CONFIDENTIAL

NCOA^{Link®}

IMPROVING DELIVERABILITY THROUGH SECURE TECHNOLOGY

NCOA^{Link}

USER TECHNICAL REFERENCE
United States Postal Service
National Customer Support Center
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USPS NCOA^{Link}
Software Developers Guide
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Introduction

NCOA^{Link®} is a data only product that introduces secure technology into the world of National Change-of-Address (NCOA) processing. The secure technology of this DATA ONLY PRODUCT eliminates the clear text representation of the change-of-address data and the complexity of address matching routines. Once the software used to access this data is completed and a successful inquiry is achieved, the new address and/or return flags can be derived from the results.

This product and technology is patented and licensed by the United States Postal Service® (USPS®). By virtue of reading this documentation, the company and or business entity, which includes employees, entered into a Non-Disclosure Agreement.

This product is similar to the existing NCOA processing except this is a DATA ONLY PRODUCT. The utilization of this product eliminates the majority of complex name and address matching routines because the majority of the name and address matching technology is built into this secure data technology.

Administration

The USPS provides support for this system through the National Customer Support Center (NCSC) in Memphis TN. For all administration and technical information regarding this product please contact the NCOA department at 800-589-5766 or email at ncoamemphis.ncsc@usps.gov.

Disclaimer

The USPS makes no warranty or representation either expressed or implied, with respect to the NCOA^{Link} technology and/or the computer system in which it is contained, including its correctness, quality, performance, merchantability, or fitness for any particular purpose.

The USPS will not be liable for direct, indirect, special, incidental, consequential, or other similar damages arising out of use of, or inability to use, the NCOA^{Link} technology and/or computer system, even if advised of the possibility of such damages.

Developer Specification and Requirements

For the purpose of clarity, developer is synonymous with vendor, or any other term that implies a creator of a software system developed for the purpose of communicating and interfacing with the USPS NCOA^{Link} system. The term licensee is defined as one who has been certified and licensed by the USPS to perform NCOA^{Link} processing.

The sole intent of the NCOA^{Link} system is to provide data back to the customer for the purpose of updating an address list that will be used for mailing purposes. A one hundred unique record file minimum is required. Development of an interface system must incorporate USPS guidelines and specifications contained in this document as well as any requirements contained in the USPS NCOA^{Link} License Agreement and Performance Requirements.

Any advertising or marketing promotions that mention and/or imply a relationship with the USPS NCOA^{Link} technology must be approved in writing prior to its use, by the USPS National Customer Support Center (NCSC). The approval of this material is a requirement and is inclusive to all developers, vendors, licensees, sub-contractors and users that directly or indirectly utilize the USPS NCOA^{Link} system.

Due to the sensitive nature of USPS provided COA data, the system employs a secure technology approach, designed and created by the USPS. The sensitivity of the COA data and customer data requires a high level of security and accuracy with respect to the use of the data in any electronic process. Any interface system that provides for, or allows data transfer between the interface and any other location or device, must enable the user/licensee to ensure that no COA information obtained from the NCOA^{Link} system is intercepted, copied, rerouted, stored, retained, archived, or used for any purpose other than explicitly authorized in the license agreement.

All addresses prior to submission to the NCOA^{Link} interface system must be processed by the users/licensee's Coding Accuracy Support System (CASS) certified software. **The ZIP+4 and City State databases utilized by the CASS certified software must be updated monthly.**

The purpose of this document is to communicate the NCOA^{Link} technical specifications to prospective developers of interface systems. This includes sequences of processing records, data exchange, record layouts and field definitions. However, as with any system, future testing, and experiences may warrant modifications to the NCOA^{Link} requirements and/or details. This document, and the information contained herein, is provided for your exclusive use, to guide your NCOA^{Link} interface development efforts, and must not be provided to anyone outside of your organization, including customers, licensees, or potential licensees.

It is **required and necessary** to incorporate the reading of the **NCOA^{Link} License Agreement** to obtain the requirements of a potential licensee and to ensure that the developed interface and or licensee can meet these requirements. The completed NCOA^{Link} system will require specific specifications with regard to processing in addition to statistical and other reporting requirements that will be contained in the above document.

Computer Hardware Specifications

The NCOA^{Link} data product will be fulfilled by two Digital Video Disc's (DVD). It is suggested that the minimum system requirements required for this system is 2GB RAM and 60GB of disk space.

Software Developer Kit Contents

The contents included will provide enough information to develop an interface to the NCOA^{Link} data only product. The sample code and data files are provided for educational purposes in the development of a NCOA^{Link} interface. It is not intended, recommended or implied that the utilization of the actual code included will produce a certifiable and/or production ready NCOA^{Link} interface. All code included unless otherwise stated will be Micro Focus COBOL.

The NCOA^{Link} COA data included in this package only contains positive results for the example data provided in this documentation.

For clarity, square brackets enclosed with letters or numbers and a dash will be used to identify sequential like named files. The following example identifies a series of files, samp[a-z].hs[0-9], refers to files sampa.hs0, sampb.hs0 etc. The Secure Hash Algorithm (SHA) is an integral part of this development. Additional information on SHA can be found on the internet using "SHA" or "SHA-1" for the search criteria or visit http://csrc.nist.gov/publications/fips/fips180-2/fips180-2.pdf . The contents of this interface development package utilizes "big-endian" examples. Additional information on "big-endian" can be found on the internet using "endian" for the search criteria. Even though "big-endian" examples are used it is possible to incorporate this into a "little-endian" environment. The totality of this software developer kit contains three DVD's.

DVD 1 & 2 contents:

DATA DVD's	Contains tables and/or data files required for the NCOA^{Link} system. The NCOA^{Link} COA data included in this package only contains test data that is associated with the STAGE 1 data located at http://ribbs.usps.gov/files/ncoalink. The two DVD's will serve as a representation of the fulfillment format which will consist of only two DVD's.

Software Developer Kit (SDK) – DVD contents:

NCOALink.doc	This document is no longer on the SDK. Please call for updated versions via email.
Exe	Contains an executable program (clkupack.exe) to unpack files. This program will be described later in this documentation.
Source	Contains sample source code needed to guide in the development of a NCOA**Link** interface system. The sample code is provided for educational purposes in the development of a NCOA^{Link} interface. It is not intended, recommended or implied that the utilization of the actual code included will produce a certifiable and/or production ready NCOA^{Link} interface.

Getting Started

1. Read this document thoroughly.

2. Obtain the appropriate NCOA^{Link} License Agreement for this development. This will contain the necessary additional requirements that will be required for an interface to be certified. A developer can provide an NCOA^{Link} interface for a Full Service Provider - 48 month data product, Limited Service Provider – 18 month data product, End-User – 18 month data product or all three. The NCOA^{Link} data product 48 month and 18 month can be fulfilled in a HASH file format or a Flat file format. The NCOA^{Link} Limited Service Provider and End-User have an additional fulfillment option called NCOA^{Link} with ANK^{Link} which can be fulfilled in a HASH file format or a Flat file format. In addition to the data provided in months 1 – 18, additional data will be provided for months 19 – 48. The data in months 19 – 48 will not provide any new address information but will provide return codes indicating the result.

3. Please note that there is a 100 unique record minimum requirement for processing files. It is recommended that the method of implementation of this requirement be developed in a manner which can be turned on or off so the interface can process one record at a time. This method should be implemented in a secure manner where the end user cannot switch/turn on/off without interaction by the software developer. This option will allow for single record processing when necessary such as for testing or for other future application interface processing. Special permission must be obtained in writing from the USPS to operate using this option.

4. For name matching, standard matching logic requires inquiries in the following order:
   Business: Match on business name.
   Individual: Match on first name, middle name, surname and title required. Gender is checked and nickname
                possibilities are considered.
   Family: Match on surname only.

5. Within the interface, the system must be designed to have the following options:

Name	Description	Code
Business only	Interface system will provide only new address information for Business moves.	B
Individual only	Interface system will provide only new address information for Individual moves	I
Individual with Business	Interface system will provide only new address information for Individual and Business moves.	C
Individual with Family	Interface system will provide only new address information for Individual and Family moves. (Residential)	R
Standard	Interface system will not restrict any matches or prohibit the return of information based on move types (Family, Individual or Business). (Standard)	S

6. Pure Family only matching is prohibited. The interface system must utilize only the above options. The interface can not remove, ignore or drop any other name information except as prescribed in this document and the associated License Performance requirements. This document does not supercede the License Performance requirements.

7. The interface system must provide for return code only options.

8. Allow user to select time frame shorter than the NCOA^{Link} Product but no less than six months. (Time period covered and total matches rejected must be reported in the Customer Service Log.)

9. Middle name matching must be performed by the interface software. The NCOA^{Link} system will return only two characters of the middle name.

10. The interface system must utilize all NCOA^{Link} data files as received with regard to content. Additions or subtractions from data files/tables with regards to data content is prohibited unless otherwise stated. The following files may be modified or replaced: pl.txt, sl.dat and sl.txt.

11. While the NCOA^{Link} system requires the utilization of a CASS certified ZIP+4 system it is not mandated that the ZIP+4 system be imbedded or inline within the NCOA^{Link} system.

12. While the NCOA^{Link} system may require the utilization of a certified DPV system it is not mandated that the DPV system be imbedded or inline within the NCOA^{Link} system.

13. Mailing lists may contain multiple named individuals, especially in the financial and insurance environment, and may be printed on the actual mailpiece. The multiple named individuals within a base record may or may not contain the same last name. Regardless, it is the responsibility of the mail list owner to identify the primary target name for submission to the NCOA^{Link} process or develop processes to handle these records. Any pre or post proprietary process will come under USPS scrutiny when used in this manner and any information used to enhance matching must be explained to the client. The specific name used in the query to obtain the match must be returned to the client. All NCOA^{Link} tests must be taken in the FULL PRODUCTION environment and any and all pre- and/or post-processing MUST be included.

14. Develop the interface system to utilize appropriate hardware that will meet the business needs of your clients with regards to processing speeds, connectivity to other platforms or data streams and operational controls.

18. Determine the impact, if any, this system may have with existing COA processes such as direct customer contact, Address Change Service and mailpiece endorsements.

19. The data fulfillment will consist of two DVD's. All files will be located on the DVD without any directories/sub-directories. Each DVD will contain a header file and will contain a data date, all file names contained on the DVD and their associated SHA value including the compressed and uncompressed files. While we anticipate that specific files may be allocated to a specific DVD the software should not rely this and should utilize the header file to determine contents of the DVD. The SHA value should be used to confirm that the files have been copied and uncompressed to the necessary media correctly. The record that contains the release date also contains a SHA value of the release date which can be utilized to prevent tampering with the release date. If the SHA value of the release date is not correct compared to the computed SHA from the software then the software could decide not to load the release and/or not allow the software to operate if the date stored on the system has been tampered with. PLEASE NOTE: UNDER NO CIRCUMSTANCES MAY A FILE BE SWAPPED OR REPLACED FROM ANOTHER RELEASE. DOING SO WILL CAUSE UNKNOWN RESULTS AND CAN CORRUPT ADDRESS LISTS.

20. In processing any COA data, regardless of origin, it is a good idea that the base file contain flags/fields that provide the necessary information on origin of the COA and when the record was updated. In conjunction with other COA processes circumstances may occur in which automated updating of certain base records may need to be prohibited and/or diverted to a different process. The utilization of these flags/fields or other fields will facilitate in the systemic decision making.

21. It is suggested and recommended that the interface process utilize an additional flag. In keeping with the philosophy as stated in 19 above, a file submitted for NCOA^{Link} processing may contain a flag that indicates that the customer may not want this address automatically updated. The intent of this flag is just to be passed back to the customer. This field/flag could be a date or some other character or string. At this time it will not override the NCOA^{Link} process and the normal interface processing will occur and the field will be passed back to the customer.

22. Understand all of the components of the COA data, including the different styles of addresses to insure the base file is being updated properly. The publications below are recommended for reference material:

"Postal Addressing Standards" (Publication 28)
"Address Information System Products Technical Guide"

The above material may be ordered from the USPS National Customer Support Center at 800-331-5746.

23. Provide adequate security that will prohibit unauthorized access or use to the interface and NCOA^{Link} product. Security specifically for the data tables as a standalone entity is not required. The tables as they are have no value unless an interface system is used. NCOA^{Link} can not be reversed engineered. The utilization of logon ID's and access logs should be sufficient depending on the implementation environment.

24. Process specialized USPS certification, audit or test files.

25. Provide 45 day expiration date logic based on the date of the NCOA^{Link} product. This logic should prevent utilization even if the system date is set back.

26. The move type must be returned when a match is made. This is determined by the interface based on the specific name inquiry utilized to obtain the match.

27. For those who are developing for Full Service interface capabilities, the software must populate the field RESULT ZIP+4 RETURN CODE with a value of 'AA' or 'A1'(ZIP+4 matched, ZIP+4 not matched, respectively). The Result DPV Return Code field will only be populated with one DPV return code when appropriate. If the DPV processes results in multiple return codes, excluding AA and A1, for the purpose of NCOA^{Link} testing select only one return code. In production processing we understand that all applicable codes will be returned to the customer per the license agreement.

28. For those who are developing for the Limited Service Provider or End-User (which do not require DPV) the field RESULT ZIP+4 RETURN CODE must be populated with a value of 'AA' or 'A1' and the Result DPV Return Code field will be space filled. If one of these licensees exercise a DPV option then the Result DPV Return Code field will be populated in the same manner as the Full Service Provider.

Return Code description file

The intent of this file is to provide the ability to dynamically add and/or modify existing return codes between product builds. If the USPS adds a new return code to a product build (data derived return code) then the processing software will be able to process this return code without changing or recompiling the software. Any modifications or additions of "software defined" return codes will still be a coordinated event.

In order to reduce the time and effort in adding, modifying, deleting, implementation and the coordination of NCOA^{Link} return codes, we will add a Return Code description table. The software must be able to handle all numeric return codes from 00 to 99 and the alphabetic "A " and not rely on hard coded concepts. The table will consist of a two character numeric field for the return code followed by text field description of the return code. The file will consist of all 100 records (00-99) with a description. If the return code is not utilized, it will have a description of "RESERVED". The software must be able to print or display this table.

Rules Table

The use of the Secure Hash Algorithm (SHA-1) in many of the data products created by the USPS require the data used to probe the tables be an exact match to the data used to create the tables. To accomplish the synchronization of data a set of rules has been created. This process is referred to as the "Rules Table". The Rules Table will facilitate matches that otherwise would not be possible, i.e. JOHNY and JOHNNY, without the risks associated with soundex. The Rules Table will be fulfilled as part of the NCOA^{Link} data fulfillment and will allow the USPS to dynamically modify matching rules between product builds without requiring the software vendor to recompile programs.

The implementation of the Rules Table allows the rules to be used by the build process, the lookup process and to be altered without action from the software vendor (after initial implementation) or their customers. Each NCOA^{Link} fulfillment will contain a file/table that will contain "rules" as well as directives for applying those rules. The rules will contain a string of characters to search for, a second string of characters to use as a replacement and the directives will indicate what part of the name to apply the rule. Below is an example of how the table will look.

<div align="center">Rule Table example</div>

Example 1	Y	N	N	3	2	MAC	MC
Example 2	Y	Y	Y	2	2	UO	OU
Example 3	Y	Y	Y	2	1	LL	L
Example 4	Y	Y	Y	2	1	NN	N

The first three one character fields are the directives on how to apply the changes, and will consist of the literals 'Y' for yes or 'N' for no. The first one character field indicates if the rule applies to the beginning of the name, the second one character field indicates if it applies to the middle of the name, and the third one character field indicates if it applies to the end of the name. The next two fields are one character each and contain a numeric value. The first field indicates how large the string to be replaced is and the second field indicates how many characters will be used to replace the original string. The next field of eight characters contains the string to be replaced and the last column of eight characters will be used to replace the original string. For example, the first rule indicates that "MAC" will be replaced with "MC" and the directions would indicate that this change should only be applied to the left or beginning of the name, numbers indicate that the original string "MAC" is three characters and will be replaced with the two character string "MC". After using a rule, the software will replace the original string with the modified version of the string and continue through the rule table. This process will be repeated each time a rule is used and continue until there are no more rules to try for that word/name.

Pass	Name string	Rule Applied	Name string after rule applied
1	MacConville	Example 1	McConville
1	McConville	Example 3	McConvile
2	McConvile	None	

Note: **The Rules Table replaces the soundex step. The rules must be tested in the order in which they are received in the rule file.** If a rule is used the software must continue through the table to check the remaining rules. If a rule was used then the software must go back to the beginning of the rule table and reprocess the string as if it were the initial string. <u>This process continues until a complete pass through the file is made and there were no rules used</u>. <u>The final pass through the table must have no matches.</u> The field "Apply to beginning of name" is

defined as when the Source Literal matches the first and subsequent characters at the beginning of the word/name and no other characters are to the left of the Source Literal identified in the name. The field "Apply to the middle of name" is defined as when the Source Literal matches characters in the word/name and there is at least one character to the left and one character to the right of the Source Literal identified in the name. The field "Apply to end of name" is defined as when the Source Literal matches the last characters at the end of the word/name and no other characters are to the right of the Source Literal identified in the name. The rules table must only be utilized on the First and Last name. Remove all punctuation from the string before going to the rules table. Remove all pre and imbedded spaces from the string. Hyphenated names – remove hyphen.

