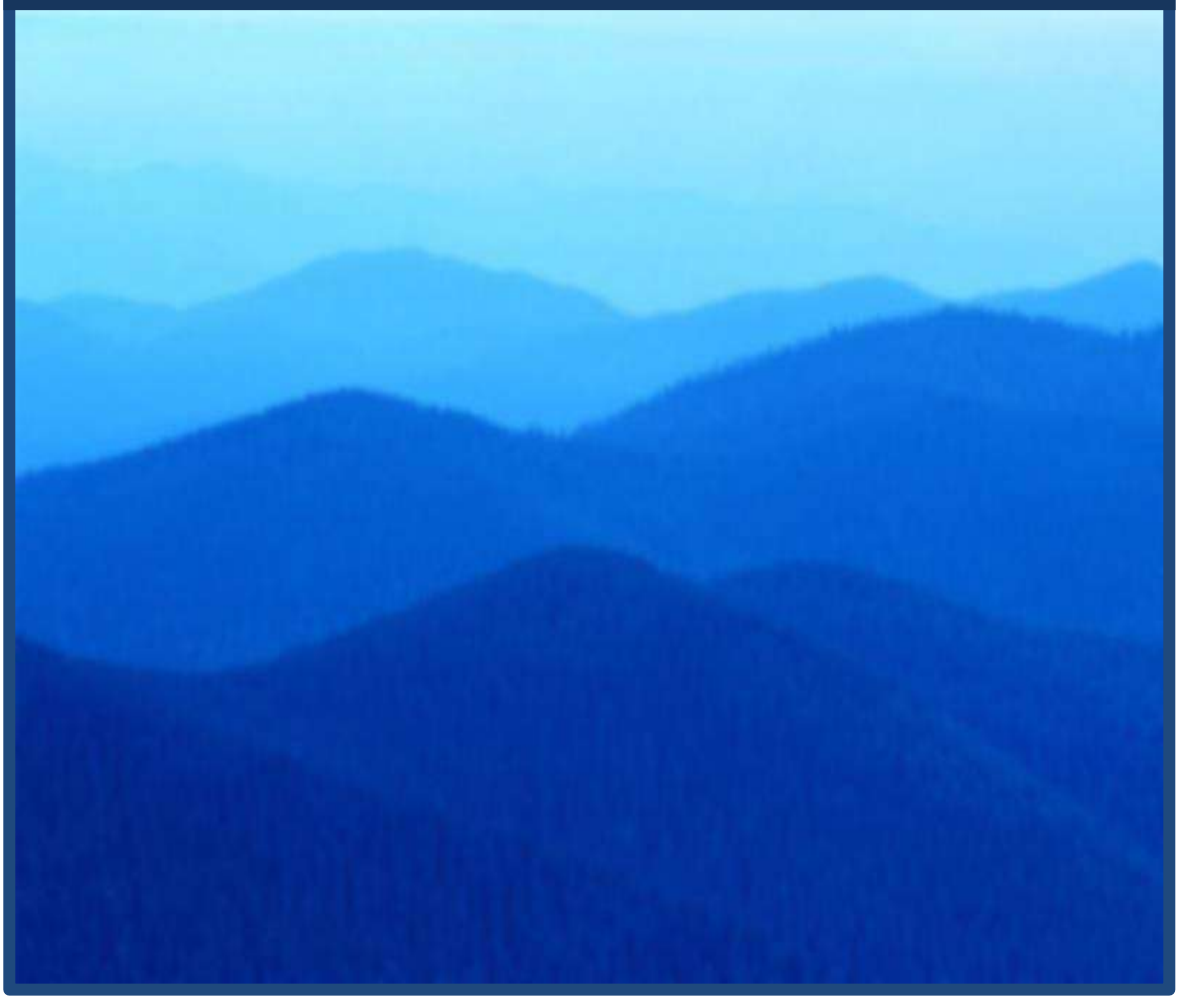
TIPS GIS MODELING SPECIFICATIONS

State of Tennessee

NEXT GENERATION 9-1-1



NEXT GENERATION 9-1-1

GIS Services
State of Tennessee

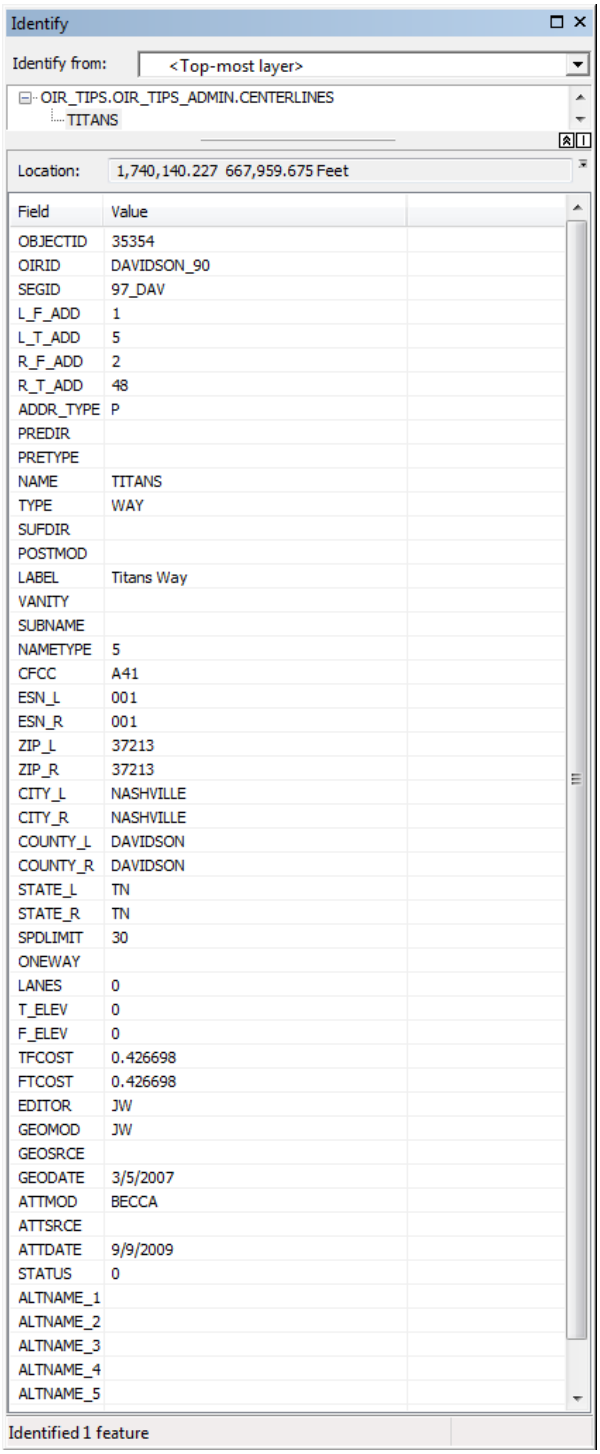
Street Centerlines

- Meet or exceed NENA standards
- Represent at a minimum all public and private named roads
- Contain all necessary attributes to allow for accurate address validation
- Reflect accurate geometrical placement using either current imagery or a GPS device

Address Points

- Meet or exceed NENA standards
- Represent each structure by approved location
- Contain all necessary attributes to allow for accurate address validation
- Each address point must be **uniquely** identifiable

Street Centerline Attribute Table



Field	Value
OBJECTID	35354
OIRID	DAVIDSON_90
SEGID	97_DAV
L_F_ADD	1
L_T_ADD	5
R_F_ADD	2
R_T_ADD	48
ADDR_TYPE	P
PREDIR	
PRETYPE	
NAME	TITANS
TYPE	WAY
SUFDIR	
POSTMOD	
LABEL	Titans Way
VANITY	
SUBNAME	
NAMETYPE	5
CFCC	A41
ESN_L	001
ESN_R	001
ZIP_L	37213
ZIP_R	37213
CITY_L	NASHVILLE
CITY_R	NASHVILLE
COUNTY_L	DAVIDSON
COUNTY_R	DAVIDSON
STATE_L	TN
STATE_R	TN
SPDLIMIT	30
ONEWAY	
LANES	0
T_ELEV	0
F_ELEV	0
TFCOST	0.426698
FTCOST	0.426698
EDITOR	JW
GEOMOD	JW
GEOSRCE	
GEODATE	3/5/2007
ATTMOD	BECCA
ATTSRCE	
ATTDATE	9/9/2009
STATUS	0
ALTNAME_1	
ALTNAME_2	
ALTNAME_3	
ALTNAME_4	
ALTNAME_5	

Street centerlines need to represent at a minimum all public and addressed private streets. The attribute table above shows how the fields are populated for street centerlines.

Relational Fields (Not used)

- **[OIRID] – The** [OIRID] is an identifier used to for tracking centerline segments. There is no required way to utilize these as they are calculated by OIR at time of data submission.
- **[SEGID] –** The [SEGID] is an identifier used to for tracking centerline segments. SEGID could be utilized as a way to link to an alternate name table.

Address Ranges (Required)

- **[L_F_ADD] (Left From Address) –** The beginning value of an address range, on the left side of the street.
- **[L_T_ADD] – (Left To Address) -** The ending value of an address range, on the left side of the street
- **[R_F_ADD] – (Right From Address) –** The beginning value of an address range, on the right side of the street.
- **[R_T_ADD] – (Right To Address) –** The ending value of an address range, on the right side of the street.
- **"From" and "To" direction is dependent on the digital direction of the road.**

Address Range Designator - (Not used)

- **[ADDR_TYPE] – (Address range type)** – Potential or Actual address range data
  - **"P"** – Potential Address Range: This range is maintained in accordance with the USPS Address Information System. This method employs hundred-breaks between intersections. For example, a street segment with an actual address range of 100 – 160 would have a potential address range of 100 – 198.
  - **"A" –** Actual Address Ranges: This range is based solely on the Master Street Address Guide ('MSAG"). These values reflect the known, minimum and maximum for each side of the street regardless of land use.

Full Street Name

- **[PREDIR] – (Pre - Directional) (Optional) –** A cardinal direction abbreviation preceding the street name key. **Only N, S, E, W or NE, NW, SE, SW can be used.**
- **[PRETYPE] – (Preceding Type) (Not used) –** A street type which precedes the street name key. **(e.g. Blvd Napoleon)**
- **[NAME] – (Street Name) (Required) –** The key identifier of a street name component, **(e.g., Maple, Cumberland, etc.)**
- **[TYPE] – (Street Type) (Optional) –** A abbreviated suffix following the street name key, **(e.g. AVE, DR, ST,)**
- **[SUFDIR] – (Suffix Directional) (Optional)**A cardinal direction abbreviation following the street name key. ***Only N, S, E, W or NE, NW, SE, SW can be used**
- **[POSTMOD] – (Post Modifier) (Not used)** – An additional value sometimes found on certain Roads **(e.g. Extension)**

Display and Map Labeling

- **[LABEL] (Required) -** This value is the concatenation of the values found in the [PREDIR], [PRETYPE], [NAME], [TYPE], [SUFDIR], and [POSTMOD] fields with the appropriate spacing interposed. For aesthetics, proper case may be used. This field can be used to label the full street name in GIS application or map production.

- **[VANITY] (Not used) -** The value that reflects the public or generally accepted name of the street. This field is not typically associated as an address component. As with the [LABEL] field, proper case may be employed for these values as well. Examples of correct values would be “Capitol Square”, “Rivergate Mall”, or “Bicentennial Park”.
- **[SUBNAME] – (Sub Division Name) (Not used) –** The value that reflects the subdivision name for the associated street segment. This field is not typically associated as an address component. As with the [LABEL] and [VANITY] fields, proper case may be employed for these values as well. Examples of valid values would be “Stone Wood Village”

Street Name Type (Optional)

- **[NAMETYPE] –** This field is populated if there are multiple names associated with each segment of a street centerline. An example of this would be a street which contains a locally known and used name as well as a numeric County, State or US highway designation. This field will help assist in determining the appropriate name for use in any given application.

Census Feature Class Code (Not used)

- **[CFCC] – (Census Feature Class Code) –** The Census Feature Class Codes are standard alphanumeric, 3-character codes. The first character is a letter describing the feature class. The second character is a number describing the major category, and the third character is a number describing the minor category. Roads are designated as Feature Class A.

If the centerline CFCC field contains 000”, the segments won’t be processed or sent to OIR

ZIP Code (Optional)

- **[ZIP_L] -** The 5-digit postal or ZIP code identifies the left side of the street centerline.
- **[ZIP_R] –** The 5-digit postal or ZIP code identifies the right side of the street centerline.
  - The 9-digit ZIP+4 code postal or ZIP code should not be used for this value.

Emergency Service Number (Required)

- **[ESN_L], -** The emergency service number on the left side of the street centerline
- **[ESN_R] –** The emergency service number on the right side of the street centerline.
  - Note, this may not be the ESN of the actual centerline.

City or Community (Required)

- **[CITY_L] -** The districts chosen value they would like delivered at time of call outlining the community on the left side of the street centerline.
- **[CITY_R] -** The districts chosen value they would like delivered at time of call outlining the community on the right side of the street centerline.

County (Required)

- **[COUNTY_L] –** The designated county area on the left side of the street centerline
- **[COUNTY_R] –** The designated county area on the right side of the street centerline.

