Report
Prepared for

Harrington Custodian Pty Ltd.

ratio:

Proposed Mixed-Use Development

Fairfield Forum
8-36 Station Street, Fairfield

July 2019

r:

traffic:

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Final	17-07-19	Final	Samuel Lewis B.Sc	Peter Malley B.Eng
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Table of contents:

List of tables:

List of Figures:

1 Executive Summary:

- Ratio Consultants Pty Ltd has been commissioned by Harrington Custodian Pty Ltd to undertake a traffic and parking review of the proposed Masterplan for the redevelopment of the Fairfield Forum shopping centre located at 8-36 Station Street in Fairfield.
- This July 2019 report updates the February 2019 report by expanding and refining the discussion on traffic generation and distribution.
- The subject planning proposal ("Proposal") seeks to redevelop the existing retail and commercial uses (to an equivalent GLA), provide generous public open space area and introduce a number of residential buildings to accommodate in the order of 1,489 dwellings.
- DCP parking requirements for the Proposal equate to 2,611 car spaces.
- The Proposal provides for the supply of approximately 2,919 spaces which therefore exceeds the DCP requirements.
- As the proposal largely retains the existing quantum of retail and commercial floor area, additional traffic generated by the Proposal is limited to the residential component.
- Based on the application of RMS traffic generation data, the Proposal is forecast to increase daily traffic generation of the site by 18%.
- Having regard to the context of the site at the northern end of the Fairfield Town Centre and the capacity afforded by the cross section of the surrounding roads it is considered that these anticipated additional traffic volumes are relatively minor.
- Taking into consideration the Town Centre location of the site, it is estimated that forecasted traffic generation will be significantly less than estimated via the application of RMS traffic generation rates.
- A walkability assessment indicates that the majority of the Fairfield Town Centre is within a 10 minute walk of the subject site allowing future residents and visitors to readily access nearby amenities without the use of private vehicles.
- The site is in close proximity to 8 bus routes and is a convenient walk to the Fairfield railway station.
- Transport NSW advise that 53% of residential trips for Fairfield are either Work Related, Shopping or Education.
- Given the subject site is highly accessible to work, shopping, education and public transport, the traffic generation is likely to be less than the forecast.
- RMS case study data recognises that sites within close proximity to town centres can operate with a reduction in car parking requirements in the order of an average rate of 0.85 spaces per dwelling.
- The Proposal design seeks to segregate the traffic and car parking by uses, with residential car parking areas being separate from commercial /retail parking areas.
- Loading zones for commercial / retail uses have been configured as best as practicable to be designated as such and arranged in a manner to minimise mixing of loading traffic with other uses.
- Council have acknowledged that this Report is to be a high level assessment and intersection modelling is not required at this stage of the project.
- A detailed road network and intersection assessment will be prepared as part of subsequent works.

2 Introduction:

2.1 Preamble

Ratio Consultants Pty Ltd has been commissioned by Harrington Custodian Pty Ltd to undertake a traffic and parking review of the proposed Masterplan for the redevelopment of the Fairfield Forum shopping centre located at 8-36 Station Street in Fairfield.

The proposed development seeks to redevelop the existing retail and commercial uses whilst providing a generous public open space area and introducing a number of residential buildings.

The proposed Masterplan seeks to revitalise the northern extent of the Fairfield Town Centre into a high amenity area.

An initial Traffic and Transport Review was prepared by Ratio in February 2019 and submitted to Fairfield City Council as part of the Master Plan documentation. Council responded to the initial report via the 'Fairfield Local Planning Panel' and requested that an amended traffic and transport review be prepared to include additional discussion of the proposals traffic generation and traffic distribution. Council have acknowledged that this is to be a high level assessment and intersection modelling is not required at this stage of the project. A detailed road network and intersection assessment will be prepared as part of subsequent works.

As such, this report has been prepared to respond to Councils request and provide an overview of the car parking and traffic matters of the proposed Masterplan.

2.2 Objectives and Scope

Based on the scope of Ratio Consultants engagement, the information contained within this assessment has been prepared to provide an overview response to the following objectives:

- A review of the proposal within the context of the surrounding Fairfield Town Centre;
- Review of the proposals statutory onsite parking requirements;
- Review of traffic considerations associated with the proposal; and,
- Review of site access considerations and context with the surrounding road network.

2.3 Information Relied Upon

In preparing this assessment, Ratio Consultants have relied upon the following facts, matters and information:

- Site inspection observation and notes;
- Fairfield City Centre Development Control Plan (DCP) 2013 - Amendment No. 3;
- Fairfield City Wide Development Control Plan (DCP) 2013 – Amendment No. 16;
- Fairfield City Centre Urban Design Study 2018;
- Development Plans prepared by Rothelowman dated February 2019; and,
- RTA Guide to Traffic Generating Developments 2002 & 2013.

3.1 Site Context

The subject site (Fairfield Forum Shopping Centre) is located on the south-east corner of the Station Street and Cunninghame Street intersection in Fairfield.

The site's location relative to the surrounding area and road network is shown in **Figure 3.1** and **Figure 3.2**.

Figure 3.1: Site Locality Plan

Source: www.street-directory.com.au

Figure 3.2: Aerial Photograph of Subject Site and Surrounds

Source: www.nearmap.com

The subject site is irregular in shape and is generally bound by Cunninghame Street to the north, residential properties fronting onto Smart Street to the east, Nelson Street to the south and Station Street to the west

The subject site accommodates an overall area of approximately 4.2 hectares and is currently occupied by approximately 18,000 sqm of retail and commercial space comprising over 40 stores including Coles and K-Mart.

An on-site car park accommodating approximately 750 parking spaces is also provided.

3.2 Surrounding Land Uses

The site is located within the Fairfield Town Centre and is zoned as a Mixed-Use Zone (B4) within the Fairfield Local Environmental Plan 2013. The surrounding properties are predominantly commercial in nature to the south and residential to the north.

The site is located at the northern section of the Fairfield Town Centre and key non-residential land uses in the vicinity are detailed below:

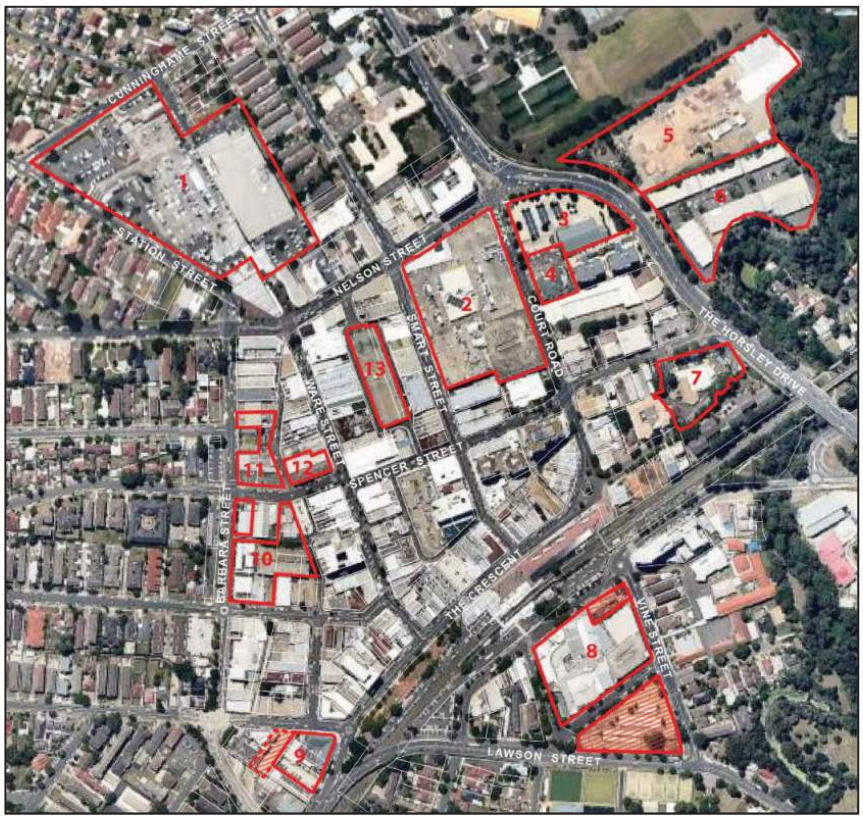
- Fairfield Public School located approximately 200 metres east of the subject site.
- Neeta City Shopping Centre located approximately 250 metres south-east of the subject site (FCC UDF Site #2).
- Fairfield Library located approximately 300 metres south of the subject site (FCC UDF Site #10).
- Fairfield Centrelink and Medicare located approximately 450 metres south of the subject site.
- Fairfield City Centre located approximately 500 metres south of the subject site.
- Fairfield Chase Shopping Centre located approximately 600 metres south-east of the subject site.
- Fairfield High School located approximately 600 metres east of the subject site.

Having regard to the Fairfield Town Centre as a whole, the subject site forms the northern most parcel within the list of Key Sites in the *Fairfield City Centre Urban Design Study 2018*.

All other Key Sites are located south of Nelson Street which acts as a buffer to future development. Sites 2, 11, 12 and 13 are the closest Key Sites to the subject site.

The location of these Key Sites is shown overleaf in **Figure 3.3**.

Figure 3.3: Map of Key Site Locations



Source: Fairfield City Centre Urban Design Study 2018

As shown in Figure 3.3, the subject site is located at the northern periphery of the Town Centre and is separated from all other key development sites by Nelson Street.

3.3 Existing Access Arrangements

Current vehicle access to the site is provided via a number of vehicle crossovers situated along Cunninghame Street, Ware Street, Smart Street and Station Street. A total of 9 site access points currently provide access to the subject site.

The location of these site accesses is shown overleaf in **Figure 3.4**.

Figure 3.4: Existing Site Access Locations

Source: www.nearmap.com

3.4 Road Network

The subject site is directly fronted by a number of local roads which provide access to and from the surrounding precinct. These are identified in **Figure 3.5** with further detail provided below.

Figure 3.5: Local Road Network

Source: www.nearmap.com

Cunninghame Street

Cunninghame Street is a Council controlled road connecting from Station Street in the southwest to The Horsley Drive in the northeast.

Along the site frontage, Cunninghame Street has an approximate carriageway width of 12.6 metres. Within the road reserve Cunninghame Street comprises a single carriageway with one through lane in each direction and parallel parking provided along both kerbs. Along the site frontage, Cunninghame Street has a posted speed limit of 50km/h.

Figure 3.6 shows the typical configuration of Cunninghame Street along the frontage of the site.

Figure 3.6: Cunninghame Street Typical Configuration

Source: www.nearmap.com

Station Street

Station Street is a Council controlled road connecting from The Boulevarde in the northwest to Nelson Street in the south.

Along the site frontage, Station Street has an approximate carriageway width of 12.6 metres. Within the road reserve, Station Street comprises a single carriageway with one through lane in each direction and parallel parking provided along both kerbs. Along the site frontage, Station Street has a posted speed limit of 50km/h.

Figure 3.7 shows the typical configuration of Station Street along the frontage of the site.

Figure 3.7: Station Street Typical Configuration

Ware Street

Ware Street is a local street that runs in a north-south alignment along the eastern boundary of the site. It extends south from Cunninghame Street and continues into the site as one of the existing access points.

In the vicinity of the site, Ware Street accommodates a carriageway of approximately 12.5 metres comprising a central through lane in each direction as well as outer kerbside parking. Along the site frontage, Ware Street operates with a default 50km/h speed limit.

Figure 3.8 shows the typical configuration of Station Street along the frontage of the site.

Figure 3.8: Ware Street Typical Configuration

Source: www.nearmap.com

4.1 Town Centre and Surrounding Locality

As outlined within the Fairfield City Centre DCP, the Fairfield Town Centre extends from Cunninghame Street in the north through to Bertha Street in the south and from Barbara Street in the west through to The Horsley Drive in the east.

Within this area, the Fairfield Town Centre encompasses a mixture of land uses and transport options including the Fairfield Train Station.

Figure 4.1 sets out the boundary of the Fairfield Town Centre and also identifies the location of the subject site within this precinct.

Figure 4.1: Fairfield Town Centre Boundary

Source: www.nearmap.com

Based on the high density and varied uses (retail, commercial, residential, other, etc) contained within an activity centre such as the Fairfield Town Centre, it is common for precincts of this nature to accommodate high levels of alternate transport modes as well as access via private vehicle.

Subsequently **Section 4.2 - 4.4** following, detail the sustainable transport initiatives available within the town centre and surrounding precinct.

4.2 Pedestrian Opportunities

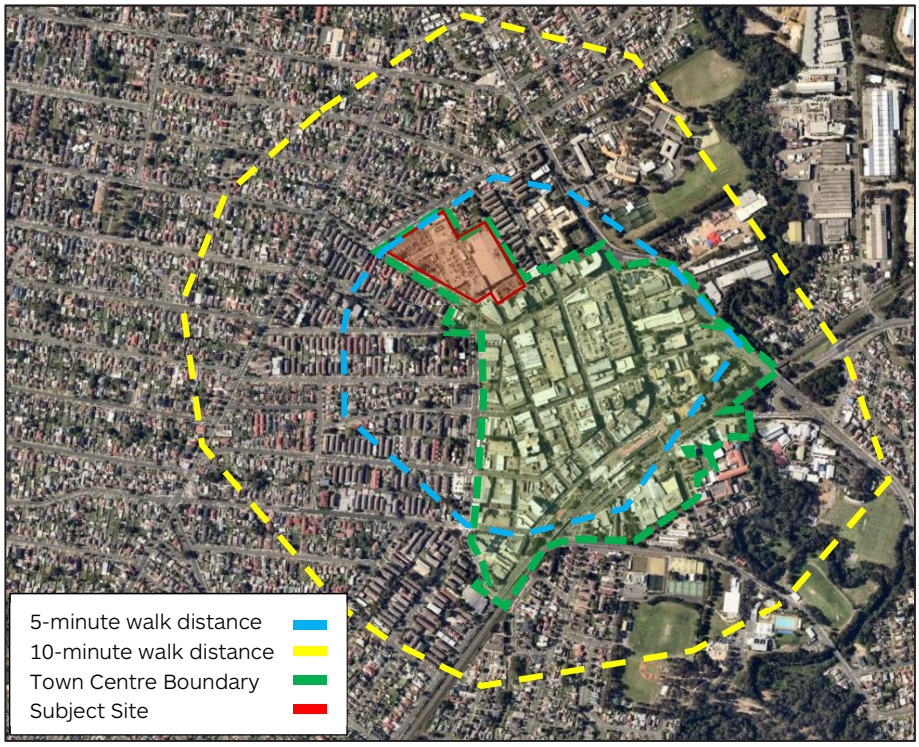
The Fairfield Town Centre benefits from a well-connected local pedestrian network that facilitates convenient pedestrian access to many of local facilities contained within the precinct.

The NSW "*Planning Guidelines for Walking and Cycling*" (NSW DIPNR 2004) identifies the benchmarks for accessibility, suggesting sixty percent of the area within a walking catchment should be able to be reached by a five to ten minute walk along the street.

Based on typical pedestrian travel speeds of 1.4m/s, a five minute walk time is calculated as equating to a walk distance of 420 metres, with a ten minute walking time equating to 840 metres.

Based on this, **Figure 4.2** has been prepared showing the areas of Fairfield accessible within a five and ten minute walk from the centre of Fairfield.

Figure 4.2: Walking distance from the centre of Fairfield



Review of the above figure subsequently indicates that the majority of the Town Centre, including the subject site, is situated within a five-minute walk from the middle of the precinct.

Furthermore, the entire town centre, as well as many surrounding residential streets, are captured within the 10-minute walking catchment.

It is therefore considered that Fairfield town centre is well suited to encourage people to use walking as a primary mode of travel, when accessing the various local facilities.

4.3 Bicycle Opportunities

In addition to the excellent pedestrian connectivity, the Fairfield Town Centre and surrounding precinct also benefits from the provision of a comprehensive network of cycleways throughout the precinct.

Over 100 kilometres of cycleway are provided, traversing east/west and north/south linking Fairfield to adjacent areas. The cycleways are primarily off-road and provide access to the major rail and bus public transport systems.

Within proximity of the Fairfield Town Centre, there are three main regional cycling routes providing east/west connectivity across the precinct:

- Prospect Creek share path connects to the Holroyd City network and Fairfield Town Centre.
- Bay to Mountains shared path connects to Mirambeena Regional Park and to Prospect Reservoir, Blacktown.
- Fairfield Council has recently completed stages 1 to 3 of the Cabramatta Creek shared path which connects the Bay to Mountains network to Cowpasture Road.

In conjunction with these routes, there are also two regional routes that provide north/south connectivity across the precinct:

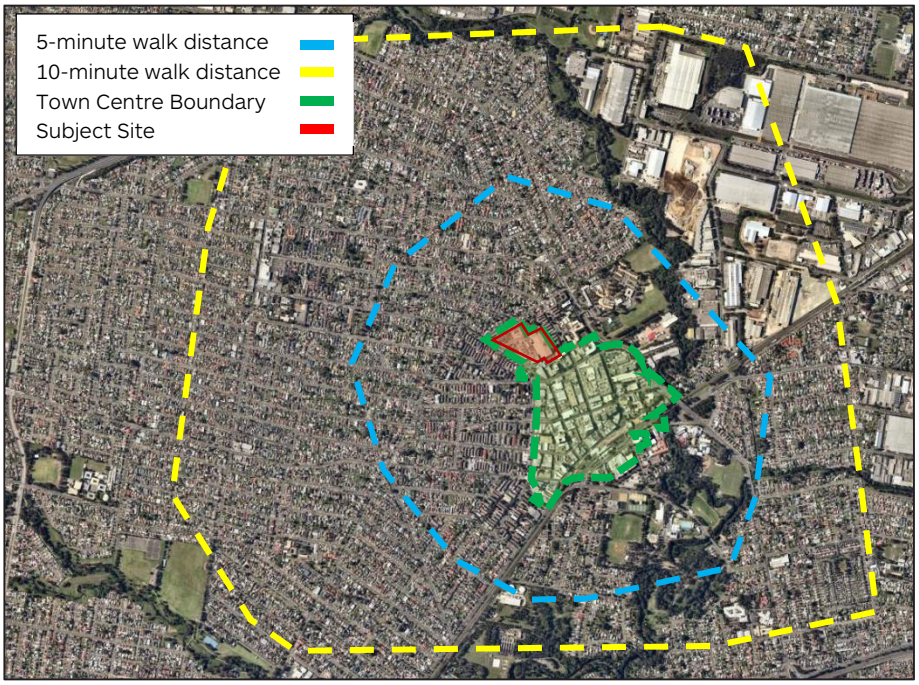
- Rail Trail cycleway connects Paramatta to Liverpool and links to Prospect Creek and the Bay to Mountains shared path network. This path will connect to the Cabramatta Creek shared path when the next stages are completed.
- T-Way cycleway connects Parramatta to Liverpool and links to the Bay to Mountains and the St Johns Park shared path network.

The cycling network in the vicinity of the site is shown in **Figure 4.3**.

Figure 4.3: Cycling Network

With regards to the wider bicycle network and based on an average cyclist travel speed of 4.2m/s, **Figure 4.4** has been prepared showing the five-minute and ten-minute cycling catchment areas from the middle of the Fairfield Town Centre.

Figure 4.4: Cycling distance from the centre of Fairfield



Review of the above figure subsequently indicates that the entirety of the Town Centre, including the subject site, is situated within a five-minute ride from the middle of the precinct.

Furthermore, a large portion of surrounding residential streets are situated within a ten-minute ride from the Town Centre.

