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## MODULE TWO: LANDBASE

Participant Guide  
spatialNET Standard Users Workbook  
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## OVERVIEW:

This module provides of the different Landbase functionality in spatialNET. This includes an overview of the drafting basics that are associated with spatialNET.

## OBJECTIVES:

By completing this module, participants will be able to:

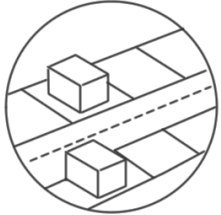
- Add and edit different boundary features to a database.
- Use the Service Area Manager.
- Create and modify road centerlines.
- Draft parcels using different line capture controls.
- Apply offsets and other AutoCAD functions in drafting.
- Create MDUs and add MDU drawings.

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## NOTES



spatialNET entities are divided into the following categories:

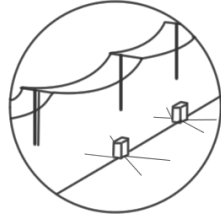


### Landbase

Landbase refers to all of the entities that apply to the base map used to define areas, streets and addresses.

Entities that belong to the Landbase category include:

- Boundaries
- Addresses
- Buildings
- Parcel

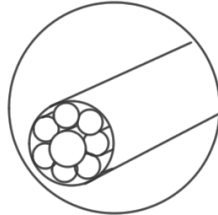


### Support

Support refers to all of the entities that are modeled to provide route for the network entities like cables. Without support, it is assumed that the network entities would be simply placed on the ground.

Support entities include:

- Joint poles
- Trenches
- Conduits

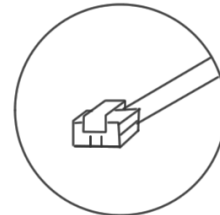


### Fiber

Entities in this category are used to model different components of the fiber network.

Entities that belong to the Fiber category include:

- Fiber cable
- Splice cases
- Fiber couplers

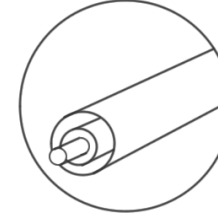


### Copper

The Copper category refers to different entities used to model twisted pair networks used by traditional telephone providers.

Entities that belong to the Copper category include:

- Telephony Cable
- DSLAMs
- PBX Boxes



### RF

Entities in this category are used to model different coax network devices used by HFC providers.

Entities that belong to the RF category include:













- RF cables
- Couplers
- Passive
- Actives
- Taps

# LANDBASE TOOLBAR



## NOTES



	<b>Function</b>	<b>Use</b>
	Add Building and Address	Adding MDU and/or SDU address to a parcel.
	Edit Multiple Addresses	Allows users to the same attribute for multiple, selected addresses.
	Align Multiple Addresses	Aligns multiple addresses/buildings to a selected street centerline.
	Geocode Building	Allows users to add additional geocode information to addresses.
	Add Place	Add different geographical features or generic information in MDU views.
	Add Linear Feature	Places other linear features to the map view.
	Add Boundary	Generate boundaries for the map view.
	Add Parcels	Draft different lots or parcels in the map view.
	Migrate Parcels	Generate address/buildings for the parcel based on street and address attributes.
	Add Centerlines	Allows users to place street centerlines on the map.
	Find Address	Provides different options to locate addresses.
	Find Centerline	Provides different options to locate street centerlines.

**Notes:**

## LANDBASE DICTIONARY OVERVIEW



## NOTES

The Dictionary is the source on how entities are defined and controlled in spatialNET. Since each entity has an entry in the dictionary, the dictionary also controls the interaction between the different entities in spatialNET. With other types of entities, this relationship component will become more clear.

### Landbase Dictionary

Landbase entities are broken down into the following definitions:

- Building Definitions
- Unit Type Definitions
- Boundary Definitions
- Parcel Definitions
- Place Definitions
- Linear Feature Definitions
- Road Definitions

Boundary Type	Description	Read Only	Service Area Type	Display Layer	Line Width
Airport	Airport	No	(none)	Boundary - A...	
Buss	Buss	No	(none)	Boundary - B... 1	
Buss - Unknown	Buss - Unknown	No	(none)	Boundary - B... 1	
Copper Servic...	Copper Service Area	No	(none)	SHUB	6
County	County	No	(none)	County Boun...	
Cross Connect	Cross Connect	No	3	Boundary - C... 3	
Field Job	Field Job	No	(none)	Field Jobs	
Footprint	Manhole footprint	No	(none)	Boundary-Fo... 1	
FTTH Tap	FTTH Tap	No	(none)	Boundary-FT... 5	
Job	Job	No	(none)	Boundary - A... 2	
LargeArea	Large Area	No	(none)	Boundary - L...	
Major Place	Major Place	No	(none)	GDT Major P...	
Man_Set	Man_Set	No	(none)	Man_Set Rou	