State (Required)

- **[STATE_L] -** The 2-character state abbreviation designated on the left side of the street centerline.
- **[STATE_R] -** The 2-character state abbreviation designated on the left side of the street centerline.
  - *For the majority of the street centerlines this value will be **"TN"**, although counties should be aware of centerlines located at the edge of their jurisdiction alongside other states.*

Routing Attributes (Not Used)

- **[SPDLIMIT] - (Speed Limit) –** The speed limit on a roadway. Indicated with integers
- **[ONEWAY] –** Direction of travel indicator, "TF" in the direction from the "to" part of the segment to the "from" part of the segment, "FT" From in the direction from the "from" part of the segment to the "to" part of the segment, "B" Both.
- **[LANES] –** Number of Lanes per road segment.
- **[T_ELEV] –** Used to indicate a change in elevation, such as underpass or overpass. -1, +1
- **[F_ELEV] -** Used to indicate a change in elevation, such as an underpass or overpass. -1, +1
- **[TFCOST] –** To-From travel costs used to determine most efficient route.
- **[FTCOST] –** From-To travel costs used to determine most efficient route.

Editing Authority (Required)

- **[EDITOR] -** The name of the person performing edits. This value should be a unique acronym as it is possible for multiple personnel to perform edits within a single ECD.

Geometry Modifications (Optional)

- **[GEOMOD] -** A brief description of the most recent spatial modification for the street centerline. The field is 75 characters in length, but could be a single, descriptive word. A spatial modification is a change to the positional location of the street centerline.

Spatial Edit Source (Optional)

- **[GEOSRCE] -** The source of the most recent spatial modification for this edit. A few examples of spatial modification would be digital imagery, new plats from the Tax Assessor's Office or verification of data in the field with a GPS.

Spatial Edit Date Stamp (Optional)

- **[GEODATE] -** The date that the most recent spatial edit was made. This value is generic and does not include a time stamp. This is in the standard US "MM/DD/YYYY" format. Please ensure that the date is correct.

Attribute Modification (Optional)

- **[ATTMOD] -** A brief description of the most recent attribute modification for the street centerline. The field is 75 characters in length, but could be a single, descriptive word. An attribute modification is a change to the fields in a street centerline's table.

Attribute Edit Source (Required)

- **[ATTSRCE] -** The source of the most recent attribute modification for this edit.

Attribute Edit Date Stamp (Required)

- **[ATTDATE] -** The date that the most recent attribute edit was made. This value is generic and does not include a time stamp. This is in the standard US "MM/DD/YYYY" format. Please ensure that the date is correct.

This field is used to assist in the management of street centerline edits. An example of status use is the classification of street centerlines to be built (734) or removed (799) for planning proposal purposes.

Lifecycle Status (Not Used)

- **[STATUS] -** The current status of the address point. The available values are as follows:
  - **ACTIVE - (730)**. - Geometry in use with valid attributes
  - **PROPOSED – (734) -** Geometry is pending, may or may not have attributes.
  - **POTENTIAL – (736) -** Geometry is being considered, but not approved
  - **RETIRED. – (799) -** Geometry is obsolete. Attribution is discarded or transferred
  - **(999) -** Used to cover STATUS types that are not listed above. The values will not be uploaded to the State of TN TIPS database
  - **(000) -** Used to cover STATUS types that are not listed above. The values will not be uploaded to the State of TN TIPS database

Street Centerlines

Street centerlines represent all public and addressed private streets. The most important aspects of the centerline are the name, address range and distinguishing location information (ESN, CITY, COUNTY, and STATE). Street names must conform to the legal names as assigned by the addressing authority. This could be accomplished by using MSAG (Master Street Address Guide) data. MSAG data needs to be reviewed for accuracy by the ECD, and then synchronized with the TIPS GIS data. ***NENA Standard 71-501v1*** Street centerlines must match the corrected MSAG data to a 98% or higher rate, and all related NENA standards should be met or exceeded. http://www.nena.org/?page=Standards

All centerline attributes should be accurate, complete, and standardized to TIPS Format. All abbreviations of Street Prefixes and Suffixes should be incorporated according to NENA Standards. Centerlines will be updated through the districts submitting changes to the state via the TIPS Change Process and maintained on a continual basis.

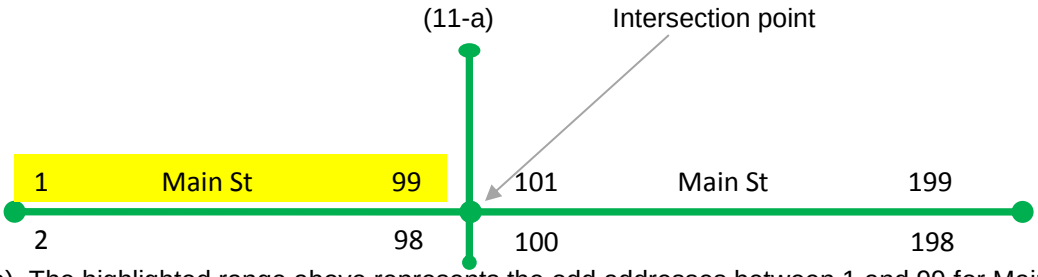
Centerline characteristics

Street centerlines are drawn in segments. When they cross another road centerline, each segment should be broken at the intersecting point and snapped to the endpoint of the adjoining segments. There must be a split representing every street intersection. This is to allow for accurate geocoding which means optimal emergency response time. Placement of centerlines should fall within 10' or less of the actual center of pavement utilizing orthographic imagery.

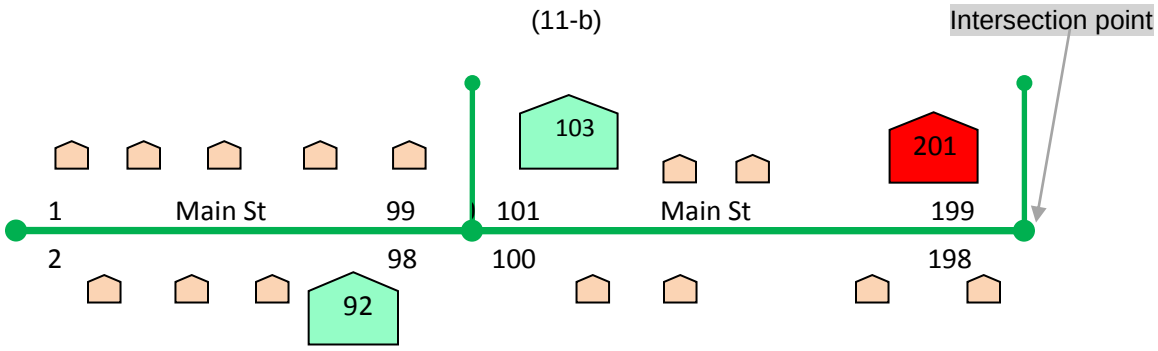
This example is unacceptable

This example meets the minimum requirements

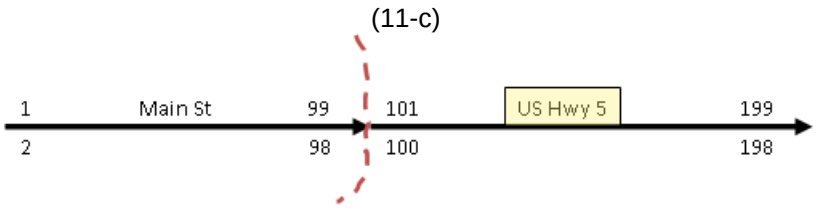
Centerlines and Range placement



(11-a) The highlighted range above represents the odd addresses between 1 and 99 for Main St. The address range should be numbered Low address to High address, following the direction of the centerline. Any necessary deviations should be documented.



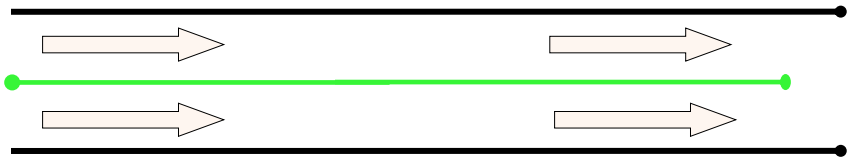
(11-b) All address point addresses along a section of centerline should fall within the range of that particular centerline segment. The address point for 201 Main St. is not included in the range, the point should be verified and either centerline range or address point location should be modified.



(11-c) - Street names can change. Main St is located inside the city limits, but when it leaves the city, the name changes to US Hwy 5. The address range data may change with the new name, but not always.

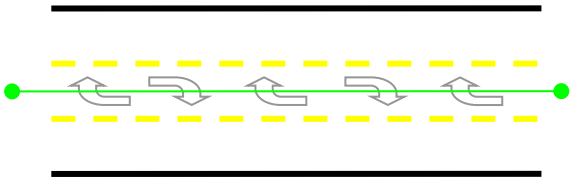
One way streets

Follow the center of the lane or lanes with a single line segment. Since there are no physical or legal barriers, one line segment is sufficient. Populate the ONEWAY field with TF or FT depending on which is appropriate.



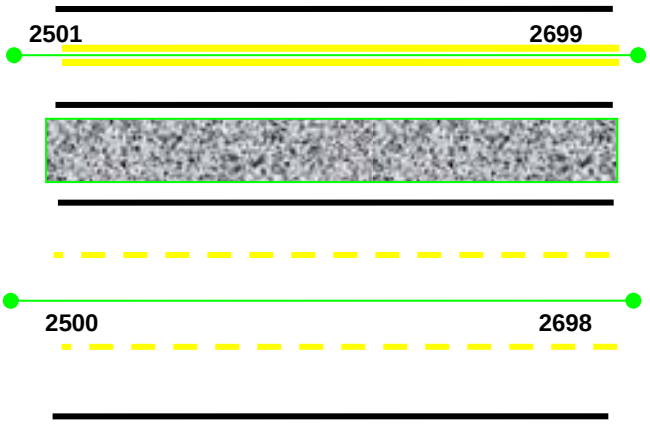
Turning Lanes

Follow the center of the turning lane, when there are no physical or legal barriers between lanes, one line segment is sufficient.



Bi-directional traffic lanes

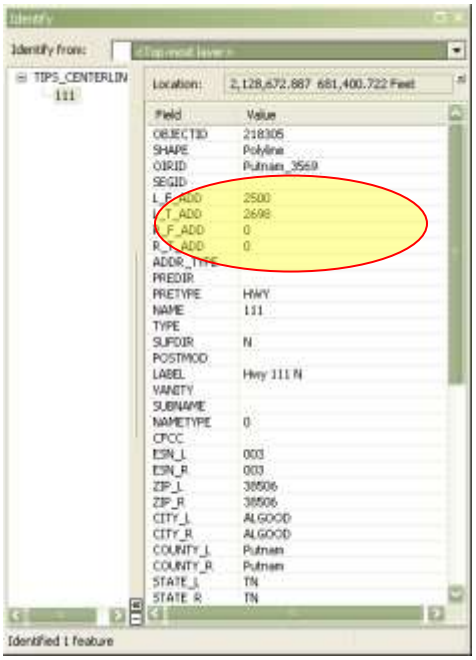
Two lanes on one side of the divider, three lanes on the other side results in one centerline coinciding with the central painted line on one side, and one centerline in the middle lane on the opposite side of the barrier. Only one side of each centerline should be addressed for this type of road.



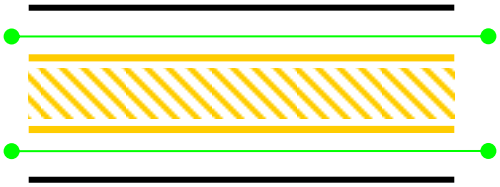
Dual Carriageway

This is an example of a Dual Carriageway. Only one side of the centerline should be addressed for this type of street centerline.

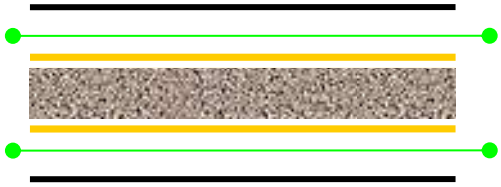
Notice the information in the Attribute table below. Looking at the centerline attribute below, R_F_ADD and R_T_ADD have zero in the value field while L_F_ADD and L_T_ADD should reflect the from and to address range, which in this case is 2500 thru 2698 in this example.



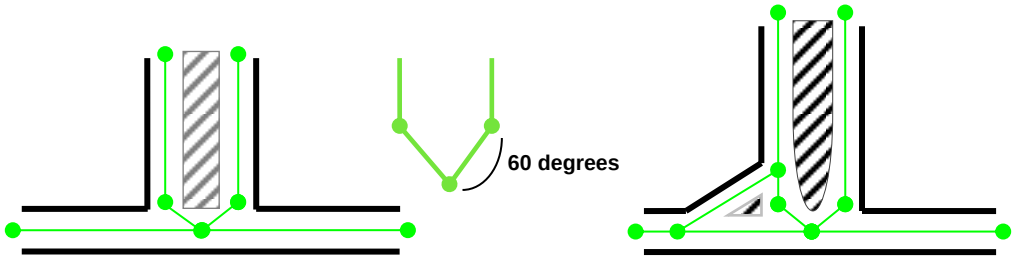
Legal Barrier– Divided by a painted barrier – It is optional to use one centerline for representation. Follow centers of traversable pavement



Legal Barrier – Physically divided – Follow centers of traversable pavement

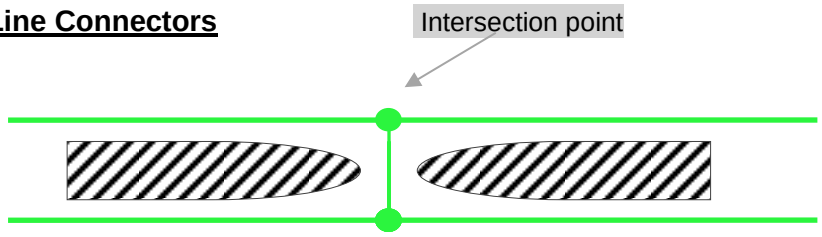


Dual Carriage way terminations



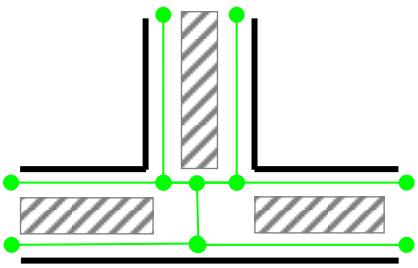
When the centerlines from a Dual Carriageway end to join a single centerline segment, a taper angle of approximately 60 degrees should be used to connect the centerlines

Straight Line Connectors



A straight line connector is used when the only access to the opposite side of the road is an opening in the median between opposing lanes. Connectors are not given a range, but the road centerline address range must be split at the intersection.