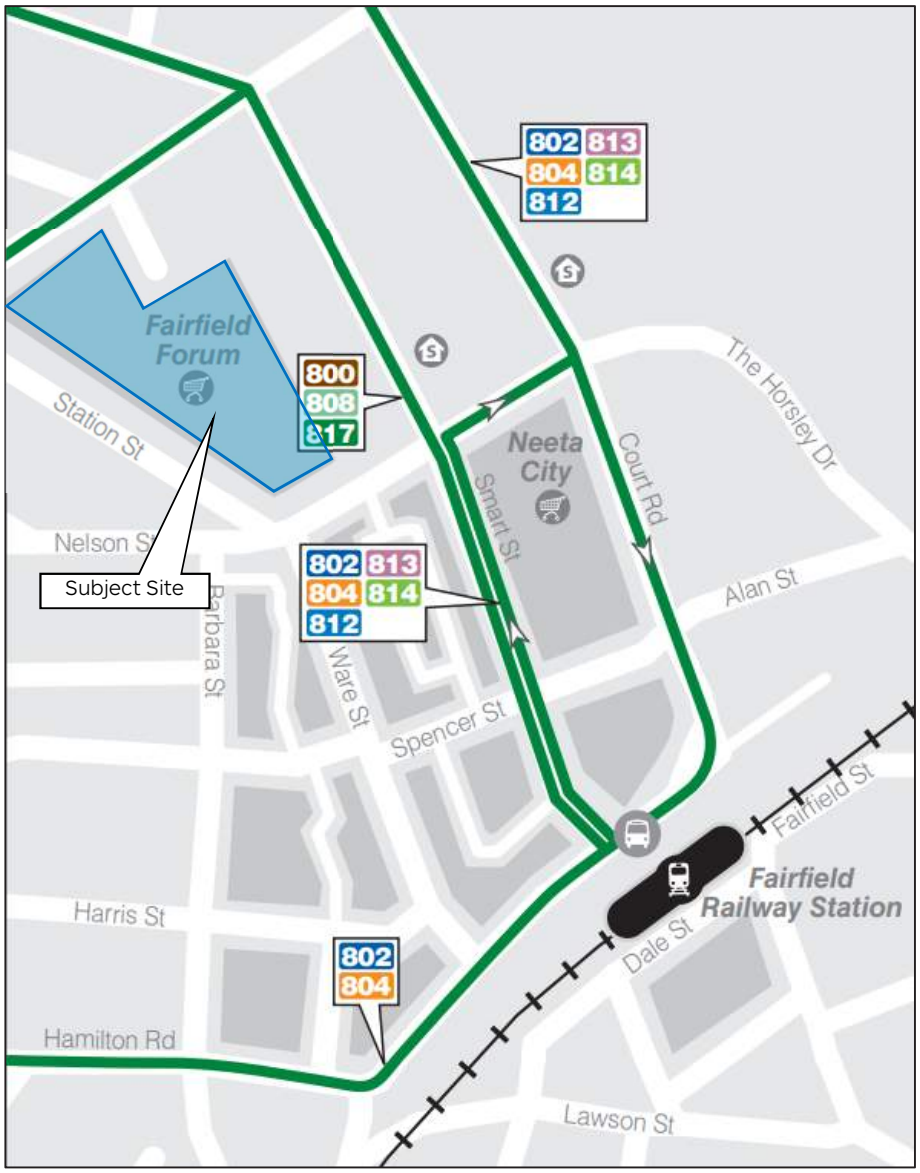
It is therefore considered that Fairfield town centre is well suited to encourage people to use cycling as an alternate mode of travel, when accessing the various local facilities.

4.4 Public Transport Opportunities

In addition to the pedestrian and cyclist connectivity provided within the precinct, the Fairfield Town Centre is also well serviced by both bus and train services providing multiple, conveniently accessible public transport options.

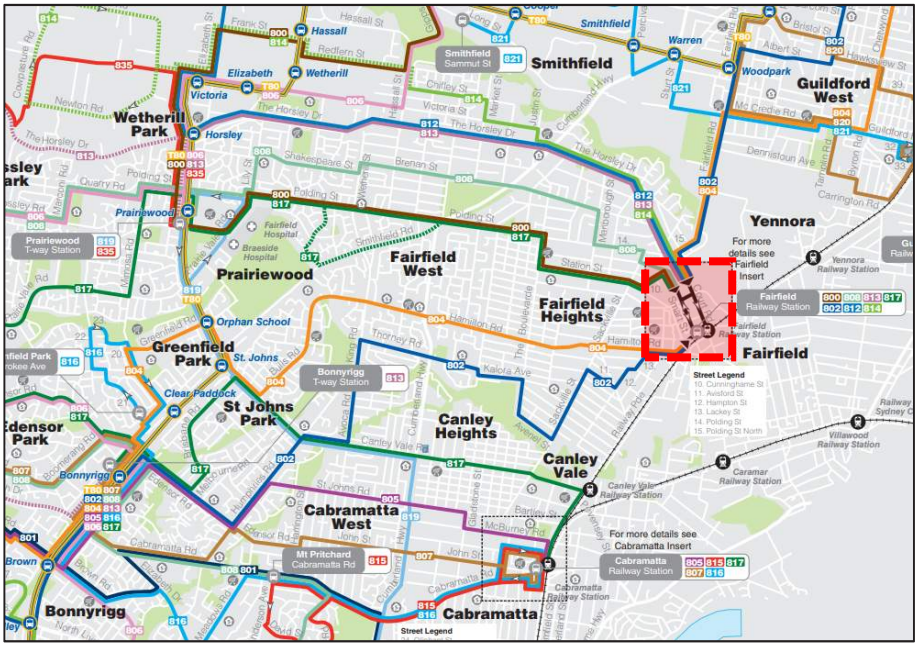
Figure 4.5 shows the public transport facilities provided at a local context within the Fairfield Town Centre with **Figure 4.6** showing the wider public transport network and its connectivity throughout the surrounding areas.

Figure 4.5: Local Public Transport



Source: transportnsw.info

Figure 4.6: Public Transport Network



Source: transportnsw.info

As identified within the preceding figures, multiple bus routes operate directly within the Fairfield Town Centre, providing connectivity throughout the surrounding precinct. All buses operating within the Fairfield Town Centre stop at the Fairfield Railway Station to provide connectivity between bus and train services.

Most suburbs within the surrounding Fairfield LGA are serviced by bus routes providing connection to/from the Fairfield Town Centre by either dedicated north – south or east-west connections through the LGA. Bus services within the Fairfield LGA typically operate at regular frequencies of between 15 – 30 minutes.

Train connectivity within the precinct is facilitated via the Fairfield Railway station located towards the southern end of the Town Centre. The station is located 300 metres from the town centre and is accessible within a four-minute walk or a two-minute cycle ride.

Fairfield Railway Station is located on the Inner West & Leppington and Cumberland Lines with trains arriving/departing the station on both lines at regular intervals.

The station provides access to key interchange stations including Richmond, Liverpool, Blacktown, and Central Station, along with other local stations.

Table 4.1 provides a summary of the services available within the Fairfield Town Centre along with their service frequency.

Table 4.1: Public Transport Services

Service	Route No / Station	Route	Frequency
Bus	800	Blacktown – Fairfield	15 mins
	817	Cabramatta - Fairfield	30 mins
	802	Liverpool – Parramatta	30 mins
	804		15 mins
	812	Blacktown – Fairfield	30 mins
	813	Bonnyrigg – Fairfield	30 mins
	814	Fairfield - Smithfield	30 mins
	904	Fairfield - Liverpool	Hourly
	905	Bankstown – Fairfield	15 mins
	906	Fairfield - Parramatta	30 mins
	S4	Fairfield – Chester Hill	Two a day
Train	Fairfield Railway Station	Inner West & Leppington and Cumberland Lines	6 - 30 minutes

It is therefore considered that the Fairfield Town Centre is well serviced by various public transport options which will provide a viable and practical alternative means of travel to private vehicle both within the town centre and within the wider surrounding precinct.

5.1 Development Schedule

Development plans for the proposal have been prepared by Rothelowman dated February 2019 (attached as **Appendix A**), which show that the subject site is to be Master Planned to accommodate a redeveloped of a mixed-use precinct comprising commercial, retail, and residential uses.

Figure 5.1 shows the proposed set out and configuration of the development site.

Figure 5.1: Proposed Masterplan

Based on these development plans, the following development schedule as presented in **Table 5.1** has been provided:

Table 5.1: Development Schedule

Use		Existing	Proposed	Difference
Commercial		-	3,200 sqm	+3,200 sqm
Retail		17,748 sqm	14,393 sqm	-3,355 sqm
Dwellings	1-2 bedroom unit	-	1,310 no.	+1,310 no.
	3 or more bedrooms	-	179 no.	+179 no.
	Total	-	1,489 no.	+1,489 no.
Car Parking Spaces		~720 no.	2,919 no.	+2,199 no.

5.2 Transport Principles

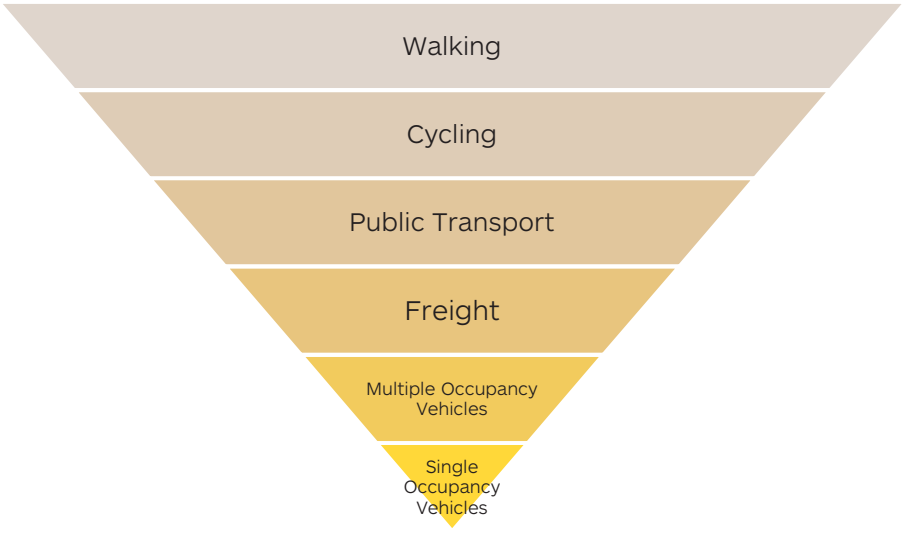
In order to direct the planning and development of the site to accommodate the future growth in transport requirements that may be associated with the proposal.

The following high-level transport principles are provided:

- Integrate transport and land use planning;
- Support walking, cycling, and public transport as preferred transport options;
- Develop high-mobility pedestrian and public transport connectivity;
- Allow for adapting the transport system to accommodate changing transport needs; and,
- Incorporate low-impact freight and delivery in the central retail area.

These principles have been used to determine the preferred transport user hierarchy to be adopted for the proposed development. This hierarchy is presented in **Figure 5.2** following.

Figure 5.2: Transport User Hierarchy



With regards to the preceding hierarchy, it is recognised that the site is part of an existing significant activity centre that draws its catchment from a wide area.

Subsequently it is understood that there may be an existing pattern for some users to access the site via private vehicle.

Implementation of the preceding principles and transport user hierarchy is however intended to support and facilitate changes in transport behaviour (existing and future) that may benefit the area as a whole.

5.3 Sustainable Transport

With regards to the preceding principles and transport user hierarchy, the following sustainable transport opportunities have been identified in order to encourage alternative means of transport to and from the development site:

Pedestrian Network

As previously addressed, the Fairfield Town Centre, of which the site is part of, is well serviced with regards to pedestrian connectivity. The site is subsequently well located with respect to facilitating pedestrian movements to and from nearby uses.

To assess the pedestrian accessibility and connectivity of the site, a 'Walk Score' analysis of the site was undertaken. A 'Walk Score' analysis measures the walkability of a site based on the walking distance to local amenities, such as supermarkets, cafes, restaurants, parks, public transport, etc.

Points are awarded based on distance to amenities in each category with amenities within a five-minute walk given maximum points. A decay function is used to give points to more distant amenities. Walk Score also measures pedestrian friendliness by analysis population density and road metrics such as block length and intersection density.

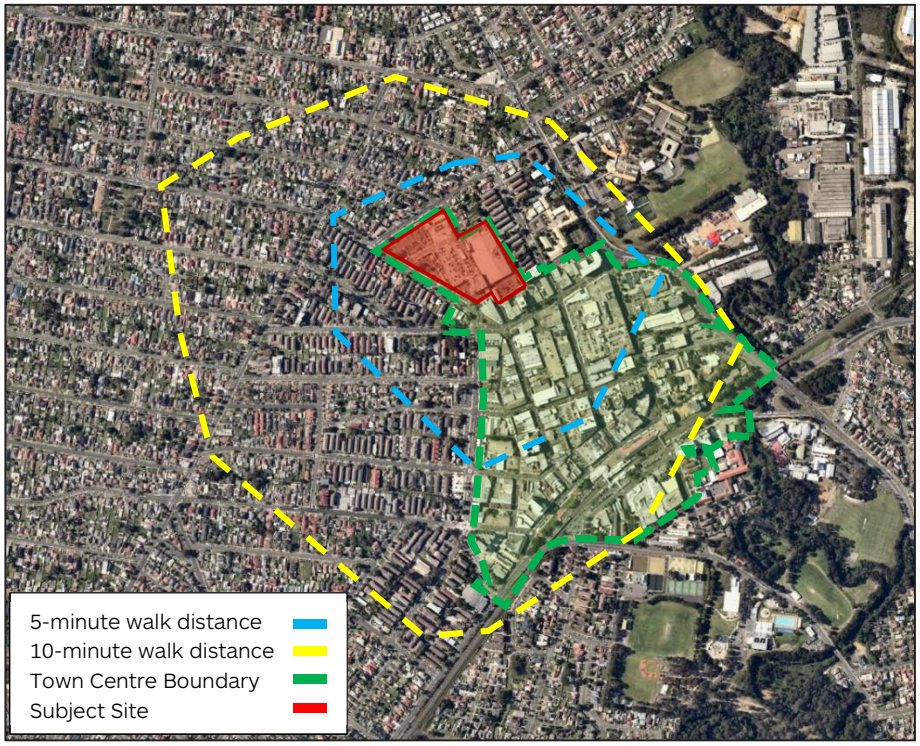
Based on this assessment, the development site achieves a 'Walk Score' of 86 points (out of a possible 100) and is described as a 'Very Walkable' on WalkScore.com. This suggests that most errands can be done without the use of a private motor vehicle.

The excellent walkability of the subject site provides future users with an easy and sustainable alternative to access the proposed development other than reliance on private motor vehicles.

It is therefore considered that future residents of the development will have a genuine alternative to the private motor vehicle, particularly for short trips and journeys to/from work.

An assessment of the pedestrian connectivity within the catchment surrounding the subject site has been prepared in line with that undertaken for the Fairfield Town Centre. The subsequent walking catchment for the subject site is presented in **Figure 5.3**.

Figure 5.3: Walking distance from the Site



A review of the walkable catchment area for the subject site indicates that almost 50% of the Fairfield Town Centre is situated within a five-minute walk of the site, with almost the entire town centre within a ten-minute walk.

It is therefore considered that proposed development is well located to encourage people to use walking as a primary mode of travel, when accessing the various local facilities.

Bicycle Network

Due to its location within the Fairfield Town Centre, the subject site is well serviced by the surrounding bicycle network.

As identified by the RMS Cycleway Finder, an on-road bicycle route is provided along Nelson Street, accessed via Station Street, approximately 100 metres from the subject site. Additional on-road bicycle routes are provided along Court Road, Wrentmore Street, Camden Street, The Crescent and many more.

An off-road share path (Prospect Creek Shared Path) is located adjacent to The Horsley Drive which is accessible via Cunninghame Street within a 300 metre cycle from the site. The 5km path connects to the Holroyd City network and Fairfield Town Centre.

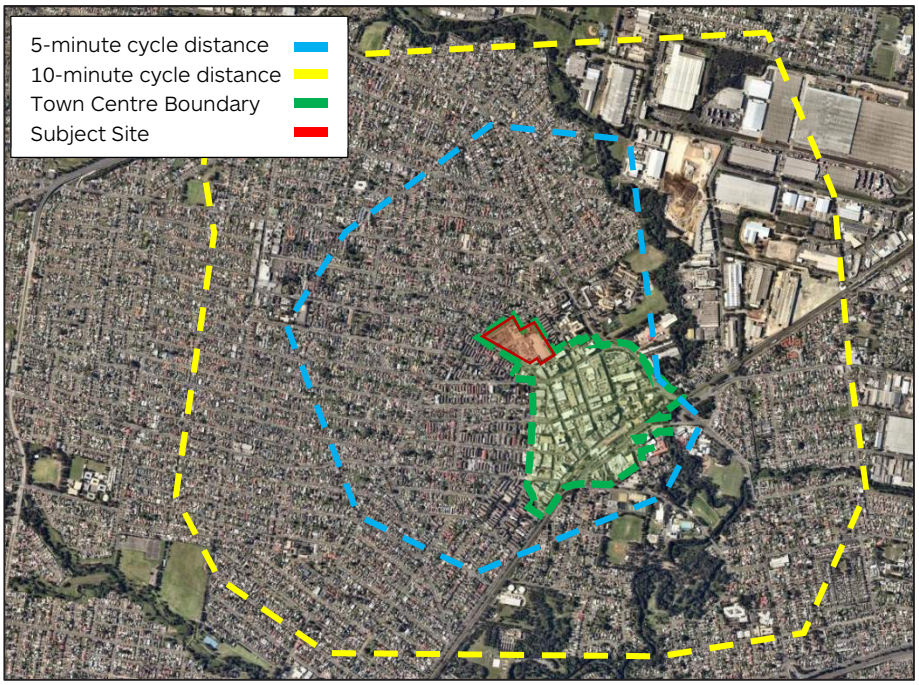
Another off-road share path (Parramatta – Liverpool Rail Trail) is located to the south of Fairfield Railway Station which is accessible via The Horsley Drive within an 800 metre cycle from the site.

The Parramatta – Liverpool Rail Trail runs along the railway line from Parramatta Station to Liverpool Station providing a link to a number of popular precincts.

Bicycle parking facilities are provided throughout the Fairfield Town Centre including secure bicycle parking at Fairfield Railway Station.

An assessment of the surrounding cycling accessible catchment area has been undertaken for the subject site and is presented within **Figure 5.4**.

Figure 5.4: Cycling distance from the Site



Review of the above figure subsequently indicates that the entirety of the Fairfield Town Centre, is situated within a five-minute ride from the subject site. Furthermore, a large portion of surrounding residential streets are situated within a ten-minute ride from the subject site.

It is therefore considered that based on the proximity of the site to the Fairfield Town Centre, in conjunction with the accessibility of the surrounding bicycle network, that the subject site is well located to encourage cycling as an alternate mode of travel.

Public Transport

Given its location within the Fairfield Town Centre, it is considered that the subject site is well serviced by public transport which provides a viable alternative means of transport to private vehicle.

With regards to the public transport options proximate to the subject site there are two bus stops located along Cunninghame Street (the northern boundary of the site). In addition to the two bus stops, there are further bus stops located along Smart Street that can be accessed within a five-minute walk (400m) of the site.

Overall, these stops are serviced by eleven different bus routes providing access to a wide range of destinations including Blacktown, Cabramatta, Liverpool, and Smithfield amongst others.

With regards to train access, Fairfield Railway Station is located eight-minute walk (700 metres) south from the site and provides access to the Inner West & Leppington and Cumberland Lines with trains arriving/departing the station on both lines at regular intervals. The station provides access to main interchange stations such as Richmond, Liverpool, Blacktown, Central Station along with other local area stations.

Table 5.2 outlines the public transport services within the surrounding area and their location with consideration to the site.

Table 5.2: Public Transport Services Proximate to the Site

Service	Route		Nearest Stop	Walking Distance
Bus	800	Blacktown – Fairfield	Cunninghame Street	Adjacent the site
	817	Cabramatta - Fairfield		
	802	Liverpool – Parramatta	Station Street	400 metres
	804			
	812	Blacktown – Fairfield		
	813	Bonnyrigg – Fairfield		
	814	Fairfield - Smithfield		
	904	Fairfield - Liverpool		
	905	Bankstown – Fairfield		
	906	Fairfield - Parramatta		
	S4	Fairfield – Chester Hill		
Train	Inner West & Leppington and Cumberland Lines		Fairfield Railway Station	700 metres

As such, it is considered that the site has excellent access to a wide range of public transport services, with public transport providing a genuine alternative method of transport to/from the site than the private car.