Search rule table (from top-down)(must be tested in the order in which they are received)
Note: See the sample source code UTB115C0.CBL

The benefits of this approach include the ability to quickly add and remove rules and a finer level of control as to how the rules should be applied. Once implemented, the software will be able to apply the new or modified rules dynamically, allowing the data to drive the matching logic.

Business Names

If the old address is present attempt to match the input business name. The software will attempt to perform a match on the business name. The determining factor to make a match to the business name is determined by the software. Each developer has their own proprietary matching process for matching names. The results from software to software can vary.

Non-Business Names

Developers must create their own name parser and the quality of the responses from the NCOA^{Link} data will be directly dependent on the quality of the name parser. Because the developers are using different parsers a slight difference in results maybe possible. But for the most part you should receive the same response from each vendor providing all the data is the same. For each attempted lookup on an individual name, first the name will be used as it appears, then attempt the normalized version of the last name, then known nicknames and normalized version of the first name.

Please Note: The only valid generational name suffixes that can be used as input to NCOA/Link are II, III, IV, JR, and SR.

Appropriate use of the Drop Flag

drop flag – This logic is only applicable when there is a street level ZIP+4 Match and an individual name match. If this flag is set to 'Y' then this means the USPS dropped the Secondary Number to create this record and if the interface processing has dropped the Secondary Number a match can not be made. This covers the rule requiring that the secondary number may be missing from either the input or the COA but not both.

drop-n flag – This logic is only applicable when there is a complete Middle Name and individual name match. If this flag is set to 'Y' this means the USPS created a record with the first initial and middle name and if you have also truncated the first name you may not make this match. This covers the rule requiring that the first name may be shortened to one letter on either the input or the COA but not both.

Appropriate use of the Hint Byte

The hint byte, if present, will be used to break ties in the list OR augment the address.

First, try to use the hint byte to break ties if more than one potential delivery point is returned. Compare the hint byte to the right side of the secondary number if present. If there is no secondary number present then compare the hint byte to the right side of the primary number. Do this for every potential delivery point in the list. If the hint byte matches only one delivery point in the list then this is the address to be returned, now disregard the hint byte because it has been used and do not use it in the address reconstruction. If this process results in zero or more than one address then keep the hint byte to augment the address.

Note: The hint byte will never be used to augment 'H' records. After the hint byte is used in the tie breaking portion of reconstruction and there is a single delivery point and that record has a delivery type of 'H', always discard the hint byte.

Next, attempt to DPV confirm the delivery point without using the hint byte. If only one address DPV confirms, then use the hint byte to augment the address (if a hint byte is present). If none DPV confirms attempt to DPV confirm all of the candidate delivery points using the hint byte to augment each address. If you get one match then this is the address to return.

When you augment an address using the hint byte, do the following:

a) First, if the hint is '1/2' then augment the primary number with the hint byte.
b) If it is a single letter consult the left right table and augment the address accordingly.
c) If it is a single letter and the 9-digit is not in the leftrite table, put the hint at the end of the sno.
d) If it is an exceptional unit designator then put it in the descriptor.
e) Else, put '#' in the descriptor, and the hint byte in the secondary number field.

Incorporate the Daily Delete file

The daily delete file is downloaded from the USPS to your NCOA^{Link} system. This should be done daily. The file contains information on records that have been deleted and no longer valid since the last data fulfillment.

The production versions of this file (dailydel.dat or dailydel.ebc) will be available via download from http://ribbs.usps.gov/files/ncoalink.

The daily delete file contains about 45 days worth of data.

NCOA^{Link} with ANK^{Link}

An optional fulfillment enhancement for the NCOA^{Link} Limited Service Provider and End-User has been developed. The additional optional fulfillment format is called NCOA^{Link} with ANK^{Link}. In addition to the data provided in months 1 – 18, additional data will be provided for months 19 – 48. The data in months 19 – 48 will not provide any new address information but will provide return codes indicating the results.

Of course any ANK^{Link} record that has a final NCOA^{Link} defined return code as A, 91, 92 will not have a new address. An ANK^{Link} record can not have an NCOA^{Link} return code of 14.

NCOA^{Link} Return Code Description

Code = Return Code   Description = Explanation of Return code
Address = "Y" = New Address provided   How = "D" = Derived by data – returned in lieu of 11digit
          = "N" = New Address not provided   "S" = Derived by software

Code	Description	Address	How
A	**COA Match** - The input record matched to a COA record. A new address could be furnished. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	Y	s
00	**NO Match** - The input record COULD NOT BE matched to a COA record. A new address could not be furnished. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: When processing in any mode and this return code is received, it is required to attempt the match again using the next level of matching logic allowed by the processing mode.	N	s
01	**Found COA: Foreign Move** – The input record matched to a COA record but the new address was outside the USPS delivery area. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
02	**Found COA: Moved Left No Address(MLNA)** - The input record matched to a COA record but the new address was not provided to the USPS. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
03	**Found COA: Box Closed No Order(BCNO)** – The Input record matched to a COA record containing an old address of PO BOX, which has been closed without a forwarding address provided. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
04	**Cannot match COA: Street Address with Secondary** – In the STANDARD mode utilizing Family matching logic the input record was a potential match to a family type COA record with an old address that contained secondary information. The input record does not contain secondary information. The record is a ZIP+4 street level match. This address match situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
05	**Found COA: New 11-digit DPBC is Ambiguous** – The input record matched to a COA record. The new address on the COA record could not be converted to a deliverable address because the DPBC represents more than one delivery point. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D

NCOA^Link Return Code Description – continued

Code	Description	Address	How
06	**Cannot Match COA: Conflicting Directions: Middle Name Related** –There is more than one COA record for the match algorithm and the middle names or initials on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
07	**Cannot Match COA: Conflicting Directions: Gender Related** –There is more than one COA record for the match algorithm and the genders of the names on the COAs are different. Therefore, a single match result could not be determined. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
08	**Cannot Match COA: Other Conflicting Instructions** – The input record was a potential match to two COA records. The two records were compared and due to differences in the new addresses, a match could not be made. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
09	**Cannot Match COA: High-rise Default** – The input record was a potential match to a family COA record from a High-rise address ZIP+4 coded to the building default. This address match situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
10	**Cannot Match COA: Rural Default** - The input record was a potential match to a family COA record from a Rural Route or Highway Contract Route address ZIP+4 coded to the route default. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
11	**Cannot Match COA: Individual Match: Insufficient COA Name for Match** – There is a COA record with the same surname and address but there is insufficient first/middle name information on the COA record to produce a match using individual matching logic. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic, discontinue the Individual logic sequence and go straight to FAMILY matching logic.	N	D
12	**Cannot Match COA: Middle Name Test Failed** - The input record was a potential match to a COA record. A match cannot be made because the input name contains a conflict with the middle name or initials on the COA record. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
13	**Cannot Match COA: Gender Test Failed** – The input record was a potential match to a COA record. A match cannot be made because the gender of the name on the input record conflicts with the gender of the name on the COA record. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic, discontinue the Individual logic sequence and go straight to FAMILY matching logic.	N	S

NCOA^{Link} Return Code Description – continued

Code	Description	Address	How
14	**Found COA: New Address Would Not Convert at Run Time** - The input record matched to a COA record. The new address could not be converted to a deliverable address. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
15	**Cannot Match COA: Individual Name Insufficient** – The input record was a potential match to a COA record that contains a first initial and middle initial/name [ex. C M Smith or C Mary Smith]. A match cannot be made because the input middle initial/name is missing or does not equal the middle initial/name on the COA. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic, discontinue the Individual logic sequence and go straight to FAMILY matching logic.	N	S
16	**Cannot Match COA: Secondary Number Discrepancy** – The input record was a potential match to a street level COA record. However, a match is prohibited because there is conflicting secondary information on the input and COA record. This return code is only obtained when using individual matching logic. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
17	**Cannot Match COA: Other Insufficient Name** – The input record was a potential match to a COA record that contains a full first name and full middle name. The input middle initial/name is missing or different from the middle name on the COA. A match cannot be made because the first name on the COA was truncated (drop-n flag) and the middle names must be equal in order to make this match. This return code is only obtained when using individual matching logic. Please Note: When processing in the STANDARD mode and this return code is received utilizing Individual Logic, discontinue the Individual logic sequence and go straight to FAMILY matching logic.	N	S
18	**Cannot Match COA: General Delivery** – The input record was a potential match to a COA record from a General Delivery address. This address situation requires individual name matching logic to obtain a match and individual names do not match. Please Note: This return code is only obtained when processing in the STANDARD mode using Family matching logic.	N	D
19	**Found COA: New Address not ZIP + 4 coded, New address primary number not DPV confirmable or Temporary Change Of Address** – There is a change of address on file but the new address cannot be ZIP + 4 coded and therefore there is no 11-digit DPBC to store or return, the new address primary number cannot be confirmed on DPV or the new address is temporary. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D
20	**Cannot Match COA: Conflicting Directions after re-chaining** – Multiple COA records were potential matches to the input record. The COA records contained different new addresses and a single match result could not be determined. This return code may be returned regardless of the processing mode, matching logic, or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	D

NCOA^{Link} Return Code Description – continued

Code	Description	Address	How
66	**Daily Delete** – The input record matched to a business, individual or family type COA record with an old address that is present in the daily delete file. The presence of an address in the daily delete file means that a COA record with this address is pending deletion from the COA master file and that no mail may be forwarded from this address. This return code may be returned regardless of the processing mode, matching logic or COA type. Please Note: If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	N	S
91	**COA Match: Secondary Number dropped from COA** – The input record matched to a COA record. The COA record had a secondary number and the input address did not. Please Note: This return code is derived from Individual and business matching logic only. If this return code is achieved, no <u>other matching attempts</u> are permitted regardless of the PROCESSING mode.	Y	S
92	**COA Match: Secondary Number Dropped from input address** – The input record matched to a COA record. The input address had a secondary number and the COA record did not. The record is a ZIP+4 street level match. Please Note: This return code is derived from individual and business matching logic only. If this return code is achieved, <u>no other matching attempts</u> are permitted regardless of the PROCESSING mode.	Y	S

Please Note: When processing in STANDARD mode and return codes 00, 11, 13, 15 and 17 are received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.

Regarding return code 19, temporary COAs are only in the 48-month product.

NCOA^{Link} Return Code Matrix

Code	Received during Business matching logic	Received during Individual matching logic	Received during Family matching Logic	Retry matching attempts
A	YES	YES	YES	NO
00	YES	YES	YES	attempt the match again using the next level of matching logic allowed by the processing mode
01	YES	YES	YES	NO
02	YES	YES	YES	NO
03	YES	YES	YES	NO
04	NO	NO	YES	NO
05	YES	YES	YES	NO
06	NO	YES	NO	NO
07	NO	YES	NO	NO
08	YES	YES	YES	NO
09	NO	NO	YES	NO
10	NO	NO	YES	NO
11	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
12	NO	YES	NO	NO
13	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
14	YES	YES	YES	NO
15	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.
16	NO	YES	NO	NO
17	NO	YES	NO	When processing in the STANDARD mode and this return code is received utilizing Individual Logic it is required to attempt the match again using FAMILY matching logic.

NCOA^{Link} Return Code Matrix - continued

Code	Received during Business matching logic	Received during Individual matching logic	Received during Family matching logic	Retry matching attempts
18	NO	NO	YES	NO
19	YES	YES	YES	NO
20	YES	YES	YES	NO
66	YES	YES	YES	NO
91	NO	YES	NO	NO
92	NO	YES	NO	NO

New address information is returned only on the following return codes: A, 91, 92

Return Codes that indicate a COA was found but was unable to provide a new address: 01, 02, 03, 05, 14, 19

Return Codes that return a move effective date: A, 91, 92, 01, 02, 03, 05, 14, 19

Return Codes that should not return a move effective date: 04, 06, 07, 08, 09, 10, 11, 18, 20

Return Codes in which the move effective date must be discarded: 04, 06, 07, 08, 09, 10, 11, 12, 13, 15, 16, 17, 18, 20

Return Codes that indicate potential matches but could not make the match due to rules: 04, 06, 07, 08, 09, 10, 11, 12, 13, 15, 16, 17, 18, 20

Return Codes returned during Individual logic only: 06, 07, 11, 12, 13, 15, 16, 17, 91, 92

Return Codes returned during Family logic only: 04, 09, 10, 18

Return Codes that require discontinuing the Individual logic sequence and go straight to the FAMILY matching logic. 11, 13, 15, 17

Return Codes that do not allow retry of matching logic: A, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 12, 14, 16, 18, 19, 20, 91, 92

Other Return Code Descriptions

Code	Description	Process
AA	Input Address ZIP+4 match	ZIP+4
A1	Input Address ZIP+4 not matched	ZIP+4
BB	Input Address DPV matched (all components)	DPV
CC	Input Address DPV Primary Number match, Secondary Number not Matched (secondary number present but is not DPV confirmed)	DPV
F1		
G1		
M1	Input Address Primary Number Missing	DPV
M3	Input Address Primary Number Invalid	DPV
N1	Input Address DPV Primary Number match, High-rise Address Missing Secondary Number	DPV
NL	Used when your customer wants DPV on a new address that is the result of NCOA^{Link} and the new address can not be DPV confirmed. All new addresses from NCOALink are Primary number DPV confirmable. This issue occurs when a different version of the DPV file is used by the licensee. (timing issue) The Secondary number may or may not be confirmable.	DPV
P1	Input Address Missing PO, RR, or HC Box number	DPV
P3	Input Address PO, RR, or HC Box number invalid	DPV
R1	Input Address DPV matched to CMRA but PMB Number not Present	DPV
RR	Input Address DPV matched to CMRA	DPV
U1		

NCOA^Link Return Code Examples

RC = Return Code
How – Derived from D (data) or S (software)
Address – Y (new address provided) or N (new address not provided)

RC	How	Description	Input Record	COA Record old side ↓ new side	Address
A	D	COA Match	Mary Jackson 123 Main ST	Mary Jackson 123 Main ST	Y
66	S	Daily Delete	Mary Jones 123 Main ST	Mary Jones 123 Main ST (in daily delete file)	N
00	D	NO Match	Mary Smith 123 Main ST	No COA on file	N
01	D	Found COA: Foreign Move	John Baker 123 Main ST	John M. Baker Foreign 123 Main ST	N
02	D	Found COA: Moved Left No Address (MLNA)	Mary Baker 456 Elm ST	Mary Baker MLNA 456 Elm ST	N
03	D	Found COA: Box Closed No Order (BCNO)	Moore Printing PO BOX 123	Moore Printing BCNO PO BOX 123	N
04	D	Cannot Match COA: Street Address with Secondary	Smith 789 Oak ST	Pam Smith (family) 789 Oak ST APT 3 (S)	N
05	D	Found COA: New 11-digit DPBC is Ambiguous	Mary Smith 1 1st ST STE 211	Mary Smith new 11-digit 1 1st ST STE 211 ambiguous	N
06	D	Cannot Match COA: Conflicting Directions: Middle Name Related	Ann (or) Ann S (or) Ann M Adams 123 Main ST	Ann M Adams 123 Main ST 456 Elm ST Ann S Adams 123 Main ST 789 Oak ST	N
07	D	Cannot Match COA: Conflicting Directions: Gender Related	Patrick 123 Main ST	Patrick Adams 123 Main ST 456 Main ST Mrs Patrick Adams 123 Main ST 789 Oak ST	N
08	D	Cannot Match COA: Other Conflicting Directions	Cindy Williams 123 Main ST	Cindy Williams 123 Main ST 456 Elm ST med: 200110 (2 COAs on file with different new) 789 Oak ST med: 200110	N
09	D	Cannot Match COA: High-rise Default	Smith 50 First ST	John Smith (family) 50 First ST (L)	N
10	D	Cannot Match COA: Rural Default	Smith RR 1	Martha Smith (family) RR 1 (D)	N
11	D	Cannot Match COA: Individual Match: Insufficient COA Name for Match	M Smith 123 Main ST	M Smith 123 Main ST {COA w/first initial only}	N
12	S	Cannot Match COA: Middle Name Test Failed	Mary P Jones 456 Elm ST	Mary R Jones 456 Elm ST	N
13	S	Cannot Match COA: Gender Test Failed	Mrs Randy 789 Oak ST	Randy Jones 789 Oak ST	N
14	S	Found COA: New Address Would Not Convert at Run Time	Paul Walters 1 Second ST	Paul Walters new 11-digit 1 Second ST ambiguous	N

NCOA^{Link} Return Code Examples - continued

RC = Return Code
How – Derived from D (data) or S (software)
Address – Y (new address provided) or N (new address not provided)

RC	How	Description	Input Record	COA Record old side ↓ new side	Address
15	S	Cannot Match COA: Individual Name Insufficient	J Michael Smith (or) J M Smith (or) J Smith 1 Main ST	J Mark Smith 1 Main ST {COA w/first initial and complete middle}	N
16	S	Cannot Match COA: Secondary Number Discrepancy	1) Mary Jackson 21 Front ST APT 7 (dropped sec#)	1) Mary Jackson 21 Front ST APT 2 (w/drop flag)	N
17	S	Cannot Match COA: Other Insufficient Name	M Kathleen Johnson (or) M C Johnson (or) M A Johnson (or) M Johnson 456 Elm ST	Mary Cindy Johnson (I) 456 Elm ST {COA w/complete first and middle}	N
18	D	Cannot Match COA: General Delivery	Smith General Delivery	Mary Smith (family) General Delivery	N
19	D	Found COA: New Address not ZIP+4 Coded	John Smith 99 First ST	John Smith 123 Main ST → 99 First ST Anytown, ST 11111-0000	N
20	D	Cannot Match COA: Conflicting Directions after re-chaining	Cindy Smith-Jones	Cindy Smith-Jones 123 Main ST 789 Oak ST Cindy Smith med: 200210 789 Oak ST PO BOX 100 Cindy Jones med: 200210 789 Oak ST 1011 Fig DR	N
91	S	COA Match: Secondary Number dropped from COA	Richard Smith 123 Main ST	Richard Smith 123 Main ST (S) (w/drop flag)	Y
92	S	COA Match: Secondary Number dropped from Input	Gary Jones 123 Main ST (dropped sec#)	Gary Jones 123 Main ST (S)	Y

NCOA^{Link} Name Sequence Presentation – Rules – Revised 9/03/08

1. **Original Input:** Attempt a match utilizing the First Name, Middle Name and Last Name as presented from the input file (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again.