Dual Carriage way termination straight line connectors



The physical barrier requires a straight line connector for routing purposes.

SPECIAL CASES:

Transition between single- and double-digitized streets:

Transition single/double w/ connectors

Straight line connectors

Depending on the distance between the double line separator endpoints and the next double line centerlines begin, you will either taper the end of both centerlines at a 60 degree angle to meet the endpoint of a single centerline, or make a straight line connector if there less than 20' between separations. There should not be an address range on a connector.

Census Class Feature Codes (CFCC)

Census Feature Class Codes (CFCCs) are used to identify the most noticeable characteristic of a feature. They are identified by three character codes.
In the example below, CFCC **A15** is broken down to the three categories

1. ***Feature Class First letter code for features A = Roads***
2. ***Major Category First number is major category 1 = Primary***
3. ***Minor Category Second number is minor category 5 = Separated***

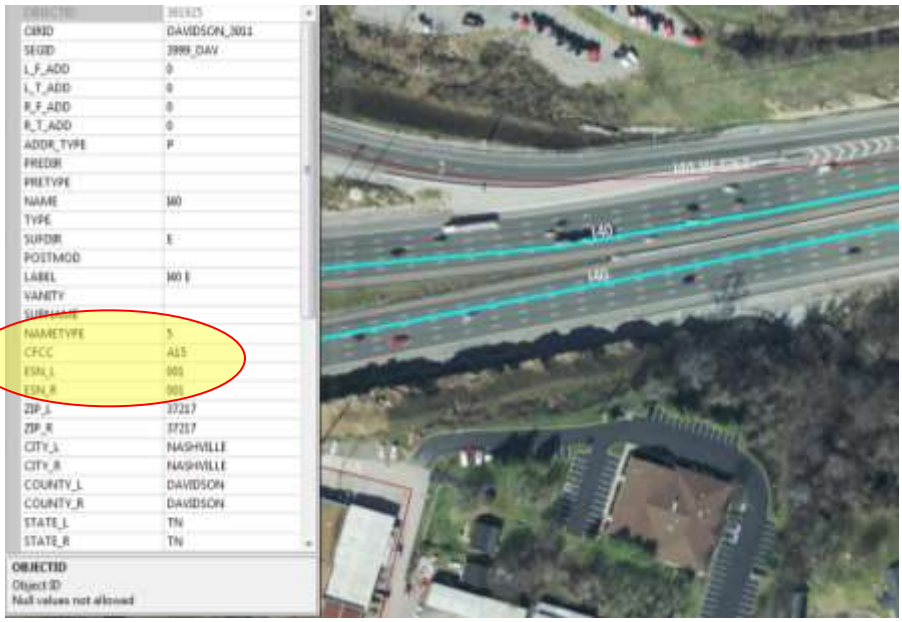
A11 – A14 Primary Roads with Limited Access, unseparated

A11 Primary road with limited access or interstate highway, **unseparated**
A12 Primary road with limited access or interstate highway, unseparated, in tunnel
A13 Primary road with limited access or interstate highway, unseparated, underpassing
A14 Primary road with limited access or interstate highway, unseparated, rail line in center
There are very few instances that A11 thru A14 will apply

A15– A19 Primary Roads with Limited Access, separated

A15 Primary road with limited access or interstate highway, **separated**
A16 Primary road with limited access or interstate highway, separated, in tunnel
A17 Primary road with limited access or interstate highway, separated, underpassing
A18 Primary road with limited access or interstate highway, separated, with rail line in center
A19 Primary road with limited access or interstate highway, bridge

A15 - Primary road with limited access, separated



A15 - Centerlines in this group are separated by a legal barrier or a minimum distance. A legal barrier can be concrete separators, guard rails, painted lines or a natural separation as shown in the situation above

A17 - Interstate/Primary roads that are separated and underpassing

This CFCC is critical for routing purposes.

A17 - Even though the I 24 centerlines cross over McMinnville Hwy, they do not intersect McMinnville Hwy in reality. To maintain topology, they must be split, and the address range edited accordingly. By designating A17_as the CFCC, the emergency responder will be routed correctly and safely.

A19 - Primary road or Interstate highway - Bridge (optional usage)

A19 - The Interstate centerlines are broken at the state/county border. The directional arrows should reflect the flow of traffic.

A21 – A29 Primary Roads Without Limited Access

This category (A2) includes nationally and regionally important highways that do not have limited access as required by category A1. It consists mainly of US highways, but may include some state highways and county highways that connect cities and larger towns. A road in this category must be hard-surface (concrete or asphalt). It has intersections with other roads, may be divided or undivided, and have multi-lane or single-lane characteristics.

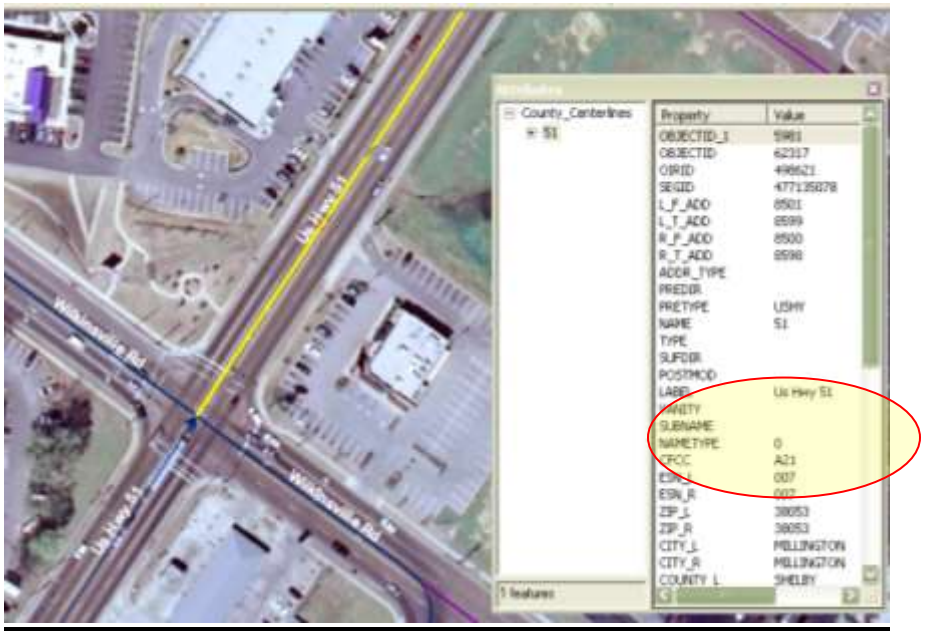
A21 – A24 Primary Roads without Limited Access, unseparated

A21 Primary road without limited access, US highways, **unseparated**
A22 Primary road without limited access, US highways, unseparated, in tunnel
A23 Primary road without limited access, US highways, unseparated, underpassing
A24 Primary road without limited access, US highways, unseparated, with rail line in center

A25 – A29 Primary Roads without Limited Access, separated

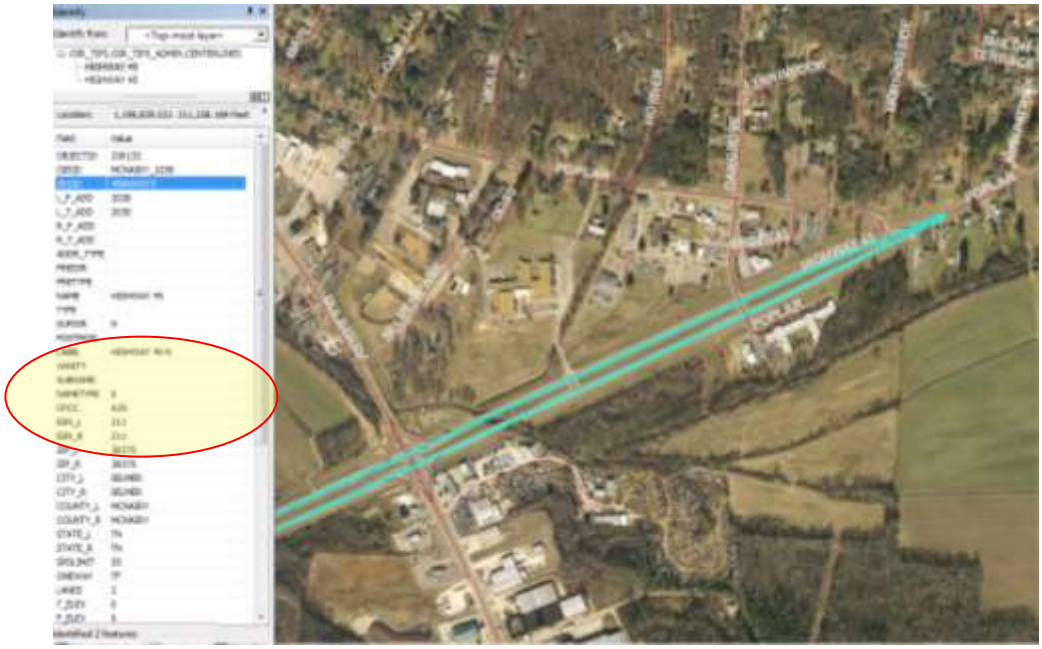
A25 Primary road without limited access, US highways, separated
A26 Primary road without limited access, US highways, separated, in tunnel
A27 Primary road without limited access, US highways, separated, underpassing
A28 Primary road without limited access, US highways, separated, with rail line in center

A21 - Primary road without limited access US and State Highways Unseparated



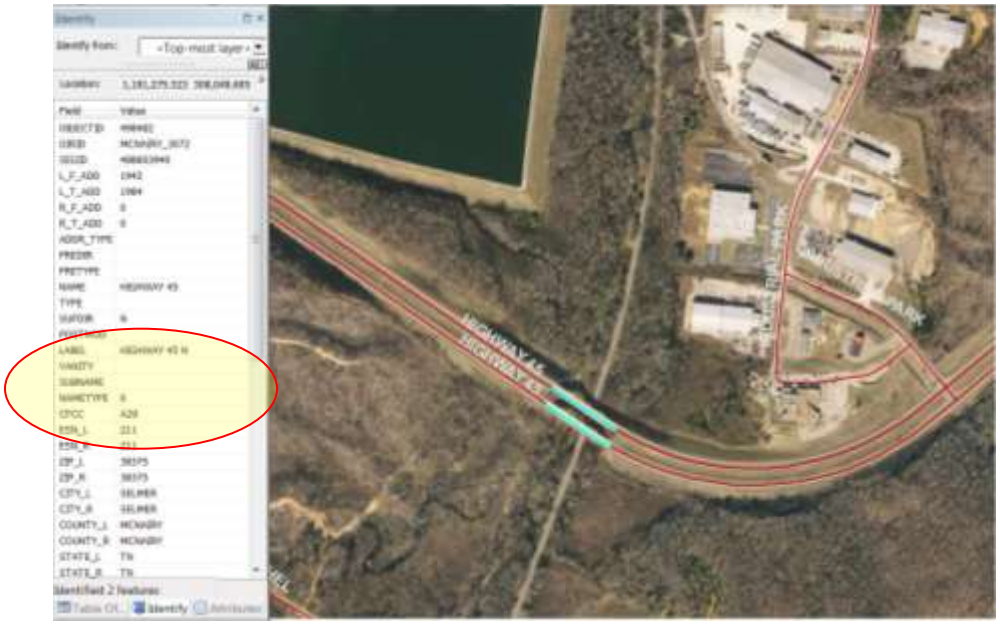
A21 - US HWY inside city limits may still retain the PRETYPE=**USHY** and CFCC=**A21**. The CITY_L and CITY_R fields should be populated.

A25 - Primary road without limited access, US Highways Separated



A25 - Highway 45 going through the town of Selmer in McNairy County.

A29 - Primary road without limited access, US Highways, Bridge (optional usage)



A29 This is a bridge for a US or State highway.

A31 – A39 Secondary and Connecting Roads

This category (A3) includes mostly state highways, but may include some county highways that connect smaller towns, subdivisions, and neighborhoods. The roads in this category generally are smaller than roads in Category A2, must be hard surface (concrete or asphalt), and are usually undivided with single-lane characteristics. These roads usually have a local name along with a route number and intersect with many other roads and driveways.

