

WAYNE STEPHEN BISSKY

ARCHITECTURE URBAN DESIGN PLANNING INTERIOR
DESIGN

204 - 22320 LOUGHEED HIGHWAY MAPLE RIDGE BC V2X2T4 PH 604-467-8300 FAX 604-467-8305

Draft Report

**Tandem Parking Technical Analysis Report
for the current RM-1 (Townhouse Residential District) Zone**

Monday, 21 October, 2013

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1. Background

This report should be read in conjunction with the referenced documents noted. It seeks to illustrate and explain the impact that tandem parking will have for multi family developments in the RM-1 zone. As different variables and constraints may affect the outcome tandem stalls will have on those zones, it is not meant to be applied to any other zone than stated.

Occupant behavior will also effect the way a development will behave, and bylaws are in place to regulate certain outcomes. This report does not illustrate how occupant behavior may affect the outcome.

2. Definitions

OFF STREET PARKING use means a use providing parking spaces for the temporary storage of vehicles.

TANDEM PARKING use means **OFF STREET PARKING** where two or more vehicles are arranged one behind another.

DOUBLE WIDE PARKING use means **OFF STREET PARKING** where two or more vehicles are arranged side by side.

Wherever a term in this bylaw is undefined it shall, if defined in "Maple Ridge Zoning Bylaw No. 3510 - 1985" as amended, have the meaning therein provided.

3. Referenced Documents

3.1. Bylaw No. 4350 -1990

A bylaw to require owners and occupiers of any land, building or structure to provide off-street parking and loading spaces.

3.2. Bylaw No. 6925 - 2012

A Bylaw to regulate the Construction, alteration, repair, demolition or moving of buildings and Structures and the installation, alteration or repair of plumbing, electrical working and equipment and gas piping, fittings and appliances in the Municipality of Maple Ridge

3.3. Bylaw No. 3510 - 1985

A Bylaw to Regulate Zoning in the District of Maple Ridge

4. Current RM-1 Zone

The Following is an excerpt from Bylaw No. 3510 - 1985.

602 RM-1 TOWNHOUSE RESIDENTIAL DISTRICT

This zone provides for low density townhouses and two family residential buildings.

4.1. *PRINCIPAL USES*

Subject to the regulations contained elsewhere in this Bylaw, the following uses and no others shall be permitted in the RM-1 zone.

- a) Townhouse use
- b) Two Family Residential
- c) One Family Residential is only permitted in the following locations:

1. 23796 – 116 Avenue
2. 11497 - 236 Street
3. 23838 - 120A Lane
4. 11442 – Best Street
5. 12169 – 228 Street
6. 12123 – 222 Street
7. 21868 Loughheed Highway
8. 12191 – 228 Street”

4.2. ACCESSORY USES

- a) Accessory boarding use
- b) Accessory residential use
- c) Accessory home occupation use
- d) Accessory off street parking use

4.3. LOT AREA

No person shall create a lot which is less than 557 m² in area.

4.4. LOT DIMENSIONS

No person shall create a lot which is less than 18 m in width.

4.5. DENSITY

All buildings and structures shall not exceed a floor space ratio of 0.6 times the net lot area, excluding a maximum of 50 m² of habitable basement area.

4.6. SITING

All buildings and structures shall be sited not less than:

- a) 7.5 metres from a front, rear or exterior side lot line; and
- b) 4.5 metres to an interior side lot line for a wall with no windows to a habitable room or 6.0 metres for a wall with a balcony or a window to a habitable room.

4.7. SIZE OF BUILDINGS AND STRUCTURES

- a) All buildings and structures for two family residential and townhouse use shall not exceed a height of 10.5 metres nor 2 1/2 stories.
- b) All buildings used for accessory residential use and/or accessory off street parking use shall not exceed 4.5 metres nor one storey in height.

4.8. OTHER REGULATIONS

- a) An accessory off street parking use, when not concealed, shall be bounded by a landscape screen of not less than one metre in height.
- b) An accessory off street parking use shall be sited so that the surface of such use at ground level, including a driveway for such use, is not within an arc of 3 metres in radius measured from the nearest surface of a required window.
- c) All buildings for two family residential use or townhouse use shall be sited so that there will be a continuous 90 degree horizontal arc unencumbered by buildings on the same lot of a radius not less than:
 - (i) 15 metres from the centre of all required windows in a living room;

- (ii) 10 metres from the centre of all other required windows other than a living room;
- (iii) 3 metres from the centre of all other windows;

these sub-sections do not apply to windows which are obscured and which are not required.

- d) Usable open space shall be provided for each unit in the development based on the following ratio:
 - (i) 45 m² for each 3 bedroom unit.
 - (ii) 30 m² for each 2 bedroom unit.
- e) A common activity area or areas shall be provided on the lot on the basis of 5 m² for each unit. This area may form part of the usable open space requirement.
- f) A use shall be permitted only if the site is serviced to the standard set out in Maple Ridge Subdivision and Development Servicing Bylaw No. 4800 - 1993.

5. Existing Multi-Family Zones

5.1. Existing Zones

The following table compares the existing multifamily residential zones in Maple Ridge.

Zone		Uses	Max Density
RM-1	Townhouse Residential	Townhouse use Two Family Residential	FSR 0.6
RM-2	Medium Density Apartment Residential	Apartment use	FSR 1.8
RM-3	High Density Apartment Residential	Apartment use	FSR 2.2
RM-4	Multiple Family Residential District	Apartment Townhouse use Two Family Residential	FSR 0.75
RM-5	Low Density Apartment Residential	Apartment use Townhouse use	FSR 0.8
RM-6	Regional Town Centre High Density Apartment Residential	Apartment use	FSR 3.35

5.2. Zone Intention

- RM-1: This zone provides for low density townhouses and two family residential buildings.
- RM-2: This zone provides for medium density apartment buildings.
- RM-3: This zone provides for high density apartment buildings with a minimum of 5 stories.
- RM-4: This zone provides for higher density townhouses in the vicinity of the downtown core area where the parking spaces are located under the residential units.
- RM-5: This Zone provides for low density (approximately 50-80 units per hectare) apartment and townhouse buildings with private outdoor space for each unit adjacent to and accessible from each unit.

- RM-6: The Regional Town Centre High Density Apartment Residential zone is intended to provide multi-family residential dwellings at a high density within the Regional Town Centre. The form of development is to incorporate a three-storey building at the base of the building with a residential tower above.

6. Scenario Comparison Methodology

6.1. Description

For comparison between the scenarios described below it was necessary to constrain some of the variables. The constraints that are not cited in the bylaws were carefully chosen specifically to the current trends in Maple Ridge for multi family developments in the RM-1 zone. These will be used to compare the different scenarios. When variances are used for a development, the scenario is no longer comparable with other scenarios using fixed elements. Although a scenario with variances has been included it is not intended to be compared directly with those that do not have variances.

6.2. Fixed Elements - Constraints

1)	Lot Size:	1 Acre, = 4047 m2, = 43,560 ft2
2)	FSR:	Maximum of 0.6, No Basements
3)	Unit Size:	50% of units 2 Bedroom @ 1000 ft2 50% of units 3 Bedroom @ 1500 ft2 No Basements 3 stories
4)	Setbacks	7.5m from all lot lines
5)	Height	Principal Use 11m Accessory use 4.5m
6)	Parking	residential parking @ 2.0 stalls per dwelling unit 0% small car stalls 0% for disabled persons
7)	Interior Road	6.0m wide strata road
8)	Lot Coverage	maximum lot coverage of 40%
9)	Block Sizes	2 to 6 units per building

Legend:

CAA = Common Activity Area
 UOS = Usable Open Space
 FSR = Floor Space Ratio
 ss = Sloping Site

6.3. Unit Type & Size

The size and type of unit can vary depending on the design. The units shown are designed floor plans to the minimum dimensions for the enclosed parking, stair way and entry. Some of the units on the sloping sites will require a suspended concrete floor to allow for a basement. The chart below describes the unit plans:

Unit	Description	# of bdrms	Garage Area	Floor 1 Area (excludes stair)	Floor 2 Area	Floor 3 Area	Total Net Area (Excludes Garage)
Unit A	3 storey, double wide garage	2	365.4 sq ft	21.4 sq ft	489.3 sq ft	489.3 sq ft	1000.0 sq ft
Unit B	3 storey, double wide garage	3	360.6 sq ft	218.7 sq ft	640.7 sq ft	640.7 sq ft	1500.0 sq ft
Unit C	3 storey, tandem garage	2	369.7 sq ft	21.4 sq ft	489.3 sq ft	489.3 sq ft	1000.0 sq ft
Unit D	3 storey, tandem garage	3	491.9 sq ft	21.4 sq ft	739.3 sq ft	739.3 sq ft	1500.0 sq ft

6.4. Variables

1)	Parking Type:	% of Tandem parking stalls
2)	Usable Open Space:	Ratio per unit type
3)	Common Activity Area:	Ratio per unit
4)	Parking:	Ratio visitor stalls per unit
5)	Driveway Apron:	Apron length for unit driveway
6)	Variances	Setback Variances

The titles of the scenarios below have the following variables associated:

Scenario A

- 1) Control Plan

Scenario B

- 1) Parking Type
- 2) Usable Open space
- 3) Common activity Area

Scenario C

- 1) Visitor Parking

Scenario D

- 1) Drive way apron length
- 2) Sloping Site is designated with a 'ss' mark after the title

Scenario E

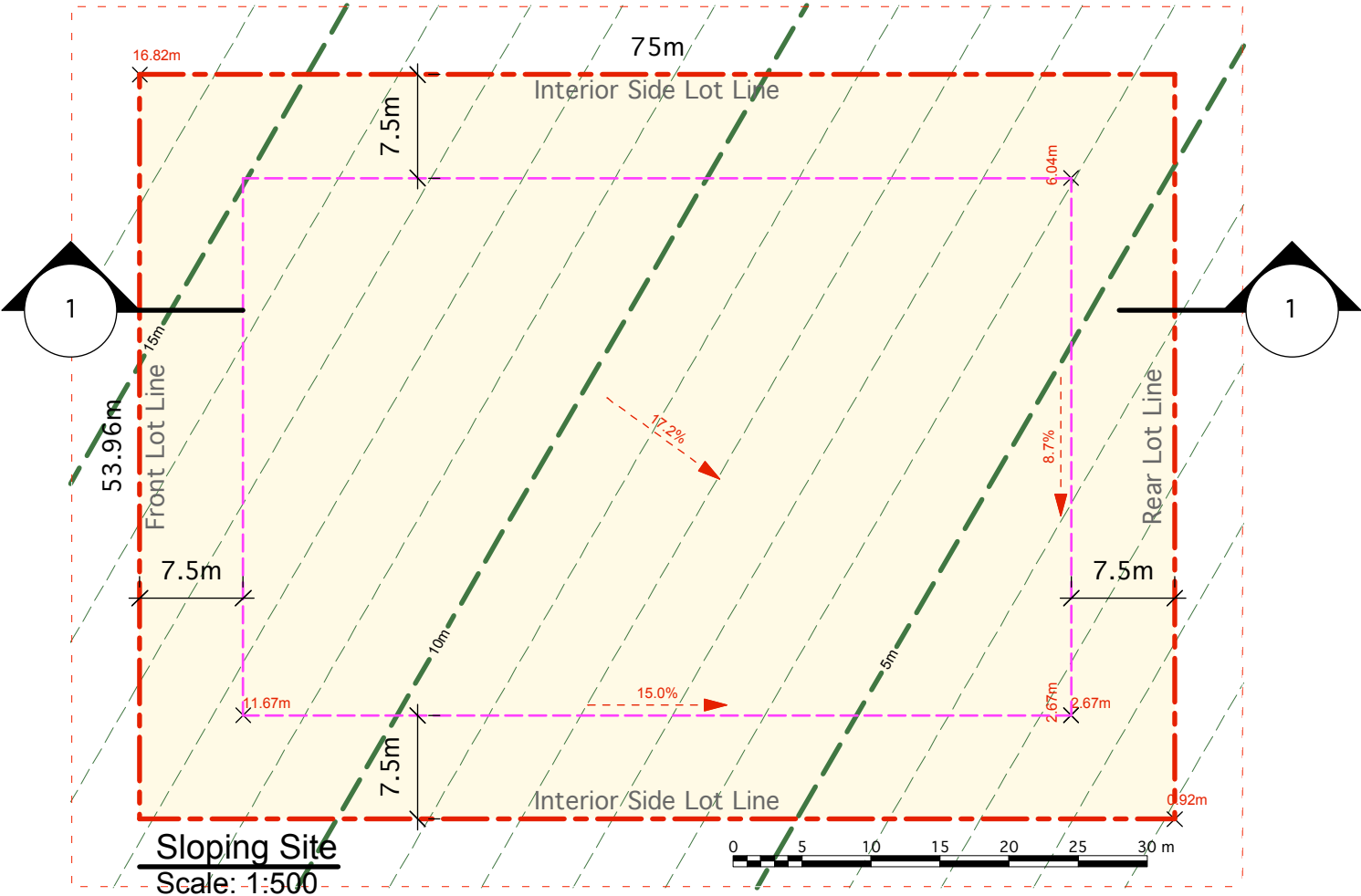
- 1) Visitor Parking Setbacks
- 2) Double wide or tandem parking apron lengths
- 3) Usable Open space
- 4) Common activity Area

Scenario F

- 1) double wide or tandem parking apron lengths
- 2) Site Setback variances

6.5. Sloping Sites

The Site illustrated below is applied to the sloping sites only. This is designated by a 'ss' mark in the title and shows contours. All other scenarios are consider flat sites.



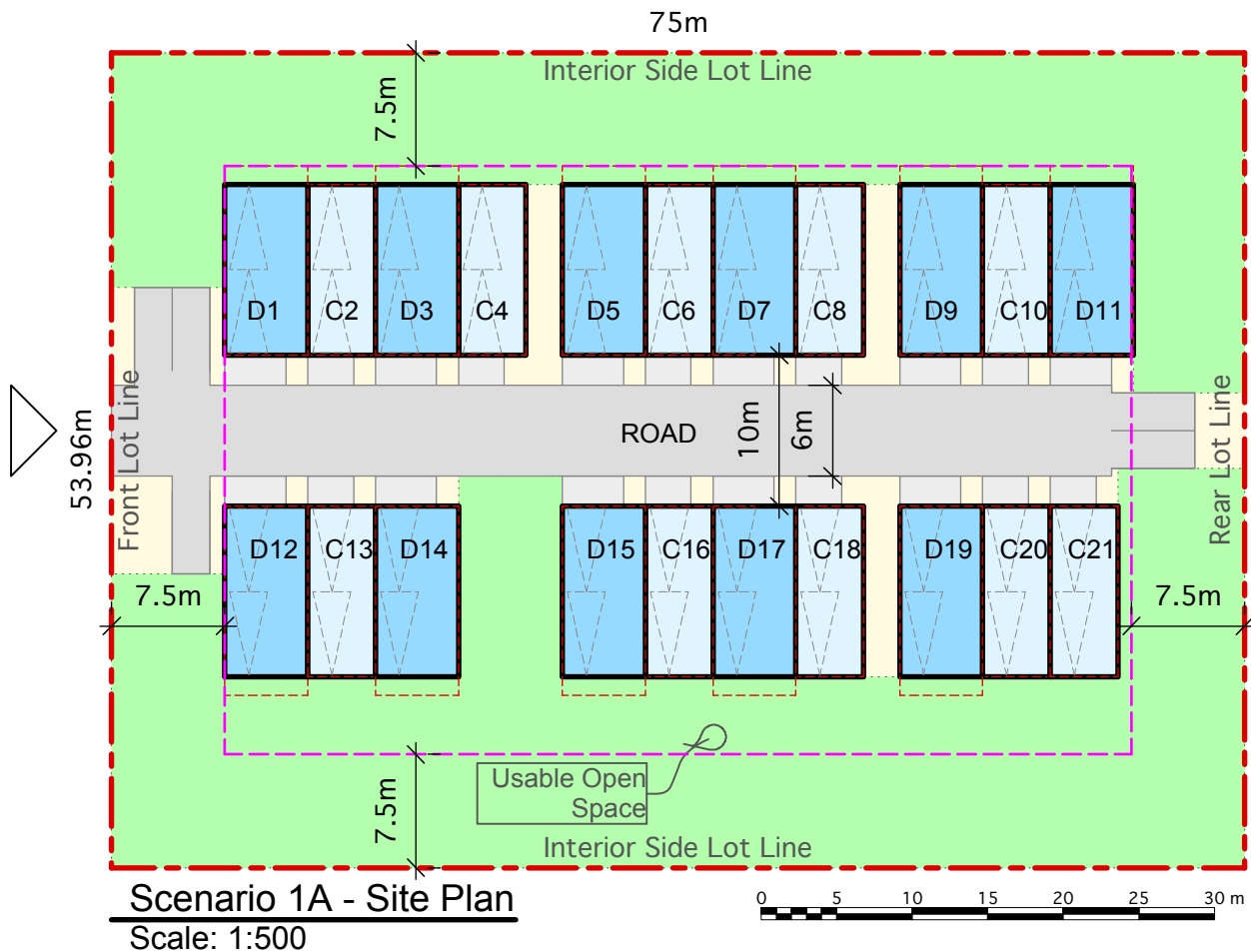
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7. Scenarios Analyzed

7.1. Scenario 1A - 100% tandem units as the RM-1 zone permits today

Variables

1)	Parking Type:	100% of Tandem parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	2.0m unit driveway



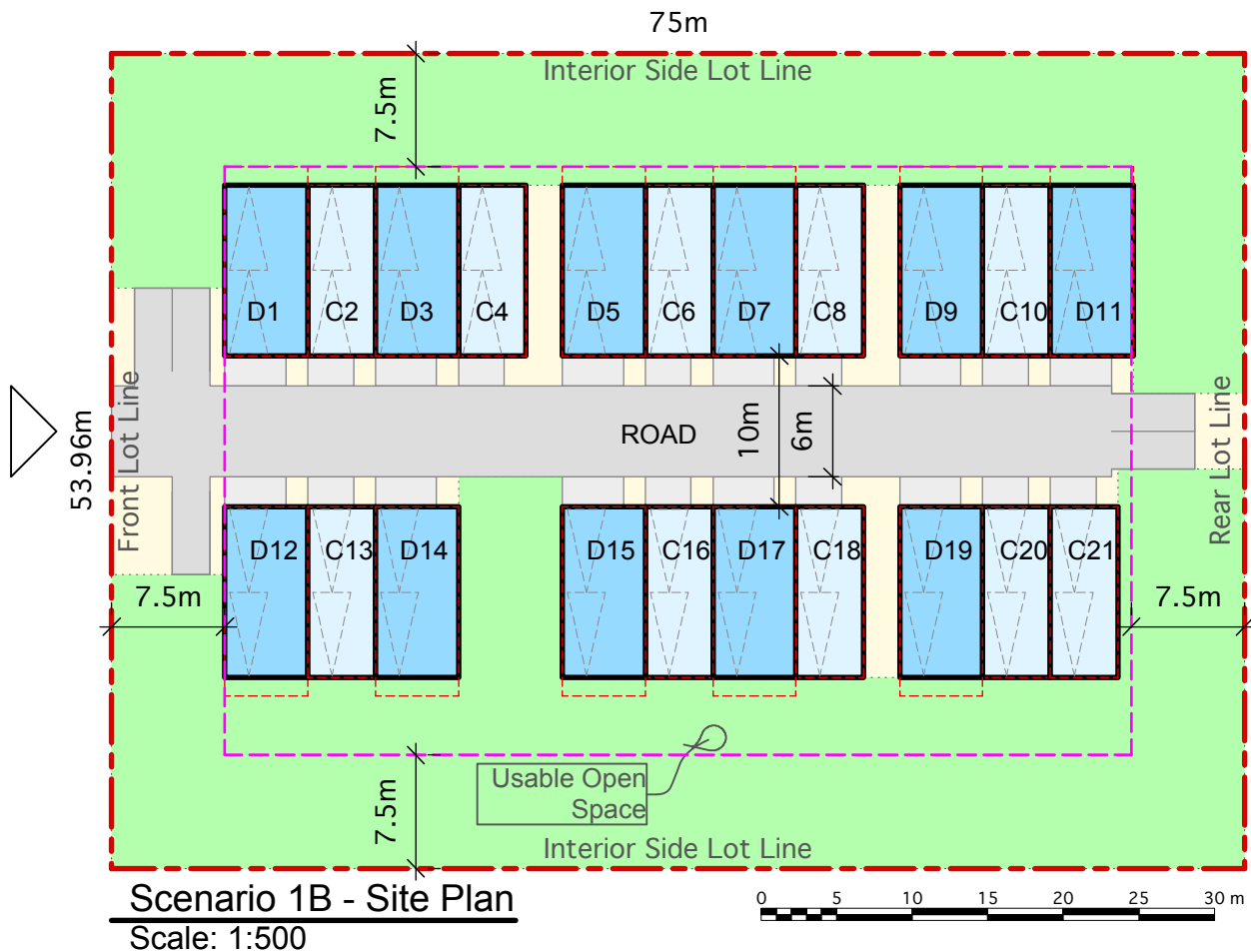
Site Plan Reconciliation

	Provided	Required		
# Units	21 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	11 Units		GFA	2,462 m ² = 26,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	473 m ² = 5,095 sq ft
% of tandem stall to units	100 %		Driveway Area:	150 m ² = 1,611 sq ft
% of double stall to units	0 %		Site Coverage:	1,263 m ² = 13,593 sq ft
Usable Open Space	2,011 m ²	795 m ²	Unit / Ha:	51.892
Common Activity Area	105 m ²	105 m ²	Road Site Coverage:	11.7 %
Visitor Parking @ 0.2	5 stalls	4.2 stalls	Driveway Site Coverage:	3.7 %
FSR:	0.608	0.600	Total Hard Surface Coverage:	15.4 %
Building Site Coverage:	31.2 %	40.0 %		

