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## RELEASE AND VERSIONING

<table>
<thead>
<tr>
<th>Type</th>
<th>Version</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Working Draft</td>
<td>0.1</td>
<td>Revising text, tables, definitions.</td>
</tr>
<tr>
<td></td>
<td>0.202</td>
<td>Addition of Address Point attribution.</td>
</tr>
<tr>
<td></td>
<td>0.305</td>
<td>Addition of ESN polygonal layer.</td>
</tr>
<tr>
<td>Public Release</td>
<td>1.0</td>
<td>Addition of Version Changes.</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>Upper-case formatting for [DESCRIPTION] field in street centerline attribution.</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>Addition of Driveways centerline layer.</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>Addition of Trail centerline layer.</td>
</tr>
<tr>
<td></td>
<td>2.0</td>
<td>Removed underscore (_) as non-Uniform punctuation.</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>Changed [LAT], [LONG], [X_SP], [Y_SP] fields from Long Integer to Double to allow for decimal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Removed [STATUS] field treatment under Address Point Attribution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changed [STRUCTYPE] requirements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revised [STPRETYPE], [STTYPE] field requirements referencing Appendix A.</td>
</tr>
<tr>
<td></td>
<td>3.1</td>
<td>Changed [TLENGTH] to Double.</td>
</tr>
<tr>
<td></td>
<td>3.2</td>
<td>Removed pseudo-ESN fields. Whether the zones are pseudo-ESNs or not, the values need to appear in the [ESN] field.</td>
</tr>
<tr>
<td></td>
<td>3.3</td>
<td>Changed [LAT], [LONG] fields to String type with a width of 10. Field values will be in Degrees, Decimal Minutes in the form “XX XX.XX”. This</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is to accommodate incident location from an aircraft (e.g., Med-Evac).</td>
</tr>
<tr>
<td></td>
<td>3.5</td>
<td>Added pavement type [PTYPE] to the driveway centerline.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changed [PARKTYPE] to Short Integer type with coded values.</td>
</tr>
<tr>
<td></td>
<td>3.6</td>
<td>Changed [LAT], [LONG] fields to a width of 15 and waved the aforementioned format restriction to allow a more flexible field value (see documentation for examples). Coordinate values remain Degrees, Decimal Minutes and the field type remains String. The Calculate Geometry... option in ArcGIS allows for populating values containing the degree (°) and minute (’) symbols with cardinal direction or negative Longitude options.</td>
</tr>
<tr>
<td>3.7</td>
<td>Added [LE], [FD] and [EMS] fields to the ESN attribute table to accommodate Law Enforcement, Fire Department and Emergency Medical Services values respectively.</td>
<td></td>
</tr>
</tbody>
</table>
| 4.0 | Modified tables to support more attribution and functionality:  
   a. Eliminated the *Common Attributes* section to make layer definitions more accessible.  
   b. Modified street centerline description to include reference to an alternate names table.  
   c. Modified table to be reflective of how the product looks.  
   d. Added the following fields to the Street Centerline table:  
      a. [NAMETYPE]  
      b. [LANES]  
   e. Lengthen [SEGID] field.  
   f. Added Alternate Names table and field descriptions.  
   g. Added [SEGID] to the Driveway centerlines table.  
   h. Added [OIR] field to Trail centerlines table.  
   i. Added the following fields to the Address point table:  
      a. [R_SEGID]  
      b. [L_SEGID]  
      c. [STRUCDESC]  
      d. [SECUNTNUM]  
      e. [SUBNAME]  
   j. Modified the following field definitions for the Address point table:  
      a. [STRUCTYPE]  
      b. [FLOOR] |
| 4.1 | Full re-write/re-format of document.  
   Added Layers:  
   Linear Water  
   Railroads  
   Landmark/Points of Interest  
   State Boundaries  
   County Boundaries  
   Zip Code Boundaries  
   Municipal Boundaries  
   Landmark Boundaries  
   Major Water Features  
   Airports  
   These layers are in the initial part of implementation and some have yet to have their fields defined.  
   Expanded field length of PRETYPE and TYPE to be a string of 5 instead of 4.  
   Changed layer name from “DRIVEWAYS” to “PRIVATE SEGMENTS”. |
<p>| 5.0 | Update of document to reflect updates to centerlines, address points and ESN boundaries. As these are the only layers that |</p>
<table>
<thead>
<tr>
<th>Version</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td>Rebranding of the standard to alleviate issues related to multiple version circulation, misinformation, and ownership of said standard. Consolidated schema and modeling specifications into one document. New format for individual field explanations with more thorough definitions and examples. New figures to aid cognition. Removed SECUNTNUM from Site Address Point layer, ESZ and ESQK from the ESN layer. Added sections and appendices that deal with MSAG and call routing in the Tennessee NG architecture.</td>
</tr>
<tr>
<td>7.1</td>
<td>Added 16 – Bus, 17 – Quadplex, 1309 – Storage Facility to the STRUCTYPE codes</td>
</tr>
<tr>
<td>7.2</td>
<td>Added 18 – Communal Area to the STRUCTYPE codes Removed the decimal restriction in SPDLIMIT</td>
</tr>
<tr>
<td>7.3</td>
<td>Added 1016 – Ferry Terminal to the STRUCTYPE codes</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

This product specification provides detailed information about the geographic information system (GIS) layers available as part of the on-going conversion project by the State of Tennessee to Next Generation 9-1-1 (NG9-1-1). Formerly referred to as the Tennessee Information for Public Safety (TIPS) standard, this schema standards and modeling document provides the foundation for a successful migration and continued participation in the Next Generation architecture. It melds the former TIPS schema and modeling specifications into one document to provide a single reference source. The rebranding of this standard is to ensure that all Emergency Communications District (ECD) personnel and their vendors are utilizing the most up-to-date and currently authorized standard, and to show ownership of this standard by the Tennessee Emergency Communications Board (TECB).

Originally authored in 2008, before many standards governing GIS data for the NG transition were written, this schema has undergone various revisions. Beginning with version 7.0, attempts to bring these standards back in line with the NENA expectations, and clarify some ambiguity that has arisen out of the previous edits are primary goals. This document supersedes all other previous versions of this schema standard.

Working with local ECDs within the state and utilizing the project partners, the State of Tennessee aggregates locally updated geometry and attribute information and integrates these into a single consolidated and standardized database utilizing its partner resources. In turn, the State provides the ECDs with the updated statewide database at no cost. The ability for the ECDs to share and exchange data with the State allows the Districts to effectively manage their operations and improve public safety.

TECHNICAL REQUIREMENTS

BACKGROUND

In 1992, the Tennessee State Information Systems Council adopted Environmental Systems Research Institute (Esri) as the State of Tennessee standard GIS software platform. Pursuant to this, the aggregated and quality controlled statewide GIS data layers will be maintained by the program partner True North Geographic Technologies (True North) and distributed to local ECDs in an Esri data format. If an ECD is unsure if their current software platform supports and/or natively uses the Esri file format, please contact True North (see below under Acknowledgements and Feedback for contact information) or the software vendor directly.

The first data layers were created through the Tennessee Base Mapping Program (TNBMP). The TNBMP data products included not only street centerlines, but digital ortho imagery, a digital surface model, hydrography and drainage data, along with a comprehensive property (cadastral) ownership layer. The project is now complete, and the TNBMP has become a statewide digital orthophotography program, conducted in cooperation with the Tennessee Department of Transportation (TDOT). This program updates ortho imagery for a quarter of the state annually. With four regions, TDOT collects 1-foot digital color orthoimagery for the entire state once every four years. These orthoimagery data products are delivered free of charge to the ECDs as a part of this program, but have no editing specifications for the local Districts, and thus are not a part of this documentation.
Each participating ECD has the responsibility for maintaining the GIS data layers that not only support operations at their local PSAP(s), but directly affect the NG9-1-1 system as a whole for the state. The standards outline the common set of criteria that must be present in each District dataset that is uploaded to the State for processing.

True North Geographic Technologies (True North), in conjunction with Comtech, has been under contract with the TECB to maintain a comprehensive Spatial Interface (SI) and provide related services to the ECDs since July 2015. The vision for this effort is to develop a system that allows True North to facilitate the SI, provide standardized civic location data to other project constituents, and provide an up-to-date, statewide set of site address, road centerline and ESN layers in this schema format to any ECD for use in dispatching and emergency services. In particular, this statewide database will be essential for implementation of NG9-1-1 and the location of misrouted cell phone calls and Voice over Internet Protocol (VoIP) calls in adjacent Districts or any part of the State.

METADATA

The term *metadata* is defined as “information that describes the content, quality, condition, origin, and other characteristics of data or other pieces of information. Metadata for spatial data may describe and document its subject matter; how, when, where, and by whom the data was collected; availability and distribution information; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard. Metadata consists of properties and documentation. Properties are derived from the data source (for example, the coordinate system and projection of the data), while documentation is entered by a person (for example, keywords used to describe the data).”

Metadata is key to the lifecycle of any dataset. It effectively protects the investment of data compilation, re-use and updating. It provides the user with consistent terminology, key elements and describes the fitness for use. Moreover, it enables discovery when combined with other data in a clearinghouse or data catalog.

Metadata maintained with the addressing layers will be FGDC-compliant. For more information on this topic, see the Content Standard for Digital Geospatial Metadata (CSDGM) and the Metadata Quick Guide.

REFERENCE

Referencing standards for addressing that govern this document include the FGDC United States Thoroughfare, Landmark, and Postal Address Data Standard document number FGDC-STD-016-

---

2011, the United States Postal Service Publication 28, and standards developed by NENA utilized for inclusion of geospatial information into the enterprise GIS solution.

