

Project
US@

Unified
Specification
for Address
in health care

Technical Specification for Patient Addresses Domestic and Military

DRAFT VERSION 1.0

Current Version Date: 06/16/2021

Project US@ Technical Workgroup

Revision History

Date	Version	Description
6/16/2021	1.0	DRAFT initial release

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Background

The Pew Charitable Trusts and other organizations have recently promoted the use of USPS Publication 28¹ as a way to increase physical address accuracy for the purposes of improved patient matching.² These and other efforts indicate the potential for improved patient matching through the development and implementation of standards and implementation specifications. ONC received public comments on the use of USPS Publication 28 in response to a Request for Information (RFI) on patient matching in the 21st Century Cures Act proposed rule,³ which sought comment on additional opportunities that may exist in patient matching and ways that ONC can lead and contribute to coordination efforts with respect to patient matching; particularly in ways that accurate patient matching can facilitate improved patient safety, better care coordination, and advanced interoperability.

ONC collaborated with standards development organizations (SDOs), including members of the Health Standards Collaborative (HSC), and other interested stakeholders to create a unified, cross-standards development organization specification for patient address. We engaged a wide range of stakeholders to help ensure that there is broad agreement on Project US@'s resulting specification and build industry commitment around its implementation from the ground up. Together, we hope to establish a lasting, industry-wide approach to representing patient addresses that is consistent across a spectrum of clinical and administrative transactions.

¹ <https://pe.usps.com/text/pub28/welcome.htm>

² See <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/09/standardized-demographic-data-improve-patient-matching-in-electronic-health-records>

³ See 84 FR 7554, <https://www.federalregister.gov/d/2019-02224/p-1600>

Introduction

PURPOSE

The Project US@ Technical Specification for patient addresses was developed by the Project US@ Technical Workgroup in collaboration with ONC and Project US@ Partners in a unified effort to standardize patient addresses across healthcare to improve patient matching. Patient matching is defined as the identification and linking of one patient's data within and across health systems in order to obtain a comprehensive view of that patient's health care record.⁴ Accurate patient matching supports patient safety, privacy and security, care coordination, improved efficiencies, and the interoperability of health data. This document describes both standardized patient address formats and content. Format describes how the various patient address elements appear in a patient record. Content describes the characters that constitute the various address elements.

Our objective in compiling a unified standard for patient address is twofold:

- To facilitate adoption and alignment through an industry-wide approach to representing patient addresses that is consistent across a spectrum of clinical and administrative transactions
- To enhance performance of patient matching algorithms through improved address quality

IN-SCOPE

The scope of version 1.0 of this specification includes United States domestic and military patient addresses. The Project US@ Technical Workgroup that developed this specification used USPS Publication 28 as a foundation, maintaining alignment throughout, with additional constraints and the addition of metadata.

OUT-OF-SCOPE

Other types of addresses or addresses representing locations associated with healthcare providers, facilities, or other entities are out of scope. Generally, speaking, international addresses are also out-of-scope, with the exception of limited guidance for Canadian and other internal addresses in alignment with Publication 28. The Project US@ Technical Workgroup deferred work on guidance related to geolocation data for future consideration. Additional future work will be informed by comments received on this draft specification.

INTENDED AUDIENCE

SDOs, health information technology (IT) developers, federal and state agencies, data scientists, researchers, health information professionals, and other stakeholders responsible for standards, technology, and systems containing patient addresses. All stakeholders are encouraged to adopt this specification in their standards and systems as a means to improve patient matching. SDOs, especially, are encouraged to review this specification to determine the impact of requirements and

⁴ <https://www.healthit.gov/topic/patient-identity-and-patient-record-matching>

recommendations on future versions of standards that are widely adopted across the industry and emerging standards where appropriate.

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RELATED DOCUMENTS

AHIMA Companion Guide

For guidance and best practices on the capture and management of patient addresses to support conformance to Project US@, see the AHIMA Project US@ Companion Guide. The Project US@ Companion Guide will be released with the Final Version 1.0 of the Technical Specification for Patient Addresses.

Project US@

STANDARDIZED PATIENT ADDRESSES

A Project US@ standardized patient address is one that includes all required address elements and that uses standard abbreviations as shown in this document. The intention of the standardization is to clarify address capture and transformation guidance to provide a uniform approach to represent patient records containing addresses within and between health IT systems.

Privacy and Security of Patient Data

Although this specification does not mandate a single technical approach to security and privacy, it can be included in appropriate technical standards to create secure, private systems. If entities handle patient addresses in the service to, or on behalf of, a covered entity, then The Health Insurance Portability and Accountability Act of 1996 (HIPAA) compliance is not optional. Any data element more specific than state, including street address, city, and in many cases ZIP codes and their equivalent geolocation data, is considered protected under [HIPAA law](#).

Interpretation of Requirements

The goal of any specification is to instill trust and confidence in the software implementation. The requirements outlined in this specification form the basis of any implementation and tests for conformance to the specification. The language used is intended to reduce ambiguity in interpreting the requirements in a precise and testable manner. The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [IETF RFC 2119](#).

Content and Exchange

In order to approach the problem of patient matching in a more holistic manner, where application of the Project US@ specification would support patient address standardization throughout the life cycle of the data, we believe best practice would be to consider both content and exchange. This specification is not a database design document. We encourage health IT developers to tailor patient registration, scheduling, and other health IT applications to conform to the specification. We also recommend systems who exchange patient demographic data with other systems to transform patient address information according to the specification before exchange and matching in such a way that limits information loss.

Verification and Validation

At the time of this publication, USPS address verification and validation services could not be used by healthcare providers, payers, public health agencies, and others without relying on a 3rd party application to do so. We encourage these application developers to conform to the Project US@ specification to support patient matching efforts led by their clients. Guidance is provided throughout this document on address verification where appropriate, and similar to other areas across this specification, is subject to change.

Current and Historical Addresses

The Project US@ patient address specification applies to both current and historical patient addresses. There is no limit to the number of historical patient addresses that systems could maintain. Sometimes the storage and exchange of historical patient addresses is limited by technology, but for those systems that are able to leverage these data, historical addresses may be valuable for patient matching. For example, if patient records do not successfully match on current address because updates have been documented in one patient record but not the other (when the record is identified by a patient matching algorithm as a potential match).

Mailing, Physical, or Other Addresses

Some health IT systems capture, store, and exchange patient addresses that have been designated as a patient's mailing address, patient's physical address, or other addresses that represent a designated physical location to the patient or may serve different clinical and administrative needs. These designations may not add significant value to matching patient records, but may serve other purposes, such as filtering specific data types for consideration (e.g., current and historical addresses). See the [Metadata Schema](#) for more information on metadata representation of data about patient address data.

Unknown Address

If elements of a patient's address are unknown, then UNKNOWN (spelled out, all capital letters) SHOULD be entered for that element in the patient record. Developers SHOULD flag UNKNOWN in their patient matching solution to avoid misclassification. Otherwise, if a field is blank, developers may expect null to indicate that the data is unknown or unavailable. Certain elements have greater value when matching records, such as ZIP code. Developers MAY indicate UNKNOWN for a patient street address line if any element is missing.

Address Field Parsing

This specification does not prescribe parsing rules, including the direction in which patient addresses are parsed if parsing is necessary. If patient address data are captured and stored in a single string field, where elements such as street address and city are not parsed into separate fields for the purposes of patient matching, systems SHOULD uniformly parse data according to the following format:

Business/Firm Name	Only to be used for patient addresses containing businesses
Street Address Line	PRIMARY ADDRESS NUMBER PREDIRECTIONAL STREET NAME SUFFIX POSTDIRECTIONAL SECONDARY ADDRESS IDENTIFIER SECONDARY ADDRESS
Last Line	CITY STATE ZIP +4

Field parsing for mailing purposes are outlined in the Project US@ AHIMA Companion Guide.

Non-address Information

At times, non-address data will be captured and stored in fields intended to represent a patient's address. In these cases, this information SHOULD be removed. Business/Firm names are allowed as outlined in the [Standardized Patient Business Addresses](#) section.

Letter case

Alphabetical letters SHOULD be uppercase on all lines of the address. Lowercase letters are acceptable, provided they remain human and machine readable.

Special Characters

Diacritics

A U.S. Census Bureau report published in 2015⁵ found at least 350 languages in the United States that are spoken in homes across the country. Many, though not all of these languages use diacritics to alter the verbal pronunciation of a word by placing marks above, below, or to the side of a character. Common examples of diacritics include:

- an acute accent (á) common to Albanian, Catalan, Croatian, Czech, Dutch, French, Hungarian, Icelandic, Polish, Portuguese, Serbian, Slovak, Slovene, and Spanish;
- a grave accent (à) common to Catalan, Dutch, French, Italian, and Portuguese; or
- a tilde (ñ) common in Estonian, Portuguese, and Spanish.