#### Areas of Discussion:

- Read Only
- AutoCAD Settings

#### Notes:

## BOUNDARIES

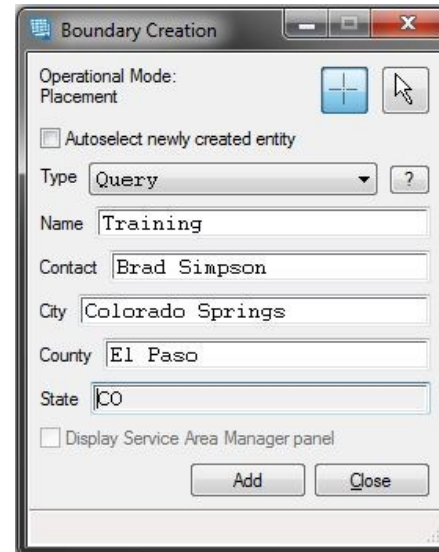
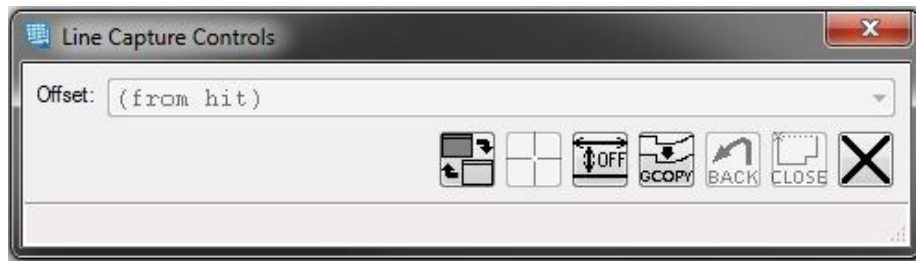


## NOTES

Boundaries in spatialNET can be used to denote political boundaries like counties or municipalities. They can also be used to define specific network areas such as node boundaries, or they can be used to define where specific update work needs to be completed in spatialNET. Boundaries also make finding a group of entities very easy. spatialNET users can choose to display only entities inside a specific boundary, or users can run reports based on boundaries.

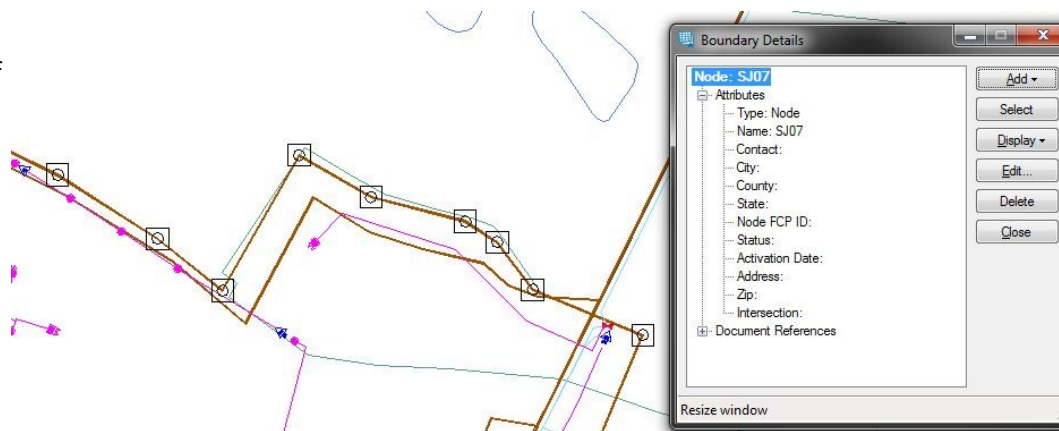
### Adding a Boundary

After clicking on the Add Boundary button, spatialNET will display the Boundary Creation window. From this window, users can update the type, name, contact information, city, county and state attributes for the boundary. Users will also have the option to add the boundary to the Service Area Manager. When drafting the boundary the Line Capture Controls will display.



### Editing a Boundary

Use the Details from the General Toolbar to modify the attributes of the boundary. If the geometry of the boundary needs to be modified, use the grips to relocate the selected vertex. There are other options that will be discussed later in this module.