7.2. Scenario 1B - 100% tandem units with increased UOS & CAA

Variables

1)	Parking Type:	100% of Tandem parking stalls
2)	Usable Open Space:	50 m ² / 3 Bedroom & 35 m ² for 2 Bedroom
3)	Common activity area:	10 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	2.0m unit driveway



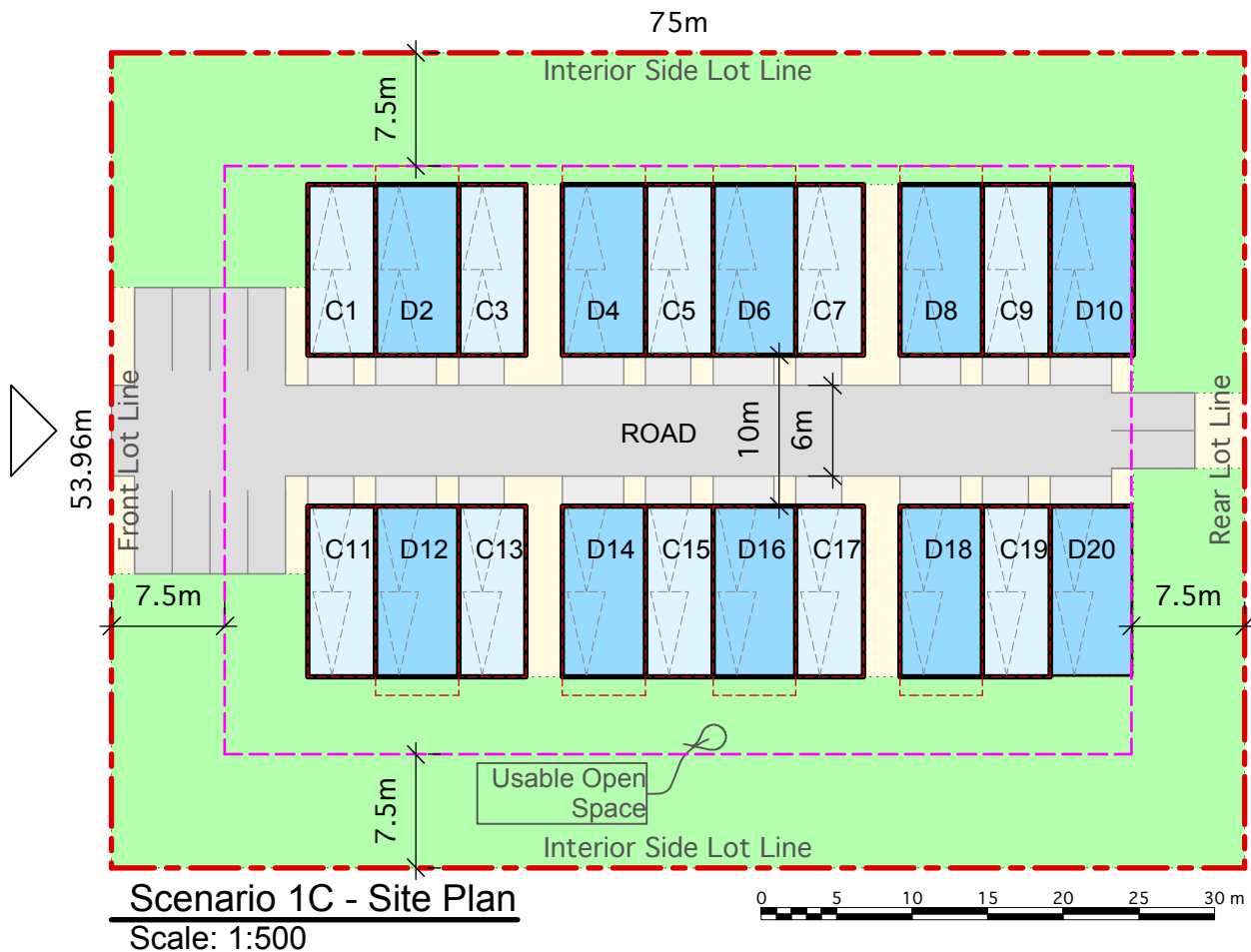
Site Plan Reconciliation

	Provided	Required		
# Units	21 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	11 Units		GFA	2,462 m ² = 26,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	473 m ² = 5,095 sq ft
% of tandem stall to units	100 %		Driveway Area:	150 m ² = 1,611 sq ft
% of double stall to units	0 %		Site Coverage:	1,263 m ² = 13,593 sq ft
Usable Open Space	2,011 m²	900 m²	Unit / Ha:	51.892
Common Activity Area	210 m²	210 m²	Road Site Coverage:	11.7 %
Visitor Parking @ 0.2	5 stalls	4.2 stalls	Driveway Site Coverage:	3.7 %
FSR:	0.608	0.600	Total Hard Surface Coverage:	15.4 %
Building Site Coverage:	31.2 %	40.0 %		

7.3. Scenario 1C - 100% tandem units with increased visitor parking ratio

Variables

1)	Parking Type:	100% of Tandem parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.5 visitor stalls / unit
5)	Driveway Apron:	2.0m unit driveway



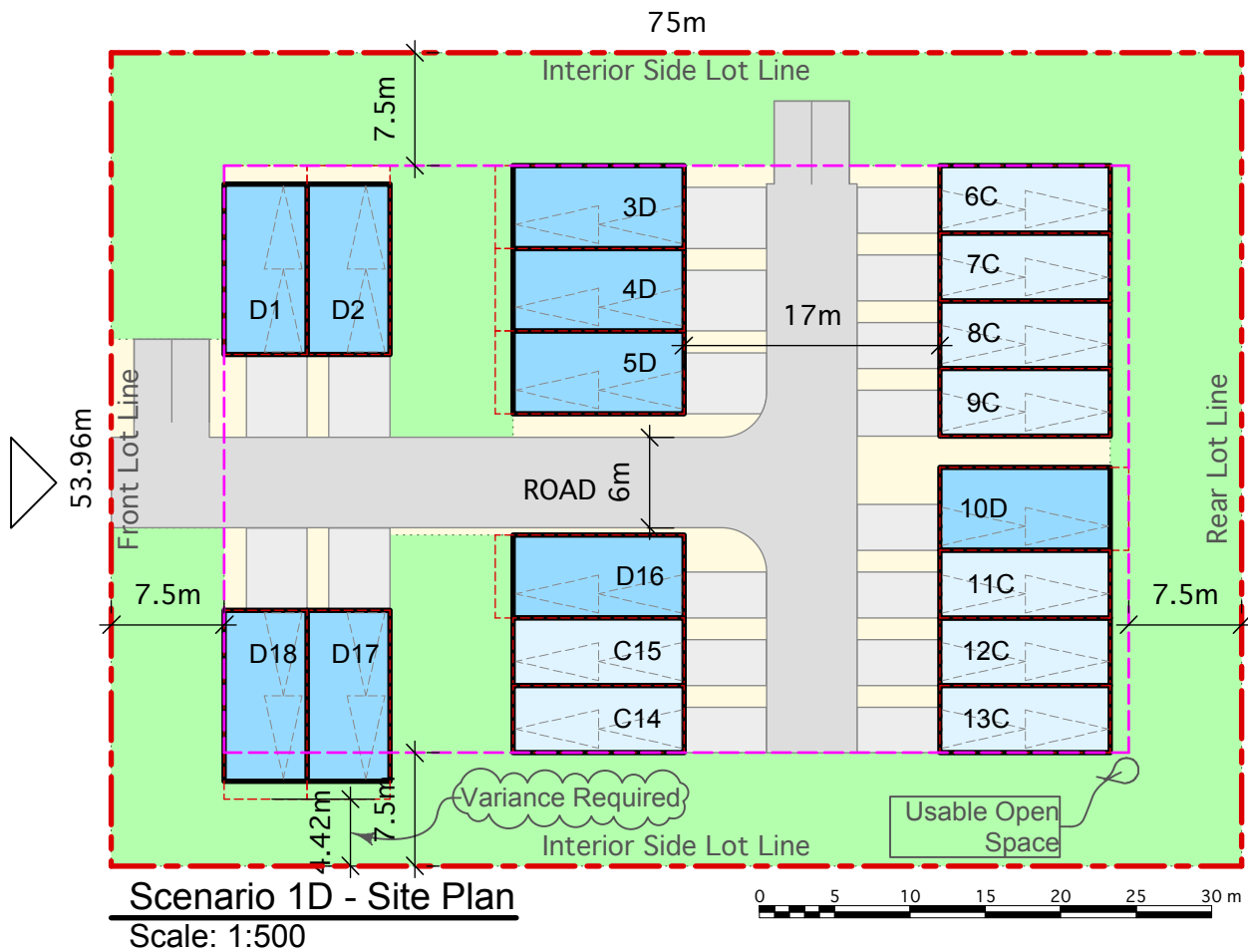
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	555 m ² = 5,970 sq ft
% of tandem stall to units	100 %		Driveway Area:	141 m ² = 1,523 sq ft
% of double stall to units	0 %		Site Coverage:	1,194 m ² = 12,854 sq ft
Usable Open Space	1,980 m ²	750 m ²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	13.7 %
Visitor Parking @ 0.5	10 stalls	10 stalls	Driveway Site Coverage:	3.5 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	17.2 %
Building Site Coverage:	29.5 %	40.0 %		

7.4. Scenario 1D - 100% tandem units with increased apron length

Variables

1)	Parking Type:	100% of Tandem parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



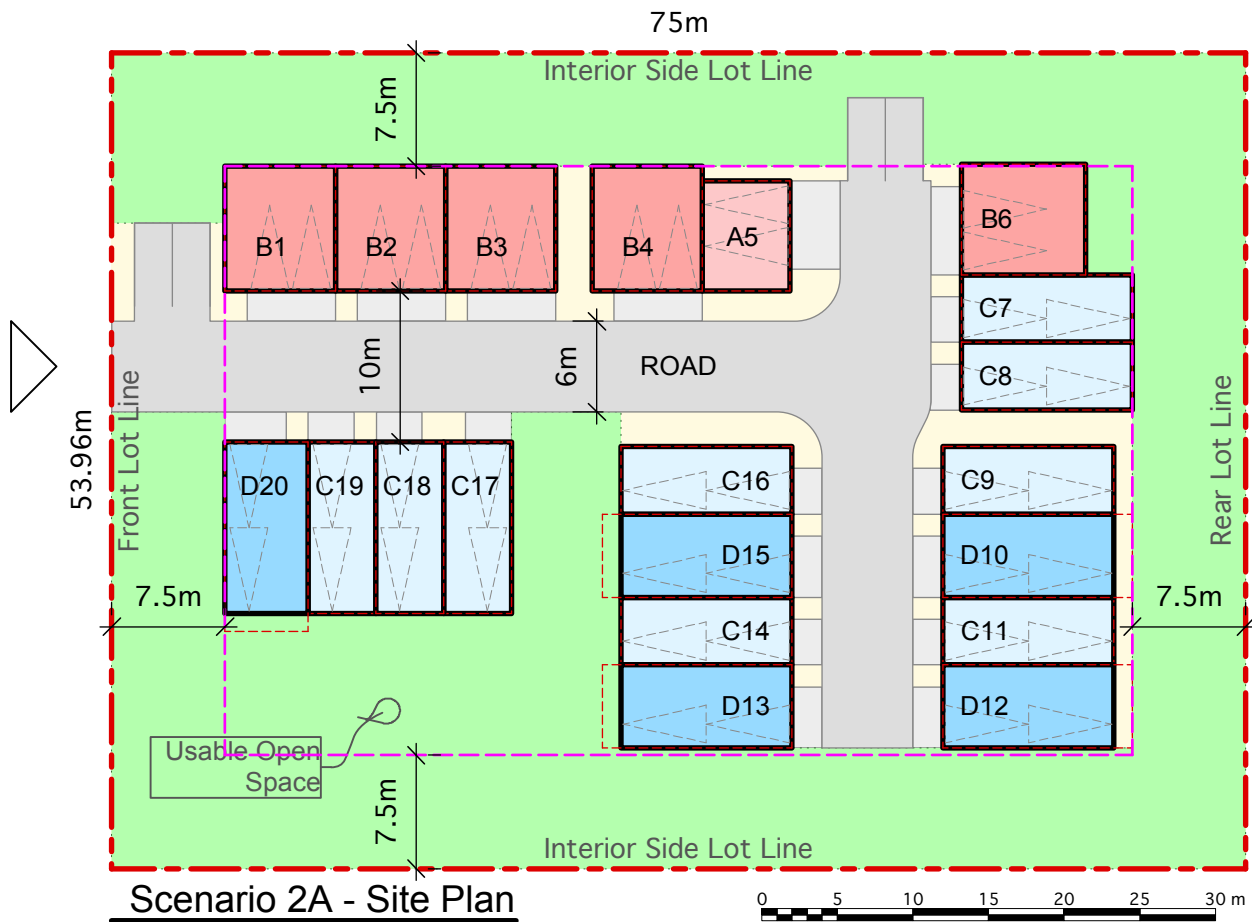
Site Plan Reconciliation

	Provided	Required		
# Units	18 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,090 m ² = 22,500 sq ft
# of 2 Bedrooms	9 Units		Road Area:	551 m ² = 5,934 sq ft
% of tandem stall to units	100 %		Driveway Area:	339 m² = 3,648 sq ft
% of double stall to units	0 %		Site Coverage:	1,075 m ² = 11,568 sq ft
Usable Open Space	1,886 m ²	675 m ²	Unit / Ha:	44.479
Common Activity Area	90 m ²	90 m ²	Road Site Coverage:	13.6 %
Visitor Parking @ 0.2	4 stalls	3.6 stalls	Driveway Site Coverage:	8.4 %
FSR:	0.517	0.600	Total Hard Surface Coverage:	22.0 %
Building Site Coverage:	26.6 %	40.0 %		

7.5. Scenario 2A - 70% tandem units as the RM-1 zone permits today

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



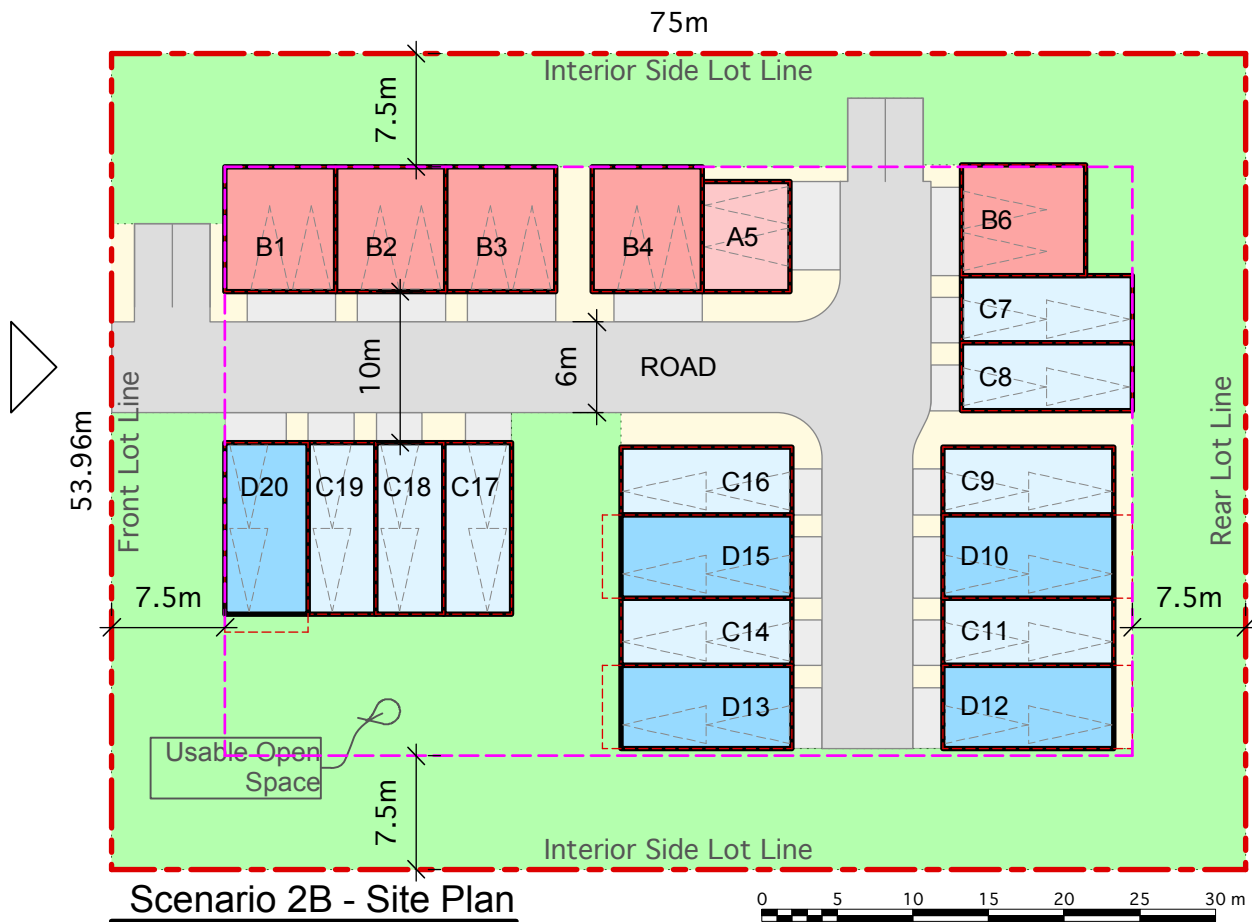
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	579 m ² = 6,236 sq ft
% of tandem stall to units	70 %		Driveway Area:	173 m ² = 1,860 sq ft
% of double stall to units	30 %		Site Coverage:	1,146 m ² = 12,337 sq ft
Usable Open Space	1,972 m ²	750 m ²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	14.3 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	4.3 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	18.6 %
Building Site Coverage:	28.3 %	40.0 %		

7.6. Scenario 2B - 70% tandem units with increased UOS & CAA

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	50 m² / 3 Bedroom & 35 m² for 2 Bedroom
3)	Common activity area:	10 m² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



