



MTA
Network Addon Mod
Mass Transit Authority



Mass Transit Authority

User's Manual

For NAM Version 31.2

Contents

Contents	1
1. Preface	3
1.1. Overview	3
1.2. Disclaimer	3
1.3. Installation	3
1.4. Changelog	4
1.4.1. <i>Changes in NAM 31.2</i>	4
1.4.2. <i>Changes in NAM 31.1</i>	4
2. Maxis Transit Stations and Lots	5
2.1. Transit Stations	5
2.2. Maxis Airports	6
3. Custom Transit Stations	7
3.1. 3ddz's HSRP Transit Hub.....	7
3.2. ardecila's CTA Stations	8
3.3. Brenda_Xne's Stations.....	9
3.4. E-N's (BriPizza) Elevated Road Bus Stop and Subway Station	10
3.5. E-N's (BriPizza) Multi-Purpose Stations	11
3.6. Moonlight's Bullet Train Station.....	13
3.7. morifari and SFBT's Victorian Stations	13
3.8. morifari's Elevated Rail Stations	15
3.9. RaphaelNinja's Ninja Boulevard Stations	16
3.10. SFBT Tram Stations and Subway-Tram Transition	17
3.11. Xyloxadoria's High Speed Rail Station.....	19
3.12. Xyloxadoria's Diagonal Overhanging Stations	20
3.13. Xyloxadoria's Double Height Stations.....	22
3.14. Xyloxadoria's Modern Overhanging Stations	23
3.15. Z's Subway to Underground Rail Connectors.....	25
4. Station Setup	27
4.1. General Notes for placing down stations	27
4.2. Setup for Most Stations	27
4.2.1. <i>Plop and Connect</i>	27
4.2.2. <i>Gap, Plop, and Activate</i>	28
4.2.3. <i>Just Plop It.</i>	30
4.3. GLR Station Setup.....	30
4.3.1. <i>Setup of Most GLR Stations</i>	30
4.3.2. <i>Setup of the T-RAM Stations</i>	32
4.3.3. <i>Setup of the Diagonal Tram-in-Avenue Station</i>	32
4.4. HSR Station Setup	34
4.5. Double Height Station Setup	34
4.6. CTA Stations Setup	35
4.7. Multi-Purpose Station Setup	36
4.7.1. <i>Permissible Networks</i>	36

4.7.2.	<i>Orienting the Station</i>	37
4.7.3.	<i>Road Access</i>	38
4.7.4.	<i>Alternate Forms of Road Access</i>	40
4.7.5.	<i>Use with Dual-Networking Pieces</i>	43
4.8.	<i>Overhanging Stations Setup</i>	44
4.8.1.	<i>Setup of the Modern Elevated Rail and Modern Monorail Stations</i>	44
4.8.2.	<i>Setup of the Viaduct Rail and Elevated Rail over Road Station</i>	46
4.8.3.	<i>Alternate Setups for the Modern Overhanging Stations</i>	49
4.9.	<i>Diagonal Stations Setup</i>	49
4.9.1.	<i>Working with the Overhang</i>	49
4.9.2.	<i>Enclosing a Diagonal Station along All Four Sides</i>	50
4.9.3.	<i>Setting up a Diagonal Viaduct Rail Station</i>	51
4.10.	<i>SURCs Setup</i>	52
5.	Appendix: A Note about TSECs and Station Capacities	56
5.1.	<i>Transit Switch Entry Costs</i>	56
5.2.	<i>Capacity</i>	57
5.2.1.	<i>General Capacity Value</i>	57
5.2.2.	<i>Stations with One Travel Type</i>	57
5.2.3.	<i>Stations with Multiple Travel Types</i>	58
5.3.	<i>Further Reading</i>	58
6.	Frequently Asked Questions	59
6.1.	<i>General Questions</i>	59
6.1.1.	<i>OMG, STATIONS??!</i>	59
6.1.2.	<i>I already have station X, but the NAM also contains station X. What should I do?</i>	59
6.1.3.	<i>Why bus usage and a Subway connection with these stations?</i>	59
6.2.	<i>Questions concerning Maxis and Third-Party Lots</i>	59
6.2.1.	<i>What was wrong with the Maxis Stations in the first place?</i>	59
6.2.2.	<i>What about other third-party stations? Would those even work?</i>	59
6.2.3.	<i>Would I be able to fix any other station to be NAM-compatible?</i>	59
6.3.	<i>Questions concerning Main Implementation</i>	60
6.3.1.	<i>Why is the capacity increase mandatory?</i>	60
6.3.2.	<i>Why are the station capacities so high in the first place?</i>	60
6.3.3.	<i>There's a particular station I want to have added into the NAM. Can it be done?</i>	60
7.	Credits	61
7.1.	<i>Main Implementation, Documentation, and Testing</i>	61
7.2.	<i>Original Station Creators</i>	61

1. Preface

1.1. Overview

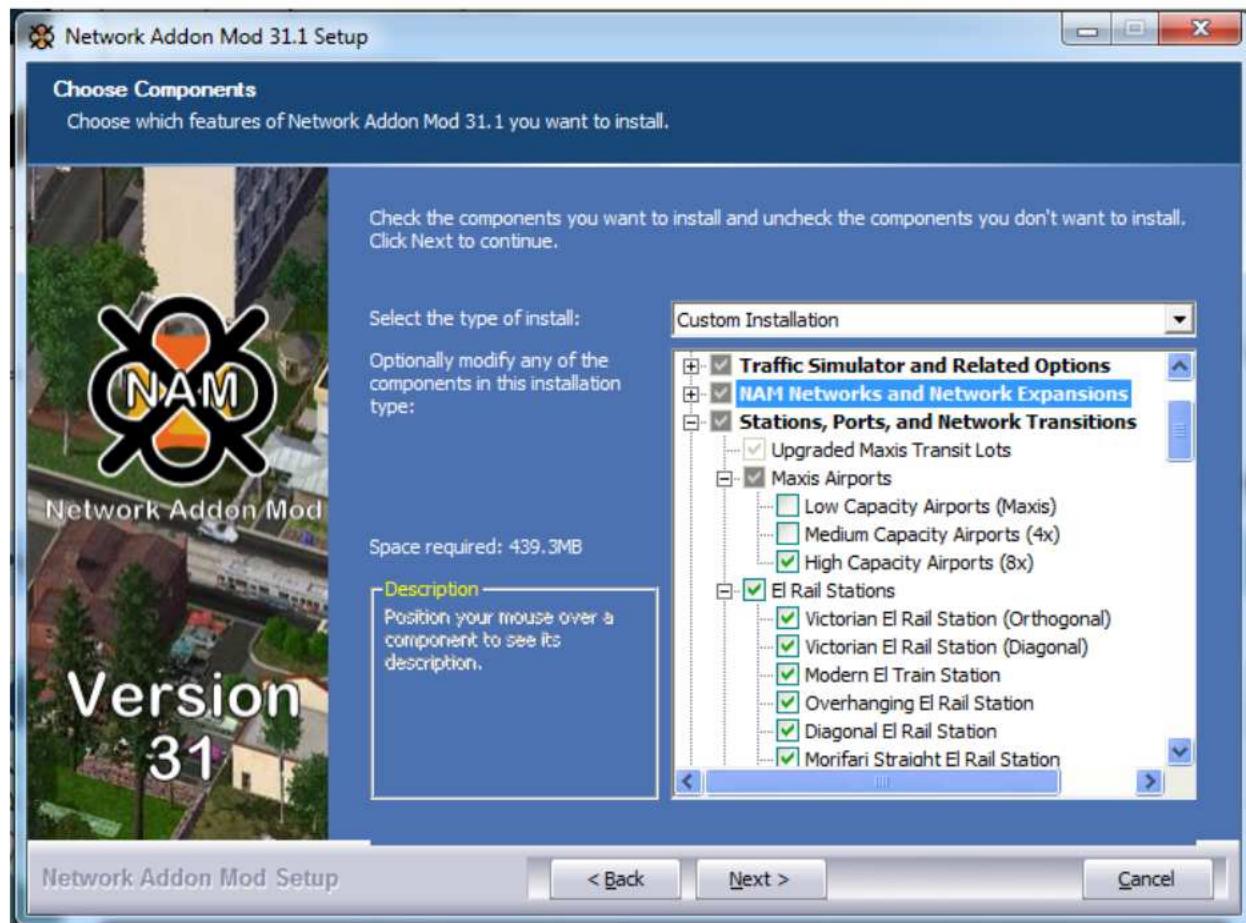
As an addition for Network Addon Mod Version 31, a set of specially-selected transit stations have been added into the NAM package itself. These stations, along with the game's own default stations, have been modified to better reflect the ideal capacities these stations should have. In short, all of these stations will have a capacity that may be higher than their original value, and in turn, should provide a better effect.

1.2. Disclaimer

All custom transit stations have been added into the NAM with consent of the original makers. In each section that follows, the creators of each custom station will be named.

1.3. Installation

All stations can be located under “Stations, Ports, and Network Transitions.” Simply select the ones you wish to install.



NOTE: Certain stations may be greyed out and un-selectable, unless another NAM plugin is also selected.

1.4. Changelog

1.4.1. Changes in NAM 31.2

An appendix has been added to the Manual for any third-party modders wishing to create NAM-friendly stations.

Two new stations added: E-N's Multi-Purpose Stations

1.4.2. Changes in NAM 31.1

Various stations have been re-tested and modified to either fix various bugs or to improve performance.

- A NOTE FOR PC USERS: Any stations plopped in your cities from NAM 31 will automatically be upgraded when you install NAM 31.1.
- A NOTE FOR MAC USERS: If you have placed down any of the original Maxis stations, you will have to bulldoze them and replop them once you have installed NAM 31.1.

Various new stations are now included, which have also been tested and scrutinised.

2. Maxis Transit Stations and Lots

The following section briefly outlines the default Transit Stations that come with Simcity 4 Deluxe or Rush Hour. The hotkeys listed are the default hotkeys.

Except for modifications to the transit-enabled stations (stations in which you can drag a network directly through the lot), the only value changed is capacity. This change is mandatory with the NAM.

2.1. Transit Stations



Station	New Capacity	Hotkey
Bus Stop	17000	CTRL+ SHIFT+ R
Passenger Train Station	24000	CTRL+ SHIFT+ T
Freight Train Station	15000	CTRL+ ALT+ T
Elevated Rail Station	30000	ALT+ T
Monorail Station	45000	None
Subway Station	24000	ALT+ SHIFT+ T

Subway-Elevated Rail Transition	62000	None
---------------------------------	-------	------

Notes:

The Subway-Elevated Rail Transition is regarded as a transit-enabled lot, even though its function is to transition between two different networks.

Out of every Transit Lot, only the Passenger Train Station has parking.

2.2. Maxis Airports

Also included with the NAM is an upgrade to the Maxis Airports. These boost the overall capacity and the overall demand for jobs created, depending on which setting is chosen:

Low Capacity Airports (Maxis, values are unchanged)

Medium Capacity Airports (Values are 4 times greater)

High Capacity Airports (Values are 8 times greater)



3. Custom Transit Stations

The following sections outline the appearances, stats, and creator of each transit station. Instructions on how to set up these stations are found under Station Setup.

Many of the stations shown will appear identical since they share a common Station model, and wherever applicable, a witty comment or historical backstory from the original descriptions will accompany the following descriptions.

3.1. 3ddz's HSRP Transit Hub

Original creator: 3ddz, refurbished by Andreas

Requires: High Speed Rail (Recommended)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
HSRP Transit Hub	Misc. Transportation	Rail, Elevated Rail, Elevated	6x8	150000	Rail, Elevated Rail, Monorail	Bus Stop, Subway, and Freight Access

		HSR* (2x)			(2x)	
--	--	-----------	--	--	------	--

* Denotes a NAM plugin (network) that has to be installed to be used.

3.2. ardecila's CTA Stations

Original creator: ardecila

Requires: Elevated Rail over Road

"The Madison-Wells Station was designed by AM Hedley in 1896 for the Northwestern Elevated Railroad, and was opened on October 3rd, 1897. Its neoclassical construction put a design accent on the otherwise noisy elevated trains of Chicago. It was demolished on January 30th, 1994." (Paraphrased from a German transcript on SimCityKurier),



"CTA's Ashland/Lake station was built along with the rest of the Lake Street Elevated in 1892. It was designed by an unknown architect in the Queen Anne style, with elements of Victorian Gothic."

"Today, there are only two of these beautiful designs remaining. The stationhouses at Ashland remain intact, but the platforms have been extended and shortened many times over the station's century-long history."



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Madison-Wells Station	Misc. Transportation	Elevated Rail over Road, Road	1x3*	72000	Elevated Rail	Bus Stop and Subway
Ashland Station	Misc. Transportation	Elevated Rail over Road, Road	1x3*	72000	Elevated Rail	Bus Stop and Subway

* Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

The middle tile requires a + crossing to be made using Road.

The Madison-Wells station is 9x1 if you include the overhangs, and the Ashland station itself is 9x5 if you include the overhangs.