Some, though not all health information technology systems, have the capacity to capture diacritics, and the ability to meaningfully exchange them relies on a number of factors, including the capacity of the receiving system in the exchange to read and accurately match records containing diacritics. In addition, diacritic marks that do not successfully convert to Unicode will often display as an inverted question mark. If patient matching algorithms are not designed to identify and disregard these or any other unrecognizable character, additional matching errors may occur.

Diacritics SHOULD follow [Appendix A](#) for mapping guidance between letters containing diacritics and other representations.

Punctuation

With the exception of the hyphen in the ZIP+4 Code and in the primary number used in the patient street address line, punctuation SHOULD be omitted in the patient address record.

Remove special characters, multiple blanks, and punctuation as follows:	
	Double spaces MUST be changed to single space, except between state abbreviations and ZIP Codes or ZIP+4 Codes.
*	Asterisks
,	Commas
.	Periods
()	Parentheses
“ ”	Quotations
:	Colons

⁵ <https://www.census.gov/newsroom/press-releases/2015/cb15-185.html>

Remove special characters, multiple blanks, and punctuation as follows:	
;	Semicolons
'	Apostrophes
-	Hyphens, except in the ZIP+4 Code and in the primary number used in the patient street address line. Spaces before and after the hyphen or slashes (/) SHOULD be removed from the address or business/firm name line. Spaces SHOULD NOT be removed between elements, as concatenation is to be avoided.
@	At
&	Ampersand

The pound sign (#) is not considered a special character or punctuation, hence, the pound sign should not be removed. PO Box services in some locations allow for an option to use the Post Office street address for the address, along with the PO Box number preceded by a “#” sign. The pound sign (#) COULD be used as a secondary unit designator if the correct designation, such as APT or STE, is not known.

Hyphenated Address Ranges

Hyphenated address ranges are prevalent in New York City (for example, *112–10 BRONX RD*), Hawaii, and areas in southern California. The hyphen in the primary range MUST NOT be removed.

Grid Style Addresses

These MAY contain significant punctuation, such as periods (for example, *39.2 RD*, *39.4 RD*). There are also grid style addresses in Salt Lake City that include double directionals (for example, in *842 E 1700 S*: E is a predirectional, S is a postdirectional, and 1700 is located in the street name field).

Alphanumeric Combinations of Address Ranges

Some patient addresses MAY contain a combination of alpha and numeric characters. For example, N6W23001 BLUEMOUND RD, as found in Wisconsin and Northern Illinois. Alphanumeric address ranges create a challenge for accurate matching. [Appendix H](#) provides guidelines for locating and matching alphanumeric ranges (both primary and secondary).

Fractional Addresses

Fractional patient addresses MAY be represented as three or four character positions (for example, 123 1/2 MAIN ST). 123 1/2 takes seven character positions in the range field.

Spanish and Other Foreign Words

Patient addresses MAY contain Spanish and other non-English words that could be difficult to match. See [Puerto Rico Addresses](#) for a complete description of the format for these addresses. Additional information on Spanish words used in primary street names may be found in [Appendix F](#).

ADDRESS ELEMENTS AND ABBREVIATIONS

Street Address Line

Each known address element **MUST** be segmented into individual components with one space between each element. These components are the primary address number, predirectional, street name, suffix, postdirectional, secondary address identifier, and secondary address. Follow guidance in the [Unknown Address](#) section if address elements are unknown or unavailable.

Primary Address Number

To standardize a patient address, the primary address number **MUST** be placed before the street name.

Predirectional

Directional is a term used to refer to the part of the address that gives directional information for a patient address (i.e., N, S, E, W, NE, NW, SE, SW). If a directional word is found as the first word in the street name and there is no other directional to the left of it, then the predirectional **MUST** be abbreviated to the appropriate one- or two-character abbreviation.

Examples:

Incorrect Form	Correct Form
NORTH BAY STREET	N BAY STREET
EAST END AVE	E END AVE

Street name

Numeric street names, for example, 7TH ST or SEVENTH ST, **MUST** be conveyed exactly as it appears in the patient's official identification (government issued or insurance card). Corner addresses **SHOULD** be replaced by standardized street addresses if known.

Street Suffix Abbreviations

Street suffixes such as Boulevard and Avenue **MUST** be abbreviated according to the standard suffix abbreviations in [Appendix B](#).

Postdirectional

If a directional word is located to the right of the street name and suffix, then the directional **MUST** be abbreviated to the appropriate one- or two-character abbreviation and located in the postdirectional field. Spaces **SHOULD NOT** be entered between letters making up an abbreviation for a postdirectional.

Example:

Incorrect Form	Correct Form
BAY DRIVE WEST	BAY DRIVE W

Other Directional Considerations

Two Directionals

If two directional words appear consecutively as one or two words, before the street name or following the street name or suffix, then the two words **SHOULD** become either the pre- or the post-directionals.

Exceptions are any combinations of NORTH-SOUTH or EAST-WEST as consecutive words. In these cases, the second directional **SHOULD** become part of the street name and **SHOULD** be spelled out completely in the street name field. Directionals **SHOULD** be spelled out if part of the patient street address name.

Examples:

Incorrect Form	Correct Form
NORTH E MAIN STREET	NORTH EAST MAIN ST
SOUTHEAST FREEWAY NORTH	SOUTHEAST FWY N

Directional letters **SHOULD NOT** be combined with alphabet indicators. Directional street names **SHOULD** be spelled out. Directionals **SHOULD** be abbreviated after the street name.

Example:

Incorrect Form	Correct Form
COUNTY ROAD N EAST	COUNTY ROAD NE

Directional as Part of Street Name

If the directional word appears between the street name and the suffix, then it **SHOULD** appear as part of the street name and **SHOULD** be spelled out in the patient record

Examples:

Incorrect Form	Correct Form
BAY W DRIVE	BAY WEST DRIVE
NORTH AVENUE	NORTH AVE

Secondary Address Unit Designators

Secondary address unit designators, such as apartment or suite, are required elements for those patient demographic records containing secondary unit designators. Secondary address unit designators **MUST** be at the end of the Patient Street Address Line. The pound sign (#) **MUST NOT** be used as a secondary unit designator if the correct designation, such as APT or STE, is known. See the [Special Characters](#) section for more information.

Table 1: Secondary Address Unit Designators

Description	Approved Abbreviation
Apartment	APT
Basement	BSMT**
Building	BLDG
Department	DEPT
Floor	FL
Front	FRNT**
Hanger	HNGR
Key	KEY
Lobby	LBBY**
Lot	LOT
Lower	LOWR**
Office	OFC**
Penthouse	PH**
Pier	PIER
Rear	REAR**
Room	RM
Side	SIDE**
Slip	SLIP
Space	SPC
Stop	STOP
Suite	STE
Trailer	TRLR
Unit	UNIT
Upper	UPPR**

** Does not require additional data, such as number or letter, to follow. These secondary unit designators SHOULD stand alone at the end of the patient address line.

Suffixes

The suffix of the address MUST conform to the standard suffix abbreviations outlined in [Appendix B](#).

Two Suffixes

If an address has two consecutive words that appear in [Appendix B](#), the second of the two words MUST be abbreviated according to the standard suffix abbreviations and MUST be placed in the suffix field. The first of the two words SHOULD be part of the street name, and SHOULD be spelled out in the patient record in its entirety after the street name.

Examples:

Incorrect Form	Correct Form
789 MAIN AVENUE DRIVE	789 MAIN AVENUE DR
4513 3RD STREET CIRCLE WEST	4513 3RD STREET CIR W
1000 AVE E	1000 AVENUE E

Highways

County, state, and local highways MUST follow the standardized format as illustrated by examples in [Appendix C](#).

Last Line

City Names

City names SHALL be spelled out in their entirety. Patient address records MUST have at least one space between the city name, two-character state abbreviations, and ZIP+4 Code.

Two Letter State and Possession Abbreviations

Names of states and U.S. possessions MUST follow the standardized abbreviations outlined in [Appendix D](#).

MILITARY ADDRESSES

Patient records containing addresses to Army/Air Post Offices (APOs), or Fleet Post Offices (FPOs) are required to include the patient's name and rank, per USPS Publication 28. Guidance for the patient's name and rank is out of scope for this document.

APO/FPO patient addresses MUST include the unit, the box number, the APO/FPO address, and the 9-digit ZIP Code. City or country names MUST NOT be included in APO/FPO shipping addresses.