Scenario 2B - Site Plan

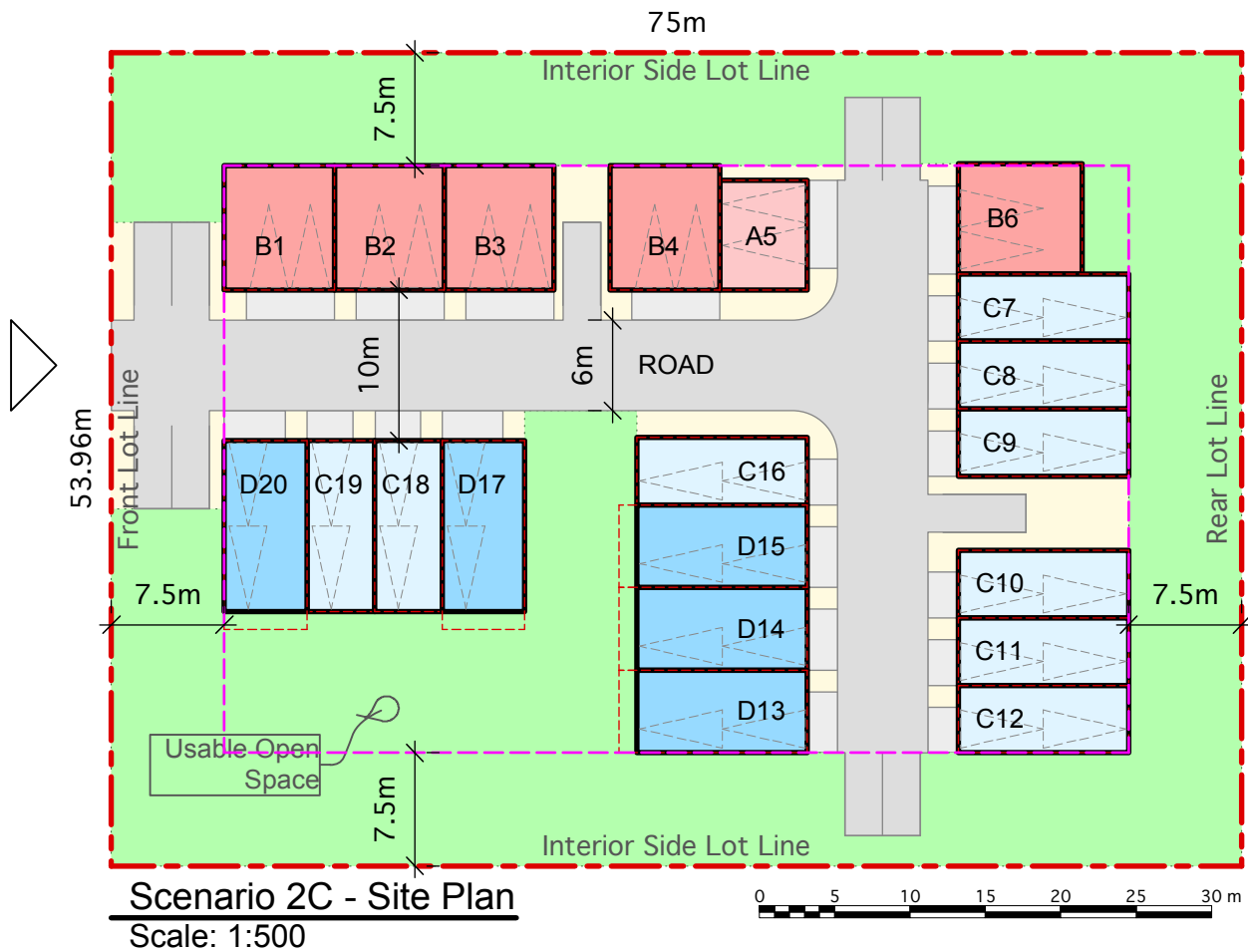
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Site Plan Reconciliation			
	Provided	Required	
# Units	20 Units		Site Area
# of 3 Bedrooms	10 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	10 Units		GFA
% of tandem stall to units	70 %		2,323 m ² = 25,000 sq ft
% of double stall to units	30 %		Road Area:
Usable Open Space	1,972 m ²	850 m ²	579 m ² = 6,236 sq ft
Common Activity Area	200 m ²	200 m ²	Driveway Area:
Visitor Parking @ 0.2	4 stalls	4 stalls	173 m ² = 1,860 sq ft
FSR:	0.574	0.600	Site Coverage:
Building Site Coverage:	28.3 %	40.0 %	1,146 m ² = 12,337 sq ft
			Unit / Ha:
			49.421
			Road Site Coverage:
			14.3 %
			Driveway Site Coverage:
			4.3 %
			Total Hard Surface Coverage:
			18.6 %

7.7. Scenario 2C - 70% tandem units with increased visitor parking ratio

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.5 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



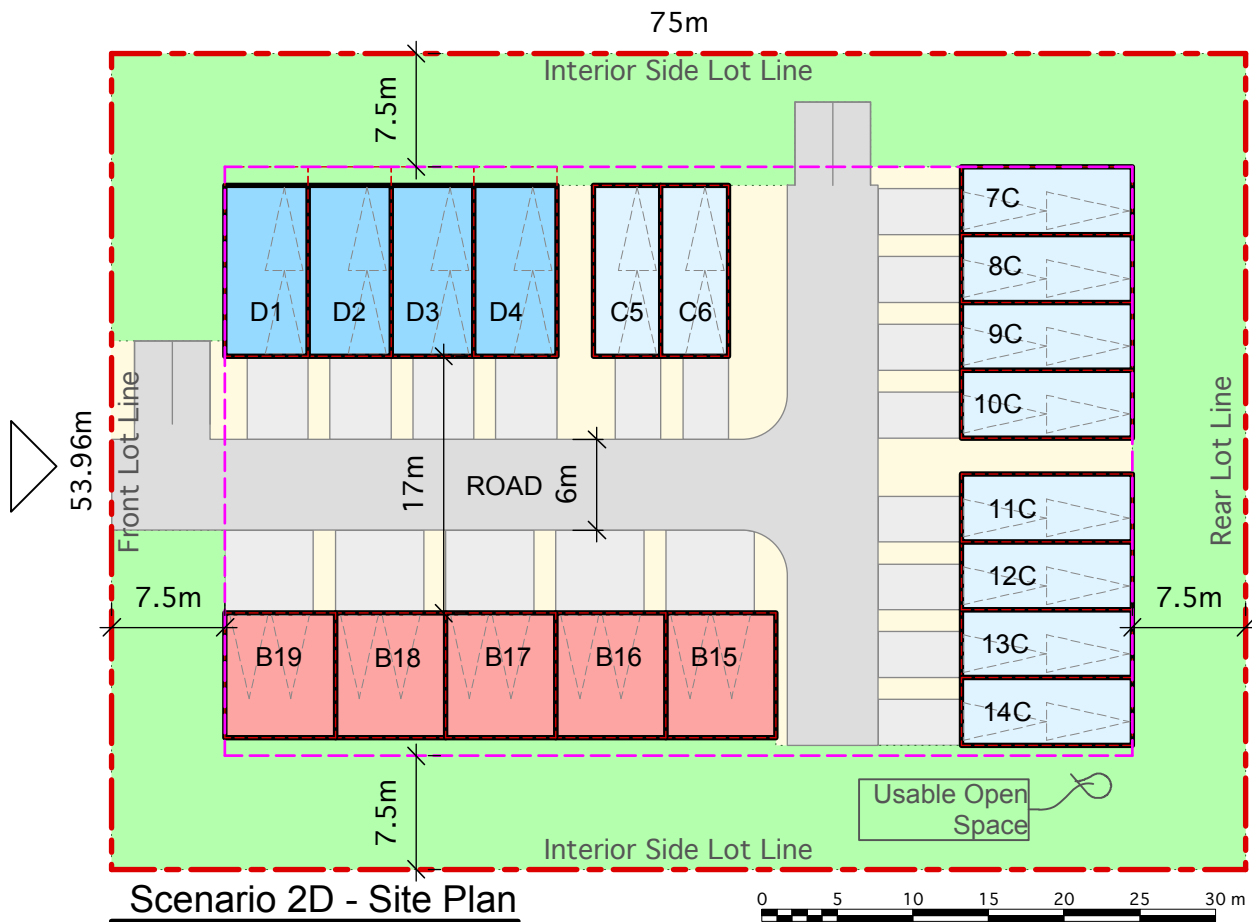
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	674 m ² = 7,250 sq ft
% of tandem stall to units	70 %		Driveway Area:	165 m ² = 1,777 sq ft
% of double stall to units	30 %		Site Coverage:	1,146 m ² = 12,337 sq ft
Usable Open Space	1,893 m ²	750 m ²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	16.6 %
Visitor Parking @ 0.5	10 stalls	10 stalls	Driveway Site Coverage:	4.1 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	20.7 %
Building Site Coverage:	28.3 %	40.0 %		

7.8. Scenario 2D - 70% tandem units with increased apron length on all units

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



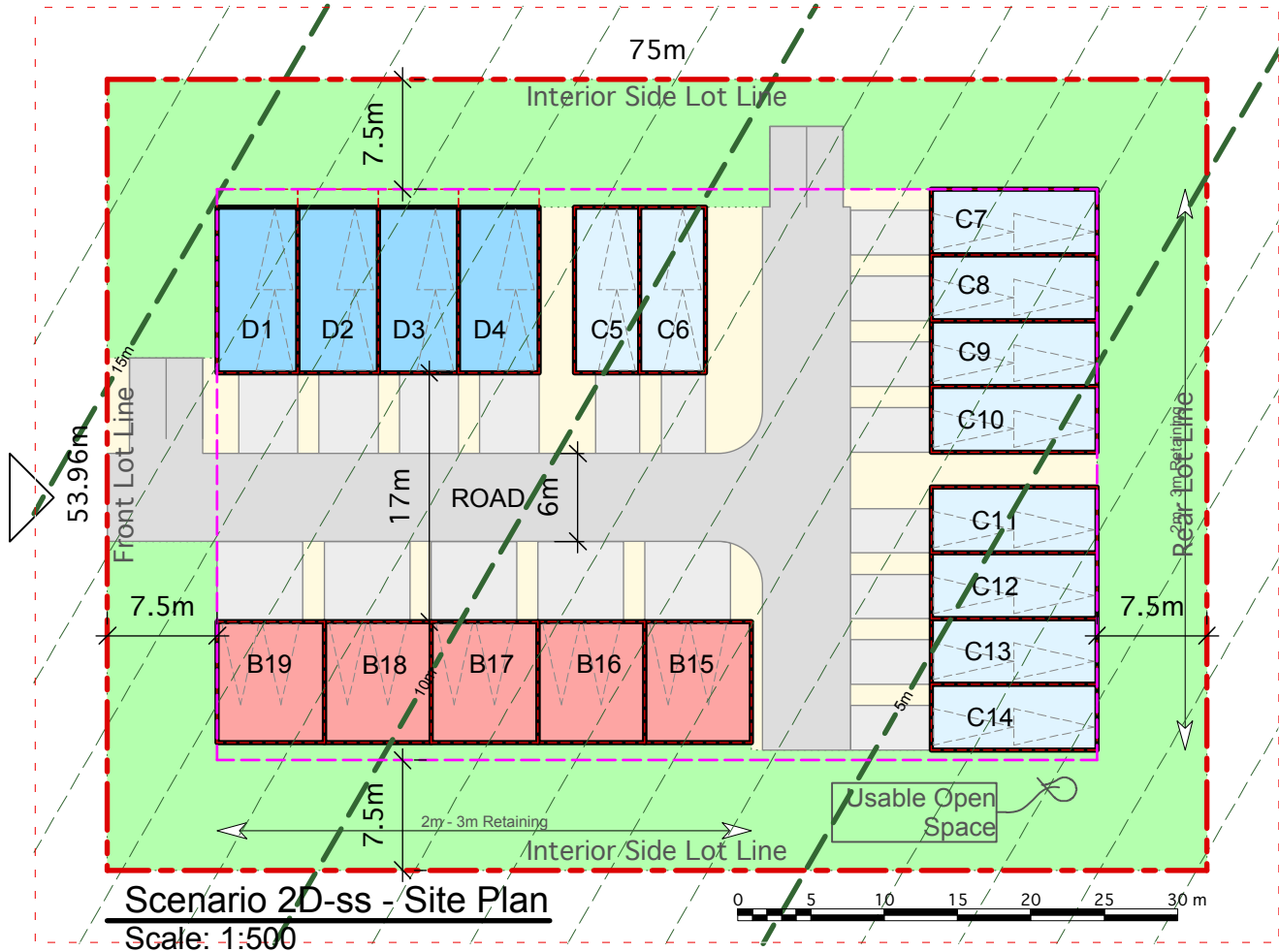
Site Plan Reconciliation

	Provided	Required		
# Units	19 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,183 m ² = 23,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	554 m ² = 5,967 sq ft
% of tandem stall to units	74 %		Driveway Area:	416 m² = 4,482 sq ft
% of double stall to units	26 %		Site Coverage:	1,083 m ² = 11,654 sq ft
Usable Open Space	1,699 m ²	705 m ²	Unit / Ha:	46.95
Common Activity Area	95 m ²	95 m ²	Road Site Coverage:	13.7 %
Visitor Parking @ 0.2	5 stalls	3.8 stalls	Driveway Site Coverage:	10.3 %
FSR:	0.539	0.600	Total Hard Surface Coverage:	24.0 %
Building Site Coverage:	26.8 %	40.0 %		

7.9. Scenario 2D-ss - 70% tandem units with increased apron length on all units

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



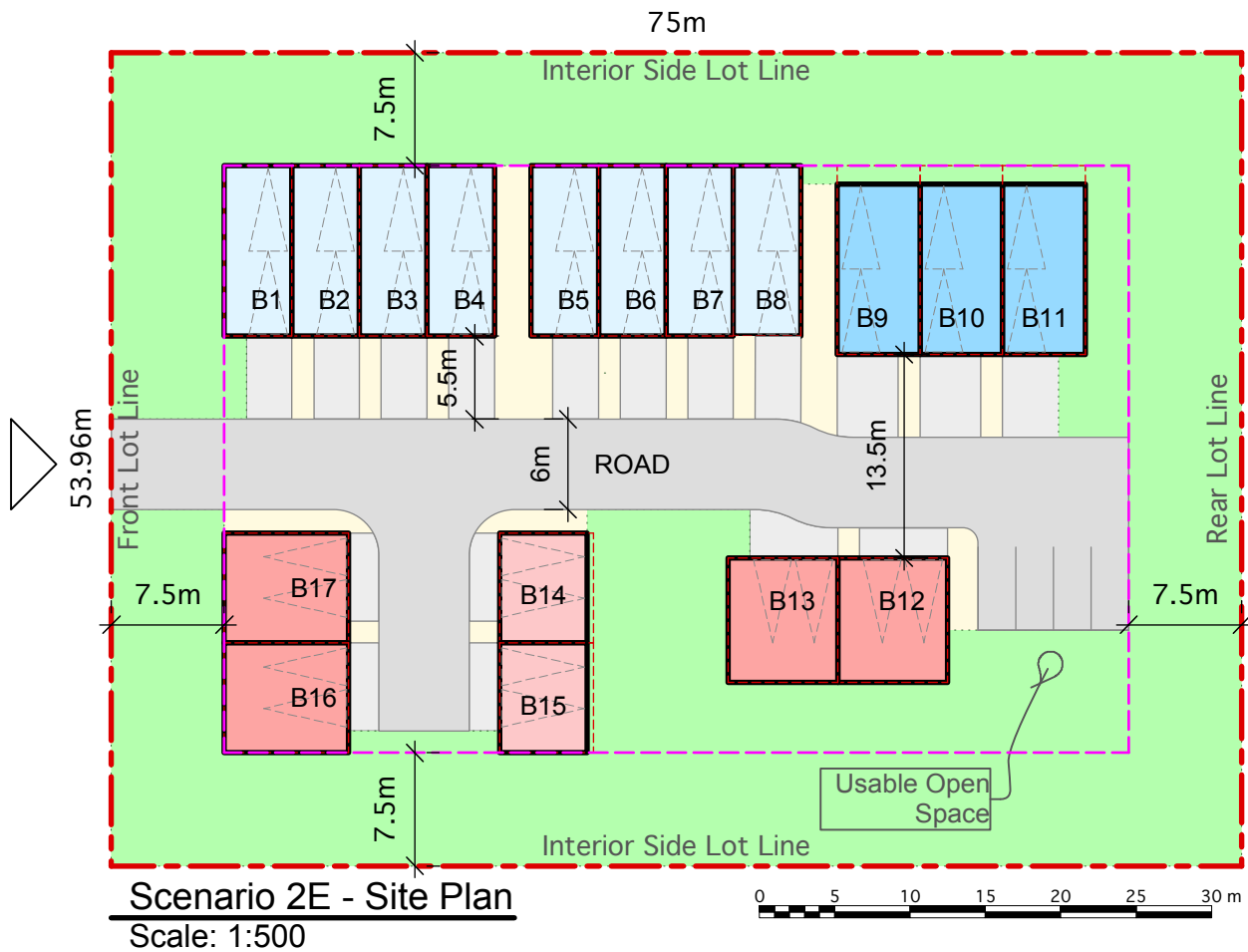
Site Plan Reconciliation

	Provided	Required		
# Units	19 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,183 m ² = 23,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	554 m ² = 5,967 sq ft
% of tandem stall to units	74 %		Driveway Area:	416 m² = 4,482 sq ft
% of double stall to units	26 %		Site Coverage:	1,083 m ² = 11,654 sq ft
Usable Open Space	1,699 m ²	705 m ²	Unit / Ha:	46.95
Common Activity Area	95 m ²	95 m ²	Road Site Coverage:	13.7 %
Visitor Parking @ 0.2	4 stalls	3.8 stalls	Driveway Site Coverage:	10.3 %
FSR:	0.539	0.600	Total Hard Surface Coverage:	24.0 %
Building Site Coverage:	26.8 %	40.0 %		

7.10. Scenario 2E - 70% tandem units with increased apron length on tandem only

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only



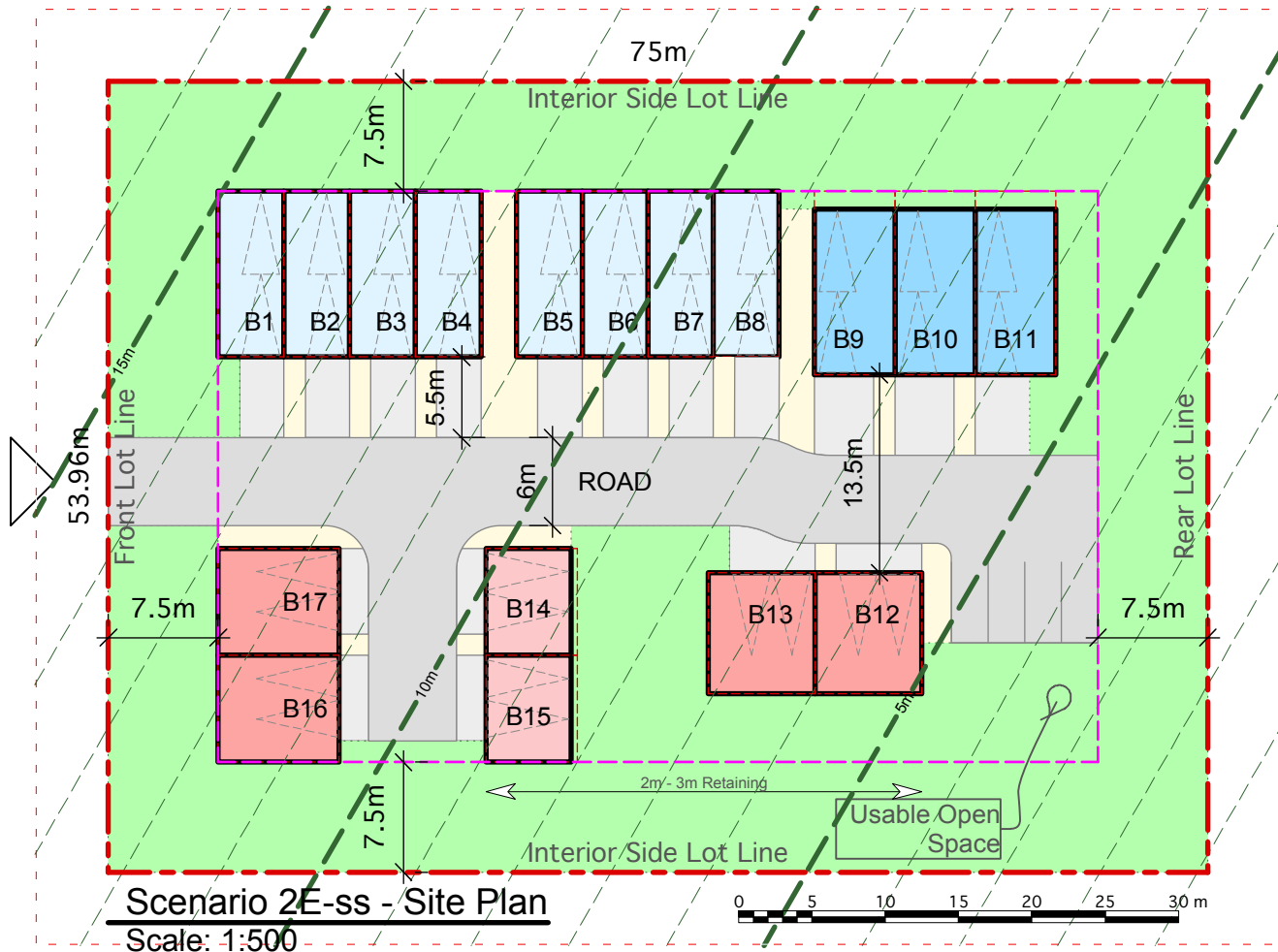
Site Plan Reconciliation

	Provided	Required		
# Units	17 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	7 Units		GFA	1,905 m ² = 20,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	567 m ² = 6,103 sq ft
% of tandem stall to units	65 %		Driveway Area:	273 m² = 2,944 sq ft
% of double stall to units	35 %		Site Coverage:	943 m ² = 10,154 sq ft
Usable Open Space	2,097 m²	955 m²	Unit / Ha:	42.008
Common Activity Area	85 m ²	85 m ²	Road Site Coverage:	14.0 %
Visitor Parking @ 0.2	4 stalls	3.4 stalls	Driveway Site Coverage:	6.8 %
FSR:	0.471	0.600	Total Hard Surface Coverage:	20.8 %
Building Site Coverage:	23.3 %	40.0 %		