3.3. Brenda_Xne's Stations

Original creator: Brenda_Xne

Requires: Bullet Train Mod (Optional, for Monorail Station), Ground Light Rail (For GLR Station)

"Yes you can see the trains go by inside the station!!" (Description for MEBSP Station)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Modern GLR Station	Rails and Depots	Ground Light Rail*	1x4	35000	Elevated Rail	Bus Stop
MEBSP Station	Rails and Depots	Elevated Rail	1x6	69000	Elevated Rail	Bus Stop, Subway, and Parking
Modern Monorail/ BTM Station	Rails and Depots	Monorail	1x3	60000	Monorail	Bus Stop and Subway

* Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

The GLR station requires the use of Draggable GLR. This cannot be used with the GLR Puzzle Pieces.

If you have the Bullet Train Mod installed, the Monorail Station can also be used for the BTM. The Monorail tracks in the station will automatically be replaced with BTM tracks.

3.4. E-N's (BriPizza) Elevated Road Bus Stop and Subway Station

Original creator: E-N (site: BriPizza)

Requires: Viaduct Road (L2)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Elevated Road Bus Stop and Subway Station	Misc. Transportation	Viaduct Rail (On side)	1x2	30000	N/A	N/A

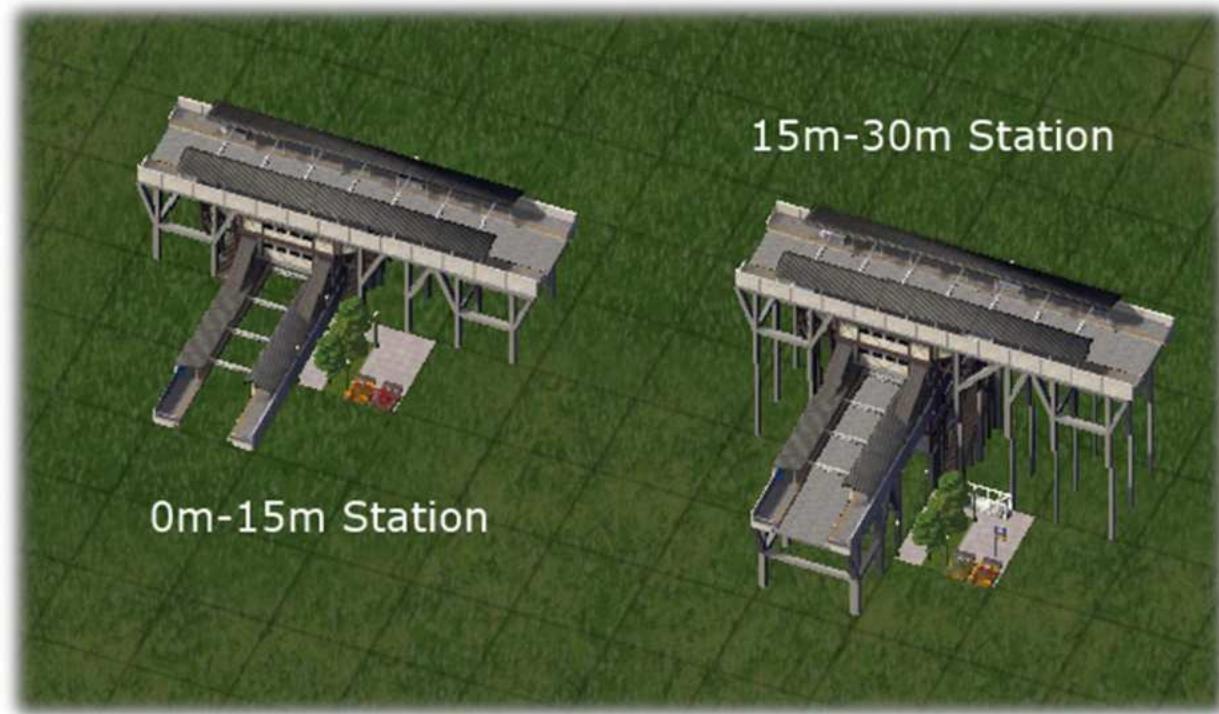
Notes:

This is a station meant to be placed alongside an Elevated (Viaduct) Road. The overhanging side is supposed to "sink" into the Elevated Road.

3.5. E-N's (BriPizza) Multi-Purpose Stations

Original creator: E-N (BriPizza)

Requires: Any 0m network (for 0m-15m station), any 15m network (for both stations), and any 30m network (for 15m-30m station)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
0m-15m Multi-Purpose Station	Miscellaneous Transportation	Any 0m network and any 15m network	1x1*	75000	N/A	Bus Stop and Subway
15m-30m Multi-Purpose Station	Miscellaneous Transportation	Any 15m network and any 30m (double-height) network**	1x1*	75000	N/A	Bus Stop and Subway

* Denotes a station with an additional overhang.

** Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

This station is 4x4 if you include the overhangs.

Both stations will also work if you are using the Bullet Train Mod, the El-Rail Alternate Implementation, or both.

The networks that can be used here can vary; see Multi-Purpose Station Setup for more information.

3.6. Moonlight's Bullet Train Station

Original creator: Moonlight

Requires: Bullet Train Mod



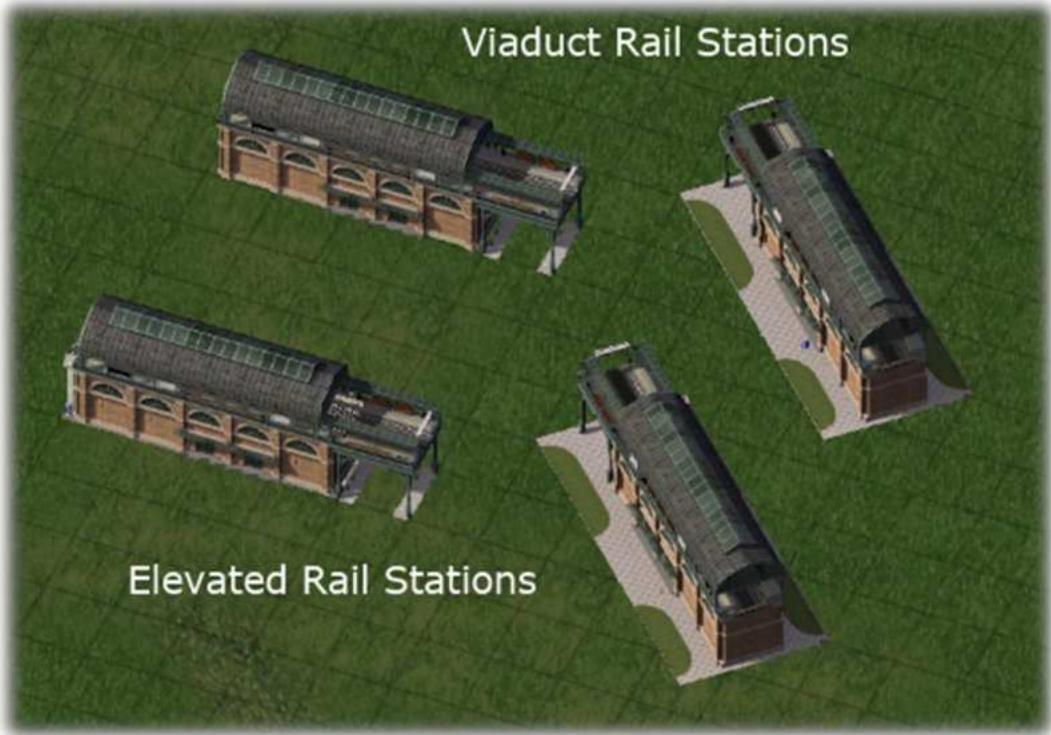
Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Japanese Bullet Train Station	Rails and Depots	Monorail (BTM*)	1x4	65000	Monorail	Bus Stop and Subway

* Denotes a NAM plugin (network) that has to be installed to be used.

3.7. morifari and SFBT's Victorian Stations

Original creator: morifari (Victorian Station model, El-Rail Stations), ArkenbergeJoe (Viaduct Rail Stations)

Requires: Viaduct Rail (for Viaduct Rail stations)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Viaduct Rail Station	Rails and Depots	Viaduct Rail**	1x4*	48000	Rail	Bus Stop and Subway
Diagonal Viaduct Rail Station	Rails and Depots	Viaduct Rail**	1x2*	48000	Rail	Bus Stop and Subway
Elevated Rail Station	Miscellaneous Transportation	Elevated Rail	1x4*	48000	Elevated Rail	Bus Stop and Subway
Diagonal Elevated Rail Station	Miscellaneous Transportation	Elevated Rail	1x2*	48000	Elevated Rail	Bus Stop and Subway

* Denotes a station with an additional overhang.

Notes:

The overhang on the Orthogonal stations allows for Road (or any network) to be dragged underneath. This is optional.

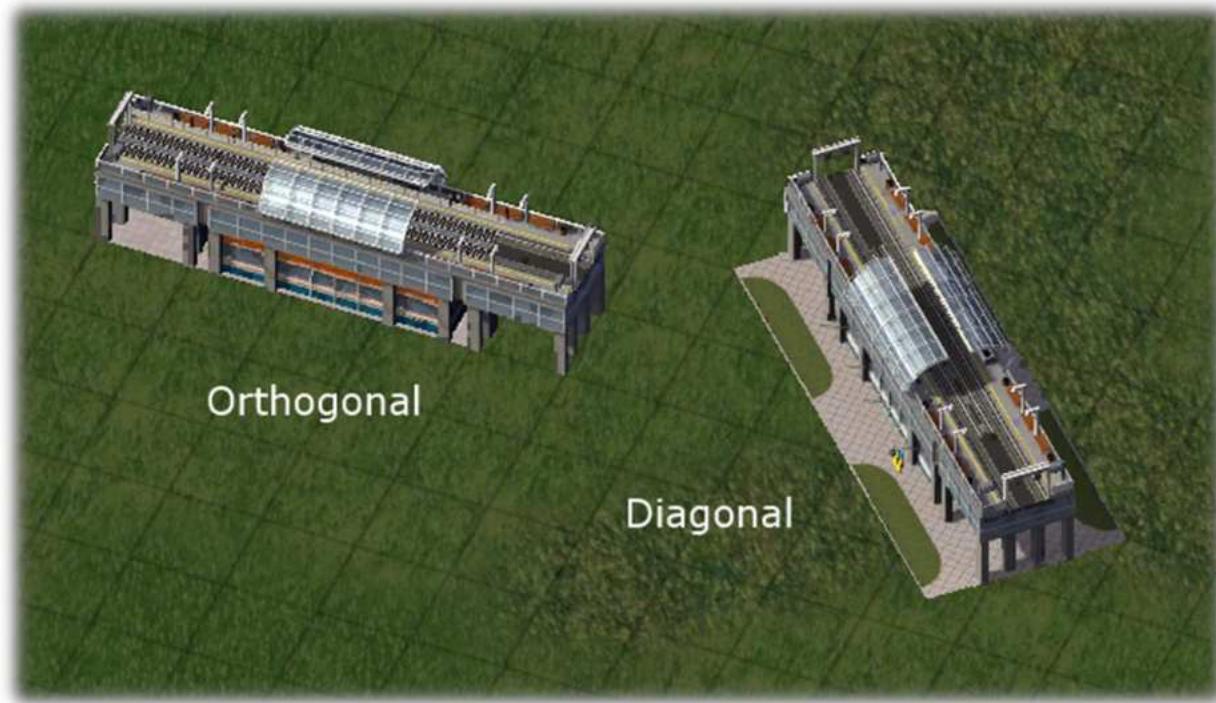
The Orthogonal stations are 1x5 if you include the overhang. The Diagonal stations are roughly 5x6 if you include the overhang.

Further instructions for the Diagonal stations can be found under Diagonal Stations Setup.

3.8. morifari's Elevated Rail Stations

Original creator: morifari

Requires: N/A



There are also Viaduct Rail versions of these stations.

Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Elevated Rail Station, Straight	Misc. Transportation	Elevated Rail	1x4*	50000	Elevated Rail	Bus Stop and Subway
Elevated Rail Station,	Misc. Transportation	Elevated Rail	1x2*	50000	Elevated Rail	Bus Stop and Subway

Diagonal						
Viaduct Rail Station, Straight	Rails and Depots	Viaduct Rail**	1x4*	50000	Rail	Bus Stop and Subway
Viaduct Rail Station, Diagonal	Rails and Depots	Viaduct Rail**	1x2*	50000	Rail	Bus Stop and Subway

* Denotes a station with an additional overhang.

** Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

The overhang on the Orthogonal station (rightside portion) allows for Road (or any network) to be dragged underneath. This is optional.

The Orthogonal station is 1x5 if you include the overhang. The Diagonal station is roughly 5x6 if you include the overhang.

Further instructions for the Diagonal stations can be found under Diagonal Stations Setup.

3.9. RaphaelNinja's Ninja Boulevard Stations

Original creator: RaphaelNinja

Requires: N/A

"A Penta-functional Transit Building (is there such a thing? there is now!) that supports Parking, Buses, Subways, Trains and Freight, all dependant on what you connect to the building."