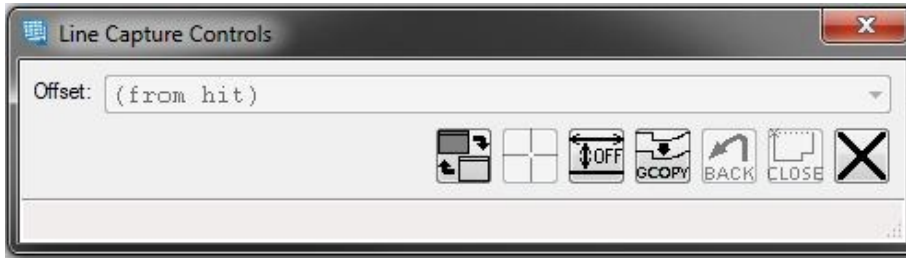


## LINE CAPTURE CONTROLS



## NOTES

When drafting all linear features such as boundaries, cables, and street centerlines the Line Capture Controls window will display. There are several versions of this window depending on the type of entity, but all share the same basic set of controls.



Listed here are the different options for the Line Capture Controls in their default state:



Hide or unhide the entity creation window providing additional view space to draft the entity.



Placement mode. This is the default control allowing users to place vertices of the line on the map.



Draft linear entity based on an offset of another object.



Geometry Copy (GCopy) tool. Select an AutoCAD object to copy the geometry from when drafting the entity.



Provides the users to undo the last placement or addition of the linear feature when active.



Closes polygon like entities such as boundaries automatically when active.



Exit out of the Line Capture Controls window. Operates much like a Cancel command.

**Notes:**

# JOB BOUNDARIES



## NOTES

Job Boundaries are specialized boundaries used for job administration and assignment. spatialNET Administrators can assign work process and tasks via job boundaries. With job boundaries, the administrators can add comments to provide more information for the tasks associated for the job.

Boundary Creation

Operational Mode:  
Placement

Autoselect newly created entity

Type: Job

Name: Order011A

Contact: Brad Simpson

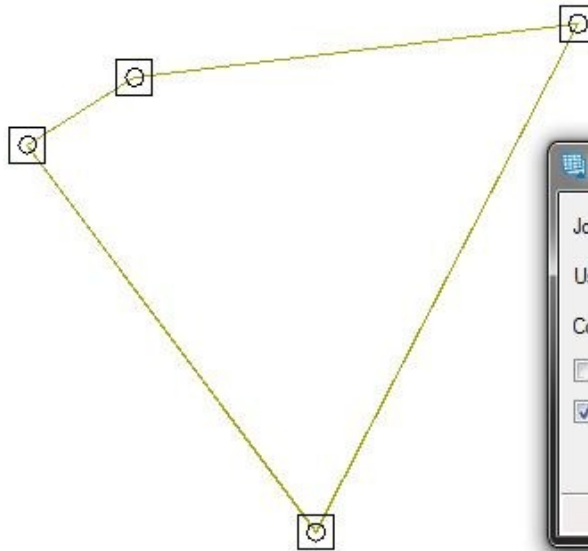
City: Colorado Springs

County: El Paso

State: CO

Display Service Area Manager panel

Add Close



Job Boundary Creation

Job: Brad Training Images (Open)

Username: Administrator

Comments: Add parcels

Auto-delete when job posted or cancelled

Create Default Work Units

Add Close

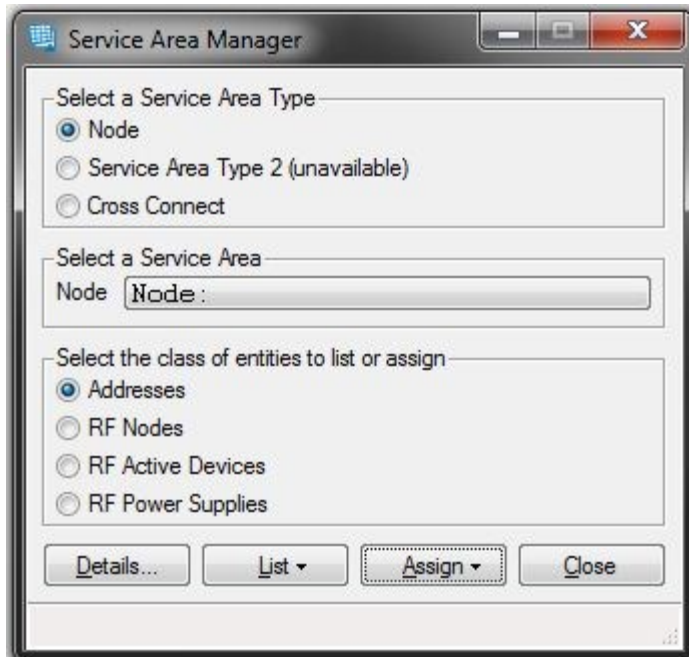
Notes:

## SERVICE AREA MANAGER



## NOTES

Service Area Managers provides the ability to spatialNET users to define what specific addresses and other network devices are associated to a specific part of the distribution network. Typically, these are defined by an optical node boundary, DSLAM for a copper network, or a specific distribution cabinet for FTTx networks. Users then can define a boundary and associate to a service type (for example: billing, service, or a rate center). spatialNET can support up to three service area boundary associations, so a specific address can be associated to a specific rate center, network boundary and dispatch area.