2. **Normalize First Name:** If a match is not obtained utilizing rule 1, then query the NORMALF.LST with the input first name, and substitute the normalized version(s) of the first name (Individual logic)**.** Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. These steps will be repeated for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try.

3. **Nickname:** If a match is not obtained utilizing rule 2, then query the NICK.LST utilizing the original input or normalized version(s) of the first name if one was obtained, and substitute the nickname for the first name for all nickname occurrences. (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. These steps will be repeated for all nicknames until a match is obtained or there are no more nicknames to try.

   NOTE: Once you have normalized a first name, use the nickname(s) of the normalized first name. **Do not attempt normalization of nick names.**

4. **Normalize Last Name:** If a match is not obtained utilizing rule 3, then query the NORMALL.LST with the input last name and substitute the normalized version of the last name. (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. **(The FIRST NAME must REFLECT the ORIGINAL first name when performing this lookup) Attempting variations of the first name and last name simultaneously is prohibited**. Repeat the above processes for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try.

   Note: **DO not attempt the "optional** drop 'S'" on the original input last name or the normalized name.

5. **First Name Initial:** If a match is not obtained utilizing rule 4, if there is a Middle Name (more than 1 character), you may attempt a lookup on only the first initial, full middle name, and last name **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **Attempting variations of the first name and last name simultaneously is prohibited**. **Do not** truncate first names while testing normalized spellings of last names.

   Note: If the first name is truncated to the first initial only, the software should set the INPUT DROP NAME FLAG (or any other variable name utilized by the software to track if the input truncated to the first initial) must be set to positive. If the returned NCOA^{Link} DROP N FLAG is positive and the INPUT DROP NAME FLAG is positive then this lookup should be treated as a no match (Return Code: 00). Continue with the lookup process. Please refer to section labeled *Appropriate use of the Drop Flag*.

6. **Swap First/Middle Name:** If a match is not obtained utilizing rule 5, you may reverse the order of the first name and full middle name, providing, of course, that the middle name is more than 1 character **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. <u>If an NCOA^{Link} match is obtained and does not contain a middle name/initials this will be treated as a no match. If an NCOA^{Link} match is obtained and contains middle name/initials but they do not agree then it will be treated as a no match. The only way to match in this scenario is if the input and NCOA^{Link} result both have middle initials and they equate.</u> **Do not attempt name variations when using this option. Use the name as presented.**

7. **Last Name:** If a match is not obtained utilizing rule 6, then you may attempt the lookup **utilizing only the original input LAST NAME as presented** (family logic). Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **If you got to this step by return code 11, 13, 15, and 17 then this would be your last lookup.**

8. **First Name – Hyphenated Middle/Last:** If a match is not obtained utilizing rule 7, then you may attempt the First Name, and Hyphenated Middle Name / Last Name combination **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **Do not attempt name variations when using this option.**

9. **Hyphenated Middle/Last:** If there is not a match utilizing Example 8 then you may attempt the Hyphenated Middle Name / Last Name combination (family logic). Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **Do not attempt name variations when using this option**.

NCOA^{Link} Name Sequence Presentation – Example A

Each of the numbered examples below correspond to the numerical example listed under the title NCOA^{Link} Name Sequence Presentation. The following is an order of precedence for presenting names to NCOA^{Link}. The middle names or initials are presented in this presentation for clarity and it is understood that middle names or initials are not presented for matching, but are used for comparison and validation of the information returned from NCOA^{Link}.

For this example sequence, assume the following information in the NCOALink Data:

NORMALF: ANDREJ   ANDREW   **NICK:** ANDREW   ANDY
: ANDREJ   ANDRE   **:** ANDREW   DREW

NORMALL: ALDABBAS DABBAS

1. **Original Input:** First Name, Middle Name, and Last Name as presented (Individual logic).

Rule 1 – Original Input			Name as presented: ANDREJ DEAN ALDABBAS	**Logic: Individual**
Attempted input name:				
Step	First	Middle	Last	Address	Description
A	ANDREJ	DEAN	ALDABBAS	123 MAIN ST APT 35	original Input

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 1 – Original Input			Name as presented: ANDREJ DEAN ALDABBAS	**Logic: Individual**
Attempted input name:				
Step	First	Middle	Last	Address	Description
B	ANDREJ	DEAN	ALDABBAS	123 MAIN ST	drop pno trailing alpha or fraction/2ndary

Option to drop the 'S' from the last name. (Individual logic)

Rule 1 – Original Input			Name as presented: ANDREJ DEAN ALDABBAS	**Logic: Individual**
Attempted input name:				
Step	First	Middle	Last	Address	Description
C	ANDREJ	DEAN	ALDABBA	123 MAIN ST APT 35	original input/drop "S" (optional)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 1 – Original Input			Name as presented: ANDREJ DEAN ALDABBAS	**Logic: Individual**
Attempted input name:				
Step	First	Middle	Last	Address	Description
D	ANDREJ	DEAN	ALDABBA	123 MAIN ST APT	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

2. **Normalize First Name:** Query the NORMALF.LST with the input first name, and substitute the normalized version(s) of the first name (Individual logic).

Rule 2 – Normalize First Name		Name as presented: ANDREJ DEAN ALDABBAS			**Logic: Individual**
Step	Attempted input name: First	Middle	Last	Address	Description
A	ANDRE	DEAN	ALDABBAS	123 MAIN ST APT 35	normalize first name

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 2 – Normalize First Name		Name as presented: ANDREJ DEAN ALDABBAS			**Logic: Individual**
Step	Attempted input name: First	Middle	Last	Address	Description
B	ANDRE	DEAN	ALDABBAS	123 MAIN ST	normalize 1st/drop pno trailing alpha or fraction/2ndary

 Option to drop the 'S' from the last name. (Individual logic)

Rule 2 – Normalize First Name		Name as presented: ANDREJ DEAN ALDABBAS			**Logic: Individual**
Step	Attempted input name: First	Middle	Last	Address	Description
C	ANDRE	DEAN	ALDABBA	123 MAIN ST APT 35	normalize 1st/drop "S" (optional)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 2 – Normalize First Name		Name as presented: ANDREJ DEAN ALDABBAS			**Logic: Individual**
Step	Attempted input name: First	Middle	Last	Address	Description
D	ANDRE	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

Repeat the above processes for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try.

Rule 2 – Normalize First Name		Name as presented: ANDREJ DEAN ALDABBAS			**Logic: Individual**
Step	Attempted input name: First	Middle	Last	Address	Description
E	ANDREW	DEAN	ALDABBAS	123 MAIN ST APT 35	normalize first name
F	ANDREW	DEAN	ALDABBAS	123 MAIN ST	normalize 1st/drop pno trailing alpha or fraction/2ndary
G	ANDREW	DEAN	ALDABBA	123 MAIN ST APT 35	normalize 1st/drop "S" (optional)
H	ANDREW	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary(optional)

3. **Nickname:** Query NICK.LST utilizing the original input or normalized version(s) of the first name if one was obtained, and substitute the nickname for the first name for all nickname occurrences (Individual logic).
NOTE: Once you have normalized a first name, use the nickname(s) of the normalized first name.

RULE 3 – NICKNAME			Name as presented: ANDRE DEAN ALDABBAS	**Logic: Individual**
	Attempted input name:			
Step	First	Middle	Last	Address	Description
A	*** NO MATCHING RECORD IN THE NICKNAME TABLE ***				

First, ANDRE is presented to the nickname table. There is no matching record for ANDRE. Next, ANDREW is presented. ANDREW corresponds with ANDY in the nickname table and is used as input:

RULE 3 – NICKNAME			Name as presented: ANDREW DEAN ALDABBAS	**Logic: Individual**
	Attempted input name:			
Step	First	Middle	Last	Address	Description
B	ANDY	DEAN	ALDABBAS	123 MAIN ST APT 35	nickname(1)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

RULE 3 – NICKNAME			Name as presented: ANDREW DEAN ALDABBAS	**Logic: Individual**
	Attempted input name:			
Step	First	Middle	Last	Address	Description
C	ANDY	DEAN	ALDABBAS	123 MAIN ST	nick(1)/drop pno trailing alpha or fraction/2ndary

Option to drop the 'S' from the last name. (Individual logic)

RULE 3 – NICKNAME			Name as presented: ANDREW DEAN ALDABBAS	**Logic: Individual**
	Attempted input name:			
Step	First	Middle	Last	Address	Description
D	ANDY	DEAN	ALDABBA	123 MAIN ST APT 35	nick(1)/drop "S" (optional)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

RULE 3 – NICKNAME			Name as presented: ANDREW DEAN ALDABBAS	**Logic: Individual**
	Attempted input name:			
Step	First	Middle	Last	Address	Description
E	ANDY	DEAN	ALDABBA	123 MAIN ST	nick(1)/drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

Repeat the above processes for all nicknames until a match is obtained or there are no more nicknames to try. The next nickname for ANDREW is DREW. DREW is now used as input into NCOALink. Note: Do not attempt normalization of nicknames.

RULE 3 – NICKNAME			Name as presented: ANDREW DEAN ALDABBAS	**Logic: Individual**
	Attempted input name :			
Step	First	Middle	Last	Address	Description
F	DREW	DEAN	ALDABBAS	123 MAIN ST APT 35	nickname(2)
G	DREW	DEAN	ALDABBAS	123 MAIN ST	nick(2)/drop pno trailing alpha or fraction/2ndary
H	DREW	DEAN	ALDABBA	123 MAIN ST APT 35	nick(2)/drop "S" (optional)
I	DREW	DEAN	ALDABBA	123 MAIN ST	nick(2)/drop "S"/drop pno trailing alpha or fraction/2ndary(optional)
Repeat for all nicknames until a match is obtained or there are no more nicknames to try					

Note: Had normalized first names not been obtained from the normalization table (no corresponding record), the original input name would have been used to query the nickname table:

RULE 3 – NICKNAME			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name: The Original Input Name ANDREJ has no nickname associated with it.					
Step	First	Middle	Last	Address	Description
A					

4. **Normalize Last Name:** Query the NORMALL.LST with the input last name and substitute the normalized version of the last name**. (The FIRST NAME must REFLECT the ORIGINAL first name when performing this lookup)**. (Individual logic) Attempting variations of the first name and last name simultaneously is prohibited.

RULE 4 – Normalize Last Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name : Original input - hyphenated middle name and last name					
Step	First	Middle	Last	Address	Description
A	ANDREJ	DEAN	DABBAS	123 MAIN ST APT 35	normalized last name

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

RULE 4 – Normalize Last Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name : Original input - hyphenated middle name and last name					
Step	First	Middle	Last	Address	Description
B	ANDREJ	DEAN	DABBAS	123 MAIN ST	normalize last/drop pno trailing alpha or fraction/2ndary

Note: **DO not attempt the "optional** drop 'S'" on the original input last name or the normalized name.

Repeat the above processes for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try.

Note: The last name of ALDABBAS only has one normalized name associated with it "Dabbas". The following example depicts an additional normalized name using a fictitious name.

RULE 4 – Normalize Last Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name : Original input - hyphenated middle name and last name					
Step	First	Middle	Last	Address	Description
C	ANDREJ	DEAN	DAB	123 MAIN ST APT 35	normalized last name
D	ANDREJ	DEAN	DAB	123 MAIN ST	normalize last/drop pno trailing alpha or fraction/2ndary

5. **First Name Initial:** Middle Name (more than 1 character), attempt a lookup on only the first initial, full middle name, and last name **utilizing the original input as presented** (Individual logic).

Rule 5 – First Name Initial			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
A	A	DEAN	ALDABBAS	123 MAIN ST APT 35	First initial

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 5 – First Name Initial			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
B	A	DEAN	ALDABBAS	123 MAIN ST	1st initial/drop pno trailing alpha or fraction/2ndary

Option to drop the 'S' from the last name. (Individual logic)

Rule 5 – First Name Initial			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
C	A	DEAN	ALDABBA	123 MAIN ST APT 35	1st initial/drop "S" (optional)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 5 – First Name Initial			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
D	A	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

Note: If the first name is truncated to the first initial only, the software must set the INPUT DROP NAME FLAG (or any other variable name utilized by the software to track if the input truncated to the first initial) must be set to positive. If the returned NCOA^{Link} DROP N FLAG is positive and the INPUT DROP NAME FLAG is positive then this lookup should be treated as a no match (Return Code: 00). Continue with the lookup process. Please refer to section labeled *Appropriate use of the Drop Flag.*

6. **Swap First/Middle Name:** Reverse the order of the first name and full middle name, providing, of course, that the middle name is more than 1 character **utilizing the original input as presented** (Individual logic). **Do not attempt name variations when using this option.** <u>If an NCOA^{Link} match is obtained and does not contain a middle name/initials this will be treated as a no match. If an NCOA^{Link} match is obtained and contains middle name/initials but they do not agree then it will be treated as a no match. The only way to match in this scenario is if the input and NCOA^{Link} result both have middle initials and they equate.</u>

Rule 6 – Swap First/Middle Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
A	DEAN	ANDREJ	ALDABBAS	123 MAIN ST APT 35	Reverse First/Middle name

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 6 – Swap First/Middle Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
B	DEAN	ANDREJ	ALDABBAS	123 MAIN ST	reverse 1st-mid/drop pno trailing alpha or fraction/2ndary

Option to drop the 'S' from the last name. (Individual logic)

Rule 6 – Swap First/Middle Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
C	DEAN	ANDREJ	ALDABBA	123 MAIN ST APT 35	reverse 1st-mid/drop "S" (optional)

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 6 – Swap First/Middle Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
D	DEAN	ANDREJ	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

7. **Last Name:** Attempt the lookup **utilizing only the original input LAST NAME as presented** (family logic). **If you got to this step by return code 11,13,15, and 17 then this would be your last lookup.**

Rule 7 – Last Name		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Family**
Attempted input name :				
Step First	Middle Last	Address	Description	
A	ALDABBAS	123 MAIN ST APT 35	last name only	

Option to drop the 'S' from the last name. (family logic)

Rule 7 – Last Name		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Family**
Attempted input name :				
Step First	Middle Last	Address	Description	
B	ALDABBA	123 MAIN ST APT 35	last name/drop "S" (optional)	

8. **First Name – Hyphenated Middle/Last:** Attempt the original input First Name, and Hyphenated Middle Name / Last Name combination **utilizing the original input as presented** (Individual logic). **Do not attempt name variations when using this option.**

Rule 8 – First Name – Hyphenated Middle/Last		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Individual**
Attempted input name :				
Step First	Middle Last	Address	Description	
A ANDREJ	DEAN-ALDABBAS	123 MAIN ST APT 35	hyphenated middle/last	

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 8 – First Name – Hyphenated Middle/Last		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Individual**
Attempted input name :				
Step First	Middle Last	Address	Description	
B ANDREJ	DEAN-ALDABBAS	123 MAIN ST	drop pno trailing alpha or fraction/2ndary	

Option to drop the 'S' from the last name. (Individual logic)

Rule 8 – First Name – Hyphenated Middle/Last		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Individual**
Attempted input name :				
Step First	Middle Last	Address	Description	
C ANDREJ	DEAN-ALDABBA	123 MAIN ST APT 35	drop "S" (optional)	

Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address.