A31 – A34 Primary Roads with Limited Access, unseparated

A31 Secondary and connecting road, State and county highways, **unseparated**
A32 Secondary and connecting road, State and county highways, unseparated, in tunnel
A33 Secondary and connecting road, State and county highways, unseparated, underpassing
A34 Secondary and connecting road, State and county highways, unseparated, with rail line in center

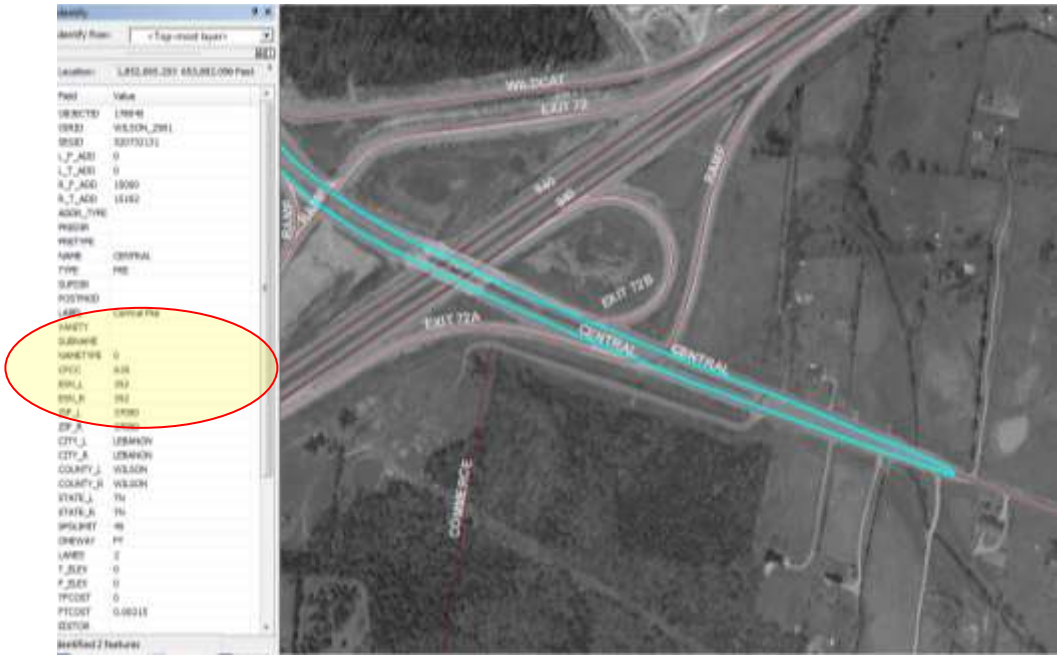
A35 – A39 Primary Roads with Limited Access, separated

A35 Secondary and connecting road, State and county highways, **separated**
A36 Secondary and connecting road, State and county highways, separated, in tunnel
A37 Secondary and connecting road, State and county highways, separated, underpassing
A38 Secondary and connecting road, State and county highway, separated, with rail line in center
A39 Secondary and connecting road, state and county highways, bridge

A31 - Secondary and Connecting Road, State and county highways, unseparated

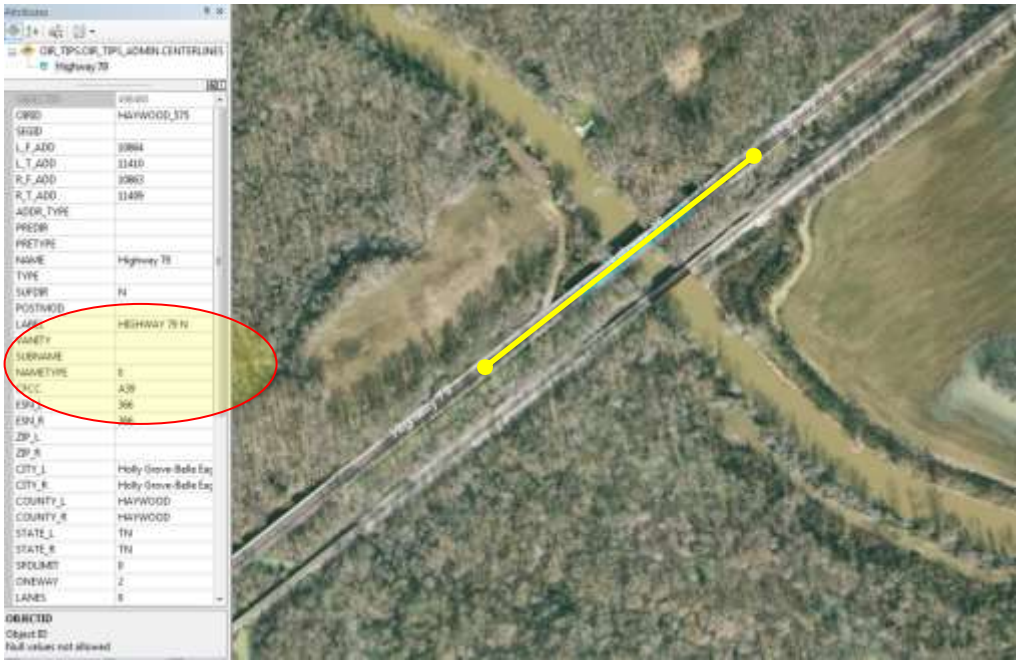
A31 In this example, Central Pike is unseparated

A35 - Secondary and Connecting Road, State and county highways, Separated



A35 - Central Pike transitions from a single centerline to 2 lanes

A39 - Secondary and Connecting Road, State and county highways, Bridge (optional usage)



A39 - State Highway bridge crossing a waterway

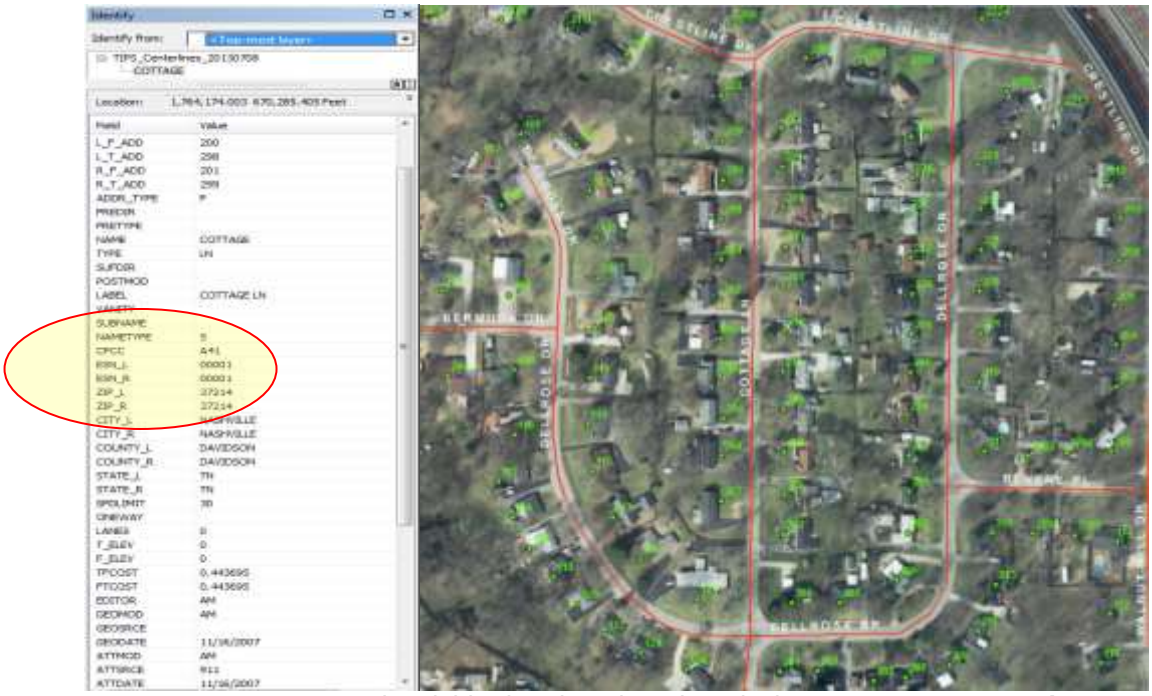
A41 – A49 Local, Neighborhood, Rural, and City Streets

Roads in this category (A4) are used for local traffic and usually have a single lane of traffic in each direction. In an urban area, there are neighborhood roads and streets that are not thoroughfares. These belong in categories A2 or A3. In a rural area, this is a short-distance road connecting the smallest towns; the road may or may not have a state or county route number. Scenic park roads, unimproved or unpaved roads, and industrial roads are included in this category. Most roads in the Nation are classified as A4 roads. This class pertains to local, neighborhood, rural and city streets

A41 Local, neighborhood, and rural road, city streets**, unseparated**
A42 Local, neighborhood, and rural road, city streets, unseparated, in tunnel
A43 Local, neighborhood, and rural road, city streets, unseparated, underpassing
A44 Local, neighborhood, and rural road, city streets, unseparated, with rail line in center

A45 Local, neighborhood, and rural road, city streets, **separated**
A46 Local, neighborhood, and rural road, city streets, separated, in tunnel
A47 Local, neighborhood, and rural road, city streets, separated, underpassing
A48 Local, neighborhood, and rural road, city streets, separated, with rail line in center
A49 Local, neighborhood, and rural road, city streets, bridge

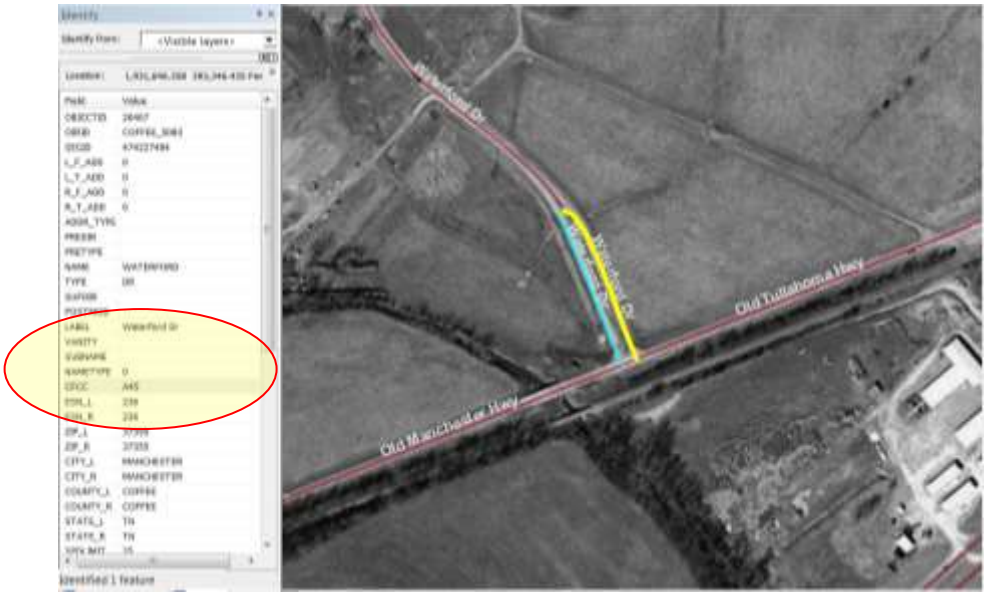
A41 - Local, neighborhood, rural road and city street, unseparated



A41 - Local, neighborhood, and rural road, city, street, **unseparated**

A41 - Local, neighborhood, and rural road, city, street, **unseparated**

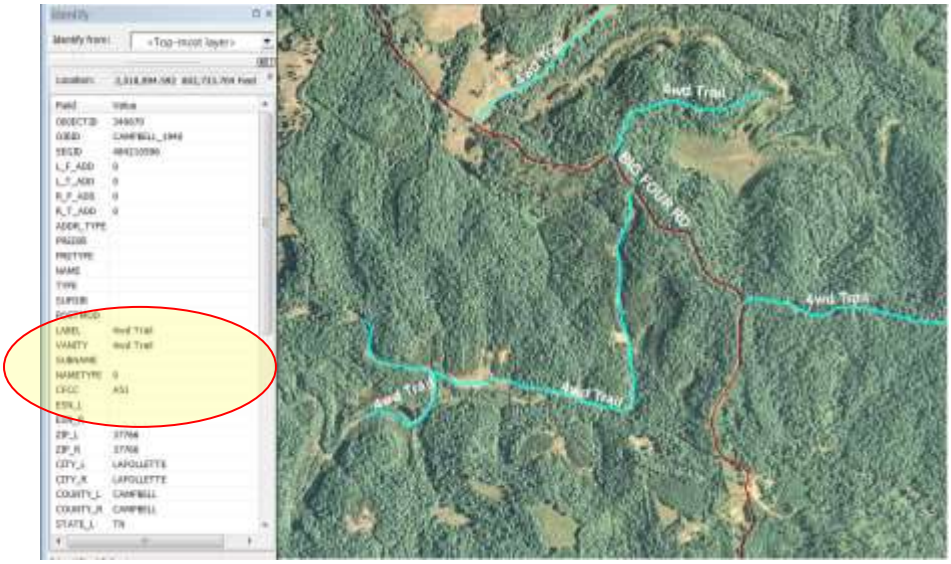
A45 - Local, neighborhood, rural road, and city street, separated



A45 - A rural road, **separated**

A50 – A53 Vehicular trail (4WD)

A51 Vehicular trail, road passable only by 4WD vehicle, unseparated
A52 Vehicular trail, road passable only by 4WD vehicle, unseparated, in tunnel
A53 Vehicular trail, road passable only by 4WD vehicle, unseparated, under passing



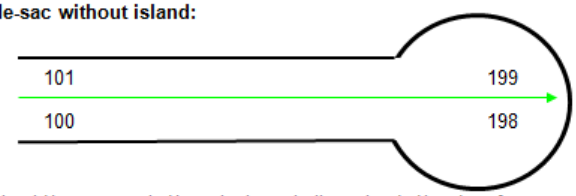
A51 - Four wheel drive trails –Centerlines in this category are not usually accessible by passenger vehicles

A60 – A67 Special Road Features

A60 Special road feature, major category used when the minor category could not be determined
A61 Cul-de-sac, the closed end of a road that forms a loop or turn around
A62 Traffic circle, the portion of a road or intersection of roads that form a roundabout
A63 Access ramp, the portion of a road that forms a cloverleaf or limited access interchange
A64 Service drive, road that provides access to businesses, facilities, and rest areas along limited

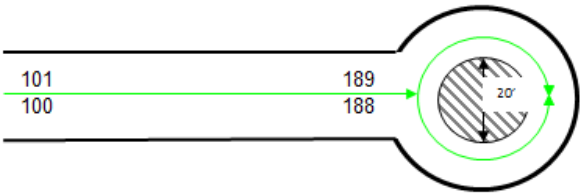
A61 Cul de sac

Cul-de-sac without island:

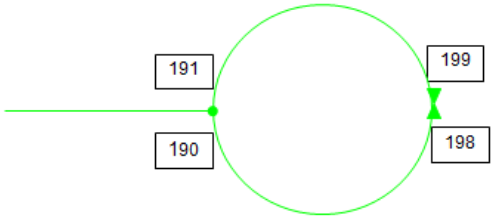


This should be represented by a single centerline extended to edge of pavement. There is no physical barrier to impede access.