### Areas of Discussion:

- Select a Service Area Type
- Select a Service Area
- Select the Class of Entities to List or Assign
- Details
- List
- Assign
- Close

### Notes:

## LINEAR EDIT MODES



## NOTES

Linear Edit Modes provides spatialNET users the ability for more robust geometry edits of linear features. This includes adding curves and extra vertices into the shape to allow for greater, more detailed changes of the polygon.



### Process Steps:

- 1.
- 2.
- 3.

Typically, the following edit modes are used, but all of them are available to spatialNET users:

- |                         |  |
|-------------------------|--|
| <b>Edit Bulges</b>      | Allows users to add manipulator grips to add a curve to the line.                        |
| <b>Edit Vertices</b>    | Users can add new vertices into the line to change the shape of the line.                |
| <b>Rotate Entity</b>    | The entity rotates around the selected grip.   |
| <b>Translate Entity</b> | When selected, the entity will keep the original shape, but can be relocated on the map. |

### Notes:

# STREET CENTERLINES



# NOTES

spatialNET does not model the full road, but uses street centerlines to display where streets or roads will be at on the map. The types and annotations of the street centerlines are controlled by the dictionary definitions of the centerlines. It is very important for other aspects of spatialNET that the Road Creation window is filled out as completely as possible. When migrating parcels, spatialNET will use this information in creating address and building information.

The screenshot shows the 'Road Creation' dialog box with the following fields and values:

- Operational Mode: Placement
- Autoselect newly created entity:
- Show Labels:  Automatic,  Manual
- Road Type: A4
- Directional Prefix: [ ] Prefix
- Street Name: Training, Street Type: Street
- Directional Suffix: [ ] Suffix
- State: [ ]
- Left: From 100, To 500, City Colorado Springs, Zip 80904, County El Paso
- Right: From 105, To 505, City Colorado Springs, Zip 80904, County El Paso
- Length: 1000
- Create Default Work Units:
- Buttons: Add, Close

This image shows a close-up of the 'Left' and 'Right' address range fields from the Road Creation dialog. The 'Left' side has 'From' 100, 'To' 500, 'City' Colorado Springs, 'Zip' 80904, and 'County' El Paso. The 'Right' side has 'From' 105, 'To' 505, 'City' Colorado Springs, 'Zip' 80904, and 'County' El Paso.

### Areas of Discussion:

- Directionality of drafting
- Length
- Migrated Landbase

### Notes:

## AUTOCAD OFFSETS



## NOTES

There are types that spatialNET users may choose to use AutoCAD functionality to assist with their drafting efforts. Typically, spatialNET users employ parcels to draft street edges. However, placing them accurately and consistently can be problematic. To aid drafters, use the AutoCAD Offset command when wanting to place different entities with these types of specifications.

1. Type "O" or "Offset" in the Command field of AutoCAD.
2. Enter the amount of offset.
3. Select the entity or object.
4. Select the side where to place the offset.
5. Re-select the entity or others and repeat process.

```
More> regenerate_view
More> _
Command: offset
5411023.2233, 5492149.7211, 0.0000
```

### Areas of Discussion:

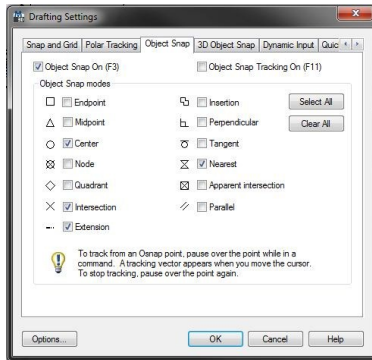
- Changing Layer
- Saving Offsets

### Notes:



Other than offsets, there are other functions inside of AutoCAD that can be applied to drafting.