COORDINATE SYSTEM AND PROJECTION

TCA § 66-6 defines the legislation for the Tennessee Coordinate System, describing the geodetic survey system, coordinates, and technical definitions. The following outlines the current State of Tennessee standard for GIS data:

- **Coordinate System:** State Plane
- **Zone:** 4100 (Tennessee)
- **Projection:** Lambert Conformal Conic
- **False Easting:** 1968500.000000
- **False Northing:** 0.000000
- **Central Meridian:** -86.000000
- **First Standard Parallel:** 35.250000
- **Second Standard Parallel:** 36.416667
- **Latitude of Origin:** 34.333333
- **Linear Unit:** U.S. Foot (0.304801)
- **Geographic Coordinate System:**
  - **Name:** Geographic Coordinate System (GCS)
  - **Angular Unit:** Degree (0.017453292519943295)
  - **Prime Meridian:** Greenwich (0.000000000000000000)
  - **Datum:** North American Datum of 1983
  - **Spheroid:** GRS 1980
    - **Semi-major Axis:** 6378137.0000000000000000
    - **Semi-minor Axis:** 6356752.3141403561000000
    - **Inverse Flattening:** 298.2572221010000200

In 2022, the National Geodetic Survey will replace NAD83 and NAVD88 horizontal and vertical datums for the entire North American Plate. The new reference frame that will affect Tennessee will be the North American Terrestrial Reference Frame of 2022 (NATRF2022). See the NGS website for more details and progress updates.

HORIZONTAL ACCURACY

Horizontal accuracy will apply to address points and street centerline nodes and vertices. The requirement for acceptance shall be +/- 3 meters. At this time, there are no requirements surrounding vertical accuracy.

---

SCHEMA AND MODELING SPECIFICATIONS

This specification currently provides for the standardization of three (3) GIS data layers: the site address points, the road centerlines and the ESN boundaries. As NENA standards progress, other layers may be optional or required as uploads to the State program. Unlike other transitional i3 solutions, the State decided to migrate based on MSAG and ALI creation from the Site Address Points. This is advantageous as it puts ground truth in the MSAG. The Road Centerlines will still play a pivotal role, but the Site Address Points have become the de facto addressing layer. The ESN boundaries are also the gateway layer as processing begins, and thus could make or break a successful processing run in downstream QA for a particular ECD. As such, stringent rules regarding field population for each of the layers must be adhered to for the MSAG and ALI processes.

The very first draft of this schema definition for the State of Tennessee pre-dates many NENA standards documents governing GIS data for NG9-1-1. The business model dictated the distribution of this base set of layers and attributes to the local Districts who are maintaining the layers. As schema changes are difficult to promulgate effectively, especially with the various vendor software used throughout the state, this initial schema has been, for the most part, adhered to throughout its lifecycle. As a result, this standard will vary from some more recent NENA specifications. As an example, current NENA documents dictate that no abbreviations should be used in the addressing fields. Spelling everything out alleviates any ambiguity. This is in direct conflict with the federal standards used as a base to initially author this specification (and were once promoted by NENA during the inception of this specification). Care is being taken to review new standards and migration pathways to satisfy the new requirements.

The GIS Identifier (OIRID) for each of the layers is probably the most crucial attribute. This value MUST be unique and persistent for each individual record across time and space. Duplication of this value is not allowed within a single feature class. At this time, these unique identifiers cannot be reused once a record is deleted. These values cannot be changed once assigned unless coordinated with the NG9-1-1 program partners. Unplanned changes in the GIS Identifiers between data deliverables are caught in the nightly QA and the ECD data is prevented from processing. This constitutes a disaster recovery level scenario for the NG9-1-1 databases should those be allowed through (current NOC level SIL 1). The dataset containing the original GIS Identifiers should be recovered from local backups so that the ECD can begin processing again. An ECD dataset will remain stagnant in the statewide production databases until the recovery is complete. Should this issue be identified, please contact your vendor (if applicable) and True North at support@tngeo.com or one of the program offices to alert that this has happened.

As this project has progressed, various artifacts and non-standard field population have been caught in the nightly QA process. Some of these are due to misinformation about those fields in the schema, but most are due to accidental typographic data entry errors. Habitual repetitions, like tabbing through fields or hitting Enter to move through a table or form, can result in erroneous (and sometimes unseen) characters depending on the editing software in use. The toughest one of these to find is the carriage return <CR>. The most frequent of these errors is a leading or trailing space in the field value. These are of greatest consequence in the fields which determine MSAG inserts or changes.

A companion template file geodatabase is available which includes templates for the three layers, tables reflecting domain values for the fields, Attribute Assistant baseline tables, and linking tables (such as the optional contact table).
1.0 SITE ADDRESS POINT

Site address point features represent locations where civic addresses are assigned. Features in this layer should represent addressable structures only. Any locations that do not have an authoritatively assigned address should be put into a separate landmark or POI layer, or into a layer by themselves. Conversely, if a usually un-addressable structure has a telephone associated with it (e.g., a pole with a call box), that location can be addressed and included in this layer.

Duplication of address points with the same attribution should be avoided and are reported back as “coincident points”. Occasionally this is the result of a copy/paste function in the GIS editing software, after which the added point is never moved and the attributes never altered. However, this most frequently occurs when trying to maintain occupant and/or phone number information as additional fields to the base schema. Best practices for the implementation of this schema to benefit both the NG9-1-1 project and localized PSAP operations is to maintain as much of the extraneous information (not found in this standard) in a linking table which utilizes the GIS Identifier. Not only does this keep the added information separate, but the imperative to keep the GIS Identifier unique and persistent also has application locally.

As of the release of this standard, any previous modeling specification document is obsolete. Although some specific examples will be provided throughout this treatment for special situations, the placement of the site address point geometry should generally follow the more stringent guidelines for accuracy (e.g., § 3.4.4) found in the NENA Information Document for Development of Site/Structure Address Point GIS Data for 9-1-1 document NENA-INF-014.1-2015. Any new placement requirements or options will be cited in this standard and not in a separate document. Any specifications herein supersede the NENA document options for Tennessee.

1.1 Identifier and Reference Fields

1.1.1 OIRID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>GIS Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Address ID, Unique_ID, Site ID</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>20</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.1.1, NENA-STA-010.2-2016, NENA 02-010</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Currently, this value is an alphanumeric patterned after the format: ’%ECD name%_%numeric sequence%’ The ECD name is a one-word moniker for the District and MUST be in uppercase. For each individual record, this value MUST be unique among all address point records and persist for the lifetime of that record. The numeric sequence should increment by one (1) with each successive edit, but there is no requirement for consecutive numbering as long as the values are unique and persistent for each record. At this time, these unique identifiers cannot be reused once an address point record is deleted.</td>
</tr>
</tbody>
</table>

### Examples

<table>
<thead>
<tr>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘ANDERSON_123’, ‘WILSON_45678’</td>
</tr>
</tbody>
</table>

#### 1.1.2 R_SEGID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Route Segment Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>25</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Identifier linking the address point to the road centerline segment that it is routed from. The value should mirror the [SEGID] value on the related centerline segment. This can be different from the segment it is addressed from. If there is more than one routable segment, the primary segment should be referenced here. If the [A_SEGID] is also a routable segment, it should be referenced as the primary (see 1.1.3, 2.1.2, and Figure 1).</td>
</tr>
</tbody>
</table>

#### 1.1.3 A_SEGID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Address Segment Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>25</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Identifier linking the address point to the road centerline segment that it is addressed from. The value should mirror the [SEGID] value on the referenced centerline segment. The same address can be routed-to from a different centerline segment (see 1.1.2, 2.1.2, and Figure 1).</td>
</tr>
</tbody>
</table>

#### 1.1.4 SEG_SIDE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Segment Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>1</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td>‘L’ = Left side of the segment ‘R’ – Right side of the segment</td>
</tr>
<tr>
<td>Definition</td>
<td>Identifies the side of the related centerline segment that the site address point is addressed from. The centerline segment has direction based on its From and To nodes, not its address range assignment (though both should align).</td>
</tr>
</tbody>
</table>

Examples
In the above figure, an example is given of a hypothetical scenario where the [R_SEGID] and the [A_SEGID] would be different. The address point is addressed from MAIN ST, therefore the [A_SEGID] is populated with the [SEGID] value from the MAIN ST road segment. However, the best route to the structure for first responders is the back entrance (avoiding the keycard activated gate). The [R_SEGID] value would reflect the [SEGID] for the NW AVE A road segment to show the relationship.

### 1.1.5 GISLINK

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Parcel Link Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Address Parcel Identifier</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>15</td>
</tr>
<tr>
<td>Reference</td>
<td>Tennessee Base Mapping Program Technical Specifications\textsuperscript{10}, FGDC-STD-016-2011 §2.2.3.2</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Links the site address point to the parcel it is within. The relationship affords access to information about owner/occupancy, acreage, subdivision names, and other CAAS attributes.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘001032B E 00700’, ‘001005 05800’</td>
</tr>
</tbody>
</table>

1.2 Descriptors

1.2.1 STRUCTYPE

Field Alias | Structure Type |
PIDF-LO     | maps to PLC    |
Common Names|                                                                 |
Field Type  | Short Integer  |
Field Length|                                                          |
Reference   | RFC 4589       |
Domain      | See Appendix E |
Definition   | Domain of values that describe the type of structure represented by the site address point. Only one value can be chosen. If multiple values apply, choose the one that best describes the type of site address point this represents. |
Examples    |                                                            |

1.2.2 STRUCDESC

Field Alias | Structure Description |
PIDF-LO     |                                                                 |
Common Names|                                                                 |
Field Type  | Text               |
Field Length| 30                 |
Reference   |                                                                 |
Domain      |                                                                 |
Definition   | Value describing the characteristics of the structure represented by the site address point. |
Examples    | ‘RED BRICK’, ‘BROWN SIDING’ |

1.3 Complete or Primary Address Number Fields

1.3.1 STNUM_H

Field Alias | Street Number High |
PIDF-LO     |                                                                 |
Common Names|                                                                 |

### 1.3.2 STNUM\_L

<table>
<thead>
<tr>
<th>Field Type</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Contains the lowest value (MIN) of an address range for a single structure.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘123’, ‘456B’, ‘789-C’</td>
</tr>
</tbody>
</table>

Do not use decimals to delineate incremental values in this field.