The Street Address Line for all APO/FPO military patient addresses MUST be standardized to include the appropriate military address type with its assigned number and a box number. There are five possible military address types: CMR (Consolidated Mail Room), OMC (Official Mail Center), PSC (Postal Service Center), UMR (Unit Mail Room), and UNIT. The assigned number and the box number MUST follow one of these acronyms.

Examples of standardized military address:

Army/Air Post Office (APO)

PSC 3 BOX 4120
APO AE 09021-0002

UNIT 2050 BOX 4190
APO AP 96278-2050

CMR 802 BOX 74
APO AE 09499-0074

Fleet Post Office (FPO)

UNIT 100100 BOX 4120
FPO AP 96691-0104

UNIT 4856 BOX 121
FPO AP 96667-3931

Diplomatic Post Office (DPO)

UNIT 8400 BOX 0000
DPO AE 09498-0048

Domestic Locations

Most domestic military addresses must have a conventional street style address. Domestic Military addresses **MUST** use only the city name along with the approved two-character state abbreviation and the ZIP Code or ZIP+4 Code.

Overseas Locations

Overseas military addresses **MUST** contain the APO or FPO designation along with a two-character “state” abbreviation of AE, AP, or AA and the ZIP Code or ZIP+4 Code. AE is used for armed forces in Europe, the Middle East, Africa, and Canada; AP is for the Pacific; and AA is for the Americas excluding Canada.

DEPARTMENT OF STATE ADDRESSES

DPOs are postal facilities that operate at one of the Department of State's missions abroad as a branch post office of the U.S. Postal Service (USPS). DPO patient addresses **MUST** include the unit, the box number, the DPO address, and the 9-digit ZIP Code. City or country names **MUST NOT** be included in DPO shipping addresses. Patient records containing addresses to DPOs are required to include the patient's name, per USPS Publication 28. Guidance for the patient's name is out of scope for this document.

Example:

UNIT 9900 BOX 0500
DPO AE 09701-0500

RURAL ROUTE ADDRESSES

The rural route number in a patient record **MUST** be standardized as follows:

RR ____ BOX ____

Examples:

Incorrect Form	Correct Form
RURAL ROUTE 91 BOX A7	RR 91 BOX A7
RFD 82 BOX 12	RR 82 BOX 12
RD 51 # 25	RR 51 BOX 25
RFD Route 4 #87a	RR 4 Box 87A
RR 2 BOX 18 Bryan Dairy Rd	RR 2 BOX 18
RR03 BOX 98D	RR 3 BOX 98D

Developers:

SHOULD NOT use the words RURAL, NUMBER, NO., or the pound sign (#).

MUST NOT add a leading zero before the rural route number.

SHOULD include hyphens as part of the box number only when they are part of the address.

SHOULD change the designations RFD and RD (as a meaning for rural or rural free delivery) to RR.

SHOULD NOT allow additional designations, such as town or street names, on the patient Street Address Line of rural route addresses.

GENERAL DELIVERY

Developers MUST use the words GENERAL DELIVERY, all uppercase, spelled out (no abbreviation), as the patient street address line in the patient record if the patient has a general delivery address. Each general delivery record SHOULD carry the -9999 add-on code. The ZIP Code or ZIP+4 Code MUST be correctly applied for patient addresses with a general delivery. Note that General Delivery is not available at every post office.

Example:

Incorrect Form	Correct Form
GEN DELIVERY TAMPA, FL 33602	GENERAL DELIVERY TAMPA FL 33602-9999

POST OFFICE BOX ADDRESSES

Post Office Box addresses in a patient record MUST be standardized as follows:

PO BOX _____ (the actual number, numbers, or letter)

Examples:

Incorrect Form	Correct Form
POST OFFICE BOX 11890	PO BOX 11890
POST OFFICE BOX G	PO BOX G

Developers MUST NOT add a leading zero before the post office box number.

PO Box addresses often appear with the words CALLER, FIRM CALLER, BIN, LOCKBOX, or DRAWER, or other synonyms. When this occurs, developers MUST change these words to PO BOX in the patient record.

PO Box services in some locations allow for an option to use the Post Office street address for the address, along with the PO Box number preceded by a “#” sign or “UNIT” designation.

PRIVATE MAILBOX ADDRESSES

Private companies offering mailbox rental services to patients are considered commercial mail receiving agencies (CMRA). Addresses on mail received at a CMRA must adhere to specific requirements in the use of their private mailbox number (PMB).

Patient addresses at a CMRA MUST include either the PMB identifier or the numerical identifier, followed by the appropriate private mailbox number. Developers MUST NOT use any other identifiers.

Where the CMRA’s physical address requires its own secondary address element, the PMB or # address must follow the specific format rules stated below. Developers MUST NOT combine the secondary address element of the address for the CMRA and the CMRA patient’s private box number.

The words POST OFFICE BOX or PO BOX and the private mailbox number MUST NOT be used on the Street Address Line. The Street Address Line is the standardized address of the private company.

PMB 234
 RR 1 BOX 12
 HERNDON VA 22071-2716

PMB 234
 10 MAIN ST STE 11
 HERNDON VA 22071-2716

123 MAIN STREET PMB 4545
 HERNDON VA 22071-2716

PO BOX 159753 PMB 3571
 HERNDON VA 22071-2716

PUERTO RICO ADDRESSES

Format

Puerto Rico's common addressing consists of various formats, such as:

Examples:

Urbanization
House Number and Street Name
City, State, and ZIP+4

URB
LAS GLADIOLAS
150 CALLE A
SAN JUAN PR 00926-3232

House Number and Street Name
City, State, and ZIP+4 Code

1234 CALLE AURORA
MAYAGUEZ PR 00680-1233

Exceptions

Some areas in Puerto Rico do not have street names or repetitive house numbers. The urbanization name SHOULD substitute as the street name.

House number and Urbanization Name
City, State, and ZIP+4

1234 URB LOS OLMOS
PONCE PR 00731-1235

There are also public housing projects (residenciales) without street names or repetitive apartment numbers. In these cases the apartment number SHOULD be the primary number and the name of the public housing project SHOULD become the street name.

Apartment Number and Residential Name
City, State, and ZIP+4

23 RES LLORENS TORRES
SAN JUAN PR 00924-1234

Certain condominiums are not located on a named street or have an assigned number to the building. The name of the condominium SHOULD be substituted for the street name.

Residential Name
Building No. and Apt. No.
City, State, and ZIP+4

The word CALLE MAY be placed before the street name and number. CALLE means STREET in Spanish, and placing the word CALLE prior to other address components is proper use based on Spanish composition. In addition to the word CALLE, the word AVENIDA or its abbreviation AVE MAY also appear in this position.

Apartment Buildings and Condominiums

There are two basic address formats for apartment buildings and condominiums. Developers MUST follow abbreviation guidance outlined in the [Secondary Address Unit Designators](#) section for patient addresses located within apartment buildings and condominiums.

Buildings with a physical street address

Building Name
Street Number, Street Name, Apartment Number
City, State, and ZIP+4

COND ASHFORD PALACE
1234 AVE ASHFORD APT 1A
SAN JUAN PR 00907-1234

Buildings without a physical address

Certain condominiums are located on an unnamed street and may not have an assigned number. The name of the condominium SHOULD substitute as the street name and the number 1 SHOULD be used when no building number exists.

Bldg Number, Bldg Name, and Apt Number
City, State, and ZIP+4

1 COND MIRAFLOR APT 104
SAN JUAN PR 000907-1335

Where there are multiple buildings (or towers) with the same name, the building number SHOULD become the primary number.

Examples:

Incorrect Form	Correct Form
COND VERDE APT 1120	1 COND VERDE APT 1120
VISTA SUITES III APT 104	3 VISTA SUITES APT 104

Patient Street Address Line

The components of the patient Street Address Line are the urbanization (when required), primary address number and street name, secondary address identifier, and secondary address range.

Urbanization Name
Secondary Address Identifier and Number
Primary Address Number and Street Name

URB HIGHLAND GDNS

COND LAS AMAPOLAS APT 103
123 CALLE MAIN

In Puerto Rico, some apartment buildings do not have a street address. In this situation, the building name SHOULD be part of the primary address identifier. If directionals are present in an address, they are part of the street name. Developers MUST NOT translate directionals.

1510 CALLE 3 NO (NO = Northwest)

1620 CALLE 17 SO (SO = Southwest)

Street Names and Prefixes

Developers MUST NOT abbreviate street names.

Spanish street names generally have the suffix element preceding the root street name, making it a prefix.

