDC.
SMCBDCCMD	CMD for program SMCBDCCL.
SMCBDR	ILE RPG version of SMCBDC.

Member	Description of Contents
SMCBDRCL	CL program to invoke SMCBDR.
SMCBDRCMD	CMD for program SMCBDRCL.
SMCTYC	COBOL program that illustrates how to write a program to call the CODE-1 Plus City Lookup program (C1CTYLKP).
SMCTYCCL	CL program to invoke SMCTYC.
SMCTYCCMD	CMD for program SMCTYCCL.
SMCTYR	ILE RPG version of SMCTYC.
SMCTYRCL	CL program to invoke SMCTYR.
SMCTYRCMD	CMD for program SMCTYRCL.
SMCTYRD	Display file associated with SMCTYR.
SMDBPCL	CL stub program to invoke SMDBPCL2.
SMDBPCL2	CL program to invoke the CODE-1 Plus Database Print function to generate a list of addresses within given ZIP Codes. This CL program runs in activation group QILE.
SMDBPCMD	CMD for program SMDBPCL.
SMDRC	COBOL program that illustrates how to write a program to call the CODE-1 Plus programs EXTADDR2 (Address Extraction), C1MATCHB (Address Matcher), and C1PRPT (Standard Reports) in an integrated application.

Member	Description of Contents
SMDRCLC	CL program to invoke SMDRC.
SMDRCMDC	CMD for program SMDRCCL.
SMDRR	ILE RPG version of SMDRC.
SMDRCLR	CL program to invoke SMDRR.
SMDRCMDR	CMD for program SMDRRCL.
SMEXITOPC	COBOL program that illustrates how to write a CODE-1 Plus EXITOP (exit routine) program.
SMEXITOPR	ILE RPG version of SMEXITOPC.
SMG01CL	CL program to invoke the CODE-1 Plus Parameter-Driven Report Writer (G1G001).
SMG01CMD	CMD for program SMG01CL.
SMLKBC	COBOL program that illustrates how to write a program to call the CODE-1 Plus Look Request program (G1CPLKB), also known as database inquiry.
SMLKBCCL	CL program to invoke SMLKBC.
SMLKBCCMD	CMD for program SMLKBCCL.
SMLKBR	ILE RPG version of SMLKBC.

Member	Description of Contents
SMLKBRCL	CL program to invoke SMLKBR.
SMLKBRCMD	CMD for program SMLKBRCL.
SMLKBRD	Display file associated with SMLKBR.
SMLTOC	COBOL program that illustrates how to write a program to call the CODE-1 Plus Line-of-Travel program (LTO10).
SMLTOCCL	CL program to invoke SMLTOC.
SMLTOCCMD	CMD for program SMLTOCCL.
SMLTOR	ILE RPG version of SMLTOC.
SMLTORCL	CL program to invoke SMLTOR.
SMLTORCMD	CMD for program SMLTORCL.
SMLTORD	Display file associated with SMLTOR.
SMPLCBD	Sample COBOL batch program for calling C1BMCBD.
SMPLCLKP	COBOL program that illustrates how to call the CODE-1 Plus City Lookup program (C1CTYLKP).
SMPLDBPR	COBOL program that illustrates how to call the CODE-1 Plus database print program (C1PDBPRT).

Member	Description of Contents
SMPDLLOT	COBOL program that illustrates how to call the Line of Travel program (LTO10).
SMPDRVR	COBOL program that illustrates how to call the CODE-1 Plus matcher program (C1MATCHx) and the standard reports callable program (C1PRPT).
SMPLEXOP	COBOL program that illustrates how to code a user exit routine.
SMSSZCL	CL program to print a State Size Report by invoking the CODE-1 Plus callable program C1DBSTSZ.
SMSSZCMD	CMD for program SMSSZCL.
STECOMM	CICS linkage area for G1CPDSU (Suite <sup>Link</sup> interface program).
Z4CPARM	COBOL copybook that describes the interface area used when calling the Z4CHANGE callable program (C1P430).
Z4CPARMR	ILE RPG version of Z4CPARM.

Member	Description of Contents
BMCBD.DAT	Parameter cards associated with SMCBD*.
DBPRT.DAT	Parameter cards associated with SMDBP*.
EXOP.DAT	Parameter cards associated with SMEXITOP*.

Member

Description of Contents

---

G1G001.DAT

Parameter cards associated with SMG01\*.

---



# 7 - Return Codes

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# Understanding the CODE-1 Plus Return Codes

This chapter provides a description and suggested action for the most common CODE-1 Plus return codes and return code combinations.