7.11. Scenario 2E-ss - 70% tandem units with increased apron length on tandem only

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only



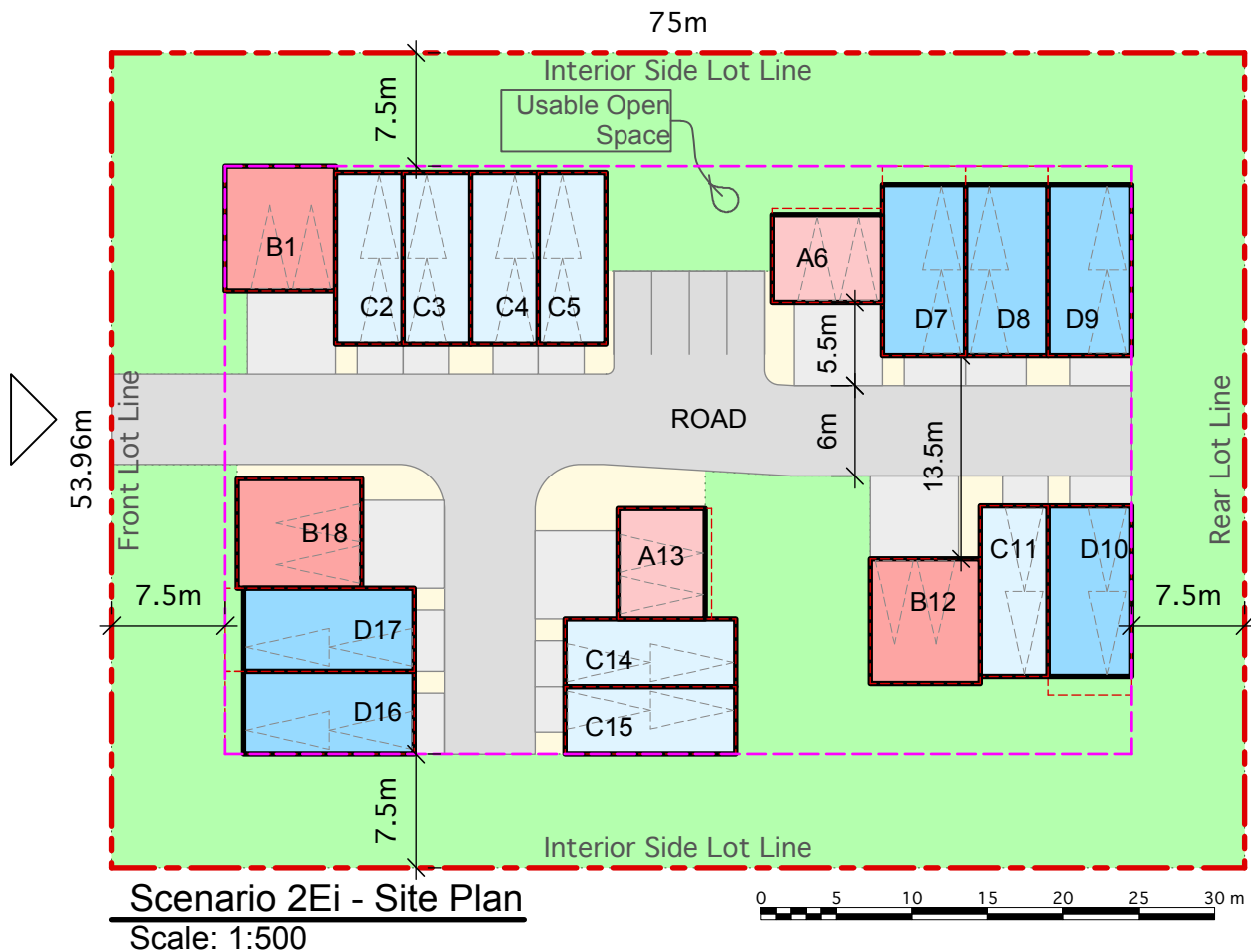
Site Plan Reconciliation

	Provided	Required		
# Units	17 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	7 Units		GFA	1,905 m ² = 20,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	567 m ² = 6,103 sq ft
% of tandem stall to units	65 %		Driveway Area:	273 m² = 2,944 sq ft
% of double stall to units	35 %		Site Coverage:	943 m ² = 10,154 sq ft
Usable Open Space	2,097 m²	955 m²	Unit / Ha:	42.008
Common Activity Area	85 m ²	85 m ²	Road Site Coverage:	14.0 %
Visitor Parking @ 0.2	4 stalls	3.4 stalls	Driveway Site Coverage:	6.8 %
FSR:	0.471	0.600	Total Hard Surface Coverage:	20.8 %
Building Site Coverage:	23.3 %	40.0 %		

7.12. Scenario 2Ei - 70% tandem units with increased apron length on double wide only

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only



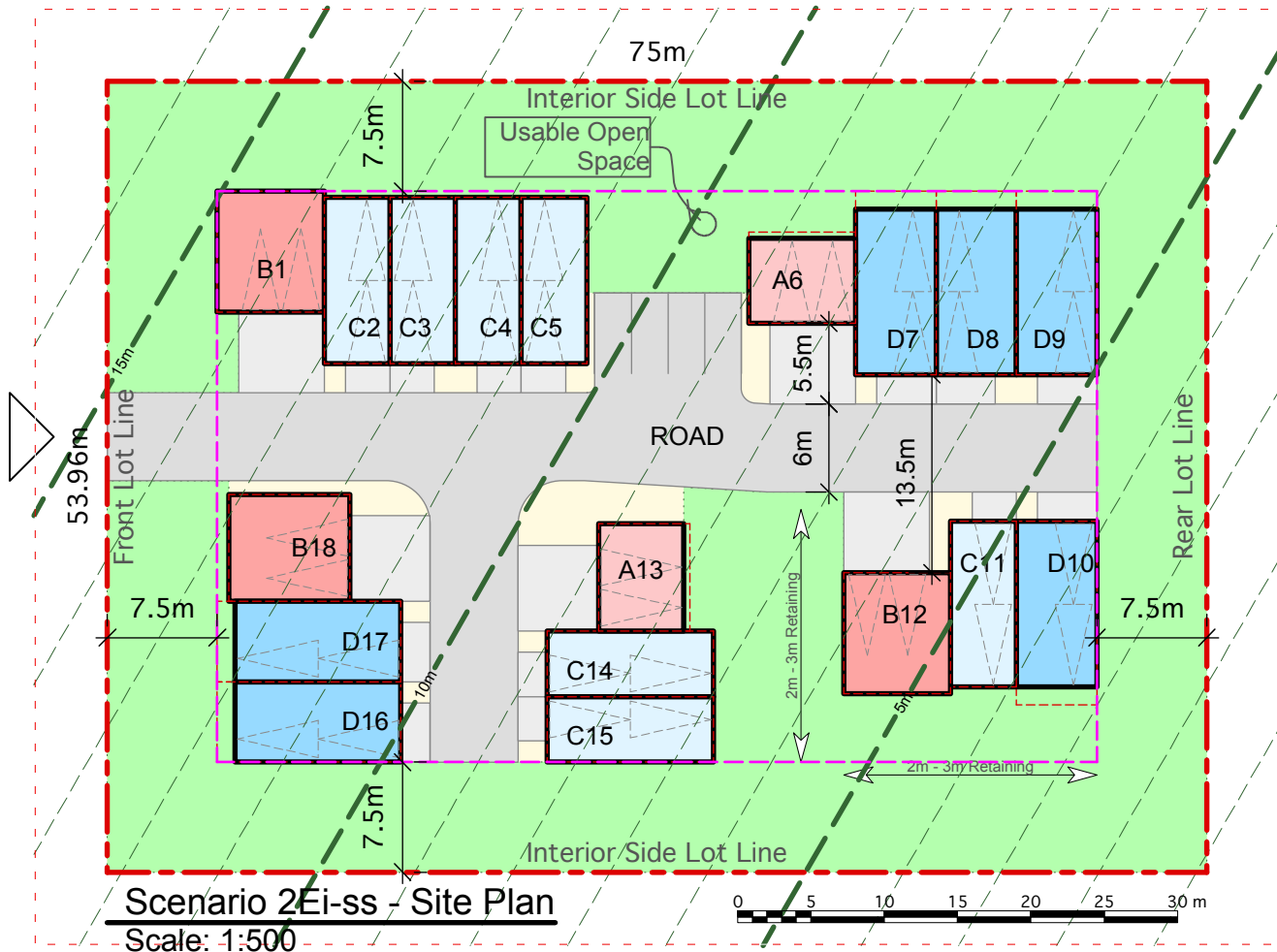
Site Plan Reconciliation

	Provided	Required		
# Units	18 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,090 m ² = 22,500 sq ft
# of 2 Bedrooms	9 Units		Road Area:	596 m ² = 6,414 sq ft
% of tandem stall to units	72 %		Driveway Area:	252 m² = 2,708 sq ft
% of double stall to units	28 %		Site Coverage:	1,039 m ² = 11,179 sq ft
Usable Open Space	2,089 m²	1035 m²	Unit / Ha:	44.479
Common Activity Area	90 m ²	90 m ²	Road Site Coverage:	14.7 %
Visitor Parking @ 0.2	4 stalls	3.6 stalls	Driveway Site Coverage:	6.2 %
FSR:	0.517	0.600	Total Hard Surface Coverage:	20.9 %
Building Site Coverage:	25.7 %	40.0 %		

7.13. Scenario 2Ei-ss - 70% tandem units with increased apron length on double wide only

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only



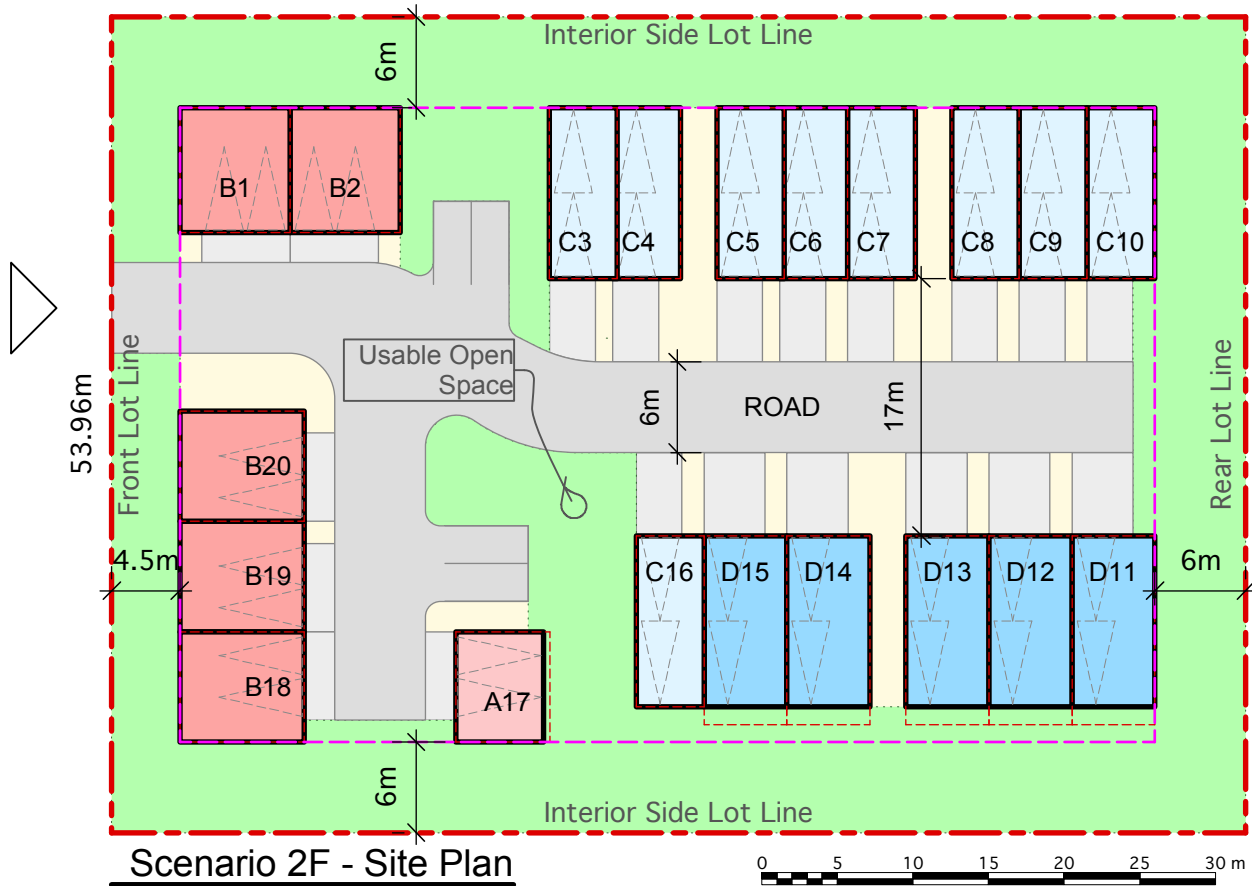
Site Plan Reconciliation

	Provided	Required		
# Units	18 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,090 m ² = 22,500 sq ft
# of 2 Bedrooms	9 Units		Road Area:	596 m ² = 6,414 sq ft
% of tandem stall to units	72 %		Driveway Area:	252 m² = 2,708 sq ft
% of double stall to units	28 %		Site Coverage:	1,039 m ² = 11,179 sq ft
Usable Open Space	2,089 m²	1035 m²	Unit / Ha:	44.479
Common Activity Area	90 m ²	90 m ²	Road Site Coverage:	14.7 %
Visitor Parking @ 0.2	4 stalls	3.6 stalls	Driveway Site Coverage:	6.2 %
FSR:	0.517	0.600	Total Hard Surface Coverage:	20.9 %
Building Site Coverage:	25.7 %	40.0 %		

**7.14. Scenario 2F - 70% tandem units with increased apron length on tandem only
& site setback variances**

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



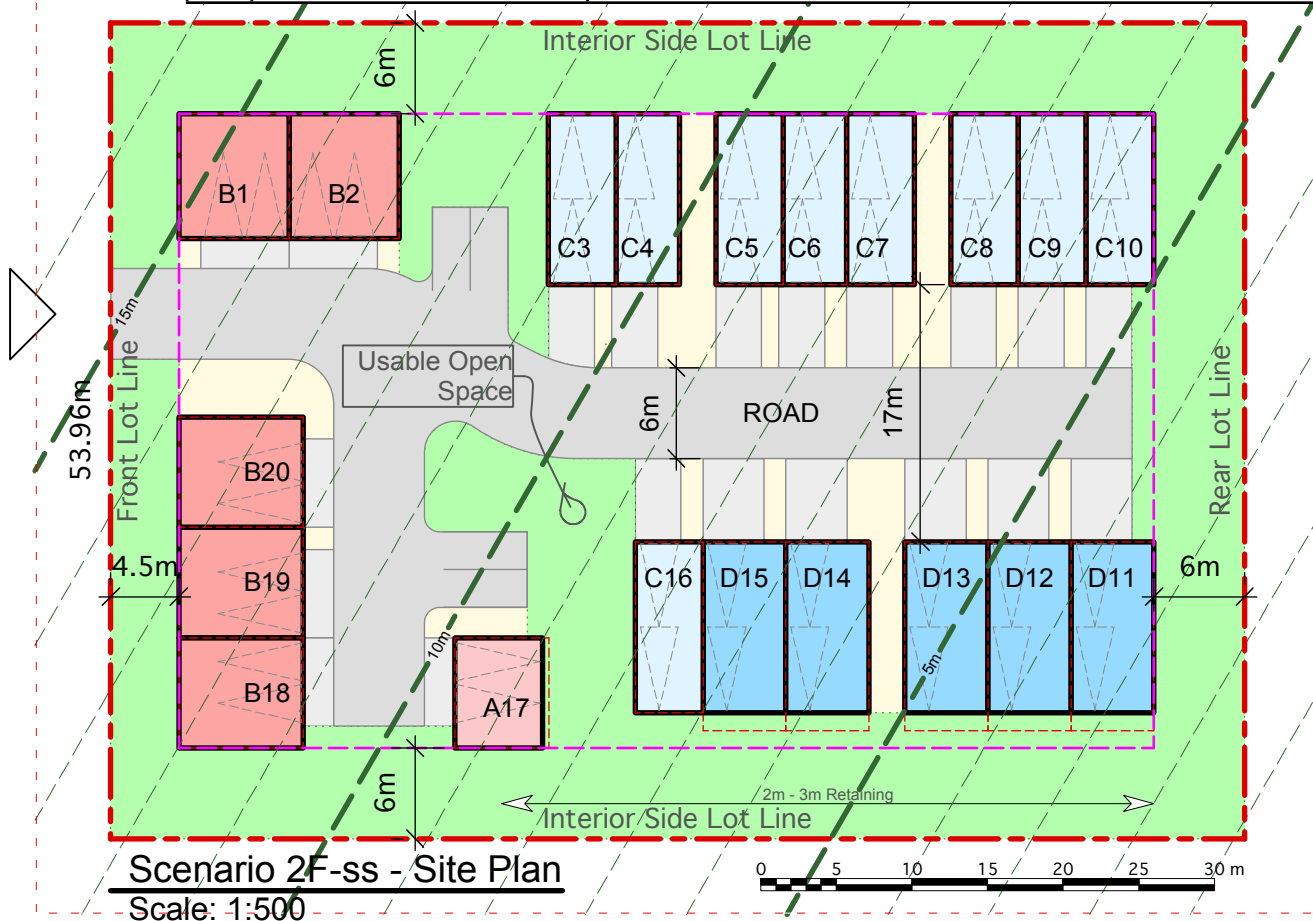
Scenario 2F - Site Plan
Scale: 1:500

Site Plan Reconciliation			
	Provided	Required	
# Units	20 Units		Site Area
# of 3 Bedrooms	10 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	10 Units		GFA
% of tandem stall to units	70 %		2,323 m ² = 25,000 sq ft
% of double stall to units	30 %		Road Area:
Usable Open Space	1,703 m ²	1150 m ²	635 m ² = 6,831 sq ft
Common Activity Area	100 m ²	100 m ²	Driveway Area:
Visitor Parking @ 0.2	4 stalls	4 stalls	331 m² = 3,560 sq ft
FSR:	0.574	0.600	Site Coverage:
Building Site Coverage:	28.3 %	40.0 %	1,146 m ² = 12,337 sq ft
			Unit / Ha:
			49.421
			Road Site Coverage:
			15.7 %
			Driveway Site Coverage:
			8.2 %
			Total Hard Surface Coverage:
			23.9 %