Notes:

As the description implies, this is a combination Bus-Subway and Passenger-Freight Train station that comes with underground parking.

Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Ninja Boulevard Station	Misc. Transportation	N/A	1x4	50000	N/A	Bus Stop, Subway, Freight Access, and Parking
Ninja Boulevard Kiosk	Misc. Transportation	N/A	1x1	32000	N/A	Bus Stop, Subway, Freight Access, and Parking

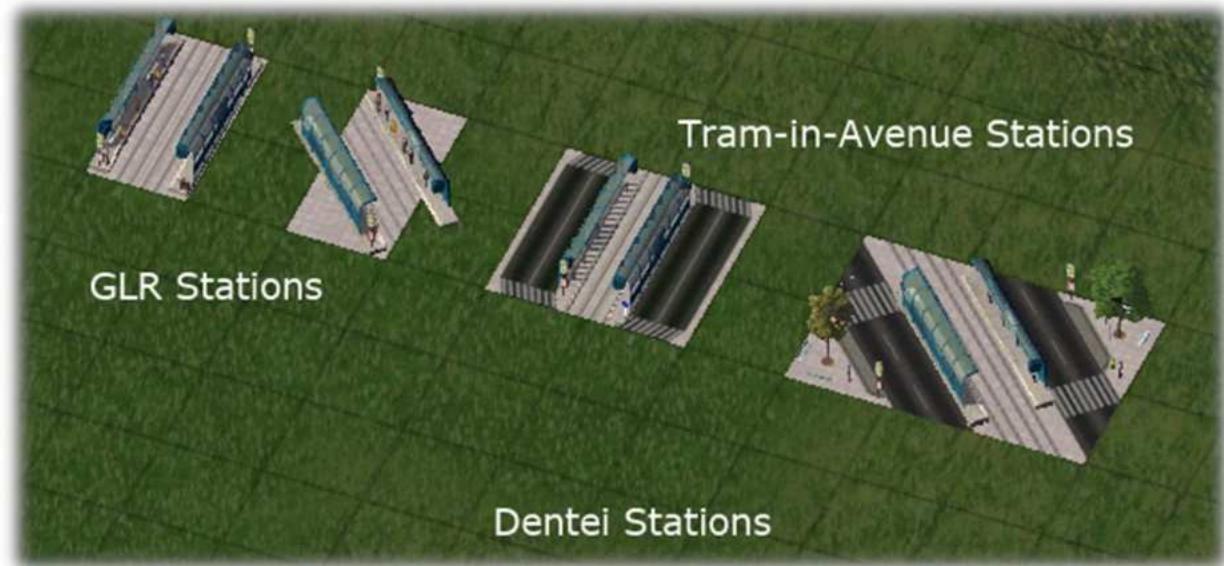
3.10. SFBT Tram Stations and Subway-Tram Transition

Original creator: Chrisim (All stations), NOB (Dentei Station model)

Requires: Ground Light Rail (GLR), Tram-Road Addon Mod (T-RAM)

"The diagonal tram-avenue station is probably the first of its kind."





Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Tram-in-Road Station	Misc. Transportation	Tram-in-Road**	1x2*	24000	One-way Road	Bus Stop
Tram-on-Street Station	Misc. Transportation	Tram-on-Street**	1x1	14000	One-way Road	Bus Stop
GLR Station	Misc. Transportation	GLR**	1x2	48000	Elevated Rail	N/A
Diagonal GLR	Misc. Transportation	GLR**	1x2*	48000	Elevated Rail	N/A

Station						
Tram-in-Avenue Station	Misc. Transportation	Tram-in-Avenue**	2x2	48000	One-way Road	Bus Stop
Diagonal Tram-in-Avenue Station	Misc. Transportation	Tram-in-Avenue**	2x3	74000	One-way Road	Bus Stop
Subway-Tram Transition	Misc. Transportation	GLR**, Subway	1x3	74000	Elevated Rail	N/A

* Denotes a station with an additional overhang.

** Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

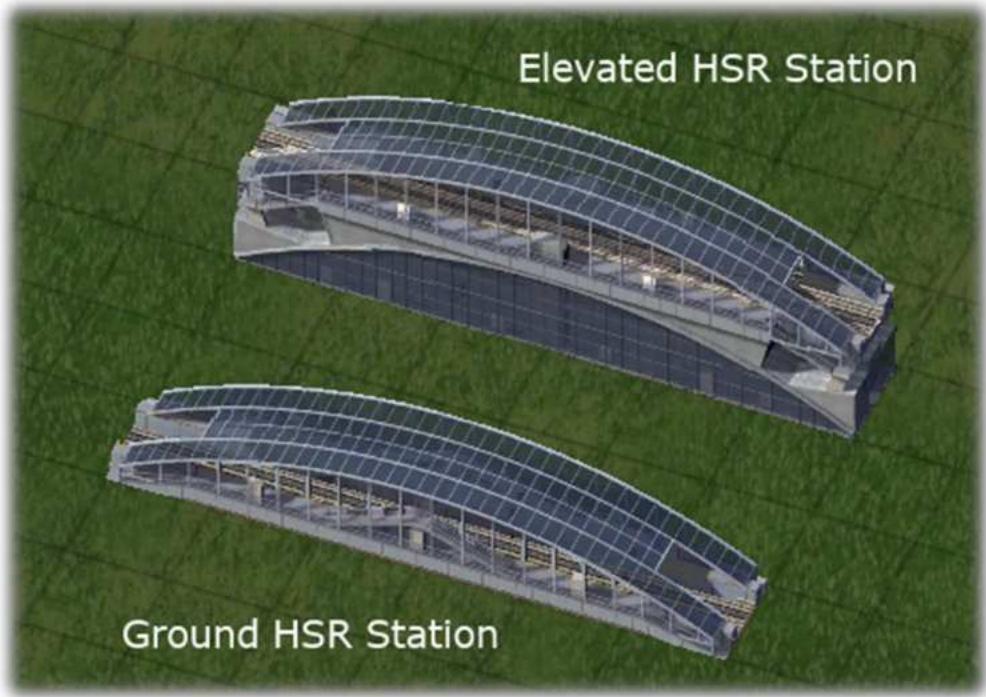
The GLR stations and GLR-Subway transition require the use of Draggable GLR. These cannot be used with the GLR Puzzle Pieces.

Because the Diagonal Tram-in-Avenue station is really the first of its kind, instructions for setting it up can be found under T-RAM Station Setup.

3.11. Xyloxadoria's High Speed Rail Station

Original creator: Xyloxadoria

Requires: High Speed Rail Plugin (HSRP)



A Heavy Rail version of the Ground HSR Station is also included.

Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Ground High Speed Rail Station	Rails and Depots	Ground HSR*	1x6	78000	Monorail	Bus Stop
Elevated High Speed Rail Station	Rails and Depots	Elevated HSR*	1x6	62000	Elevated Rail	Bus Stop and Subway
Heavy Rail Station	Rails and Depots	Rail	1x6	42000	Rail	Bus Stop

* Denotes a NAM plugin (network) that has to be installed to be used.

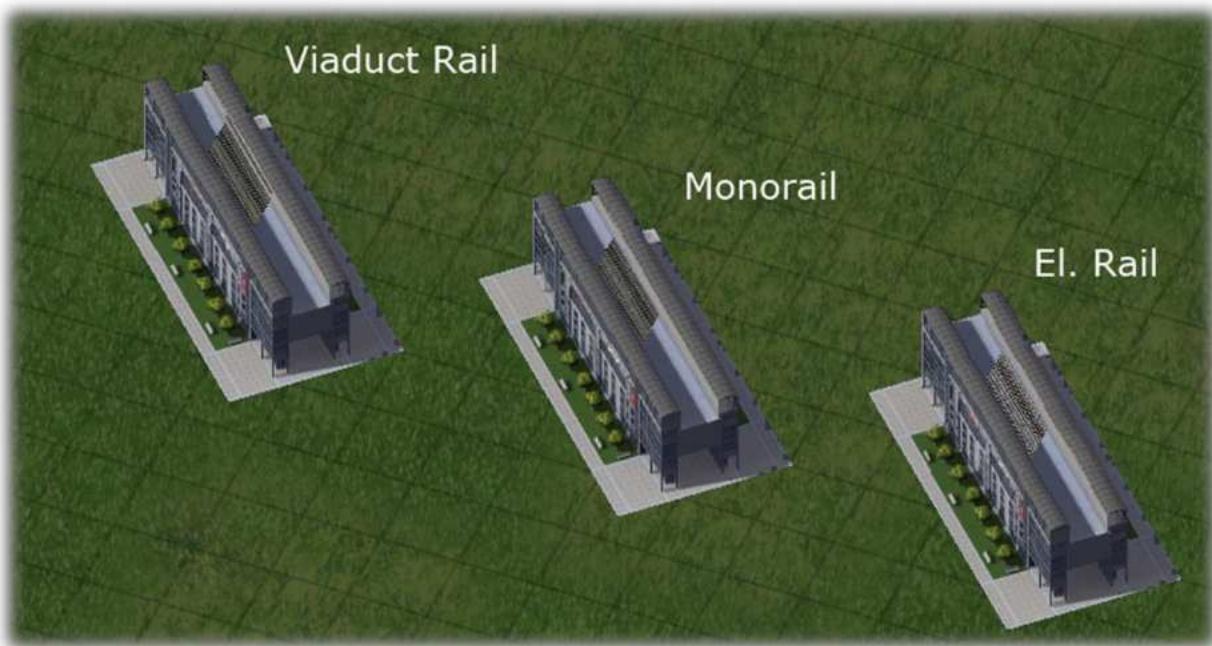
Notes:

A Heavy Rail version of the Ground HSR station is also included.

3.12. Xyloxadoria's Diagonal Overhanging Stations

Original creator: Xyloxadoria

Requires: Viaduct Rail (for Viaduct Rail station), High Speed Rail Project (for HSR station)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Viaduct	Rails and	Viaduct	1x2*	48000	Rail	Bus Stop

Rail Station	Depots	Rail**				and Subway
Monorail Station	Rails and Depots	Monorail	1x2*	62000	Monorail	Bus Stop and Subway
Elevated Rail Station	Miscellaneous Transportation	Elevated Rail	1x2*	48000	Elevated Rail	Bus Stop and Subway
HSR Station	Rails and Depots	HSR*	1x2*	62000	Monorail	Bus Stop and Subway

* Denotes a station with an additional overhang.

** Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

If you have the Bullet Train Mod installed, the Monorail Station can also be used for the BTM. The Monorail tracks in the station will automatically be replaced with BTM tracks.

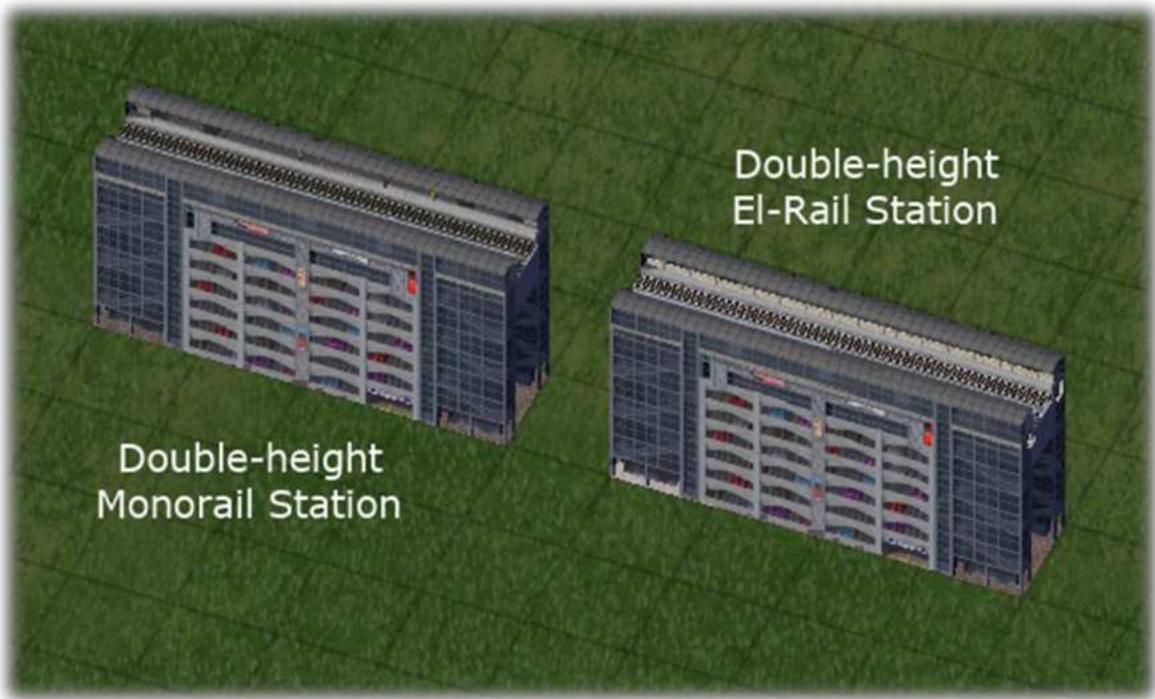
The Viaduct Rail station was created off of the original Diagonal stations.
Further instructions can be found under Diagonal Stations Setup.