Cul-de-sac with island:



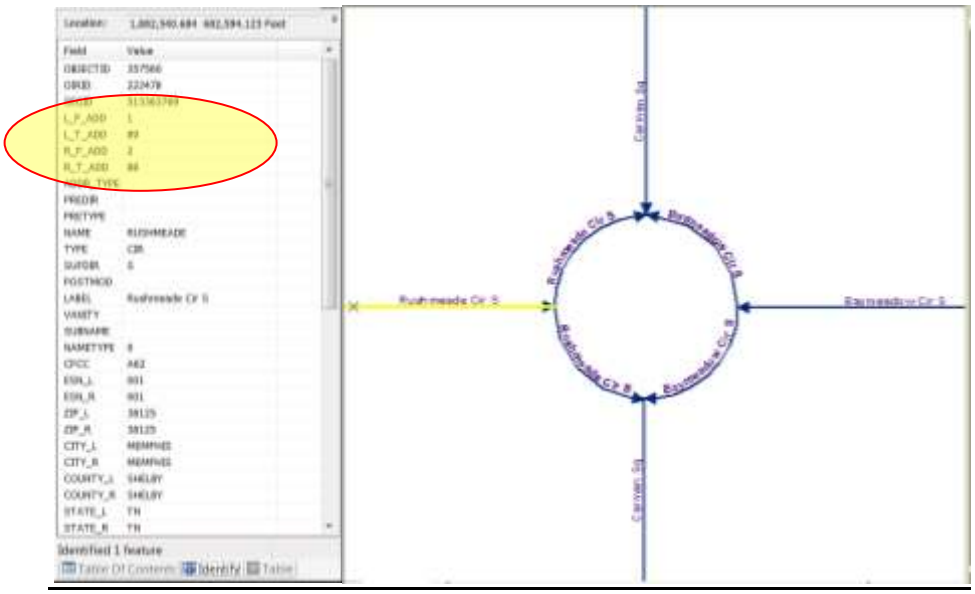
Circle centerline should be centered between edge of pavement and island (20' or wider). Centerline should be broken at the end of cul-de-sac for address range placement.



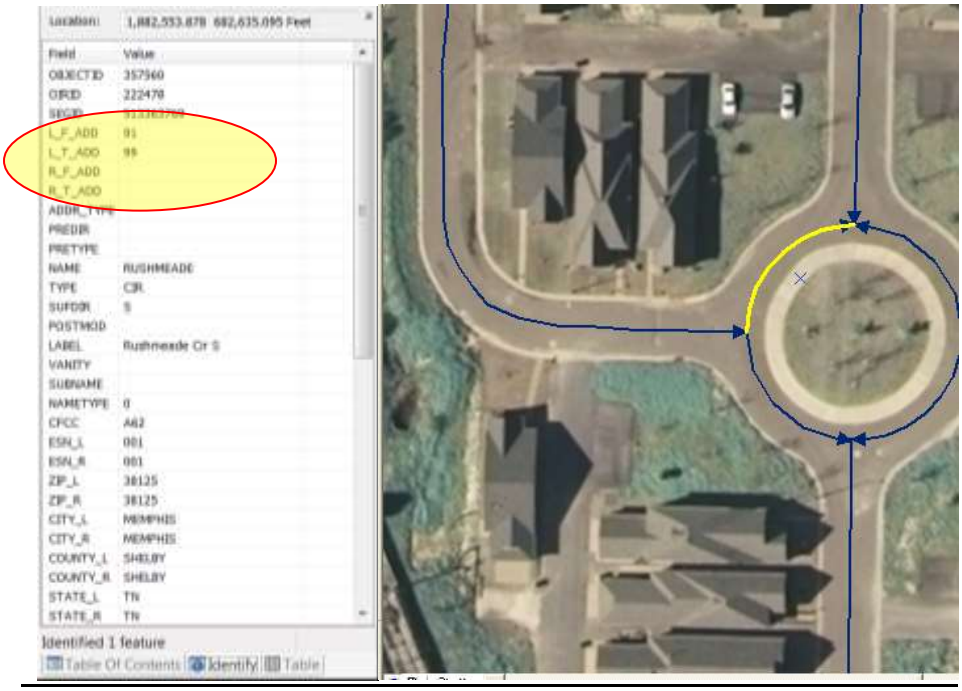
The centerlines for the turnaround are similar to a dual carriageway in that there will typically be an odd range on one side, and even on the other

A62 Traffic circle

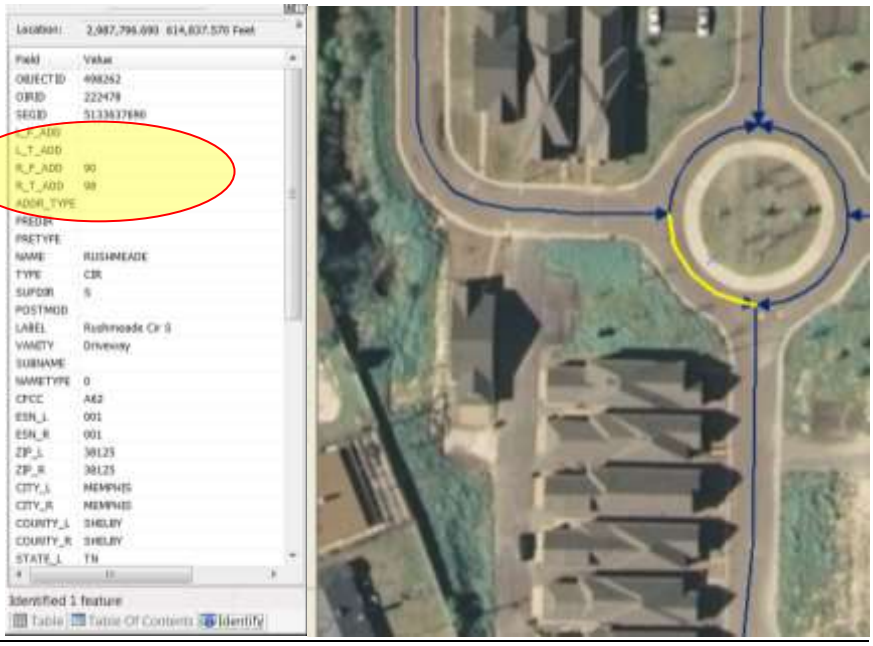
A traffic circle represents a road where entering traffic may or may not have formal controls.



A62 - The address range should be present on both sides of the centerline section.[1]

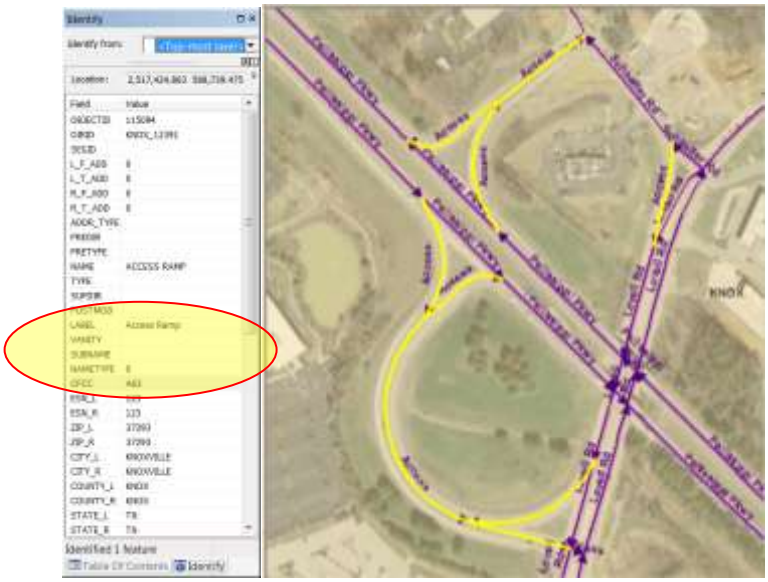


A62 - The address range should be only on the left side of this centerline section.



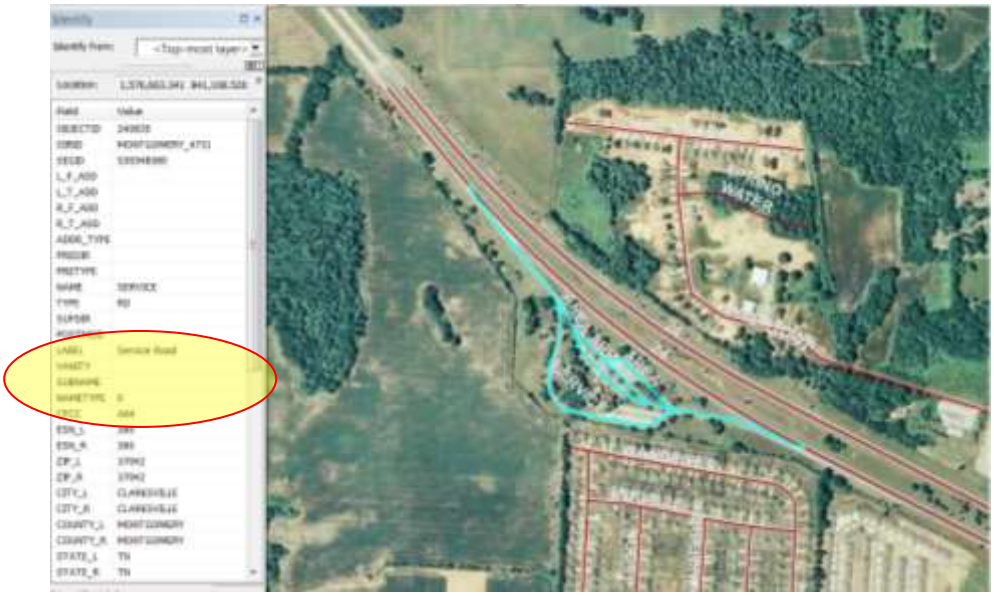
A62 - Here, the address range should be only on the right side of this centerline section.

A63 - Access ramp



A63 - Roads with limited access (A10 thru A19) should be entered using an access ramp.

A64 - Service Drive



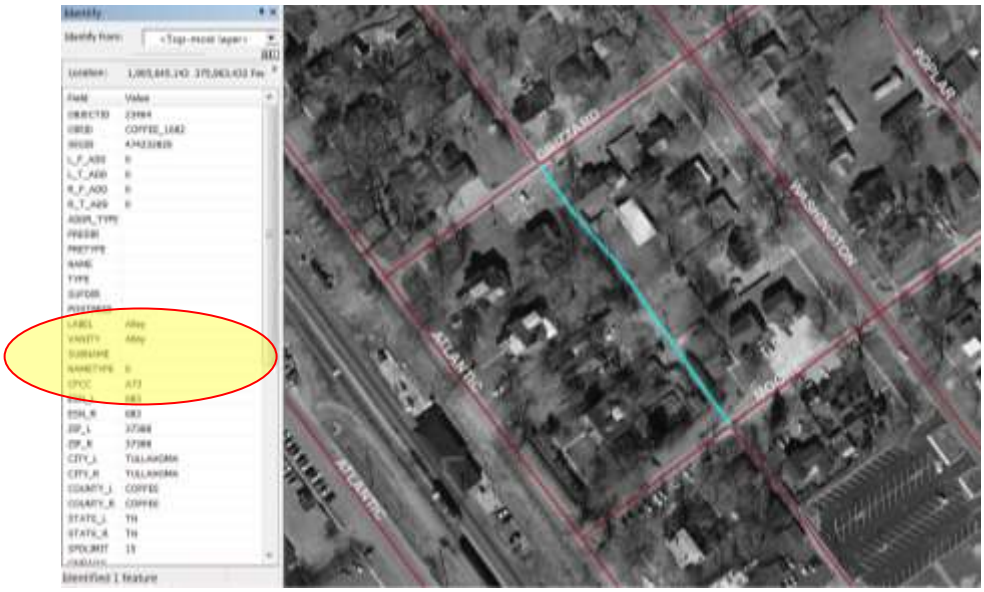
A64 - This is a road or portion of a road that provides access to businesses, facilities, and rest areas along a limited-access highway: this road may intersect other roads and be named.