## AutoCAD Object Snaps

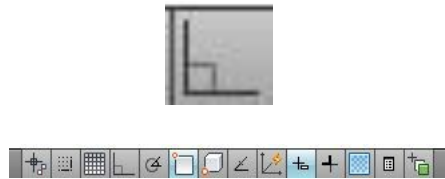


### Areas of Discussion:

- F3 Key
- Endpoint Snaps
- Midpoint Snaps
- Tangent

### Notes:

## Ortho Mode

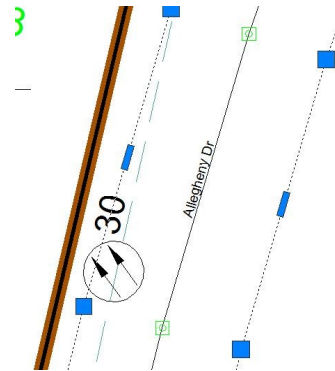


### Areas of Discussion:

- Advantages
- Disadvantages

### Notes:

## CAD Scrapping



### Areas of Discussion:

- Process
- How to Remove

### Notes:

# PARCELS



# NOTES

Depending on the situation, adding parcels will not be a typical day-to-day function for most spatialNET users. If presented with a situation where parcel information needs to be added to the map, there are several items to keep in mind including selecting the parcel type and adding the parcel address information.

Parcel Creation dialog box. Fields include: Operational Mode: Placement (with a plus icon and mouse cursor), Autoselect newly created entity (checkbox), Parcel Type (R1), Parcel Address (with Edit button), Owner Address (with Edit button), Area, Land Use Code (R1), Zoning (Res), Units (1), Stories (2), Parcel Number (201), Migration Status (Not Migrated), Add, and Close buttons.

Parcel Address dialog box. Fields include: Street Number (250), Street Number Suffix, Directional Prefix, Prefix, Street Name (Training), Street Type (Street), Directional Suffix, Suffix, Lot Number (201A), City (Colorado Springs), State (CO), Zip (80904), County (El Paso), and Done button.

Owner Address dialog box. Fields include: Owner Name (Brad Simpson), Owner Address 1 (1205 Mapping Drive), Owner Address 2, Owner City (Colorado Springs), Owner State (CO), Owner Zip (80920), and Done button.

### Areas of Discussion:

- Editing Parcels
- Drafting Parcels
- GCopy Functionality

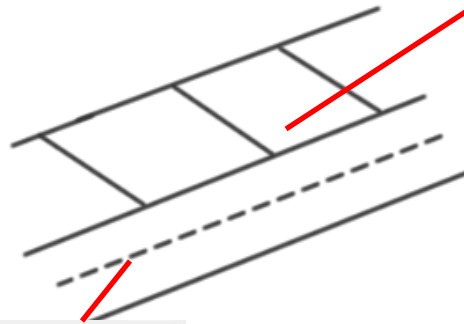
### Notes:

# MIGRATING PARCELS



## NOTES

spatialNET can associate parcels to street centerlines and align the addresses for the parcels accordingly. The information that spatialNET to complete this correctly is based on the follow factors:



Left	Right
From: 100	From: 105
To: 500	To: 505
City: Colorado Springs	City: Colorado Springs
Zip: 80904	Zip: 80904
County: El Paso	County: El Paso

spatialNET is verifying if this information matches. If it does, the migration will succeed.