3.13. Xyloxadoria's Double Height Stations

Original creator: Xyloxadoria

Requires: Double-height Monorail, Double-height Elevated Rail

"Enjoy the station, but I would suggest taking the elevator. Unless you like climbing 8 stories worth of stairs."



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Double-height Monorail Station	Rails and Depots	Double-height (L4) Monorail*	1x4	78000	Monorail	Bus Stop and Subway
Double-height El-Rail Station	Misc. Transportation	Double-height (L4) Elevated Rail*	1x4	62000	Elevated Rail	Bus Stop and Subway

* Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

If you have the Bullet Train Mod installed, the Monorail Station can also be used for the BTM. The Monorail tracks in the station will automatically be replaced with BTM tracks.

3.14. Xyloxadoria's Modern Overhanging Stations

Original creator: Xyloxadoria

Requires: Viaduct Rail (for Viaduct Rail station), El-Rail over Road (for El-Rail over Road station)

"Don't have much space in your city? Well this might be a solution for you."



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
Viaduct Rail Station	Rails and Depots	Viaduct Rail**	1x1*	48000	Rail	Bus Stop and Subway
Monorail Station	Rails and Depots	Monorail	1x1*	64000	Monorail	Bus Stop and Subway
Elevated Rail Station	Misc. Transportation	Elevated Rail	1x1*	48000	Elevated Rail	Bus Stop and Subway
Elevated Rail over Road Station	Misc. Transportation	Elevated Rail over Road**	1x1*	48000	Road	Bus Stop and Subway
Viaduct Rail	Rails and	Viaduct	1x1	48000	Rail	Subway

(Other Side)	Depots	Rail**				
Monorail (Other Side)	Rails and Depots	Monorail	1x1	64000	Monorail	Subway
Elevated Rail (Other Side)	Misc. Transportation	Elevated Rail	1x1	48000	Elevated Rail	Subway
Elevated Rail over Road (Other Side)	Misc. Transportation	Elevated Rail over Road**	1x1	48000	Road	Subway

* Denotes a station with an additional overhang.

** Denotes a NAM plugin (network) that has to be installed to be used.

Notes:

The Viaduct Rail and El-Rail over Road stations were created off of the original Monorail and Elevated Rail stations.

If you have the Bullet Train Mod installed, the Monorail Station can also be used for the BTM. The Monorail tracks in the station will automatically be replaced with BTM tracks.

Further instructions can be found under Overhanging Stations Setup.

3.15. Z's Subway to Underground Rail Connectors

Original creator: Z

Requires: Underground Rail (Rail under Road and Rail under Pedmall)



Station	Location in Menu	Networks Needed to Connect With	Footprint	Capacity	Network used to Activate or Drag Through	Additional Features
SURC (Straight and T-Crossing)	Misc. Transportation	Underground Rail under Road, Road	1x1	65200	Road	N/A
SURC (Pedmall)	Misc. Transportation	Underground Rail under Pedmall	1x1	65200	N/A	N/A

Notes:

The SURCs are found at the very bottom of the Misc. Transportation Menu, so you will need to scroll down to see them.

Further instructions can be found under SURC Setup.

4. Station Setup

4.1. General Notes for placing down stations

To avoid crashing your game and to see where your stations will go, it is best to lay down your puzzle pieces prior to laying down stations. This is the case with networks such as the Viaduct Rail and various forms of Dual-Networking.

Several stations have been designed to avoid a CTD, though others have no such safeguards.

Most “simple” stations will require you to simply drag a certain network straight through the station, while providing some form of road access afterwards.

Many of these stations will contain access for Subway. If you don’t wish to use these stations for subway, then simply leave the Subway connection unconnected.

For most stations, the tile to connect Subway to a station will be highlighted when in Underground View. For some stations, this may be hard to find, and if so, simply rotating the camera very fast while in Underground Mode (access this by pressing SHIFT+T; this brings up the Subway tool) may reveal a small blue square where the Subway connection goes.

Particularly for large stations and with uneven terrain, it is best to flatten the surrounding area beforehand. Placing single Road tiles (clicking the area with the Road tool) will best accomplish this. The Road tiles can then be demolished afterwards.



4.2. Setup for Most Stations

4.2.1. Plop and Connect

Applies to: Most Stations

Most stations, particularly those where you can drag a network straight through, can be easily set up in just two steps: Plop and connect.

1. Plop.



2. Connect.



4.2.2. Gap, Plop, and Activate

Applies to: Xyloxadoria's Double-Height Stations, SFBT's Tram-in-Avenue, Tram-in-Road, and Tram-on-Street Stations, ardecila's CTA Stations

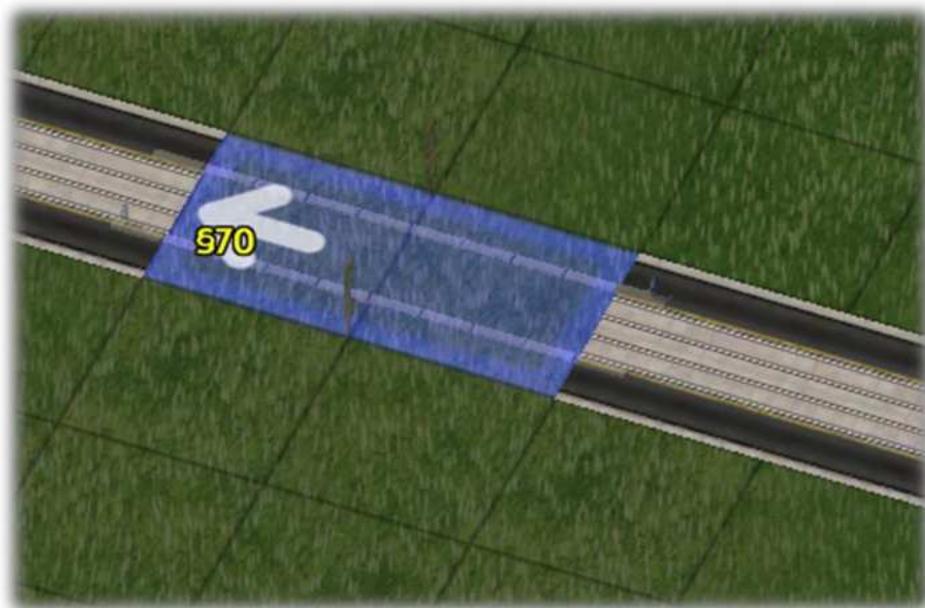
Other stations, particularly those made for puzzle-based networks (Viaduct Rail, GLR Dual Networking, Double-Height Networks), require a small gap to be created first. Create this gap before placing down the station; attempting to place down a station and then filling the gap runs the risk of encountering a CTD. These stations often require activation by dragging a specific network across the station itself or by clicking the station with a specific network.

The network that each station is made for, as with the network needed to activate the station, are both specified in the tables found in Custom Transit Stations.

1. Make a gap. Replace puzzle pieces if needed.



2. Plop the station.



3. Activate it.



4.2.3. Just Plop It

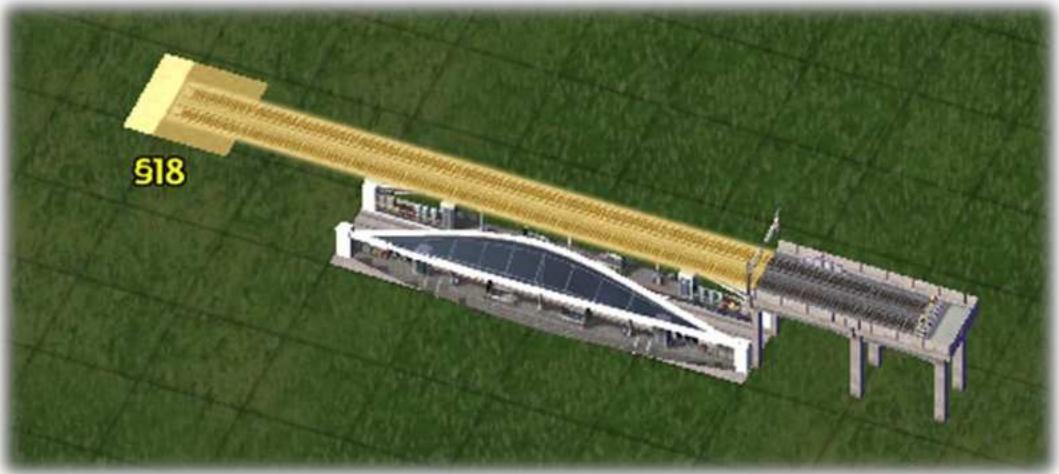
Further still, some stations can simply be placed down, so long as the networks necessary for accessing the station are touching it. This only applies to three stations: Both Ninja Boulevard Stations and the Elevated Road Bus Stop and Subway Station.



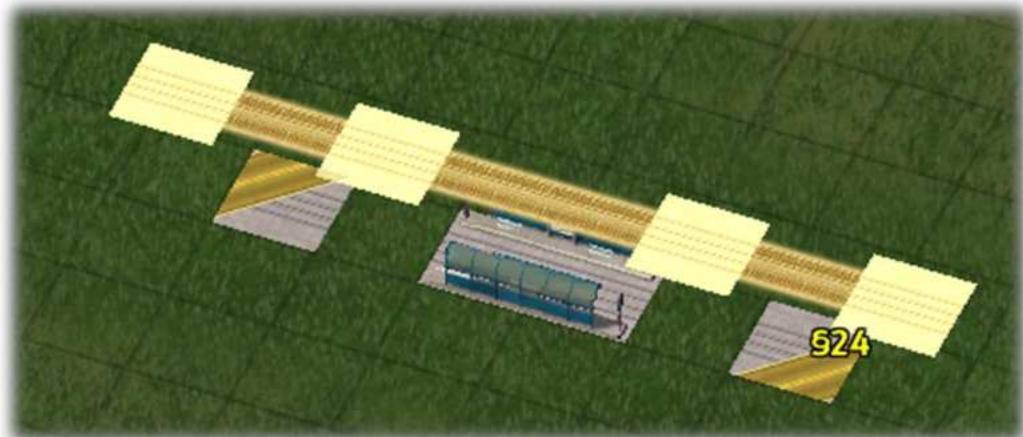
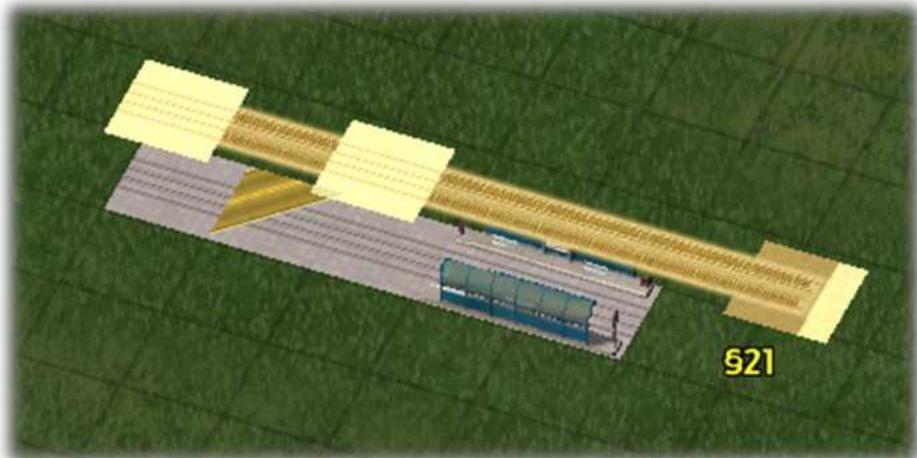
4.3. GLR Station Setup

4.3.1. Setup of Most GLR Stations

All GLR Stations are set up so that you can drag Elevated Rail straight through the station. This is intended so that Draggable GLR can connect directly to the station. Note that these stations cannot connect with Puzzle-based GLR.

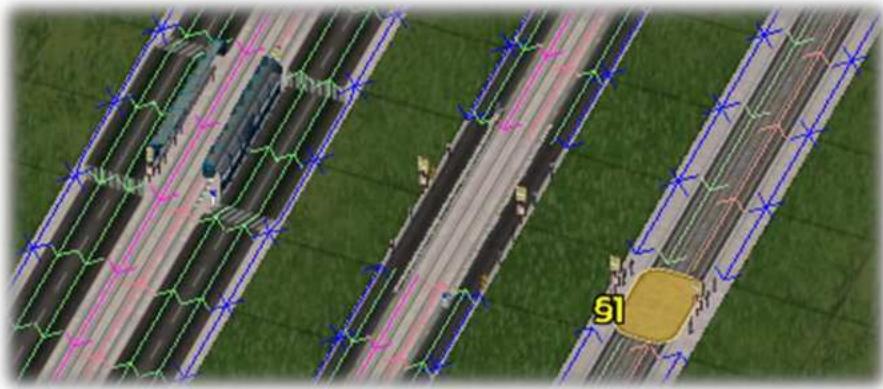


Also note that the GLR override does not “carry through” the station. In other words, you need to have a starter somewhere on both sides of the station.