A71 – A74 Road as Other Thoroughfare

A road in this category is not part of the vehicular highway system. It is used by bicyclists or pedestrians, and is typically inaccessible to mainstream motor traffic except for private owner
and service vehicles. This category includes foot and hiking trails located on park and forest land, as well as stairs or walkways that follow a road right-of-way and have names similar to road names.

A71 Walkway, nearly level road for pedestrians, usually unnamed
A72 Stairway, stepped road for pedestrians, usually unnamed
A73 Alley, road for service vehicles, usually unnamed, located at the rear of buildings and property
A74 Driveway or service road, usually privately owned and unnamed, used to access residences, etc.

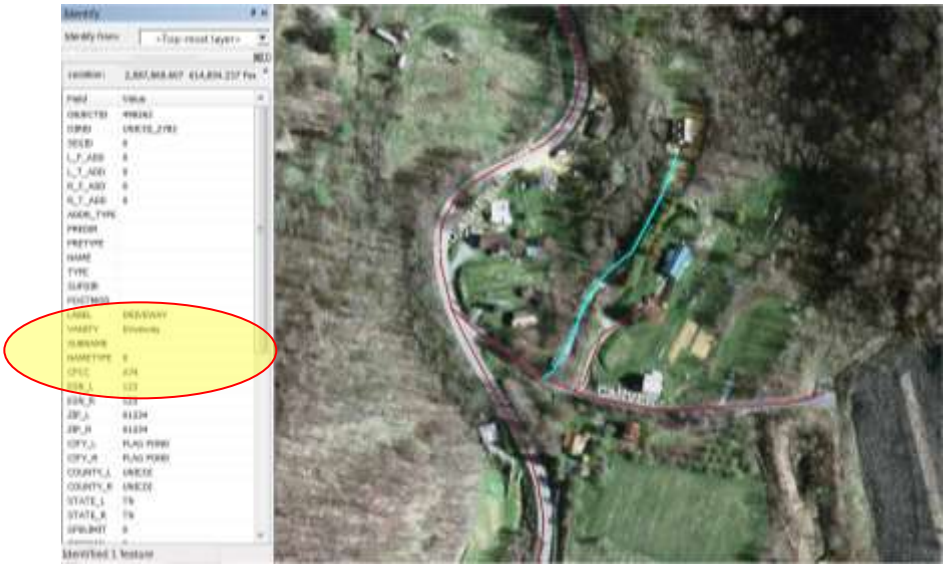
A73 - Alley



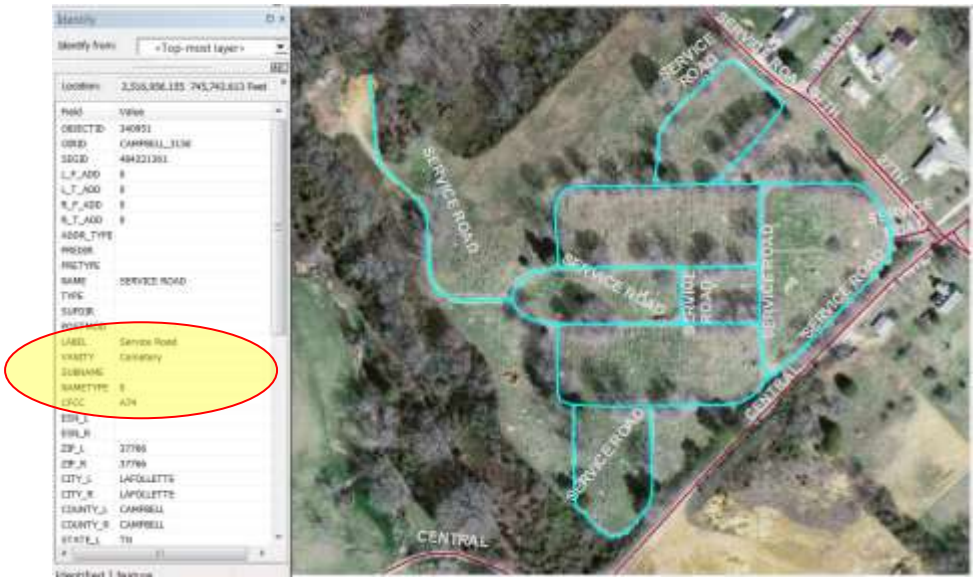
A73 - Alley, road for service vehicles, usually unnamed, located at the rear of buildings and property

A74 - Driveway / Service road

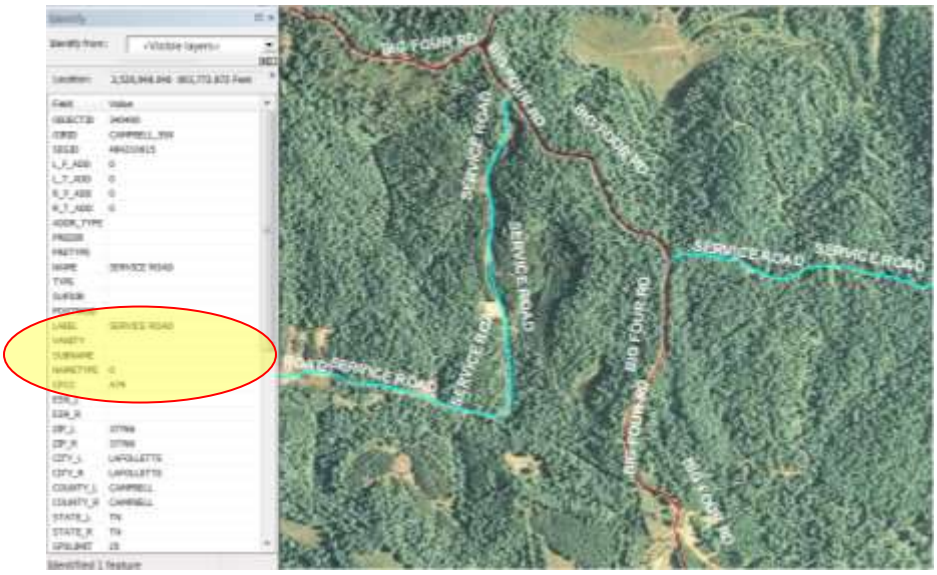
Driveway/Service roads encompass a wide range of centerline types. They are used to represent centerlines that may not have names, but are connected to centerlines that do. They typically don't have address range data, and are usually privately owned and unnamed., ***It is recommended that street centerlines not be split or broken at Driveway intersections as this will complicate street address ranges.***



A74 - Driveway privately owned and unnamed.



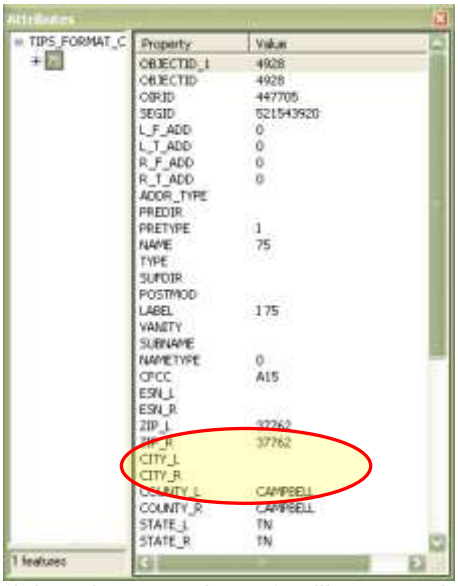
A74 - Service roads can provide access to a cemetery. There are instances that a cemetery road will be named.



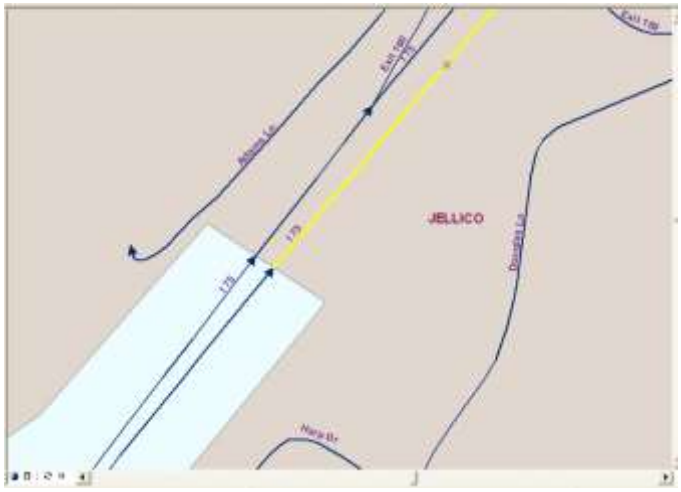
A74 - Service roads can provide access to logging areas

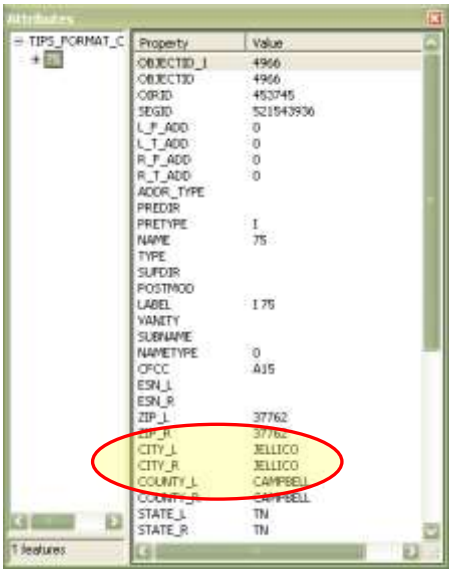
Centerlines and boundaries

Road centerlines must be split at State, County, Administrative, and ESN boundaries.
The address range should be edited after this action. There are exceptions as shown in this example of I 75 entering the administrative boundary for Jellico. Interstate Highways don't have an address range, It is optional to give mile markers and or rest areas an address point.



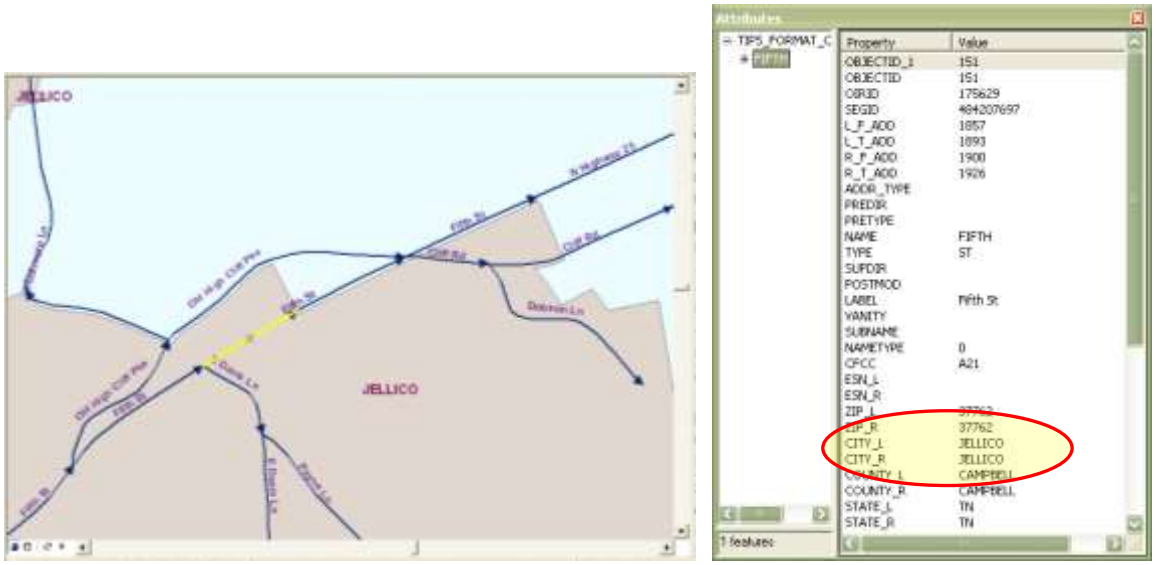
A15 - This highlighted segment of I 75 is broken at the Administrative Boundary of Jellico TN. The centerline located outside the Administrative Boundary will not include CITY_L or CITY_R data. (18-b)



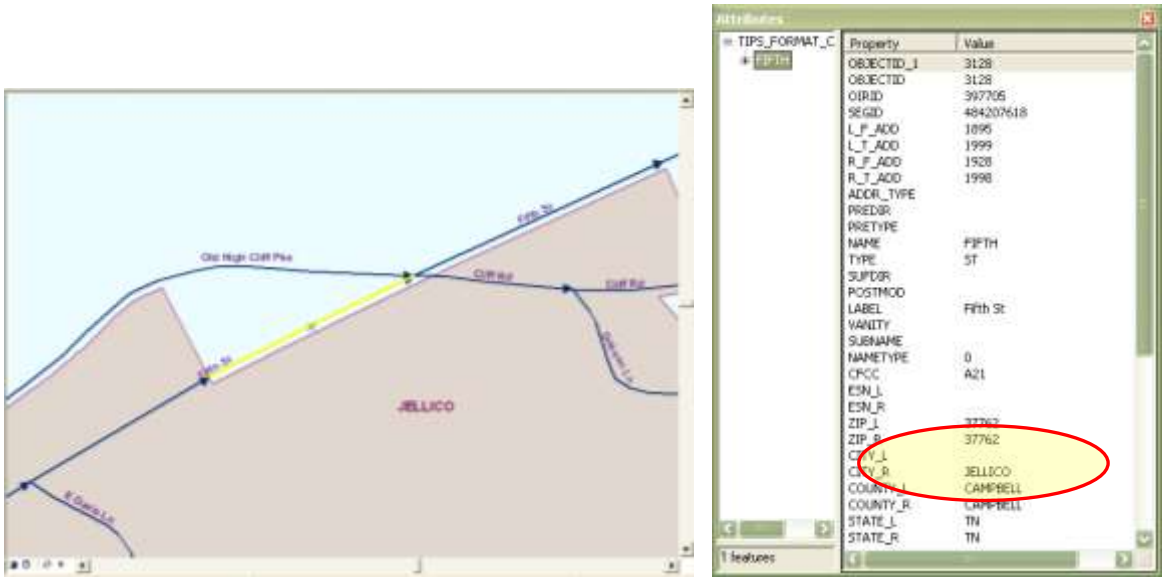


A15 - The highlighted segment of I 75 is broken at the Administrative Boundary of Jellico TN. The centerline located inside the Boundary polygon must include CITY_L and CITY_R data.