**7.15. Scenario 2F-ss - 70% tandem units with increased apron length on tandem only
& site setback variances**

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



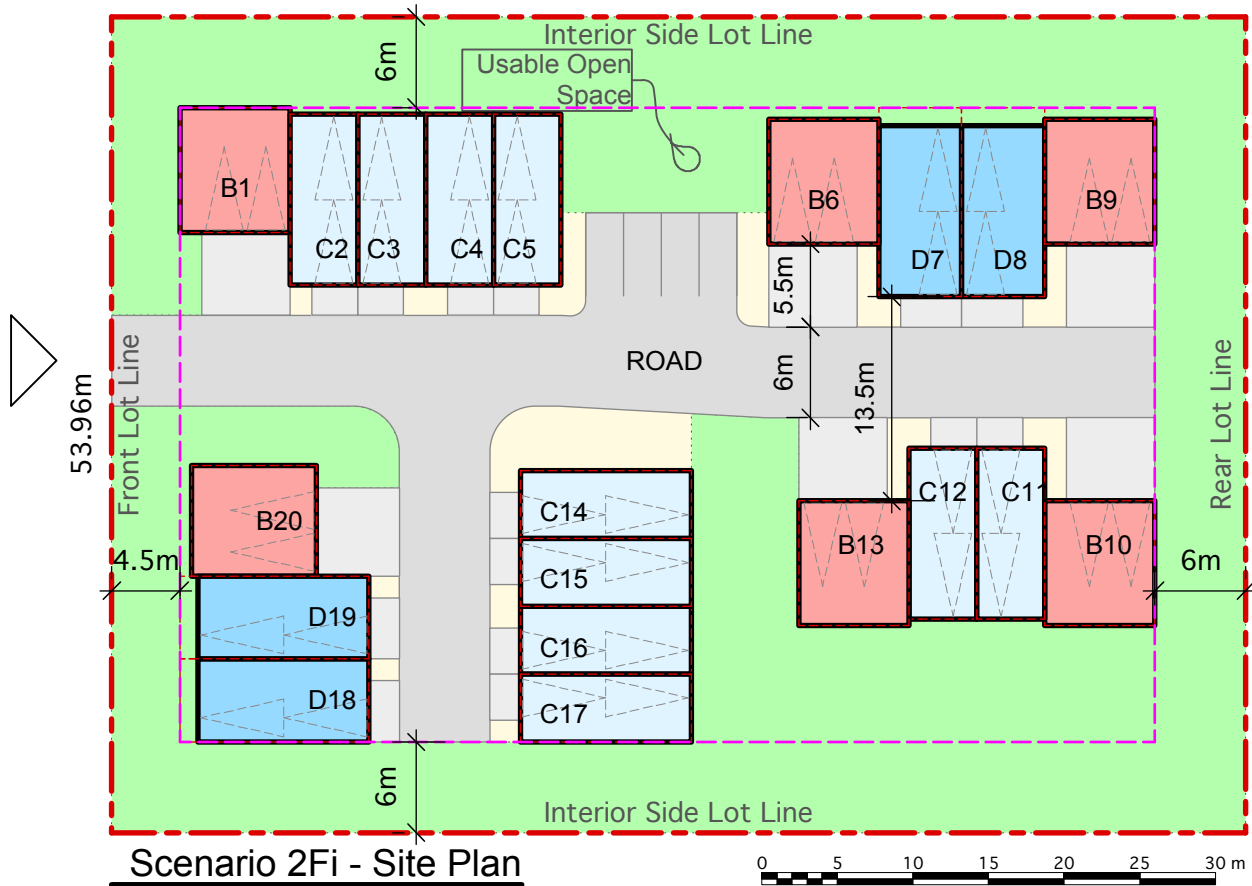
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	635 m ² = 6,831 sq ft
% of tandem stall to units	70 %		Driveway Area:	331 m² = 3,560 sq ft
% of double stall to units	30 %		Site Coverage:	1,146 m ² = 12,337 sq ft
Usable Open Space	1,703 m²	1150 m²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	15.7 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	8.2 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	23.9 %
Building Site Coverage:	28.3 %	40.0 %		

**7.16. Scenario 2Fi - 70% tandem units with increased apron length on double wide only
& site setback variances**

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



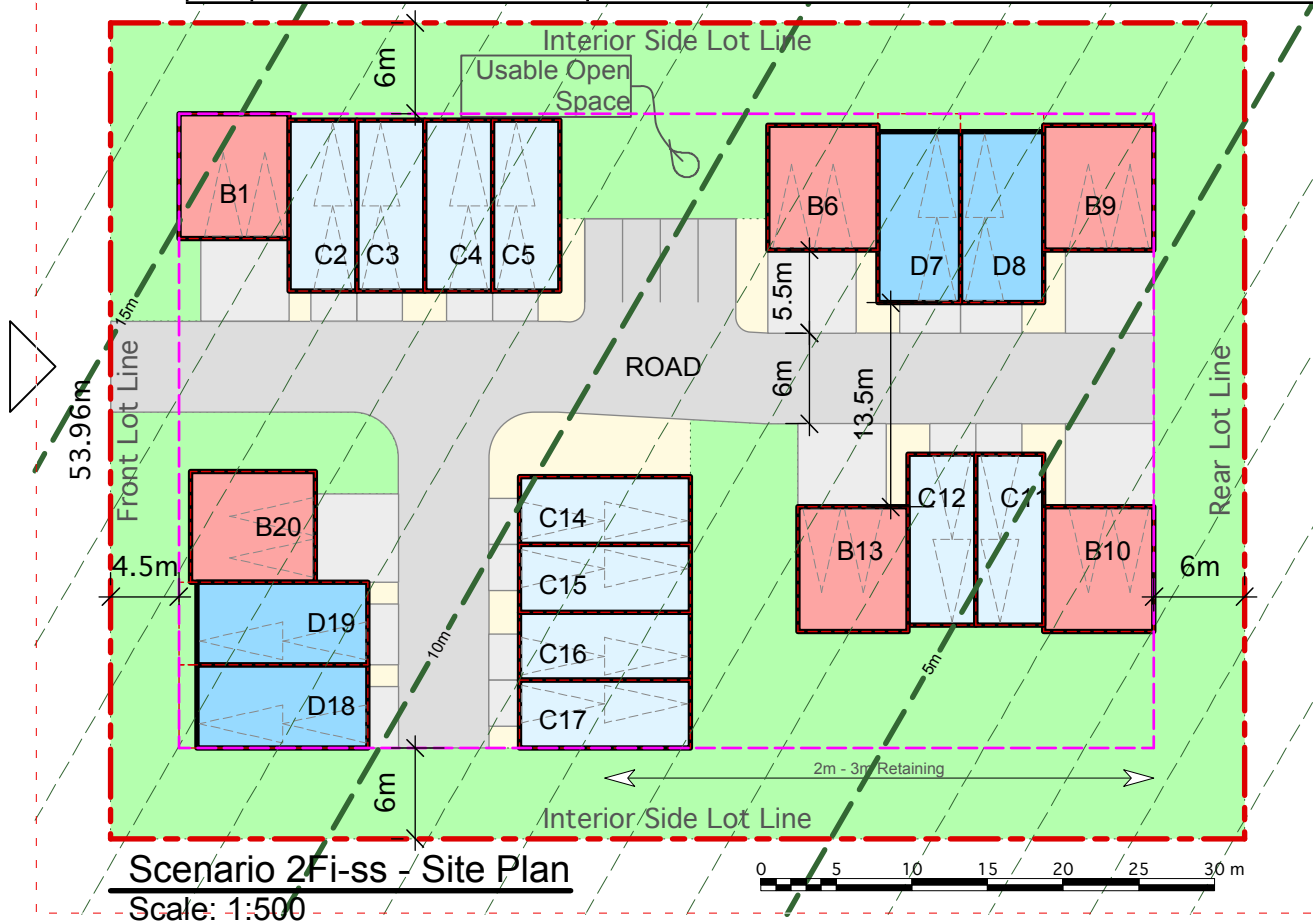
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	623 m ² = 6,710 sq ft
% of tandem stall to units	70 %		Driveway Area:	286 m² = 3,076 sq ft
% of double stall to units	30 %		Site Coverage:	1,143 m ² = 12,301 sq ft
Usable Open Space	1,870 m²	1150 m²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	15.4 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	7.1 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	22.5 %
Building Site Coverage:	28.2 %	40.0 %		

7.17. Scenario 2Fi-ss - 70% tandem units with increased apron length on double wide only & site setback variances

Variables

1)	Parking Type:	70% of Tandem & 30% of Double Wide parking stalls
2)	Usable Open Space:	65 m² / 3 Bedroom & 50 m² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



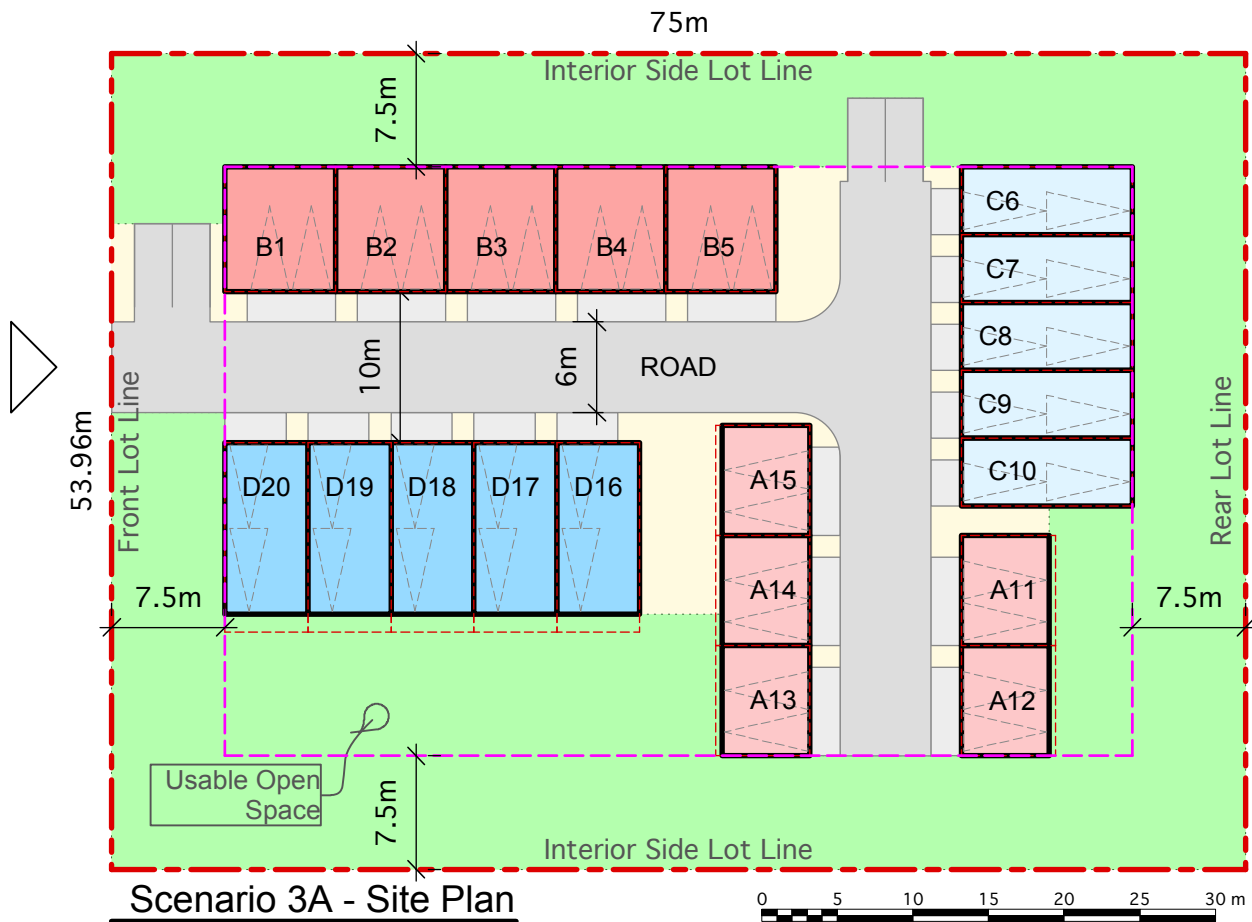
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	623 m ² = 6,710 sq ft
% of tandem stall to units	70 %		Driveway Area:	286 m² = 3,076 sq ft
% of double stall to units	30 %		Site Coverage:	1,143 m ² = 12,301 sq ft
Usable Open Space	1,870 m²	1150 m²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	15.4 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	7.1 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	22.5 %
Building Site Coverage:	28.2 %	40.0 %		

7.18. Scenario 3A - 50% tandem units as the RM-1 zone permits today

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



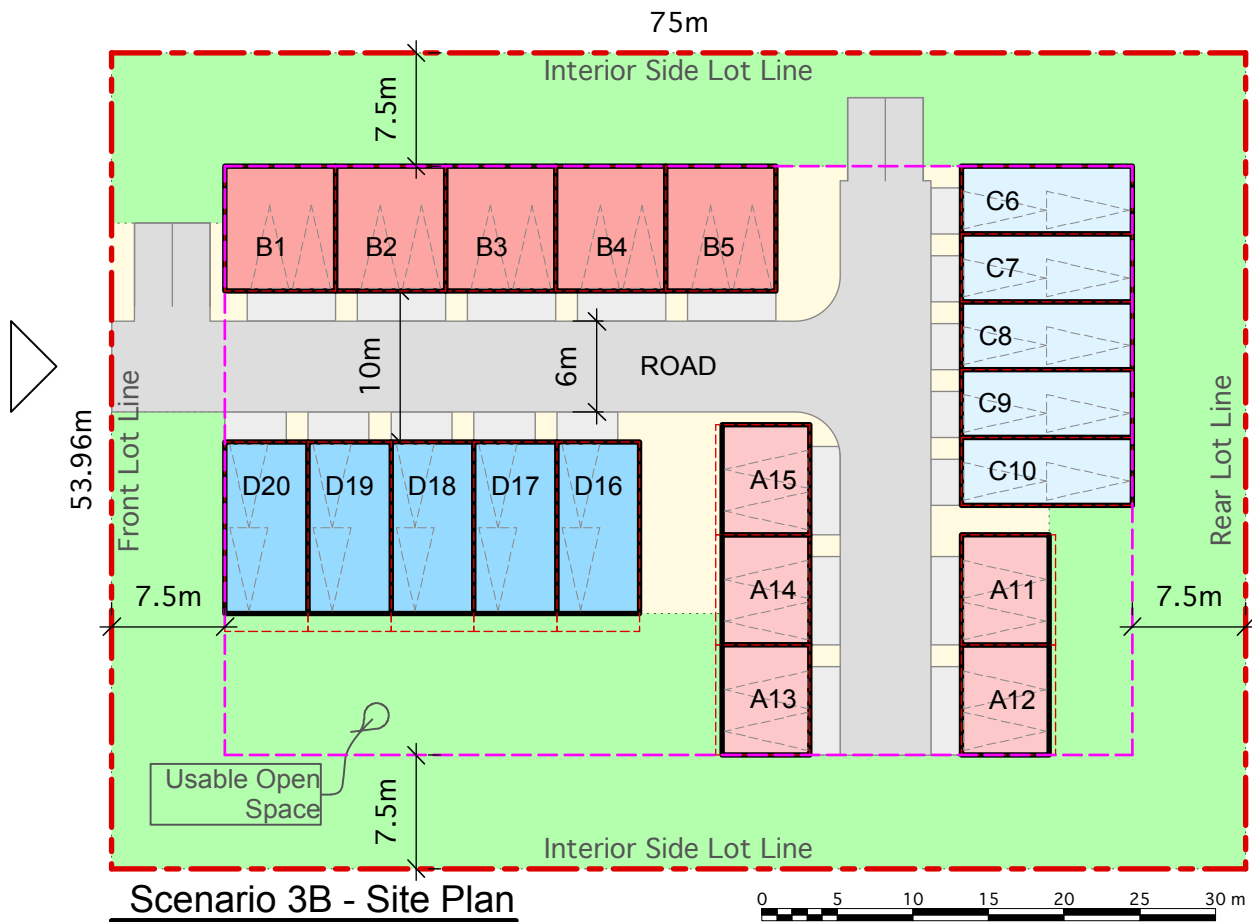
Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	581 m ² = 6,253 sq ft
% of tandem stall to units	50 %		Driveway Area:	188 m ² = 2,019 sq ft
% of double stall to units	50 %		Site Coverage:	1,125 m ² = 12,110 sq ft
Usable Open Space	1,993 m ²	750 m ²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	14.4 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	4.6 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	19.0 %
Building Site Coverage:	27.8 %	40.0 %		

7.19. Scenario 3B - 50% tandem units with increased UOS & CAA

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	50 m ² / 3 Bedroom & 35 m ² for 2 Bedroom
3)	Common activity area:	10 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



Scenario 3B - Site Plan

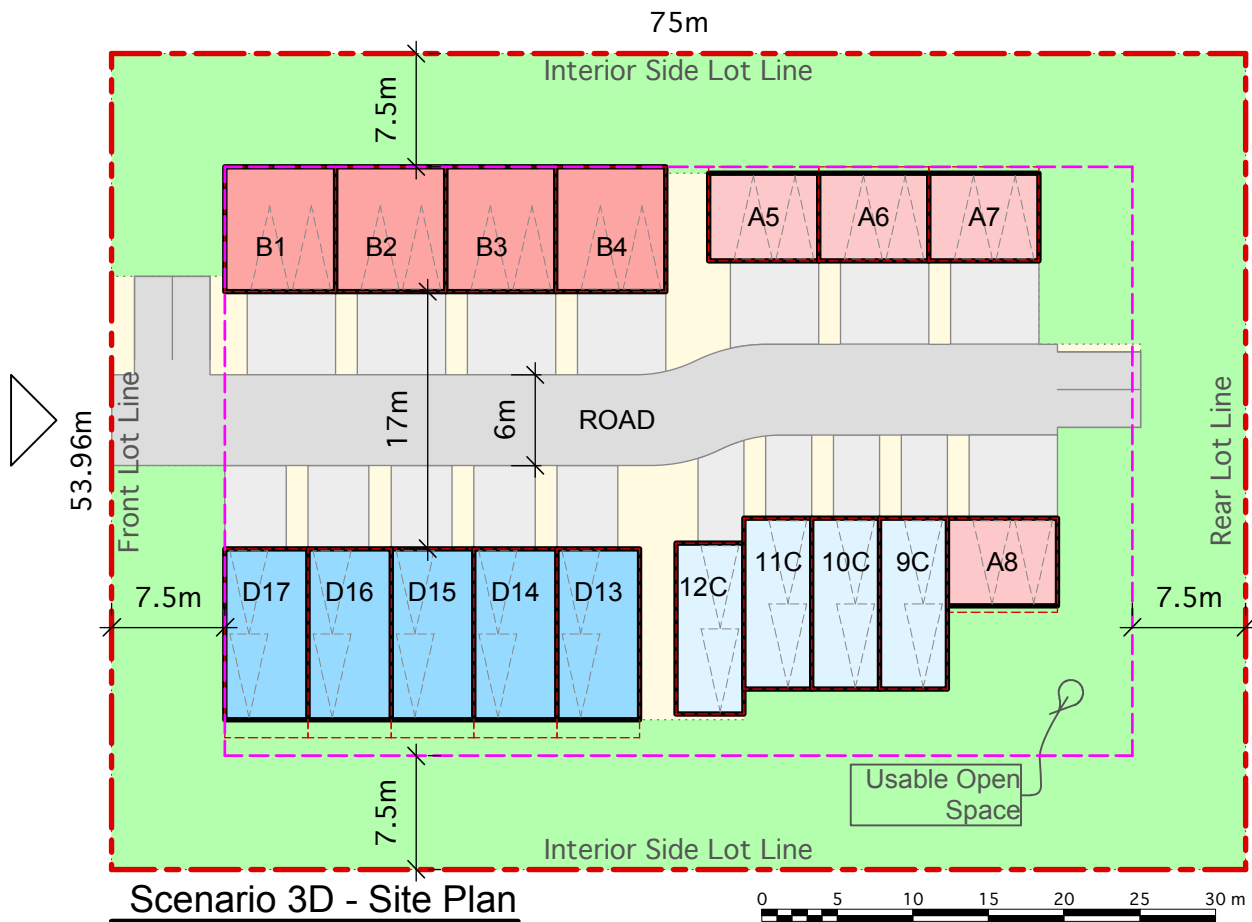
Scale: 1:500

Site Plan Reconciliation			
	Provided	Required	
# Units	20 Units		Site Area
# of 3 Bedrooms	10 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	10 Units		GFA
% of tandem stall to units	50 %		2,323 m ² = 25,000 sq ft
% of double stall to units	50 %		Road Area:
Usable Open Space	1,993 m ²	850 m ²	581 m ² = 6,253 sq ft
Common Activity Area	200 m ²	200 m ²	Driveway Area:
Visitor Parking @ 0.2	4 stalls	4 stalls	188 m ² = 2,019 sq ft
FSR:	0.574	0.600	Site Coverage:
Building Site Coverage:	27.8 %	40.0 %	1,125 m ² = 12,110 sq ft
			Unit / Ha:
			49.421
			Road Site Coverage:
			14.4 %
			Driveway Site Coverage:
			4.6 %
			Total Hard Surface Coverage:
			19.0 %