4.3.2. Setup of the T-RAM Stations

Setup of the T-RAM Stations calls for the “Gap, Plop, and Activate” procedure, as mentioned previously. Activating these stations requires dragging the One-way Road Tool within the station’s tiles. You can tell if it’s activated if the paths appear while using the Draw Paths cheat.

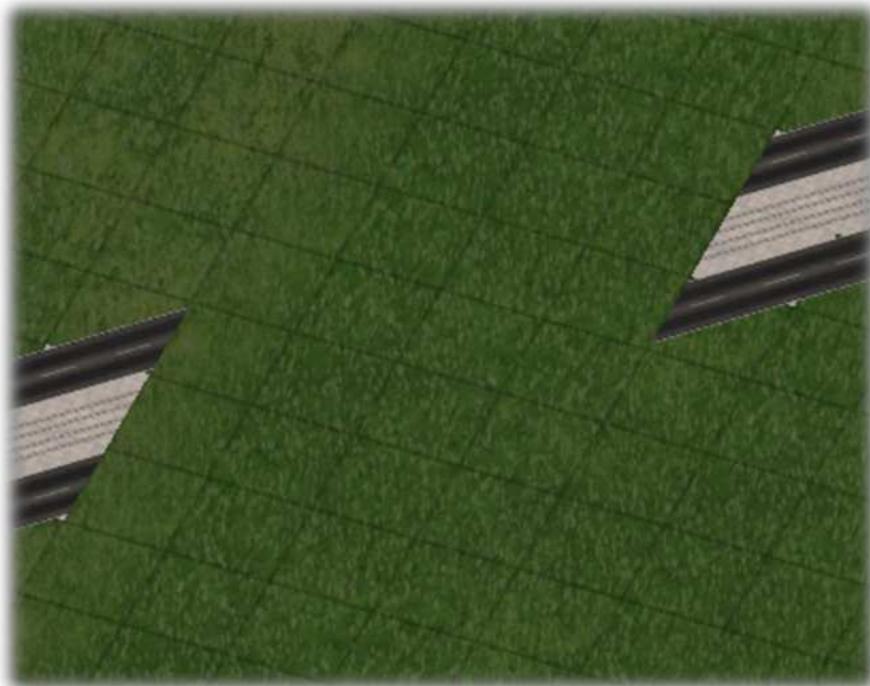


The station in the middle is not activated. The one on the left is.

4.3.3. Setup of the Diagonal Tram-in-Avenue Station

Setup of the Diagonal Tram-in-Avenue Station may require a fair amount of trial-and-error, as this requires dragging One-way-Road within part of the Tram-in-Avenue pieces.

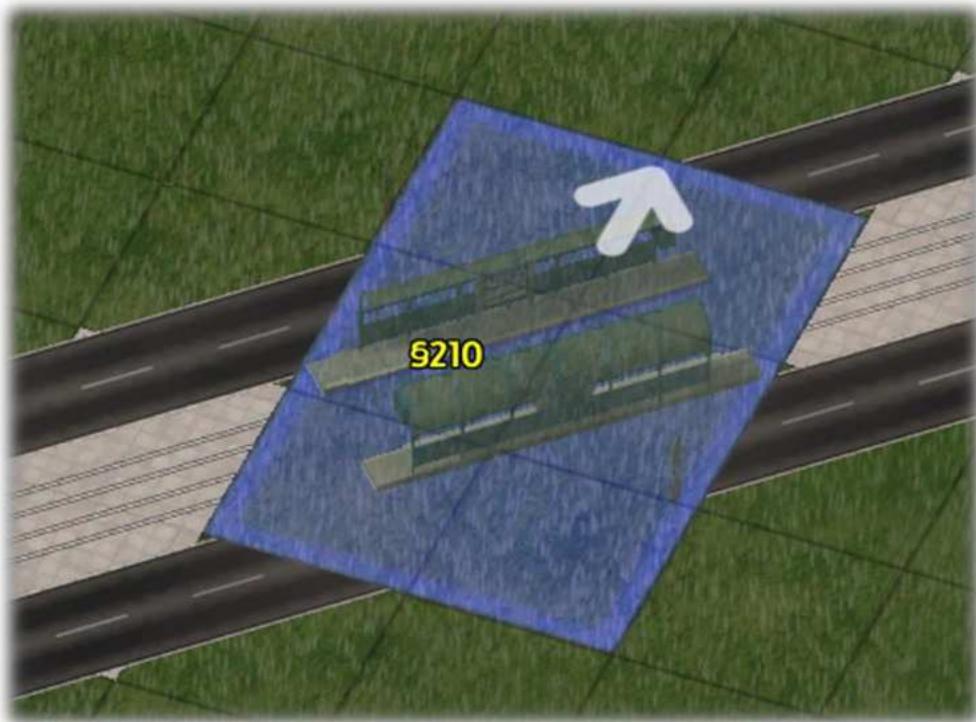
Create a gap within a Diagonal Tram-in-Avenue network as shown.



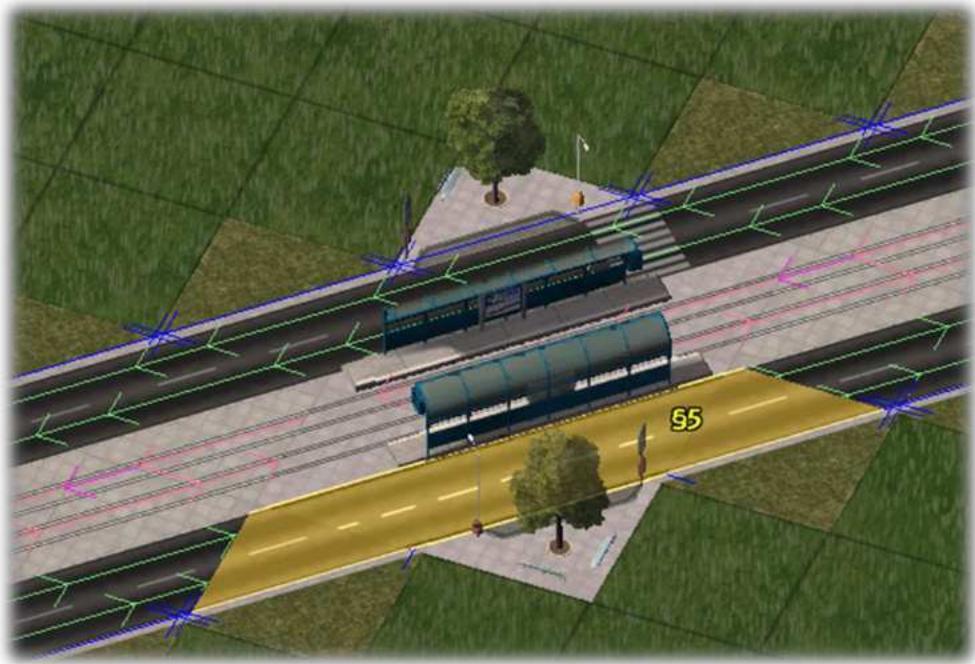
Using Diagonal Fillers, close in the gap until there is a 2x3 space within. Note that you can plop fillers on top of other fillers.



Plop the station within the gap.

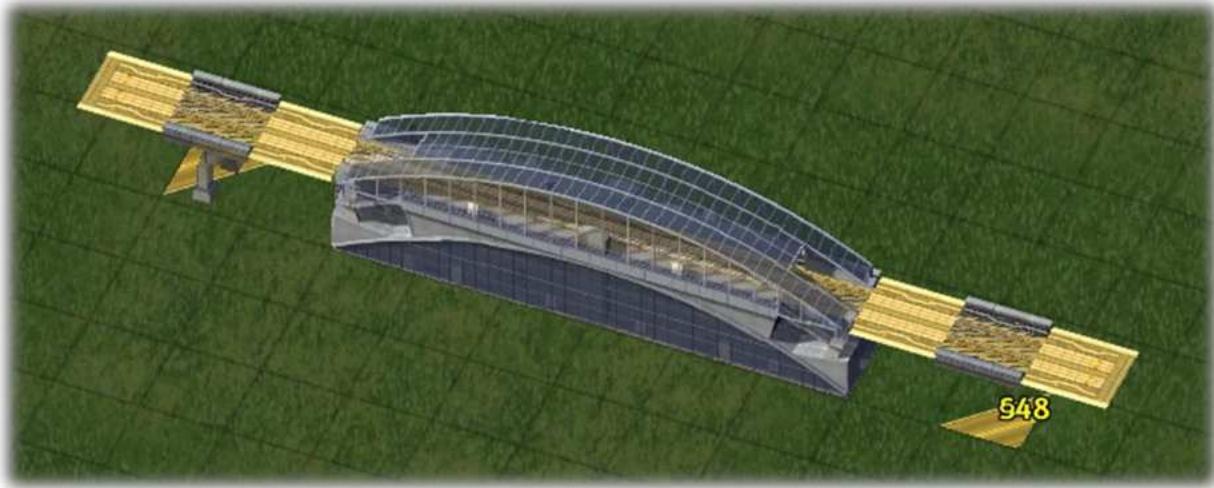


Drag One-way Road through the station, but also through the Avenue stubs. This will activate the station and connect it with the rest of the Tram network.



4.4. HSR Station Setup

Similar to the GLR Stations, you can drag Monorail straight through these stations, though HSR Starters are also needed.



4.5. Double Height Station Setup

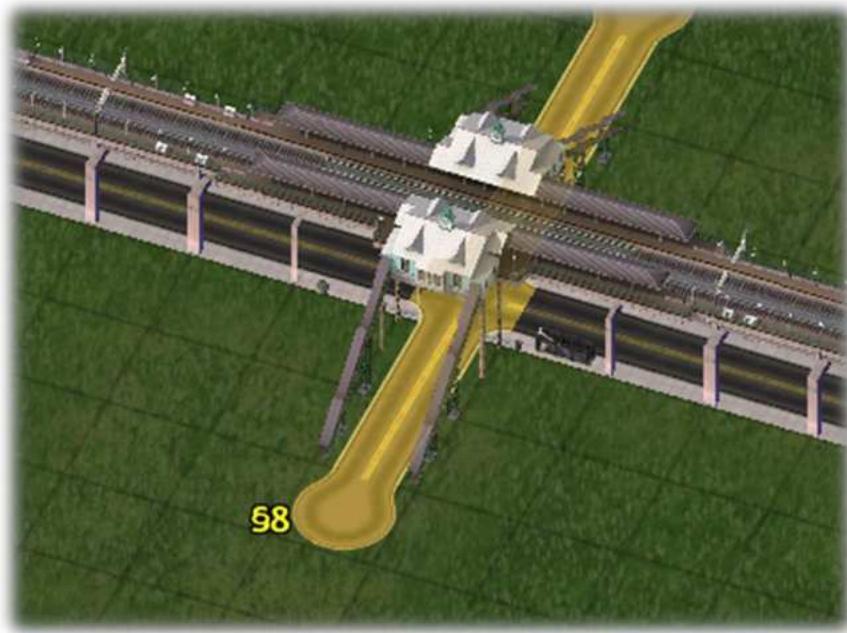
Setup of the Double Height Stations calls for the “Gap, Plop, and Activate” procedure, as mentioned previously. Activating these stations requires dragging the Elevated Rail or Monorail within the station’s tiles, depending on which station is being used.



4.6. CTA Stations Setup

The CTA Stations have to be placed within a 3-tile gap, with the middle tile being a Road crossing, as shown below. Activating the station requires both dragging within the station using the Road tool, and dragging through the crossing tile.





NOTE: These stations have an additional overhang. It is recommended to place these stations on a straight section of Elevated Rail over Road that is 9 tiles long.

4.7. Multi-Purpose Station Setup

For use with: E-N's (BriPizza) 0m -15m and 15m-30m Multi-Purpose Stations

4.7.1. Permissible Networks

These two stations are uniquely designed, as they can be used with any two networks crossing at a 90-degree angle. One network has to be 15 meters higher than the other.

However, there are two stations: A 0m-15m station, and a 15m-30m station. A list of what networks can be used is shown below.

0 meter networks:

- o Street, Road, One-way Road, or Avenue (in-game network)
- o Rail (in-game network)
- o Ground High Speed Rail (NAM network, from HSRP)
- o Ground Light Rail (NAM network, from GLR)

15 meter networks:

- o Elevated Rail (in-game network)
- o Monorail (in-game netowrk)
- o Viaduct Rail (NAM network)
- o Viaduct Road or Viaduct One-way Road (NAM network)
- o Elevated High Speed Rail (NAM network, from HSRP)

30 meter networks:

- o Double-Height Elevated Rail (NAM network)
- o Double-Height Monorail (NAM network)

4.7.2. Orienting the Station

Note how each station is set up. Assuming up is north (with the lot arrow pointing to the east), the taller network is going east-west, with the lower network going north-south. The lot itself is at the southeast corner. The loading pads overlap towards the northwest, and the rest of the pads stick out further in the east and in the south. This is just a reference; the station can be in any orientation as you desire, but this is to help you with rotating the station.