Rule 8 – First Name – Hyphenated Middle/Last		Name as presented: ANDREJ DEAN ALDABBAS		**Logic:Individual**
Attempted input name :				
Step First	Middle Last	Address	Description	
D ANDREJ	DEAN-ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary optional)	

9. **Hyphenated Middle/Last:** Attempt the Hyphenated Middle Name / Last Name combination (family logic). **Do not attempt name variations when using this option.**

Rule 9 – Hyphenated Middle/Last			Name as presented: ANDREJ DEAN ALDABBAS		Logic:Family
	Attempted input name :				
Step	First	Middle	Last	Address	Description
A			DEAN-ALDABBAS	123 MAIN ST APT 35	hyphenated middle/last

Option to drop the 'S' from the last name. (Family logic)

Rule 9 – Hyphenated Middle/Last			Name as presented: ANDREJ DEAN ALDABBAS		Logic:Family
	Attempted input name :				
Step	First	Middle	Last	Address	Description
B			DEAN-ALDABBA	123 MAIN ST APT 35	drop 'S' (optional)

NCOA^{Link} Name Sequence Presentation – Example B

Each of the numbered examples below correspond to the numerical example listed under the title NCOA^{Link} Name Sequence Presentation. The following examples are exactly the same as in the NCOA^{Link} Name Sequence Presentation – Example A, but reflect a consolidated format. The middle names or initials are presented in this presentation for clarity and it is understood that middle names or initials are not presented for matching, but are used for comparison and validation of the information returned from NCOA^{Link}.

For this example sequence, assume the following information in the NCOALink Data:

NORMALF: ANDREJ   ANDREW   **NICK:**   ANDREW   ANDY
           ANDREJ   ANDRE   ANDREW   DREW

NORMALL: ALDABBAS   DABBAS

1. **Original Input:** Attempt a match utilizing the First Name, Middle Name and Last Name as presented from the input file (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again.

Rule 1 – Original Input			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Step	Attempted input name : First	Middle	Last	Address	Description
A	ANDREJ	DEAN	ALDABBAS	123 MAIN ST APT 35	original Input
B	ANDREJ	DEAN	ALDABBAS	123 MAIN ST	drop pno trailing alpha or fraction/2ndary
C	ANDREJ	DEAN	ALDABBA	123 MAIN ST APT 35	original input/drop "S" (optional)
D	ANDREJ	DEAN	ALDABBA	123 MAIN ST APT	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

2. **Normalize First Name:** If a match is not obtained utilizing rule 1, then query the NORMALF.LST with the input first name, and substitute the normalized version(s) of the first name (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again.

Rule 2 – Normalize First Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Step	Attempted input name : First	Middle	Last	Address	Description
A	ANDRE	DEAN	ALDABBAS	123 MAIN ST APT 35	normalize first name
B	ANDRE	DEAN	ALDABBAS	123 MAIN ST	normalize 1st/drop pno trailing alpha or fraction/2ndary
C	ANDRE	DEAN	ALDABBA	123 MAIN ST APT 35	normalize 1st/drop "S" (optional)
D	ANDRE	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)
E	ANDREW	DEAN	ALDABBAS	123 MAIN ST APT 35	normalize first name
F	ANDREW	DEAN	ALDABBAS	123 MAIN ST	normalize 1st/drop pno trailing alpha or fraction/2ndary
G	ANDREW	DEAN	ALDABBA	123 MAIN ST APT 35	normalize 1st/drop "S" (optional
H	ANDREW	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)
Repeat for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try					

3. **Nickname:** If a match is not obtained utilizing rule 2, then query the NICK.LST utilizing the original input or normalized version(s) of the first name if one was obtained, and substitute the nickname for the first name for all nickname occurrences. (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. These steps will be repeated for all nicknames until a match is obtained or there are no more nicknames to try. NOTE: Once you have normalized a first name, use the nickname(s) of the normalized first name. **Do not attempt normalization of nick names.**

Rule 3 – NICKNAME		Name as presented: ANDRE DEAN ALDABBAS			Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
A	*** NO Matching Record in the NICKNAME table for ANDRE ***				

RULE 3 – NICKNAME		Name as presented: ANDREW DEAN ALDABBAS			Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
B	ANDY	DEAN	ALDABBAS	123 MAIN ST APT 35	nickname(1)
C	ANDY	DEAN	ALDABBAS	123 MAIN ST	nick(1)/drop pno trailing alpha or fraction/2ndary
D	ANDY	DEAN	ALDABBA	123 MAIN ST APT 35	nick(1)/drop "S" (optional)
E	ANDY	DEAN	ALDABBA	123 MAIN ST	nick(1)/drop "S"/drop pno trailing alpha or fraction/2ndary (optional)
F	DREW	DEAN	ALDABBAS	123 MAIN ST APT 35	nickname(2)
G	DREW	DEAN	ALDABBAS	123 MAIN ST	nick(2)/drop pno trailing alpha or fraction/2ndary
H	DREW	DEAN	ALDABBA	123 MAIN ST APT 35	nick(2)/drop "S" (optional)
I	DREW	DEAN	ALDABBA	123 MAIN ST	nick(2)/drop "S"/drop pno trailing alpha or fraction/2ndary(optional)
Repeat for all nicknames until a match is obtained or there are no more nicknames to try					

Note: Had normalized first names not been obtained from the normalization table (no corresponding record), the original input name would have been used to query the nickname table:

RULE 3 – NICKNAME		Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name: The Original Input Name ANDREJ has no nickname associated with it.				
Step	First	Middle	Last	Address	Description
A					

4. **Normalize Last Name:** If a match is not obtained utilizing rule 3, then query the NORMALL.LST with the input last name and substitute the normalized version of the last name. (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. **(The FIRST NAME must REFLECT the ORIGINAL first name when performing this lookup) Attempting variations of thefirst name and last name simultaneously is prohibited**. Repeat the above processes for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try.

   Note: **DO not attempt the "optional** drop 'S'" on the original input last name or the normalized name.

RULE 4 – Normalize Last Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name : Original input - hyphenated middle name and last name					
Step	First	Middle	Last	Address	Description
A	ANDREJ	DEAN	DABBAS	123 MAIN ST APT 35	normalized last name
B	ANDREJ	DEAN	DABBAS	123 MAIN ST	normalize last/drop pno trailing alpha or fraction/2ndary

   Repeat the above processes for all normalized occurrences until a match is obtained or there are no more normalized occurrences to try. Note: The last name of ALDABBAS only has one normalized name associated with it "Dabbas". The following example depicts an additional normalized name using a fictitious name.

RULE 4 – Normalize Last Name			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name : Original input - hyphenated middle name and last name					
Step	First	Middle	Last	Address	Description
C	ANDREJ	DEAN	DAB	123 MAIN ST APT 35	normalized last name
D	ANDREJ	DEAN	DAB	123 MAIN ST	normalize last/drop pno trailing alpha or fraction/2ndary

5. **First Name Initial:** If a match is not obtained utilizing rule 4, if there is a Middle Name (more than 1 character), you may attempt a lookup on only the first initial, full middle name, and last name **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **Attempting variations of the first name and last name simultaneously is prohibited**. **Do not** truncate first names while testing normalized spellings of last names.

   Note: If the first name is truncated to the first initial only, the software should set the INPUT DROP NAME FLAG (or any other variable name utilized by the software to track if the input truncated to the first initial) must be set to positive. If the returned NCOA^{Link} DROP N FLAG is positive and the INPUT DROP NAME FLAG is positive then this lookup should be treated as a no match (Return Code: 00). Continue with the lookup process. Please refer to section labeled *Appropriate use of the Drop Flag*.

Rule 5 – First Name Initial			Name as presented: ANDREJ DEAN ALDABBAS		Logic: Individual
Attempted input name :					
Step	First	Middle	Last	Address	Description
A	A	DEAN	ALDABBAS	123 MAIN ST APT 35	First initial
B	A	DEAN	ALDABBAS	123 MAIN ST	1st initial/drop pno trailing alpha or fraction/2ndary
C	A	DEAN	ALDABBA	123 MAIN ST APT 35	1st initial/drop "S" (optional)
D	A	DEAN	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

6. **Swap First/Middle Name:** If a match is not obtained utilizing rule 5, you may reverse the order of the first name and full middle name, providing, of course, that the middle name is more than 1 character **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. If an NCOA^{Link} match is obtained and does not contain a middle name/initials this will be treated as a no match. If an NCOA^{Link} match is obtained and contains middle name/initials but they do not agree then it will be treated as a no match. <u>The only way to match in this scenario is if the input and NCOA^{Link} result both have middle initials and they equate.</u> **Do not attempt name variations when using this option. Use the name as presented.**

Rule 6 – Swap First/Middle Name			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
A	DEAN	ANDREJ	ALDABBAS	123 MAIN ST APT 35	Reverse First/Middle name
B	DEAN	ANDREJ	ALDABBAS	123 MAIN ST	reverse 1st-mid/drop pno trailing alpha or fraction/2ndary
C	DEAN	ANDREJ	ALDABBA	123 MAIN ST APT 35	reverse 1st-mid/drop "S" (optional)
D	DEAN	ANDREJ	ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

7. **Last Name:** If a match is not obtained utilizing rule 6, then you may attempt the lookup **utilizing only the original input LAST NAME as presented** (family logic). Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **If you got to this step by return code 11, 13, 15, and 17 then this would be your last lookup.**

Rule 7 – Last Name				Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Family**
	Attempted input name :					
Step	First	Middle	Last	Address	Description	
A			ALDABBAS	123 MAIN ST APT 35	last name only	
B			ALDABBA	123 MAIN ST APT 35	last name/drop "S" (optional)	

8. **First Name - Hyphenated Middle/Last:** If a match is not obtained utilizing rule 7, then you may attempt the First Name, and Hyphenated Middle Name / Last Name combination **utilizing the original input as presented** (Individual logic). Using individual match logic, if a ZIP+4 address match is made to a street level record and there is secondary address information in the input address and if no NCOA^{Link} match is obtained then a second attempt is made by simultaneously dropping the secondary number and trailing alpha or fractions on primary numbers (if present) from the original input address. Optional: If the last name ends with an 'S', you may drop the 'S' and try this again. **Do not attempt name variations when using this option.**

Rule 8 – First Name – Hyphenated Middle/Last			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Individual**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
A	ANDREJ		DEAN-ALDABBAS	123 MAIN ST APT 35	hyphenated middle/last
B	ANDREJ		DEAN-ALDABBAS	123 MAIN ST	drop pno trailing alpha or fraction/2ndary
C	ANDREJ		DEAN-ALDABBA	123 MAIN ST APT 35	drop "S" (optional)
D	ANDREJ		DEAN-ALDABBA	123 MAIN ST	drop "S"/drop pno trailing alpha or fraction/2ndary (optional)

9. **Hyphenated Middle/Last:** Attempt the original input First Name, and Hyphenated Middle Name / Last Name combination (Individual logic). **Do not attempt name variations when using this option.**

Rule 9 – Hyphenated Middle/Last			Name as presented: ANDREJ DEAN ALDABBAS		**Logic: Family**
	Attempted input name :				
Step	First	Middle	Last	Address	Description
A			DEAN-ALDABBAS	123 MAIN ST APT 35	hyphenated middle/last
B			DEAN-ALDABBA	123 MAIN ST APT 35	drop 'S' (optional)

Cindy-Mary Table

	Cindy Mary	Cindy M	Cindy	C Mary	C M	C	Mary	Mary C	Mary Cindy
Cindy Mary	Match	Match	Match	Match	No match	No match	No Match	No Match	Match
Cindy M	Match	Match	Match	No match	No match	No match	No match	No match	No match
Cindy	Match	Match	Match	No match	No match	No match	No match	No match	No match
C Mary	Match	No match	No match	Match	No match	No match	No Match	Match	No match
C M	No match	No match	No match	No match	Match	No match	No match	No match	No match
C	No match	No match	No match	No match	No match	No match	No match	No match	No match
Mary	No Match	No match	No match	No match	No match	No match	Match	Match	Match
Mary C	No Match	No match	No match	Match	No match	No match	Match	Match	Match
Mary Cindy	Match	No match	No match	No match	No match	No match	Match	Match	Match

NCOA^{Link} Build Records

COA Type and Name as provided by customer:	Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name (not all inclusive):	Return Code:
I M Jones	M Jones (I)	M Jones C Jones M C Jones C M Jones M Cathleen Jones Cathleen M Jones Mary Jones Mary Cathleen Jones Cathleen Mary Jones Jones [family logic]	 M Cathleen Jones	11 00 11 00 11 00 00 11 00 00
F M Jones	M Jones (I) Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I M C Jones	M C Jones (I)	M C Jones C M Jones B C Jones M P Jones M Jones C Jones M Cathleen Jones Cathleen M Jones Mary Jones Mary Cathleen Jones Cathleen Mary Jones Jones [family logic]	 M Cathleen Jones	A 00 00 15 15 00 15 00 00 15 00 00
F M C Jones	M C Jones(I) Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I M Cindy Jones	M Cindy Jones (I)	M Cindy Jones M Cindy Jones [w/ndrop flag] Cindy M Jones B Cindy Jones Cindy B Jones Mary Cindy Jones Cindy Mary Jones Cindy Jones Mary Jones M Jones C Jones M C Jones C M Jones M Cathy Jones Cathy M Jones Mary Cathleen Jones Cathleen Mary Jones Jones [family logic]	 M Cindy Jones M Cathleen Jones	A A 00 00 00 A 00 00 00 15 00 15 00 15 00 15 00 00

NCOA^{Link} Build Records - continued

COA Type and Name as provided by customer:		Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name (not all inclusive):	Return Code:
F	M Cindy Jones	M Cindy Jones (I) Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I	Mary Cindy Jones	Mary Cindy Jones (I) M Cindy Jones (I) *with n-drop flag*	Mary Cindy Jones Cindy Mary Jones M Cindy Jones M Cindy Jones [w/ndrop flag] Cindy M Jones Mary Jones Cindy Jones C Mary Jones Mary C Jones M Jones C Jones M C Jones C M Jones M Chris Jones Chris M Jones Mary Cathleen Jones Cathleen Mary Jones Melissa Cindy Jones Jones [family logic]	Mary Cindy Jones Mary C Jones M Cathleen Jones Mary Cathleen Jones	A A A 00 00 A 00 00 A 17 00 17 00 17 00 12 00 00 00
F	Mary Cindy Jones	Mary Cindy Jones (I) M Cindy Jones (I) *with n-drop flag* Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I	Mary Jones	Mary Jones (I)	Mary Jones Cindy Jones Mary C Jones C Mary Jones M Jones C Jones M C Jones C M Jones Mary Cathleen Jones Cathleen Mary Jones Jones [family logic]	 Mary C Jones Mary Cathleen Jones	A 00 A 00 00 00 00 00 A 00 00
F	Mary Jones	Mary Jones (I) Jones (F)	Same as above except input last name of 'Jones' [family logic]		

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NCOA^Link **Build Records - continued**

COA Type and Name as provided by customer:		Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name (not all inclusive):	Return Code:
I	Mary C Jones	Mary <u>C</u> Jones (I)	Mary Jones		A
			Cathy Jones		00
			C Mary Jones	Mary C Jones	A
			Mary C Jones		A
			B Mary Jones	Mary B Jones	12
			Mary B Jones		12
			C Jones		00
			M Jones		00
			C M Jones		00
			M C Jones		00
			Mary Cathleen Jones		A
			Cathleen Mary Jones	Mary Cathleen Jones	00
			Jones [family logic]		00
F	Mary C Jones	Mary <u>C</u> Jones (I) Jones (F)	Same as above except input of last name 'Jones' [family logic] would receive return code A.		
I	Mary Smith-Jones	Mary Smith (I) Mary Jones (I) Mary Smith-Jones(I) Mary Jones-Smith(I)	Mary Smith		A
			Mary Jones		A
			Mary (Smith-Jones)		A
			Mary (Jones-Smith)		A
			Mary Cathy Smith		A
			Mary Cathy Jones		A
			Cathy Mary Smith	Mary Cathy Smith	00
			Cathy Mary Jones	Mary Cathy Jones	00
			M S Jones		00
			S M Jones		00
			M Smith Jones		00
			Smith M Jones		00
			Mary Cathy (Smith-Jones)		A
			Mary Cathy (Jones-Smith)		A
			Cathy Mary (Smith-Jones)	Mary Cathy (Smith-Jones)	00
			Cathy Mary (Jones-Smith)	Mary Cathy (Jones-Smith)	00
			M S (Jones-Smith)		00
			S M (Jones-Smith)		00
			M Smith (Jones-Smith)		00
			Smith M (Jones-Smith)		00
			(Jones-Smith) [family logic]		00
			(Smith-Jones) [family logic]		00
F	Mary Smith-Jones	Mary Smith (I) Mary Jones (I) Mary Smith-Jones (I) Mary Jones-Smith (I) Smith-Jones (F) Jones-Smith (F)	Same as above except input of last name 'Smith-Jones' [family logic] or 'Jones-Smith' [family logic] would receive return code A.		