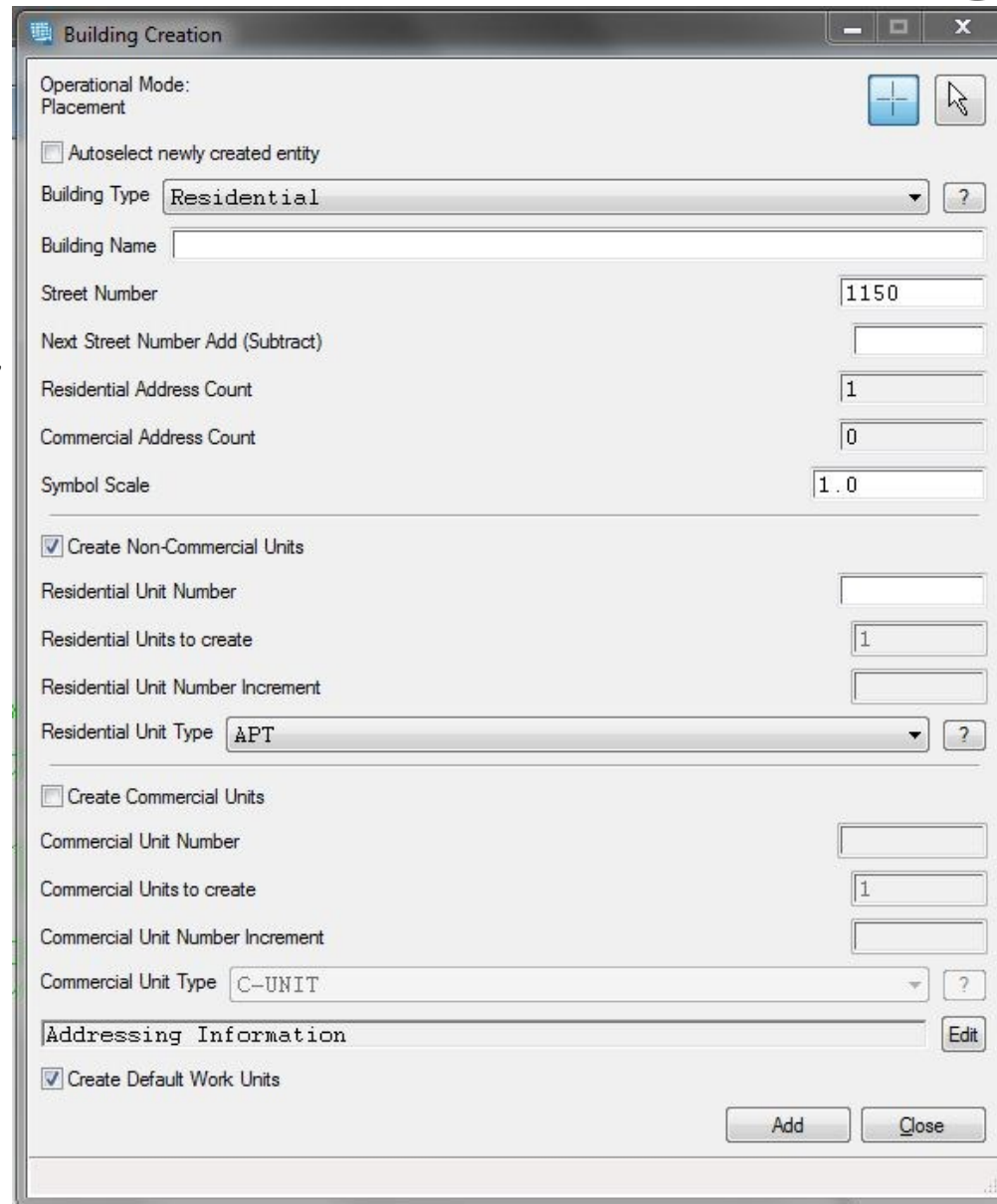
If it does not migrate correctly, update the street centerline information and the parcel address. Keep in mind left and right side of the centerline is completely dependent on how the centerline was drafted. When the information is consistent for both the street centerline and for the parcel address, complete the migration by clicking the Migrate Parcel icon. Select the building type. Once the migration completes, spatialNET will display result of the migration.

## BUILDINGS AND ADDRESSES

Building locations and addresses can be added to the map independently of any parcel information. Depending on the drafting requirements, users can place addresses and associate drops to them without drafting out parcels of land. In addition, a parcel may have two or more addresses associated to it, and users can show this by placing an additional address or building on that lot of land. Before placing an address or a building, ensure nothing is selected.

### Areas of Discussion:

- Building Type
- Next Street Number
- Address Count
- Addressing Information



Building Creation

Operational Mode: Placement

Autoselect newly created entity

Building Type: Residential

Building Name:

Street Number: 1150

Next Street Number Add (Subtract):

Residential Address Count: 1

Commercial Address Count: 0

Symbol Scale: 1.0

Create Non-Commercial Units

Residential Unit Number:

Residential Units to create: 1

Residential Unit Number Increment:

Residential Unit Type: APT

Create Commercial Units

Commercial Unit Number:

Commercial Units to create: 1

Commercial Unit Number Increment:

Commercial Unit Type: C-UNIT

Addressing Information: Edit

Create Default Work Units

Add Close



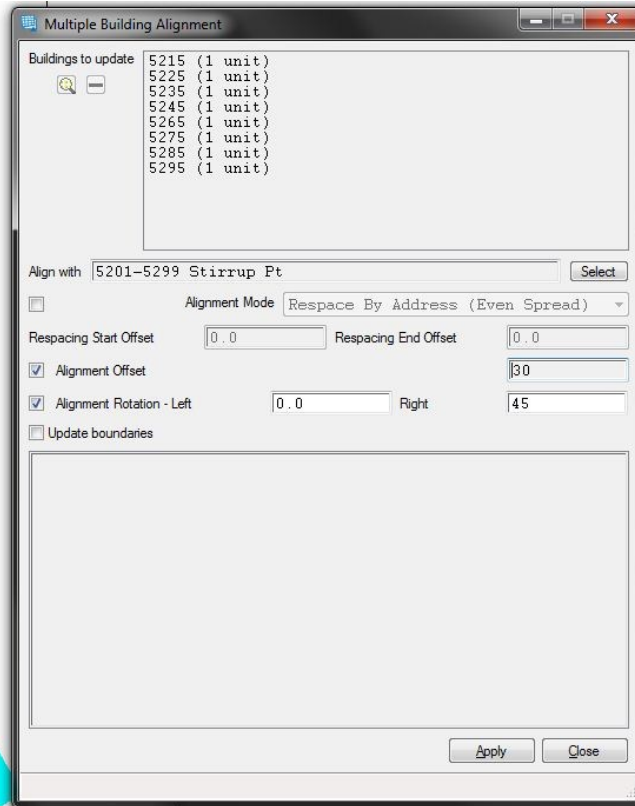
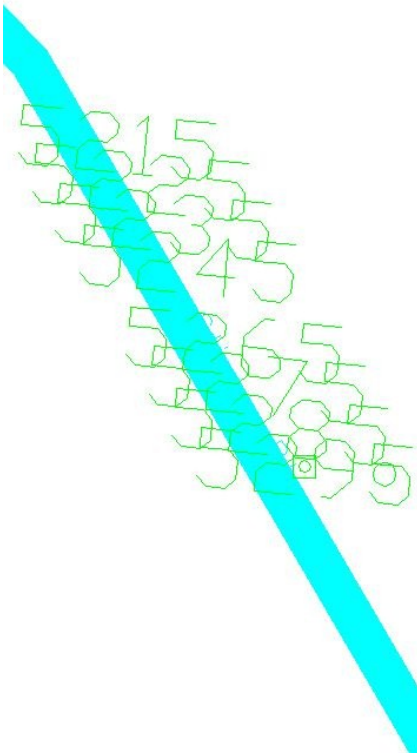
## NOTES

# ALIGNING ADDRESSES



# NOTES

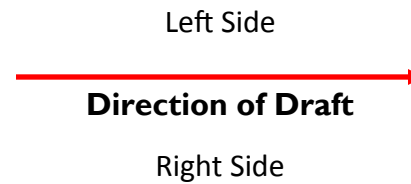
spatialNET users can manually adjust addresses to align them to the street centerlines, but spatialNET provides a tool to assist users in completing alignment for multiple addresses for a selected street centerline.



### Areas of Discussion:

- Details
- Removing Addresses
- Alignment Modes
- Alignment Offset
- Alignment Rotation

Keep in mind that the Alignment tool bases its modifications upon how the centerline was drafted:



**Notes:**

# MDU



## NOTES

Multi-Dwelling Units (MDUs) can be modeled in spatialNET. Depending on the drafting standards, spatialNET supports commercial, residential, and mixed use MDUs. Using the Add Address tool, select one of the MDUs listed in the Building Type list. When adding the MDU, select the appropriate settings for residential and commercial units.

### Areas of Discussion:

- Building Type
- Unit Number
- Units to Create
- Unit Number Increment
- Unit Type

The screenshot shows a software interface with two main sections: 'Create Non-Commercial Units' and 'Create Commercial Units'. Both sections have checkboxes that are checked. The 'Residential Unit Type' dropdown is set to 'APT' and has a question mark icon next to it. The 'Commercial Unit Type' dropdown is set to 'C-UNIT' and also has a question mark icon next to it. Text input fields are provided for unit numbers, units to create, and unit number increments for both residential and commercial units.

Section	Option	Value
Create Non-Commercial Units	Residential Unit Number	100
	Residential Units to create	10
	Residential Unit Number Increment	10
	Residential Unit Type	APT
Create Commercial Units	Commercial Unit Number	1
	Commercial Units to create	5
	Commercial Unit Number Increment	1
	Commercial Unit Type	C-UNIT

Depending on your dictionary and drafting standards, users can select or de-select non-commercial units and commercial units to create residential, commercial or mixed use MDUs. Keep in mind that users can access information concerning the unit type directly by clicking on the question mark next to the selection.

### Notes:




# MDU

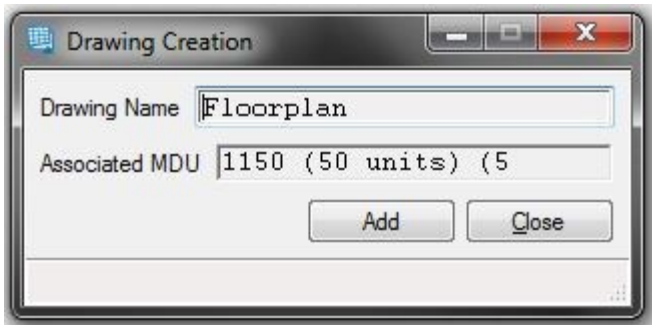


## NOTES

spatialNET also supports MDU views to allow for floor plans and riser/elevation views to associated to the building.



Function	Use
 Add MDU Drawing	Creates a MDU drawing for the entity allowing users to add the actual drawing. This is the first step in adding MDU drawing.
 Add MDU Drawing DMark	Creates a logical network connection point between the outside view and the MDU drawing view.
 Display MDU Drawing	Opens the MDU drawing in a new view to allow users to draft or import floor plan or other drawing information.