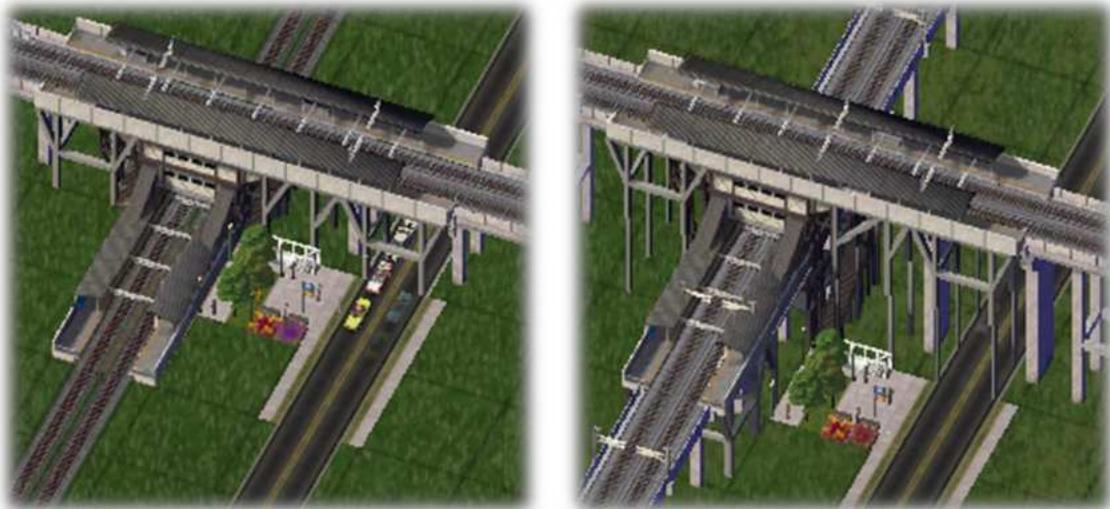




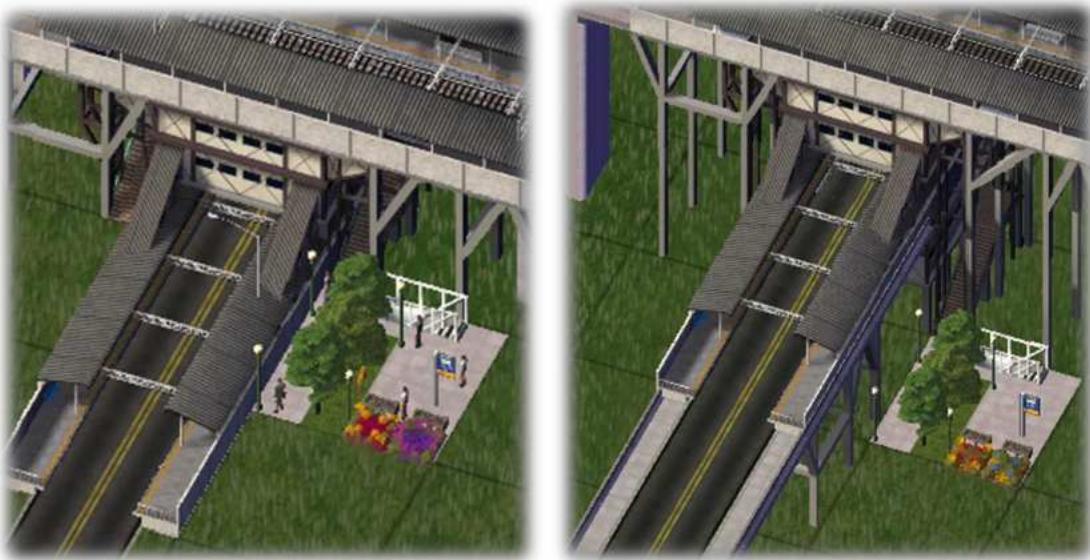
NOTE: Since both stations don't have any networks going through the 1x1 lot, there is no risk for a CTD here.

4.7.3. Road Access

Roads or Pedmalls can be placed next to the lot to allow bus and subway access at ground level. Street, One-way Road, and Avenue may also be used here. In either case, the Road is parallel to the lower loading pad and is directly touching the lot, as shown below.



Alternatively, Road access can be fulfilled by using one of the loading pads. For the 0m-15m station, either loading pad can be used. For the 15m-30m station, the 15m loading pad (the lower one) can be used. When using either station's 15m loading pad, be sure to use Viaduct Road or Viaduct One-way Road pieces. In either case, the lot will still be in direct contact with the Road.



Shown left: The 0m-15m station. Shown right: The 15m-30m station.

Shown below: A more complex example, using the 15m loading pad for Road access. Note that this example actually uses four different stations, one of which (RTMT) is not included with the NAM.



NOTE: When using the Viaduct Road pieces, the station may appear out of order on other rotations or other zoom levels. What is happening is the substructure of the lower loading pad is poking through the Viaduct Road. This is purely visual, and sometimes, saving and re-entering a city may fix it.



Shown above, the substructure (the grey part) is completely covering the Viaduct Road, shown with cars on top.

4.7.4. Alternate Forms of Road Access

Roads may interact with the station in a number of other ways, though each method doesn't mean that it will be directly connected with the station. Keep in mind that the station itself is actually the 1x1 lot, and that some of these methods may require additional means of connecting the Road to the 1x1 lot. Here are a few examples:

Lower rail line and Road are adjacent and parallel (0m-15m Station)



In this case, the Road itself is nowhere in contact with the station. Achieving Road access can be achieved by using a second Road, or using Pedmall and Pedestrian Overpass pieces, as shown. Note that the second bus stop acts as a pedmall connector between the Road and the Ped Overpas.



Lower rail line and Road are perpendicular with each other (15m-30m Station)



This is easy to achieve with the 15m-30m station, since its loading pads are elevated and can accommodate a crossing Road between the pillars. Nothing else is required here, since the lot is still touching a Road.

Roads enclosing the 15m-30m Station



Similarly, there can be an additional crossing Road underneath the loading pads, making it possible to enclose the station within a 4x4 square of Road. Road access is achieved at the corner of one of the Road-Road crossings.

Road Access using Avenue (Both stations)



This is achieved identically to using Road, though a small crossing is needed for the entire width of the Avenue to access the station. This can be done by dragging across the Avenue using either Street or Road, show below.

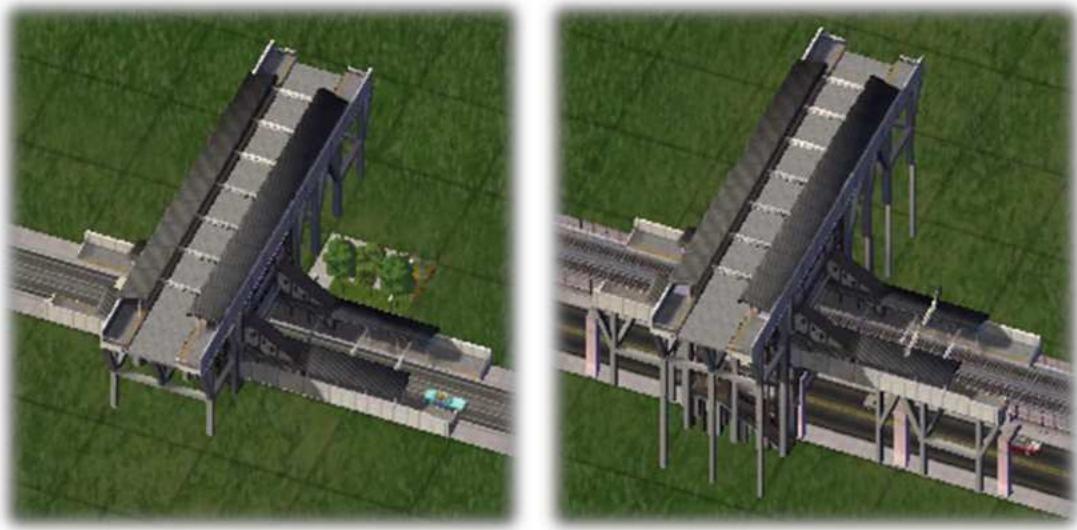


NOTE: If you're using the Elevated Rail Alternate Implementation, you will get a green arch bridge, as shown below. This can be avoided by replacing the segment of Avenue that crosses with the Elevated Rail with One-way Road.



4.7.5. Use with Dual-Networking Pieces

With the 0m-15m station, it's possible to use Tram-on-Street as the 0m network. With the 15m-30m station, it's possible to use Elevated Rail over Road as the 15m network. Either method can be used to conserve space, since two different networks (a rail-type network and a surface street) only need to take up the space of just one network. Unfortunately, there are no pieces that cross either piece with a higher network, so neither method is currently viable at this time.



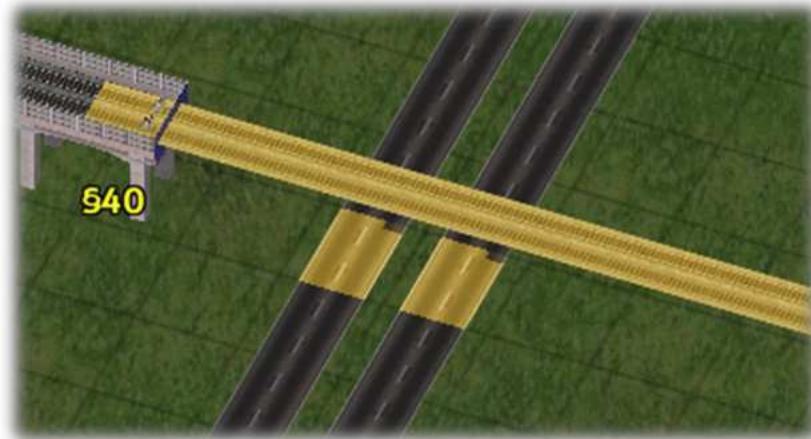
4.8. Overhanging Stations Setup

For use with: Xyloxadoria's Modern Overhanging Stations

4.8.1. Setup of the Modern Elevated Rail and Modern Monorail Stations

These stations are a two-part station, with one part consisting of a 1x1 lot with a large overhang, and a counterpart lot (Other Side) used as an “anchor” for the other half of the station. The large overhang is designed such that another network, ideally Avenue, can be run directly underneath. This enables it to use no additional space.

1. To plop down an Elevated Rail or Monorail Station, first drag your desired network so that it crosses over an Avenue, as shown. This example will use Monorail (actually, BTM), but the process is the same with the Elevated Rail station.



2. Next, place down the Modern Overhanging Monorail Station itself. Note that you will be taken into an underground view of your city due to the station having a Subway connection.



3. It should be noted that placing down the station inevitably breaks the Monorail overpasses; this will be fixed later on. For the other half of the station, place down the Monorail Station (Other Side) lot, as shown.



4. With the station and its overhanging half “anchored” into place, re-drag the Monorail (or Elevated Rail if using the El-Rail station) through the station to fix the broken overpass. Optionally, or if there is room, another network, such as Road, can be run parallel along the Monorail station and even cross the Avenue itself. This parallel network can already be placed prior to building the station, or be dragged after.





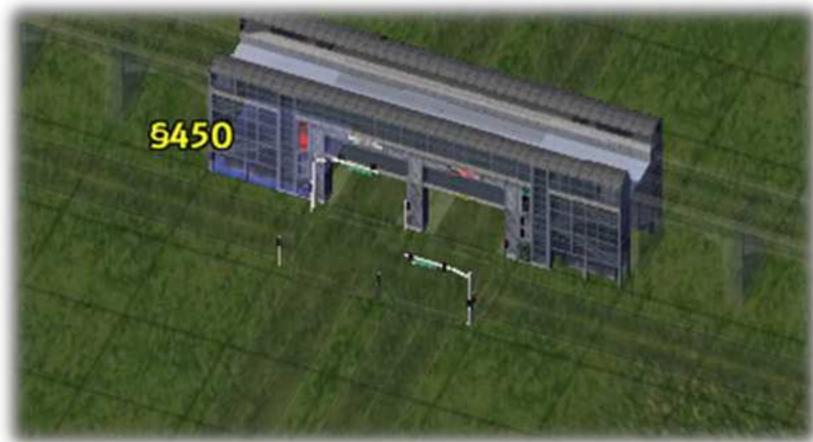
4.8.2. Setup of the Viaduct Rail and Elevated Rail over Road Station

Like the Modern Overhanging Stations for Elevated Rail and Monorail, the stations for Viaduct Rail and Elevated Rail over Road (tailor-made for the NAM) are also a two-part station. Setting these stations require extra care, since doing so runs the risk of encountering a CTD if not done in the order as shown.