Return Code	Description	Suggested Action
General Return Code		
A	This address requires a unit number (for an apartment, building, suite, or floor).	Enter a unit number.
B	Insufficient address or blank address.	Enter a house number and street name or box information.
H	House or Box Number is not correct.	Check house or box number and re-enter.
S	Street name is incorrect or misspelled OR street suffix is incorrect.	Check street spelling or street suffix and re-enter.
Z	ZIP Code is not valid.	Please re-enter ZIP Code or enter address without a ZIP Code.
General Return Code and Directional Return Code		
General Return Code = M Directional Return Code = N	Address information is incomplete.	Enter a directional. For example: N - North S - South SE - Southeast

Return Code	Description	Suggested Action
General Return Code = M Directional Return Code = D	Directional is incorrect.	Enter a different directional. For example: N - North S - South
General Return Code = M Directional Return Code = F	Directional is incorrect.	Enter a different directional. For example: N - North S - South
General Return Code and Suffix Return Code		
General Return Code = M Suffix Return Code = N	Street suffix is incomplete.	Enter a suffix. For example: ST - Street RD - Road CT - Court
General Return Code = M Suffix Return Code - S	Street suffix is incorrect.	Enter a different suffix. For example: ST - Street RD - Road CT - Court
LACS Return Code		
Y	Address converted to a 911 (LACS) address.	Enter new address, if known.
Unit Return Code		
A	Unit Number (apartment, building, suite, or floor) is incorrect in an otherwise valid address. May delay delivery.	Re-enter Unit Number. The suggested action is optional, but recommended.

Return Code	Description	Suggested Action
N	Unit Number (apartment, building, suite, or floor) is missing in an otherwise valid address. May delay delivery.	Enter Unit Number if known. The suggested action is optional, but recommended.

# 8 - Error Conditions

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# Parameter Errors

When CODE-1 Plus detects an error in your parameters, your job terminates. Your Job Log shows that the job abended, with a user error code of 0012. To determine the error(s) CODE-1 Plus detected, follow the steps below:

1. Open the output file containing the reports, and review the Parameter Record Listing.
2. Scroll to the right in the Parameter Record Listing, past the 80th column in the report, and look for \*ERROR \* printed in the file.
3. Scroll back to the left to positions 1 through 80, and look at the line directly below the parameter with the error. The line where the \* ERROR \* message occurs is the parameter line containing the error.

## EXAMPLE

The CS ZIP parameter should be defined as:

```
.....1.....2.....3.....4.....5.....
```

```
CS ZIP S 163 C 141 20 161 02      023 C 027
```

However, the CS ZIP parameter was inadvertently defined as:

```
.....1.....2.....3.....4.....5.....
```

```
CS ZIP Sa163nC 141 20 161 02      023 C 027
```

The Parameter Record Listing contains \* ERROR \* past the 80th position on the line containing the CS ZIP parameter and asterisks beneath positions 9 through 12 as shown here:

```
.....1.....2.....3.....4.....5.....
```

```
CS ZIP Sa163nC 141 20 161 02      023 C 027
```

```
*****
```

**Note:** iCODE-1 Plus may require up to 80 bytes for the definition parameter records. If sequence numbers are posted in positions 73-80 of the defined parameter records, an abnormal termination may occur during processing.

## Condition Codes

Condition Code	Code Description
Program C1BM00	
0	Normal completion.
12	Parameter error.
16	Non-CASS parameters and CONFIG column 23 = "Y".
18	CODE-1 Plus database and software not compatible.
22	CODE-1 Plus expired database/CASS cycle.
24	Geographic Coding Plus is not installed (and G9 parameters defined in job).
26	Z4CHANGE database incorrect and Z4CHANGE requested.
99	CODE-1 Plus database and software not compatible or a file I/O error. See output from job for specific message.  This may also indicate a License Management problem. Check your execution log or run a license report for more information.

## Condition Code

## Code Description

Condition Code	Code Description
C1CTYLKP	
0	Normal completion.
99	CODE-1 Plus database and software not compatible or a file I/O error. See output from job for specific message.
C1MATCHB (and other C1MATCHx interfaces)	
0	Normal completion.
99	CODE-1 Plus database and software not compatible or a file I/O error. See output from job for specific message.
C1DBSTSZ	
0	Normal completion.
99	CODE-1 Plus database and software not compatible or a file I/O error. See output from job for specific message.
C1DBUNLD	
0	Normal completion.
12	Missing STATES parameter.
99	File I/O error. See output from job for specific message.



Condition Code

Code Description

Condition Code	Code Description
C1P430	
0	Normal completion.
4	Warning: If function to be performed is: O Database is already open P 9-digit ZIP Code has changed or is not numeric C File is not opened.
8	Serious Error: If function is to performed is: O Database open failed or dates do not match P Database was not open.
C1PDBPRT	
0	Normal completion.
99	Error opening, reading, or closing parameter file.
C1PDR	
0	Normal completion.
99	File I/O error. See output from job for specific message.
G1G001	
0	Normal completion.

Condition Code

Code Description

99

Error opening or reading parameter file.

LICENSE MANAGEMENT

CLIENT NF

This error message is commonly caused by the license file not being found, due to the license file statement not being in the calling program, or not correctly pointing to the license file. Please see our IVP (or Sample) program for an example of the license file statement.

# 9 - Statistical File Layout

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# Statistical File

CODE-1 Plus generates an output statistical file which contains numerous record types. The statistical records allow you to access all information currently available in the reports generated by CODE-1 Plus, with the exception of calculated percentages. Each record is 1024 bytes in length.