Examples:

CALLE AVENIDA, PASEO, PLAZA, PASAJE, CARR, PARQUE, VEREDA, VISTA, VIA, CALLE JON, PATIO, BLVD, CAMINO, CAMINITO, CALETA, MARGINAL

585 AVE FD ROOSEVELT

105 CAMINO AMAZONA

1025 PARQUE DEL REY

1212 VIA ANGÉLICA

Developers MUST NOT translate CALLE to the suffix ST. This translation will lead to additional errors when matching patient records.

Note that patient addresses that will also be used for billing purposes or other mailing SHOULD always include CALLE, AVENIDA, etc.

Numbered Streets

Numbered streets MUST always contain the word CALLE. This avoids misinterpretation between numbered streets and house numbers in patient addresses.

Examples:

Incorrect Form	Correct Form
CALLE 1 A17	A17 CALLE 1
CALLE 191 B113	13 CALLE 191

House Numbers

House numbers may have fractional or alphabetic modifiers. Developers **MUST** place the house number before the street name. When placing alphanumeric house numbers prior to the street name, developers **MUST NOT** use hyphens to separate the letter from the number.

Examples:

Incorrect Form	Correct Form
CALLE 125 C-19	C19 CALLE 125
A-17 CALLE AMAPOLA	A17 CALLE AMAPOLA
B-17A CALLE 1	B17A CALLE 1

Due to the amount of numbers within a block and a house number in Puerto Rico addresses, many identifiers are commonly used to separate address elements, including BLOQUE, NUM, NO, CASA, LOTE, or a # sign. These identifiers **MUST NOT** be included in patient addresses.

Hyphens in the address range are sometimes necessary. When addresses contain block numbers and house numbers, developers **MUST** use a hyphen to separate the block number from the house number. When addresses contain up to three-digit numeric block numbers, developers **MUST** include a hyphen.

Examples:

Incorrect Form	Correct Form
CALLE 19 BLQ 199 Casa 31	199-31 CALLE 19
CALLE 117 Bloque 23 Núm.18	23-18 CALLE 117

Urbanizations

Urbanization denotes an area, sector, or development within a geographic area. In addition to being a descriptive word, it precedes the name of the area. This URB descriptor, commonly used in urban areas of Puerto Rico, is an important part of the addressing format, as it describes the location of a given street.

Urbanizations **MUST** be abbreviated to URB followed by the urbanization name. Urbanizations are not repeated within five-digit zones.

Examples:

Incorrect Form	Correct Form
URBANIZATION GOLDEN GATE	URB GOLDEN GATE

In Puerto Rico, identical street names and address number ranges can be found within the same ZIP Code. In these cases, the urbanization name is the only element that correctly identifies the location of a particular address.

URB ROYAL OAKS
123 CALLE 1
BAYAMON PR 00961-0123

URB HERMOSILLO
123 CALLE 1
BAYAMON PR 00961-1212

Exceptions

Certain urbanizations are known as extensiones, mansiones, repartos, villas, parques, and jardines. When these names are present in a patient address, **MUST NOT** place the abbreviation URB prior to the name of the urbanization. Some addresses in Puerto Rico urbanizations do not have a street name, where the urbanization **MUST** become the street name.

Examples:

Incorrect Form	Correct Form
A17 URB JARDINES FAGOTA PONCE PR 00731	A17 JARD FAGOTA PONCE PR 00731

The following urbanization names stand alone and **MUST NOT** require the use of the abbreviation URB.

Urbanization	Abbreviation
Altura(s)	ALT(S)
Barriada	BDA
Barrio	BO
Bosque	BOSQUE
Brisa(s)	BRISA(S)
Ciudad	CIUDAD
Colina(s)	COLINA(S)
Chalets	CHALETS
Comunidad	COMUNIDAD
Estancias	EST
Extensión	EXT
Hacienda	HACIENDA
Jardines	JARD

Urbanization	Abbreviation
Industrial	IND
Loma(s)	LOMA(S)
Mansiones	MANS
Parque	PARQ
Parcela(s)	PARCELA(S)
Paseo	PASEO
Pradera	PRADERA
Portal	PORTAL
Portales	PORTALES
Quintas	QUINTAS
Residencial	RES
Reparto	REPTO
Riberas	RIBERAS
Sector	SECT
Terraza	TERR
Valle	VALLE
Villa(s)	VILLA(S)
Vista(s)	VISTA(S)

Examples:

Incorrect Form	Correct Form
URB EXT VISTA BELLA	EXT VISTA BELLA
URB ALTS DE CANÁ	ALTS DE CANA

Post Office Box

Developers MUST capture or transform Post Office Box addresses as PO BOX in the patient record. Developers MUST NOT use Spanish words to represent PO BOX.

Examples:

Incorrect Form	Correct Form
XYZ COMPANY APARTADO 2018	XYZ COMPANY PO BOX 2018
ABC COMPANY	ABC COMPANY

Incorrect Form	Correct Form
GPO BOX 1118	PO BOX 1118

In certain areas, the postal station name appears in a patient's address. The postal station name is not needed because the ZIP Code identifies the station. However, when the station name is present, it SHOULD be placed above the delivery line.

Example:

Incorrect Form	Correct Form
PO BOX 1190 OLD SAN JUAN STA SAN JUAN PR 00902-1190	OLD SAN JUAN STA PO BOX 1190 SAN JUAN PR 00902-1190

Rural Routes

A rural route address in the patient record MUST be standardized as follows:

RR__ BOX__

Developers MUST NOT use the words RURAL, RUTA RURAL, BUZON, or BZN. The designations RFD, RD, and RT (meaning rural route) MUST be changed to RR and developers MUST have a space between RR and the route number and BOX and the box number. Developers MUST NOT add a leading zero before the rural route number.

Examples:

Incorrect Form	Correct Form
RR03 BOX 9800	RR 3 BOX 9800
RFD ROUTE 4 BZN 1725	RR 4 BOX 1725
RUTA RURAL 3 BUZON 12000	RR 3 BOX 12000
RFD 1 Bzn 17-A	RR 1 BOX 17A

There MUST NOT be additional designations, such as sector names, on the Street Address Line of rural route addresses.

Names of sectors used together with route and box numbers can lead to increased matching errors. Health IT developers MUST eliminate this information in Puerto Rico addresses.

Examples:

Incorrect Form	Correct Form
RR 2 BOX 1980 SECTOR EL BRINCO	RR 2 BOX 1980
RR 3 BOX 3415 BARRIO VISTA ALEGRE	RR 3 BOX 3415

Highway Contract Routes

Highway contract route addresses **MUST** be standardized as HC____BOX____. It is basically the same format utilized for rural routes. Likewise, Health IT developers **MUST NOT** include leading zeros before the route number.

Examples:

Incorrect Form	Correct Form
Ruta Estrella 1 Buzón 18	HC 1 BOX 18
HC 03 Bzn 1050	HC 1 BOX 1050

As with rural route addresses, developers **MUST NOT** include any additional designations, such as names of sectors in the patient address line of highway contract addresses.

Last Line

Patient addresses **SHOULD** include the last line, which **MUST** include the city, state and ZIP Code, if known. Certain areas of the San Juan metropolitan area are identified by residents with names such as Condado, Barrio Obrero, and Rio Piedras. Developers **MUST NOT** use these names to represent the city of San Juan. These are not valid last line entries. Developers **MUST** include SAN JUAN as the only valid city name for patient addresses within San Juan.

U.S. ISLANDS AND OTHER TERRITORIES

Format

The U.S. Virgin Islands and other territories do not use urbanizations or Spanish words. Single primary street addresses do not have lot numbers as part of the patient addresses. These are physical identifiers. For patient addresses to the U.S. Virgin Islands, developers **MUST** use VI as the correct abbreviation for the Virgin Islands. Developers **MUST NOT** use USVI, VIS, VI USA, or USA VI.

Examples:

2 MOUNT ROYALE EST
CHRISTIANSTED VI 00820-4470

RR 1 BOX 6601
KINGSHILL VI 00850-9802

CANADIAN ADDRESSES

The following address format is used when the postal address delivery zone is included in the address. Developers **MUST** use the standard two-character abbreviation for provinces and territories. On patient records with addresses to Canada, developers **SHOULD** have two spaces between the province abbreviation and the postal code, as shown below between “ON” and “K1A 0B1”:

Example:

1010 CLEAR STREET
OTTAWA ON K1A 0B1
CANADA

Canadian Province/Territory	Postal Service Abbreviation
Alberta	AB
British Columbia	BC
Manitoba	MB
New Brunswick	NB
Newfoundland and Labrador	NL
Northwest Territories	NT
Nova Scotia	NS
Nunavat Territory	NU
Ontario	ON
Prince Edward Island	PE
Quebec	QC
Saskatchewan	SK
Yukon Territory	YT

OTHER INTERNATIONAL ADDRESSES

The very last (or bottom) line of an international patient address **MUST** contain only the **COUNTRY** name, and **MUST** be written in full with no abbreviations and **SHOULD** be in capital letters. Developers **MUST NOT** place the postal codes of foreign country designations on the last line of the address and **MUST NOT** underline the **COUNTRY** name.