### 1.3.3 STNUM

<table>
<thead>
<tr>
<th>Field Type</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Alpha-numeric field containing the structure number or value for the site address civic location assigned by the local addressing authority. Usually an integer which defines the individual address number for the structure. As this is the primary structure value, alphabetic characters should only appear in this field if they are part of the house number, not a secondary address (like an apartment, suite or unit). Duplex structures with no primary address can be populated in this field (i.e., ‘101A’ and ‘101B’).</td>
</tr>
<tr>
<td>Examples</td>
<td>‘123’, ‘456B’, ‘789-C’</td>
</tr>
</tbody>
</table>

Do not use decimals to delineate incremental values in this field.

### 1.3.4 STNUM\_SUF

<table>
<thead>
<tr>
<th>Field Type</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

Do not use decimals to delineate incremental values in this field.
### 1.4 Secondary Address Fields

Secondary or subaddress information further defines the primary address to a more granular level. Populating these fields correctly is crucial because MSAG records are only created from primary addresses. Therefore, every secondary address MUST have a primary address point. The fields in this subsection identify whether an address point is representing a secondary address. If there is any value in these fields, the point is marked as secondary in the exchange format. For a treatise on how to correctly populate these fields, see Appendix F.

#### 1.4.1 BUILDING

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>BLD</td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>35</td>
</tr>
</tbody>
</table>

**Reference**

**Domain**

**Definition**
[VANITY] may describe a complex of buildings, but this field identifies the specific building associated with this site address point. As this is already identified as the building by the field name, do not add or abbreviate “BUILDING” for the field value, (e.g., if it is ‘BLDG A’ simply enter ‘A’).

**Examples**

#### 1.4.2 FLOOR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>FLR</td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
</tbody>
</table>

**Reference**

**Domain**

**Definition**
The floor of the building specific to this site address point. If there is only one floor, leave this field blank. As this is already identified as the floor by the field name, do not add or abbreviate “FLOOR” for the field value, (e.g., if it is ‘FLR 2’ simply enter ‘2’). Use the USPS secondary unit designator abbreviations found in Appendix C2 of the Publication 28 standard where applicable.
## 1.4.3 UNIT_TYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Unit Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>Along with UNIT_NUM, concatenates to UNIT</td>
</tr>
<tr>
<td>Common Names</td>
<td>Subaddress Type (FGDC), Secondary Address Identifier</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>4</td>
</tr>
<tr>
<td>Domain</td>
<td>USPS Publication 28 Appendix C2 applicable values, see also Appendix B of this document</td>
</tr>
<tr>
<td>Definition</td>
<td>The type of secondary address location.</td>
</tr>
</tbody>
</table>

## 1.4.4 UNIT_NUM

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Unit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>Along with UNIT_TYPE, concatenates to UNIT</td>
</tr>
<tr>
<td>Common Names</td>
<td>Subaddress Identifier (FGDC), Secondary Address Range (USPS)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
<tr>
<td>Domain</td>
<td>USPS Publication 28 Appendix B of this document</td>
</tr>
<tr>
<td>Definition</td>
<td>The secondary unit number or identifier that specifies the individual unit.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘A’, ‘247’, ‘1B’</td>
</tr>
</tbody>
</table>

## 1.5 Road Designation Fields

### 1.5.1 PREDIR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Prefix Directional</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>PRD</td>
</tr>
<tr>
<td>Common Names</td>
<td>Predirectional (USPS), sometimes referred to as Street Prefix</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
<tr>
<td>Definition</td>
<td>An abbreviated directional indicator for the road.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 1.5.2 PRETYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Prefix Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>PRM</td>
</tr>
<tr>
<td>Common Names</td>
<td>Road Pre-modifier</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
<tr>
<td>Domain</td>
<td>USPS Publication 28 Appendices C1, H, see also Appendix A of this document</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Definition</td>
<td>A type modifier for the road placed in front of the road name. The field length is currently 5 for existing special cases, but all attempts should be made to follow the domain for this field.</td>
</tr>
</tbody>
</table>

Do not use ATTSE Standard Thoroughfare Designations.

### 1.5.3 NAME

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Street Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>RD</td>
</tr>
<tr>
<td>Common Names</td>
<td>Suffix Type, Street Name Posttype (FGDC)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>40</td>
</tr>
</tbody>
</table>

**Domain**

The name of the thoroughfare or throughway only (without the street name or directionals).

**Examples**

### 1.5.4 TYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Street Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>STS</td>
</tr>
<tr>
<td>Common Names</td>
<td>Suffix Type, Street Name Posttype (FGDC)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
</tbody>
</table>

**Domain**

USPS Publication 28 Appendices C1, H, see also Appendix A of this document

**Definition**

A type modifier for the road placed after the street name. The field length is currently 5 for existing special cases, but new assignments should follow the domain for this field.

**Examples**


Do not use ATTSE Standard Thoroughfare Designations.

### 1.5.5 SUFDIR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Suffix Directional</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>POD</td>
</tr>
<tr>
<td>Common Names</td>
<td>Postdirectional, in some standards referred to as the Street Suffix</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
</tbody>
</table>

**Domain**


**Definition**

An abbreviated directional indicator for the road.
### 1.5.6 POSTMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Post Modifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>POM</td>
</tr>
<tr>
<td>Common Names</td>
<td>Road Post Modifier</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>20</td>
</tr>
<tr>
<td>Domain</td>
<td>USPS Publication 28 Appendix C1</td>
</tr>
<tr>
<td>Definition</td>
<td>Always follows and modifies the street name.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘EXT’, ‘BYP’</td>
</tr>
</tbody>
</table>

### 1.6 Complete Address and Label Fields

#### 1.6.1 ADDRESS

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Complete Address</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>100</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The concatenation of all parsed street number and street name elements consisting of STNUM, PREDIR, PRETYPE, NAME, TYPE, SUFDIR, POSTMOD. If the secondary address information must be used in this field, it should be appended to the end so that logical queries can still find the primary address.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘123 MAIN ST’, ‘405 W BROAD AVE’, ‘275 HWY 54 W EXT’</td>
</tr>
</tbody>
</table>

#### 1.6.2 ADDR_ESN

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Address with ESN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>100</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The concatenation of the ADDRESS field with the ESN at the end separated by a space.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘123 MAIN ST 301’, ‘405 W BROAD AVE 001’, ‘275 HWY 54 W EXT 204’</td>
</tr>
</tbody>
</table>

#### 1.6.3 LABEL

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Field Length</td>
<td>100</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>This is a freeform field for use in cartographic design. The values here can (and probably should) be proper case. Typically for the Site Address Points, this field would hold the street number or individual unit designation for this address. Recommended population would show street number for primary addresses and a concatenation of the UNIT_TYPE and UNIT_NUM for secondary addresses.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘123’ for Address = 123 MAIN ST, ‘APT B2’ for address containing secondary address values</td>
</tr>
</tbody>
</table>

1.6.4 SUBNAME

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Subdivision Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>A5</td>
</tr>
<tr>
<td>Common Names</td>
<td>Place Name (FGDC), Neighborhood Community (CLDXF)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>50</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The name of the subdivision this address participates in.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

1.6.5 VANITY

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Vanity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>LMK</td>
</tr>
<tr>
<td>Common Names</td>
<td>Landmark Name (FGDC), Complete Landmark Name (CLDXF)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>50</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.5.1, NENA-STA-004.1-2014 (CLDXF), RFC 4119</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Colloquial landmark name identifying an address location. Field values can be proper case for labeling/cartographic purposes.</td>
</tr>
</tbody>
</table>

1.7 Zonal Aggregates

1.7.1 ZIP

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>PC</td>
</tr>
<tr>
<td>Common Names</td>
<td>Postal Code, ZIP Code</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.6.3, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Domain</td>
<td>Defined by the US Postal Service</td>
</tr>
<tr>
<td>Definition</td>
<td>The 5-digit code assigned to the USPS post office servicing this address location.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Examples</td>
<td>‘37129’</td>
</tr>
</tbody>
</table>

1.7.2 ZIP4

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ZIP4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>ZIP+4</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>4</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.6.4, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Domain</td>
<td>Defined by the US Postal Service</td>
</tr>
<tr>
<td>Definition</td>
<td>The 4-digit code that value-adds the 5-digit ZIP that identifies a finite range of delivery addresses within the area serviced by the specific USPS post office.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

1.7.3 ESN

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Emergency Service Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The Emergency Service Number is actually a 5-digit string, of which this schema is only capturing the last 3. The 3-digit code is prefixed with leading zeros. The ESN is a legacy element used for 10-digit routing.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘001’, ‘016’, ‘234’</td>
</tr>
</tbody>
</table>

1.7.4 CITY

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>MSAG Community Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>MCN (NENA)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>30</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>This is not the administrative or postal city designation. This field should contain the MSAG Community Name, assigned by the 9-1-1 authority, which the address point is contained within.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘MURFREESBORO’, ‘DEKALB COUNTY’</td>
</tr>
</tbody>
</table>

1.7.5 COUNTY

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td>A2</td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
</tbody>
</table>
### Field Type

- **Field Type**: Text
- **Field Length**: 30
- **Reference**: NENA-STA-004.1-2014 (CLDXF)
- **Domain**
- **Definition**: The administrative county area that contains the address point
- **Examples**: ‘LAKE’, ‘POLK’