Record Type	ID	Maximum # of Records per Execution
PS 3553 Form	US1	1
	US2	1
Control Totals	CT1	1
	CT2	1
Analysis of Matched Records	AMR	1
Address Match Execution	AME	1
List Code	LCD	200/C1BM00 10000/C1BM00XL
3-Digit	SCF	1000
Delivery Point Validation	DPV	200/C1BM00 10000/C1BM00XL
Delivery Point Summary	DPS	1

You need a FILEDF parameter to tell CODE-1 Plus to generate this file. The Control Total and Analysis of Matched Records Reports are created with each execution of CODE-1 Plus.

Record Type	ID	Maximum # of Records per Execution
PS 3553 Form	US1	1
	US2	1
Control Totals	CT1	1
	CT2	1
Analysis of Matched Records	AMR	1
Address Match Execution	AME	1
List Code	LCD	200/C1BM00 10000/C1BM00XL
3-Digit	SCF	1000
Delivery Point Validation	DPV	200/C1BM00 10000/C1BM00XL
Delivery Point Summary	DPS	1

# PS Form 3553-1 Statistical Record Layouts

The US1 and US2 statistical records are not generated unless you are executing a CASS-certified configuration.

Position	Length	Description	Format
1-2	2	Product Identifier (C1). Part of passed key	Character
3-10	8	Product Release Number (RXX.XM00)	Character
11-13	3	Record Identifier	US1
14-22	9	File Code	Character
23-38	16	Reserved	
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current Time (for example, 1:01 PM 1.01 seconds = 13010101). Key	Numeric
55	1	Check Digit for General Data Area	Character
56-310	255	Reserved	

Position	Length	Description	Format
311-317	7	C1P CASS Release Number 9.99.99	Character
318-320	3	C1P-CASS-CYCLE .N.	Character
321-324	4	C1P-CASS-CYCLE YEAR YYYY	Character
325-332	8	C1P Master File Date MM15YYYY	Character
333-335	3	C1P Software Configuration NNN	Character
336-360	25	CASS Certified Company Name	Character
361-390	30	CASS Software Name	Character
391-415	25	Z4Change Certified Company Name	Character
416-445	30	Z4Change Software Name	Character
446-452	7	Z4Change Release Number 9.99.99	Character
453-477	25	ELOT Certified Company Name	Character
478-507	30	ELOT Software Name	Character

Position	Length	Description	Format
508-514	7	ELOT Release Number 9.99.99	Character
515-534	20	List Processor Name	Character
535-554	20	List Processor Name—continued	Character
555-574	20	List Processor Name—continued	Character
575-584	10	Date Processed MM/DD/YYYY	Character
585-1024	440	Reserved	

The US1 and US2 statistical records will not be generated unless you are executing a CASS-certified configuration.

## PS Form 3553-2 — Record Layout ID US2

Position	Length	Description	Format
1-2	2	Product Identifier (C1). Part of passed key.	Character
3-10	8	Product Release Number (RXX.XM00)	Character



Position	Length	Description	Format
11-13	3	Record Identifier	US2
14-22	9	File Code	Character
23-38	16	Reserved	
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current Time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-330	20	CODE-1 Plus Database version	Character
331-350	20	List ID—1	Character
351-370	20	List ID—continued	Character
371-375	5	Number of lists	Numeric
376-385	10	ZIP Code valid to date MM/DD/YYYY	Character

Position	Length	Description	Format
386-395	10	ZIP + 4 valid to date MM/DD/YYYY	Character
396-405	10	DPBC valid to date MM/DD/YYYY	Character
406-415	10	Carrier Route Code valid to date MM/DD/YYYY	Character
416-425	10	LOT Code valid to date MM/DD/YYYY	Character
PS FORM 3553 COUNTS			
426-434	9	Total records submitted	Numeric
435-443	9	Total records ZIP + 4 coded	Numeric
444-452	9	Total records Z4CHANGE processed	Numeric
453-461	9	Total records DPBC assigned	Numeric
462-470	9	Total records 5-digit coded	Numeric
471-479	9	Total records Carrier Route coded	Numeric
480-488	9	Total records LOT assigned	Numeric
489-497	9	Records high rise default	Numeric

Position	Length	Description	Format
498-506	9	Records high rise exact	Numeric
507-515	9	Rural Route default	Numeric
516-524	9	Rural Route exact	Numeric
525-533	9	LACS	Numeric
534-542	9	Records EWS matched	Numeric
543-551	9	Records DPV coded	Numeric
552-1024	473	Reserved	

## Control Totals -1 Statistical Record Layout — Record ID CT1

Position	Length	Description	Format
1-2	2	Product Identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character

Position	Length	Description	Format
11-13	3	Record identifier	CT1
14-38	25	Secondary key (unused)	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Total input records	Numeric
320-328	9	Total input records bypassed	Numeric
329-337	9	Total records bypassed by Z4CHANGE	Numeric
338-346	9	Total input records processed	Numeric
347-355	9	Number of input records confirmed by APO ZIPS	Numeric
356-364	9	Number of input records confirmed by MIL ZIPS	Numeric