6.1 DCP Parking Rates

Table 1 of Chapter 12 of the Fairfield Citywide Development Control Plan sets out the minimum parking requirement rates for proposed development within Fairfield.

In conjunction with this, Appendix 5 of the Fairfield City Centre DCP 2013 sets out specific minimum rates for developments identified as being located within the Fairfield Town Centre.

As previously identified, the subject site is situated within the Fairfield Town centre and subsequently is subject to the rates as set out within Appendix 5 of the Fairfield City Centre DCP 2013 and summarised in **Table 6.1** following:

Table 6.1: DCP Minimum Car Parking Rates

Use		DCP Minimum Car Parking Rate
Commercial		1 space per 40sqm gross leasable area
Retail		1 space per 25qm gross leasable area
Dwellings	1 - 2 bedroom unit	1 car space per dwelling
	3 or more bedrooms	1.5 car spaces per dwelling
	Visitors	0.25 car spaces per dwelling

6.2 DCP Parking Requirements

Based on the development schedule, and the DCP rates for the site as identified within **Section 6.1**, **Table 6.2** following has been prepared identifying the DCP parking requirements for the proposed development.

Table 6.2: DCP Minimum Car Parking Requirements

Use		Schedule	Parking Requirement
Commercial		3,200 sqm	82
Retail		14,393 sqm	578
Dwellings	1 - 2 bedroom unit	1,310 no.	1,310
	3 or more bedrooms	179 no.	269
	Visitors	1,489 no.	372
Total			**2,611**

The car parking supply illustrated within the Master Plan of 2,919 spaces is therefore well in excess of the DCP requirement of 2,611 spaces as identified in **Table 6.2**.

Given this excess parking provision above DCP requirements, opportunity exists to convert some of these spaces to car share

schemes or bicycle compounds. Such initiatives will be further investigated when detailed analysis and design is undertaken.

6.3 Parking Limitation Opportunities

As previously identified, the subject site is situated within the Fairfield Town Centre with excellent connectivity to surrounding land uses and to a variety of public transport options.

Developments situated in activity centre locations such as that proposed are typically able to operate with reduced parking provisions due to the increased likelihood of multi-purpose trips to the site, in conjunction with a variation in parking demand between uses over the course of a typical day and week.

In addition to this, and with consideration to the parking requirements of the proposed residential dwellings, it is noted that within the 2013 update to the *RTA Guide to Traffic Generating Development*, surveys of high density residential dwellings within Sydney metropolitan areas indicated the following rates of car parking provision and occupancy:

- Average car parking *provision* rate of 1.31 per dwelling. Note that this provision rate is irrespective of the number of rooms within a dwelling and is inclusive of visitor parking.
- Average car park *occupancy* rate of 65%.

Based on these rates, it is therefore noted that high density residential dwellings, similar to those proposed, typically generate an average parking demand of 0.85 spaces per dwelling (1.31 x 0.65).

It is subsequently considered that based on the location of the site, and with respect to available RTA data, opportunity exists for the subject site to operate with a reduced number of parking spaces from that set out within the DCP.

7.1 Introduction

Based on correspondence received from Council, the following high level assessment of the proposal has been undertaken to broadly identify the potential traffic generation of the proposal.

The following assessment identifies the potential traffic generation and distribution of the subject site.

7.2 Traffic Generation

Commercial / Retail Traffic

Development plans for the proposal indicate that upon completion, the commercial/retail component of the site will total 17,593 sqm of floor space. The floor area of the existing commercial/retail centre on the subject site is 17,748sqm and as such is similar size and nature.

Subsequently, it is considered that traffic generated by the commercial/retail component of the proposed development will largely be in line with existing volumes and distributions.

Therefore, traffic for the retail and commercial component will continue to be accommodated within the surrounding road network as per existing operations.

Residential Traffic

In light of the above, the residential component of the proposal is identified as generating the additional traffic from the site.

In assessing the potential traffic generation of the residential component of the proposal, guidance has been taken from the *RMS Guide to Traffic Generating Developments – Updated Traffic Surveys (August 2013)*. This document sets out AM peak hour, PM peak hour and daily traffic generation rates for residential dwellings.

These rates were compiled from surveys from five metropolitan sites and five regional sites. The five regional sites are not considered to be comparable with the characteristics of the subject site and so have been omitted.

Review of the data of the five metropolitan sites, results in the average traffic generation rates per unit of:

— 0.24 in the AM peak hour
— 0.14 in the PM peak hour; and
— 1.66 vehicle trips per day per unit.

Accordingly, the anticipated residential traffic generation of the proposal during the AM and PM peak hours are as shown in **Table 7.1** below:

Table 7.1: Residential Traffic Generation

	AM Peak	PM Peak	Daily Traffic
1,489 units	**357 vph**	**208 vph**	**2,472 vpd**

As previously noted, the subject site is located within the Fairfield city centre within close proximity to a variety of land uses. These land uses comprise essential services such as retail, education, business, health, and community facilities.

Typically, services such as these are a source of traffic attraction. Due to the close proximity of the development to these facilities, in combination with the high walkability and public transport opportunities of the precinct, it is likely that vehicle traffic generation of the site is likely to be reduced and replaced with alternate transport modes.
The location of the proposed development therefore supports the ability of the site to operate with a reduced dependence on private vehicles, subsequently increasing the ability of the site to operate with reduced traffic generation and therefore reducing the associated requirements within the surrounding road network.

Based on the above, it is considered that the traffic generation identified in **Table 7.1** is a conservative assessment of the likely traffic generation.

Based on typical traffic generation rates contained within the *RMS Guide to Traffic Generating Developments,* the existing site uses are estimated to generate in the order of 13,800vpd. The additional 2,472vpd generated by the proposed residential dwellings therefore equate to an increase in daily traffic generation of only 18% from existing volumes.

When equally distributed across the three roads providing access to the site, this equates to approximately 824vpd on each road. Having regard to the context of the site at the northern end of the Fairfield Town Centre and the capacity afforded by the cross section of these roads it is considered that these anticipated additional traffic volumes are relatively minor.

Notwithstanding the above, a detailed traffic impact assessment will be undertaken at a later date once the final scheme has been refined.

7.3 Traffic Distribution

Commercial / Retail Traffic Distribution

As stated earlier, it is considered that traffic as generated by the retail component of the development will largely be in line with existing conditions and therefore will continue to be accommodated within the surrounding road network as per existing operations.

Residential Traffic Distribution

The majority of the traffic generated by the residential aspect of the development during the AM peak period will be residents departing the site whilst the majority of the traffic during the PM peak period will be residents returning to the site.

It is assumed that residential movements will be distributed as per **Table 7.2** during the AM and PM peak hours.

Table 7.2: Anticipated Traffic Distribution - Residential

Time	Inbound	Outbound
AM Peak	20%	80%
PM Peak	60%	40%

Applying the above distributions to the proposed traffic generation results in the peak hour traffic movements shown in **Table 7.3**.

Table 7.3: Anticipated Traffic Generation - Residential

Use	Time	Inbound	Outbound	Total
Residential	AM Peak (vph)	71	286	357
	PM Peak (vph)	125	83	208
	Daily (vpd)	**1,236**	**1,236**	**2,472**

A review of the New South Wales 'Household Travel Survey' trip purpose data has been undertaken for 'Fairfield' which is considered to be reflective of the location of the proposed site.

Table 7.4 shows the trip purpose percentage data and the resulting proposed traffic generation.

Table 7.4: Trip Purpose Data - Residential

Trip Purpose	Driver / Passenger			
	Peak Hour %	AM Peak	PM Peak	Daily
Work Related	23%	81	47	563
Education	10%	37	22	258
Shopping	20%	70	41	486
Social / Recreation	17%	61	36	424
Personal	6%	20	12	141
Other	24%	87	51	600
Total	**100%**	**357**	**208**	**2,472**

Source: transportnsw.gov.au

As shown in the preceding table, peak hour trips are made for a variety of reasons, including work, education, shopping etc.

A review of places of employment, retail and educational facilities in the surrounding area and suburbs has been undertaken, resulting in the assumed percentage distribution outlined in **Table 7.5.**

Table 7.5: Assumed Percentage Distribution - Residential

Trip Purpose	North	East	South
Work Related	20%	40%	40%
Education	10%	70%	20%
Shopping	20%	10%	70%
Other	40%	30%	30%

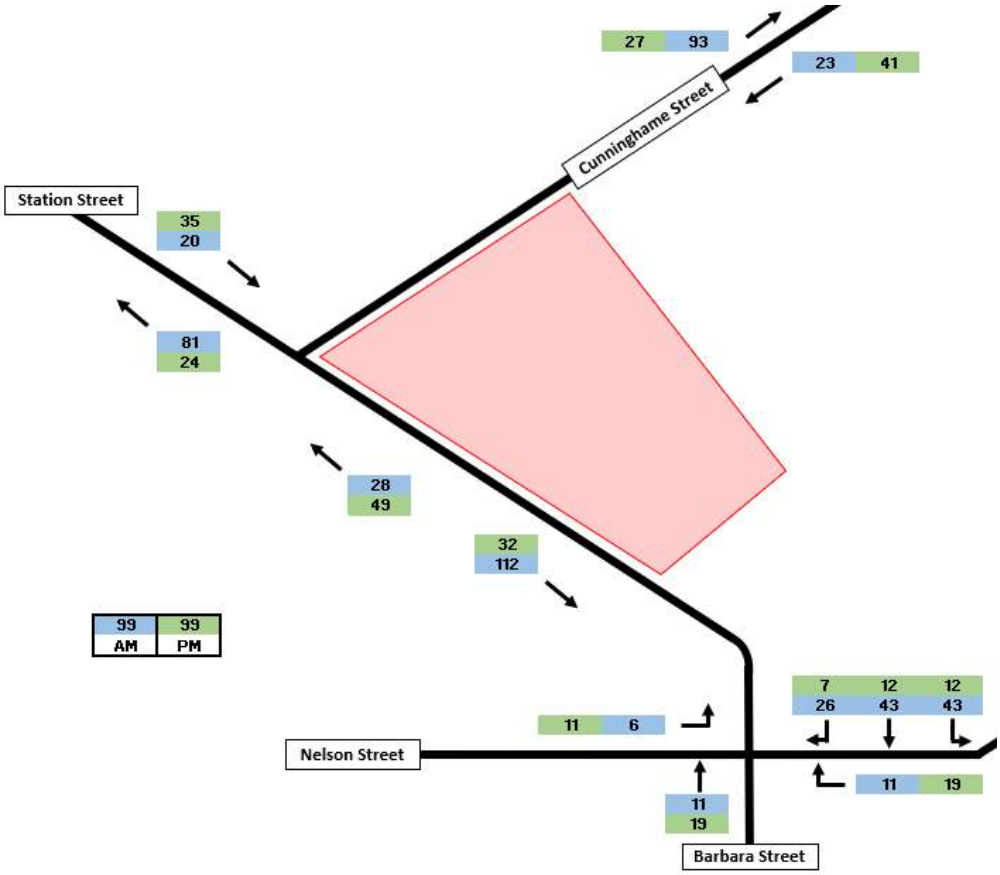
Applying the above assumptions to the trip purpose data results in the trips by direction as summarized in **Table 7.6.**

Table 7.6: Assumed Trip Assignment - Residential

Direction	AM Peak		PM Peak	
	%	VPH	%	VPH
North	28	101	28	59
East	33	116	33	68
South	39	140	39	81
Total	100	357	100	208

Based on **Table 7.6,** the anticipated peak hour traffic movements at intersections immediately adjacent the site are shown in **Figure 7.1**.

Figure 7.1: Anticipated Traffic Distribution



Multiple access points are available to the site which allows traffic to distribute across the wider road network and therefore reduce the impact on any singular intersection.

A detailed traffic impact assessment will be undertaken during the next stage of works, including intersection capacity assessments of key intersections surrounding the site.

As previously noted, the subject site is located at the northern end of the Town Centre and is separated from all other key development sites by Nelson Street. Considering the location of the site and the separation provided by Nelson Street, a detailed traffic impact assessment can effectively assess the impact of the subject site on the road network without requiring an assessment of the entire Town Centre. To facilitate this, detailed capacity modelling that is prepared will take into account future growth associated with the other key development sites south of Nelson Street through the inclusion of growth in Nelson Street traffic volumes.

8.1 Site Access Locations

As addressed within **Section 3.3**, under existing conditions, vehicle access to/from the site is facilitated via the provision of multiple access points situated around the site.

As part of the proposed development, the existing access arrangements are to be consolidated and reduced with vehicle access proposed to be provided as follows:

- 1 car park (residential) accessed from Ware Street;
- 1 car park accessed from Smart Lane;
- 1 combined car park and loading dock accessed from Ware Street;
- 1 combined car park and loading dock accessed from Station Street; and
- 1 car park (residential) accessed from Station Street.

In addition to these proposed access locations, a new local connection is proposed to be provided between Station Street and the southern extent of Ware Street, providing road network linkage through the site.

These proposed access locations in conjunction with the proposed internal road link will allow for connectivity between the subject site and the surrounding road network.

The proposed access points have been located such that they are located away from critical intersection areas such as the Ware Street extension to Station Street and the existing intersection with Cunninghame Street. By locating site access away from these areas increases legibility and reduces conflict.

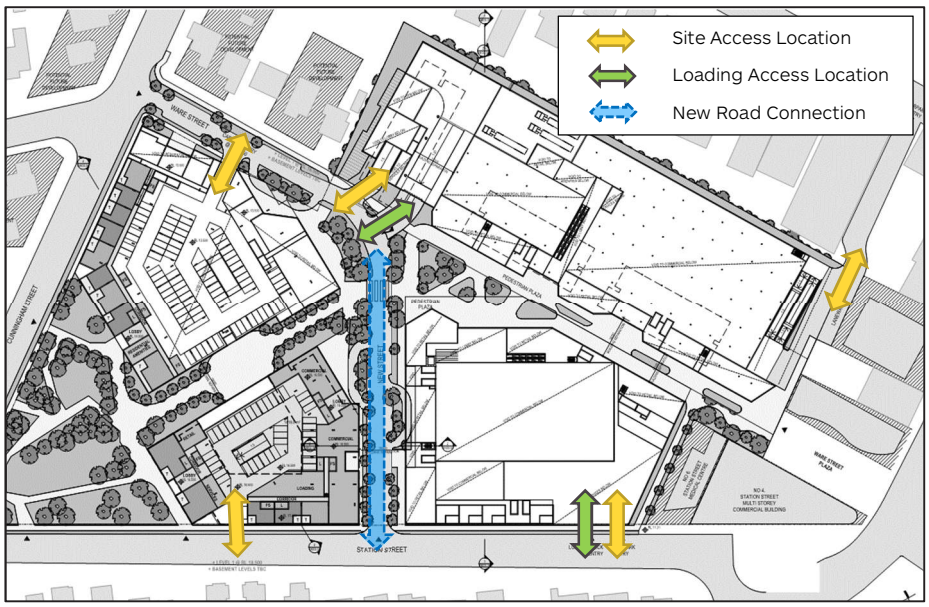
Additionally, the proposed access points have been located such that the "core" of the Ware Street extension is free from excessive traffic volumes. The location of the access points is therefore intended to promote the amenity of Ware Street, reduce the intensity of traffic and improve pedestrian activity through the area.

Similarly, the location of car parking and loading facilities have been considered within the concept development plans. Specifically, loading areas have been located away from high traffic pedestrian areas and have been arranged such that they are serviced by a single location to reduce points of conflict. Similarly, proposed resident and customer car parking areas have been separated and are provided in independent basement car parking areas to accommodate residential amenity and security.

The provision of multiple access points to the site seeks to distribute the traffic load across the wider road network and to provide a number of access points that provide direct access to the road network to reduce internal congestion associated with circulation.

Figure 8.1 following shows the proposed site access locations along with the new local road connection.

Figure 8.1: Site Access Locations



8.2 Surrounding Road Network Context

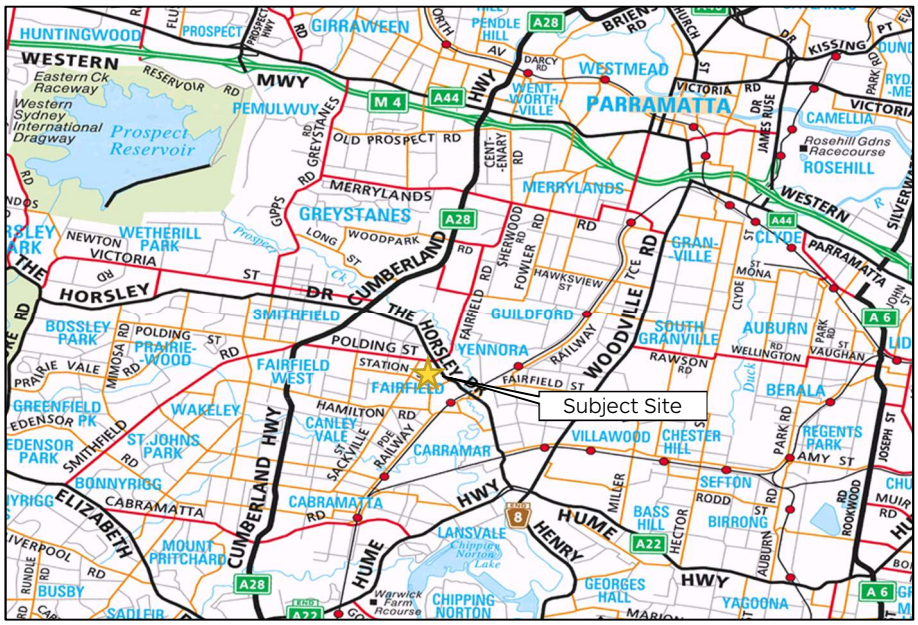
In regard to the wider surrounding road network context, Fairfield is well serviced by a surrounding higher order road network that includes a mixture of arterial, secondary arterial, and connector roads. This network will aid with facilitating vehicle movements to and from the site.

With respect to the proposal, key higher order roads within proximity of the development include:

- The Horsley Drive which operates as a primary arterial facilitating north-south movement between the Cumberland Highway to the north and the Hume Highway to the south.
- Polding Street which operates as a secondary arterial and provides east-west connection between the Cumberland Highway to the west and The Horsley Drive to the east.
- Sackville Street, Hamilton Road, and Station Street which operate as connector level roads providing connection through the local area and to higher order arterial roads.

Figure 8.2 shows the wider surrounding road network with respect to the location of the subject site.

Figure 8.2: Wider Road Network



With regards to this surrounding higher order road network, it is therefore considered that the subject site is well serviced with regards to facilitating the movement of future traffic to and from the development.