Boundaries for Primary and Secondary Roads



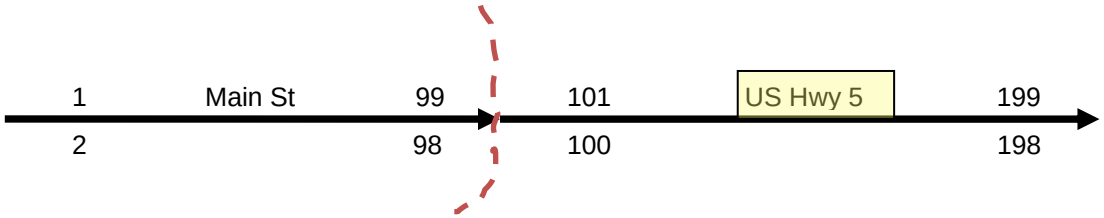
A21 - The highlighted centerline for Fifth St. will have both CITY_L and CITY_R data as it is located inside the boundary.

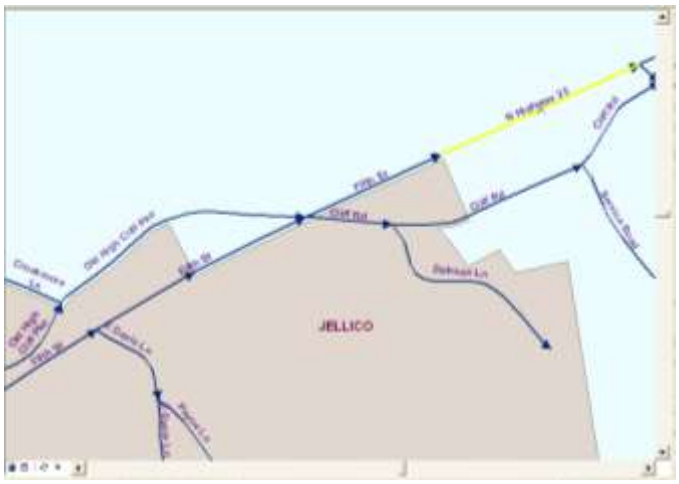


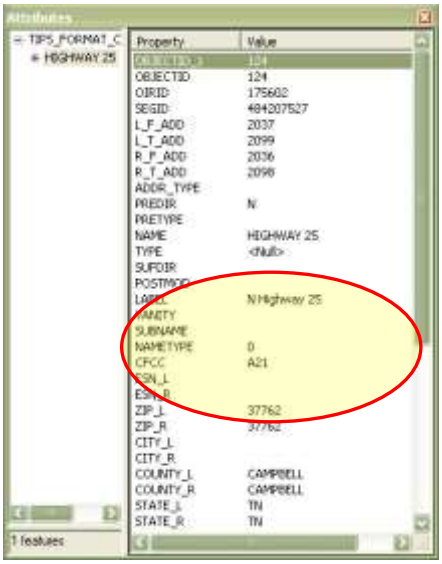
A21 - There are situations where the address range on one side is addressed to the city and the other side is not. Due to the need for clarity, the centerline must be offset from the boundary polygon. In this case, CITY_R is populated but CITY_L is not.

Boundary – Road Name Change

There are situations that will require a NAME change. This is normally due to a State or County highway that enters or exits a boundary line.







A21 - In the case above, Fifth St will become N Highway 25. Even though the name changes, the CFCC remains A21 because this is an unseparated state highway. When in doubt, you can always refer to the MSAG for your district.

Summary of NG 911 Street Centerline Quality Requirements

Be continually updated

Accurately reflect block address ranges as related to address points

Fall within 10' or less of the centerline as visible in Ortho Photography

Represent all public and addressed private streets

Attributes should be accurate, complete and standardized (address ranges, ESN's Communities, spelling abbreviations…) The abbreviations can be found in USPS Publication 28

NENA standards are met or exceeded

Match the corrected MSAG to a 98 percent or higher rate

Street names should conform to the legal names as assigned by the addressing authority. The abbreviations can be found in USPS Publication 28

Abbreviations of all Street Prefixes and Suffixes should be incorporated according to NENA Standards. The abbreviations can be found in USPS Publication 28

Include all attribute information such as Number, Name, Type etc…

Attempt to assure that Left and Right addressing is consistently either odd or even addresses; document unsuccessful attempts

Orient all line segments in the direction of increasing address ranges

Each centerline segment shares an exact begin or end node with another centerline segment

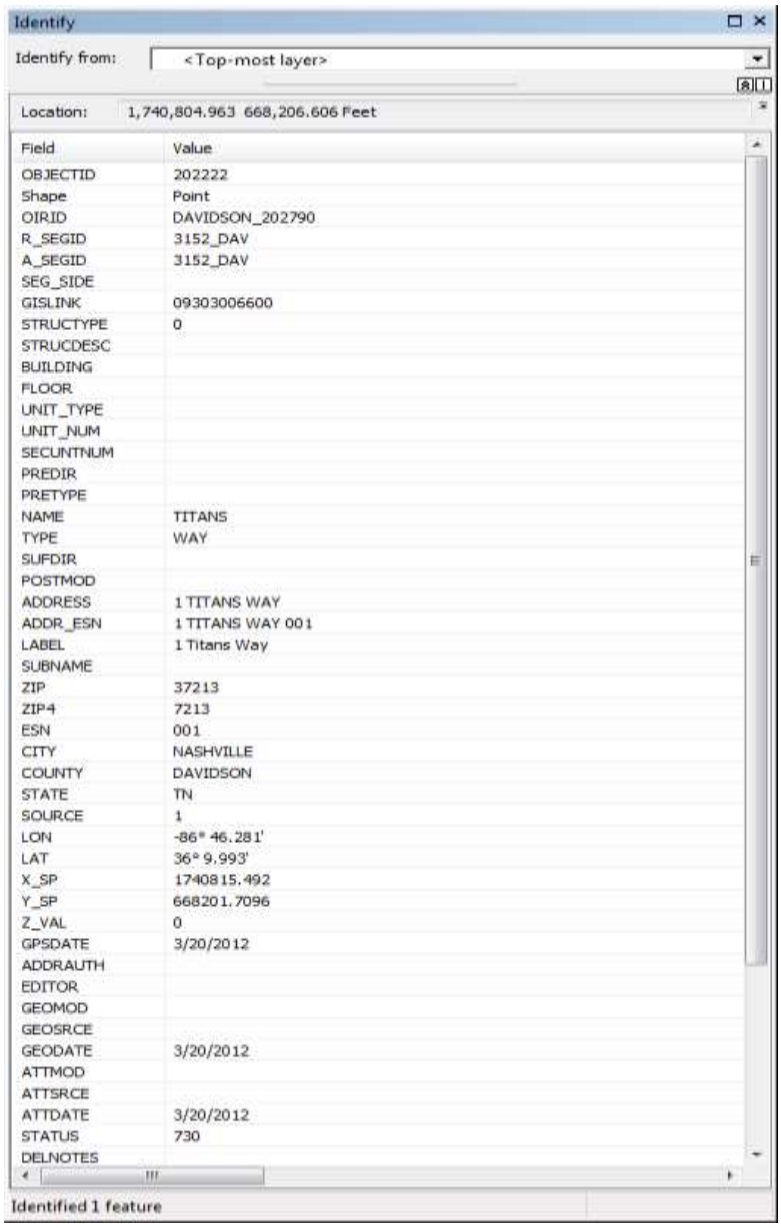
Each intersection is split for routing purposes and intersection lookup purposes

Street centerlines are split at intersections with State, County, City and ESN boundaries

Address Points

Attribute Table

Address points represent all structures with an actual street address. The point must include all required attribute values. As each point has a unique identifier, there should be no duplicate address points.



The attribute table above shows how the fields should be populated.

Address Point Features

To assist in geocoding more accurately, the address points are meant to provide an enhanced layer for emergency response dispatching. The TIPS Address Points contain all necessary attributes to allow for accurate geocoding and spatial representation (table structure for Address Points can be found on page 35.

Relational Fields (Not used)

- **[OIRID] – (Office for Information Resources Identifier) –** A unique identifier for each individual address point. Populated by OIR services.

Relational Fields for Street segments (Optional

- **[R_SEGID] –** Ties each address point to each of its associated centerlines based upon routing.
- **[A_SEGID] –** Ties each address point to each of its associated centerlines based upon which centerline the point is addressed from.

Segment side designation (Optional)

- **[SEG_SIDE] -** This field is optional. It designates, with an "R" for right or "L" for left, which side of the street centerline that an address point is located. The **[SEG_SIDE]** should reflect the direction of addressing on the street centerline and may not necessarily reflect the direction of traffic flow.

Parcel Association (Not used)

- **[GISLINK] -** This **v**alue is determined from either the centroid of the parcel it was generated from or assigned by a spatial relationship to the parcel base that the address point is 'completely within.' **[GISLINK]**s assigned by spatial relationship apply to consumed local data only. Structures that are between parcel lines will be given the **[GISLINK]** of the ownership parcel first, if such designation can be determined, otherwise parcel ownership will be calculated by referencing the building footprint or structure on local orthophotography. (e.g., ¾ of the building footprint is in Parcel A ∴ Ownership = Parcel A).

Address information (Optional)

- **[STRUCDESC] – (Structure Description) -** Description of structure, such as color.
- **[STRUCTYPE] – (Structure Type) –** Codes for structures, indicated by integer values (e.g. 1=House, 2=Duplex, 3=Trailer).
- **[BUILDING] –** Building designator (e.g. 5 would indicate building 5)
- **[FLOOR] –** Floor number or level.
- **[UNIT_TYPE] –** Designator for unit type**.**
- **[UNIT_NUM] –** Unit number of address
- **[SECUNTNUM] –** Secondary unit number.

Secondary Address Information (Optional)

- **[STNUMSUF]- (Street Number Suffix) -** This complex element is the full concatenation of the secondary address information and should reflect the USPS Publication 28 values for the secondary unit. Examples of valid values would be "APT 27", "BLDG 5-A", "COMPLEX 1, UNIT 10", or "PIER 4".

Street Number (Required)

- **[STNUM],** The **[STNUM]** field corresponds to the street or house number for a particular address. This is a numeric value only, and does not include the secondary address information (i.e., apartment or building designations). The field is a string type in the schema, instead of an integer, to accommodate various dispatch software.
- **[STNUM_H] -** The high address range for the street centerline segment on which the **[STNUM]** is located.
- **[STNUM_L]** - The low address range for the street centerline segment on which the **[STNUM]** is located.

Full Street Name (Required)

- **[PREDIR] – (Proceeding Directional) –** A cardinal direction abbreviation preceding the street name key. **Only N, S, E, W or NE, NW, SE, SW can be used.**
- **[PRETYPE] – (Preceding Type) –** A street type which precedes the street name key. **(e.g. Blvd Napoleon)**
- **[NAME] – (Street Name) –** The key identifier of a street name component, **(e.g., Maple, Cumberland, etc.)**
- **[TYPE] – (Street Type) –** A abbreviated suffix following the street name key, **(e.g. AVE, DR, ST,)**
- **[SUFDIR] – (Suffix Directional) –** A cardinal direction abbreviation following the street name key. ***Only N, S, E, W or NE, NW, SE, SW can be used**
- **[POSTMOD] – (Post Modifier)** – An additional value sometimes found on certain Roads **(e.g. Extension)**

Lookup (Not used)

- **[ADDRESS] -** This value is a combination of the values found in the **[STPREDIR],** [**STPRETYPE], [STNAME], [STTYPE]**, and **[STSUFDIR]** fields.
- **[ADDR_ESN] -** Similar to the **[ADDRESS]** field, this value is a combination of the values found in the **[STPREDIR]**, **[STPRETYPE]**, **[STNAME]**, **[STTYPE],** and **[STSUFDIR]** fields with the addition of the **[ESN]** value added at the end.