NCOALink **Build Records - continued**

COA Type and Name as provided by customer:	Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name (not all inclusive):	Return Code:
I Mary Cindy Smith-Jones	Mary Cindy Smith-Jones(I)	Mary Smith		A
	Mary Cindy Jones-Smith(I)	Cindy Smith		00
		Mary Jones		A
		Cindy Jones		00
	Mary Cindy Smith (I)	Mary C Jones		A
	Mary Cindy Jones (I)	C Mary Jones	Mary C Jones	00
	M Cindy Smith-Jones (I)	Mary C Smith		A
	M Cindy Jones-Smith (I)	C Mary Smith	Mary C Smith	00
	M Cindy Smith (I)	Cindy M Jones		00
	M Cindy Jones (I)	M Cindy Jones		A
		Cindy M Smith		00
		M Cindy Smith		A
		M Smith		17
		M Jones		17
		Mary Smith Jones	Mary (Smith-Jones)	A
		Cindy Smith Jones		00
		Mary Jones Smith	Mary (Jones-Smith)	A
		Cindy Jones Smith		00
		Smith Mary Jones	Mary Smith Jones	12
		Smith Cindy Jones		00
		Mary (Smith-Jones)		A
		Cindy (Smith-Jones)		00
		Mary (Jones-Smith)		A
		Cindy (Jones-Smith)		00
		Mary C (Jones-Smith)		A
		C Mary (Jones-Smith)	Mary C (Jones-Smith)	00
		Mary C (Smith-Jones)		A
		C Mary (Smith-Jones)	Mary C (Smith-Jones)	00
		Cindy M (Jones-Smith)		00
		M Cindy (Jones-Smith)		A
		Cindy M (Smith-Jones)		00
		M Cindy (Smith-Jones)		A
		M Cindy (Smith-Jones) [w/ndrop flag]		00
		Melissa Cindy (Smith-Jones)		00
		M (Smith-Jones)		17
		M (Jones-Smith)		17
		Mary Smith (Jones-Smith)		12
		Cindy Smith (Jones-Smith)		00
		Mary Jones (Smith-Jones)		12
		Cindy Jones (Smith-Jones)		00
		Smith Mary (Jones-Smith)	Mary Smith (Jones-Smith)	12
		Smith Cindy (Jones-Smith)		00
		(Smith-Jones) [family logic]		00
		(Jones-Smith) [family logic]		00
F Mary Cindy Smith-Jones	All records in previous example and Smith-Jones (F) Jones-Smith (F)	Same as above except input of last name 'Smith-Jones' [family logic] or 'Jones-Smith' [family logic] would receive return code A.		

NCOA^{Link} Build Records - continued

COA Type and Name as provided by customer:	Record(s) Created during NCOALink Build:	Input Name:	Sequence Input Name (not all inclusive):	Return Code:
I John Mary Smith	John Smith Mary Smith	John Smith Mary Smith Mary A Smith John A Smith A John Smith A Mary Smith J Mary Smith Mary J Smith John Mary Smith Mary John Smith Smith [family logic]	John A Smith Mary A Smith Mary J Smith	A A A A A A A A A A 00
F John Mary Smith	John Smith Mary Smith Smith (F)	Same as above except input of last name 'Smith' [family logic] would receive return code A.		

Note: If the COA is a ZIP+4 street level record with secondary information, a drop-flag record is created in addition to the above specified record in the table. For example: If the COA is for 'M Cindy Jones' moving from 123 Main ST APT 2, street level record, the following records would be created:

M Cindy Jones, 123 Main ST APT 2

M Cindy Jones, 123 Main ST (w/drop flag)

Certification and Audit

Query Name Handling

When the input contains a middle initial/name:

If the COA returns a middle initial/name and a return code other than '00' was received, display the input middle initial/name in the query name field **if it was used during lookup**. The presence of the query middle initial/name indicates that the middle initial/name was influential in determining the output. If the COA does not contain a middle initial/name, do not return a query middle initial/name.

Input	COA	Middle return	Query name
Charles Al Arnette	Charles Allan Arnette	AL	AL
Charles Allan Arnette	Charles Allan Arnette	AL	ALLAN
Charles Allan Arnette	Charles A Arnette	A	ALLAN or A
Charles Doc Arnette	Charles Doc Arnette	DO	DOC
Charles DJ Arnette	Charles DD Arnette	DD	DJ
Charles J Arnette	Charles D Arnette	D	J
Charles DJ Arnette	Charles D Arnette	D	DJ or D
Charles D Arnette	Charles DJ Arnette	DJ	D
Charles A Arnette	Charles Arnette	(blank)	(blank)
Charles Allan Arnette	Charles Arnette	(blank)	(blank)
Charles Arnette	Charles A Arnette	A	(blank)

Query Name - middle name information

	NCOALink Middle Name Return: Blank	NCOALink Middle Name Return: 1 character	NCOALink Middle Name Return: 2 Characters
Input Middle Name: Blank	Blank	Blank	Blank
Input Middle Name: 1 Character	Blank	The 1 (first) character	The 1 (first) character
Input Middle Name: 2 or more Characters	Blank	The first character OR the Full Input Middle Name	Full Input Middle Name

The following is a description of the file layouts used in the Audit and certification process. The following layouts describe how the Certification/Audit file, which is also called the Stage 2 file, will be constructed:

TEST CLIENT INPUT FILE HEADER RECORD
TEST CLIENT INPUT FILE DETAIL RECORD

The Certification/Audit file or better known by Stage 2 will only contain the questions.

The following is a description of the file layouts used in the developer process or by any Licensee to test the system. The following layouts describe how the test file, which is also called the Stage 1 file, will be constructed:

TEST CLIENT OUTPUT FILE HEADER RECORD
TEST CLIENT OUTPUT FILE DETAIL RECORD

The test file or better known by Stage 1 will contain the questions and the answers. Developers and Licensees can utilize this file to analyze if the system is functioning properly. This format will be utilized to provide back the answers to a Certification/Audit file (Stage 2).

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All Alpha fields, defined as (pic x(#)) in the output file, will be left justified and space filled. When an Alpha field is empty it must contain all spaces. All Numeric fields, defined as (pic 9(#)) in the output file, will be right justified zero filled. When a Numeric field is empty it must contain all zeros. All records will be fixed length and contain a carriage-return line-feed (CRLF) at the end of each record.

RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
TEST CLIENT INPUT FILE				
HEADER RECORD				
1	8	NCSC AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
9	14	NCSC AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
15	18	NCSC AUDIT FILE NUMBER	4	9(04)
19	26	NCSC NCOA^{Link} RELEASE DATE (Data Date)	8	9(08)
27	34	NCSC ZIP+4 RELEASE DATE (Data Date)	8	9(08)
35	42	NCSC DPV RELEASE DATE (Data Date)	8	9(08)
43	43	NCSC TYPE (Audit, Certification, Stage)	1	X(01)
44	297	FILLER	254	X(254)
298	298	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
299	300	CARRIAGE RETURN LINE FEED	2	X(02)

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		TEST CLIENT INPUT FILE **DETAIL RECORD**		
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	28	INPUT CUSTOMER KEY	28	X(28)
29	29	INPUT NAME PARSED (Y,N)	1	X(01)
30	95	INPUT CUSTOMER NAME	66	X(66)
	NOTE:	The information found in the INPUT CUSTOMER NAME will be fixed length. The data contained within the field may be presented as a single field or it may be parsed. If the name is a business, then the name will start in the first position.		
30	35	INPUT PREFIX TITLES	6	X(06)
36	50	INPUT CUSTOMER FIRST NAME	15	X(15)
51	65	INPUT CUSTOMER MIDDLE NAME	15	X(15)
66	85	INPUT CUSTOMER LAST NAME	20	X(20)
86	91	INPUT SUFFIX TITLES	6	X(06)
92	95	FILLER	4	X(04)
96	96	INPUT ADDRESS PARSED (Y,N)	1	X(01)
97	124	INPUT CUSTOMER URBANIZATION NAME	28	X(28)
125	191	INPUT CUSTOMER ADDRESS	67	X(67)
	NOTE:	The information found in the INPUT CUSTOMER ADDRESS will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
125	134	INPUT PARSED PRIMARY NUMBER	10	X(10)
135	136	INPUT PARSED PRE-DIRECTIONAL	2	X(02)
137	164	INPUT PARSED PRIMARY NAME	28	X(28)
165	168	INPUT PARSED SUFFIX	4	X(04)
169	170	INPUT PARSED POST-DIRECTIONAL	2	X(02)
171	174	INPUT PARSED UNIT DESIGNATOR	4	X(04)
175	182	INPUT PARSED SECONDARY NUMBER	8	X(08)
183	191	FILLER	9	X(09)
192	192	INPUT LAST LINE PARSED (Y,N)	1	X(01)
193	234	CUSTOMER LAST LINE	42	X(42)
	NOTE:	The information found in the INPUT CUSTOMER LAST LINE will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
193	220	INPUT CITY NAME	28	X(28)
221	222	INPUT STATE	2	X(02)
223	227	INPUT FIVE DIGIT ZIP	5	X(05)
228	231	INPUT ZIP+4 ADDON	4	X(04)
232	234	FILLER	3	X(03)
235	297	FILLER	63	X(63)
298	298	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
299	300	CARRIAGE RETURN LINE FEED	2	X(02)

		TEST CLIENT OUTPUT FILE **HEADER RECORD**		
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	8	NCSC AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
9	14	NCSC AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
15	18	NCSC AUDIT FILE NUMBER	4	9(04)
19	26	NCSC NCOA^{Link} RELEASE DATE (DATA DATE)	8	9(08)
27	34	NCSC ZIP+4 RELEASE DATE (DATA DATE)	8	9(08)
35	42	NCSC DPV RELEASE DATE (DATA DATE)	8	9(08)
43	43	NCSC TYPE (Audit, Certification, Stage)	1	X(01)
44	298	FILLER	255	X(255)
299	306	OUTPUT AUDIT FILE CREATED DATE(YYYYMMDD)	8	9(08)
307	312	OUTPUT AUDIT FILE CREATED TIME(HHMMSS)	6	9(06)
313	320	PROCESSED AGAINST NCOA^{Link} RELEASE DATE (DATA DATE)	8	9(08)
321	328	PROCESSED AGAINST ZIP+4 RELEASE DATE (DATA DATE)	8	9(08)
329	336	PROCESSED AGAINST DPV RELEASE DATE (DATA DATE)	8	9(08)
337	340	PROCESSED ON PLATFORM ID (platform ID assigned by USPS)	4	X(04)
341	997	FILLER	657	X(657)
998	998	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
999	1000	CARRIAGE RETURN LINE FEED	2	X(02)

		TEST CLIENT OUTPUT FILE **Page 1 of 2**		
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
1	28	INPUT CUSTOMER KEY	28	X(28)
29	29	INPUT NAME PARSED (Y,N)	1	X(01)
30	95	INPUT CUSTOMER NAME	66	X(66)
	NOTE:	The information found in the INPUT CUSTOMER NAME will be fixed length. The data contained within the field may be presented as a single field or it may be parsed. If the name is a business, then the name will start in the first position.		
30	35	INPUT PREFIX TITLES	6	X(06)
36	50	INPUT CUSTOMER FIRST NAME	15	X(15)
51	65	INPUT CUSTOMER MIDDLE NAME	15	X(15)
66	85	INPUT CUSTOMER LAST NAME	20	X(20)
86	91	INPUT SUFFIX TITLES	6	X(06)
92	95	FILLER	4	X(04)
96	96	INPUT ADDRESS PARSED (Y,N)	1	X(01)
97	124	INPUT CUSTOMER URBANIZATION NAME	28	X(28)
125	191	INPUT CUSTOMER ADDRESS	67	X(67)
	NOTE:	The information found in the INPUT CUSTOMER ADDRESS will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
125	134	INPUT PARSED PRIMARY NUMBER	10	X(10)
135	136	INPUT PARSED PRE-DIRECTIONAL	2	X(02)
137	164	INPUT PARSED PRIMARY NAME	28	X(28)
165	168	INPUT PARSED SUFFIX	4	X(04)
169	170	INPUT PARSED POST-DIRECTIONAL	2	X(02)
171	174	INPUT PARSED UNIT DESIGNATOR	4	X(04)
175	182	INPUT PARSED SECONDARY NUMBER	8	X(08)
183	191	FILLER	9	X(09)
192	192	INPUT LAST LINE PARSED (Y,N)	1	X(01)
193	234	CUSTOMER LAST LINE	42	X(42)
	NOTE:	The information found in the INPUT CUSTOMER LAST LINE will be fixed length. The data contained within the field may be presented as a single field or it may be parsed.		
193	220	INPUT CITY NAME	28	X(28)
221	222	INPUT STATE	2	X(02)
223	227	INPUT FIVE DIGIT ZIP	5	X(05)
228	231	INPUT ZIP+4 ADDON	4	X(04)
232	234	FILLER	3	X(03)
235	298	FILLER	64	X(64)
	NOTE:	The following fields reflect the results of input name after the utilization of a name parser. This is the final parsed name information utilized in the process which was responsible for the final result. If the name is a business, then the name will start in the first position. If no match (return code 00) or daily delete (return code 66) then this field will be blank.		
299	304	QUERY PREFIX TITLE	6	X(06)
305	319	QUERY CUSTOMER FIRST NAME	15	X(15)
320	334	QUERY CUSTOMER MIDDLE NAME	15	X(15)
335	354	QUERY CUSTOMER LAST NAME	20	X(20)
355	360	QUERY SUFFIX TITLE	6	X(06)

TEST CLIENT OUTPUT FILE Page 2 of 2				
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
	NOTE:	The following fields reflect the results of the input address after the utilization of a certified CASS ZIP+4 system. This is the final address information that was utilized in the process which was responsible for the final result. If no match (return code 00) or daily delete (return code 66) then this field will be blank.		
361	388	QUERY PARSED URBANIZATION NAME	28	X(28)
389	398	QUERY PARSED PRIMARY NUMBER	10	X(10)
399	400	QUERY PARSED PRE-DIRECTIONAL	2	X(02)
401	428	QUERY PARSED PRIMARY NAME	28	X(28)
429	432	QUERY PARSED SUFFIX	4	X(04)
433	434	QUERY PARSED POST-DIRECTIONAL	2	X(02)
435	438	QUERY PARSED UNIT DESIGNATOR	4	X(04)
439	446	QUERY PARSED SECONDARY NUMBER	08	X(08)
447	474	QUERY PARSED CITY NAME	28	X(28)
475	476	QUERY PARSED STATE	2	X(02)
477	481	QUERY FIVE DIGIT ZIP	5	X(05)
482	485	QUERY ZIP+4 ADDON	4	X(04)
486	513	RESULT PARSED URBANIZATION NAME	28	X(28)
514	523	RESULT PARSED PRIMARY NUMBER	10	X(10)
524	525	RESULT PARSED PRE-DIRECTIONAL	2	X(02)
526	553	RESULT PARSED PRIMARY NAME	28	X(28)
554	557	RESULT PARSED SUFFIX	4	X(04)
558	559	RESULT PARSED POST-DIRECTIONAL	2	X(02)
560	563	RESULT PARSED UNIT DESIGNATOR	4	X(04)
564	571	RESULT PARSED SECONDARY NUMBER	08	X(08)
572	599	RESULT PARSED CITY NAME	28	X(28)
600	601	RESULT PARSED STATE	2	X(02)
602	606	RESULT FIVE DIGIT ZIP	5	X(05)
607	610	RESULT ZIP+4 ADDON	4	X(04)
611	613	RESULT DPBC (including check digit)	3	X(03)
614	617	RESULT CARRIER RTE	4	X(04)
618	618	*RESULT DROP FLAG	1	X(01)
619	619	*RESULT DROP N FLAG	1	X(01)
620	625	RESULT MOVE EFFECTIVE DATE	6	X(06)
626	627	*RESULT MIDDLE NAME/Initials(returned from NCOA/Link)	2	X(02)
628	628	*RESULT GENDER (returned from NCOA/Link)	1	X(01)
629	636	*RESULT HINT BYTE (after expansion)	8	X(08)
637	638	RESULT NCOA LINK RETURN CODE	2	X(02)
639	640	RESULT ZIP+4 RETURN CODE	2	X(02)
641	642	RESULT DPV RETURN CODE	2	X(02)
643	658	HEX VALUE OF THE EMDP (from input address)	16	X(16)
659	698	HEX VALUE OF THE SHA OF EMPD (from input address)	40	X(40)
699	714	HEX VALUE OF THE FIRST 8 CHARACTERS OF 48 or 49 BYTE OBJECT	16	X(16)
715	729	FIRST NAME OF THE 48 or 49 BYTE OBJECT	15	X(15)
730	749	LAST NAME OF THE 48 or 49 BYTE OBJECT	20	X(20)
750	754	SUFFIX NAME OF THE 48 or 49 BYTE OBJECT	5	X(05)
755	794	HEX VALUE OF THE SHA OF 48 or 49 BYTE OBJECT	40	X(40)
795	810	HEX VALUE OF THE DATA RETRIEVED (before reorder)	16	X(16)
811	827	DECIMAL VALUE OF THE 17 DIGIT RESULT VALUE	17	X(17)
828	828	RESULT MOVE TYPE (Family, Individual, Business, Residential)(F,I,B,R)	1	X(01)
829	836	OPTIONAL – INTERMEDIATE RETURN CODES	8	X(08)
837	838	ANK^{Link} RETURN CODE (77)	2	X(02)
839	840	FUTURE RETURN CODE	2	X(02)
841	841	MATCH TO NCOA^{Link} 18 MONTH PRODUCT	1	X(01)
842	842	MATCH TO NCOA^{Link} WITH ANK^{Link} PRODUCT	1	X(01)
843	843	MATCH TO NCOA^{Link} 48 MONTH PRODUCT	1	X(01)

844	997	FILLER	154	X(154)
		TEST CLIENT OUTPUT FILE **Page 3 of 3**		
RECORD FROM	POSITION TO	FIELD NAME	LENGTH	COBOL
998	998	RECORD TYPE (Header/Detail) (H,D)	1	X(01)
999	1000	CARRIAGE RETURN LINE FEED	2	X(02)

*The following fields of returned data used for analysis must not be returned to the customer: result drop flag, result drop n flag, result middle name, result gender and result hint byte.