Position	Length	Description	Format
365-373	9	Number of input records confirmed by GOV ZIPS	Numeric
374-382	9	Number of input records confirmed by value	Numeric
383-391	9	Number of input records confirmed by match to Auxiliary File	Numeric
392-400	9	Total records for which address match attempted	Numeric
401-409	9	Original ZIP Code confirmed via match	Numeric
410-418	9	Original ZIP Code altered	Numeric
419-427	9	Multiple ZIP Code matches	Numeric
428-436	9	Original ZIP Code accepted without match	Numeric
437-445	9	No ZIP Code available; original ZIP Code invalid, no match possible	Numeric
446-454	9	No ZIP Code available; original ZIP Code unique and did not match C/S, no match	Numeric
455-463	9	Total unmatched records.	Numeric

Position	Length	Description	Format
464-472	9	Reserved	
473-481	9	Invalid ZIP Code	Numeric
482-490	9	Insufficient address	Numeric
491-499	9	Street mismatch	Numeric
500-508	9	House mismatch	Numeric
509-517	9	Apartment mismatch	Numeric
518-526	9	Total records successfully matched	Numeric
527-535	9	ZIP + 4 not stored, multiple matches	Numeric
536-544	9	ZIP + 4 not stored, house/box missing	Numeric
545-553	9	ZIP + 4 not stored, apartment missing	Numeric
554-562	9	ZIP + 4 not stored, address information dropped	Numeric
563-571	9	ZIP + 4 not stored, PRBC too high	Numeric

Position	Length	Description	Format
572-580	9	ZIP + 4 not stored, storage not requested	Numeric
581-589	9	ZIP + 4 not stored, matched non-deliverable	Numeric
590-598	9	ZIP + 4 stored successfully	Numeric
599-607	9	Carrier Route not stored, multiple matches	Numeric
608-616	9	Carrier Route not stored, address information dropped	Numeric
617-625	9	Carrier Route not stored, PRBC too high	Numeric
626-634	9	Carrier Route not stored, storage not requested	Numeric
635-643	9	Carrier Route stored successfully	Numeric
644-652	9	Standardized address not stored, too long	Numeric
653-661	9	Standardized address not stored, multiple	Numeric
662-670	9	Standardized address not stored, address information dropped	Numeric

Position	Length	Description	Format
671-679	9	Standardized address not stored, PRBC too high	Numeric
680-688	9	Standardized address not stored, storage not requested	Numeric
689-697	9	Standardized address stored successfully	Numeric
698-706	9	Line of Travel coding attempts	Numeric
707-715	9	Line of Travel matched, ZIP + 4 level coded	Numeric
716-724	9	Line of Travel unmatched, default coded	Numeric
725-733	9	Line of Travel unmatched, insufficient ZIP + 4 Code	Numeric
734-742	9	Address match yielding street alias	Numeric
743-1024	282	Reserved	



# Control Totals-2 Statistical Record Layout

Position	Length	Description	Format
1-2	2	Product Identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	CT2
14-38	25	Secondary key (unused)	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Private Mail Box Extractions	Numeric
320-328	9	Private Mail Box stored in secondary address line	Numeric

Position	Length	Description	Format
329-337	9	Private Mail Box appended to standardized address	Numeric
338-346	9	Private Mail Box not appended to standardized address, too long for field provided	Numeric
347-355	9	Records matching USPS Record Type S	Numeric
356-364	9	Records matching USPS Record Type P	Numeric
365-373	9	Records matching USPS Record Type R	Numeric
374-382	9	Records matching USPS Record Type H	Numeric
383-391	9	Records matching USPS Record Type F	Numeric
392-400	9	Records reserved for Postmaster	Numeric
401-409	9	Records matching USPS Record Type G	Numeric
410-418	9	Records matching unknown USPS Record Type	Numeric
419-427	9	Records receiving Bnnn (Box Section) Carrier Route	Numeric

Position	Length	Description	Format
428-436	9	Records receiving Cnnn (Carrier Route) Carrier Route	Numeric
437-445	9	Records receiving Gnnn (General Delivery) Carrier Route	Numeric
446-454	9	Records receiving Hnnn (Highway Contract) Carrier Route	Numeric
455-463	9	Records receiving Rnnn (Rural Route) Carrier Route	Numeric
464-472	9	Records receiving unknown Carrier Route	Numeric
473-481	9	Total records high rise default	Numeric
482-490	9	Total records high rise exact	Numeric
491-499	9	Total records rural route default	Numeric
500-508	9	Total records rural route exact	Numeric
509-517	9	Total records with LACS indicator	Numeric
518-526	9	Total records matched to EWS	Numeric

Position	Length	Description	Format
527-535	9	Total records Delivery Point confirmed	Numeric
536-544	9	Total records written COK file	Numeric
545-553	9	Total records written ZP4 file	Numeric
554-562	9	Total records written IZP file	Numeric
563-571	9	Total records written NCO file	Numeric
572-580	9	Total street string match attempts	Numeric
581-589	9	Total street string match successes	Numeric
590-598	9	Total street database match attempts	Numeric
599-607	9	Total street database match successes	Numeric
608-616	9	Total street database match attempts for all streets	Numeric
617-625	9	Total street database match successes for all streets	Numeric
626-634	9	Total SuiteLink match attempts	Numeric