9 Summary and Conclusions:

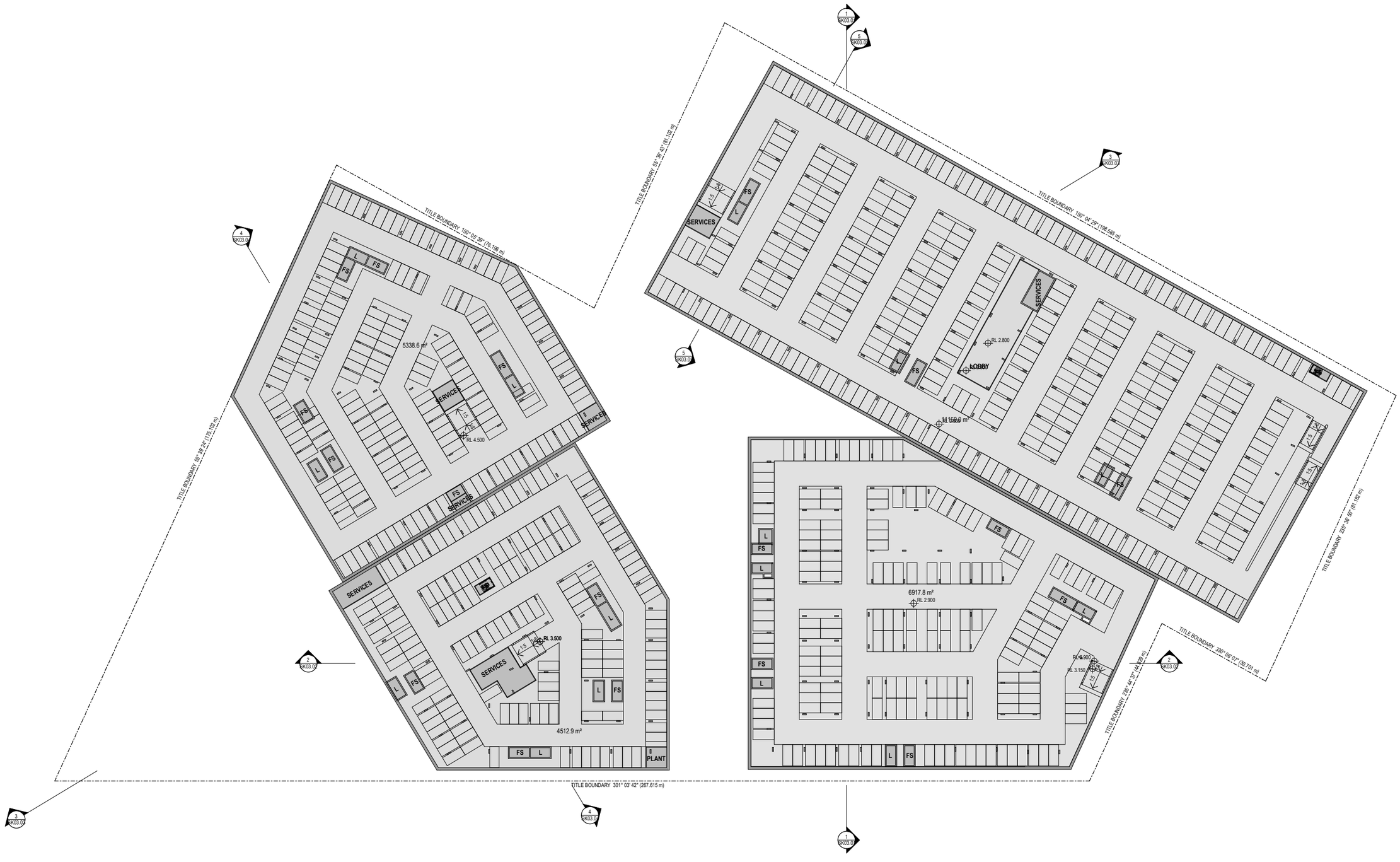
Based on the preceding assessment, the following summary of the proposed Fairfield Forum development is provided:

- The subject site is situated within the Fairfield Town Centre.
- The proposal seeks to redevelop the existing commercial/retail site to provide a mixed-use precinct comprising residential, retail and commercial uses in conjunction with new basement car parking.
- The subject site is situated within a highly walkable precinct, with many facilities (education, retail, commercial, community, etc) situated within close proximity to the site. The location of the site within the surrounding precinct subsequently supports walking as a viable alternative means of transport to private vehicle.
- The subject site is well located for bicycle connectivity with multiple bicycle paths located within close proximity to the proposed development providing connection throughout the town centre and wider surrounding precinct.
- The subject site is serviced by multiple public transport options that will provide a viable alternative means of transport to private vehicle.
- Based on the proposed development schedule, the proposal would generate a DCP parking requirement of 2,611 spaces distributed across the commercial, retail, and residential uses.
- Based on the location of the site within Fairfield Town Centre in conjunction with supporting case study data, it is considered that opportunity may exist for the site to operate with a reduced provision of on-site parking than specified within the DCP rates.
- Retail traffic as generated by the proposal is anticipated to be typically in line with existing conditions as the retail floor area is not increasing and will therefore result in minimal change to the existing road network conditions.
- The residential aspect of the development is anticipated to generate up to 357vph during the AM peak hour, 208vph during the PM peak hour and 2,472vpd.
- The additional traffic associated with the residential component of the proposal equates to approximately an 18% increase in traffic generated by the site.
- Having regard to the context of the site at the northern end of the Fairfield Town Centre and the capacity afforded by the cross section of these roads it is considered that these anticipated additional traffic volumes are relatively minor.
- The proposed development will reduce and consolidate the existing site access arrangements, reducing the spread of site access impacts on the surrounding road network.
- The Fairfield Town Centre is well serviced by a surrounding higher order road network that will assist with facilitating the movement of vehicles to and from the development site.

Appendix A **Development Plans**

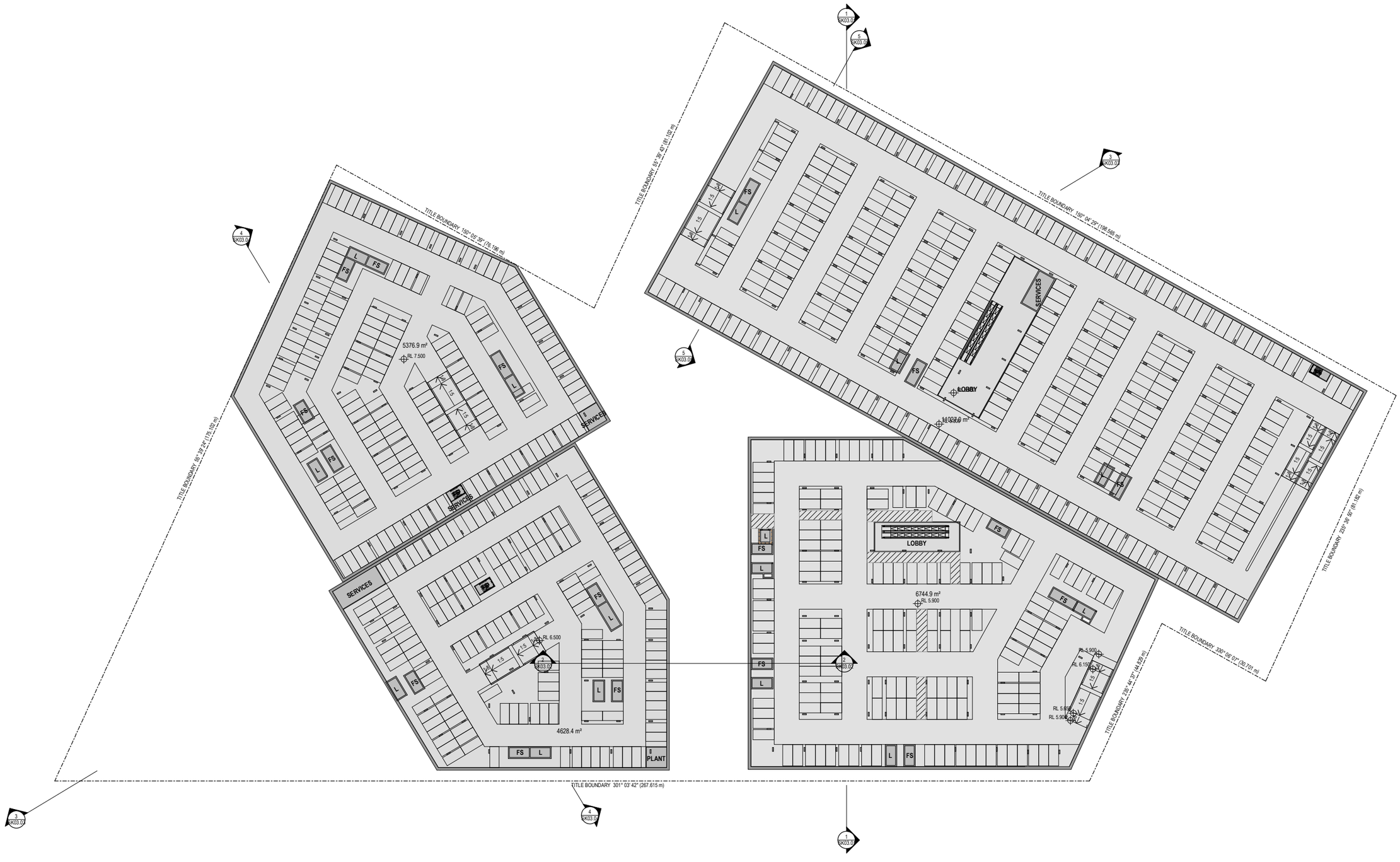
PLANS

BASEMENT 3



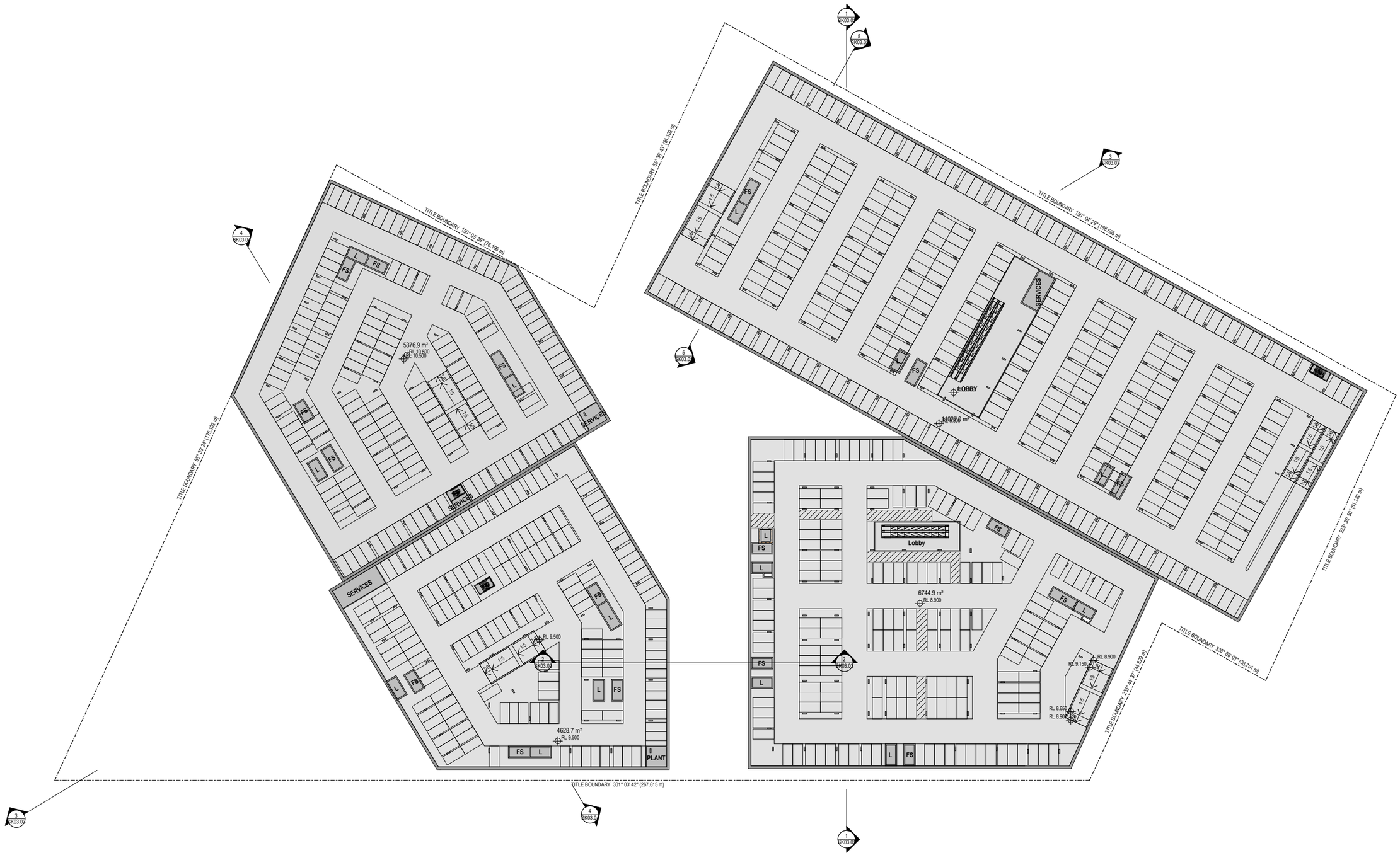
PLANS

BASEMENT 2



PLANS

BASEMENT 1



PLANS

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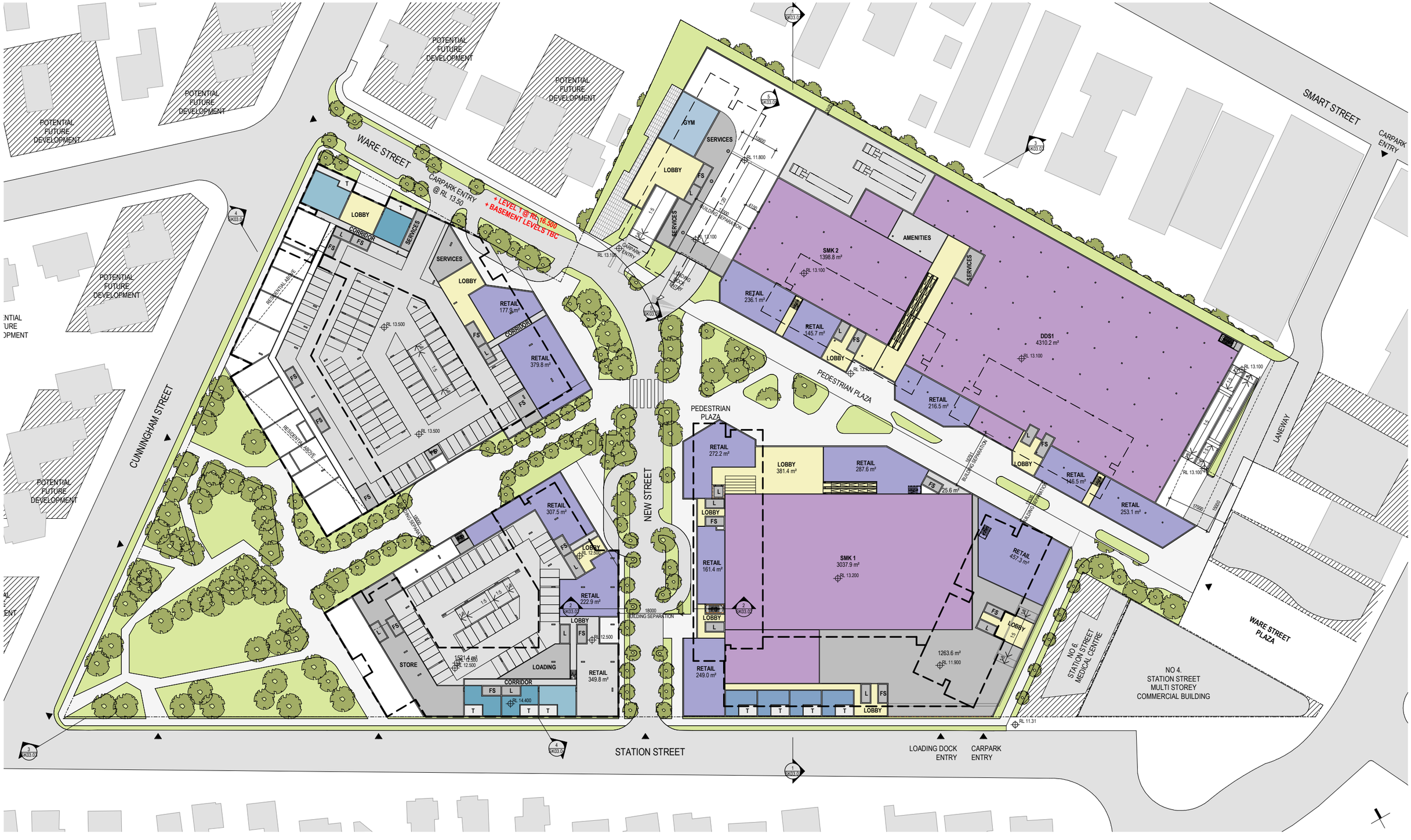
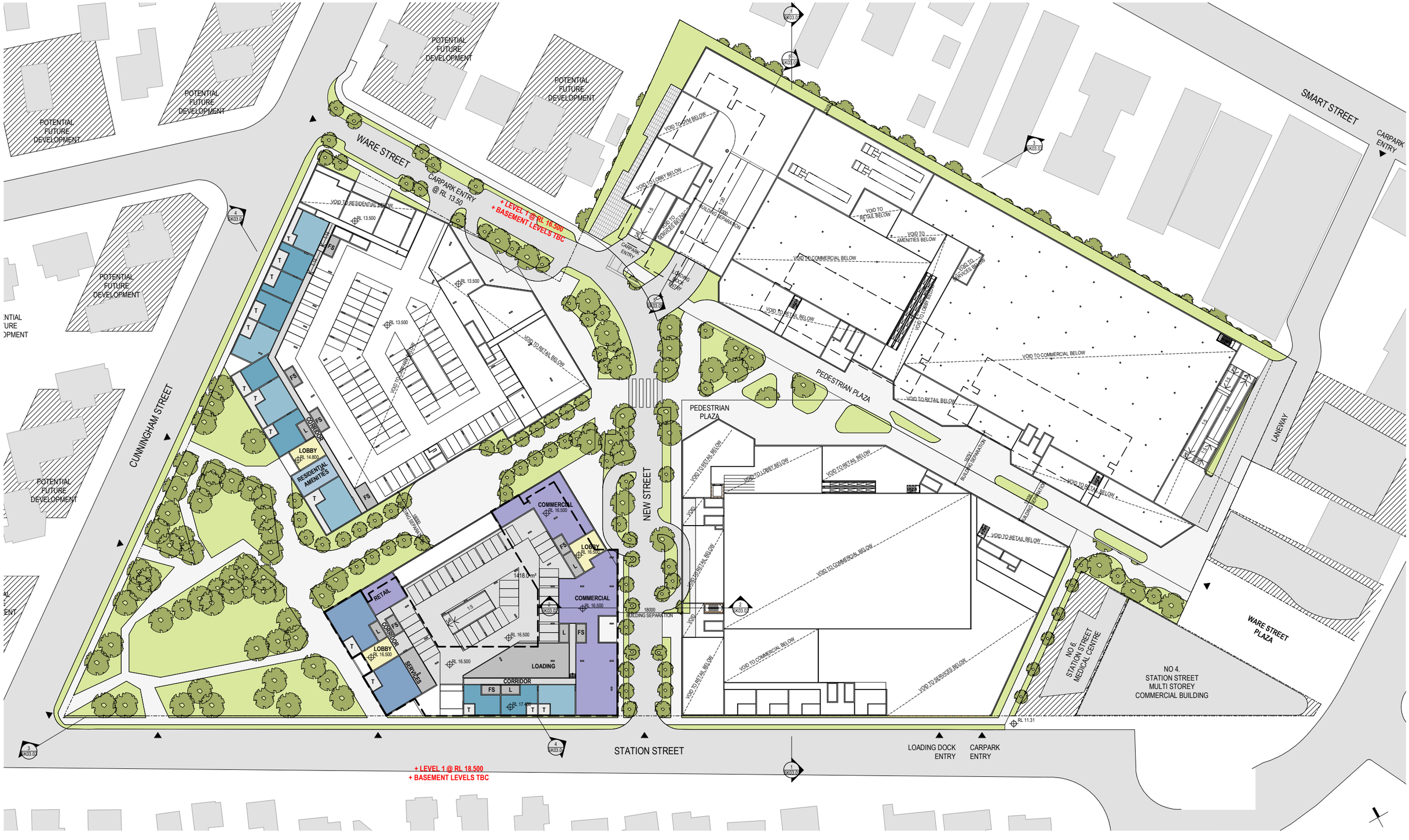