### Add MDU Drawing

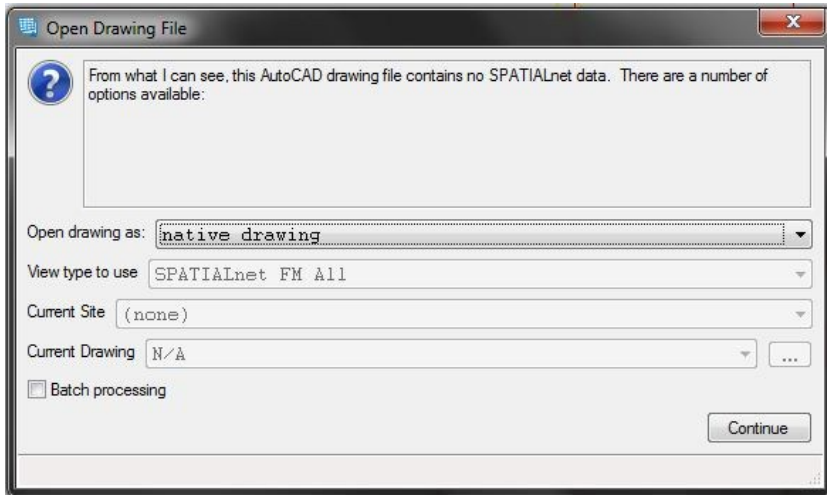
spatialNET will prompt users for a drawing name when creating the MDU drawing. Verify that the drawing is for the correct the MDU by reviewing the Associated MDU field. Once created, users can view the drawing.

#### Notes:



### Displaying and Adding DMarks in MDU Drawing

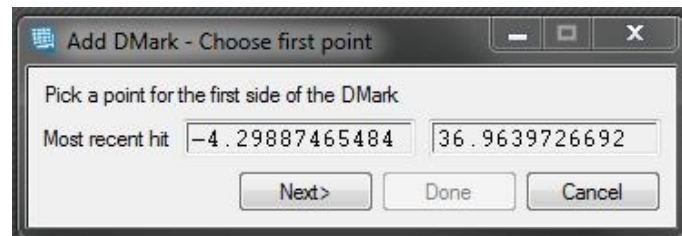
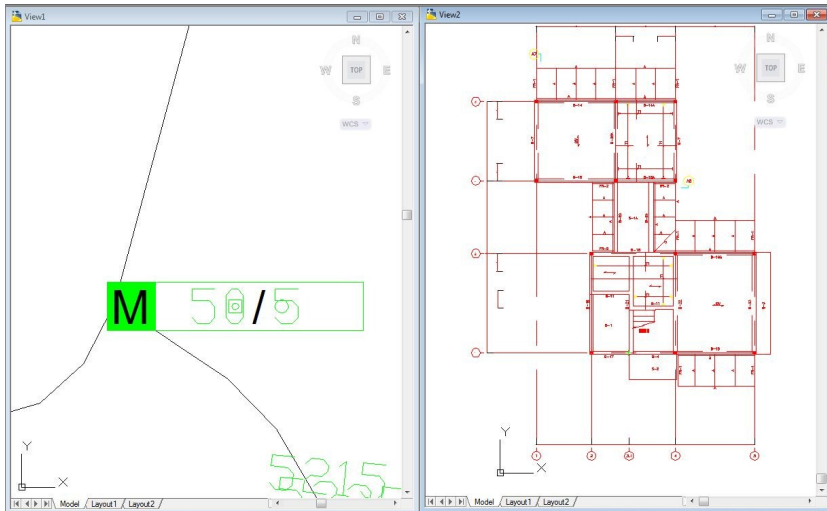
Once created, spatialNET users can display and draft in the MDU drawing view. When opening an AutoCAD .dwg file, spatialNET will prompt the user to add the drawing as a native AutoCAD object or as a spatialNET entity.



As a spatialNET entity, the AutoCAD drawing can be associated to a site. With the MDU drawing open, users can then add their floor plan by using a copy/paste set of commands.

In the MDU drawing, users will be able to add network connections and entities like fiber, cooper and RF. In addition, users can also draft support structures into the MDU drawing to present the route that the network takes through the MDU.

It is important that Display AutoCAD Entities is set in the view settings. Once added, users can add the DMarks for the outside map view and the MDU drawing.



## LEARNING MOMENTS

What are your top three learning moments from this discussion? Why?

Why?

Why?

Why?

Which topics in this training do you think will be the most challenging to apply?

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What will you do differently as a result of this training?

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