Report/File calculation

The NCOA^{Link} system requires report and file generation of statistical data. The following is provided as a reference only to the Customer Service Log (CSL) as an example of data collected. For a full list of the most current requirements please consult the appropriate NCOA^{Link} Licensee Performance requirements.

Note: All field positions indicate the field start.

1. All information on the Processing Summary Report is from the CSL & PAF reports

2. Total of detail records for all Count fields should equal the Sum placed in the header record

3. Position 115 'Total Number of Records ZIP+4 Coded' should equal the total of the following fields:

Start	FIELD NAME
287	Total Matched To PO Box
298	Total Matched To HCR Exact
309	Total Matched To RR Default
320	Total Matched To Firm
331	Total Matched To General Del
342	Total Matched To Highrise Default
353	Total Matched To Military
375	Total Matched To RR Exact
386	Total Matched To Street
397	Total Matched To HCR Default
408	Total Matched To Highrise Exact
419	Total Matched To Other

4. The following ZIP + 4 Coded fields should equal the corresponding CASS Fields.

NCOA^{Link} Field Name	CASS Field
Total Matched To PO Box	PO Box
Total Matched To HCR Exact	HCR Exact
Total Matched To RRoute Default	RR Default
Total Matched To Firm	Firm
Total Matched To General Del	General Del
Total Matched To Highrise Default	Highrise Default
Total Matched To Military	Military
Total Matched To Non-Deliverable	Non-Deliverable
Total Matched To RR Exact	RR Exact
Total Matched To Street	Street
Total Matched To HCR Default	HCR Default
Total Matched To Highrise Exact	Highrise Exact
Total Matched To Other	Other
Total Matched To Pos LACS	Pos LACS
Total Matched To EWS	EWS

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5. The following ZIP + 4 Counts should be close to the corresponding 3553 Boxes

NCOA^{Link} Field Name	3553 Field
Total Matched To RR Default	Sum of RR Default and HCR Default
Total Matched To RRoute Exact	Sum of RR Exact and HCR Exact
Total Matched To Highrise Default	High Rise Default
Total Matched To Highrise Exact	High Rise Exact
Total Matched To Pos LACS	LACS
Total Matched to EWS	EWS
Total Number Of Records DPV Confirmed	DPV

6. The sum of the following fields should equal Position 93 "Total Number of Records Matched".

Start	FIELD NAME
452	A – Match
463	91 – Match With Secondary Number Dropped On COA (Old Side)
474	92 – Match With Secondary Number Dropped On Input
485	01 – Match – Foreign Move
496	02 – Match – Moved Left No Address
507	03 – Match – Po Box Closed
529	05 – Match – New 11 Digit DPBC Is Ambiguous
617	19 – Match – New Address Not ZIP+4 Codeable
661	14 – Match – New Address Would Not Convert

7. The sum of the following fields should equal Position 93 (Total Number of Records Matched) + ANK^{Link} match return codes (77- A,91,92,01,02,03,05,19,14) located between positions 1855 and 2118.

Start	FIELD NAME	Start	FIELD NAME	Start	FIELD NAME
837	Addresses Matched Month 0	1024	Addresses Matched Month 17	1200	Addresses Matched Month 33
848	Addresses Matched Month 1	1035	Addresses Matched Month 18	1211	Addresses Matched Month 34
859	Addresses Matched Month 2	1046	Addresses Matched Month 19	1222	Addresses Matched Month 35
870	Addresses Matched Month 3	1057	Addresses Matched Month 20	1233	Addresses Matched Month 36
881	Addresses Matched Month 4	1068	Addresses Matched Month 21	1244	Addresses Matched Month 37
892	Addresses Matched Month 5	1079	Addresses Matched Month 22	1255	Addresses Matched Month 38
903	Addresses Matched Month 6	1090	Addresses Matched Month 22	1266	Addresses Matched Month 39
914	Addresses Matched Month 7	1101	Addresses Matched Month 24	1277	Addresses Matched Month 40
925	Addresses Matched Month 8	1112	Addresses Matched Month 25	1288	Addresses Matched Month 41
936	Addresses Matched Month 9	1123	Addresses Matched Month 26	1299	Addresses Matched Month 42
947	Addresses Matched Month 10	1134	Addresses Matched Month 27	1310	Addresses Matched Month 43
958	Addresses Matched Month 11	1145	Addresses Matched Month 28	1321	Addresses Matched Month 44
969	Addresses Matched Month 12	1156	Addresses Matched Month 29	1332	Addresses Matched Month 45
980	Addresses Matched Month 13	1167	Addresses Matched Month 30	1343	Addresses Matched Month 46
991	Addresses Matched Month 14	1178	Addresses Matched Month 31	1354	Addresses Matched Month 47
1002	Addresses Matched Month 15	1189	Addresses Matched Month 32	1365	Addresses Matched Month 48
1013	Addresses Matched Month 16				

8. The sum of the following fields should >= Position 126 "Total Number of Records DPV Confirmed" .

Start	FIELD NAME
1453	Street (S) Records Validated
1486	High Rise (H) Records Validated
1519	Po Box (P) Records Validated
1530	Rr/Hc (R) Records Validated
1563	Firm (F) Records Validated
1596	General Delivery (G) Records Validated

9. The sum of the following fields should >= Position 1607 "Total Primary Number Error" .

Start	FIELD NAME
1618	Street (S) Records With Primary Number Error
1629	High Rise (H) Records With Primary Number Error
1640	PO Box (P) Records With Primary Number Error
1651	RR/HC (R) Records With Primary Number Error
1662	Firm (F) Records With Primary Number Error

10. The sum of the following fields should >= Position 1673 "Total Secondary Number Error"

Start	FIELD NAME
1684	Street (S) Records With Secondary Number Error
1695	High Rise (H) Records With Secondary Number Error
1706	Firm (F) Records With Secondary Number Error

11. The sum of the following fields should equal position 2119 "77 – Total records matched using ANK^{Link} "

1855	77 – A – Match
1866	77 – 91 – Match with Secondary No. Dropped on COA (Old Side)
1877	77 – 92 – Match with Secondary Number Dropped on Input
1888	77 – 01 – Match – Foreign Move
1899	77 – 02 – Match – Moved Left No Address
1910	77 – 03 – Match – PO Box Closed
1921	77 – 04 – No Match – Family move - Street Address w/Secondary
1932	77 – 05 – Match – New 11 digit DPBC is ambiguous
1943	77 – 06 – No Match – Middle Name Related
1954	77 – 07 – No Match – Gender Related
1965	77 – 08 – No Match – Conflicting Instructions
1976	77 – 09 – No Match – Family move from Highrise default
1987	77 – 10 – No Match – Family move from Rural/HC Route default
1998	77 – 11 – No Match – Individual move – Insufficient name data
2009	77 – 18 – No Match – Family move from General Delivery
2020	77 – 19 – Match – New Address not ZIP+4 codeable
2031	77 – 20 – No Match – Multiple Response – Conflicting Directions
2042	77 – 12 – No Match – Middle Name test failed
2053	77 – 13 – No Match – Gender test failed
2064	77 – 14 – Match – New Address would not convert
2075	77 – 15 – No Match – Individual Name insufficient on input
2086	77 – 16 – No Match – Secondary Number discrepancy
2097	77 – 17 – No Match – Different First Name
2108	77 – 66 – No Match – Input Address appears in "Daily Delete" suppression file

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Header Record (page 1 of 6)			

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
1	4	PLATFORM ID Alphanumeric. Licensee ID (USPS assigned)	4	X(4)
5	18	NUMBER OF RECORDS Total number of records in the Customer Service Log excluding Header Record	14	9(14)
19	70	Filler	52	X(52)
		The Header Record must contain file totals for all fields in the subsequent Detail Record(s). All field positions in the Header Record correspond to field positions in the Detail Record(s).		
		Processing Statistics Summary		
71	81	TOTAL NUMBER OF RECORDS PROCESSED	11	9(11)
82	92	TOTAL NUMBER OF NCOA^{Link} QUERIES PERFORMED	11	9(11)
93	103	TOTAL NUMBER OF RECORDS MATCHED	11	9(11)
104	114	TOTAL NUMBER OF MATCHES REJECTED	11	9(11)
115	125	TOTAL NUMBER OF RECORDS ZIP+4 CODED	11	9(11)
126	136	TOTAL NUMBER OF RECORDS DPV CONFIRMED	11	9(11)
137	286	FILLER	150	X(150)
		ZIP+4 Match Statistics		
287	297	Total matched to PO Box	11	9(11)
298	308	Total matched to HCR Exact	11	9(11)
309	319	Total matched to RR Default	11	9(11)
320	330	Total matched to Firm	11	9(11)
331	341	Total matched to General Del	11	9(11)
342	352	Total matched to Highrise Default	11	9(11)
353	363	Total matched to Military	11	9(11)
364	374	Total matched to Non-Deliverable	11	9(11)
375	385	Total matched to RR Exact	11	9(11)
386	396	Total matched to Street	11	9(11)
397	407	Total matched to HCR Default	11	9(11)
408	418	Total matched to Highrise Exact	11	9(11)
419	429	Total matched to Other	11	9(11)
430	440	Total matched to Pos LACS	11	9(11)
441	451	Total matched to EWS	11	9(11)
		Footnote Information: Number of responses containing each footnote code:		
		New Address Provided by NCOA^{Link}		
452	462	A – Match	11	9(11)
463	473	91 – Match with Secondary Number Dropped on COA (Old Side)	11	9(11)
474	484	92 – Match with Secondary Number Dropped on Input	11	9(11)
		From NCOA^{Link} File Build		
485	495	01 – Match – Foreign Move	11	9(11)
496	506	02 – Match – Moved Left No Address	11	9(11)
507	517	03 – Match – PO Box Closed	11	9(11)