#### 1.7.6 STATE

- **Field Alias**: State
- **PIDF-LO**: A1
- **Common Names**
- **Field Type**: Text
- **Field Length**: 2
- **Definition**: The 2-letter abbreviation for the federal state area that contains the address point.
- **Examples**

#### 1.8 Coordinate and Elevation Information

##### 1.8.1 LON

- **Field Alias**: Longitude
- **PIDF-LO**
- **Common Names**
- **Field Type**: Text
- **Field Length**: 15
- **Reference**: FGDC-STD-016-2011 § 2.3.2.3
- **Domain**
- **Definition**: The longitude of the address point in Geographic coordinates. Formatting can vary.
- **Examples**

##### 1.8.2 LAT

- **Field Alias**: Latitude
- **PIDF-LO**
- **Common Names**
- **Field Type**: Text
- **Field Length**: 15
- **Reference**: FGDC-STD-016-2011 § 2.3.2.4
- **Domain**
- **Definition**: The latitude of the address point in Geographic coordinates. Formatting can vary.
- **Examples**
### 1.8.3 X.SP

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>X Coordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Double</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.2.1</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Longitude-equivalent information catalogued in State Plane coordinates that meet the specifications under the <em>Coordinate System and Projection</em> subsection of this document.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 1.8.4 Y.SP

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Y Coordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Double</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.2.2</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Latitude-equivalent information catalogued in State Plane coordinates that meet the specifications under the <em>Coordinate System and Projection</em> subsection of this document.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 1.8.5 Z_VAL

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Altitude, Z-coordinate</td>
</tr>
<tr>
<td>Field Type</td>
<td>Long Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.2.6,</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Metric elevation above mean sea level</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 1.9 Catalogue

#### 1.9.1 GPSDATE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Initial Edit Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
<tr>
<td>Domain</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>Datetime stamp the address point was initially created. Once this value is established, it should never change. It should be noted that datetime values are not permissible in Shapefiles. Date fields in Shapefiles can hold a date or a time, but not both.</td>
</tr>
</tbody>
</table>

### 1.9.2 ADDRAUTH

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Addressing Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Text</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>50</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.1.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The addressing authority responsible for assigning the address for the current point. Although usually a single entity, addressing authorities can vary within a given jurisdiction.</td>
<td></td>
</tr>
</tbody>
</table>

### 1.9.3 SOURCE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Derived Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A description of what the address point is representing, be it a parcel centroid or a driveway entrance point or a main entrance point to the address represented by the attribution.</td>
<td></td>
</tr>
</tbody>
</table>

### 1.9.4 EDITOR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Editor</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>10</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moniker identifying the last editor for this address point. It is at the District’s discretion as to whether this identifies an agency or individual.</td>
<td></td>
</tr>
</tbody>
</table>
### 1.9.5 GEOMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Geometry Modification Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Brief description of the type of geometry edit that was last performed on this address location.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘MOVED TO ROOFTOP’, ‘ADJUSTED FOR ACCURACY’</td>
</tr>
</tbody>
</table>

### 1.9.6 GEOSRCE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Geometry Modification Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>45</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The source that was used to make the geometry edit described in GEOMOD.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘AERIAL 2015’, ‘CENTERLINE GEOCODE’, ‘GPS’</td>
</tr>
</tbody>
</table>

### 1.9.7 GEODEATE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Geometry Modification Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The datetime stamp the last geometry edit was made to this address location. It should be noted that datetime values are not permissible in Shapefiles. Date fields in Shapefiles can hold a date or a time, but not both.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘2018-01-15T20:10:30’</td>
</tr>
</tbody>
</table>

### 1.9.8 ATTMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Brief description of the type of attribute edit that was last performed on this address location.</td>
</tr>
</tbody>
</table>
### 1.9.9 ATTSRCE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>45</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The source that was used to make the attribute edit described in ATTMOD.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘FIELD-VERIFIED’</td>
</tr>
</tbody>
</table>

### 1.9.10 ATTDATE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Date</td>
</tr>
<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The datetime stamp the last attribute edit was made to this address location. It should be noted that datetime values are not permissible in Shapefiles. Date fields in Shapefiles can hold a date or a time, but not both.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘2018-01-15T20:10:30’</td>
</tr>
</tbody>
</table>

### 1.9.11 STATUS

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Lifecycle Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Address Lifecycle Status</td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§ 2.3.7.3</td>
</tr>
<tr>
<td>Domain</td>
<td>730 = ACTIVE; 734 = PROPOSED; 736 = POTENTIAL; 799 = RETIRED</td>
</tr>
<tr>
<td>Definition</td>
<td>Defines the current lifecycle status of the address.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 1.9.12 DELNOTES

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Delete Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>A notation field explaining the reason for a 799 lifecycle status.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>
2.0 ROAD CENTERLINE

Road centerlines are comprised of interconnected linear segments that generally define the center of pavement or throughway. In the NG system, this layer can actively participate in ALI geocoding and call routing. As such, attributes on the road segments MUST match the associated address points in zonal distinction and parity accuracy. From a strictly addressing perspective, identifying anomalies in the data is sufficient; however, from a call routing perspective, the road centerlines MUST be broken and attributed correctly to match the authoritative street numbering, whether that is orderly or not.

As of the release of this standard, any previous modeling specification document is obsolete. See section 4 of this document for general modeling requirements. The specifications herein supersede any NENA document options for Tennessee.

2.1 Identifier and Reference Fields

2.1.1 OIRID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>GIS Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Unique ID, Site ID</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>20</td>
</tr>
<tr>
<td>Reference</td>
<td>NENA-STA-010.2-2016, NENA 02-010</td>
</tr>
</tbody>
</table>

Definition: Currently, this value is an alphanumeric patterned after the format: ‘%ECD name%_%numeric sequence%’. The ECD name is a one-word moniker for the District and MUST be in uppercase. For each individual record, this value MUST be unique among all road centerline records and persist for the lifetime of that record. The numeric sequence should increment by one (1) with each successive edit, but there is no requirement for consecutive numbering as long as the values are unique and persistent for each record. At this time, these unique identifiers cannot be reused once a road centerline record is deleted.

Examples: ‘ANDERSON_123’, ‘WILSON_45678’

2.1.2 SEGID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Segment Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Text</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>25</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
</tbody>
</table>

Definition: Unique identifier tying vertical alignments between segments together within the road centerline layer (see Figure 2). This field also serves to link the individual road centerline segments to the site address points they are routed and addressed from (see 1.1.2, 1.1.3, and Figure 1). This necessarily implies an auto-sequence number component, but the overall field value format is free-form.

Examples: SEG-123; This is a free-form field, but there should be an auto-number sequence for each centerline segment for uniqueness.
Current modeling standards permit stacked centerline segments to allow for the use of multiple road names. The [SEGID] ties each of the segments together to show relationship.

2.2 Address Ranges

Each road segment has a start and an end point (a From and To node). These are created when the segment is digitized and constitute the direction of the segment. Generally, each segment should be digitized in the direction of ascending address ranges (minimum range values should start at the From node and increase to the maximum for that segment at the To node. Regardless of the direction of digitization, the parity should match the address points on either side of that segment.

2.2.1 L_F_ADD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Left From Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>11</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The address range extremity at the From node as defined by the associated address points on the left-side directionality of the centerline segment.</td>
</tr>
</tbody>
</table>
### 2.2.2 L_T_ADD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Left To Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>11</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The address range extremity at the To node as defined by the associated address points on the left-side directionality of the centerline segment.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.2.3 R_F_ADD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Right From Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>11</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The address range extremity at the From node as defined by the associated address points on the right-side directionality of the centerline segment.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.2.4 R_T_ADD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Right To Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>11</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The address range extremity at the To node as defined by the associated address points on the right-side directionality of the centerline segment.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.2.5 ADDR_TYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Address Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Address Range Type</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>1</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§ 2.3.5.1</td>
</tr>
<tr>
<td>Domain</td>
<td>‘A’ or ‘P’</td>
</tr>
<tr>
<td>Definition</td>
<td>Describes the address ranges as actual (A) or potential (P). These can be mixed in the centerline dataset. NENA-preferred values are actual.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>
## 2.3 Road Designation Fields

### 2.3.1 PREDIR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Prefix Directional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Predirectional (USPS), sometimes referred to as Street Prefix</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
<tr>
<td>Definition</td>
<td>An abbreviated directional indicator for the road.</td>
</tr>
</tbody>
</table>

### 2.3.2 PRETYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Prefix Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Road Pre-modifier</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
<tr>
<td>Domain</td>
<td>USPS Publication 28 Appendices C1, H, see also Appendix A of this document</td>
</tr>
<tr>
<td>Definition</td>
<td>A type modifier for the road placed in front of the road name. The field length is currently 5 for existing special cases, but all attempts should be made to follow the domain for this field.</td>
</tr>
</tbody>
</table>

*Do not use ATTSE Standard Thoroughfare Designations.*

### 2.3.3 NAME

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Street Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>40</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The name of the thoroughfare or throughway only (without the street type or directionals).</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.3.4 TYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Street Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Suffix Type, Street Name Posttype (FGDC)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
</tbody>
</table>
## Domain

**USPS Publication 28 Appendices C1, H, see also Appendix A of this document**

**Definition**
A type modifier for the road placed after the street name. The field length is currently 5 for existing special cases, but new assignments should follow the domain for this field.

**Examples**

≥ Do not use ATTSE Standard Thoroughfare Designations.