PLANS

GROUND UPPER



PLANS

LEVEL 1

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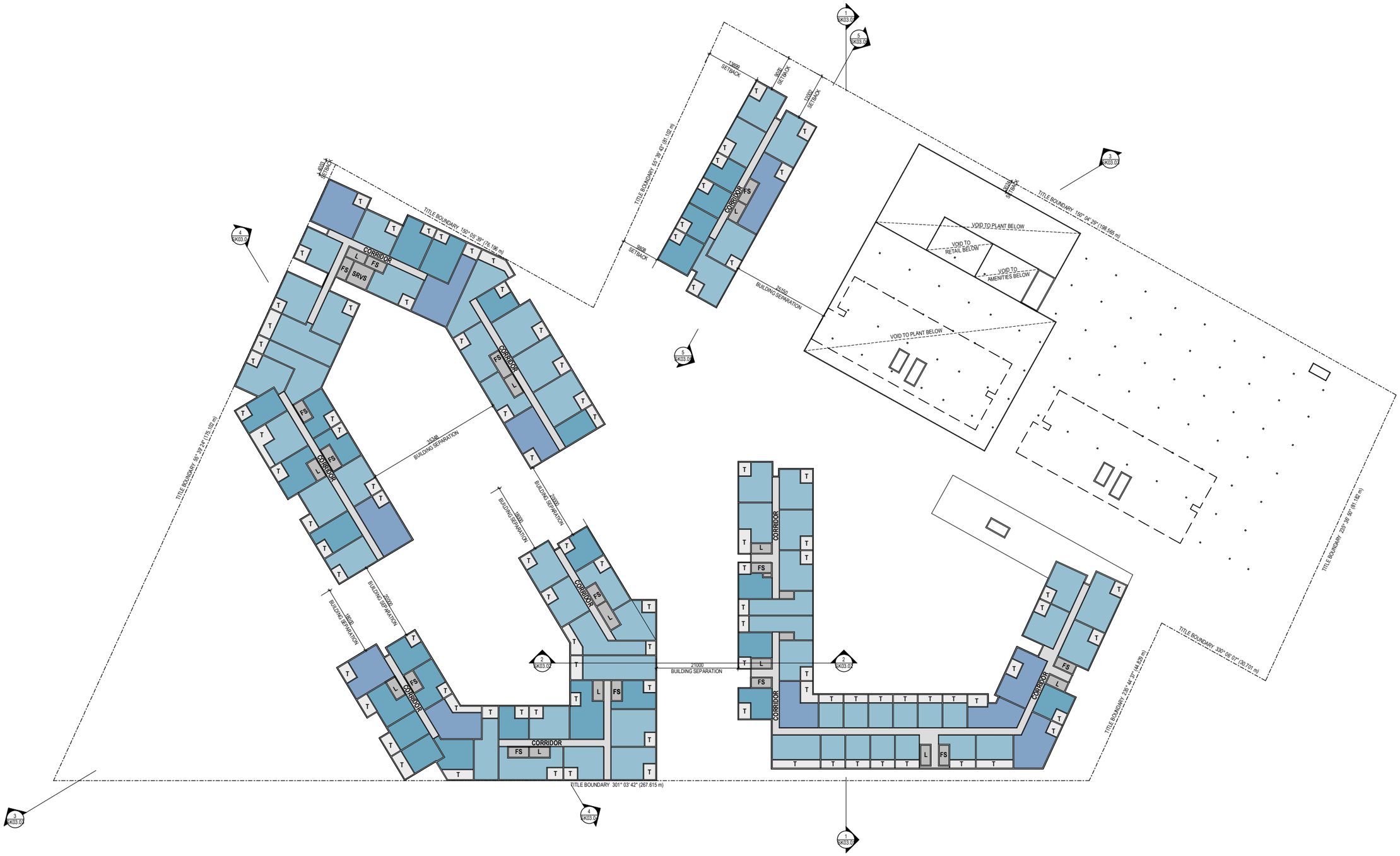

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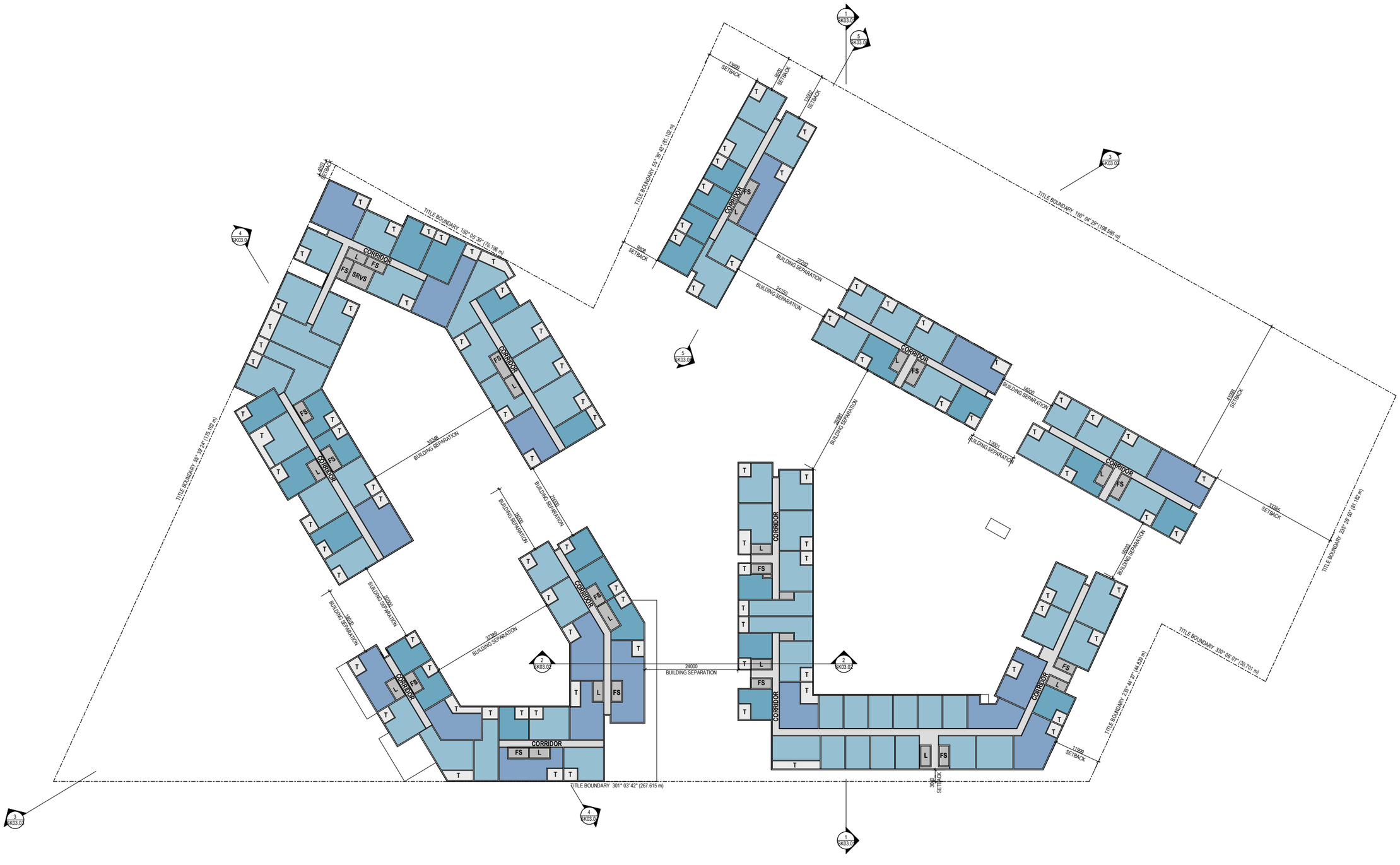

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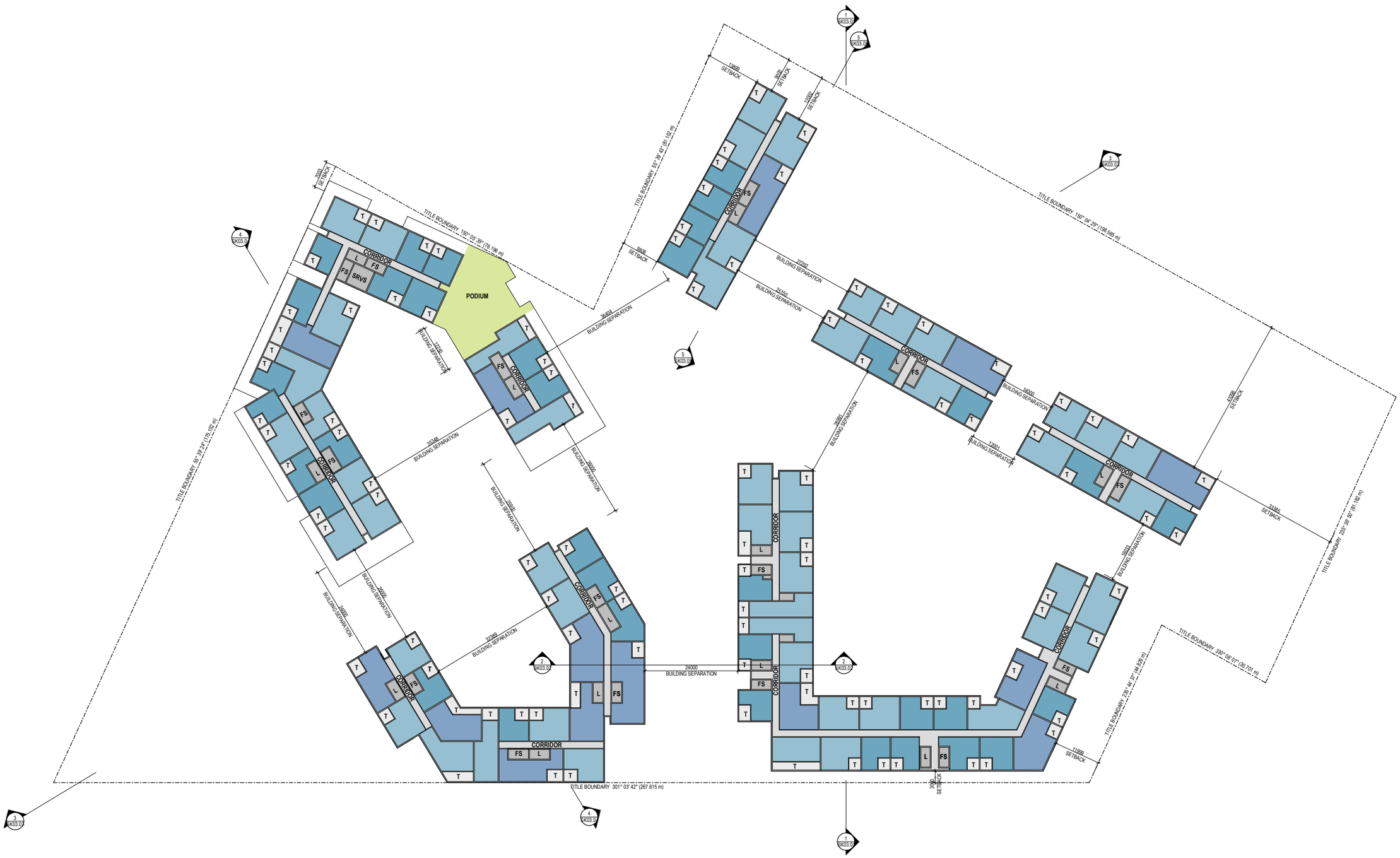

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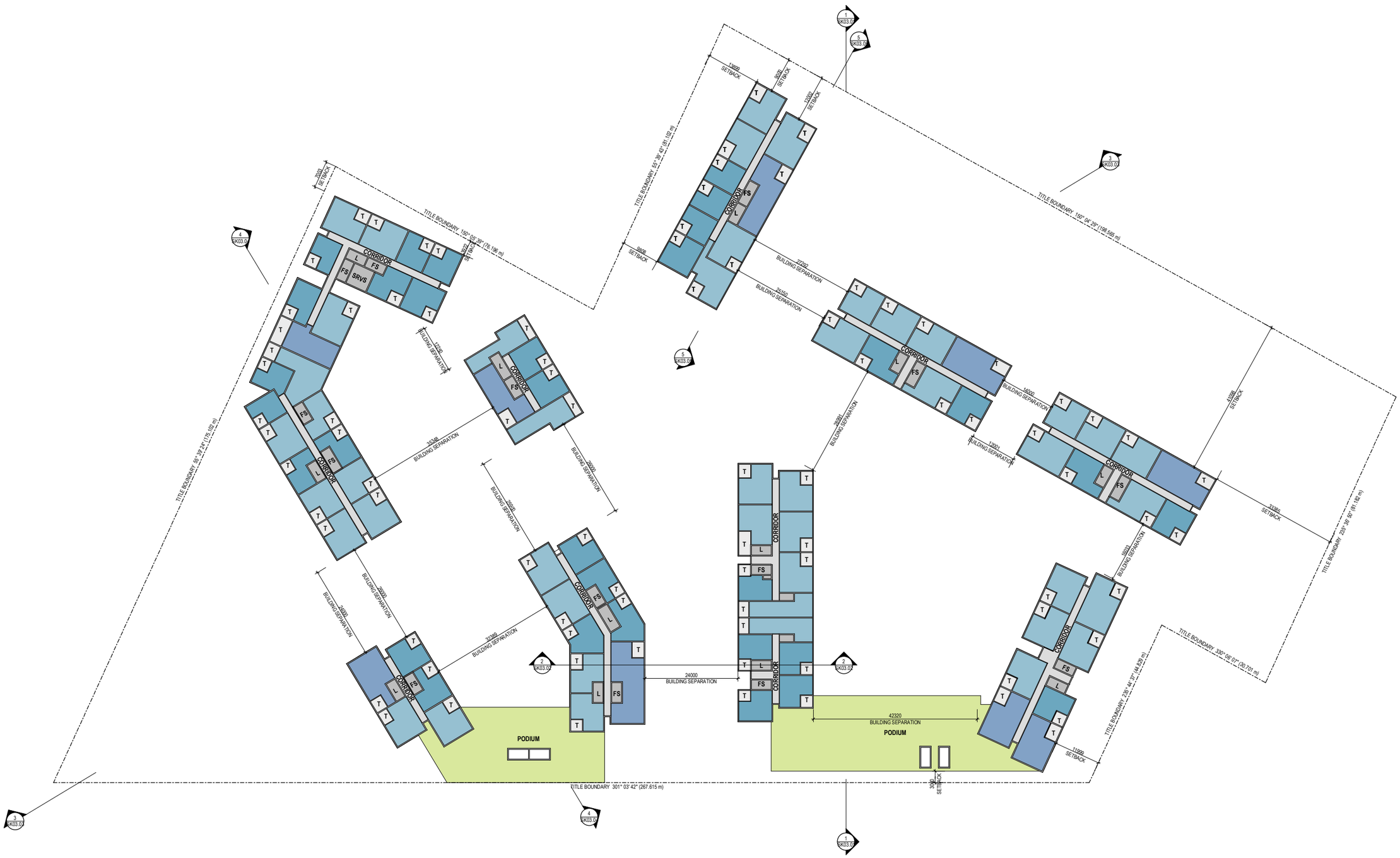

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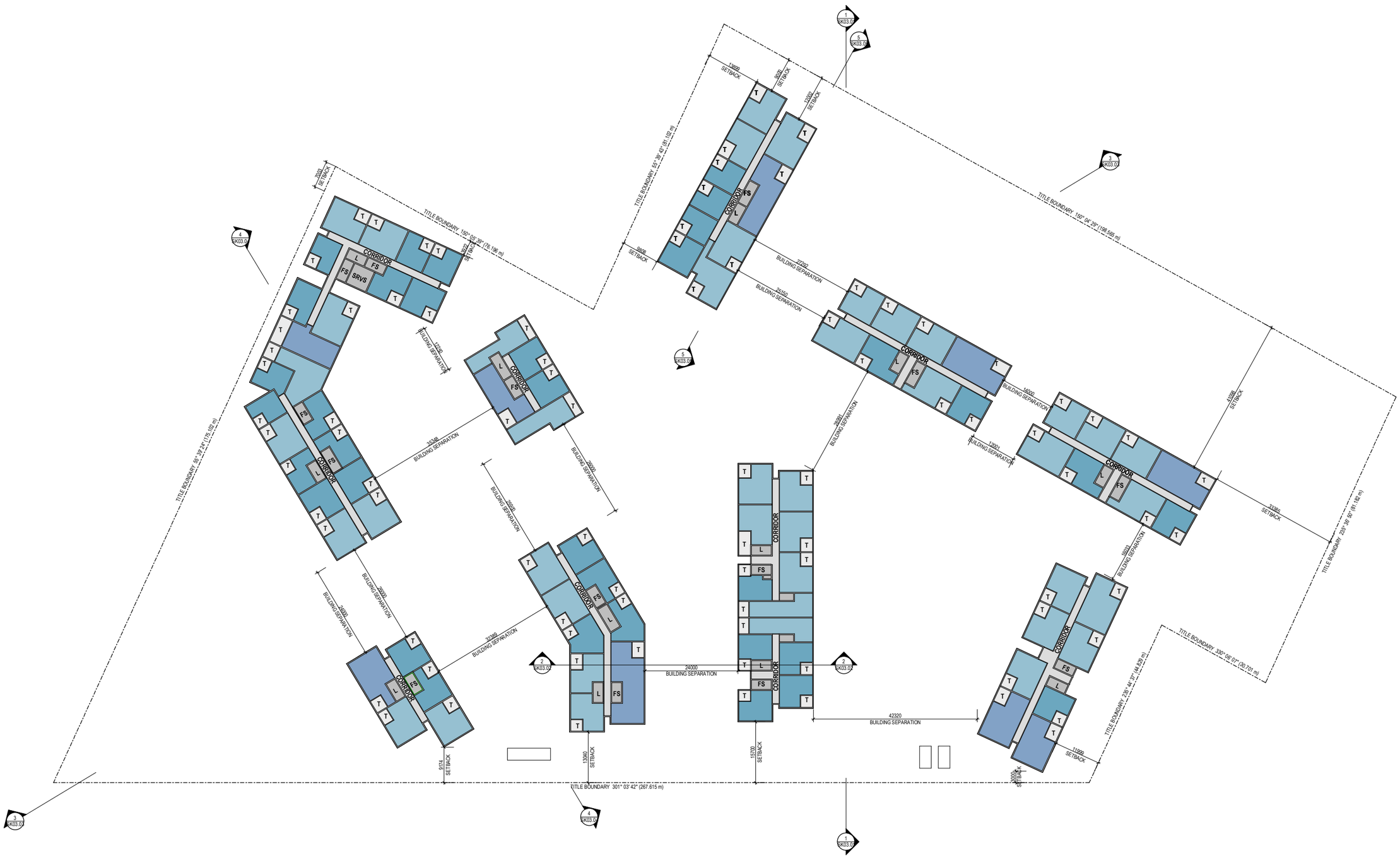