Example:

HARTMANNSTRASSE 7
5300 BONN 1
GERMANY

STANDARDIZED PATIENT BUSINESS ADDRESSES

This section applies to patient records that contain business address information.

Business Addressing Standards

If a patient record contains a business address, developers MUST include a patient address line, and MUST contain the last line which MUST contain City, State, ZIP Code, and ZIP+4, if known. Business addresses may contain other address data elements including apartment or suite numbers, Post Office Box addresses, and a rural/highway contract route address (with route and box numbers). Developers MUST use the recommended abbreviations or suffix tables identified in this document. The business/firm name MUST be a separate element in a patient address, SHOULD follow other formatting rules outlined in this document, and MAY disregard the business/firm name when matching records to avoid error . Developers SHOULD NOT remove the hyphen between the ZIP Code and ZIP+4 Code. See the [Special Characters](#) section for more information on how to handle special characters in business addresses.

Example:

Incorrect Form	Correct Form
BIG BUSINESS INCORPORATED 12 EAST BUSINESS LANE, SUITE-209 KRYTON, TN 38188-0002	BIG BUSINESS INC 12 E BUSINESS LN STE 209 KRYTON, TN 38188-0022
PIZZA DELIVERY COMPANY 61-20 EAST RIVER DRIVE NEW YORK, NY 10021-0905	PIZZA DELIVERY COMPANY 61-20 E RIVER DR NEW YORK NY 10021-0905

Patient Business Address Elements

To understand the complexity of business addressing, efforts have been made to identify and define the many individual data elements that can be included in a business address for patients. The following elements are within the scope of Project US@:

- Street Number
- Predirectional
- Street Name
- Street Suffix
- Postdirectional
- Secondary Unit Indicator
- Secondary Number
- PO Box Number
- City
- State
- ZIP Code
- ZIP+4 Code

In those instances where certain constraints limit the number of words or characters that can be placed in the patient record, the developers **MUST** replace fully spelled words with standard address and business word abbreviations.

Example:

Data Element	Example
Patient Address Line	12 E BUSINESS LN STE 209
City, State, Zip+4 Line	KRYTON TN 38188-0002

Remove Certain Words

Developers **SHOULD** replace or remove certain words as listed below. Further, developers **SHOULD** use standard business word abbreviations and **SHOULD NOT** remove words from a patient business address. The following compression technique should be applied only if the standard abbreviations do not meet particular business needs.

- Remove etc., i.e., in care of, and et al.
- Remove words like the, of, by, for, at, also.
- Remove ATTENTION, ATTN:.

PATIENT ADDRESS METADATA SCHEMA

The metadata schema below is intended to improve visibility into the source of, and alterations to, patient address data and improve the confidence systems have in the reliability and trustworthiness of shared data. Metadata could also assist in partial or fully automated patient matching solutions to help people and systems determine whether two or more records represent the same patient, and may inform the direction of a merge or other decisions when matching, linking, aggregating, and deduplicating patient data. Metadata may also help inform investigations of adverse events related to inaccurate patient matching, providing source data as well as a history of changes to the data over time.

Both mandatory and optional fields are provided to establish a standardized way for capturing and exchanging metadata of patient address data.

M = Mandatory, if known
O = Optional

DRAFT Metadata Requirements

ID	Field	Cardinality	Format	Content
1.0	Source	M		name of data source
2.0	Begin Date/Time	M	00/00/00 00:00:00: 00.0000	date of creation and/or begin date for which the address applies to the patient
2.2	End Date/Time	O	00/00/00 00:00:00: 00.0000	end date for which the address applies to the patient
3.0	Current or Historical	M		
3.1	Current	O		any current known address
3.2	Historical	O		no limit to number of historical addresses, defined as any address that is not considered current
4.0	Address Type	M		
4.1	Home	O		
4.2	Work	O		
4.3	Billing	O		
4.4	Transitional housing	O		including seasonal
4.5	Temporary	O		any address occupied for a temporary period that differs from current address, recommend begin and end dates
5.0	Address Use	O		
5.1	Physical	O		
5.2	Mailing	O		
6.0	Unknown	O		

ID	Field	Cardinality	Format	Content
7.0	Multi-unit or shared housing	O		indicator intended to reduce false positives related to apartments, care facilities, and other multi-unit housing
8.0	Housing Stability	O		
8.1	Homeless	M		if a patient is known to be homeless but does not reside at a shelter; recommend collecting any available data (e.g., ZIP codes may valuable)
8.2	Shelter or other facility	O		if a patient resides at a shelter or other facility, recommend capturing complete address of facility

Additional Metadata Recommendations to Consider

ID	Field	Cardinality	Format	Content
1.1	Source of change	O		name of source of change; valuable when identifying record overlays
1.2	Source type	O		
2.1	Change Date/Time	O	00/00/00 00:00:00: 00.0000	date of change
9.0	Error	O		when a patient address or element of a patient address is known to contain errors
10.0	Confidential	O		as indicated by the patient
11.0	Address validated	O		against 3rd party application
11.1	Date/time address validated	O	00/00/00 00:00:00: 00.0000	
11.2	Who validated address	O		name/organization of individual who validated the address
11.3	Patient asserted	O		

Appendices

APPENDIX A. DIACRITIC MAPPING GUIDANCE

Mapping is intended to provide guidance on mapping diacritic characters for patient addresses to characters that still represent the character, but in a computationally friendly way.

Latin Diacritics

Symbol	ISO decimal code	ASCII map character	Description
À	192	a	Capital letter A with grave accent
Á	193	a	Capital letter A with acute accent
Â	194	a	Capital letter A with circumflex accent
Ã	195	a	Capital letter A with tilde
Ä	196	a	Capital letter A with dieresis or umlaut mark
Å	197	a	Capital letter A with ring above
Æ	198	a	Capital letter AE diphthong
Ç	199	c	Capital letter C with cedilla
È	200	e	Capital letter E with grave accent
É	201	e	Capital letter E with acute accent
Ê	202	e	Capital letter E with circumflex accent
Ë	203	e	Capital letter E with dieresis or umlaut mark
Ì	204	i	Capital letter I with grave accent
Í	205	i	Capital letter I with acute accent
Î	206	i	Capital letter I with circumflex
Ï	207	i	Capital letter I with dieresis or umlaut mark
Ð	208	e	Capital letter ETH (Icelandic)
Ñ	209	n	Capital letter N with tilde

Symbol	ISO decimal code	ASCII map character	Description
Ò	210	o	Capital letter O with grave accent
Ó	211	o	Capital letter O with acute accent
Ô	212	o	Capital letter O with circumflex
Õ	213	o	Capital letter O with tilde
Ö	214	o	Capital letter O with dieresis or umlaut mark
Ø	216	o	Capital letter O with slash
Ù	217	u	Capital letter U with grave accent
Ú	218	u	Capital letter U with acute accent
Û	219	u	Capital letter U with circumflex
Ü	220	u	Capital letter U with dieresis or umlaut mark
Ý	221	y	Capital letter Y with acute accent
Þ	222	p	Capital letter THORN
ß	223	s	Small letter sharp s - ess-zed
à	224	a	Small letter a with grave accent
á	225	a	Small letter a with acute accent
â	226	a	Small letter a with circumflex
ã	227	a	Small letter a with tilde
ä	228	a	Small letter a with dieresis or umlaut mark
å	229	a	Small letter a with ring above
æ	230	a	Small letter ae

Symbol	ISO decimal code	ASCII map character	Description
ç	231	c	Small letter c with cedilla
è	232	e	Small letter e with grave accent
é	233	e	Small letter e with acute accent
ê	234	e	Small letter e with circumflex
ë	235	e	Small letter e with dieresis
ì	236	i	Small letter i with grave accent
í	237	i	Small letter i with acute accent
î	238	i	Small letter i with circumflex
ï	239	i	Small letter i with diaeresis
ð	240	e	Small letter eth
ñ	241	n	Small letter n with tilde
ò	242	o	Small letter o with grave accent
ó	243	o	Small letter o with acute accent
ô	244	o	Small letter o with circumflex
õ	245	o	Small letter o with tilde
ö	246	o	Small letter o with dieresis
ø	248	o	Small letter o with slash
ù	249	u	Small letter u with grave accent
ú	250	u	Small letter u with acute accent
û	251	u	Small letter u with circumflex

Symbol	ISO decimal code	ASCII map character	Description
ü	252	u	Small letter u with dieresis
ý	253	y	Small letter y with acute accent
þ	254	p	Small letter thorn
ÿ	255	y	Small letter y with dieresis
Œ	338	o	Capital letter OE
œ	339	o	Small letter oe
Š	352	s	Capital letter S with caron
š	353	s	Small letter s with caron
ÿ	376	y	Capital letter Y with dieresis

APPENDIX B. STREET SUFFIX ABBREVIATIONS

The following table lists examples of suffix forms that are primary street suffix names, common street suffixes or suffix abbreviations, and required standard suffix abbreviations.