### 2.3.5 SUFDIR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Suffix Directional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Names</strong></td>
<td>Postdirectional, in some standards referred to as the Street Suffix</td>
</tr>
<tr>
<td><strong>Field Type</strong></td>
<td>Text</td>
</tr>
<tr>
<td><strong>Field Length</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>An abbreviated directional indicator for the road.</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td></td>
</tr>
</tbody>
</table>

### 2.3.6 POSTMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Post Modifier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Names</strong></td>
<td>Road Post Modifier</td>
</tr>
<tr>
<td><strong>Field Type</strong></td>
<td>Text</td>
</tr>
<tr>
<td><strong>Field Length</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong>Domain</strong></td>
<td>USPS Publication 28 Appendix C1</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Always follows and modifies the street name.</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>‘EXT’, ‘BYP’</td>
</tr>
</tbody>
</table>

### 2.4 Label and Categorization

#### 2.4.1 LABEL

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Names</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Field Type</strong></td>
<td>Text</td>
</tr>
<tr>
<td><strong>Field Length</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Reference</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Domain</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>This is a freeform field for use in cartographic design. The values here can (and probably should) be proper case. Typically for the Site Address Points, this field would hold the street number or individual unit designation for this address. Recommended population would show street number for primary addresses and a concatenation of the UNIT_TYPE and UNIT_NUM for secondary addresses.</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>‘123’ for Address = 123 MAIN ST, ‘APT B2’ for address containing secondary address values</td>
</tr>
</tbody>
</table>
### 2.4.2 VANITY

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Vanity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Landmark Name (FGDC), Complete Landmark Name (CLDXF)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.5.1, NENA-STA-004.1-2014 (CLDXF), RFC 4119</td>
</tr>
<tr>
<td>Domain</td>
<td>Definition</td>
</tr>
</tbody>
</table>

### 2.4.3 SUBNAME

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Subdivision Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Place Name (FGDC), Neighborhood Community (CLDXF)</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>50</td>
</tr>
<tr>
<td>Domain</td>
<td>Definition</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.4.4 NAMETYPE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Type of Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td>1 = Signed Name</td>
</tr>
<tr>
<td></td>
<td>2 = Long Haul Name – State Wide</td>
</tr>
<tr>
<td></td>
<td>3 = Long Haul Name – County Wide</td>
</tr>
<tr>
<td></td>
<td>4 = Long Haul Name - City Wide</td>
</tr>
<tr>
<td></td>
<td>5 = Postal Name</td>
</tr>
<tr>
<td></td>
<td>6 = MSAG Name</td>
</tr>
<tr>
<td></td>
<td>7 = Inventory Name</td>
</tr>
<tr>
<td>Definition</td>
<td>Populate this field when there are multiple names associated with each segment (e.g., when a street contains both a locally known as well as a County, State or US highway designation).</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.4.5 CFCC

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Census Feature Class Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td>See Appendix D</td>
</tr>
</tbody>
</table>
Definition

Now outdated 3-character alphanumeric Census codes classifying geographical features. These will be mapped to the current 5-character alphanumeric MTFCC codes in the NG exchange formats. It is important to correctly classify certain centerline segments to isolate them during processing (e.g., connectors, bridges, ramps) and for linear network routing purposes (e.g., AVL).

Examples

2.5 Zonal Aggregates

2.5.1 ESN_L

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ESN Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The Emergency Service Number as defined by the associated address points on the left-side directionality of the centerline segment</td>
</tr>
<tr>
<td>Examples</td>
<td>‘001’, ‘016’, ‘234’</td>
</tr>
</tbody>
</table>

2.5.2 ESN_R

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ESN Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The Emergency Service Number as defined by the associated address points on the right-side directionality of the centerline segment</td>
</tr>
<tr>
<td>Examples</td>
<td>‘001’, ‘016’, ‘234’</td>
</tr>
</tbody>
</table>

2.5.3 ZIP_L

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ZIP Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Postal Code, ZIP Code</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.6.3, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Domain</td>
<td>Defined by the US Postal Service</td>
</tr>
<tr>
<td>Definition</td>
<td>The 5-digit code assigned to the USPS post office servicing the associated address points on the left-side directionality of the centerline segment</td>
</tr>
<tr>
<td>Examples</td>
<td>‘37129’</td>
</tr>
</tbody>
</table>

2.5.4 ZIP_R

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>ZIP Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Postal Code, ZIP Code</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>5</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011 §2.2.6.3, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Domain</td>
<td>Defined by the US Postal Service</td>
</tr>
<tr>
<td>Definition</td>
<td>The 5-digit code assigned to the USPS post office servicing the associated address points on the right-side directionality of the centerline segment</td>
</tr>
<tr>
<td>Examples</td>
<td>‘37129’</td>
</tr>
</tbody>
</table>

### 2.5.5 CITY_L

| Field Alias | MSAG Community Name Left |
| Common Names |
| Field Type   | Text |
| Field Length | 30 |
| Reference    | NENA-STA-004.1-2014 (CLDXF) |
| Definition   | This is not the administrative or postal city designation. This field should contain the MSAG Community Name, assigned by the 9-1-1 authority, which the associated address points on the left-side directionality of the centerline segment are contained within. |
| Examples     | ‘MURFREESBORO’, ‘DEKALB COUNTY’ |

### 2.5.6 CITY_R

| Field Alias | MSAG Community Name Right |
| Common Names |
| Field Type   | Text |
| Field Length | 30 |
| Reference    | |
| Definition   | This is not the administrative or postal city designation. This field should contain the MSAG Community Name, assigned by the 9-1-1 authority, which the associated address points on the right-side directionality of the centerline segment are contained within. |
| Examples     | ‘MURFREESBORO’, ‘DEKALB COUNTY’ |

### 2.5.7 COUNTY_L

| Field Alias | County Left |
| Common Names |
| Field Type   | Text |
| Field Length | 30 |
| Reference    | NENA-STA-004.1-2014 (CLDXF) |
| Domain       | The administrative county area that the associated address points on the left-side directionality of the centerline segment are contained within. |
| Examples     | ‘LAKE’, ‘POLK’ |

### 2.5.8 COUNTY_R

| Field Alias | County Right |
| Common Names |

### 2.5.9 STATE_L

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>State Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.6.3, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Definition</td>
<td>The 2-letter abbreviation for the federal state area that the associated address points on the left-side directionality of the centerline segment are contained within.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.5.10 STATE_R

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>State Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.2.6.3, NENA-STA-004.1-2014 (CLDXF)</td>
</tr>
<tr>
<td>Definition</td>
<td>The 2-letter abbreviation for the federal state area that the associated address points on the right-side directionality of the centerline segment are contained within.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 2.6 Speed and Linear Network Attributes

#### 2.6.1 SPDLIMIT

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Speed Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Double</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The posted speed limit for the centerline segment. This field is typed as Double because, although rare, decimals are allowed.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

#### 2.6.2 ONEWAY
<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Oneway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>2</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Directional travel indicator</td>
</tr>
</tbody>
</table>

2.6.3 LANES

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Number of lanes per road segment</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

2.6.4 T_ELEV

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>To Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Connectivity policy value for modeling overpasses and underpasses</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

2.6.5 F_ELEV

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>From Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Connectivity policy value for modeling overpasses and underpasses</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

2.6.6 TFCOST

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Travel Cost (To-From)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Double</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Travel time impedance value</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>
### 2.6.7 FTCOST

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Common Names</th>
<th>Field Type</th>
<th>Field Length</th>
<th>Reference</th>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTCOST</td>
<td>Travel Cost (From-To)</td>
<td>Double</td>
<td></td>
<td></td>
<td></td>
<td>Travel time impedance value</td>
<td>2.313292, 0.076317</td>
</tr>
</tbody>
</table>

### 2.7 Catalogue

#### 2.7.1 EDITOR

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>PIDF-LO</th>
<th>Common Names</th>
<th>Field Type</th>
<th>Field Length</th>
<th>Reference</th>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editor</td>
<td></td>
<td>Editor</td>
<td>Text</td>
<td>10</td>
<td></td>
<td></td>
<td>Moniker identifying the last editor for this centerline segment. It is at the District’s discretion as to whether this identifies an agency or individual.</td>
<td></td>
</tr>
</tbody>
</table>

#### 2.7.2 GEOMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>PIDF-LO</th>
<th>Common Names</th>
<th>Field Type</th>
<th>Field Length</th>
<th>Reference</th>
<th>Domain</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOMOD</td>
<td></td>
<td>Geometry Modification Type</td>
<td>Text</td>
<td>75</td>
<td></td>
<td></td>
<td>Brief description of the type of geometry edit that was last performed on this centerline segment.</td>
<td>‘ADJUSTED FOR ACCURACY’</td>
</tr>
</tbody>
</table>

#### 2.7.3 GEOSRCE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>PIDF-LO</th>
<th>Common Names</th>
<th>Field Type</th>
<th>Field Length</th>
<th>Reference</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOSRCE</td>
<td></td>
<td>Geometry Modification Source</td>
<td>Text</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Definition</td>
<td>Examples</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The source that was used to make the geometry edit described in GEOMOD.</td>
<td>‘AERIAL 2015’, ‘GPS’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2.7.4 GEODEATE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Geometry Modification Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The datetime stamp the last geometry edit was made to this centerline segment. It should be noted that datetime values are not permissible in Shapefiles. Date fields in Shapefiles can hold a date or a time, but not both.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘2018-01-15T20:10:30’</td>
</tr>
</tbody>
</table>

### 2.7.5 ATTMOD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Brief description of the type of attribute edit that was last performed on this centerline segment.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘CITY AND ESN CHANGES DUE TO ANNEXATION’</td>
</tr>
</tbody>
</table>

### 2.7.6 ATTSRCE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>45</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The source that was used to make the attribute edit described in ATTMOD.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘FIELD-VERIFIED’</td>
</tr>
</tbody>
</table>

### 2.7.7 ATTDATE

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Attribute Modification Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
</tbody>
</table>
## 2.7.8 STATUS

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Lifecycle Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIDF-LO</td>
<td></td>
</tr>
<tr>
<td>Common Names</td>
<td>Address Lifecycle Status</td>
</tr>
<tr>
<td>Field Type</td>
<td>Short Integer</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011 § 2.3.7.3</td>
</tr>
<tr>
<td>Domain</td>
<td>730 = ACTIVE; 734 = PROPOSED; 736 = POTENTIAL; 799 = RETIRED</td>
</tr>
<tr>
<td>Definition</td>
<td>Defines the current lifecycle status of the centerline segment.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

### 3.0 ESN BOUNDARIES

This polygonal layer represents the last 3 digits of the Emergency Service Number used by a selective router to route a 9-1-1 call in a legacy system. It can facilitate dispatching of the proper emergency service agency(ies) to the call location.\(^{11}\)

As of the release of this standard, any previous modeling specification document is obsolete. See section 4 of this document for general modeling requirements. The specifications herein supersede any NENA document options for Tennessee.