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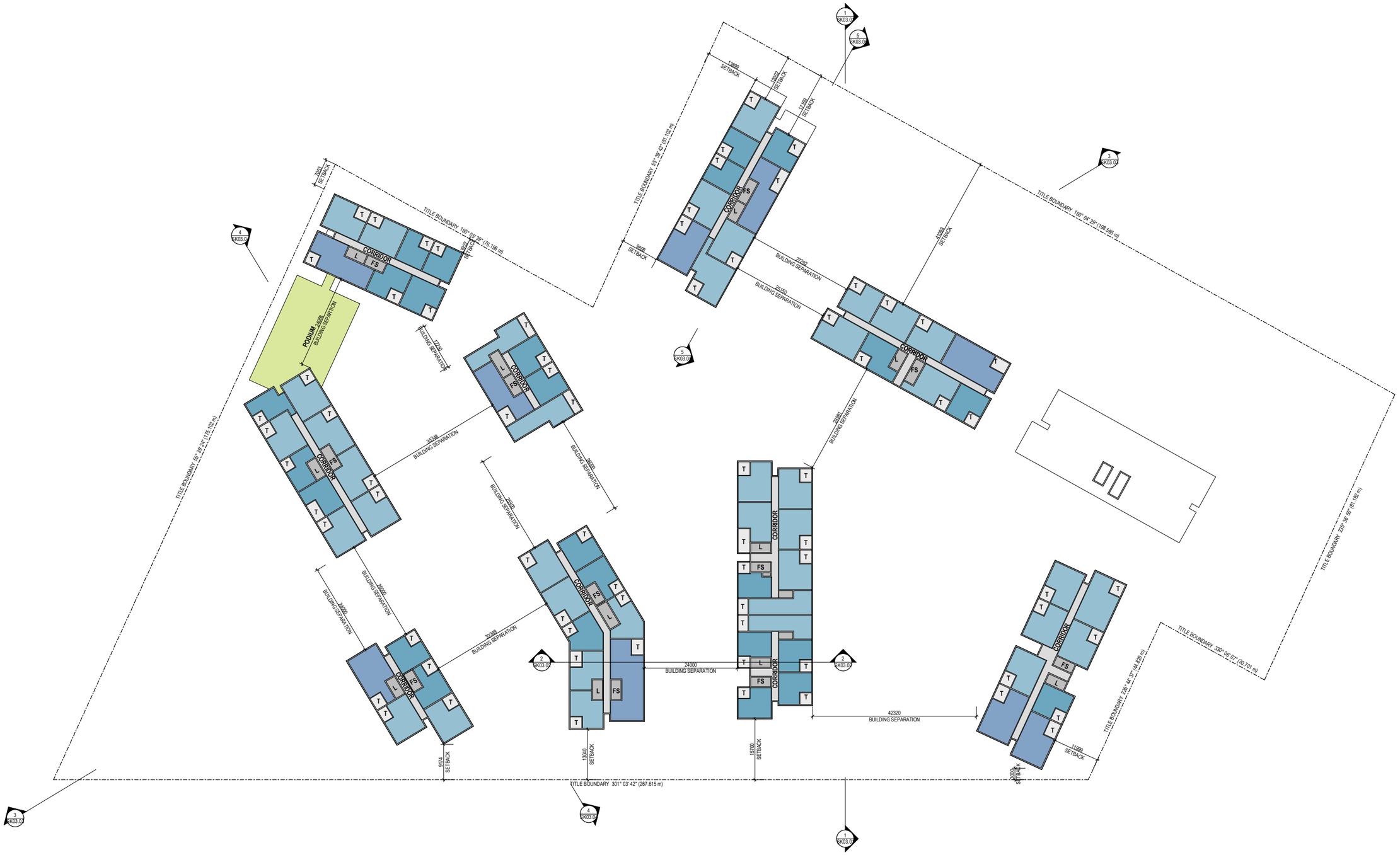

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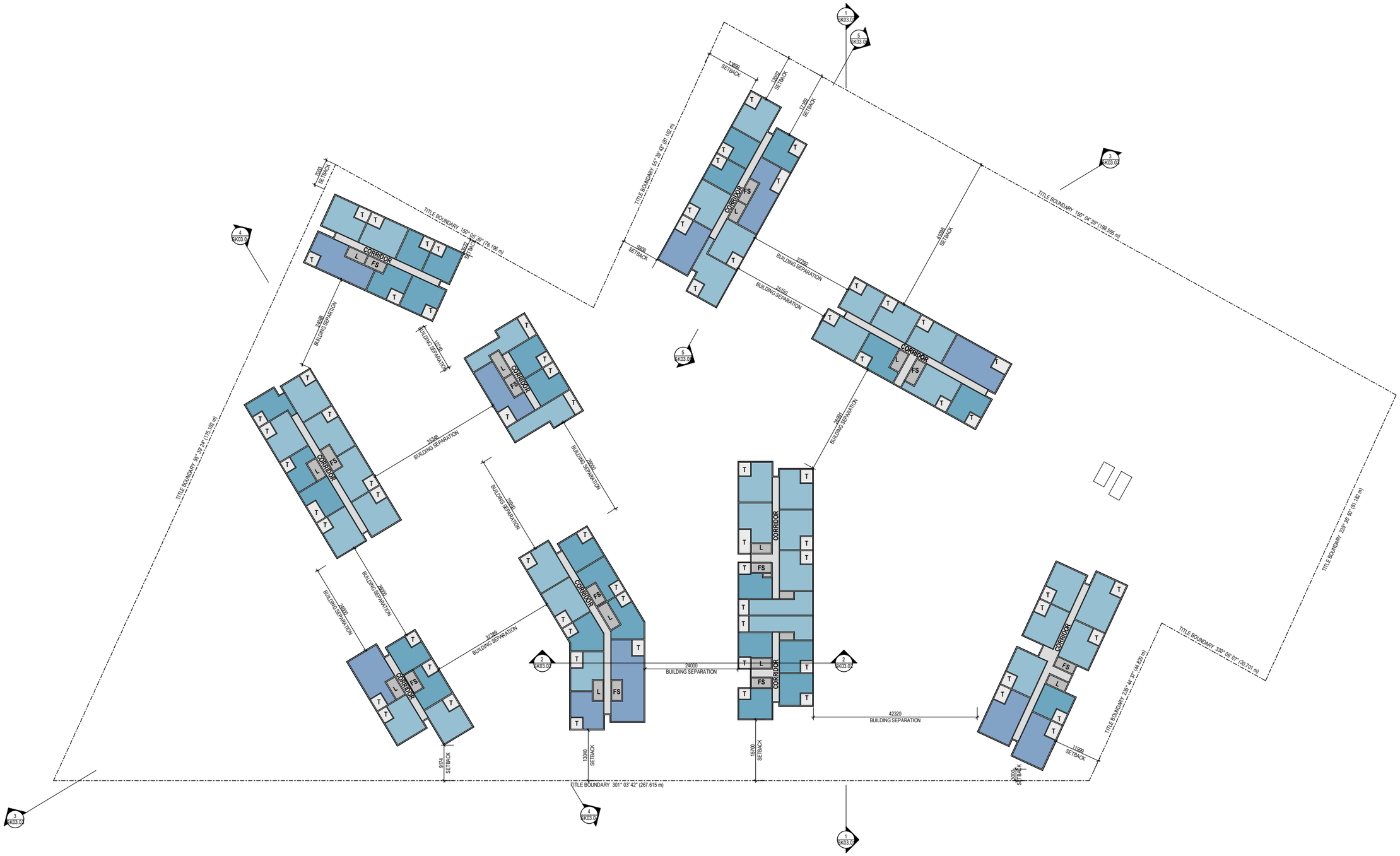

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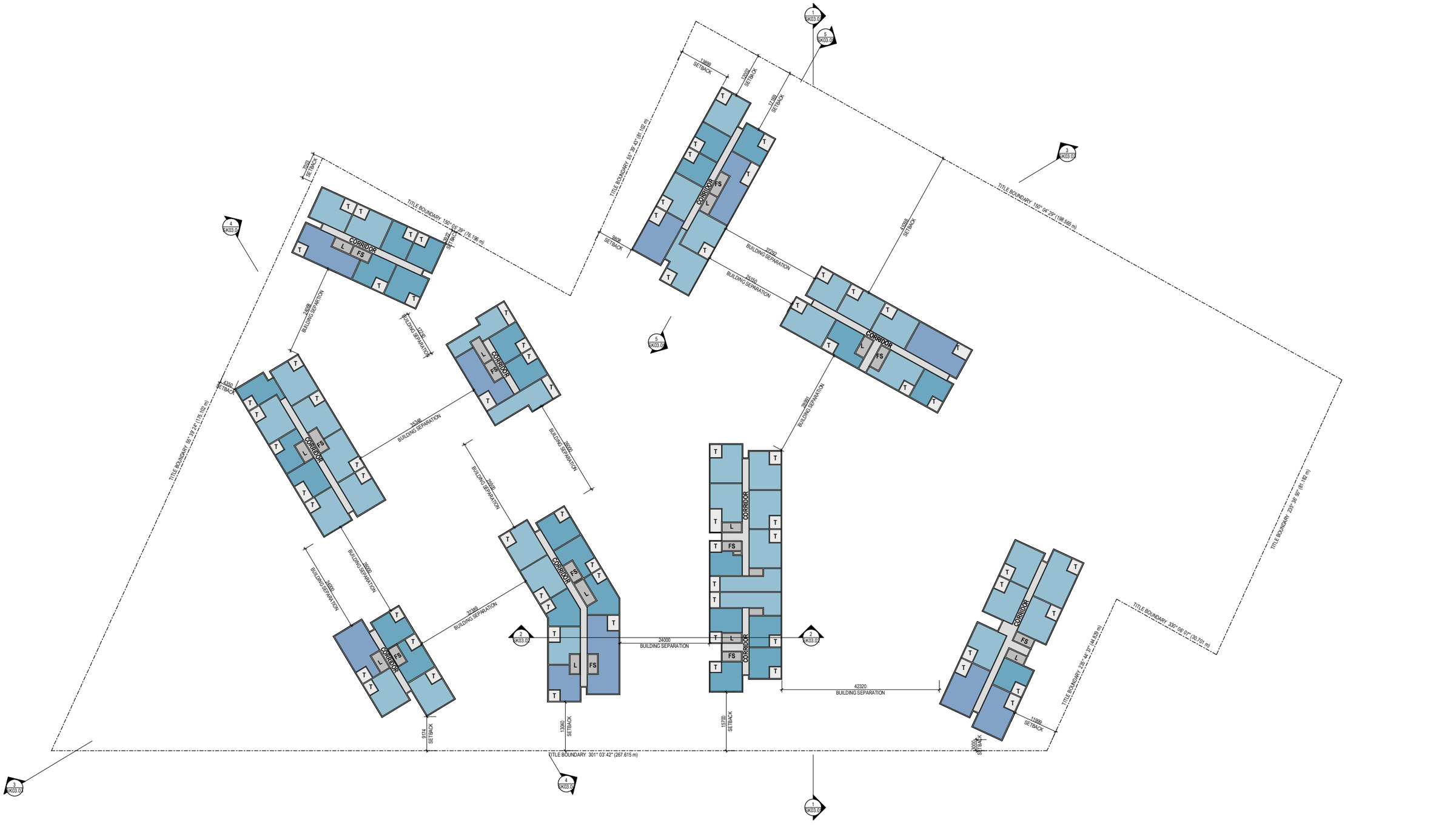

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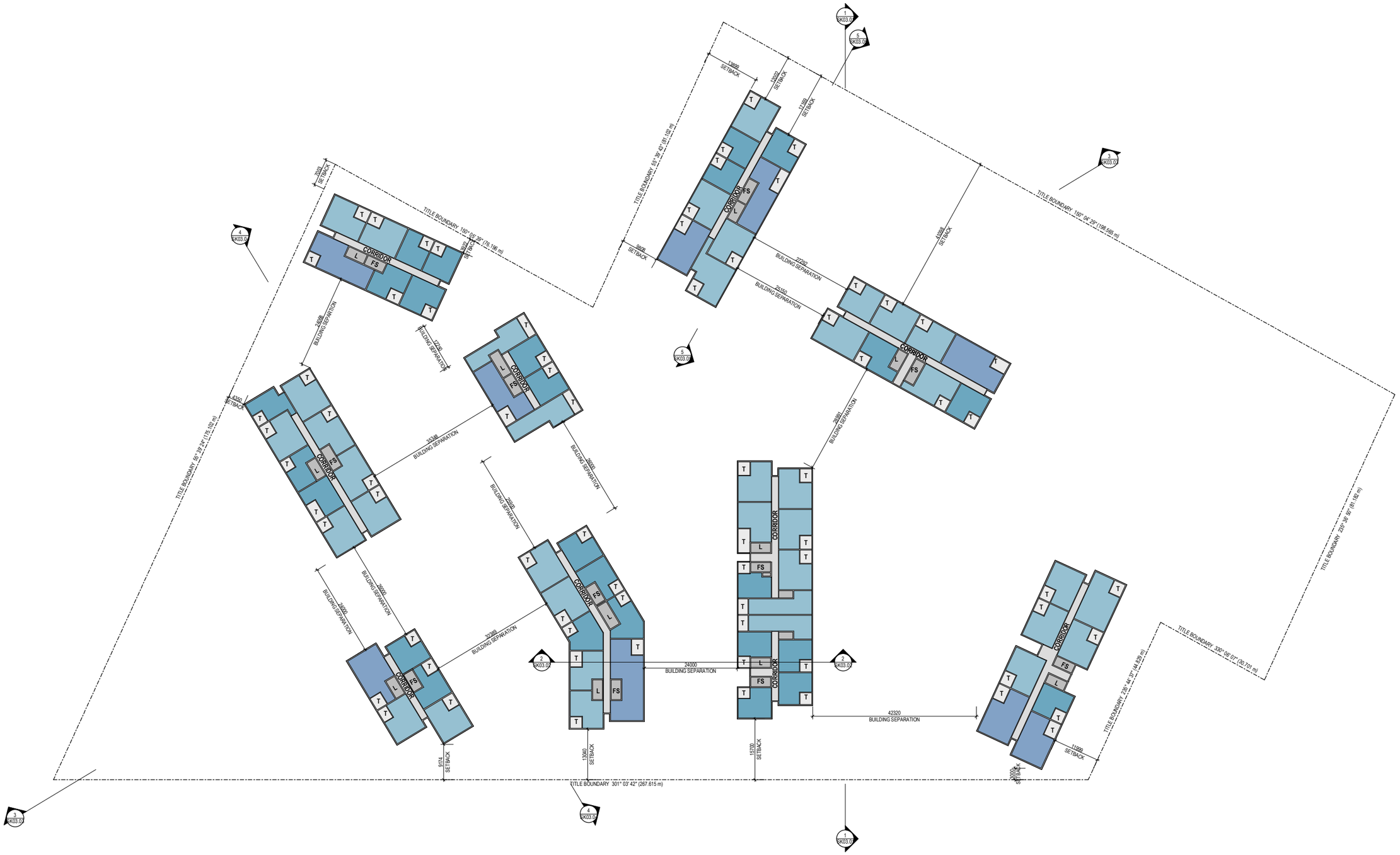

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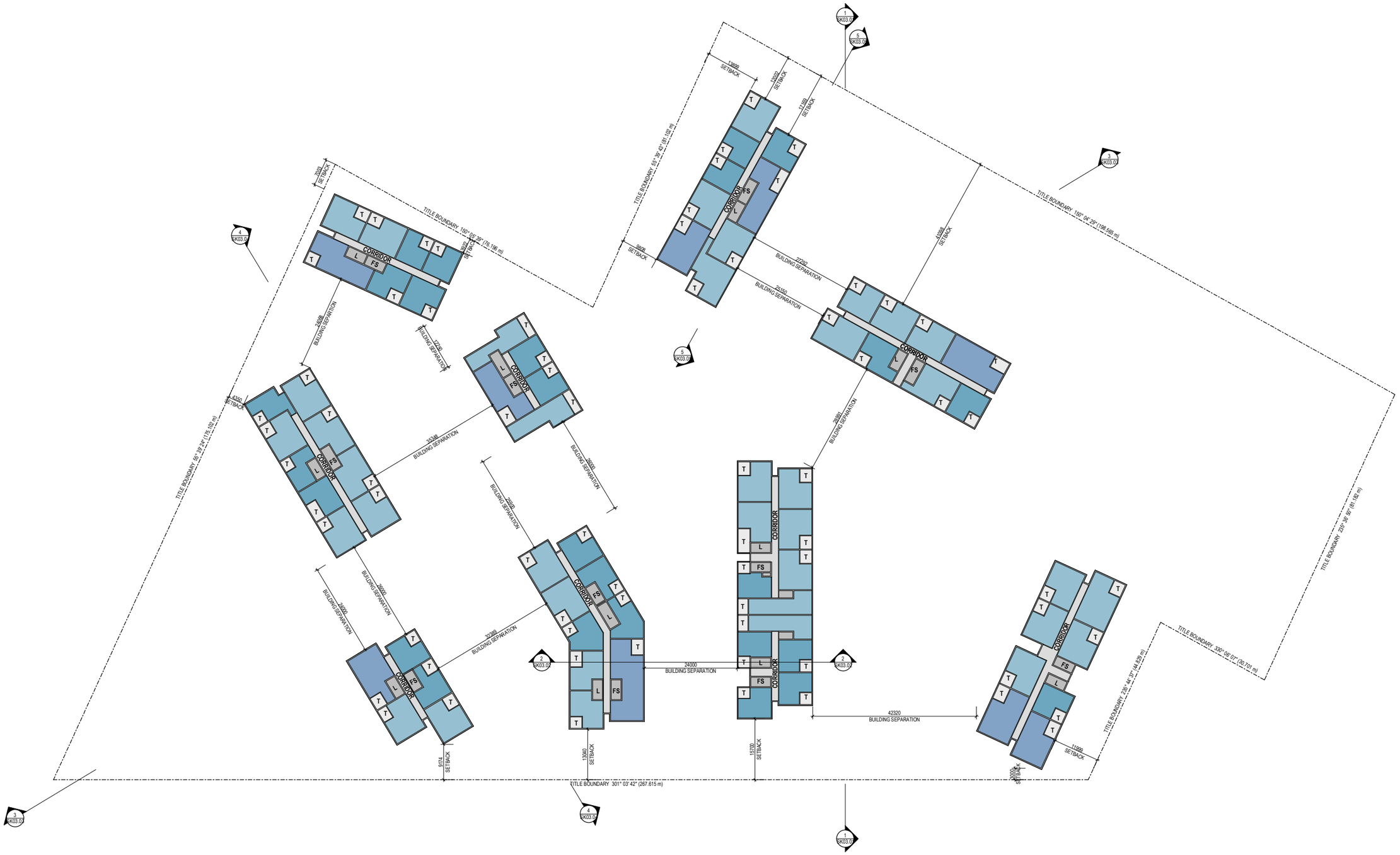

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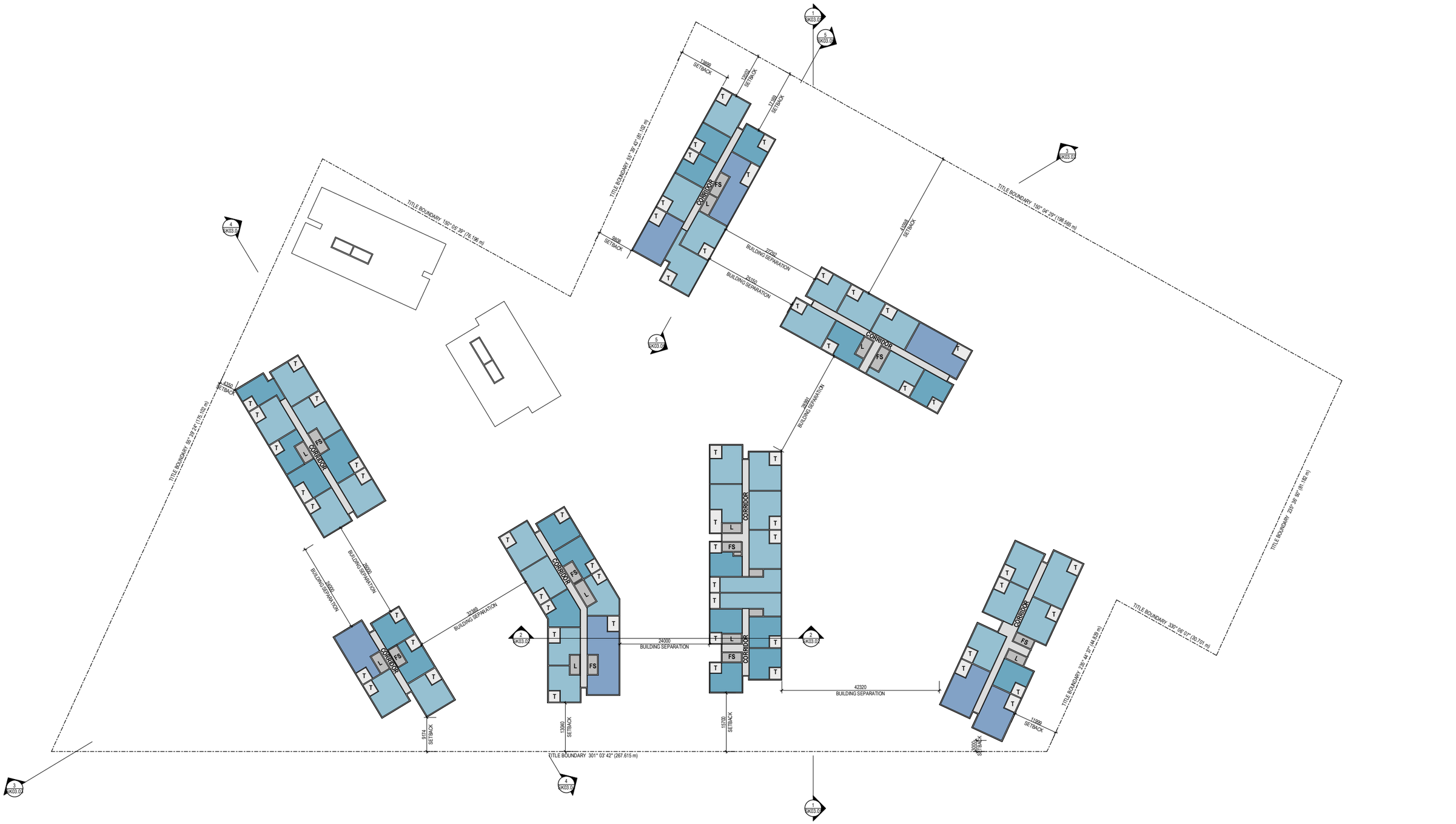