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
ALLEY	ALLEE	ALY
	ALLEY	
	ALLY	
	ALY	
ANEX	ANEX	ANX
	ANNEX	
	ANNX	
	ANX	
ARCADE	ARC	ARC
	ARCADE	
AVENUE	AV	AVE
	AVE	
	AVEN	
	AVENU	
	AVENUE	
	AVN	
	AVNUE	
BAYOU	BAYOO	BYU
	BAYOU	
BEACH	BCH	BCH
	BEACH	
BEND	BEND	BND
	BND	
BLUFF	BLF	BLF
	BLUF	
	BLUFF	
BLUFFS	BLUFFS	BLFS
BOTTOM	BOT	BTM
	BTM	
	BOTTM	
	BOTTOM	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
BOULEVARD	BLVD	BLVD
	BOUL	
	BOULEVARD	
	BOULV	
BRANCH	BR	BR
	BRNCH	
	BRANCH	
BRIDGE	BRDGE	BRG
	BRG	
	BRIDGE	
BROOK	BRK	BRK
	BROOK	
BROOKS	BROOKS	BRKS
BURG	BURG	BG
BURGS	BURGS	BGS
BYPASS	BYP	BYP
	BYPA	
	BYPAS	
	BYPASS	
	BYPS	
CAMP	CAMP	CP
	CP	
	CMP	
CANYON	CANYN	CYN
	CANYON	
	CNYN	
CAPE	CAPE	CPE
	CPE	
CAUSEWAY	CAUSEWAY	CSWY
	CAUSWA	
	CSWY	
CENTER	CEN	CTR
	CENT	
	CENTER	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	CENTR	
	CENTRE	
	CNTER	
	CNTR	
	CTR	
CENTERS	CENTERS	CTRS
CIRCLE	CIR	CIR
	CIRC	
	CIRCL	
	CIRCLE	
	CRCL	
	CRCLE	
CIRCLES	CIRCLES	CIRS
CLIFF	CLF	CLF
	CLIFF	
CLIFFS	CLFS	CLFS
	CLIFFS	
CLUB	CLB	CLB
	CLUB	
COMMON	COMMON	CMN
COMMONS	COMMONS	CMNS
CORNER	COR	COR
	CORNER	
CORNERS	CORNERS	CORS
	CORS	
COURSE	COURSE	CRSE
	CRSE	
COURT	COURT	CT
	CT	
COURTS	COURTS	CTS
	CTS	
COVE	COVE	CV
	CV	
COVES	COVES	CVS

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
CREEK	CREEK	CRK
	CRK	
CRESCENT	CRESCENT	CRES
	CRES	
	CRSENT	
	CRSNT	
CREST	CREST	CRST
CROSSING	CROSSING	XING
	CRSSNG	
	XING	
CROSSROAD	CROSSROAD	XRD
CROSSROADS	CROSSROADS	XRDS
CURVE	CURVE	CURV
DALE	DALE	DL
	DL	
DAM	DAM	DM
	DM	
DIVIDE	DIV	DV
	DIVIDE	
	DV	
	DVD	
DRIVE	DR	DR
	DRIV	
	DRIVE	
	DRV	
DRIVES	DRIVES	DRS
ESTATE	EST	EST
	ESTATE	
ESTATES	ESTATES	ESTS
	ESTS	
EXPRESSWAY	EXP	EXPY
	EXPR	
	EXPRESS	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	EXPRESSWAY	
	EXPW	
	EXPY	
EXTENSION	EXT	EXT
	EXTENSION	
	EXTN	
	EXTNSN	
EXTENSIONS	EXTS	EXTS
FALL	FALL	FALL
FALLS	FALLS	FLS
	FLS	
FERRY	FERRY	FRY
	FRRY	
	FRY	
FIELD	FIELD	FLD
	FLD	
FIELDS	FIELDS	FLDS
	FLDS	
FLAT	FLAT	FLT
	FLT	
FLATS	FLATS	FLTS
	FLTS	
FORD	FORD	FRD
	FRD	
FORDS	FORDS	FRDS
FOREST	FOREST	FRST
	FORESTS	
	FRST	
FORGE	FORG	FRG
	FORGE	
	FRG	
FORGES	FORGES	FRGS
FORK	FORK	FRK
	FRK	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
FORKS	FORKS	FRKS
	FRKS	
FORT	FORT	FT
	FRT	
	FT	
FREEWAY	FREEWAY	FWY
	FREEWY	
	FRWAY	
	FRWY	
	FWY	
GARDEN	GARDEN	GDN
	GARDN	
	GRDEN	
	GRDN	
GARDENS	GARDENS	GDNS
	GDNS	
	GRDNS	
GATEWAY	GATEWAY	GTWY
	GATEWY	
	GATWAY	
	GTWAY	
	GTWY	
GLEN	GLEN	GLN
	GLN	
GLENS	GLENS	GLNS
GREEN	GREEN	GRN
	GRN	
GREENS	GREENS	GRNS
GROVE	GROV	GRV
	GROVE	
	GRV	
GROVES	GROVES	GRVS
HARBOR	HARB	HBR
	HARBOR	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	HARBR	
	HBR	
	HRBOR	
HARBORS	HARBORS	HBR
HAVEN	HAVEN	HVN
	HVN	
HEIGHTS	HT	HTS
	HTS	
HIGHWAY	HIGHWAY	HWY
	HIGHWY	
	HIWAY	
	HIWY	
	HWAY	
	HWY	
HILL	HILL	HL
	HL	
HILLS	HILLS	HLS
	HLS	
HOLLOW	HLLW	HOLW
	HOLLOW	
	HOLLOWS	
	HOLW	
	HOLWS	
INLET	INLT	INLT
ISLAND	IS	IS
	ISLAND	
	ISLND	
ISLANDS	ISLANDS	ISS
	ISLND	
	ISS	
ISLE	ISLE	ISLE
	ISLES	
JUNCTION	JCT	JCT
	JCTION	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	JCTN	
	JUNCTION	
	JUNCTN	
	JUNCTON	
JUNCTIONS	JCTNS	JCTS
	JCTS	
	JUNCTIONS	
KEY	KEY	KY
	KY	
KEYS	KEYS	KYS
	KYS	
KNOLL	KNL	KNL
	KNOL	
	KNOLL	
KNOLLS	KNLS	KNLS
	KNOLLS	
LAKE	LK	LK
	LAKE	
LAKES	LKS	LKS
	LAKES	
LAND	LAND	LAND
LANDING	LANDING	LNDG
	LNDG	
	LNDNG	
LANE	LANE	LN
	LN	
LIGHT	LGT	LGT
	LIGHT	
LIGHTS	LIGHTS	LGTS
LOAF	LF	LF
	LOAF	
LOCK	LCK	LCK
	LOCK	
LOCKS	LCKS	LCKS