### 3.1 Identifier

#### 3.1.1 OIRID

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>GIS Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td>Unique ID, Site ID</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>20</td>
</tr>
<tr>
<td>Reference</td>
<td>NENA-STA-010.2-2016, NENA 02-010</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Currently, this value is an alphanumeric patterned after the format: ‘%ECD name%_%numeric sequence%’ The ECD name is a one-word moniker for the District and MUST be in uppercase. For each individual record, this value MUST be unique among all ESN polygon records and persist for the lifetime of that record. The numeric sequence should increment by one (1) with each successive edit, but there is no requirement</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
</table>

---

for consecutive numbering as long as the values are unique and persistent for each record. At this time, these unique identifiers cannot be reused once a ESN polygon record is deleted.

Examples ‘ANDERSON_123’, ‘WILSON_45678’

### 3.2 Coded Values

#### 3.2.1 ESN

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Emergency Service Number</th>
</tr>
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<td>Common Names</td>
<td></td>
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<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Reference</td>
<td>NENA-STA-010.2-2016, NENA 02-010</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The Emergency Service Number is actually a 5-digit string, of which this schema is only capturing the last 3. The 3-digit code is prefixed with leading zeros. The ESN is a legacy element used for 10-digit routing.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘001’, ‘016’, ‘234’</td>
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</tbody>
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#### 3.2.2 WESN

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Wireless ESN</th>
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<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>3</td>
</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>3-digit code representative of the wireless ESN. Populate this field only if the WESN and overlapping ESN are congruent or if there is a single WESN for the entire jurisdiction.</td>
</tr>
<tr>
<td>Examples</td>
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#### 3.2.3 VESN

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>VoIP ESN</th>
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<td>Common Names</td>
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<tr>
<td>Field Type</td>
<td>Text</td>
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<tr>
<td>Field Length</td>
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</tr>
<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>3-digit code representative of the Voice over IP ESN. Populate this field only if the VESN and overlapping ESN are congruent or if there is a single VESN for the entire jurisdiction.</td>
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<td>Examples</td>
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### 3.3 Reference and Date

#### 3.3.1 SRTE

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<th>Selective Router</th>
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<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Field Length</td>
<td>25</td>
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<tr>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The selective router associated with this ESN if known.</td>
</tr>
<tr>
<td>Examples</td>
<td></td>
</tr>
</tbody>
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### 3.3.2 PSAPID

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<th>PSAP Identifier</th>
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<td>Common Names</td>
<td>FCC ID</td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>4</td>
</tr>
<tr>
<td>Reference</td>
<td>FGDC-STD-016-2011§2.3.1.1, NENA-STA-010.2-2016, NENA 02-010</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>The FCC maintains a registry of PSAPs within the US and its territories, and assigns a unique 4-digit key to each. This field value should be the primary PSAP identifier from the FCC Master PSAP Registry assigned to the PSAP that this ESN would default route to. You may download the FCC Master PSAP Registry from here: <a href="https://www.fcc.gov/general/9-1-1-master-psap-registry">https://www.fcc.gov/general/9-1-1-master-psap-registry</a> If you do not find your PSAP or if a change has taken place, please advise the FCC using the contact information in the link provided and register.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘8533’, ‘6322’</td>
</tr>
</tbody>
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### 3.3.3 GEODEATE

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<tr>
<td>Field Type</td>
<td>Date</td>
</tr>
<tr>
<td>Field Length</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>ISO 8601</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Datetime stamp the polygonal geometry was last modified. It should be noted that datetime values are not permissible in Shapefiles. Date fields in Shapefiles can hold a date or a time, but not both.</td>
</tr>
<tr>
<td>Examples</td>
<td>‘2018-01-15T20:10:30’</td>
</tr>
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</table>

### 3.4 English Language Translation

#### 3.4.1 LE

<table>
<thead>
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<th>Law Enforcement ELT</th>
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<td>Field Type</td>
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<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td>NENA-ADM-000.21-2017</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Designation for the law enforcement response agency associated with this ESN. This field can identify more than one response agency. Although this is a freeform field, consistency in the values should still be employed.</td>
</tr>
</tbody>
</table>
### 3.4.2 FD

<table>
<thead>
<tr>
<th>Field Alias</th>
<th>Fire Department ELT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Names</td>
<td></td>
</tr>
<tr>
<td>Field Type</td>
<td>Text</td>
</tr>
<tr>
<td>Field Length</td>
<td>75</td>
</tr>
<tr>
<td>Reference</td>
<td>NENA-ADM-000.21-2017</td>
</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Designation for the responding fire department associated with this ESN. This field can identify more than one response agency. Although this is a freeform field, consistency in the values should still be employed.</td>
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### 3.4.3 EMS

<table>
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<th>Field Alias</th>
<th>Emergency Medical ELT</th>
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</thead>
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<td>Field Type</td>
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</tr>
<tr>
<td>Domain</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Designation for the emergency medical response agency associated with this ESN. This field can identify more than one response agency. Although this is a freeform field, consistency in the values should still be employed.</td>
</tr>
</tbody>
</table>

Examples
4.0 GENERAL MODELING SPECIFICATIONS: ROAD CENTERLINE AND ESN POLYGON

This section provides general guidance as to how both the road centerline and ESN polygons should be modeled to create effective layers for use in the NG ecosystem. Modeling for NG should be functional-driven, not data-driven. Features should be digitized and interact with each other in light of the call-routing functionality they will participate in, not simply an attempt to render the attributes.

4.1 ESN Buffers Along Roadways

Road centerlines digitized completely within a single ESN, but that run close to the boundary of an adjacent ESN, reflect the ESN Left and Right values contingent on the address ranges. Roadways are usually the responsibility of one responding agency. Therefore, the centerline of the pavement should usually be within one ESN. As much as possible, the ESN boundary should be digitized within a buffer of the edge of pavement, especially when considering Tenn. Code Ann. § 55-10-117. This is because of call routing for a wireless call that may come from the street or side of the road (notice the offset or buffer provided by the placement of the ESN boundary). If there are addresses on one side of the street that are in a different ESN, that should be reflected in the Left/Right fields of the road centerline (see Figures 3, 4 and 5).

![Figure 3](image-url)
Real-world example of an ESN polygonal buffer of New Highway 96 W. This allows for 9-1-1 calls to still be routed correctly, even when the call is made from the shoulder. With the centerline digitized in a northwesterly direction, ESN_L = 567 and ESN_R = 566.
This also means that District-bordering centerlines will need the MSAG Community Name (MCN), ESN and County name from the neighboring District to be placed in the appropriate fields that describes the addresses on that side of the road.
4.2 Response Agencies Isolated to Pavement RoW

In the same way, if the pavement is the responsibility of an agency that is different from the surrounding property, the ESN should be modeled accordingly. However, the Left/Right fields of the road centerline should reflect the left and right values of the surrounding addresses (see Figure 6). The road centerline is a fallback to the address points during ALI geocoding and should reflect the same addressing values. You will never get a landline call in the middle of the street, and the address points and road centerlines will never be referenced when geocoding a wireless 9-1-1 call.

![Figure 6](image-url)
4.3 Response Agencies Isolated by Lane Coverage

The ESN boundary should never run the centerline of the pavement unless there is dual-agency response coverage based on lane division. As an example, for accidents on the pavement, if the city covers the south-bound lane, and the county covers the north-bound lane, then the ESN boundary should snap to the centerline segments for the length of that condition. In Figure 7, the individual representations for centerline, ESN, and median pavement striping are slightly offset for visualization, but the intent is that they should be coincident.

![Figure 7](image-url)
### 4.4 ESN Tapered Angles at Intersections

The use of tapered angles in the ESN polygons in an attempt to visually reflect the centerline attribution should be avoided, especially at intersections. This concept goes back to the distinction between data-driven and functional modeling. From a data-driven standpoint, the polygons must always have an edge or a vertex at the end of a centerline that they break. However, from a functional conceptualization, this can cause an issue with call routing, especially if the involved polygons route to different PSAPs. Figure 8 shows functional modeling employing buffers vs. data-driven modeling using tapered angles at a T-intersection. Should an accident happen and a 9-1-1 call be placed at the intersection, the tapered angle could cause a misroute.
4.5 Road Centerline Snapping

A very simple modeling requirement is that all road centerline segments must snap to adjoining segments. Gaps between segments do not meet the geometry standards for the State of Tennessee. This means that centerline segments that meet at jurisdictional boundaries must also snap. The State provides a download of all surrounding District data (as outlined in this specification). The recommended workflow is to download this data and snap your segments to the surrounding District segments at the boundaries to facilitate a seamless centerline dataset when it is aggregated.