7.21. Scenario 3D - 50% tandem units with increased apron length on all units

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



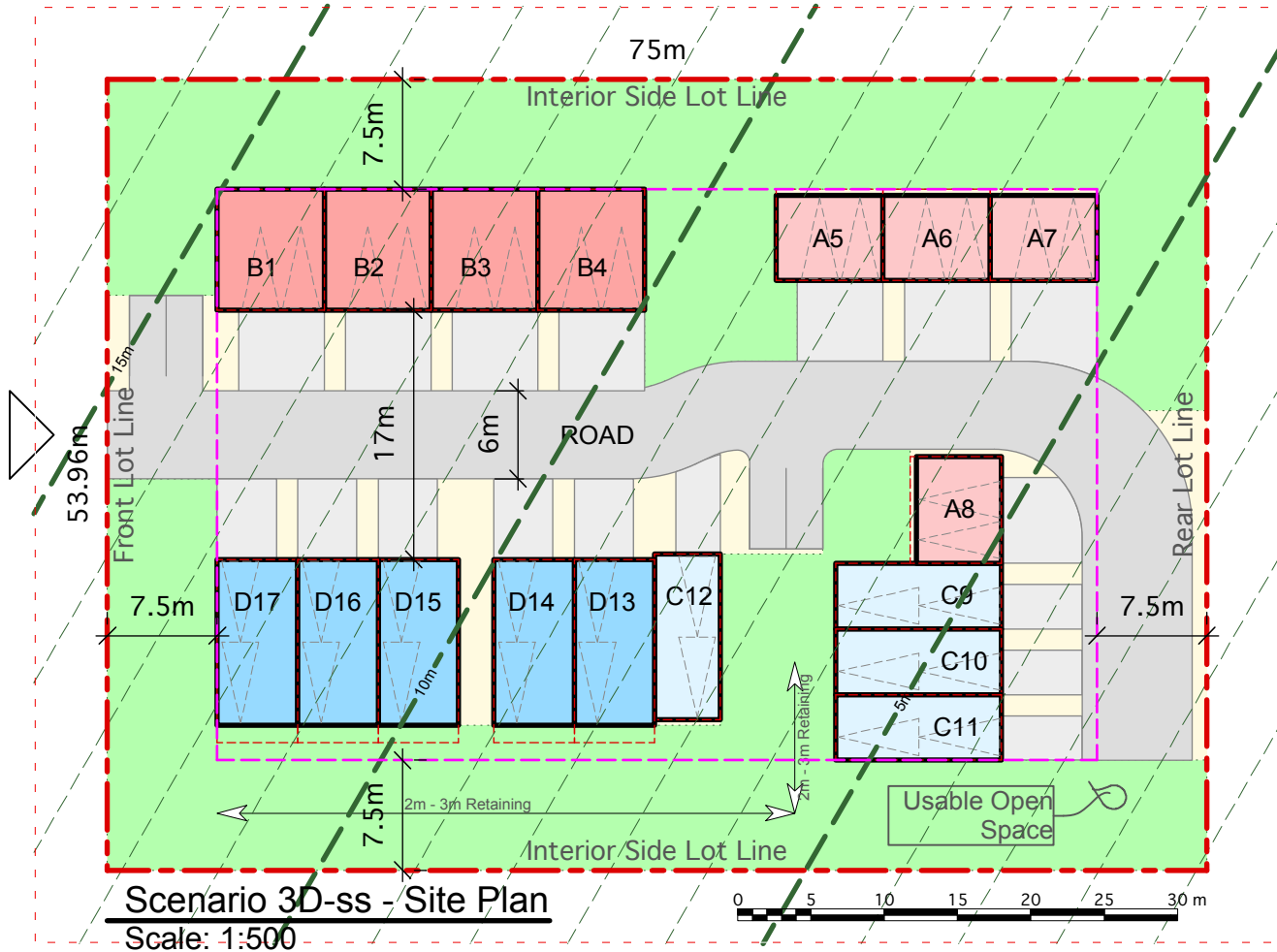
Scenario 3D - Site Plan
Scale: 1:500

Site Plan Reconciliation			
	Provided	Required	
# Units	17 Units		Site Area
# of 3 Bedrooms	9 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	8 Units		GFA
% of tandem stall to units	53 %		1,997 m ² = 21,500 sq ft
% of double stall to units	47 %		Road Area:
Usable Open Space	2,016 m ²	645 m ²	438 m ² = 4,713 sq ft
Common Activity Area	85 m ²	85 m ²	Driveway Area:
Visitor Parking @ 0.2	4 stalls	3.4 stalls	437 m² = 4,707 sq ft
FSR:	0.494	0.600	Site Coverage:
Building Site Coverage:	23.9 %	40.0 %	969 m ² = 10,427 sq ft
			Unit / Ha:
			42.008
			Road Site Coverage:
			10.8 %
			Driveway Site Coverage:
			10.8 %
			Total Hard Surface Coverage:
			21.6 %

7.22. Scenario 3D-ss - 50% tandem units with increased apron length on all units

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



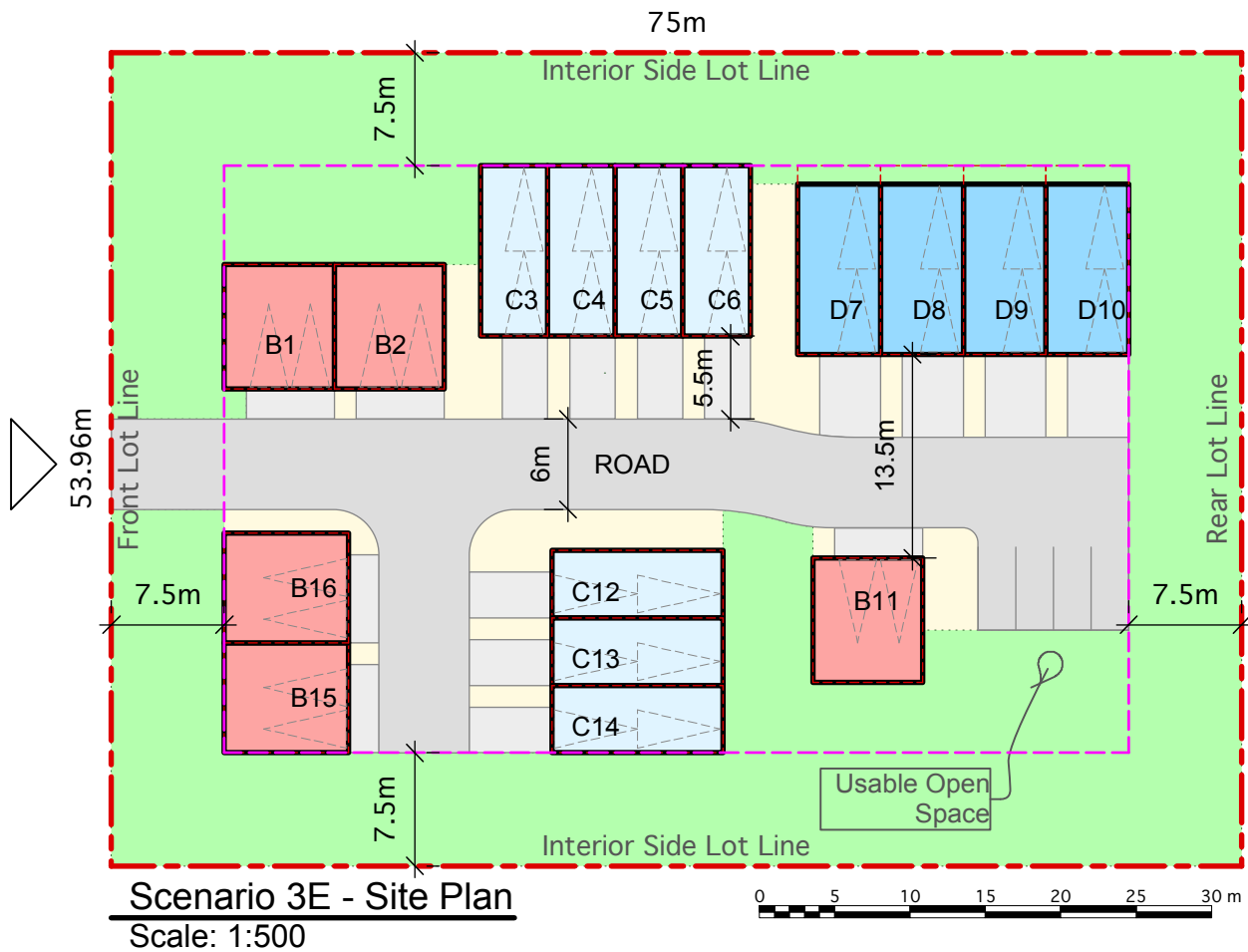
Site Plan Reconciliation

	Provided	Required		
# Units	17 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	1,997 m ² = 21,500 sq ft
# of 2 Bedrooms	8 Units		Road Area:	652 m ² = 7,018 sq ft
% of tandem stall to units	53 %		Driveway Area:	437 m² = 4,702 sq ft
% of double stall to units	47 %		Site Coverage:	969 m ² = 10,427 sq ft
Usable Open Space	1,789 m ²	645 m ²	Unit / Ha:	42.008
Common Activity Area	85 m ²	85 m ²	Road Site Coverage:	16.1 %
Visitor Parking @ 0.2	4 stalls	3.4 stalls	Driveway Site Coverage:	10.8 %
FSR:	0.494	0.600	Total Hard Surface Coverage:	26.9 %
Building Site Coverage:	23.9 %	40.0 %		

7.23. Scenario 3E - 50% tandem units with increased apron length on tandem only

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only



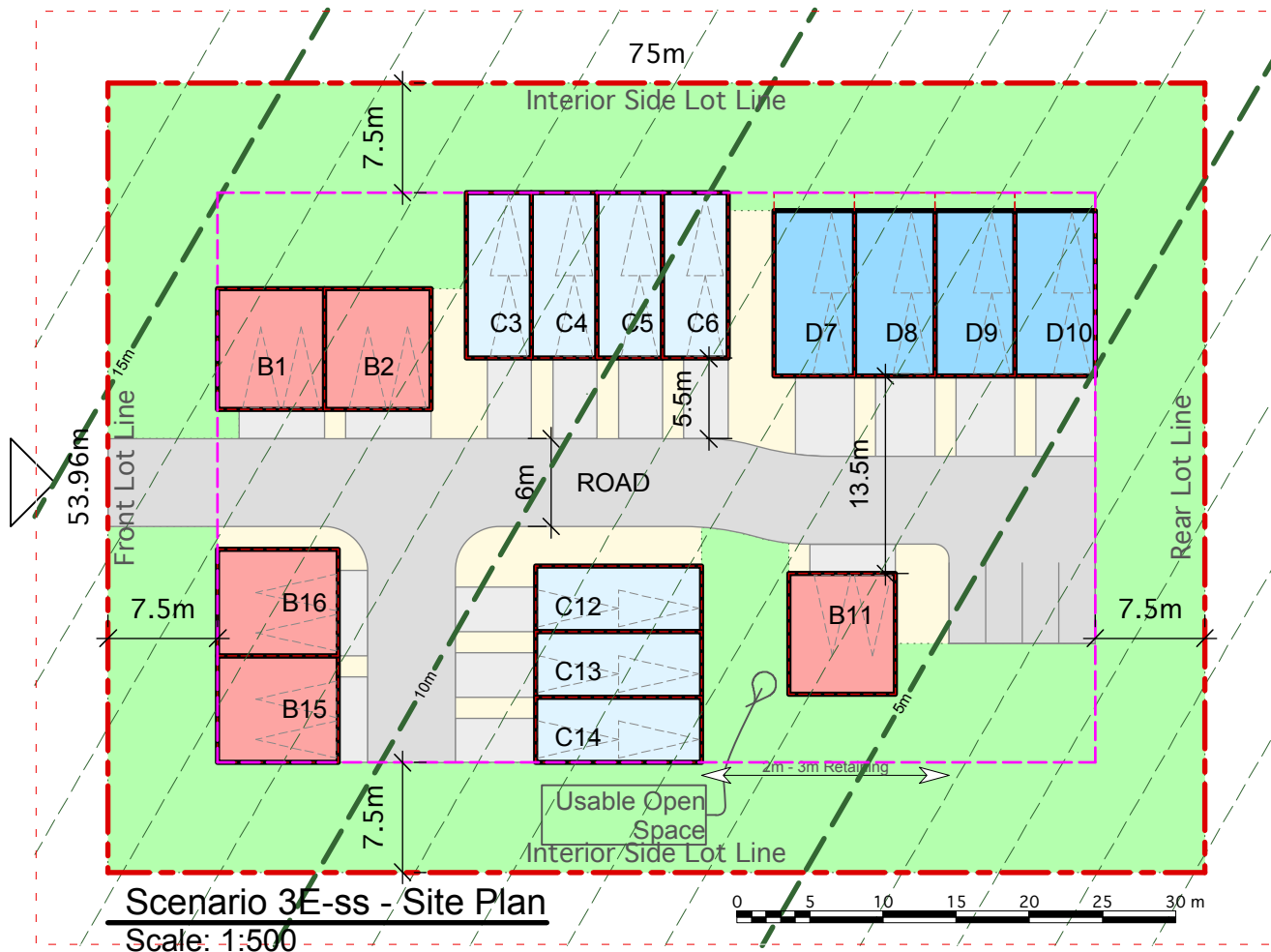
Site Plan Reconciliation

	Provided	Required		
# Units	16 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	1,905 m ² = 20,500 sq ft
# of 2 Bedrooms	7 Units		Road Area:	575 m ² = 6,191 sq ft
% of tandem stall to units	69 %		Driveway Area:	264 m² = 2,842 sq ft
% of double stall to units	31 %		Site Coverage:	930 m ² = 10,016 sq ft
Usable Open Space	2,048 m ²	615 m ²	Unit / Ha:	39.537
Common Activity Area	80 m ²	80 m ²	Road Site Coverage:	14.2 %
Visitor Parking @ 0.2	4 stalls	3.2 stalls	Driveway Site Coverage:	6.5 %
FSR:	0.471	0.600	Total Hard Surface Coverage:	20.7 %
Building Site Coverage:	23.0 %	40.0 %		

7.24. Scenario 3E-ss - 50% tandem units with increased apron length on tandem only

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only



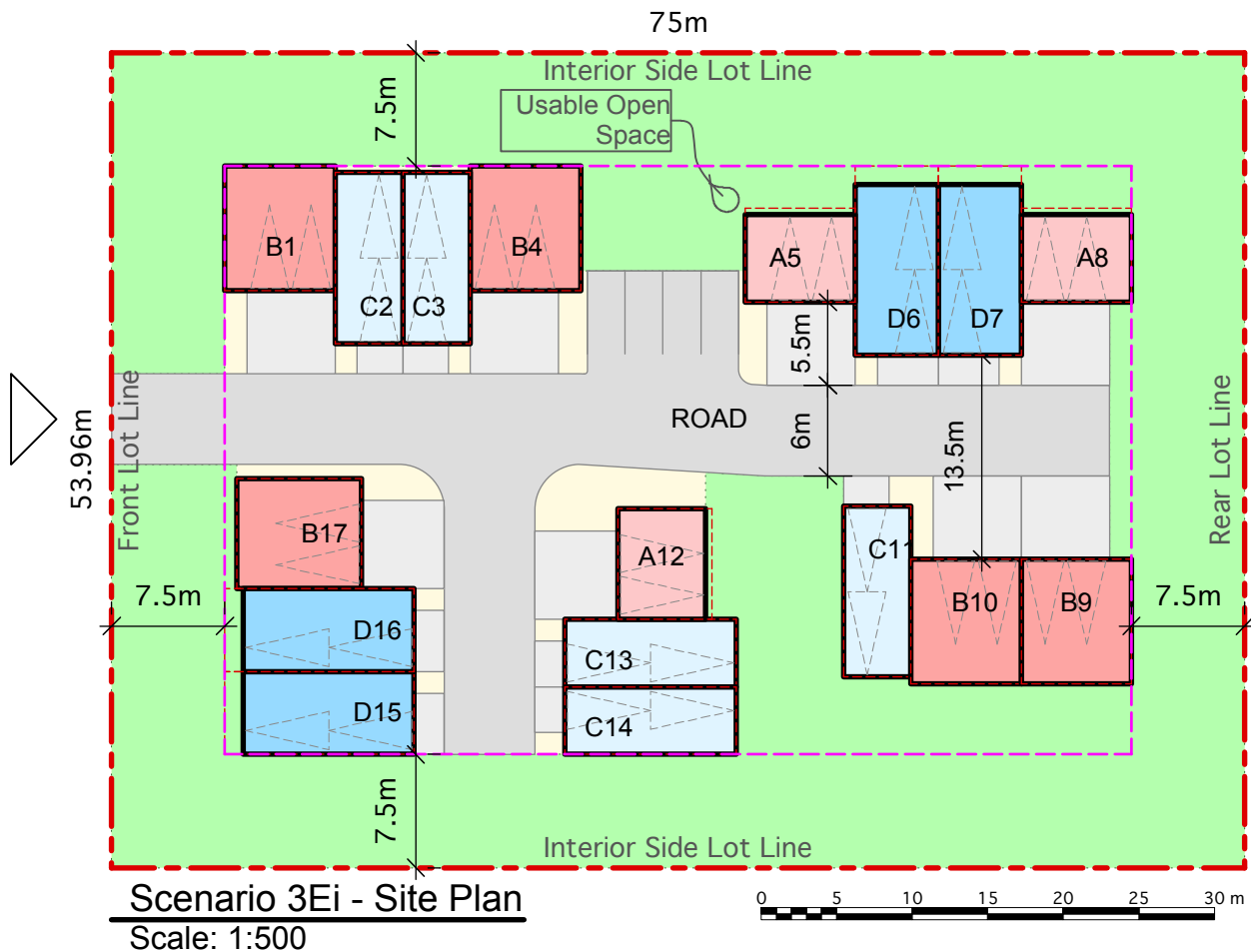
Site Plan Reconciliation

	Provided	Required		
# Units	16 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	1,905 m ² = 20,500 sq ft
# of 2 Bedrooms	7 Units		Road Area:	575 m ² = 6,191 sq ft
% of tandem stall to units	69 %		Driveway Area:	264 m² = 2,842 sq ft
% of double stall to units	31 %		Site Coverage:	930 m ² = 10,016 sq ft
Usable Open Space	2,048 m ²	615 m ²	Unit / Ha:	39.537
Common Activity Area	80 m ²	80 m ²	Road Site Coverage:	14.2 %
Visitor Parking @ 0.2	4 stalls	3.2 stalls	Driveway Site Coverage:	6.5 %
FSR:	0.471	0.600	Total Hard Surface Coverage:	20.7 %
Building Site Coverage:	23.0 %	40.0 %		