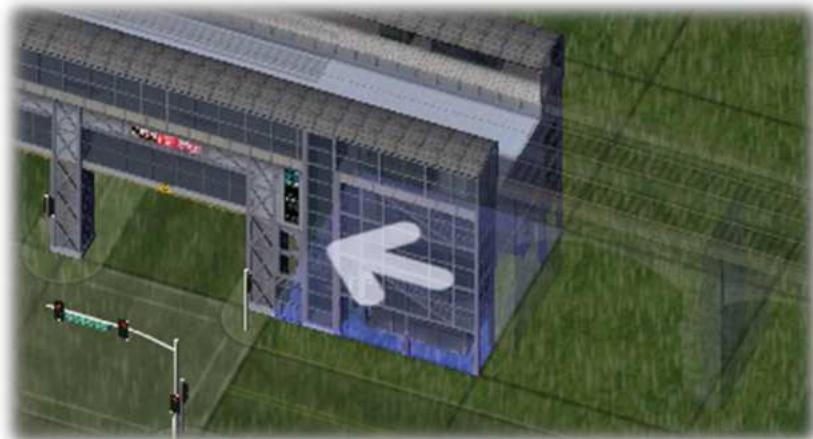
1. Place down the appropriate puzzle pieces in the pattern as shown, with two one-tile gaps on either side of the Avenue. The crossing Road shown below is optional.



2. Place down the Viaduct Rail station in one of the gaps. Rotate so that it hangs over the Avenue.

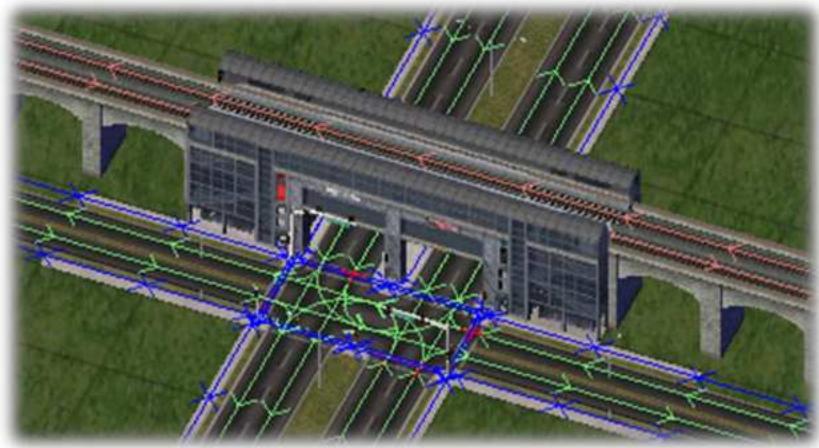


3. Place down the Other Side piece to fill in the second gap. Be sure the lot's arrow faces the Rail overpass before plopping, as shown. You may need to zoom in to get a good view of the arrow.

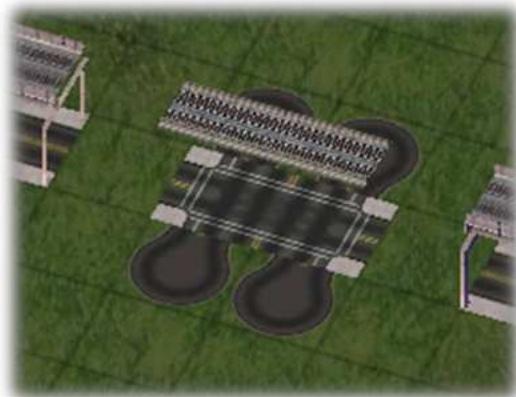
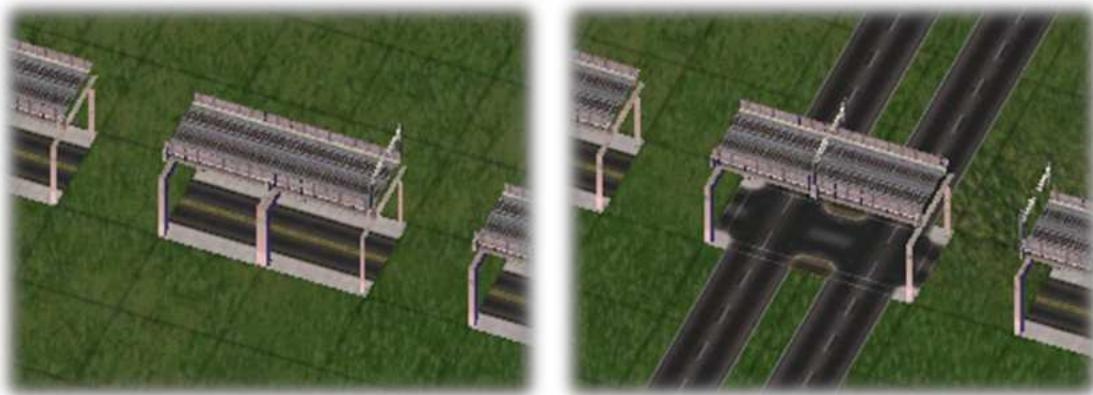


4. Finally, activate the station by clicking the station's tiles (Both the Station and the Other Side lot) with the Rail tool. If you are using the Draw Paths cheat, the station will be fully activated when the paths travel uninterrupted across the entire station.



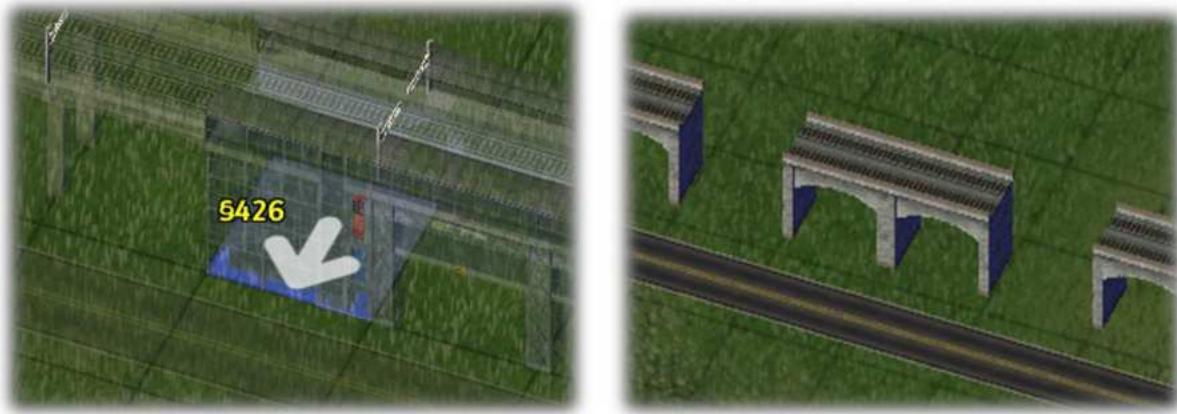


The setup of the Elevated Rail over Road Station is the same as the Viaduct Rail Station, and the same amount of care is needed. Three permissible setups for an El-Rail over Road station are shown below. The station can either be in-line with an existing El-Rail over Road network, or cross over the El-Rail-over-RoadxAvenue piece. Certain El-Rail over Roadx NWM pieces (Requires the NWM) can also work as well. Activating the station requires clicking on the station's two halves with the Road tool.



4.8.3. Alternate Setups for the Modern Overhanging Stations

These stations can operate even without an Avenue crossing along the bottom. To use these stations without having a crossing network underneath, place the station alongside an existing network. Set up the station the same way you would if there were a crossing Avenue underneath. If you are using Viaduct Rail, set up a Viaduct Rail line with a set of gaps as shown below.



4.9. Diagonal Stations Setup

For use with: Xyloxadoria, SFBT, and morifari's Diagonal Stations

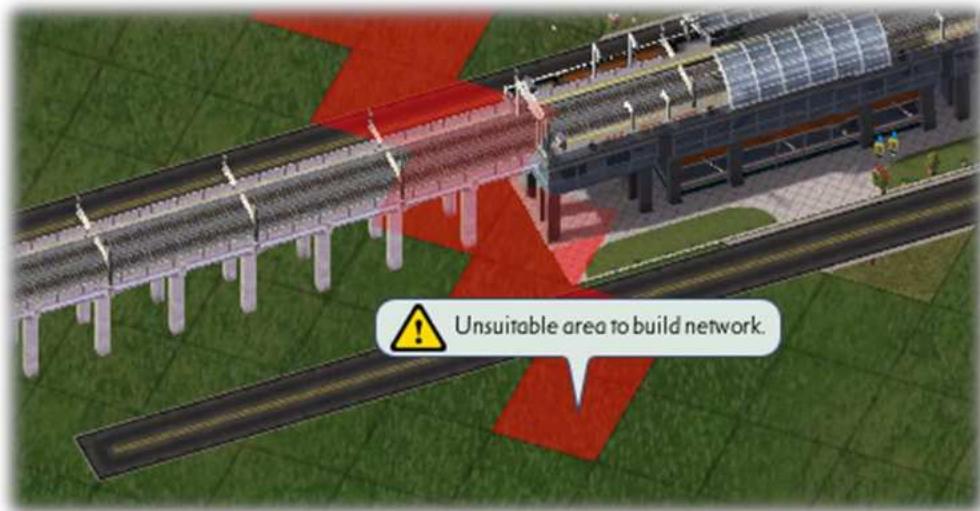
4.9.1. Working with the Overhang

Although all of the Diagonal stations have a 1x2 footprint, because of their overhang, they need to take up an area far greater than a 1x2 area, an area on par with a 5x5 or 5x6 lot. Also, because of their setup, only a small portion of the station will be able to touch a nearby Road. (Any other, like Street or One-Way Road, would also work.)



4.9.2. Enclosing a Diagonal Station along All Four Sides

Enclosing the station on all four diagonal sides with Road cannot be done by just dragging straight across; it requires use of the Half-Dragging Method.



Simply put, instead of dragging from the outside and dragging straight through, drag from the inside to connect the two Roads, then connect from the outside to complete the crossing(s). Rotating the camera view is recommended to get a better view.





4.9.3. Setting up a Diagonal Viaduct Rail Station

Placing down a Diagonal Viaduct Rail Station can prove to be more difficult since you'll be dealing with a Puzzle-based network, not a Draggable network. Nevertheless, it can be done with a bit of trial and error.

1. Select a desired station (Xyloxadoria's station will be used in this example) and hover it alongside an existing Diagonal Road. Do not place the station yet. Instead, take note of where the station's main tiles (highlighted blue) will occupy. Alternatively, if you are placing the station where there is already a Viaduct Rail line, bulldoze part of that rail line first.



2. Place down Diagonal Viaduct Rail pieces alongside the Road, as shown. For the sake of demonstration, the position where the station was previously hovered is indicated using Industrial zoning. This gap is where the station will eventually be placed.

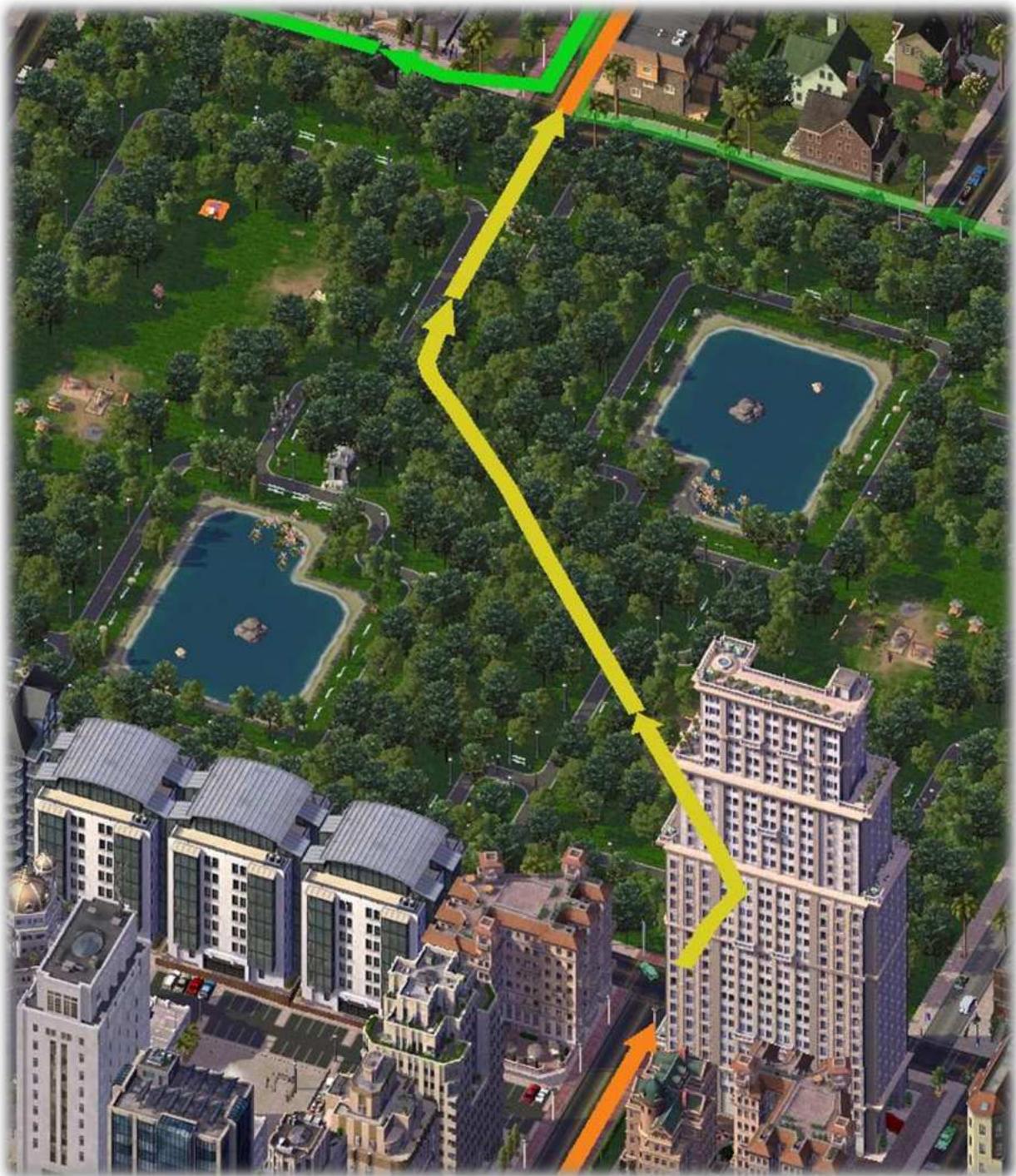


3. Place down the station itself, then activate it by dragging Rail across it, as shown.



4.10. SURCs Setup

The purpose of SURCs are simple: To connect the Underground Rail pieces with a Subway line. This is particularly useful if you are extending an Underground Rail line under an already-developed area, as shown below.