---

**Figure 9**
Topological gaps between road centerline segments do not meet standard specifications.
4.6 Parity and Zonal Anomalies

Previously, instructions were given to the Districts to “flag” parity anomalies in the data with an alternate STATUS value. That way the segmentation did not have to be changed and those were archived so that they did not affect reporting. That works OK if you are simply querying the data, but the alternate values were never catalogued in the standard, and geoprocessing functions like geocoding, and the NG elements handling MSAG and ALI, know nothing about any anomaly flags. As the standard outlines in §2.2, the address ranges must reflect the associated address points for the left and right side of the segment. This means that if there are places along a centerline where the parity swaps sides, or the zones change, the segment must be modeled accordingly. Call routing functions could be affected if this is not done correctly.

In Figure 10, JONES RD generally has a parity of odd on the left side, even on the right. However, 51 JONES RD was formerly addressed on the wrong side of the street. This address is also in the county, whereas all other addresses are in the city. The line segment should be broken, and the address ranges, as well as the zonal information, should be adjusted to show this discrepancy.
4.7 Bridges

Bridges can be attributed in the road centerline with no address ranges and no left/right zones. If there is an authoritative address on the bridge (e.g., a call box) or if addresses are generated from the centerline for CAD incidents on bridges, then those attributes need to be present.
4.8 Dual Carriageways and Connectors

Road centerlines represent the center of pavement or throughway. When the pavement is divided, the road centerline needs to depict the branched nature of the road. The address ranges also need to correctly reflect the physical relationship of the range to the correct side of the individual centerline. For instance, address ranges on the median side of a road centerline segment should be zero (0) for both To and From values.

There are few restrictions when it comes to connectors, because they are mostly there for creating network datasets and for AVL implementations. The only stipulation is that there should be no address ranges present in their attributes (see Figure 12).

![Figure 12](image)

Example of a connector joining dual carriageway lanes at an intersection.
ACKNOWLEDGEMENTS AND FEEDBACK
The Tennessee Emergency Communications Board (TECB) is the sole owner of this standard for the State of Tennessee.

True North Geographic Technologies, the NG9-1-1 program partner which facilitates the Spatial Interface and maintains the GIS standards document for the TECB, welcomes any observations or constructive criticisms regarding the maintenance standards. Please remit any comments to:

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True North Geographic Technologies
119 MTCS Rd
Murfreesboro, TN 37129
Phone: (615) 890-7728
Fax: (615) 890-7729
jwood@tngeo.com

For requests for help implementing this standard, please contact True North Support:
support@tngeo.com

Many thanks to the ECD staff across the state that participated in providing feedback and contributing domain values to enhance this standard.
## APPENDIX A

### USPS Standard Street Suffix Abbreviations

<table>
<thead>
<tr>
<th>Primary Suffix</th>
<th>Standard</th>
<th>Primary Suffix</th>
<th>Standard</th>
<th>Primary Suffix</th>
<th>Standard</th>
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<td>XING</td>
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**APPENDIX B**

**USPS Standard Secondary Unit Abbreviations**

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** Does not require Secondary Range Number to follow

This list and other abbreviation standards can be found at:


cf. USPS Publication 28
## APPENDIX C

### Non-Uniform Punctuation

These punctuation marks should not be used when editing address field values.

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**APPENDIX D**

**Census Feature Class Codes (CFCC)**

The U.S. Bureau of the Census feature class codes (CFCC) provide information on the classification of a feature. The census feature class codes are used in many geodatasets. The codes are made up of an uppercase letter and a two-digit number followed by their one or two-line definition.

**ROAD FEATURE (A)**

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<tr>
<td>A13</td>
<td>Primary road with limited access or interstate highway, unseparated, underpassing</td>
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<td>A14</td>
<td>Primary road with limited access or interstate highway, unseparated, with rail line in center</td>
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<td>A18</td>
<td>Primary road with limited access or interstate highway, separated, with rail line in center</td>
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<td>A19</td>
<td>Primary road with limited access or interstate highway, bridge</td>
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<td>Primary road without limited access, U.S. and State highways, unseparated</td>
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<td>Primary road without limited access, U.S. and State highways, unseparated, in tunnel</td>
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<td>Primary road without limited access, U.S. and State highways, separated, with rail line in center</td>
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<td>Primary road without limited access, US highways, bridge</td>
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<td>Secondary and connecting road, State and county highways, unseparated</td>
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<td>Code</td>
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<td>Secondary and connecting road, State and county highways, unseparated, with rail line in center</td>
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<td>Local, neighborhood, and rural road, city street, unseparated, in tunnel</td>
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<td>Local, neighborhood, and rural road, city street, unseparated, underpassing</td>
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<td>Local, neighborhood, and rural road, city street, separated, with rail line in center</td>
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<td>Local, neighborhood, and rural road, city street, bridge</td>
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<td>A53</td>
<td>Vehicular trail, road passable only by 4WD vehicle, unseparated, underpassing</td>
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<td>A60</td>
<td>Special road feature, major category used when the minor category could not be determined</td>
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<td>A61</td>
<td>Cul-de-sac, the closed end of a road that forms a loop or turn around</td>
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<tr>
<td>A62</td>
<td>Traffic circle, the portion of a road or intersection of roads that form a roundabout</td>
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<tr>
<td>A63</td>
<td>Access ramp, the portion of a road that forms a cloverleaf or limited access interchange</td>
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<tr>
<td>A64</td>
<td>Service drive, road that provides access to businesses, facilities, and rest areas along limited-access highway</td>
</tr>
<tr>
<td>A65</td>
<td>Ferry crossing, the representation of a route over water that connects roads on opposite shores</td>
</tr>
</tbody>
</table>
### Gated barrier to travel

### Toll booth barrier to travel

### Other thoroughfare, major category used when the minor category could not be determined

### Walkway, nearly level road for pedestrians, usually unnamed

### Stairway, stepped road for pedestrians, usually unnamed

### Alley, road for service vehicles, usually unnamed, located at the rear of buildings and property

### Driveway or service road, usually privately owned and unnamed, used as access to residences, etc., or as access to logging areas, etc.

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## RAILROAD FEATURE (B)

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<td>B12</td>
<td>Railroad main track, in tunnel</td>
</tr>
<tr>
<td>B13</td>
<td>Railroad main track, underpassing</td>
</tr>
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<td>B21</td>
<td>Railroad spur track, not in tunnel or underpassing</td>
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<tr>
<td>B22</td>
<td>Railroad spur track, in tunnel</td>
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<td>B32</td>
<td>Railroad yard track, in tunnel</td>
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<tr>
<td>B33</td>
<td>Railroad yard track, underpassing</td>
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<tr>
<td>B40</td>
<td>Railroad ferry crossing, route over water used by ships carrying train cars to connecting railroads on opposite shores, major category</td>
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<td>B50</td>
<td>Other rail line; major category used alone when the minor category could not be determined</td>
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<td>Carline, a track for street cars, trolleys, and other mass transit rail systems</td>
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<td>Cog railroad, incline railway, or logging tram</td>
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### APPENDIX E

**STRUCTYPE Domain Values**

The revised list (2018) of structure type values.

#### Familial

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<tr>
<td>7</td>
<td>Condominium</td>
</tr>
<tr>
<td>8</td>
<td>Townhome</td>
</tr>
<tr>
<td>9</td>
<td>Triplex</td>
</tr>
<tr>
<td>10</td>
<td>Trailer Park</td>
</tr>
<tr>
<td>11</td>
<td>RV / Camper</td>
</tr>
<tr>
<td>12</td>
<td>Cabin</td>
</tr>
<tr>
<td>13</td>
<td>Day Care (Child)</td>
</tr>
<tr>
<td>14</td>
<td>Day Care (Adult)</td>
</tr>
<tr>
<td>15</td>
<td>Senior Citizen Center</td>
</tr>
<tr>
<td>16</td>
<td>Bus</td>
</tr>
<tr>
<td>17</td>
<td>Quadplex</td>
</tr>
<tr>
<td>18</td>
<td>Communal Area</td>
</tr>
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</table>

#### Education

<table>
<thead>
<tr>
<th>Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>Education (General)</td>
</tr>
<tr>
<td>301</td>
<td>School</td>
</tr>
<tr>
<td>302</td>
<td>University / College</td>
</tr>
<tr>
<td>303</td>
<td>Library</td>
</tr>
<tr>
<td>304</td>
<td>Dormitory</td>
</tr>
</tbody>
</table>

#### Medical

<table>
<thead>
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</thead>
<tbody>
<tr>
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<td>Medical (General)</td>
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<tr>
<td>401</td>
<td>Hospital</td>
</tr>
<tr>
<td>402</td>
<td>Clinic</td>
</tr>
<tr>
<td>403</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>404</td>
<td>Dental</td>
</tr>
<tr>
<td>405</td>
<td>Vision</td>
</tr>
<tr>
<td>406</td>
<td>Nursing Home</td>
</tr>
<tr>
<td>407</td>
<td>Assisted Living Facility</td>
</tr>
<tr>
<td>408</td>
<td>Rehabilitation Center</td>
</tr>
<tr>
<td>409</td>
<td>Morgue</td>
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</table>

#### Religious

<table>
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<td>200</td>
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<tr>
<td>201</td>
<td>Place of Worship</td>
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#### Agricultural

<table>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>500</td>
<td>Agricultural (General)</td>
</tr>
<tr>
<td>501</td>
<td>Farm</td>
</tr>
<tr>
<td>502</td>
<td>Barn</td>
</tr>
<tr>
<td>503</td>
<td>Veterinary</td>
</tr>
<tr>
<td>504</td>
<td>Animal Shelter</td>
</tr>
<tr>
<td>505</td>
<td>Fish Hatchery</td>
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</table>
### Government

<table>
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</thead>
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<tr>
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<td>Government (General)</td>
</tr>
<tr>
<td>601</td>
<td>Capitol</td>
</tr>
<tr>
<td>602</td>
<td>City Hall</td>
</tr>
<tr>
<td>603</td>
<td>Court House</td>
</tr>
<tr>
<td>604</td>
<td>Post Office</td>
</tr>
<tr>
<td>605</td>
<td>DoD / Military</td>
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</tbody>
</table>