Position	Length	Description	Format
635-643	9	Total SuiteLink match successes	Numeric
644-652	9	Total DPV No Stat matches	Numeric
572-1024	372	Reserved	

## Analysis of Matched Records-1 Statistical Record Layout

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	AMR
14-38	25	Secondary key (unused).	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric

Position	Length	Description	Format
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Total records presented for matching	Numeric
ZIP Code			
320-328	9	No acceptable ZIP Code found	Numeric
329-337	9	Original ZIP Code accepted without a match	Numeric
338-346	9	Multiple ZIP Code matches	Numeric
347-355	9	Original ZIP Code confirmed via match	Numeric
356-364	9	Original ZIP Code altered	Numeric
365-373	9	ZIP Code altered from city-based locality	Numeric
374-382	9	ZIP Code altered from ZIP Code-based locality	Numeric

Position	Length	Description	Format
383-409	27	Reserved	
ZIP + 4 Code			
410-418	9	No ZIP + 4 determined, previous ZIP + 4 not present	Numeric
419-427	9	No ZIP + 4 determined, previous ZIP + 4 present	Numeric
428-436	9	ZIP + 4 determined, previous ZIP + 4 not present	Numeric
437-445	9	ZIP + 4 determined, same as previous	Numeric
446-454	9	ZIP + 4 determined, same sector as previous	Numeric
455-463	9	ZIP + 4 determined, sector different from previous	Numeric
464-472	9	Reserved	Numeric
473-481	9	Total matched records (P90GRC = blank or M)	Numeric
Directionals			
482-490	9	Matching.	Numeric

Position	Length	Description	Format
491-499	9	Missing.	Numeric
500-508	9	Partially missing.	Numeric
509-517	9	Mismatched.	Numeric
Suffix			
518-526	9	Matching.	Numeric
527-535	9	Missing.	Numeric
536-544	9	Mismatched.	Numeric
Apartment			
545-553	9	Present.	Numeric
554-562	9	Matching (or correctly omitted)	Numeric
563-571	9	Missing	Numeric
572-580	9	Mismatched	Numeric
581-589	9	Missing apartment appended due to firm match	Numeric
Firm			



Position	Length	Description	Format
590-598	9	Missing (or omitted)	Numeric
599-607	9	Name on input and none at address on master	Numeric
608-616	9	Mismatched	Numeric
Address Match Correctness Value Counts			
617-625	9	0	Numeric
626-634	9	1	Numeric
635-643	9	2	Numeric
644-652	9	3	Numeric
653-661	9	4	Numeric
662-670	9	5	Numeric
671-679	9	6	Numeric
680-688	9	7	Numeric
689-697	9	8	Numeric
698-706	9	9	Numeric

Position	Length	Description	Format
----------	--------	-------------	--------

Overall Match Correctness Values

707-715	9	0	Numeric
716-724	9	1	Numeric
725-733	9	2	Numeric
734-742	9	3	Numeric
743-751	9	4	Numeric
752-760	9	5	Numeric
761-769	9	6	Numeric
770-778	9	7	Numeric
779-787	9	8	Numeric
788-796	9	9	Numeric
797-1024	228	Reserved	

# Analysis of Matched Records-2 Statistical Record Layout

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	AME
14-38	25	Secondary key (unused)	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Number of CODE-1 Plus database reads — ZIPINDEX	Numeric

Position	Length	Description	Format
320-328	9	Number of CODE-1 Plus database reads — CITYDTL	Numeric
329-337	9	Number of CODE-1 Plus database reads — LOCALITY	Numeric
338-346	9	Number of CODE-1 Plus database reads — DETAILS	Numeric
347-355	9	Number of CODE-1 Plus database reads — COUNTY	Numeric
356-400	45	Reserved	
401-409	9	Number of database read requests — ZIPINDEX	Numeric
410-418	9	Number of database read requests — CITYDTL	Numeric
419-427	9	Number of database read requests — LOCALITY	Numeric
428-436	9	Number of database read requests — DETAILS	Numeric
437-445	9	Number of database read requests — COUNTY	Numeric
446-490	45	Reserved	
491-499	9	Address-match calls	Numeric

Position	Length	Description	Format
500-508	9	One-address calls	Numeric
509-517	9	Two-address calls	Numeric
518-526	9	Three-address calls	Numeric
527-535	9	Four-address calls	Numeric
536-544	9	Total C1ANZADR invocations	Numeric
545-553	9	City/state extractions	Numeric
554-562	9	Locality load operations	Numeric
563-571	9	City-based locality setup operations	Numeric
572-580	9	Finance-NR-based locality setup operations	Numeric
581-589	9	Original-ZIP Code match attempts	Numeric
590-598	9	Original-ZIP Code matches obtained	Numeric
599-607	9	City-based locality match attempts	Numeric
608-616	9	City-based locality improvements obtained	Numeric