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	LOCKS	
LODGE	LDG	LDG
	LDGE	
	LODG	
	LODGE	
LOOP	LOOP	LOOP
	LOOPS	
MALL	MALL	MALL
MANOR	MNR	MNR
	MANOR	
MANORS	MANORS	MNRS
	MNRS	
MEADOW	MEADOW	MDW
MEADOWS	MDW	MDWS
	MDWS	
	MEADOWS	
	MEDOWS	
MEWS	MEWS	MEWS
MILL	MILL	ML
MILLS	MILLS	MLS
MISSION	MISSN	MSN
	MSSN	
MOTORWAY	MOTORWAY	MTWY
MOUNT	MNT	MT
	MT	
	MOUNT	
MOUNTAIN	MNTAIN	MTN
	MNTN	
	MOUNTAIN	
	MOUNTIN	
	MTIN	
	MTN	
MOUNTAINS	MNTNS	MTNS
	MOUNTAINS	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
NECK	NCK	NCK
	NECK	
ORCHARD	ORCH	ORCH
	ORCHARD	
	ORCHRD	
OVAL	OVAL	OVAL
	OVL	
OVERPASS	OVERPASS	OPAS
PARK	PARK	PARK
	PRK	
PARKS	PARKS	PARK
PARKWAY	PARKWAY	PKWY
	PARKWY	
	PKWAY	
	PKWY	
	PKY	
PARKWAYS	PARKWAYS	PKWY
	PKWYS	
PASS	PASS	PASS
PASSAGE	PASSAGE	PSGE
PATH	PATH	PATH
	PATHS	
PIKE	PIKE	PIKE
	PIKES	
PINE	PINE	PNE
PINES	PINES	PNES
	PNES	
PLACE	PL	PL
PLAIN	PLAIN	PLN
	PLN	
PLAINS	PLAINS	PLNS
	PLNS	
PLAZA	PLAZA	PLZ
	PLZ	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	PLZA	
POINT	POINT	PT
	PT	
POINTS	POINTS	PTS
	PTS	
PORT	PORT	PRT
	PRT	
PORTS	PORTS	PRTS
	PRTS	
PRAIRIE	PR	PR
	PRAIRIE	
	PRR	
RADIAL	RAD	RADL
	RADIAL	
	RADIEL	
	RADL	
RAMP	RAMP	RAMP
RANCH	RANCH	RNCH
	RANCHES	
	RNCH	
	RNCHS	
RAPID	RAPID	RPD
	RPD	
RAPIDS	RAPIDS	RPDS
	RPDS	
REST	REST	RST
	RST	
RIDGE	RDG	RDG
	RDGE	
	RIDGE	
RIDGES	RDGS	RDGS
	RIDGES	
RIVER	RIV	RIV
	RIVER	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	RVR	
	RIVR	
ROAD	RD	RD
	ROAD	
ROADS	ROADS	RDS
	RDS	
ROUTE	ROUTE	RTE
ROW	ROW	ROW
RUE	RUE	RUE
RUN	RUN	RUN
SHOAL	SHL	SHL
	SHOAL	
SHOALS	SHLS	SHLS
	SHOALS	
SHORE	SHOAR	SHR
	SHORE	
	SHR	
SHORES	SHOARS	SHRS
	SHORES	
	SHRS	
SKYWAY	SKYWAY	SKWY
SPRING	SPG	SPG
	SPNG	
	SPRING	
	SPRNG	
SPRINGS	SPGS	SPGS
	SPNGS	
	SPRINGS	
	SPRNGS	
SPUR	SPUR	SPUR
SPURS	SPURS	SPUR
SQUARE	SQ	SQ
	SQR	
	SQRE	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	SQU	
	SQUARE	
SQUARES	SQRS	SQS
	SQUARES	
STATION	STA	STA
	STATION	
	STATN	
	STN	
STRAVENUE	STRA	STRA
	STRAV	
	STRAVEN	
	STRAVENUE	
	STRAVN	
	STRVN	
	STRVNUE	
STREAM	STREAM	STRM
	STREME	
	STRM	
STREET	STREET	ST
	STRT	
	ST	
	STR	
STREETS	STREETS	STS
SUMMIT	SMT	SMT
	SUMIT	
	SUMITT	
	SUMMIT	
TERRACE	TER	TER
	TERR	
	TERRACE	
THROUGHWAY	THROUGHWAY	TRWY
TRACE	TRACE	TRCE
	TRACES	
	TRCE	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
TRACK	TRACK	TRAK
	TRACKS	
	TRAK	
	TRK	
	TRKS	
TRAFFICWAY	TRAFFICWAY	TRFY
TRAIL	TRAIL	TRL
	TRAILS	
	TRL	
	TRLS	
TRAILER	TRAILER	TRLR
	TRLR	
	TRLRS	
TUNNEL	TUNEL	TUNL
	TUNL	
	TUNLS	
	TUNNEL	
	TUNNELS	
	TUNNL	
TURNPIKE	TRNPK	TPKE
	TURNPIKE	
	TURNPK	
UNDERPASS	UNDERPASS	UPAS
UNION	UN	UN
	UNION	
UNIONS	UNIONS	UNS
VALLEY	VALLEY	VLY
	VALLY	
	VLLY	
	VLY	
VALLEYS	VALLEYS	VLYS
	VLYS	
VIADUCT	VDCT	VIA
	VIA	

Primary Street Suffix Name	Commonly Used Street Suffix or Abbreviation	Standard Suffix Abbreviation
	VIADCT	
	VIADUCT	
VIEW	VIEW	VW
	VW	
VIEWS	VIEWS	VWS
	VWS	
VILLAGE	VILL	VLG
	VILLAG	
	VILLAGE	
	VILLG	
	VILLIAGE	
	VLG	
VILLAGES	VILLAGES	VLGS
	VLGS	
VILLE	VILLE	VL
	VL	
VISTA	VIS	VIS
	VIST	
	VISTA	
	VST	
	VSTA	
WALK	WALK	WALK
WALKS	WALKS	WALK
WALL	WALL	WALL
WAY	WY	WAY
	WAY	
WAYS	WAYS	WAYS
WELL	WELL	WL
WELLS	WELLS	WLS
	WLS	

APPENDIX C. ADDRESS STANDARDIZATION - COUNTY, STATE, LOCAL HIGHWAYS

The following are examples of county, state, and local highway primary names and the recommended standardized format. These are not the only possible examples.

Examples in Use	Project US@ Standard
COUNTY HIGHWAY 140	COUNTY HIGHWAY 140
COUNTY HWY 60E	COUNTY HIGHWAY 60E
CNTY HWY 20	COUNTY HIGHWAY 20
COUNTY RD 441	COUNTY ROAD 441
COUNTY ROAD 110	COUNTY ROAD 110
CR 1185	COUNTY ROAD 1185
CNTY RD 33	COUNTY ROAD 33
CA COUNTY RD 150	CA COUNTY ROAD 150
CALIFORNIA COUNTY ROAD 555 (excessive characters)	CA COUNTY ROAD 555
EXPRESSWAY 55	EXPRESSWAY 55
FARM to MARKET 1200	FM 1200
FM 187	FM 187
HWY FM 1320	FM 1320
HIGHWAY 101	HIGHWAY 101
HIWAY 1080A	HIGHWAY 1080A
HWY 64	HIGHWAY 64
HWY 11 BYPASS	HIGHWAY 11 BYP
HWY 66 FRONTAGE ROAD	HIGHWAY 66 FRONTAGE RD
HIGHWAY 3 BYP ROAD	HIGHWAY 3 BYPASS RD
I10	INTERSTATE 10
INTERSTATE 40	INTERSTATE 40
IH280	INTERSTATE 280
INTERSTATE HWY 680	INTERSTATE 680
I 55 BYPASS	INTERSTATE 55 BYP
I 26 BYP ROAD	INTERSTATE 26 BYPASS RD
I 44 FRONTAGE ROAD	INTERSTATE 44 FRONTAGE RD
LOOP 410	LOOP 410

Examples in Use	Project US@ Standard
RD 5A	ROAD 5A
ROAD 22	ROAD 22
RT 88	ROUTE 88
RTE 95	ROUTE 95
ROUTE 1150EE	ROUTE 1150EE
RANCH RD 620	RANCH ROAD 620
ST HIGHWAY 303	STATE HIGHWAY 303
STATE HWY 60	STATE HIGHWAY 60
SR 220	STATE ROAD 220
ST RD 86	STATE ROAD 86
STATE ROAD 55	STATE ROAD 55
SR MM	STATE ROUTE MM
ST RT 175	STATE ROUTE 175
STATE RTE 260	STATE ROUTE 260
TOWNSHIP RD 20	TOWNSHIP ROAD 20
TSR 45	TOWNSHIP ROAD 45
US 41 SW	US HIGHWAY 41 SW
US HWY 44	US HIGHWAY 44
US HIGHWAY 70	US HIGHWAY 70
KENTUCKY 440	KY HIGHWAY 440
KENTUCKY HIGHWAY 189	KY HIGHWAY 189
KY 1207	KY HIGHWAY 1207
KY HWY 75	KY HIGHWAY 75
KY ST HWY 1	KY STATE HIGHWAY 1
KY STATE HIGHWAY 24	KY STATE HIGHWAY 24
KENTUCKY STATE HIGHWAY 625 (excessive characters)	KY STATE HIGHWAY 625

Note: When the name of a state is used as a portion of the Primary Street Name, developers SHOULD use the standard two-letter abbreviation as depicted in the previous examples. However, when the state name is the complete Primary Street Name, such as OKLAHOMA AVE, then the state name SHOULD be spelled out completely.