### Utility

<table>
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<th>Description</th>
</tr>
</thead>
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<tr>
<td>700</td>
<td>Utility (General)</td>
</tr>
<tr>
<td>701</td>
<td>Tower (General)</td>
</tr>
<tr>
<td>702</td>
<td>Cell Tower</td>
</tr>
<tr>
<td>703</td>
<td>Radio Tower</td>
</tr>
<tr>
<td>704</td>
<td>TVA Siren</td>
</tr>
<tr>
<td>705</td>
<td>Water Tank</td>
</tr>
<tr>
<td>706</td>
<td>Oil Tank</td>
</tr>
<tr>
<td>707</td>
<td>Oil Well</td>
</tr>
<tr>
<td>708</td>
<td>Natural Gas Tank</td>
</tr>
<tr>
<td>709</td>
<td>Natural Gas Well</td>
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<tr>
<td>710</td>
<td>Natural Gas Pipeline</td>
</tr>
<tr>
<td>711</td>
<td>Power Substation</td>
</tr>
<tr>
<td>712</td>
<td>Pump Station</td>
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</tbody>
</table>

### Industrial

<table>
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<th>Codes</th>
<th>Description</th>
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</thead>
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<td>800</td>
<td>Industrial (General)</td>
</tr>
<tr>
<td>801</td>
<td>Warehouse</td>
</tr>
<tr>
<td>802</td>
<td>Recycle Facility</td>
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</tbody>
</table>

### Public Safety

<table>
<thead>
<tr>
<th>Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
<td>Public Safety (General)</td>
</tr>
<tr>
<td>901</td>
<td>Prison</td>
</tr>
<tr>
<td>902</td>
<td>Detention Center</td>
</tr>
<tr>
<td>903</td>
<td>Police</td>
</tr>
<tr>
<td>904</td>
<td>Sheriff</td>
</tr>
<tr>
<td>905</td>
<td>Fire</td>
</tr>
<tr>
<td>906</td>
<td>Rescue Squad</td>
</tr>
<tr>
<td>907</td>
<td>EMS</td>
</tr>
<tr>
<td>908</td>
<td>Shelter</td>
</tr>
<tr>
<td>909</td>
<td>Fire Hydrant</td>
</tr>
<tr>
<td>910</td>
<td>PELA / LZ / Helicopter Pad</td>
</tr>
<tr>
<td>911</td>
<td>PSAP</td>
</tr>
</tbody>
</table>

### Transportation

<table>
<thead>
<tr>
<th>Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>Transportation (General)</td>
</tr>
<tr>
<td>1001</td>
<td>Airport (General)</td>
</tr>
<tr>
<td>1002</td>
<td>Airport Hanger</td>
</tr>
<tr>
<td>1003</td>
<td>Airport Terminal</td>
</tr>
<tr>
<td>1004</td>
<td>Bus Station</td>
</tr>
<tr>
<td>1005</td>
<td>Gas Station</td>
</tr>
<tr>
<td>1006</td>
<td>Bridge</td>
</tr>
<tr>
<td>1007</td>
<td>Rest Area</td>
</tr>
<tr>
<td>1008</td>
<td>Railroad (General)</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1009</td>
<td>Roundhouse</td>
</tr>
<tr>
<td>1010</td>
<td>Train Station</td>
</tr>
<tr>
<td>1011</td>
<td>Railroad Crossing</td>
</tr>
<tr>
<td>1012</td>
<td>Railroad Equipment</td>
</tr>
<tr>
<td>1013</td>
<td>Railroad Mile Marker</td>
</tr>
<tr>
<td>1014</td>
<td>River Marker</td>
</tr>
<tr>
<td>1015</td>
<td>Mile Marker</td>
</tr>
<tr>
<td>1016</td>
<td>Ferry Terminal</td>
</tr>
<tr>
<td>1401</td>
<td>Restaurant</td>
</tr>
<tr>
<td>1402</td>
<td>Café</td>
</tr>
<tr>
<td>1403</td>
<td>Bar</td>
</tr>
<tr>
<td>1404</td>
<td>Club</td>
</tr>
<tr>
<td>1405</td>
<td>Theater</td>
</tr>
<tr>
<td>1406</td>
<td>Convention Center</td>
</tr>
<tr>
<td>1407</td>
<td>Stadium</td>
</tr>
<tr>
<td>1408</td>
<td>Arena</td>
</tr>
<tr>
<td>1409</td>
<td>Sports Complex</td>
</tr>
</tbody>
</table>

### Assets Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Asset (General)</td>
</tr>
<tr>
<td>1201</td>
<td>Gate</td>
</tr>
<tr>
<td>1202</td>
<td>Call Box / Phone Cabinet</td>
</tr>
<tr>
<td>1203</td>
<td>Billboard</td>
</tr>
</tbody>
</table>

### Commercial Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300</td>
<td>Commercial (General)</td>
</tr>
<tr>
<td>1301</td>
<td>Shopping Area</td>
</tr>
<tr>
<td>1302</td>
<td>Store</td>
</tr>
<tr>
<td>1303</td>
<td>Office</td>
</tr>
<tr>
<td>1304</td>
<td>Parking Garage</td>
</tr>
<tr>
<td>1305</td>
<td>Bank</td>
</tr>
<tr>
<td>1306</td>
<td>Massage Parlor</td>
</tr>
<tr>
<td>1307</td>
<td>Hotel / Motel</td>
</tr>
<tr>
<td>1308</td>
<td>Laundry Mat</td>
</tr>
<tr>
<td>1309</td>
<td>Storage Facility</td>
</tr>
</tbody>
</table>

### Recreational Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>Recreational (General)</td>
</tr>
<tr>
<td>1501</td>
<td>Park</td>
</tr>
<tr>
<td>1502</td>
<td>Campground</td>
</tr>
<tr>
<td>1503</td>
<td>Lodge</td>
</tr>
<tr>
<td>1504</td>
<td>Golf Course</td>
</tr>
<tr>
<td>1505</td>
<td>Boat Dock</td>
</tr>
<tr>
<td>1506</td>
<td>Watercraft</td>
</tr>
</tbody>
</table>

### Historical Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600</td>
<td>Historical (General)</td>
</tr>
<tr>
<td>1601</td>
<td>Museum</td>
</tr>
<tr>
<td>1602</td>
<td>Cemetery</td>
</tr>
</tbody>
</table>

### Miscellaneous Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9000</td>
<td>Temporary</td>
</tr>
<tr>
<td>9001</td>
<td>Vacant</td>
</tr>
<tr>
<td>9002</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
APPENDIX F

Populating Street Address Fields Correctly

[STNUM] and [STNUMSUF] collectively comprise the complete street number. [STNUMSUF] is not a secondary address field. It is a part of the primary street or house number. [STNUMSUF] should not contain values that are found in Appendix B of this document. It is an alphanumeric field, but if the value is not a part of the primary street number, it does not belong in the [STNUMSUF] field. See § 1.3 for individual primary address number field definitions.

The secondary address fields in the address point layer are crucial to identifying legitimate address points for MSAG creation. Every secondary address point MUST have a primary address point, and the secondary address fields are the distinction. See § 1.4 for individual secondary field definitions. If any values are found in any of the four secondary address fields, then that record is isolated as a secondary address. Be sure these fields are blank when creating a primary address.

Primary Address
123 Main Street West

<table>
<thead>
<tr>
<th>STNUM</th>
<th>STNUMSUF</th>
<th>BUILDING</th>
<th>FLOOR</th>
<th>UNIT_TYPE</th>
<th>UNIT_NUM</th>
<th>PREDIR</th>
<th>PRETYPE</th>
<th>NAME</th>
<th>TYPE</th>
<th>SUFDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Secondary Address
123 Main Street West, Apartment A

<table>
<thead>
<tr>
<th>STNUM</th>
<th>STNUMSUF</th>
<th>BUILDING</th>
<th>FLOOR</th>
<th>UNIT_TYPE</th>
<th>UNIT_NUM</th>
<th>PREDIR</th>
<th>PRETYPE</th>
<th>NAME</th>
<th>TYPE</th>
<th>SUFDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td></td>
<td>A</td>
<td>APT</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Secondary Address: Multiple Buildings and Floors
456 Main Street West, Building B, Floor 2, Suite 205

<table>
<thead>
<tr>
<th>STNUM</th>
<th>STNUMSUF</th>
<th>BUILDING</th>
<th>FLOOR</th>
<th>UNIT_TYPE</th>
<th>UNIT_NUM</th>
<th>PREDIR</th>
<th>PRETYPE</th>
<th>NAME</th>
<th>TYPE</th>
<th>SUFDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>456</td>
<td>B</td>
<td>2</td>
<td>STE</td>
<td>205</td>
<td></td>
<td></td>
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</tbody>
</table>

Primary Address: Duplex
789A East Broad Way

<table>
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<tr>
<th>STNUM</th>
<th>STNUMSUF</th>
<th>BUILDING</th>
<th>FLOOR</th>
<th>UNIT_TYPE</th>
<th>UNIT_NUM</th>
<th>PREDIR</th>
<th>PRETYPE</th>
<th>NAME</th>
<th>TYPE</th>
<th>SUFDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>789</td>
<td>A</td>
<td></td>
<td></td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>STNUM</th>
<th>STNUMSUF</th>
<th>BUILDING</th>
<th>FLOOR</th>
<th>UNIT_TYPE</th>
<th>UNIT_NUM</th>
<th>PREDIR</th>
<th>PRETYPE</th>
<th>NAME</th>
<th>TYPE</th>
<th>SUFDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>789A</td>
<td></td>
<td></td>
<td></td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>