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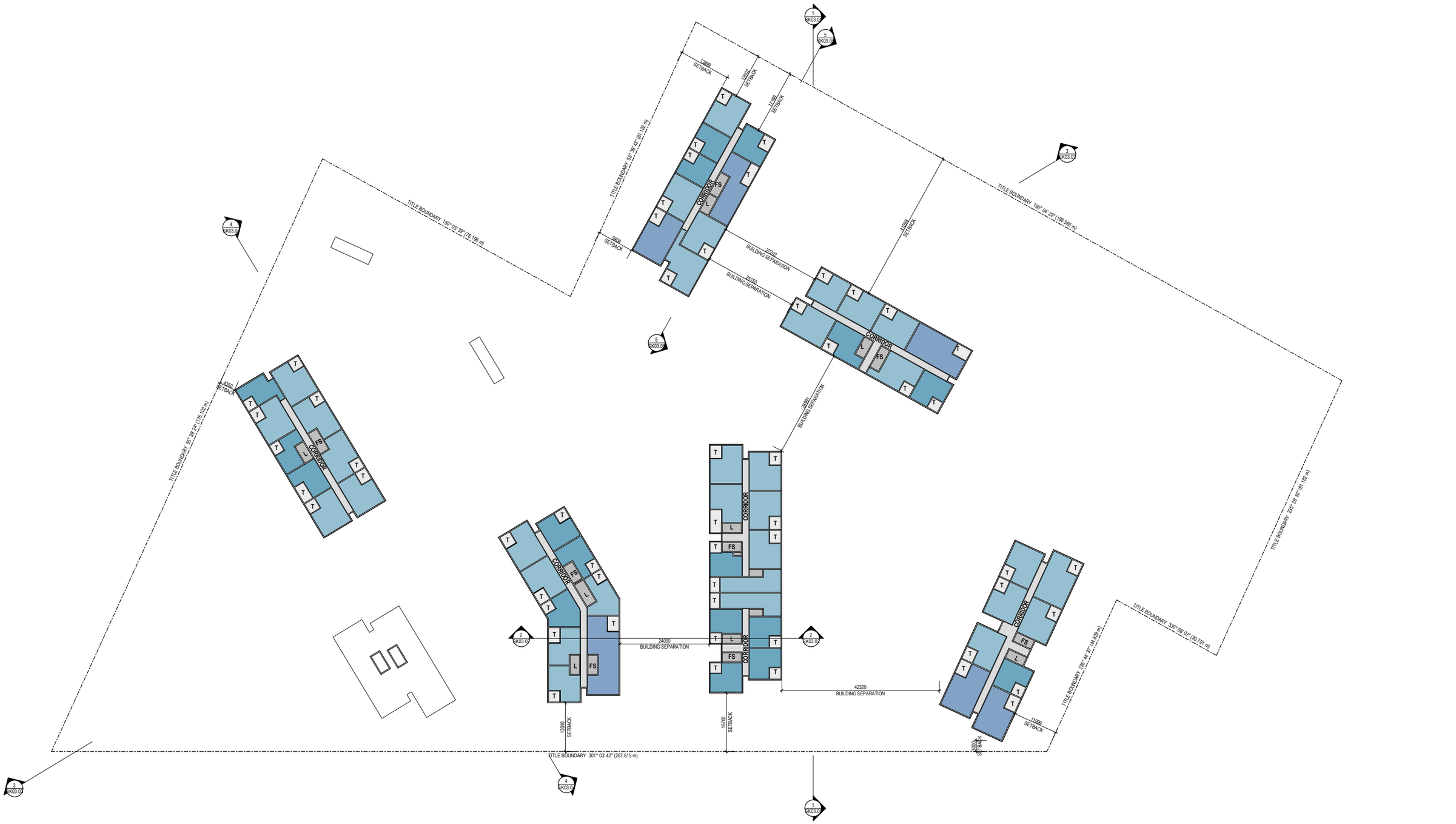

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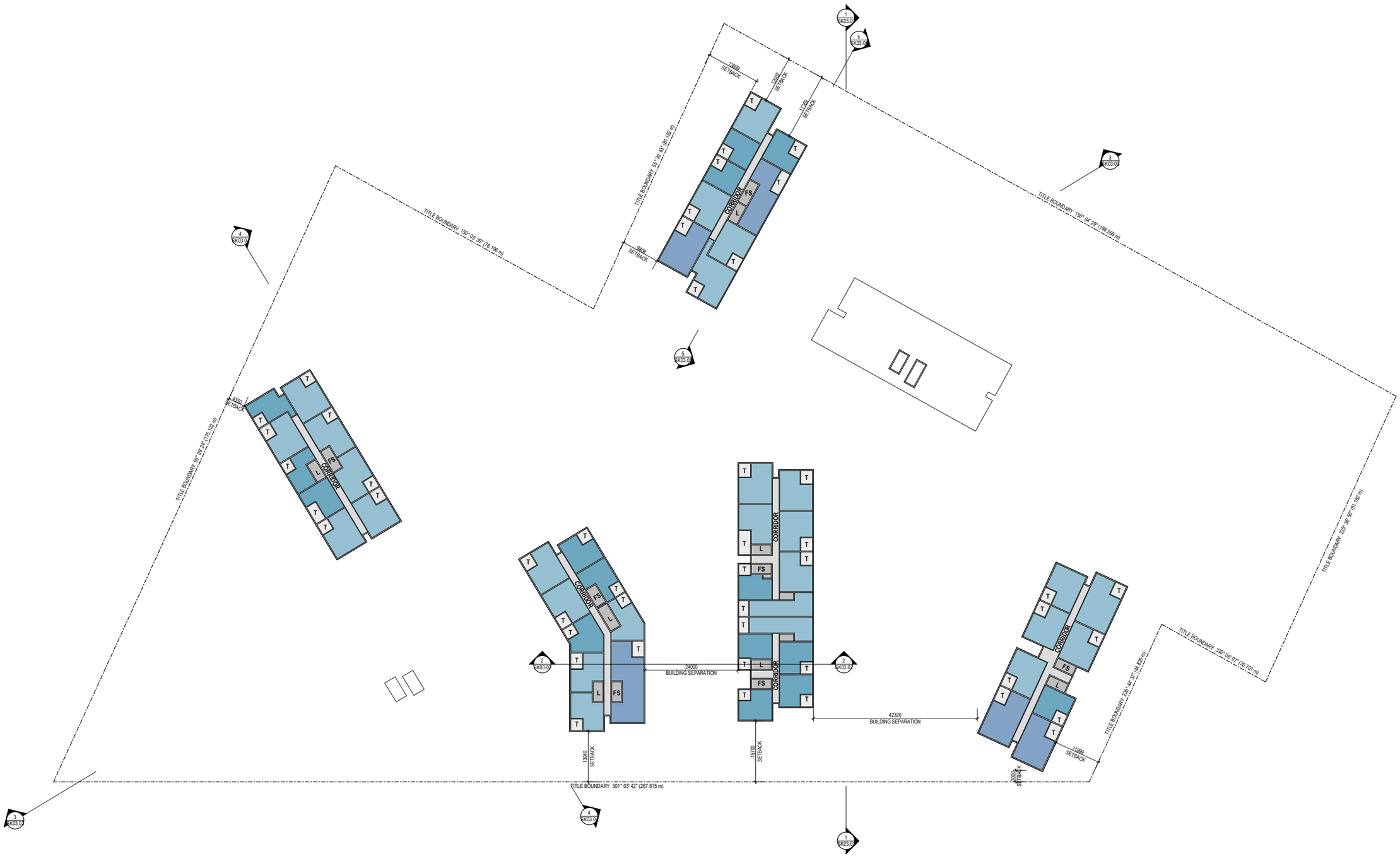

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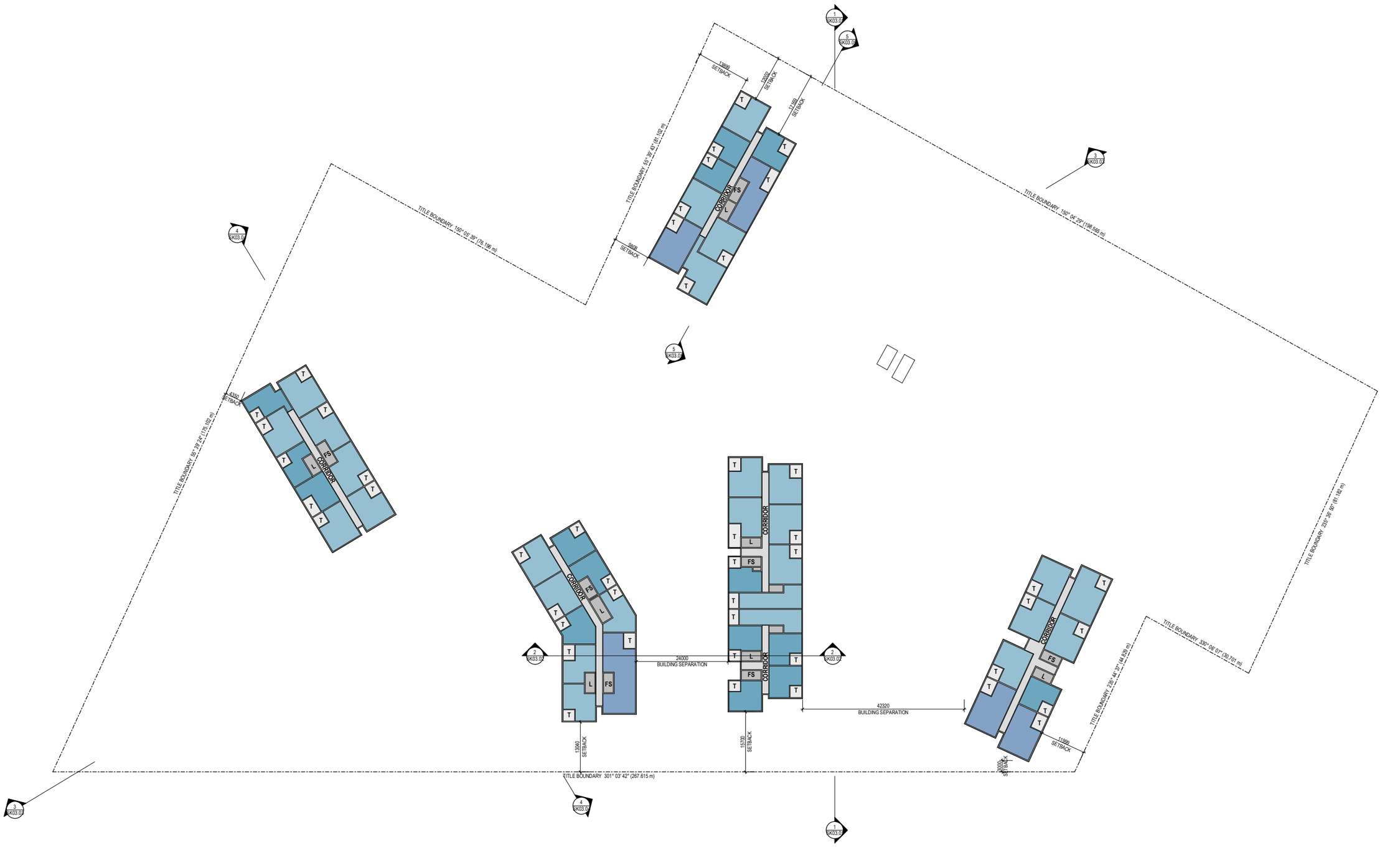

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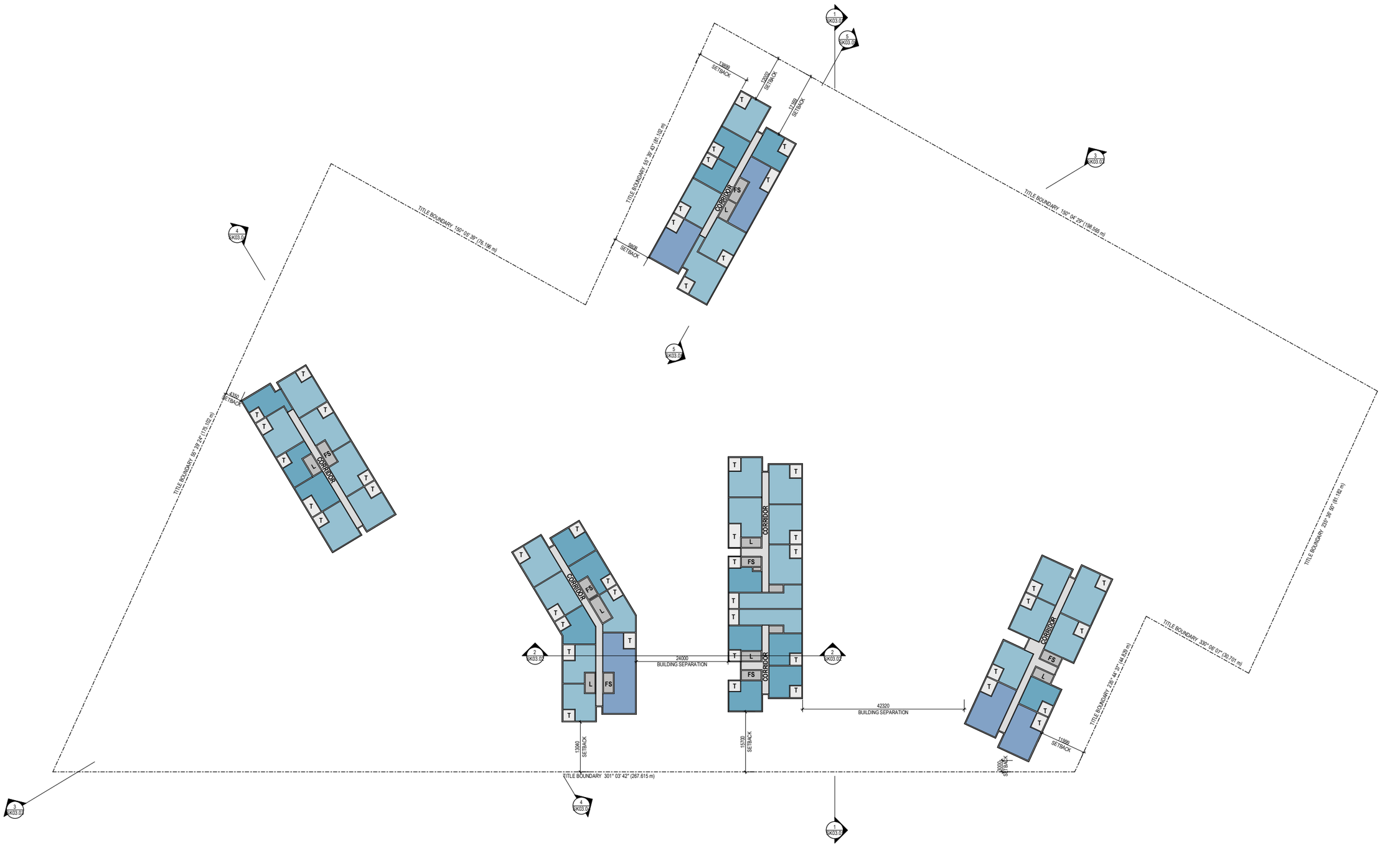

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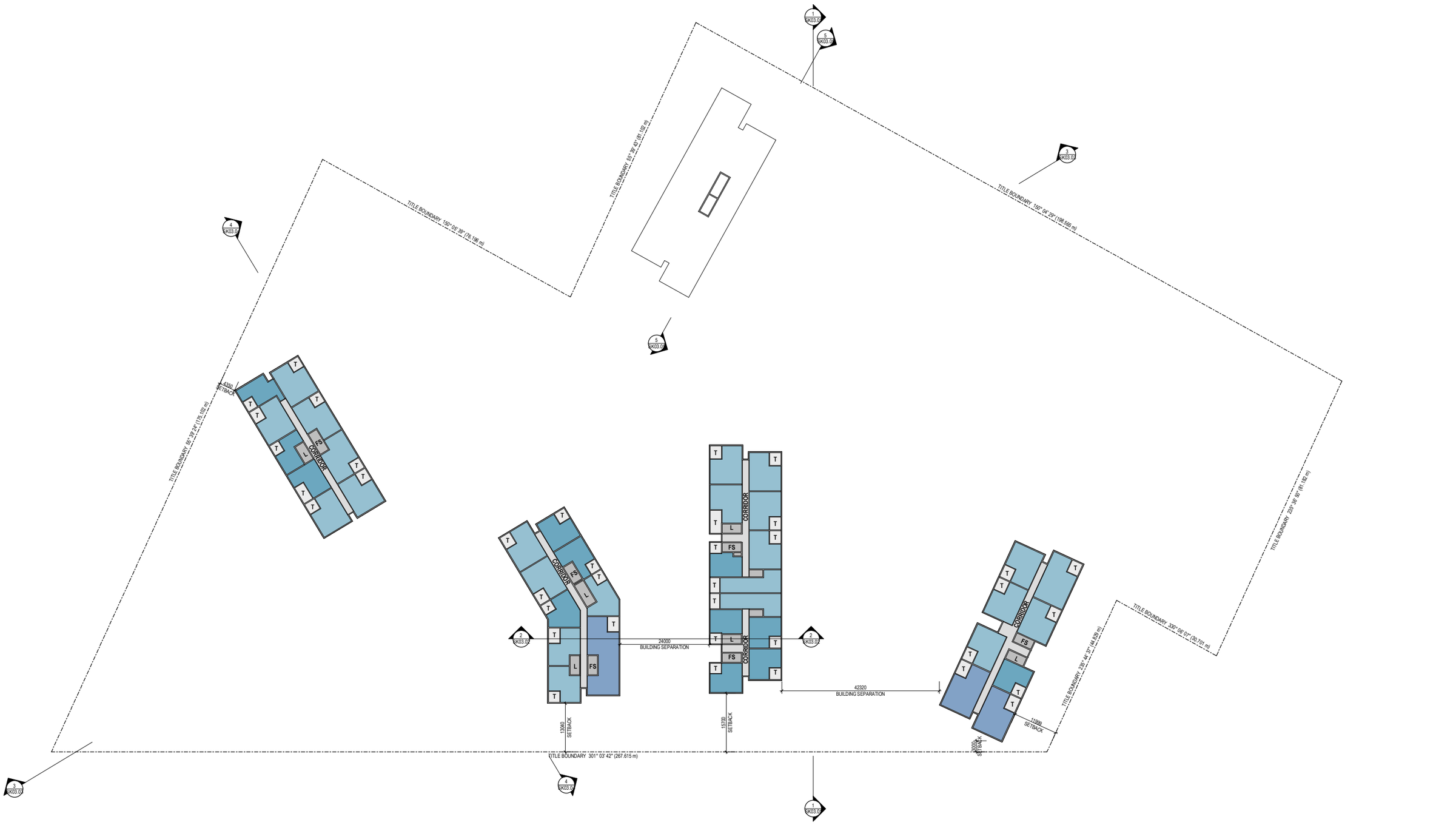