7.25. Scenario 3Ei - 50% tandem units with increased apron length on double wide only

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only



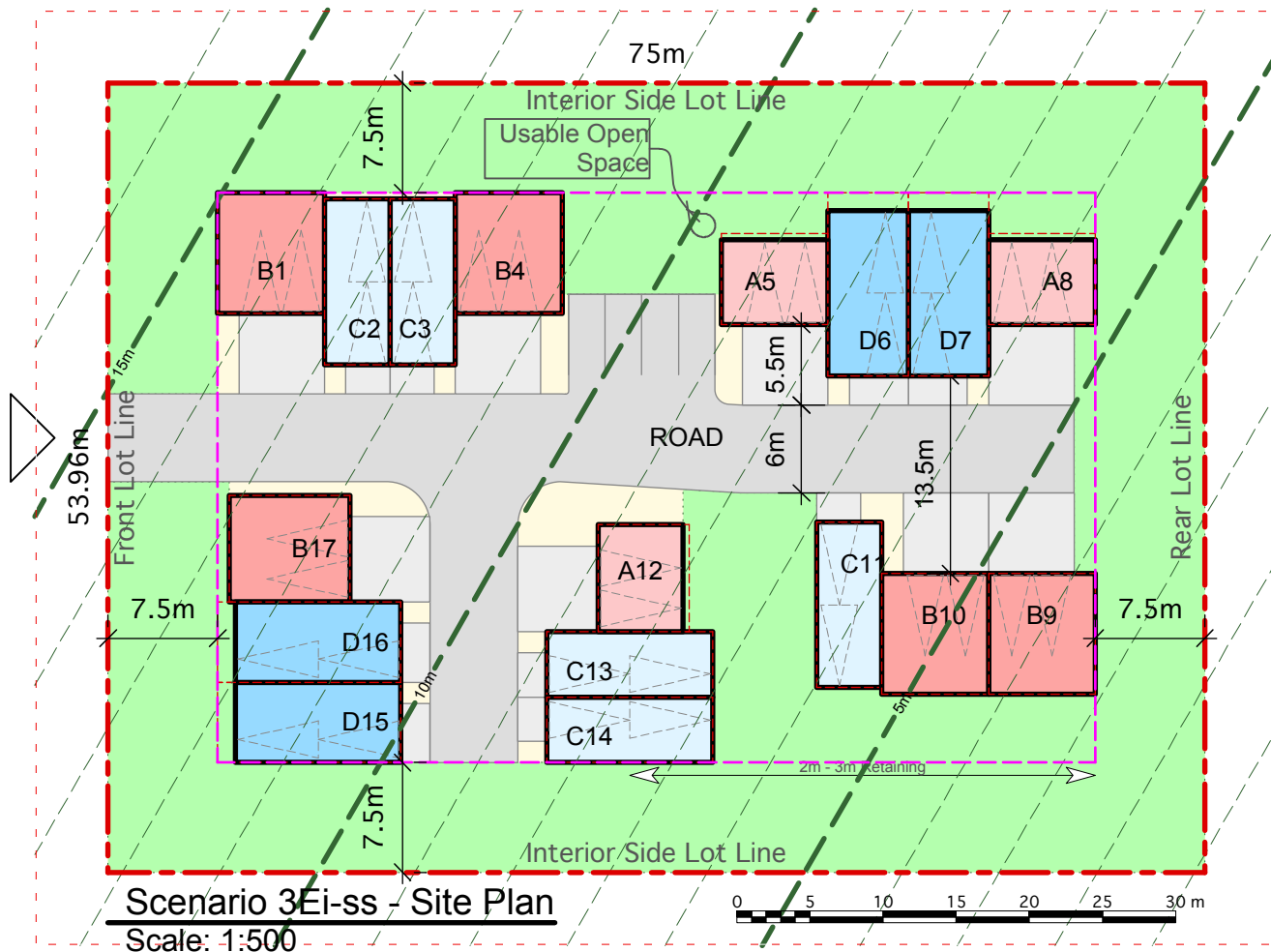
Site Plan Reconciliation

	Provided	Required		
# Units	17 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	1,997 m ² = 21,500 sq ft
# of 2 Bedrooms	8 Units		Road Area:	587 m ² = 6,320 sq ft
% of tandem stall to units	53 %		Driveway Area:	320 m² = 3,441 sq ft
% of double stall to units	47 %		Site Coverage:	965 m ² = 10,392 sq ft
Usable Open Space	2,094 m ²	645 m ²	Unit / Ha:	42.008
Common Activity Area	85 m ²	85 m ²	Road Site Coverage:	14.5 %
Visitor Parking @ 0.2	4 stalls	3.4 stalls	Driveway Site Coverage:	7.9 %
FSR:	0.494	0.600	Total Hard Surface Coverage:	22.4 %
Building Site Coverage:	23.9 %	40.0 %		

7.26. Scenario 3Ei-ss - 50% tandem units with increased apron length on double wide only

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only



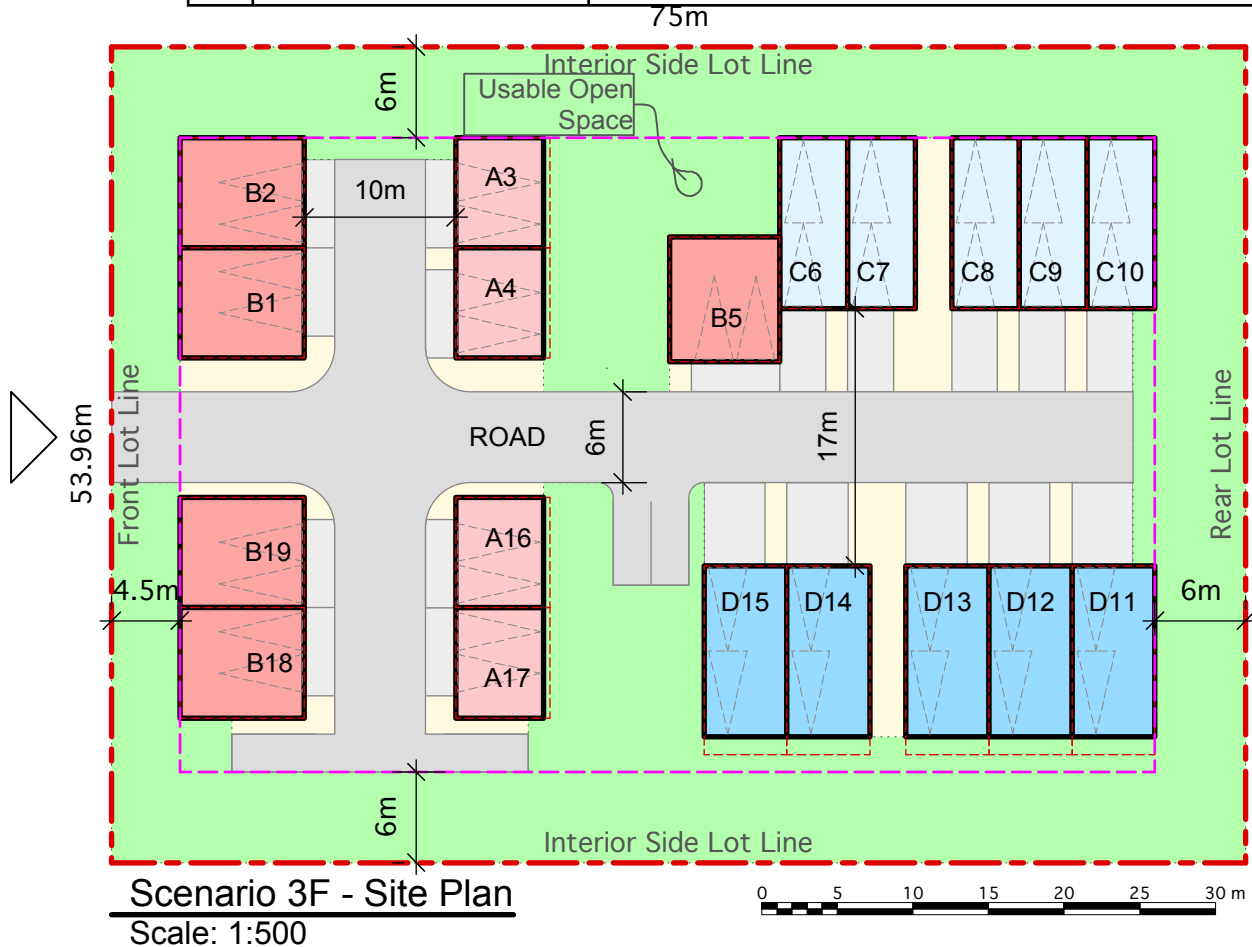
Site Plan Reconciliation

	Provided	Required		
# Units	17 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	1,997 m ² = 21,500 sq ft
# of 2 Bedrooms	8 Units		Road Area:	587 m ² = 6,320 sq ft
% of tandem stall to units	53 %		Driveway Area:	320 m² = 3,441 sq ft
% of double stall to units	47 %		Site Coverage:	965 m ² = 10,392 sq ft
Usable Open Space	2,094 m ²	645 m ²	Unit / Ha:	42.008
Common Activity Area	85 m ²	85 m ²	Road Site Coverage:	14.5 %
Visitor Parking @ 0.2	4 stalls	3.4 stalls	Driveway Site Coverage:	7.9 %
FSR:	0.494	0.600	Total Hard Surface Coverage:	22.4 %
Building Site Coverage:	23.9 %	40.0 %		

**7.27. Scenario 3F - 50% tandem units with increased apron length on tandem only
& site setback variances**

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m² / 3 Bedroom & 30 m² for 2 Bedroom
3)	Common activity area:	5 m² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



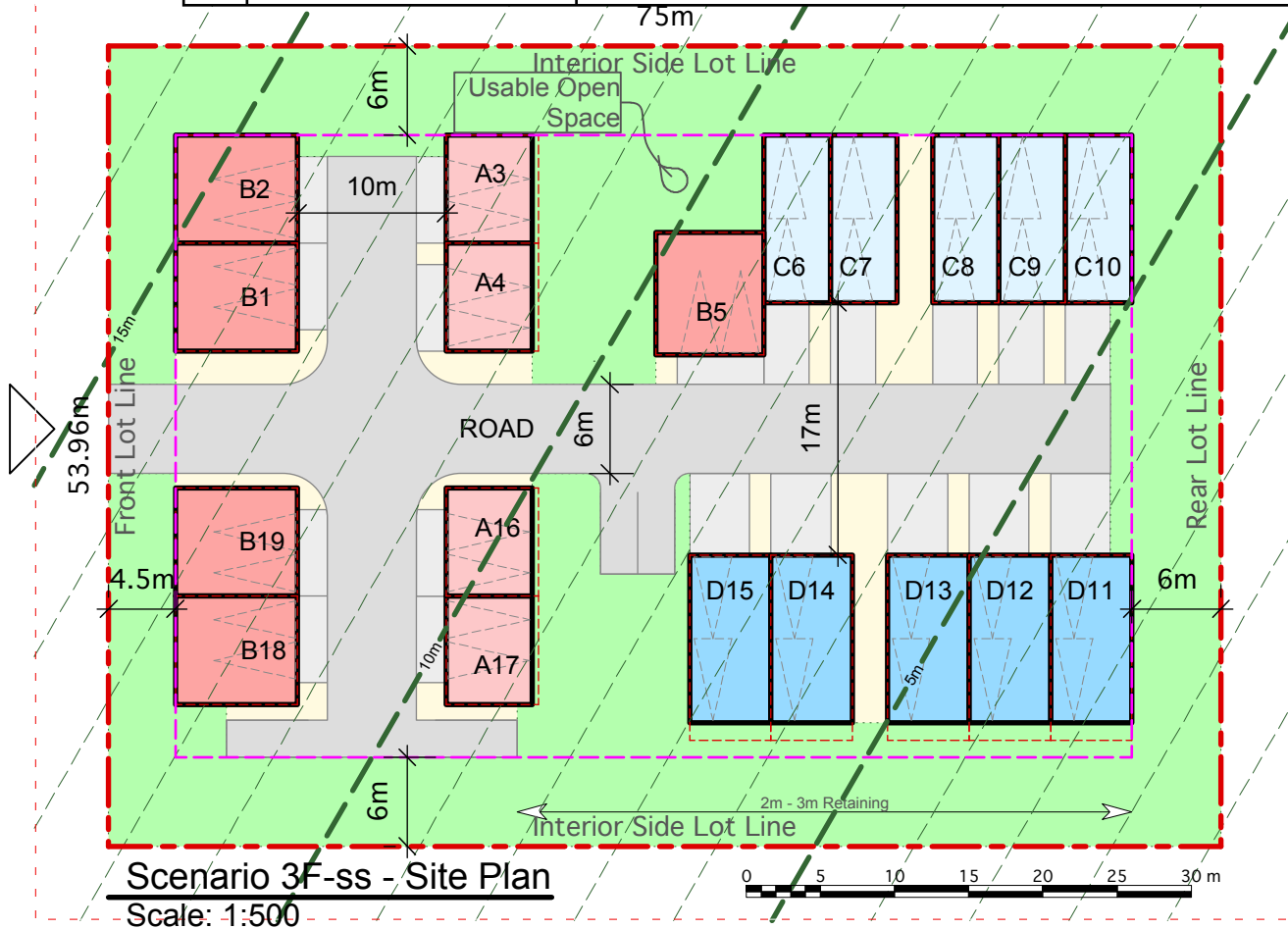
Site Plan Reconciliation

	Provided	Required		
# Units	19 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,230 m ² = 24,000 sq ft
# of 2 Bedrooms	9 Units		Road Area:	689 m ² = 7,411 sq ft
% of tandem stall to units	53 %		Driveway Area:	300 m² = 3,225 sq ft
% of double stall to units	47 %		Site Coverage:	1,080 m ² = 11,620 sq ft
Usable Open Space	1,795 m ²	720 m ²	Unit / Ha:	46.95
Common Activity Area	95 m ²	95 m ²	Road Site Coverage:	17.0 %
Visitor Parking @ 0.2	4 stalls	3.8 stalls	Driveway Site Coverage:	7.4 %
FSR:	0.551	0.600	Total Hard Surface Coverage:	24.4 %
Building Site Coverage:	26.7 %	40.0 %		

**7.28. Scenario 3F-ss - 50% tandem units with increased apron length on tandem only
& site setback variances**

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m² / 3 Bedroom & 30 m² for 2 Bedroom
3)	Common activity area:	5 m² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, tandem garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



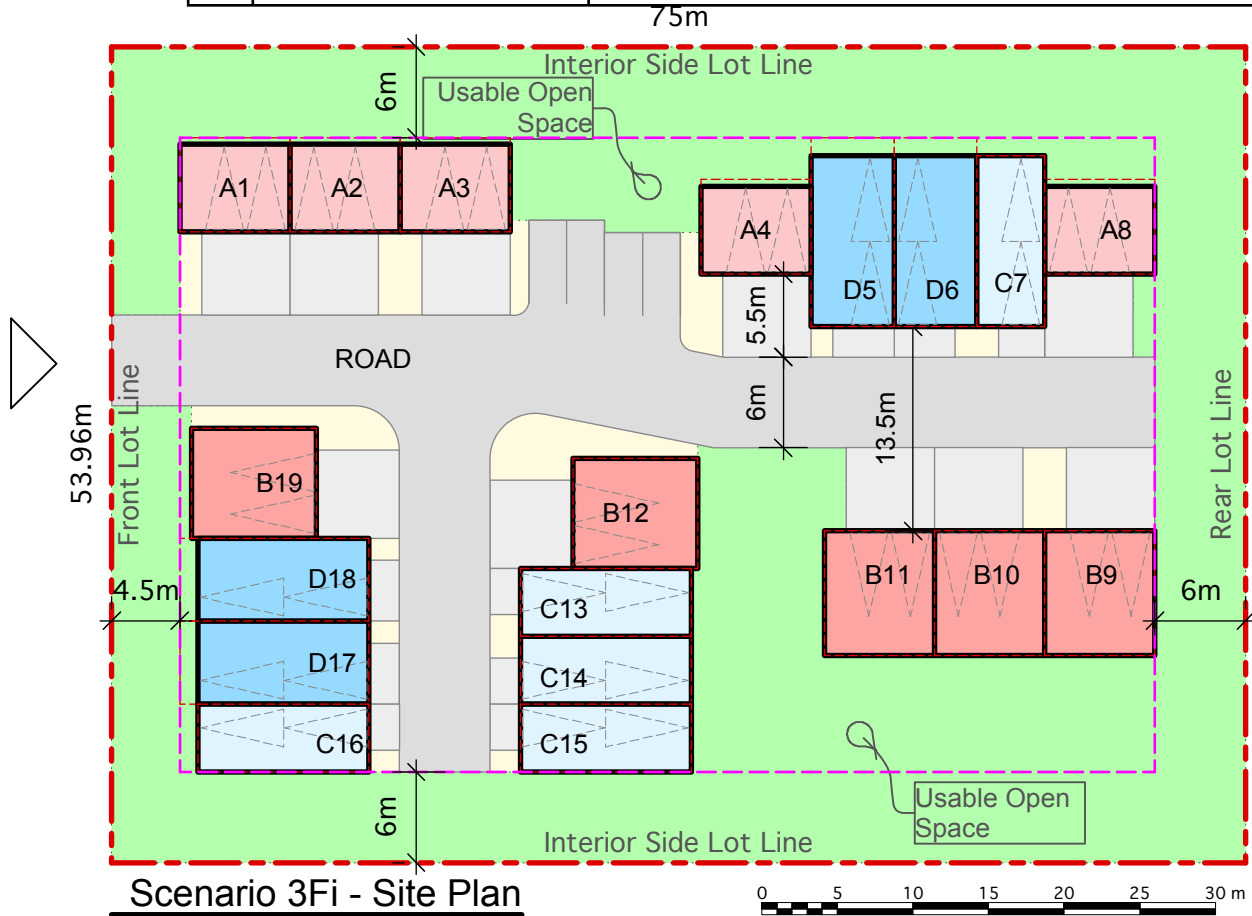
Site Plan Reconciliation

	Provided	Required		
# Units	19 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,230 m ² = 24,000 sq ft
# of 2 Bedrooms	9 Units		Road Area:	689 m ² = 7,411 sq ft
% of tandem stall to units	53 %		Driveway Area:	300 m² = 3,225 sq ft
% of double stall to units	47 %		Site Coverage:	1,080 m ² = 11,620 sq ft
Usable Open Space	1,795 m ²	720 m ²	Unit / Ha:	46.95
Common Activity Area	95 m ²	95 m ²	Road Site Coverage:	17.0 %
Visitor Parking @ 0.2	4 stalls	3.8 stalls	Driveway Site Coverage:	7.4 %
FSR:	0.551	0.600	Total Hard Surface Coverage:	24.4 %
Building Site Coverage:	26.7 %	40.0 %		