To set up one end of the Subway conversion, place down a SURC lot, and draw Road through the lot.



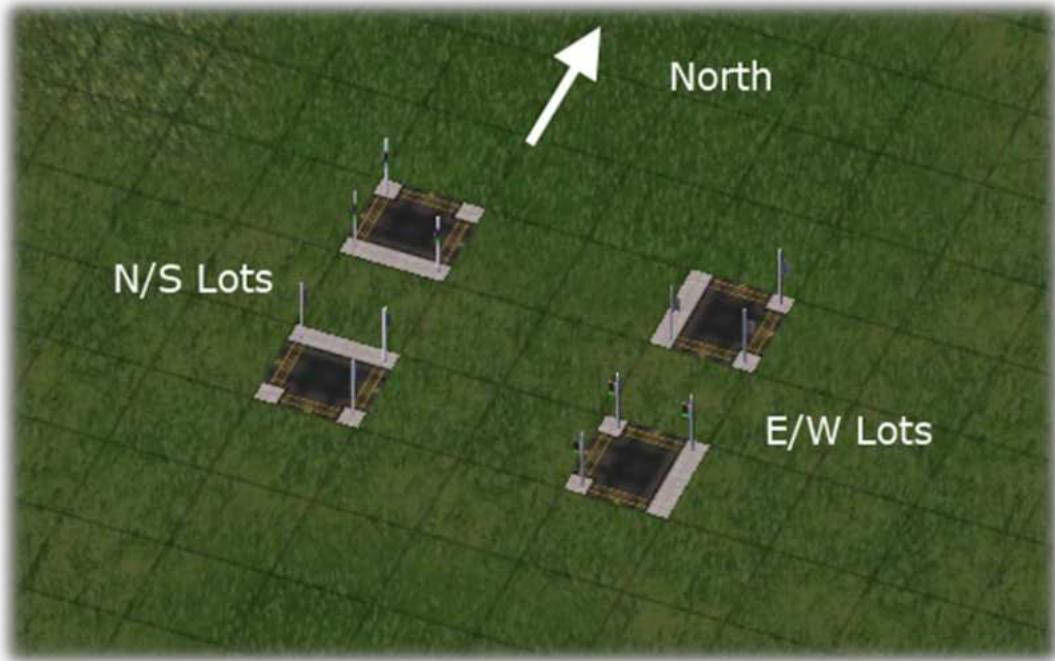
Then place down Underground Rail pieces until they touch the lot itself. Don't worry; there is no risk for a CTD here.



Connect a Subway line to the lot, making sure it doesn't interfere with other Subway lines. Repeat this process for where the Underground Rail line should continue, and connect their Subway lines together.



Note that there are two different versions of the T-intersection SURC. This is because they were made to be oriented differently, depending on where North is pointing on the map.



The best way to tell is to look at the lot's zoning arrow. For the N/S lot, be sure the arrow points north or south, and for the E/W lot, be sure the arrow points east or west.

5. Appendix: A Note about TSECs and Station Capacities

The following section is a reference for how the capacities for each station is calculated. This is also a reference for those curious to know how these numbers make sense, or for any third-party modders wishing to create a station that can be compatible with the NAM.

There are two important properties to note: Transit Switch Entry Cost (TSEC) and Capacity.

SFX:Query Sound	0xAA1DD397	Uint32	0	0x2A55BD56
Water Consumed	0xC8ED2D84	Uint32	0	0x00000005
SFX:Default Plop Sound	0xC9B93A56	Uint32	0	0x445EC571
Lot Resource Key	0xEA260589	Uint32	0	0xB46FAF04
Budget Item: Department	0xEA54D283	Uint32	1	Mass Transit
Budget Item: Line	0xEA54D284	Uint32	1	0x00000001
Budget Item: Purpose	0xEA54D285	Uint32	1	Mass Transit Switch
Budget Item: Cost	0xEA54D286	Sint64	1	0x0000000000000000
Transit Switch Point	0xE90E25A1	Uint8	28	Outside-to-Inside,All S
Transit Switch Entry Cost	0xE90E25A2	Float32	1	0.0069
Transit Switch Traffic Capacity	0xE90E25A3	Float32	1	31000

Example of TSEC and Capacity in a station, as shown in ilive's Reader.

5.1. Transit Switch Entry Costs

Transit Switch Entry Cost (abbreviated TSEC) is a property that defines how much of a travel type can travel through a transit-enabled station.

It is important to set this value properly; a value that is too low can lead to travel types using the station as an unintended shortcut which can lead to an abnormally low commute time (think of a car literally driving through the lobby of a building as a shortcut), and a value that is too high can lead to abandonment of the entire station or the entire transit line the station is serving (think of it as being too expensive to use).

The following values are highly recommended for each type of station:

- Pedestrian, Bus, and Subway Stations: 0.064
- Street Stations: 0.035
- Road and Avenue Stations: 0.02
- Underground Parking Garages: 0.064
- Above-ground Parking Lots and Garages: 0.013
- Highway Stations: 0.0064
- Elevated Rail and GLR Stations: 0.0083
- Freight Rail Stations: 0.0091
- Passenger Rail Stations: 0.0069
- Monorail, High-Speed Rail, and Bullet Train (BTM) Stations: 0.0043

The general formula for calculating TSECs is $0.96 / S$, where S is the speed of the fastest travel type designed to pass through the station at normal speed, excluding Subways. If the travel type passes next to the station instead of going through it (for a station that plop

alongside a Rail line, for example), or if there is no through travel type (such as in parking lots), the pedestrian speed should be used instead.

5.2. Capacity

Capacity is the maximum number of Sims permitted in, out of, and through a station per day.

There are technically two capacity numbers involved here: Nominal and Maximum Capacity. A station's Nominal Capacity is the capacity value displayed in the station's query, and the capacity as assigned to the station. A station's Maximum Capacity is an unshown value, which is the Nominal Capacity multiplied by a certain factor. In general, this factor is hard to predict, but in most cases, a station's Maximum Capacity is observed to be at least four times the Nominal Capacity.

A station can still function if it exceeds its Nominal Capacity, but performance of that station usually begins to decline once it exceeds its Maximum Capacity. The general rule is to design a station so that its usage never exceeds its Maximum Capacity.

5.2.1. General Capacity Value

A Nominal Capacity of 50000 should be able to fit virtually any station, as this translates to a Maximum Capacity of at least 200000. This value won't work for exceptionally large stations.

5.2.2. Stations with One Travel Type

For a specific type of transit station, the following values are recommended:

- Bus: 17000
- Subway: 24000
- Freight Train: 15000
- Passenger Train: 30000
- Elevated Rail: 30000
- Monorail: 45000
- Parking Facility: 30000

These numbers are lower than the general value of 50000, since they are meant to serve only one travel type. These values are used with the Maxis Stations.

The following formulas are used for calculating even more specific capacities:

Bus:

- o 17000 for the first tile.
- o Add 1000 per additional tile.

Subway and Underground Rail:

- o 24000 for the first tile.
- o Add 2000 per additional tile.

Passenger Train (may include Freight) and Elevated Rail:

- o 10000 for the first three tiles of the rail line, and add 2000 per additional tile of track.

- Add 10000 for the first tile of an additional rail line, and add 1000 for any other additional tiles of thorough track.
- Add 500 per each additional tile of siding track (not thorough track, like with the Maxis Grand Railroad Station).
- Add 500 per tile for any extra buildings attached to the station.

Freight Train:

- 5000 for the first three tiles, and add 1000 per additional tile.
- Add 500 per each additional tile of siding track.

Monorail, BTM, and HSR Stations: Same as Passenger Train, but the end value should be 50% greater.

Parking Facilities:

- 1000 per tile for single-level facilities. For multi-level facilities, this should be 1000 per tile that contains the building, times the number of levels within the building.
- 50000 for underground facilities.

5.2.3. Stations with Multiple Travel Types

The following rules should be followed for making stations with multiple travel types:

For stations with multiple transit types:

- Start with the formula for the highest capacity network.
- For additional rail types, add 9000 for the first tile, and add 500 for each additional tile of track. For Subway, the length of the Subway line under the station should be counted.
- For buses, add 4000 for the first tile of the rail line, and add 500 for each additional rail tile.
- Sidings and buildings are not counted here.

For a station with parking:

- If it's a parking lot, use the formula for single-level parking facilities.
- If it's a parking garage, use the formula for multi-level parking facilities.

For a Subway Station with parking:

- If it's a parking lot, add 2000 for each tile of parking lot.
- If it's a parking garage, add 2000 per tile for the first level, and add 1000 per tile for each additional level.

5.3. Further Reading

Further notes on the subject can be found in the following links:

[Transit Switch Entry Costs and Station Capacities](#) – The initial article on TSECs and Capacities.

6. Frequently Asked Questions

6.1. General Questions

6.1.1. OMG, STATIONS?!!

Well, yeah. ^_^

The first thing that new NAM users will realise is that their stations become over-capacity very fast, and will head off to one of the various file exchanges to find a better station. Including a set of stations with the NAM, along with high-capacity versions of the game's original stations, makes the process easier for the user.

Additionally, instead of facilitating the creation of new stations by third-party BATers, the "No stations" rule instead created stations that did not meet NAM standards, and either have low capacity or restricted traffic usage.

6.1.2. I already have station X, but the NAM also contains station X. What should I do?

The stations included with the NAM have modified values (mainly a higher capacity and an adjusted TSEC) that give each station more ideal usage, so these should replace the original stations. However, since the NAM Installer can detect existing instances of these stations, and these are installed after everything else (in a folder called z___NAM), this process should already have been done when you ran the installer.

6.1.3. Why bus usage and a Subway connection with these stations?

Frequently, the placement of a transit station, in real life and in-game, warrants the placement of a Bus Stop nearby. Integrating Bus Stop functionality with each station means one less step to perform.

For all stations that have a Subway connection, connecting a Subway line is not necessary if you don't want a Subway line. Again, the reason why it's there in the first place is similar with integrating Bus functionality.

6.2. Questions concerning Maxis and Third-Party Lots

6.2.1. What was wrong with the Maxis Stations in the first place?

Two main things: Improper TSEC and very low capacity.

6.2.2. What about other third-party stations? Would those even work?

Oftentimes, it may be hard to tell if a station is even NAM-compatible without using the Reader, though typically, a station with a capacity below 17000 (the recommended capacity for single-tile bus stops) means that such a station would not be able to keep up with the Traffic Simulator.

6.2.3. Would I be able to fix any other station to be NAM-compatible?

Sure. The formulas to follow are given, but you'll need the Reader in order to adjust these values yourself. This will at least boost capacity and allow for more ideal station usage.

6.3. Questions concerning Main Implementation

6.3.1. Why is the capacity increase mandatory?

The capacity values assigned to the NAM Transit Simulator and the capacity values assigned to the NAM Transit Stations go hand-in-hand. As you increase a network's capacity, the transit stations required for those networks (for example, Elevated Rail and an Elevated Rail Station) also has to increase.

6.3.2. Why are the station capacities so high in the first place?

The Transit Station capacities reflect the capacities used with NAM Transit Simulator, and since there are five different versions with Simulator Ultra being the highest, setting these capacities to such a high value would be able to cover all five versions of the Transit Simulator.

6.3.3. There's a particular station I want to have added into the NAM. Can it be done?

Other than acquiring permission, there are certain criteria that a station needs to meet, but the important part is that it doesn't require additional dependencies.

7. Credits

7.1. Main Implementation, Documentation, and Testing

b22rian (Testing)
Douzerogue (Testing)
GDO29Anagram / Ganaram Inukshuk (Documentation)
Memo (Main implementation and testing)
Z (Main Implementation)

7.2. Original Station Creators

3ddz
Ardecila
Brenda_Xne
E-N (BriPizza)
Moonlight
Morifari
RaphaelNinja
SFBT Team
Xyloxadoria
z