Position	Length	Description	Format
617-625	9	Finance-NR-based locality match attempts	Numeric
626-634	9	Finance-NR-based locality improvements obtained	Numeric
635-643	9	Single-address match attempts	Numeric
644-652	9	General Delivery attempts	Numeric
653-661	9	General Delivery successful matches	Numeric
662-670	9	Street Address attempts	Numeric
671-679	9	Street Address successful matches	Numeric
680-688	9	Rural Route/Highway Contract attempts	Numeric
689-697	9	Rural Route/Highway Contract successful attempts	Numeric
698-706	9	PO Box attempts	Numeric
707-715	9	PO Box successful matches	Numeric
716-724	9	Equal-Street search attempts	Numeric

Position	Length	Description	Format
725-733	9	Equal-Street finds	Numeric
734-742	9	Unequal-Street name comparisons	Numeric
743-751	9	Unequal-Street finds	Numeric
752-760	9	House match attempts	Numeric
761-769	9	House successful matches	Numeric
770-778	9	PO or Rural Route/Highway Contract Box match attempts	Numeric
779-787	9	PO or Rural Route/Highway Contract Box successful matches	Numeric
788-796	9	Apartment match attempts	Numeric
797-805	9	Apartment successful matches	Numeric
806-814	9	Firm-name match attempts	Numeric
815-823	9	Firm-name successful matches	Numeric
824-832	9	House-range de-calculations	Numeric

Position	Length	Description	Format
833-841	9	Apartment-range de-calculations	Numeric
842-850	9	Locality loads from the LIFO stack	Numeric
851-859	9	Focused locality loads	Numeric
860-868	9	County name table loads	Numeric
869-877	9	Successful county name searches	Numeric
878-886	9	Small town default logic matches	Numeric
887-895	9	Delivery Point alternate matches	Numeric
896-904	9	Unique ZIP Code logic matches	Numeric
905-913	9	Private Mail Box (PMB) extractions	Numeric
914-1024	111	Reserved	



# List Code Statistical Record Layout

The List Code Statistical Record supports the following CODE-1 Plus reports:

- ZIP + 4 Coding by List Code
- Carrier Coding by List Code
- Line of Travel Coding by List Code
- Processing Summary by List Code.

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	LCD
14-22	9	List Code — Secondary key (unused)	Character
23-38	16	Secondary key (unused)	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric

Position	Length	Description	Format
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Number processed	Numeric
320-328	9	Invalid ZIP Code	Numeric
329-337	9	Insufficient address	Numeric
338-346	9	Street mismatch	Numeric
347-355	9	House mismatch	Numeric
356-364	9	Apartment mismatch	Numeric
365-373	9	Total records successfully matched	Numeric
374-382	9	ZIP + 4 not stored, multiple matches	Numeric
383-391	9	ZIP + 4 not stored, house/box missing	Numeric
392-400	9	ZIP + 4 not stored, apartment missing	Numeric
401-409	9	ZIP + 4 not stored, address information dropped	Numeric

Position	Length	Description	Format
410-418	9	ZIP + 4 not stored, PRBC too high	Numeric
419-427	9	ZIP + 4 not stored, storage not requested	Numeric
428-436	9	ZIP + 4 not stored, matched non-deliverable	Numeric
437-445	9	ZIP + 4 stored successfully	Numeric
446-454	9	Carrier Route not stored, multiple matches	Numeric
455-463	9	Carrier Route not stored, address information dropped	Numeric
464-472	9	Carrier Route not stored, PRBC too high	Numeric
473-481	9	Carrier Route not stored, storage requested	Numeric
482-490	9	Carrier Route stored successfully	Numeric
491-499	9	Standardized Address not stored, too long	Numeric
500-508	9	Standardized Address not stored, multiple	Numeric

Position	Length	Description	Format
509-517	9	Standardized Address not stored, address information dropped	Numeric
518-526	9	Standardized Address not stored, PRBC too high	Numeric
527-535	9	Standardized Address not stored, storage not requested	Numeric
536-544	9	Standardized Address stored successfully	Numeric
545-553	9	Line of Travel coding attempts	Numeric
554-562	9	Line of Travel matched, ZIP + 4 level coded	Numeric
563-571	9	Line of Travel unmatched, default coded	Numeric
572-580	9	Line of Travel unmatched, insufficient ZIP + 4 Code	Numeric
581-589	9	Reserved	
590-598	9	Records processed	Numeric
599-607	9	Address mismatch	Numeric
608-616	9	Multiple match	Numeric

Position	Length	Description	Format
617-625	9	Unique match	Numeric
626-634	9	ZIP Codes stored	Numeric
635-643	9	ZIP + 4 Codes stored	Numeric
644-652	9	Carrier Route Codes stored	Numeric
653-661	9	Standardized Address stored	Numeric
662-670	9	Standardized city/state information stored	Numeric
671-1024	354	Reserved	

## 3-Digit (SCF) Statistical Record Layout

The 3-Digit (SCF) Statistical Record supports the following CODE-1 Plus reports:

- ZIP + 4 Coding by 3-digit ZIP Code
- Carrier Coding by 3-digit ZIP Code
- Line of Travel Coding by 3-digit ZIP Code
- Processing Summary by 3-digit ZIP Code.