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Header Record (page 2 of 6)**		
518	528	04 – No Match – Family move from Street Address w/Secondary	11	9(11)
529	539	05 – Match – New 11 digit DPBC is ambiguous	11	9(11)
540	550	06 – No Match – Middle Name Related	11	9(11)
551	561	07 – No Match – Gender Related	11	9(11)
562	572	08 – No Match – Conflicting Instructions	11	9(11)
573	583	09 – No Match – Family move from Highrise default	11	9(11)
584	594	10 – No Match – Family move from Rural/HC Route default	11	9(11)
595	605	11 – No Match – Individual move – Insufficient name data	11	9(11)
606	616	18 – No Match – Family move from General Delivery	11	9(11)
617	627	19 – Match – New Address not ZIP+4 codeable	11	9(11)
628	638	20 – No Match – Multiple Response – Conflicting Directions	11	9(11)
		From NCOA^{Link} File Run		
639	649	12 – No Match – Middle Name test failed	11	9(11)
650	660	13 – No Match – Gender test failed	11	9(11)
661	671	14 – Match – New Address would not convert	11	9(11)
672	682	15 – No Match – Individual Name insufficient on input to match	11	9(11)
683	693	16 – No Match – Secondary Number discrepancy	11	9(11)
694	704	17 – No Match – Different First Name	11	9(11)
		From "Daily Delete" Process		
705	715	66 – No Match – Input Address appears in "Daily Delete" suppression file	11	9(11)
		From DPV Processing of Input Addresses		
716	726	AA – ZIP+4 Match.	11	9(11)
727	737	A1 – ZIP+4 No Match	11	9(11)
738	748	M1 – Primary Number missing	11	9(11)
749	759	M3 – Primary Number invalid	11	9(11)
760	770	P1 – Missing PO, RR or HC Box number	11	9(11)
771	781	P3 – Invalid PO, RR or HC Box number	11	9(11)
782	792	BB – DPV matched (all components)	11	9(11)
793	803	RR – DPV matched to CMRA	11	9(11)
804	814	CC – Primary Number Match – Secondary present but invalid	11	9(11)
815	825	N1 – Primary Number Match – Secondary missing	11	9(11)
826	836	R1 – DPV matched to CMRA – PMB number not present	11	9(11)
		Move Activity Summary		
837	847	ADDRESSES MATCHED MONTH 0	11	9(11)
848	858	ADDRESSES MATCHED MONTH 1	11	9(11)
859	869	ADDRESSES MATCHED MONTH 2	11	9(11)
870	880	ADDRESSES MATCHED MONTH 3	11	9(11)
881	891	ADDRESSES MATCHED MONTH 4	11	9(11)
892	902	ADDRESSES MATCHED MONTH 5	11	9(11)
903	913	ADDRESSES MATCHED MONTH 6	11	9(11)
914	924	ADDRESSES MATCHED MONTH 7	11	9(11)
925	935	ADDRESSES MATCHED MONTH 8	11	9(11)
936	946	ADDRESSES MATCHED MONTH 9	11	9(11)
947	957	ADDRESSES MATCHED MONTH 10	11	9(11)
958	968	ADDRESSES MATCHED MONTH 11	11	9(11)
969	979	ADDRESSES MATCHED MONTH 12	11	9(11)
980	990	ADDRESSES MATCHED MONTH 13	11	9(11)
991	1001	ADDRESSES MATCHED MONTH 14	11	9(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Header Record (page 3 of 6)		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
1002	1012	ADDRESSES MATCHED MONTH 15	11	9(11)
1013	1023	ADDRESSES MATCHED MONTH 16	11	9(11)
1024	1034	ADDRESSES MATCHED MONTH 17	11	9(11)
1035	1045	ADDRESSES MATCHED MONTH 18	11	9(11)
1046	1056	ADDRESSES MATCHED MONTH 19	11	9(11)
1057	1067	ADDRESSES MATCHED MONTH 20	11	9(11)
1068	1078	ADDRESSES MATCHED MONTH 21	11	9(11)
1079	1089	ADDRESSES MATCHED MONTH 22	11	9(11)
1090	1100	ADDRESSES MATCHED MONTH 23	11	9(11)
1101	1111	ADDRESSES MATCHED MONTH 24	11	9(11)
1112	1122	ADDRESSES MATCHED MONTH 25	11	9(11)
1123	1133	ADDRESSES MATCHED MONTH 26	11	9(11)
1134	1144	ADDRESSES MATCHED MONTH 27	11	9(11)
1145	1155	ADDRESSES MATCHED MONTH 28	11	9(11)
1156	1166	ADDRESSES MATCHED MONTH 29	11	9(11)
1167	1177	ADDRESSES MATCHED MONTH 30	11	9(11)
1178	1188	ADDRESSES MATCHED MONTH 31	11	9(11)
1189	1199	ADDRESSES MATCHED MONTH 32	11	9(11)
1200	1210	ADDRESSES MATCHED MONTH 33	11	9(11)
1211	1221	ADDRESSES MATCHED MONTH 34	11	9(11)
1222	1232	ADDRESSES MATCHED MONTH 35	11	9(11)
1233	1243	ADDRESSES MATCHED MONTH 36	11	9(11)
1244	1254	ADDRESSES MATCHED MONTH 37	11	9(11)
1255	1265	ADDRESSES MATCHED MONTH 38	11	9(11)
1266	1276	ADDRESSES MATCHED MONTH 39	11	9(11)
1277	1287	ADDRESSES MATCHED MONTH 40	11	9(11)
1288	1298	ADDRESSES MATCHED MONTH 41	11	9(11)
1299	1309	ADDRESSES MATCHED MONTH 42	11	9(11)
1310	1320	ADDRESSES MATCHED MONTH 43	11	9(11)
1321	1331	ADDRESSES MATCHED MONTH 44	11	9(11)
1332	1342	ADDRESSES MATCHED MONTH 45	11	9(11)
1343	1353	ADDRESSES MATCHED MONTH 46	11	9(11)
1354	1364	ADDRESSES MATCHED MONTH 47	11	9(11)
1365	1375	ADDRESSES MATCHED MONTH 48	11	9(11)
1376	1452	Filler	77	X(77)
		DPV Statistics		
1453	1463	Street (S) Records Validated	11	9(11)
1464	1474	CMRA Presented	11	9(11)
1475	1485	CMRA Validated	11	9(11)
1486	1496	High Rise (H) Records Validated	11	9(11)
1497	1507	CMRA Presented	11	9(11)
1508	1518	CMRA Validated	11	9(11)
1519	1529	PO Box (P) Records Validated	11	9(11)
1530	1540	RR/HC (R) Records Validated	11	9(11)
1541	1551	CMRA Presented	11	9(11)
1552	1562	CMRA Validated	11	9(11)
1563	1573	Firm (F) Records Validated	11	9(11)
1574	1584	CMRA Presented	11	9(11)
1585	1595	CMRA Validated	11	9(11)
1596	1606	General Delivery (G) Records Validated	11	9(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Header Record (page 4 of 6)		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
1607	1617	Total Primary Number Error	11	9(11)
1618	1672	FILLER	55	9(55)
1673	1683	Total Secondary Number Error	11	9(11)
1684	1694	Street (S) Records with Secondary Number Error	11	9(11)
1695	1705	High Rise (H) Records with Secondary Number Error	11	9(11)
1706	1716	Firm (F) Records with Secondary Number Error	11	9(11)
1717	1766	FILLER		
		LACS^{Link} Return Codes		
1767	1777	A – LACS Record Match	11	9(11)
1778	1788	00 – No Match	11	9(11)
1789	1799	14 – Match – Found LACS Record – New Address would not convert	11	9(11)
1800	1810	92 – Match with Secondary Number Dropped on Input	11	9(11)
		From DPV Processing of Input Addresses – Additional Return Codes		
1811	1821	F1 – Military	11	9(11)
1822	1832	U1 – Unique ZIP Code	11	9(11)
1833	1843	G1 – General Delivery	11	9(11)
		From NCOA^{Link} File Run – Additional Footnote Codes		
1844	1854	NL – New address not DPV confirmable with vendor software. (Required only when this code is returned to the customer)***	11	9(11)
		Footnote Information: Number of responses containing each footnote code:		
		ANK^{Link} and corresponding NCOA^{Link} Return Codes and Definition		
1855	1865	77 – A – Match	11	9(11)
1866	1876	77 – 91 – Match with Secondary No. Dropped on COA (Old Side)	11	9(11)
1877	1887	77 – 92 – Match with Secondary Number Dropped on Input	11	9(11)
1888	1898	77 – 01 – Match – Foreign Move	11	9(11)
1899	1909	77 – 02 – Match – Moved Left No Address	11	9(11)
1910	1920	77 – 03 – Match – PO Box Closed	11	9(11)
1921	1931	77 – 04 – No Match – Family move - Street Address w/Secondary	11	9(11)
1932	1942	77 – 05 – Match – New 11 digit DPBC is ambiguous	11	9(11)
1943	1953	77 – 06 – No Match – Middle Name Related	11	9(11)
1954	1964	77 – 07 – No Match – Gender Related	11	9(11)
1965	1975	77 – 08 – No Match – Conflicting Instructions	11	9(11)
1976	1986	77 – 09 – No Match – Family move from Highrise default	11	9(11)
1987	1997	77 – 10 – No Match – Family move from Rural/HC Route default	11	9(11)
1998	2008	77 – 11 – No Match – Individual move – Insufficient name data	11	9(11)
2009	2019	77 – 18 – No Match – Family move from General Delivery	11	9(11)
2020	2030	77 – 19 – Match – New Address not ZIP+4 codeable	11	9(11)
2031	2041	77 – 20 – No Match – Multiple Response – Conflicting Directions	11	9(11)
2042	2052	77 – 12 – No Match – Middle Name test failed	11	9(11)
2053	2063	77 – 13 – No Match – Gender test failed	11	9(11)
2064	2074	77 – 14 – Match – New Address would not convert	11	9(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Header Record (page 5 of 6)		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
2075	2085	77 – 15 – No Match – Individual Name insufficient on input	11	9(11)
2086	2096	77 – 16 – No Match – Secondary Number discrepancy	11	9(11)
2097	2107	77 – 17 – No Match – Different First Name	11	9(11)
2108	2118	77 – 66 – No Match – Input Address appears in "Daily Delete" suppression file	11	9(11)
2119	2129	77 – Total records matched using ANK^{Link}	11	9(11)
		LACS^{Link} Return Codes		
2130	2140	09 – LACS- OLD ADDR HIGHRISE DEFAULT – NO NEW ADDRESS	11	9(11)
2141	2192	FILLER	52	X(52)
		Suite^{Link} Return Codes		
2193	2203	Suite^{Link} Return Code A – Match **OPTIONAL – FILLER**	11	9(11)
2204	2214	Suite^{Link} Return Code 00 – No Match **OPTIONAL – FILLER**	11	9(11)
		NCOA^{Link} Return Codes (continued)		
2215	2225	NCOA^{Link} Return Code 21 – To Be Determined	11	9(11)
2226	2236	NCOA^{Link} Return Code 22 – To Be Determined	11	9(11)
2237	2247	NCOA^{Link} Return Code 23 – To Be Determined	11	9(11)
2248	2258	NCOA^{Link} Return Code 24 – To Be Determined	11	9(11)
2259	2269	NCOA^{Link} Return Code 25 – To Be Determined	11	9(11)
2270	2280	NCOA^{Link} Return Code 26 – To Be Determined	11	9(11)
2281	2291	NCOA^{Link} Return Code 27 – To Be Determined	11	9(11)
2292	2302	NCOA^{Link} Return Code 28 – To Be Determined	11	9(11)
2303	2313	NCOA^{Link} Return Code 29 – To Be Determined	11	9(11)
2314	2324	NCOA^{Link} Return Code 30 – To Be Determined	11	9(11)
2325	2638	FILLER	314	X(314)
		DPV Return Codes		
2639	2649	Count of DPV Return Code = Y	11	9(11)
2650	2660	Count of DPV Return Code = S	11	9(11)
2661	2771	Count of DPV Return Code = D	11	9(11)
2672	2682	Count of DPV Return Code = N	11	9(11)
2683	2693	Count of DPV Return Code = BLANK	11	9(11)
2694	2704	Count of DPV Vacant Flag = Y	11	9(11)
2705	2715	Count of DPV CMRA Flag	11	9(11)
2716	2726	Count of DPV No Stat Flag	11	9(11)
		Move Activity Summary for Processing Summary Report		
2727	2737	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 0-3	11	X(11)
2738	2748	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 4-6	11	X(11)
2749	2759	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 7-12	11	X(11)
2760	2770	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 13-18	11	X(11)
2771	2781	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 19+	11	X(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Header Record (page 6 of 6)		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
2782	2836	FILLER	55	X(55)
		Move Activity Summary for Processing Summary Report		
2837	2847	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 0-3	11	X(11)
2848	2858	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 4-6	11	X(11)
2859	2869	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 7-12	11	X(11)
2870	2880	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 13-18	11	X(11)
2881	2891	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 19+	11	X(11)
2892	2902	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 0-3	11	X(11)
2903	2913	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 4-6	11	X(11)
2914	2924	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 7-12	11	X(11)
2925	2935	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 13-18	11	X(11)
2936	2946	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 19+	11	X(11)
2947	2999	FILLER	53	X(53)
3000	3000	Record Type – H = Header/ D = Detail	1	X(1)
		CR/LF Carriage Return/Line Feed required at end of each record.		

<table>
<tr><td colspan="6">NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG
FULL SERVICE PROVIDER
Detail Record (page 1 of 9)</td></tr>
<tr><td>RECORD
FROM</td><td>POSITION
TO</td><td>FIELD NAME and DESCRIPTION</td><td>LENGTH</td><td colspan="2">COBOL</td></tr>
<tr><td>1</td><td>18</td><td>PAF ID
Alphanumeric. Mailing List Processing Acknowledgment Form ID.
1-4   Licensee ID (USPS assigned)
5-10   List Owner NAICS Code
11-12   Frequency of processing
13-18   List ID (Licensee assigned)</td><td>18</td><td colspan="2">X(18)</td></tr>
<tr><td>19</td><td>28</td><td>PROCESSING CATEGORY
Set values to identify the type of processing performed.
EMP TRAIN, INT DB TST, MKTG TEST, NORMAL, STAGE I, STAGE II,
SYS TEST</td><td>10</td><td colspan="2">X(10)</td></tr>
<tr><td>29</td><td>29</td><td>ADDITIONAL NOTES
The literal "A" in this field denotes that customer provided written request
for longer processing period.</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>30</td><td>30</td><td>PRE-PROCESSES PERFORMED
N = None
Y = Yes but with no data modifications
D = Yes, data modifications from sources other than postal data
P = Yes, data modifications from postal data only (ie: ZIP+4, DPV)
B = Yes, data modifications from postal and other sources</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>31</td><td>31</td><td>CONCURRENT PROCESSES PERFORMED
N = None
Y = Yes but with no data modifications
D = Yes, data modifications from sources other than postal data
P = Yes, data modifications from postal data only (ie:ZIP+4, DPV)
B = Yes, data modifications from postal and other sources</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>32</td><td>32</td><td>POST-PROCESSES PERFORMED
N = None
Y = Yes but with no data modifications
D = Yes, data modifications from sources other than postal data
P = Yes, data modifications from postal data only (LACS^{Link})
B = Yes, data modifications from postal and other sources</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>33</td><td>33</td><td>STANDARD OUTPUT RETURNED
Y = All NCOA^{Link} required output returned to client
N = Post-processes modified return information (ie: updates applied to list)
B = Post-processes modified return information; however, separate file
     containing all required output data was also returned</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>34</td><td>34</td><td>MATCHING LOGIC APPLIED
S = Standard (Business, Individual and Family matches allowed)
I = Individual only
B = Business only
C = Individual and Business only
R = Individual and Family only(Residential)</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>35</td><td>35</td><td>DATA RETURNED
C = COA Data Returned (including footnotes and processing statistics)
F = Footnotes (no COA data included; may include processing statistics)
S = Statistics only (no COA data or footnotes provided)</td><td>1</td><td colspan="2">X(1)</td></tr>
<tr><td>36</td><td>37</td><td>NUMBER OF MONTHS REQUESTED
By request of list owner, number of months for which COA data accepted</td><td>2</td><td colspan="2">9(2)</td></tr>
</table>

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Detail Record (page 2 of 9)		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
38	38	CLASS OF MAIL Alphanumeric. Class of mail to be used for mailings produced from customer mailing list. A = First-Class only B = Periodicals only C = Standard Mail only D = Package Services only E = First-Class & Periodicals F = First-Class & Standard Mail G = First-Class & Package Services H = Periodicals & Standard Mail I = Periodicals & Package Services J = Standard Mail & Package Services K = First-Class, Periodicals & Standard Mail L = First-Class, Periodicals & Package Services M = First-Class, Standard Mail & Package Services N = Periodicals, Standard Mail & Package Services O = First-Class, Periodical, Standard Mail, Package Services	1	X(1)
		Processing Date Information		
39	46	DATE LIST RECEIVED FROM CUSTOMER Numeric. Format CCYYMMDD.	8	9(8)
47	54	DATE NCOA^{Link} PROCESSING BEGAN Numeric. Format CCYYMMDD.	8	9(8)
55	62	DATE NCOA^{Link} PROCESSING COMPLETED Numeric. Format CCYYMMDD.	8	9(8)
63	70	DATE LIST RETURNED TO CUSTOMER Numeric. Format CCYYMMDD.	8	9(8)
		Processing Statistics Summary		
71	81	TOTAL NUMBER OF RECORDS PROCESSED Total number of records presented on the original input list.	11	9(11)
82	92	TOTAL NUMBER OF NCOA^{Link} QUERIES PERFORMED Total number of all queries made into NCOA^{Link} including all variations of name and address attempted for each input record. (ie: nickname attempts)	11	9(11)
93	103	TOTAL NUMBER OF RECORDS MATCHED Results returned indicate match: Return codes A, 91, 92, 01, 02, 03, 05, 14, 19	11	9(11)
104	114	TOTAL NUMBER OF MATCHES REJECTED Results discarded based on Move Effective Date: Return code 00 generated due to age of COA	11	9(11)
115	125	TOTAL NUMBER OF RECORDS ZIP+4 CODED	11	9(11)
126	136	TOTAL NUMBER OF RECORDS DPV CONFIRMED	11	9(11)
		CASS™/MASS™ Product Information		
137	166	CASS/MASS Software Name	30	X(30)
167	178	CASS/MASS Software Version	12	X(12)
179	186	CASS/MASS Directory (Data) Release Date (DATA DATE) Numeric. Format CCYYMMDD.	8	9(8)

NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG
FULL SERVICE PROVIDER
Detail Record (page 3 of 9)

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
		NCOA^{Link} Product Information		
187	216	NCOA^{Link} Software Name	30	X(30)
217	228	NCOA^{Link} Software Version	12	X(12)
229	236	NCOA^{Link} Data Release Date (DATA DATE) Numeric. Format CCYYMMDD.	8	9(8)
		FILLER (Formerly DPV Product Information)		
237	286	FILLER	50	X(50)
		ZIP+4 Match Statistics		
287	297	Total matched to PO Box	11	9(11)
298	308	Total matched to HCR Exact	11	9(11)
309	319	Total matched to RR Default	11	9(11)
320	330	Total matched to Firm	11	9(11)
331	341	Total matched to General Del	11	9(11)
342	352	Total matched to Highrise Default	11	9(11)
353	363	Total matched to Military	11	9(11)
364	374	Total matched to Non-Deliverable	11	9(11)
375	385	Total matched to RR Exact	11	9(11)
386	396	Total matched to Street	11	9(11)
397	407	Total matched to HCR Default	11	9(11)
408	418	Total matched to Highrise Exact	11	9(11)
419	429	Total matched to Other	11	9(11)
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441	451	Total matched to EWS	11	9(11)
		Footnote Information: Number of responses containing each footnote code:		
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463	473	91 – Match with Secondary Number Dropped on COA (Old Side)	11	9(11)
474	484	92 – Match with Secondary Number Dropped on Input	11	9(11)
		From NCOA^{Link} File Build		
485	495	01 – Match – Foreign Move	11	9(11)
496	506	02 – Match – Moved Left No Address	11	9(11)
507	517	03 – Match – PO Box Closed	11	9(11)
518	528	04 – No Match – Family move from Street Address w/Secondary	11	9(11)
529	539	05 – Match – New 11 digit DPBC is ambiguous	11	9(11)
540	550	06 – No Match – Middle Name Related	11	9(11)
551	561	07 – No Match – Gender Related	11	9(11)
562	572	08 – No Match – Conflicting Instructions	11	9(11)
573	583	09 – No Match – Family move from Highrise default	11	9(11)
584	594	10 – No Match – Family move from Rural/HC Route default	11	9(11)
595	605	11 – No Match – Individual move – Insufficient name data	11	9(11)
606	616	18 – No Match – Family move from General Delivery	11	9(11)
617	627	19 – Match – New Address not ZIP+4 codeable	11	9(11)
628	638	20 – No Match – Multiple Response – Conflicting Directions	11	9(11)