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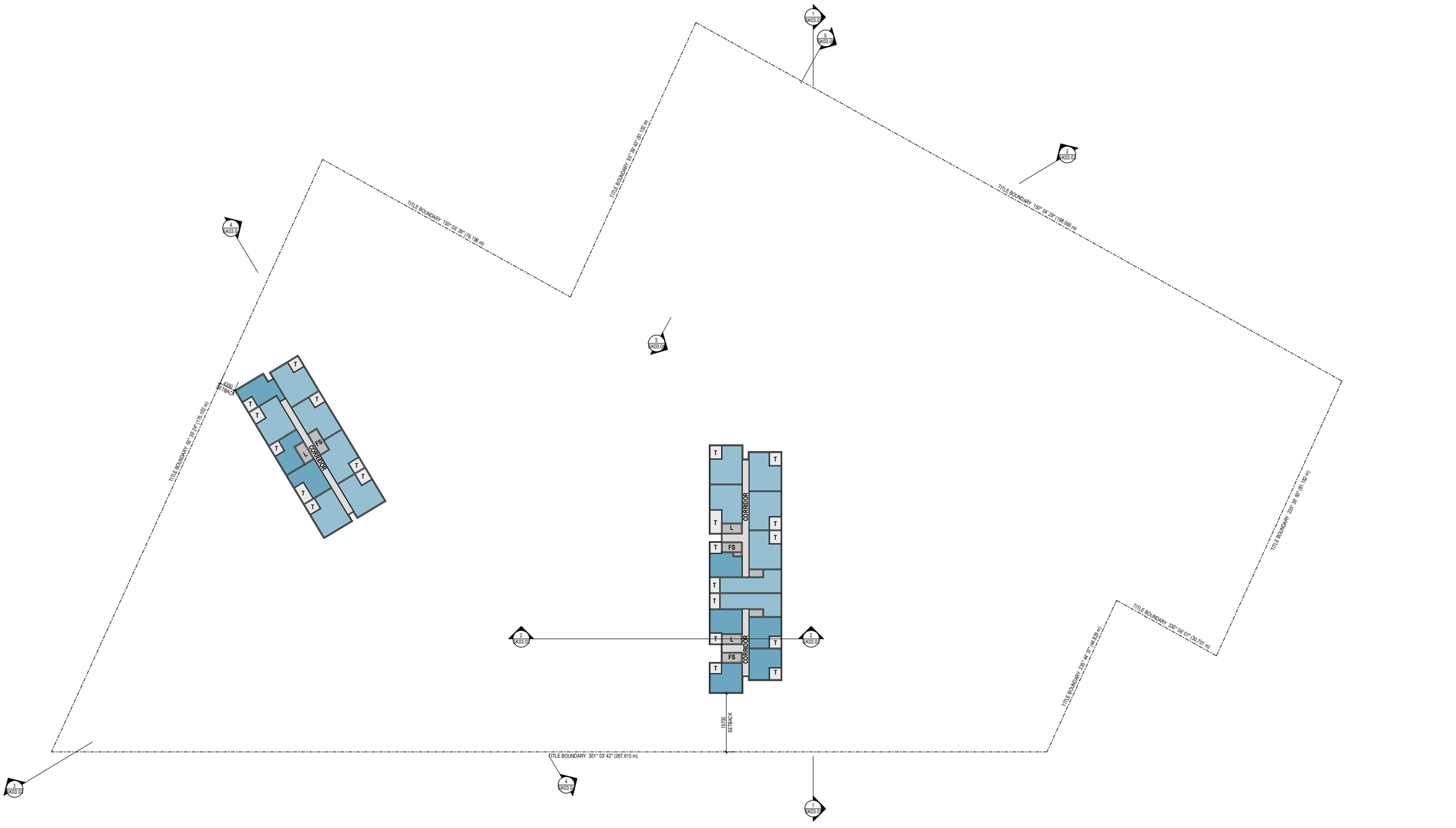

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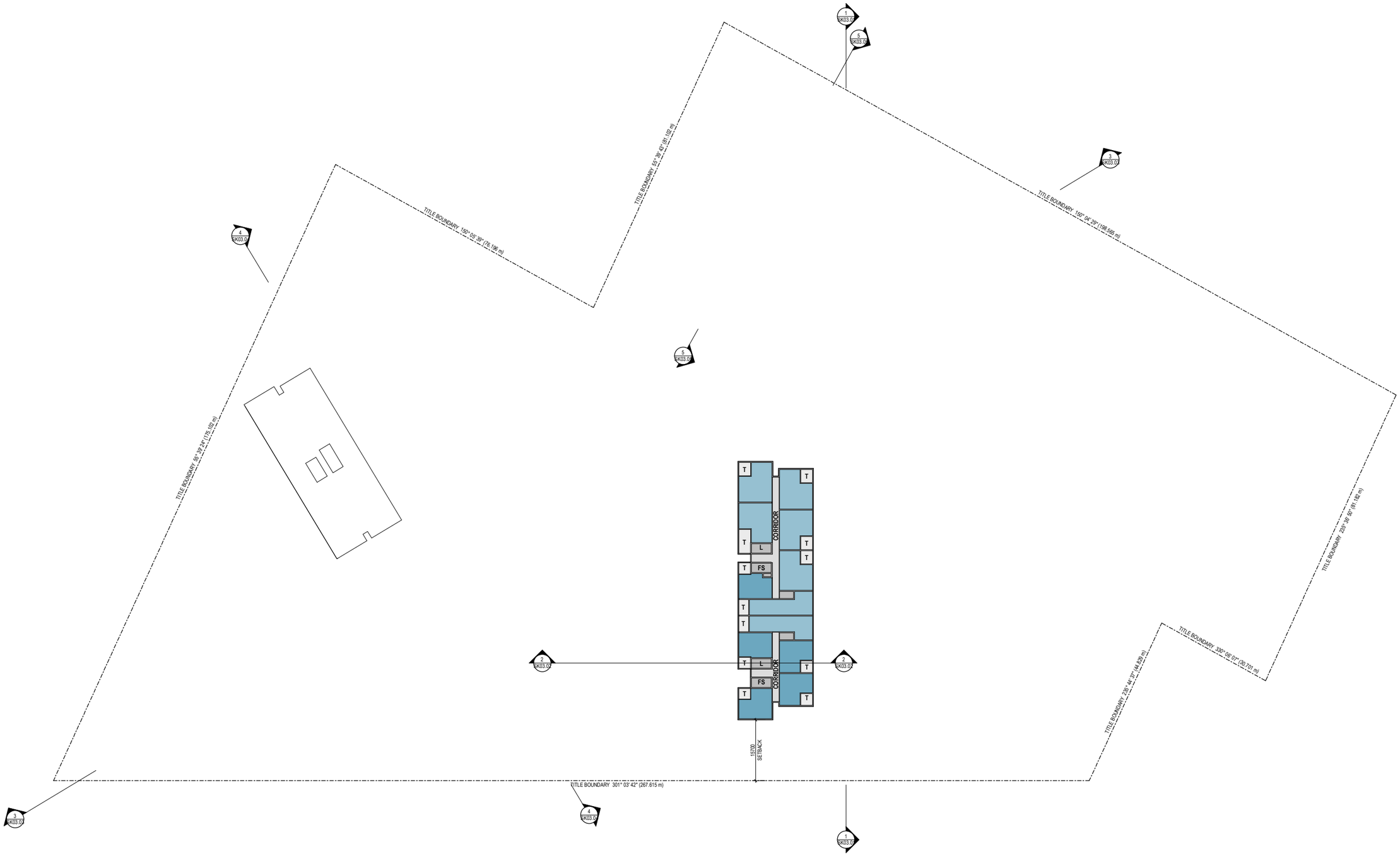

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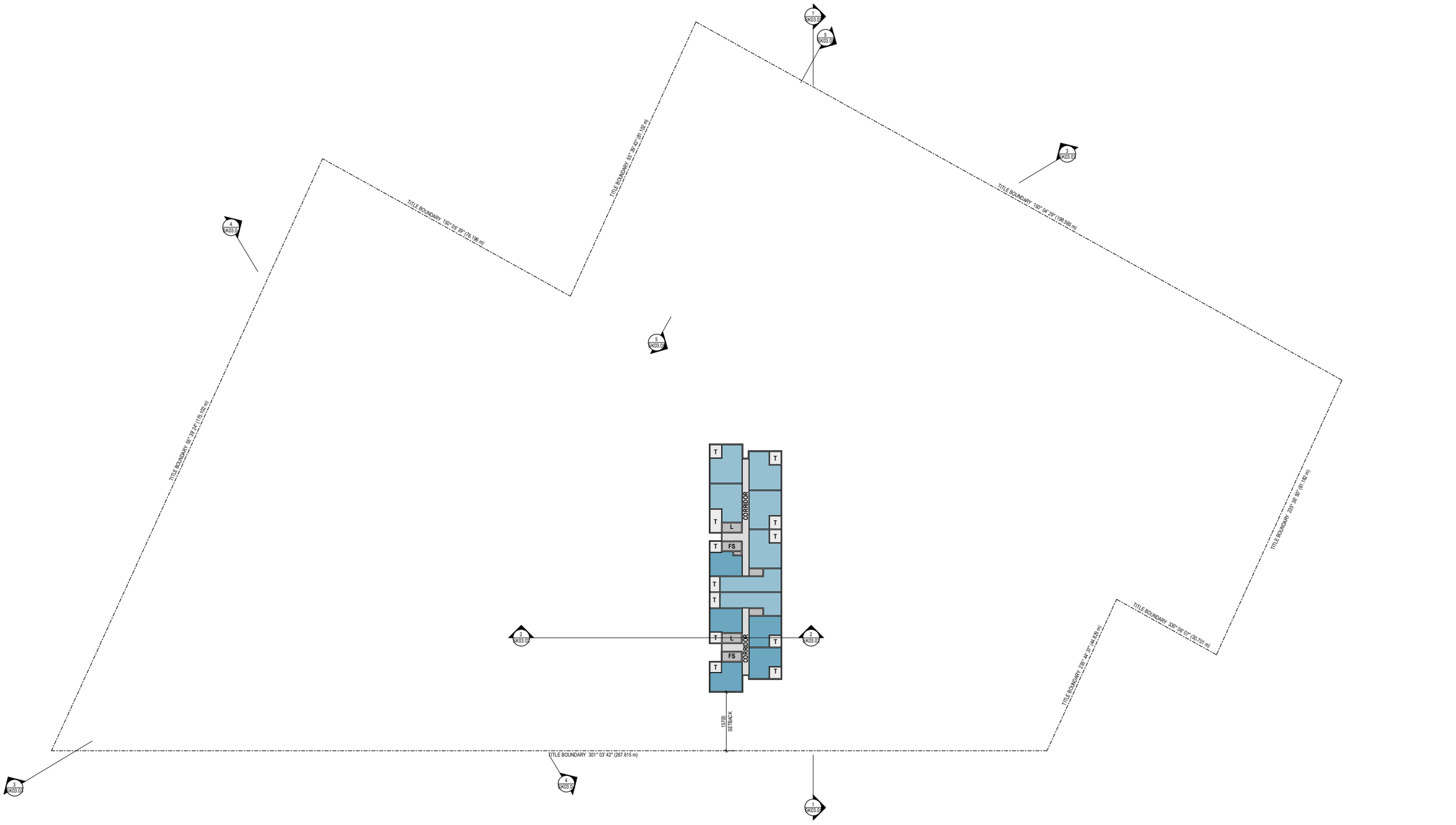

PLANS

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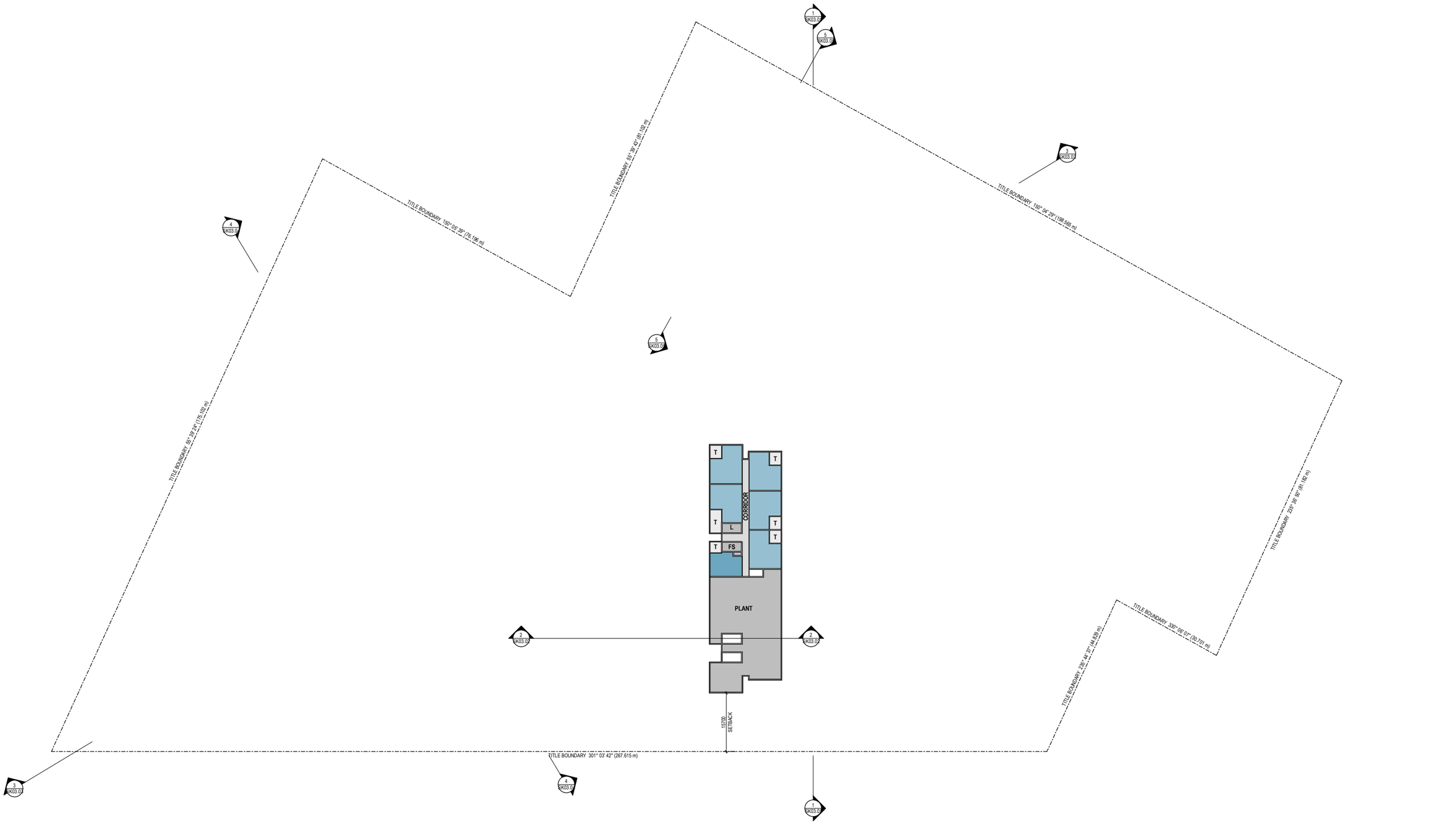
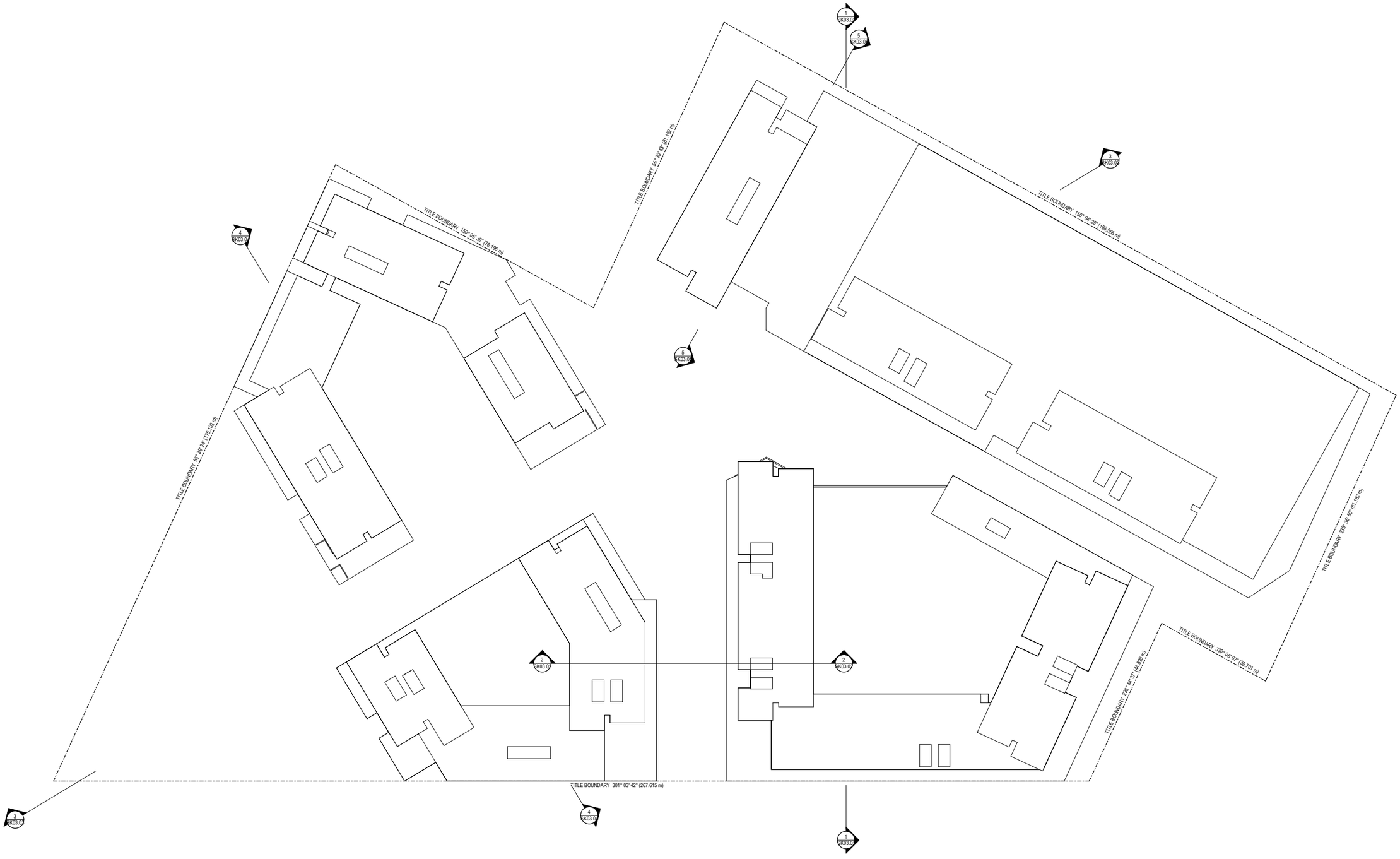


PLANS

ROOF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TITLE BOUNDARY 55° 36' 47" (81.109 m)
TITLE BOUNDARY 150° 05' 36" (76.196 m)
TITLE BOUNDARY 65° 18' 24" (175.182 m)
TITLE BOUNDARY 235° 36' 47" (81.182 m)
TITLE BOUNDARY 330° 06' 07" (30.701 m)
TITLE BOUNDARY 235° 41' 37" (44.458 m)
TITLE BOUNDARY 301° 03' 42" (267.615 m)
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