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	SCF
14-16	3	3-Digit ZIP Code (SCF) — secondary key	Character
17-18	2	State abbreviation — secondary key	Character
19-38	20	Secondary key (unused)	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-54	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
55	1	Check digit for general data area	Character
56-310	255	Reserved	
311-319	9	Number processed	Numeric
320-328	9	Invalid ZIP Code	Numeric

Position	Length	Description	Format
329-337	9	Insufficient address	Numeric
338-346	9	Street mismatch	Numeric
347-355	9	House mismatch	Numeric
356-364	9	Apartment mismatch	Numeric
365-373	9	Total records successfully matched	Numeric
374-382	9	ZIP + 4 not stored, multiple matches	Numeric
383-391	9	ZIP + 4 not stored, house/box missing	Numeric
392-400	9	ZIP + 4 not stored, apartment missing	Numeric
401-409	9	ZIP + 4 not stored, address information dropped	Numeric
410-418	9	ZIP + 4 not stored, PRBC too high	Numeric
419-427	9	ZIP + 4 not stored, storage not requested	Numeric
428-436	9	ZIP + 4 not stored, matched non-deliverable	Numeric

Position	Length	Description	Format
437-445	9	ZIP + 4 stored successfully	Numeric
446-454	9	Carrier Route not stored, multiple matches	Numeric
455-463	9	Carrier Route not stored, address information dropped	Numeric
464-472	9	Carrier Route not stored, PRBC too high	Numeric
473-481	9	Carrier Route not stored, storage not requested	Numeric
482-490	9	Carrier Route stored successfully	Numeric
491-499	9	Standardized address not stored, too long	Numeric
500-508	9	Standardized address not stored, multiple	Numeric
509-517	9	Standardized address not stored, address information dropped	Numeric
518-526	9	Standardized address not stored - PRBC too high	Numeric
527-535	9	Standardized address not stored, storage not requested	Numeric



Position	Length	Description	Format
536-544	9	Standardized address stored successfully	Numeric
545-553	9	Line of Travel coding attempts	Numeric
554-562	9	Line of Travel matched, ZIP + 4 level coded	Numeric
563-571	9	Line of Travel unmatched, default coded	Numeric
572-580	9	Line of Travel unmatched, insufficient ZIP + 4 Code	Numeric
581-589	9	Reserved	
590-598	9	Records processed	Numeric
599-607	9	Address mismatch	Numeric
608-616	9	Multiple match	Numeric
617-625	9	Unique match	Numeric
626-634	9	ZIP Codes stored	Numeric
635-643	9	ZIP + 4 Codes stored	Numeric
644-652	9	Carrier Route Codes stored	Numeric

Position	Length	Description	Format
653-661	9	Standardized Addresses stored	Numeric
662-670	9	Standardized city/state information stored	Numeric
671-1024	354	Reserved	

## DPS Statistical Record Layout

The Delivery Point Validation (DPV) Statistical Record supports the requirements for DPV monthly reporting to the USPS, and the CODE-1 Plus DPV Processing by List Code report.

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier	DPS
14-22	9	File Code	Character
23-31	9	List Code	Character

Position	Length	Description	Format
32-38	7	Reserved	Character
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-53	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric
54	1	Check digit for general data area	Character
55-310	255	Reserved	
311-318	8	Report date (from header record or system date) MM/DD/YY	Character
319-326	8	Customer file received date (from L CODE parameter or blank) YYYYMMDD	Character
327-334	8	Customer file processed date (system date) YYYYMMDD	Character
335-342	8	CODE-1 Plus master file date YYYYMMDD	Character
343-349	7	CODE-1 Plus software version 9.99.99	Character
350-352	3	CODE-1 Plus software configuration NNN	Character

Position	Length	Description	Format
353-355	3	Reserved	
356-364	9	Total records presented	Numeric
365-373	9	Total ZIP + 4 coded	Numeric
374-382	9	Total street records coded	Numeric
383-391	9	Total high rise records coded	Numeric
392-400	9	Total PO Box records coded	Numeric
401-409	9	Total RR/HC records coded	Numeric
410-418	9	Total firm records coded	Numeric
419-427	9	Total General Delivery coded	Numeric
428-436	9	Total DPV validated	Numeric
437-445	9	Street (S) records validated	Numeric
446-454	9	Street (S) records CMRA presented	Numeric
455-463	9	Street (S) records CMRA validated	Numeric

Position	Length	Description	Format
464-472	9	High rise (H) records validated	Numeric
473-481	9	High rise (H) records CMRA presented	Numeric
482-490	9	High rise (H) records CMRA validated	Numeric
491-499	9	PO Box (P) records validated	Numeric
500-508	9	RR/HC (R) records validated	Numeric
509-517	9	RR/HC (R) records CMRA presented	Numeric
518-526	9	RR/HC (R) records CMRA validated	Numeric
527-535	9	Firm (F) records validated	Numeric
536-544	9	Firm (F) records CMRA presented	Numeric
545-553	9	Firm (F) records CMRA validated	Numeric
554-562	9	General Delivery records validated	Numeric
563-571	9	Total primary number errors	Numeric

Position	Length	Description	Format
572-580	9	Total primary street errors	Numeric
581-589	9	Total primary high rise errors	Numeric
590-598	9	Total primary PO Box errors	Numeric
599-607	9	Total primary RR/HC errors	Numeric
608-616	9	Total primary firm errors	Numeric
617-625	9	Total secondary number errors	Numeric
626-634	9	Total secondary street errors	Numeric
635-643	9	Total secondary high rise errors	Numeric
644-652	9	Total secondary firm errors	Numeric
653-661	9	False/Positives	Numeric
662-670	9	Total Residential Delivery Indicator (RDI) attempts	Numeric
671-679	9	Total number of Residential Addresses	Numeric
680-688	9	Total number of Business Addresses	Numeric

Position	Length	Description	Format
689-1024	336	Reserved	

## DPS Summary Statistical Record Layout

The Delivery Point Validation (DPV) Summary Statistical Record (DPS) supports the CODE-1 Plus DPV Processing Summary report.