Display and Map Labeling (Optional)

- **[LABEL] – (Map Label) -** A composite of the street number and naming information with the unit number, in proper case use for map symbology (e.g. 101 N Main St).
- **[VANITY] – (Miscellaneous Description) -** A value which reflects the public or generally accepted named of the location of the structure. Can contain any unique identifiers.
- **[SUBNAME]_- – (Subdivision Name) –** The name of a subdivision, Maple Creek, Creekwood, Governor's Club Trailers, etc.

USPS Information (not used)

- **[ZIP] -** This value should reflect the 5-digit zone improvement plan (ZIP) number in which the address point is located.
- **[ZIP4] -** This value should reflect the last 4 digits of the ZIP+4 code in which the address point is located.

Emergency Service Number (Not used)

- **[ESN] -** The 3-digit emergency service number in which the address point is located. The value should always be in a 3-digit format (e.g. "002").

City or Community (Not used)

- **[CITY] -** The service community name identified in the MSAG/ALI for the address point. This field should not be confused with city administrative boundaries.

County (Required)

- **[COUNTY]** The designated county area in which the address point is located. Each County maintains their own boundaries, and there is no seamless boundary file maintained by the State.

State (Required)

- **[STATE]** The 2-character state abbreviation in which the address point is located. For the majority of the street centerlines this value will be "TN", although counties should be aware of centerlines located at the edge of their jurisdiction alongside other states.

Point location description (not used)

- **[SOURCE] –** A description of the location of address point in relation to actual physical location of the structure (e.g. Parcel Centroid, driveway, entrance point).

Coordinate Information (Not used)

- **[LAT], [LON] – (**Latitude and Longitude) – Geographic coordinates expressed in degrees minutes and seconds (e.g. 36° 9' 56" N, 86° 47' 3" W). Not to be manually populated
- **[X_SP], [Y_SP] –** (X State Plane, Y State Plane) – Coordinate information expressed in State Plan Coordinates. Not to be manually populated.
- **[Z_VAL] – (Z Value) –** Coordinate designation for elevation

Date of GPS Collection (Not used)

- **[GPSDATE] -** The date on which the address point was collected by GPS. This is in the standard US "MM/DD/YYYY" format. Please ensure that the date is correct. If point was placed via another method, do not enter any data into this field.

Addressing Authority (Not used)

- **[ADDRAUTH] -** An abbreviation of the editing authority. This may be an abbreviation of the entity or initials of the editor.

Editing Authority (Not used)

- **[EDITOR]** - An abbreviation of the editing authority. This may be an abbreviation of the entity or initials of the editor.

Geometry Modifications (Not used)

- **[GEOMOD]** - A brief description of the most recent spatial modification for the address point. The field is 75 characters in length, but could be a single, descriptive word. A spatial modification is a change to the positional location of the address point.

Spatial Edit Source (Not used)

- **[GEOSRCE]** The source of the most recent spatial modification for this edit. An example of a spatial modification would be new plats from the Tax Assessor's Office or verification of data in the field with a GPS. This value is crucial for the retention of the edit in the TIPS production dataset.

Spatial Edit Date Stamp (Not used)

- **[GEODATE]** The date that the most recent spatial edit was made. This value is generic and does not include a time stamp. This is in the standard US "MM/DD/YYYY" format. Please ensure that the date is correct.

Attribute Modification (Not used)

- **[ATTMOD]** A brief description of the most recent attribute modification for the address point. The field is 75 characters in length, but could be a single, descriptive word. An attribute modification is a change to the fields in an address point's table.

Attribute Edit Source (Required)

- **[ATTSRCE]** The source of the most recent attribute modification for this edit. This value is crucial for the retention of the edit in the TIPS production dataset.

Attribute Edit Date Stamp (Required)

- **[ATTDATE]** The date that the most recent attribute edit was made. This value is generic and does not include a time stamp. This is in the standard US "MM/DD/YYYY" format. Please ensure that the date is correct.

Lifecycle Status (Not used)

- **[STATUS] -** The current status of the address point. The available values are as follows:
  - **ACTIVE - (730)**. - Geometry in use with valid attributes
  - **PROPOSED – (734) -** Geometry is pending, may or may not have attributes.
  - **POTENTIAL – (736) -** Geometry is being considered, but not approved
  - **RETIRED. – (799) -** Geometry is obsolete. Attribution is discarded or transferred
  - **(999) -** Used to cover STATUS types that are not listed above. The values will not be uploaded to the State of TN TIPS database
  - **(000) -** Used to cover STATUS types that are not listed above. The values will not be uploaded to the State of TN TIPS database

Delete Notation (Not used)

- **[DELNOTES]** This field is a memo space for entering a brief description that explains the retirement of specific geometry or any special instructions that were considered at the time of the edit. It is not mandatory.

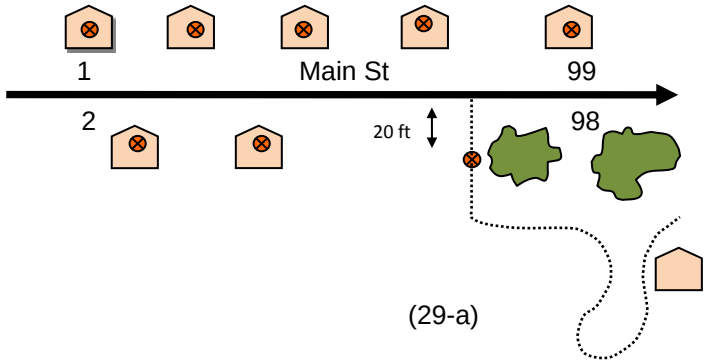
Global Identification Number (Required)

- **[GLOBALID]** This field contains a unique ID for each Address Point, not to be reused.

Address Points

Locating

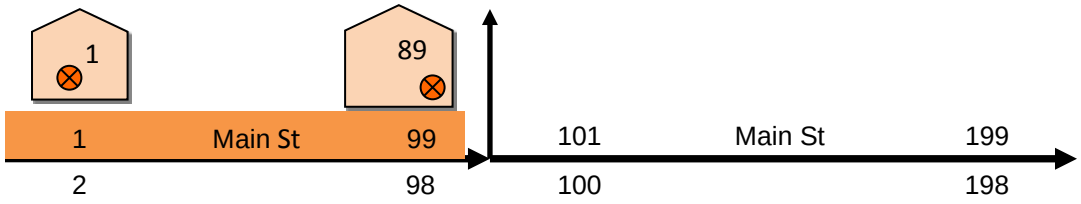
Address points represent all structures with an actual street address. The points can be located on the structure or, if there are visibility issues, recommend locating at least 20' back from the driveway entrance. (29-a)



(29-a)

Inclusion

The Centerline range may be populated by either Possible or Actual. Possible range is mostly used by USPS. Actual addresses may be available through utility companies, local government, and data collection in the field.
Even though the last structure on this section of Main St is #89, the range can reflect all possible addresses between beginning and end of segment. In this case the **Possible** range would be 1-99. The **Actual** range would be 1-89. (29-b)

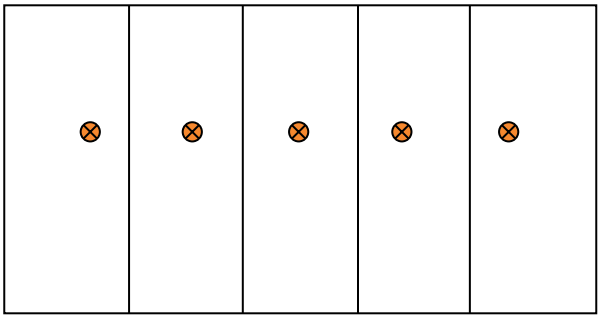


(29-b)

The address point should include all required attribute values. As each point has a unique identifier, there should be no duplicate address points, An example would be a duplex. There would be 2 unique addresses for 1 structure. There are fields in the TIPS attribute structure that can identify a building, floor, and unit number.

Multiple address points located in a single unit

Apartments or business offices should have 1 point for each unique address.

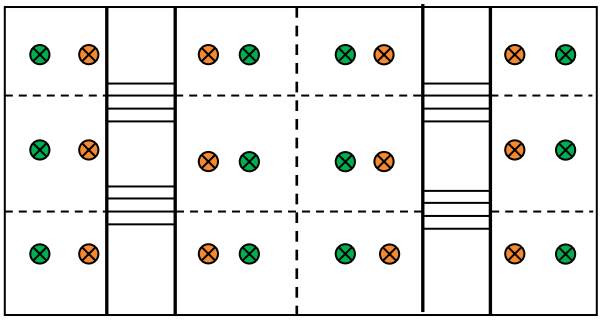


= 1'st floor

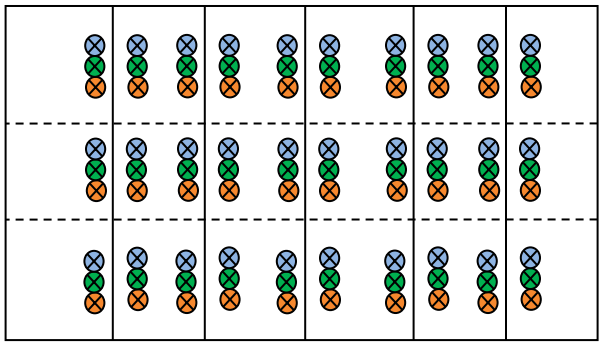
= 2'nd floor

= 3'rd floor

Single level with multiple units



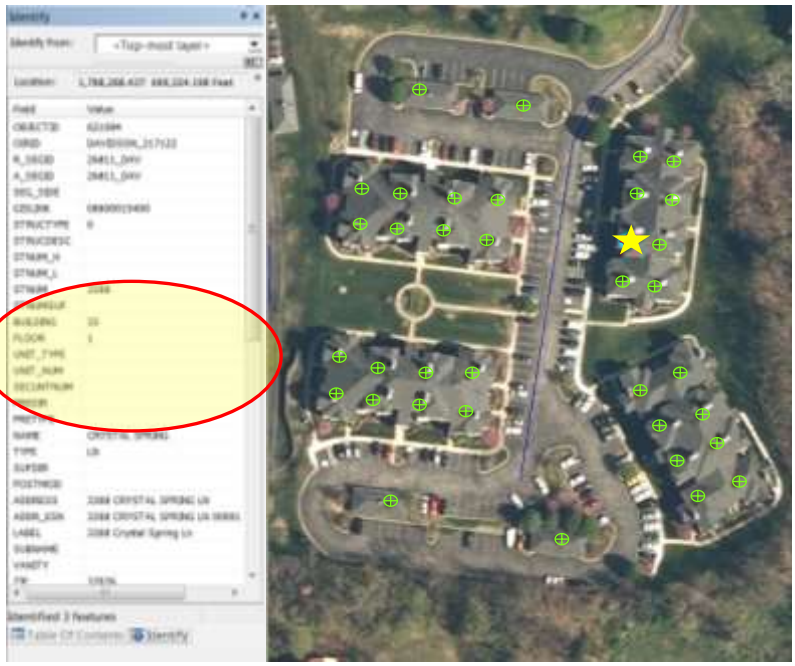
Two level multiple-unit



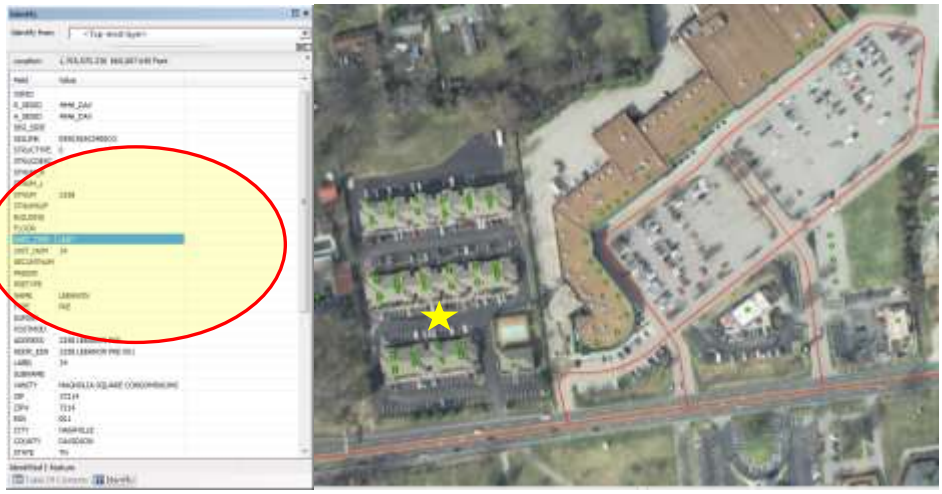
Three level multiple-unit

Remember, there must be a unique address point for each individual living unit.

Multiple address unit example



This example is missing a UNIT_NUM. The Building and Floor have been identified, but there is no UNIT_NUM. The accuracy of the data is important for emergency responders.



This example includes a STNUM (street number) and a UNIT_NUM (unit number). The building, and unit location have been identified. Again, the accuracy of this data is important for emergency responders

Summary of Next Generation 911 address point requirements

Continually updated

Include all required attributes

Placed in correct location

Must not have duplicates

Ensure address matches the centerline range

Should match MSAG and ALI to a 98 percent or higher rate

Represent all public and private addressable structures

Attributes are accurate, complete and standardized (ESN's Communities, spelling abbreviations. The abbreviations can be found in USPS Publication 28

NENA standards are met or exceeded

Match the corrected ALI to a 98 percent or higher rate

Abbreviations of all Street Prefixes and Suffixes are incorporated according to NENA Standards. The abbreviations can be found in USPS Publication 28

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