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Detail Record (page 4 of 9)**		
		From NCOA^{Link} File Run		
639	649	12 – No Match – Middle Name test failed	11	9(11)
650	660	13 – No Match – Gender test failed	11	9(11)
661	671	14 – Match – New Address would not convert	11	9(11)
672	682	15 – No Match – Individual Name insufficient on input to match	11	9(11)
683	693	16 – No Match – Secondary Number discrepancy	11	9(11)
694	704	17 – No Match – Different First Name	11	9(11)
		From "Daily Delete" Process		
705	715	66 – No Match – Input Address appears in "Daily Delete" suppression file	11	9(11)
		From DPV Processing of Input Addresses		
716	726	AA – ZIP+4 Match	11	9(11)
727	737	A1 – ZIP+4 No Match	11	9(11)
738	748	M1 – Primary Number missing	11	9(11)
749	759	M3 – Primary Number invalid	11	9(11)
760	770	P1 – Missing PO, RR or HC Box number	11	9(11)
771	781	P3 – Invalid PO, RR or HC Box number	11	9(11)
782	792	BB – DPV matched (all components)	11	9(11)
793	803	RR – DPV matched to CMRA	11	9(11)
804	814	CC – Primary Number Match – Secondary present but invalid	11	9(11)
815	825	N1 – Primary Number Match – Secondary missing	11	9(11)
826	836	R1 – DPV matched to CMRA – PMB number not present	11	9(11)
		Move Activity Summary Age based on month and year of process date.		
837	847	ADDRESSES MATCHED MONTH 0 Total number of matches made with Move Effective Date (MED) corresponding to the process date.	11	9(11)
848	858	ADDRESSES MATCHED MONTH 1 Total number of matches made with MED 1 month prior to process date.	11	9(11)
859	869	ADDRESSES MATCHED MONTH 2 Total number of matches made with MED 2 months prior to process date.	11	9(11)
870	880	ADDRESSES MATCHED MONTH 3 Total number of matches made with MED 3 months prior to process date.	11	9(11)
881	891	ADDRESSES MATCHED MONTH 4 Total number of matches made with MED 4 months prior to process date.	11	9(11)
892	902	ADDRESSES MATCHED MONTH 5 Total number of matches made with MED 5 months prior to process date.	11	9(11)
903	913	ADDRESSES MATCHED MONTH 6 Total number of matches made with MED 6 months prior to process date.	11	9(11)
914	924	ADDRESSES MATCHED MONTH 7 Total number of matches made with MED 7 months prior to process date.	11	9(11)
925	935	ADDRESSES MATCHED MONTH 8 Total number of matches made with MED 8 months prior to process date.	11	9(11)
936	946	ADDRESSES MATCHED MONTH 9 Total number of matches made with MED 9 months prior to process date.	11	9(11)
947	957	ADDRESSES MATCHED MONTH 10 Total number of matches made with MED 10 months prior to process date	11	9(11)
958	968	ADDRESSES MATCHED MONTH 11 Total number of matches made with MED 11 months prior to process date.	11	9(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Detail Record (page 5 of 9)**		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
969	979	ADDRESSES MATCHED MONTH 12 Total number of matches made with MED 12 months prior to process date.	11	9(11)
980	990	ADDRESSES MATCHED MONTH 13 Total number of matches made with MED 13 months prior to process date.	11	9(11)
991	1001	ADDRESSES MATCHED MONTH 14 Total number of matches made with MED 14 months prior to process date.	11	9(11)
1002	1012	ADDRESSES MATCHED MONTH 15 Total number of matches made with MED 15 months prior to process date.	11	9(11)
1013	1023	ADDRESSES MATCHED MONTH 16 Total number of matches made with MED 16 months prior to process date.	11	9(11)
1024	1034	ADDRESSES MATCHED MONTH 17 Total number of matches made with MED 17 months prior to process date.	11	9(11)
1035	1045	ADDRESSES MATCHED MONTH 18 Total number of matches made with MED 18 months prior to process date.	11	9(11)
1046	1056	ADDRESSES MATCHED MONTH 19 Total number of matches made with MED 19 months prior to process date.	11	9(11)
1057	1067	ADDRESSES MATCHED MONTH 20 Total number of matches made with MED 20 months prior to process date.	11	9(11)
1068	1078	ADDRESSES MATCHED MONTH 21 Total number of matches made with MED 21 months prior to process date.	11	9(11)
1079	1089	ADDRESSES MATCHED MONTH 22 Total number of matches made with MED 22 months prior to process date.	11	9(11)
1090	1100	ADDRESSES MATCHED MONTH 23 Total number of matches made with MED 23 months prior to process date.	11	9(11)
1101	1111	ADDRESSES MATCHED MONTH 24 Total number of matches made with MED 24 months prior to process date.	11	9(11)
1112	1122	ADDRESSES MATCHED MONTH 25 Total number of matches made with MED 25 months prior to process date.	11	9(11)
1123	1133	ADDRESSES MATCHED MONTH 26 Total number of matches made with MED 26 months prior to process date.	11	9(11)
1134	1144	ADDRESSES MATCHED MONTH 27 Total number of matches made with MED 27 months prior to process date.	11	9(11)
1145	1155	ADDRESSES MATCHED MONTH 28 Total number of matches made with MED 28 months prior to process date.	11	9(11)
1156	1166	ADDRESSES MATCHED MONTH 29 Total number of matches made with MED 29 months prior to process date.	11	9(11)
1167	1177	ADDRESSES MATCHED MONTH 30 Total number of matches made with MED 30 months prior to process date.	11	9(11)
1178	1188	ADDRESSES MATCHED MONTH 31 Total number of matches made with MED 31 months prior to process date.	11	9(11)
1189	1199	ADDRESSES MATCHED MONTH 32 Total number of matches made with MED 32 months prior to process date.	11	9(11)
1200	1210	ADDRESSES MATCHED MONTH 33 Total number of matches made with MED 33 months prior to process date.	11	9(11)
1211	1221	ADDRESSES MATCHED MONTH 34 Total number of matches made with MED 34 months prior to process date.	11	9(11)
1222	1232	ADDRESSES MATCHED MONTH 35 Total number of matches made with MED 35 months prior to process date.	11	9(11)
1233	1243	ADDRESSES MATCHED MONTH 36 Total number of matches made with MED 36 months prior to process date.	11	9(11)
1244	1254	ADDRESSES MATCHED MONTH 37 Total number of matches made with MED 37 months prior to process date.	11	9(11)

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Detail Record (page 6 of 9)**		
1255	1265	ADDRESSES MATCHED MONTH 38 Total number of matches made with MED 38 months prior to process date.	11	9(11)
1266	1276	ADDRESSES MATCHED MONTH 39 Total number of matches made with MED 39 months prior to process date.	11	9(11)
1277	1287	ADDRESSES MATCHED MONTH 40 Total number of matches made with MED 40 months prior to process date.	11	9(11)
1288	1298	ADDRESSES MATCHED MONTH 41 Total number of matches made with MED 41 months prior to process date.	11	9(11)
1299	1309	ADDRESSES MATCHED MONTH 42 Total number of matches made with MED 42 months prior to process date.	11	9(11)
1310	1320	ADDRESSES MATCHED MONTH 43 Total number of matches made with MED 43 months prior to process date.	11	9(11)
1321	1331	ADDRESSES MATCHED MONTH 44 Total number of matches made with MED 44 months prior to process date.	11	9(11)
1332	1342	ADDRESSES MATCHED MONTH 45 Total number of matches made with MED 45 months prior to process date.	11	9(11)
1343	1353	ADDRESSES MATCHED MONTH 46 Total number of matches made with MED 46 months prior to process date.	11	9(11)
1354	1364	ADDRESSES MATCHED MONTH 47 Total number of matches made with MED 47 months prior to process date.	11	9(11)
1365	1375	ADDRESSES MATCHED MONTH 48 Total number of matches made with MED 48 months or more prior to process date.	11	9(11)
1376	1387	OPERATOR ID Identification code for the operator who processed this list	12	X(12)
1388	1417	BUYER COMPANY NAME If list processed was for rent/sale/lease fulfillment, provide name of company (or individual) purchasing list	30	X(30)
1418	1422	MAILING ZIP CODE ZIP Code of Business Mail Entry Unit (BMEU) or Post Office at which mail will be submitted for mailing	5	9(5)
1423	1452	Marketing Test – List Owner Company Name (Company for whom the marketing test is being completed)	30	X(30)
		DPV Statistics		
1453	1463	Street (S) Records Validated	11	9(11)
1464	1474	CMRA Presented	11	9(11)
1475	1485	CMRA Validated	11	9(11)
1486	1496	High Rise (H) Records Validated	11	9(11)
1497	1507	CMRA Presented	11	9(11)
1508	1518	CMRA Validated	11	9(11)
1519	1529	PO Box (P) Records Validated	11	9(11)
1530	1540	RR/HC (R) Records Validated	11	9(11)
1541	1551	CMRA Presented	11	9(11)
1552	1562	CMRA Validated	11	9(11)
1563	1573	Firm (F) Records Validated	11	9(11)
1574	1584	CMRA Presented	11	9(11)
1585	1595	CMRA Validated	11	9(11)
1596	1606	General Delivery (G) Records Validated	11	9(11)

		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Detail Record (page 7 of 9)**		
RECORD FROM	**POSITION TO**	**FIELD NAME and DESCRIPTION**	**LENGTH**	**COBOL**
1607	1617	Total Primary Number Error	11	9(11)
1618	1672	FILLER	55	X(55)
1673	1683	Total Secondary Number Error	11	9(11)
1684	1694	Street (S) Records with Secondary Number Error	11	9(11)
1695	1705	High Rise (H) Records with Secondary Number Error	11	9(11)
1706	1716	Firm (F) Records with Secondary Number Error	11	9(11)
		FILLER (Formerly LACS^{Link} Product Information)		
1717	1766	Filler	50	X(50)
		LACS^{Link} Return Codes		
1767	1777	A – LACS Record Match	11	9(11)
1778	1788	00 – No Match	11	9(11)
1789	1799	14 – Match – Found LACS Record – New Address would not convert	11	9(11)
1800	1810	92 – Match with Secondary Number Dropped on Input	11	9(11)
		From DPV Processing of Input Addresses – Additional Return Codes		
1811	1821	F1 – Military	11	9(11)
1822	1832	U1 – Unique ZIP Code	11	9(11)
1833	1843	G1 – General Delivery	11	9(11)
		From NCOA^{Link} File Run – Additional Return Codes		
1844	1854	NL – New address not DPV confirmable with vendor software. (Required only when this code is returned to the customer)***	11	9(11)
		Footnote Information: Number of responses containing each footnote code:		
		ANK^{Link} and corresponding NCOA^{Link} Return Codes and Definition		
1855	1865	77 – A – Match	11	9(11)
1866	1876	77 – 91 – Match with Secondary No. Dropped on COA (Old Side)	11	9(11)
1877	1887	77 – 92 – Match with Secondary Number Dropped on Input	11	9(11)
1888	1898	77 – 01 – Match – Foreign Move	11	9(11)
1899	1909	77 – 02 – Match – Moved Left No Address	11	9(11)
1910	1920	77 – 03 – Match – PO Box Closed	11	9(11)
1921	1931	77 – 04 – No Match – Family move - Street Address w/Secondary	11	9(11)
1932	1942	77 – 05 – Match – New 11 digit DPBC is ambiguous	11	9(11)
1943	1953	77 – 06 – No Match – Middle Name Related	11	9(11)
1954	1964	77 – 07 – No Match – Gender Related	11	9(11)
1965	1975	77 – 08 – No Match – Conflicting Instructions	11	9(11)
1976	1986	77 – 09 – No Match – Family move from Highrise default	11	9(11)
1987	1997	77 – 10 – No Match – Family move from Rural/HC Route default	11	9(11)
1998	2008	77 – 11 – No Match – Individual move – Insufficient name data	11	9(11)
2009	2019	77 – 18 – No Match – Family move from General Delivery	11	9(11)
2020	2030	77 – 19 – Match – New Address not ZIP+4 codeable	11	9(11)
2031	2041	77 – 20 – No Match – Multiple Response – Conflicting Directions	11	9(11)
2042	2052	77 – 12 – No Match – Middle Name test failed	11	9(11)
2053	2063	77 – 13 – No Match – Gender test failed	11	9(11)
2064	2074	77 – 14 – Match – New Address would not convert	11	9(11)

RECORD FROM	POSITION TO	FIELD NAME and DESCRIPTION	LENGTH	COBOL
		NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG **FULL SERVICE PROVIDER** **Detail Record (page 8 of 9)**		
2075	2085	77 – 15 – No Match – Individual Name insufficient on input	11	9(11)
2086	2096	77 – 16 – No Match – Secondary Number discrepancy	11	9(11)
2097	2107	77 – 17 – No Match – Different First Name	11	9(11)
2108	2118	77 – 66 – No Match – Input Address appears in "Daily Delete" suppression file	11	9(11)
2119	2129	77 – Total records matched using ANK^{Link}	11	9(11)
		LACSLink Return Codes		
2130	2140	09 – LACS- OLD ADDR HIGHRISE DEFAULT – NO NEW ADDRESS	11	9(11)
2141	2141	NCOA^{Link} DVD Product Version: A = 48 HASH, B = 48 FLAT, C = 18 HASH, D = 18 FLAT, E = ANK HASH, F = ANK FLAT		
2142	2142	High Match Rate Description – NCOA Match Percentage Greater than 20%: A = ANK^{Link} Extract File (FSP Only) S = Stage I or Stage II File R = Returned Mail File	1	X(01)
		FILLER (Formerly Suite^{Link} Reporting)		
2143	2192	FILLER	50	x(50)
		NCOA^{Link} Return Codes (Continued)		
2215	2225	NCOA^{Link} Return Code 21 – To Be Determined	11	9(11)
2226	2236	NCOA^{Link} Return Code 22 – To Be Determined	11	9(11)
2237	2247	NCOA^{Link} Return Code 23 – To Be Determined	11	9(11)
2248	2258	NCOA^{Link} Return Code 24 – To Be Determined	11	9(11)
2259	2269	NCOA^{Link} Return Code 25 – To Be Determined	11	9(11)
2270	2280	NCOA^{Link} Return Code 26 – To Be Determined	11	9(11)
2281	2291	NCOA^{Link} Return Code 27 – To Be Determined	11	9(11)
2292	2302	NCOA^{Link} Return Code 28 – To Be Determined	11	9(11)
2303	2313	NCOA^{Link} Return Code 29 – To Be Determined	11	9(11)
2314	2324	NCOA^{Link} Return Code 30 – To Be Determined	11	9(11)
2325	2634	FILLER	314	X(314)
		DPV Return Codes		
2639	2649	Count of DPV Return Code = Y	11	9(11)
2650	2660	Count of DPV Return Code = S	11	9(11)
2661	2671	Count of DPV Return Code = D	11	9(11)
2672	2682	Count of DPV Return Code = N	11	9(11)
2683	2693	Count of DPV Return Code = BLANK	11	9(11)
2694	2704	Count of DPV Vacant Flag = Y	11	9(11)
2705	2715	Count of DPV CMRA Flag	11	9(11)
2716	2726	Count of DPV No Stat Flag	11	9(11)
		Move Activity Summary for Processing Summary Report		
2727	2737	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 0-3	11	X(11)
2738	2748	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 4-6	11	X(11)
2749	2759	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 7-12	11	X(11)
2760	2770	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 13-18	11	X(11)
2771	2781	Sum of Match Return Codes A, 91 & 92 with Move Effective Month: Mon 19+	11	

RECORD FROM	POSITION TO	NCOA^{Link} MONTHLY CUSTOMER SERVICE LOG FULL SERVICE PROVIDER Detail Record (page 9 of 9)		
		FIELD NAME and DESCRIPTION	**LENGTH**	**COBOL**
2782	2836	FILLER	55	X(55)
		Move Activity Summary for Processing Summary Report		
2837	2847	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 0-3	11	X(11)
2848	2858	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 4-6	11	X(11)
2859	2869	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 7-12	11	X(11)
2870	2880	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 13-18	11	X(11)
2881	2891	Sum of Match Return Codes 01, 02 & 03 with Move Effective Month: Mon 19+	11	X(11)
2892	2902	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 0-3	11	X(11)
2903	2913	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 4-6	11	X(11)
2914	2924	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 7-12	11	X(11)
2925	2935	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 13-18	11	X(11)
2936	2946	Sum of Match Return Codes 05, 14 & 19 with Move Effective Month: Mon 19+	11	X(11)
2947	2999	FILLER	53	X(53)
3000	3000	Record Type – H = Header/ D = Detail	1	X(01)
		CR/LF Carriage Return/Line Feed required at end of each record.		

Note: All numeric fields are right justified, zero filled.
All alphanumeric fields are left justified, spaced filled.
Note: This file shall be submitted in standard ASCII text format and electronically transmitted to the NCSC. The file shall be named using "C," the 4-character code assigned by the NCSC, the 1-character code for the month and the year with an extension of DAT. (e.g. CNAAAC02.DAT)

Known Changes

This Guide (Version 2) has been updated to contain all known changes that are scheduled to be completed by developers on July 31, 2006. The following is a list of those required changes that will be included in the NCOA^{Link} Data Release Date 9/11/2006 with a Release number of 733:

Added new matching logic mode of "R"
- Added new matching logic mode of "R"
- DVD Header Changes
- High Match Rate description field
- Query Name Change
- Return Code Description file
- CSL Changes
  - Matching Logic Applied
  - LACS^{Link}™ return code 09
  - NCOA^{Link} DVD Product Version
  - High Match Rate Description
  - Suite^{Link} Reporting
  - Reserved NCOA^{Link} return code counter fields
  - Reserved ANK^{Link} return code counter fields
  - Enlarged Filler field
- Removal of Soundex
- Incorporate Rules Table
- Name Sequence Presentation

Version Changes

This Guide (version 6) has been updated with the following modifications:
- The definition of return code 19 was updated. Temporary COAs are <u>only</u> in the 48-month product.

This Guide (version 5) has been updated with the following modifications:
- Updated the Customer Service Log.

This Guide (version 4) has been updated with the following modifications:
- Updated return codes to reflect move effective date (MED) changes.
- Updated to place hint byte in secondary number field if any entry is not found in the left-right table.

This Guide (version 3) was updated September 3, 2008 with the following modifications:
- Name Rules Presentation – Rules section
- Cindy-Mary table
- NCOA^{Link} Build Records table