APPENDIX D. TWO-LETTER STATE AND POSSESSION ABBREVIATIONS

Use the abbreviations below when capturing or transforming patient addresses.

State/Possession	Abbreviation
Alabama	AL
Alaska	AK
American Samoa	AS
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
District of Columbia	DC
Federated States of Micronesia	FM
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Marshall Islands	MH
Maryland	MD
Massachusetts	MA
Michigan	MI
Minnesota	MN
Mississippi	MS

State/Possession	Abbreviation
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Northern Mariana Islands	MP
Ohio	OH
Oklahoma	OK
Oregon	OR
Palau	PW
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virgin Islands	VI
Virginia	VA
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

Geographic Directional	Abbreviation
North	N
East	E
South	S
West	W
Northeast	NE
Southeast	SE
Northwest	NW
Southwest	SW

Military "State"	Abbreviation
Armed Forces Europe, the Middle East, and Canada	AE
Armed Forces Pacific	AP
Armed Forces Americas (except Canada)	AA

APPENDIX E. STANDARD ABBREVIATIONS FOR SPANISH-LANGUAGE ADDRESSES

In many areas of the country, street names are influenced by Hispanic culture. In these areas, Spanish prefix words such as *AVENIDA*, *CALLE*, and *CAMINO* are frequently used as the first word of the street name and often combined with prepositional phrases such as *de*, *la*, *de las*, and the noun they are describing. For example, *AVENIDA DE LA ESTRELLA* and *CAMINO DE LAS VILLAS* are Hispanic words called *prefixes* because they normally occur at the beginning of the street name, while the English translation would be placed as a suffix in an address.

Spanish Prefix	Standardization	English Translation
AVENIDA	AVE	Avenue
CALLE	CLL	Street
CAMINITO	CMT	Little Road
CAMINO	CAM	Road
CERRADA	CER	Closed
CIRCULO	CIR	Circle
ENTRADA	ENT	Entrance
PASEO	PSO	Path
PLACITA	PLA	Little Plaza
RANCHO	RCH	Ranch
VEREDA	VER	Small Path
VISTA	VIS	View

Note: The English translation is provided for information only. Do not replace the Spanish words with the English translation.

APPENDIX F. COMMON TRANSLATIONS FOR PUERTO RICO ADDRESSES

The following is a list of commonly used phrases that may appear in Puerto Rico addresses:

Spanish	English
Apartado	PO Box
Buzon	Box
Buzon Rural	Rural Box
Ruta Rural	Rural Route
Ruta Estrella	Highway Contract
Edificio	Building

Note: The English translation is provided for information only. Do not replace the Spanish words with the English translation.

The following is a list of Spanish words and their corresponding abbreviations that may appear in Puerto Rico addresses:

Spanish Word	Abbreviation	Spanish Word	Abbreviation
Apartamento	APT	Extencion	EXT
Barriada	BDA	Hospital	HOSP
Building	BLDG	Industrial	IND
Bloque	BL	Jardines	JARD
Barrio	BO	Mansiones	MANS
Carretera	CARR	Parcelas	PARC
Caserio	CAS	Quebrada	QBDA
Condominio	COND	Reparto	REPTO
Cooperativa	COOP	Residencial	RES
Corporacion	CORP	Sector	SEC
Departamento	DEPT	Terraza	TERR
Edificio	EDIF	Urbanization	URB
Entrega General	GEN DEL	Villa	VIL

APPENDIX G. ALPHANUMERIC/FRACTIONAL ADDRESSES

Determining Address Ranges

Alphanumeric ranges present a challenge to the address matching process, whether it is being done automatically by a vendor's software or manually. The difficulty in alphanumeric matching is in trying to determine what addresses fall in the range. The following coding rules are being provided to eliminate the inconsistency in the way some alphanumeric ranges are coded. The rules that follow apply to both the primary and secondary ranges in street records, rural route box numbers, and highway contract box numbers.

Alphanumeric Ranges

Format

In whole numeric ranges all single alphanumeric combinations make a match as long as the input record is higher than the numeric low and lower than the numeric high and the ZIP+4 add-on code is the same.

Example:

Input Record	Validity Determination
100–198(e) MAIN ST	12345–1234
98A	invalid (outside of range)
198A	invalid (outside of range)
102B	valid
158A	valid
158AA	invalid (multiple alphas must be coded)

If *104A MAIN ST* has a separate add-on code, it must be coded and the range 100-198 must be broken (as 100–104 and 106–198).

The low range and the high range must contain the same format of the alphanumeric combination. Numeric numbers do not make a match to alphanumeric ranges.

Example

Input Record	Validity Determination
10A–20A	valid
115C–115F	valid
AB90–AB120	valid
15AB–15AC	valid
12–12	invalid (numerics are not included in alphanumeric ranges)
10–20A	invalid (numeric to alphanumeric)

Input Record	Validity Determination
10A–20	invalid (alphanumeric to numeric)
A–AB	invalid (single to double alpha)

It is acceptable to go from a one–digit numeric to a two–digit numeric (or two–digit numeric to a three–digit numeric, etc.) in a single alphanumeric range record, but it is invalid to go from a single alpha to a double alpha (or double alpha to a triple alpha, etc.).

Input Record	Change Record	Validity Determination
90A	101A	valid
AB1	AB10	valid
A101	AB101	invalid (single to double alpha)

Middle Range

The middle of a range contains all of the logical alphanumeric combinations as determined by the value of the low and high ranges and the odd/even indicator.

2A–10A cannot contain 1A, 4B, or 10B, but does contain 3A, 6A, and 7A. BC15–BF15 cannot contain BA15, BM15, or BC16, but does contain BD15.

Note: A pure numeric range (1–99) contains all possible combinations with a single trailing alpha (e.g., 1A, 3X, 25Z, 43A).

Alpha and Numeric Range Format

When rule one is followed, either the numeric value can be ranged or the alpha value can be ranged but not both; numerics are not included in alphanumeric ranges.

Input Record	Validity Determination
1A–4A	valid (contains 2A, 3A, but not 2B, 1, 2, 3, or 4)
1A–1F	valid (contains 1B, 1E, but not 1G)
B3–N3	valid (contains D3, L3, but not A3)
C4–C16	valid (contains C5, C10, but not D5, 10, or C17)
1A–4F	invalid (contains both values ranged)

Multiple Alphas in a Single Field

In a range with multiple alphas in a single field, only the last position of the alpha is ranged.

Input Record	Validity Determination
10AB–10AD	valid
101AAA–101AAE	valid

Input Record	Validity Determination
BC100–BF100	valid
101AAA–101ABA	invalid (middle alpha changed)
AB100–AD199	invalid (complex alpha and numeric ranged)

If a range consists of multiple alphas (with or without numerics), and a position other than the last alpha seems to change, multiple records are coded for that range, as in the following:

Input Record	Coded for That Range	Coded for That Range	Coded for That Range
AAA	ABA	ACA	ADA
AAB	ABB	ACB	ADB
AAC	ABC	ACC	ADC
AAD	ABD	ACD	ADD

Grid Addresses

The following describes how to code two styles of grid addresses:
N18W22604 or 6W220

In both of these examples, only the right–most numeric portion should be ranged.

Input Record	Coded Record	Validity Determination
N18W22604	N18W22698	valid
6W220	6W298	valid
N23W2400	N26W2598	invalid (ranging both numerics)
4N3000	7N3098	invalid (ranging both numerics)

Odd/Even/Both Indicator

The following describes the way to set the odd/even/both (O/E/B) indicator in alphanumeric ranges. After following the preceding rules, the proper setting of the O/E/B indicator is important. The O/E/B indicator must be set as *BOTH* in every instance where the alpha is the ranged element. Even and odd indicators may be set only if the numeric portion of the alphanumeric range is the single element ranged. Obviously, any range containing both even and odd numeric elements must be coded as *BOTH*.

Input Record	Validity Determination
10A–20A	acceptable (numeric range, BOTH or EVEN)
115C–115F	(alpha range, must be BOTH)
AB1–AB10	(numeric range, 1–10, must be BOTH)

Input Record	Validity Determination
AB2–AB10	acceptable (numeric range, BOTH or EVEN)
A1A–A1B	(alpha range, must be BOTH)
6W220–6W298	acceptable (numeric range, BOTH or EVEN)

Fractional Addresses

All possible fractions are contained within the limits of numeric ranges. Individual fractional addresses should not be coded unless they fall outside of the numeric range or have a different ZIP+4 Code. If the range is 1–99(O), 13 1/2, 49 1/3, 57 3/4, and 75 1/16 fall within the limits of the range. 99 1/2 does not, nor does 1/2 or any other purely fractional address.