Position	Length	Description	Format
1-2	2	Product identifier (C1). Part of passed key.	Character
3-10	8	Product release number (RXX.XM00)	Character
11-13	3	Record identifier.	DPV
14-22	9	File Code	Character
23-38	16	Reserved	
39-45	7	Current Julian Date (2009010—Jan. 10, 2009). Key.	Numeric
46-53	8	Current time (13010101—1:01 PM 1.01 seconds). Key.	Numeric

Position	Length	Description	Format
54	1	Check digit for general data area	Character
55-310	256	Reserved for future use (filler)	Character
311-318	8	Report date (from header record or system date) YYYYMMDD	Character
319-326	8	Customer file received date (from L CODE parameter or blank) YYYYMMDD	Character
327-334	8	Customer file processed date (system date) YYYYMMDD	Character
335-342	8	CODE-1 Plus master file date YYYYMMDD	Character
343-349	7	CODE-1 Plus software version 9.99.99	Character
350-352	3	CODE-1 Plus software configuration NNN	Character
353-355	3	Reserved	
356-364	9	Total records presented to DPV	Numeric
365-373	9	DPV validated	Numeric



Position	Length	Description	Format
374-382	9	No Delivery Point Validation (N flag)	Numeric
383-391	9	Primary and secondary numbers valid (Y flag)	Numeric
392-400	9	Primary number validated (S flag)	Numeric
401-409	9	Valid primary; missing secondary (D flag)	Numeric
410-418	9	Number of ZIP Code street multiple attempts	Numeric
419-427	9	Number of DPV confirmed	Numeric
428-436	9	Number of ZIP Code PO Box/RR/HC multiple attempts	Numeric
437-445	9	Number of DPV confirmed	Numeric
446-454	9	Number of Carrier Route multiple attempts	Numeric
455-463	9	Number of DPV confirmed	Numeric
464-472	9	Number of directional multiple attempts	Numeric
473-481	9	Number of DPV confirmed	Numeric

Position	Length	Description	Format
482-490	9	Number of suffix multiple attempts	Numeric
491-499	9	Number of DPV confirmed	Numeric
500-508	9	Number of multiple input secondary number attempts	Numeric
509-517	9	Number of DPV confirmed	Numeric
518-526	9	Unique Small Town Default ZIP + 4 Assignment	Numeric
527-535	9	DPV confirmed	Numeric
536-544	9	Total ZIP + 4 coded	Numeric
545-553	9	Total street records coded	Numeric
554-562	9	Total high rise records coded	Numeric
563-571	9	Total PO Box records coded	Numeric
572-580	9	Total RR/HC records coded	Numeric
581-589	9	Total firm records coded	Numeric
590-598	9	Total General Delivery coded	Numeric

Position	Length	Description	Format
599-607	9	Street (S) records validated	Numeric
608-616	9	Street (S) records CMRA presented	Numeric
617-625	9	Street (S) records CMRA validated	Numeric
626-634	9	High rise (H) records validated	Numeric
635-643	9	High rise (H) records CMRA presented	Numeric
644-652	9	High rise (H) records CMRA validated	Numeric
653-661	9	PO Box (P) records validated	Numeric
662-670	9	RR/HC (R) records validated	Numeric
671-679	9	RR/HC (R) records CMRA presented	Numeric
680-688	9	RR/HC (R) records CMRA validated	Numeric
689-697	9	Firm (F) records validated	Numeric
698-706	9	Firm (F) records CMRA presented	Numeric

Position	Length	Description	Format
707-715	9	Firm (F) records CMRA validated	Numeric
716-724	9	General Delivery records validated	Numeric
725-733	9	Total primary number errors	Numeric
734-742	9	Total primary street errors	Numeric
743-751	9	Total primary high rise errors	Numeric
752-760	9	Total primary PO Box errors	Numeric
761-769	9	Total primary RR/HC errors	Numeric
770-778	9	Total primary firm errors	Numeric
779-787	9	Total secondary number errors	Numeric
788-796	9	Total secondary street errors	Numeric
797-805	9	Total secondary high rise errors	Numeric
806-814	9	Total secondary firm errors	Numeric
815-823	9	False/Positives	Numeric

Position	Length	Description	Format
824-832	9	Total Residential Delivery Indicator (RDI) attempts	Numeric
833-841	9	Total number of Residential Addresses	Numeric
842-850	9	Total number of Business Addresses	Numeric
851-1024	174	Reserved	



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