**7.29. Scenario 3Fi - 50% tandem units with increased apron length on double wide only
& site setback variances**

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



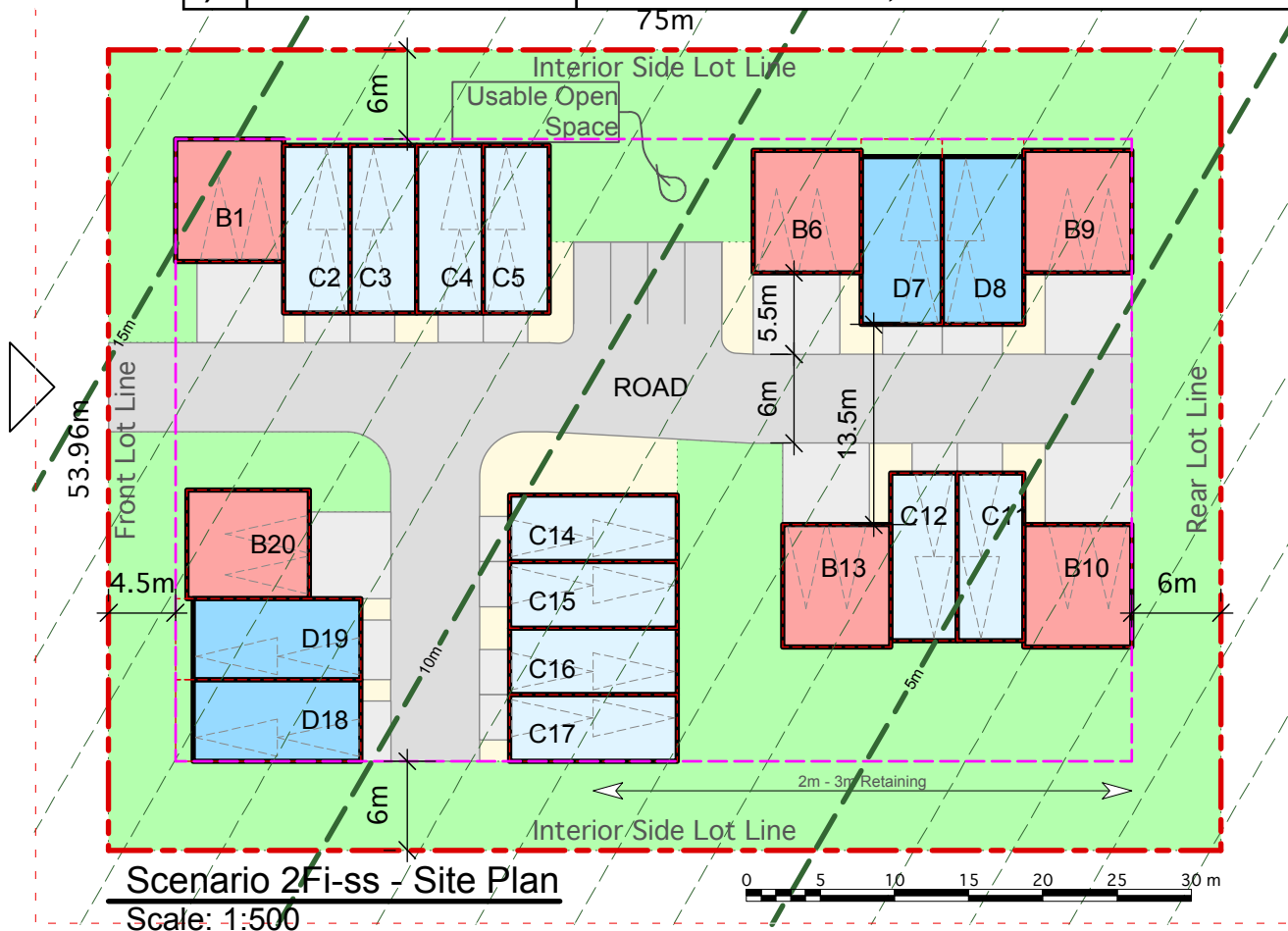
Scenario 3Fi - Site Plan
Scale: 1:500

Site Plan Reconciliation			
	Provided	Required	
# Units	19 Units		Site Area
# of 3 Bedrooms	9 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	10 Units		GFA
% of tandem stall to units	47 %		2,183 m ² = 23,500 sq ft
% of double stall to units	53 %		Road Area:
Usable Open Space	1,857 m ²	705 m ²	637 m ² = 6,859 sq ft
Common Activity Area	95 m ²	95 m ²	Driveway Area:
Visitor Parking @ 0.2	4 stalls	3.8 stalls	384 m² = 4,133 sq ft
FSR:	0.539	0.600	Site Coverage:
Building Site Coverage:	26.1 %	40.0 %	1,056 m ² = 11,370 sq ft
			Unit / Ha:
			46.95
			Road Site Coverage:
			15.7 %
			Driveway Site Coverage:
			9.5 %
			Total Hard Surface Coverage:
			25.2 %

7.30. Scenario 3Fi-ss - 50% tandem units with increased apron length on double wide only & site setback variances

Variables

1)	Parking Type:	50% of Tandem & 50% of Double Wide parking stalls
2)	Usable Open Space:	45 m² / 3 Bedroom & 30 m² for 2 Bedroom
3)	Common activity area:	5 m² / unit
4)	Parking:	0.2 visitor stalls / unit Visitor parking complies with setbacks
5)	Driveway Apron:	5.5m unit driveway, double garage only
6)	Variances:	Front Yard Setback 4.5m, all other setbacks 6.0m



Site Plan Reconciliation

	Provided	Required		
# Units	20 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	10 Units		GFA	2,323 m ² = 25,000 sq ft
# of 2 Bedrooms	10 Units		Road Area:	623 m ² = 6,710 sq ft
% of tandem stall to units	70 %		Driveway Area:	286 m² = 3,076 sq ft
% of double stall to units	30 %		Site Coverage:	1,143 m ² = 12,301 sq ft
Usable Open Space	1,870 m²	1150 m²	Unit / Ha:	49.421
Common Activity Area	100 m ²	100 m ²	Road Site Coverage:	15.4 %
Visitor Parking @ 0.2	4 stalls	4 stalls	Driveway Site Coverage:	7.1 %
FSR:	0.574	0.600	Total Hard Surface Coverage:	22.5 %
Building Site Coverage:	28.2 %	40.0 %		

7.31. Scenario 4A - 0% tandem units as the RM-1 zone permits today

Variables

1)	Parking Type:	0% of Tandem & 100% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway



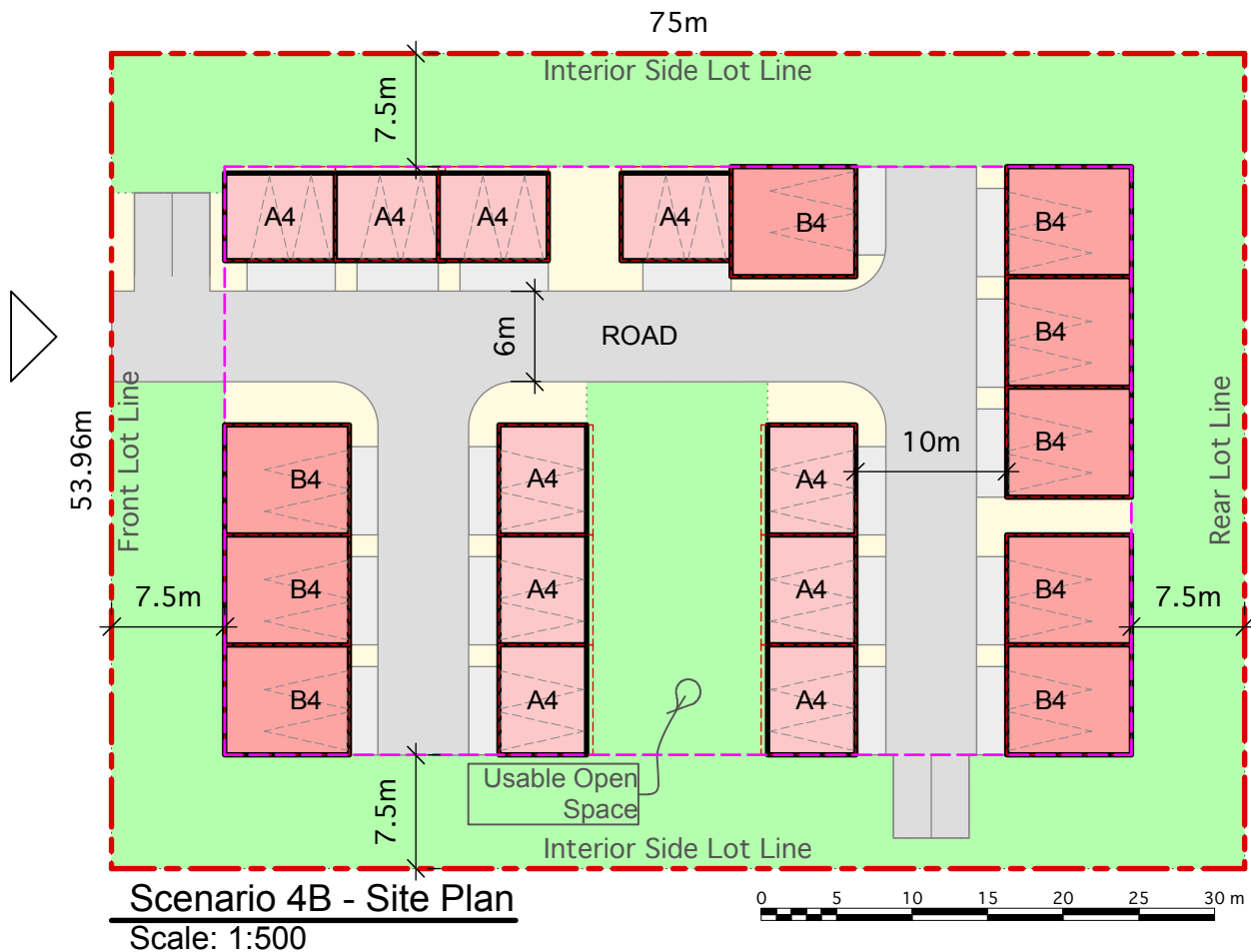
Site Plan Reconciliation

	Provided	Required		
# Units	19 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA	2,183 m ² = 23,500 sq ft
# of 2 Bedrooms	10 Units		Road Area:	757 m ² = 8,152 sq ft
% of tandem stall to units	0 %		Driveway Area:	219 m ² = 2,357 sq ft
% of double stall to units	100 %		Site Coverage:	996 m ² = 10,718 sq ft
Usable Open Space	1,885 m ²	705 m ²	Unit / Ha:	46.95
Common Activity Area	95 m ²	95 m ²	Road Site Coverage:	18.7 %
Visitor Parking @ 0.2	4 stalls	3.8 stalls	Driveway Site Coverage:	5.4 %
FSR:	0.539	0.600	Total Hard Surface Coverage:	24.1 %
Building Site Coverage:	24.6 %	40.0 %		

7.32. Scenario 4B - 0% tandem units with increased UOS & CAA

Variables

1)	Parking Type:	0% of Tandem & 100% of Double Wide parking stalls
2)	Usable Open Space:	50 m ² / 3 Bedroom & 35 m ² for 2 Bedroom
3)	Common activity area:	10 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway

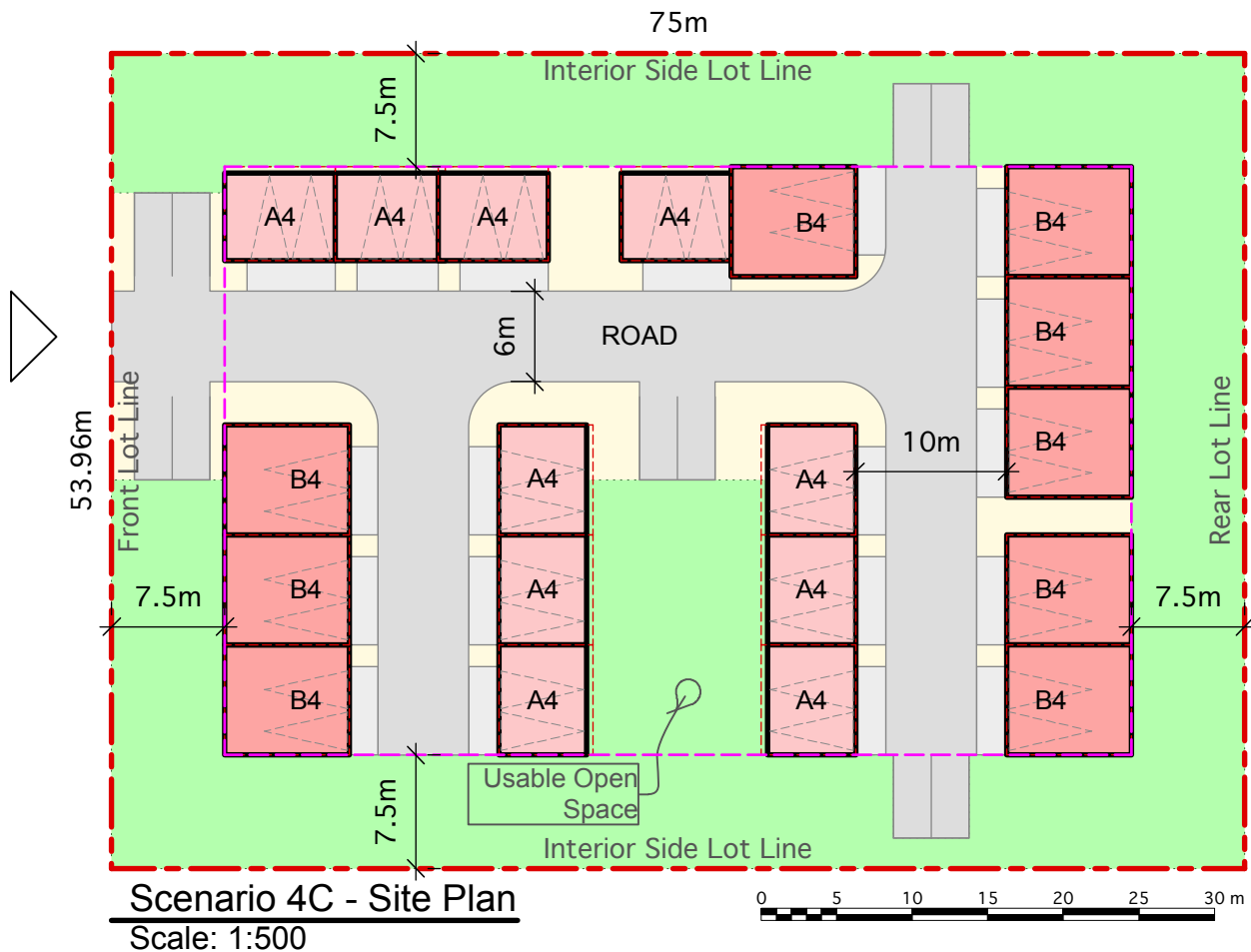


Site Plan Reconciliation			
	Provided	Required	
# Units	19 Units		Site Area 4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	9 Units		GFA 2,183 m ² = 23,500 sq ft
# of 2 Bedrooms	10 Units		Road Area: 757 m ² = 8,152 sq ft
% of tandem stall to units	0 %		Driveway Area: 219 m ² = 2,357 sq ft
% of double stall to units	100 %		Site Coverage: 996 m ² = 10,718 sq ft
Usable Open Space	1,885 m ²	800 m ²	Unit / Ha: 46.95
Common Activity Area	190 m ²	190 m ²	Road Site Coverage: 18.7 %
Visitor Parking @ 0.2	4 stalls	3.8 stalls	Driveway Site Coverage: 5.4 %
FSR:	0.539	0.600	Total Hard Surface Coverage: 24.1 %
Building Site Coverage:	24.6 %	40.0 %	

7.33. Scenario 4C - 0% tandem units with increased visitor parking ratio

Variables

1)	Parking Type:	0% of Tandem & 100% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.5 visitor stalls / unit
5)	Driveway Apron:	1.0m unit driveway

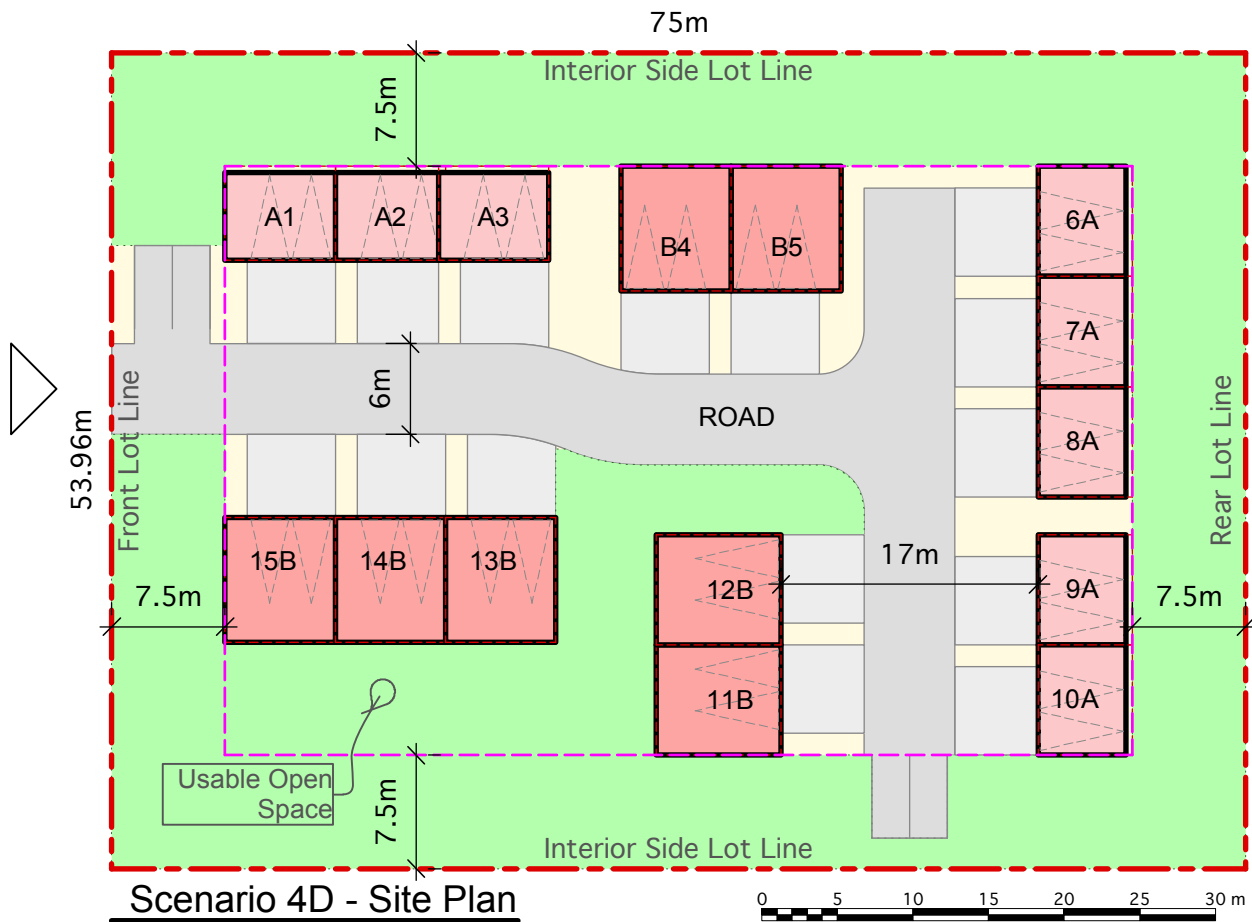


Site Plan Reconciliation			
	Provided	Required	
# Units	19 Units		Site Area
# of 3 Bedrooms	9 Units		4,047 m ² = 43,560 sq ft
# of 2 Bedrooms	10 Units		GFA
% of tandem stall to units	0 %		2,183 m ² = 23,500 sq ft
% of double stall to units	100 %		Road Area:
Usable Open Space	1,731 m ²	705 m ²	850 m ² = 9,147 sq ft
Common Activity Area	95 m ²	95 m ²	Driveway Area:
Visitor Parking @ 0.5	10 stalls	9.5 stalls	219 m ² = 2,357 sq ft
FSR:	0.539	0.600	Site Coverage:
Building Site Coverage:	24.6 %	40.0 %	996 m ² = 10,718 sq ft
			Unit / Ha:
			46.95
			Road Site Coverage:
			21.0 %
			Driveway Site Coverage:
			5.4 %
			Total Hard Surface Coverage:
			26.4 %

7.34. Scenario 4D - 0% tandem units with increased apron length

Variables

1)	Parking Type:	0% of Tandem & 100% of Double Wide parking stalls
2)	Usable Open Space:	45 m ² / 3 Bedroom & 30 m ² for 2 Bedroom
3)	Common activity area:	5 m ² / unit
4)	Parking:	0.2 visitor stalls / unit
5)	Driveway Apron:	5.5m unit driveway



Site Plan Reconciliation

	Provided	Required		
# Units	15 Units		Site Area	4,047 m ² = 43,560 sq ft
# of 3 Bedrooms	7 Units		GFA	1,719 m ² = 18,500 sq ft
# of 2 Bedrooms	8 Units		Road Area:	590 m ² = 6,350 sq ft
% of tandem stall to units	0 %		Driveway Area:	478 m² = 5,149 sq ft
% of double stall to units	100 %		Site Coverage:	785 m ² = 8,445 sq ft
Usable Open Space	1,943 m ²	555 m ²	Unit / Ha:	37.066
Common Activity Area	75 m ²	75 m ²	Road Site Coverage:	14.6 %
Visitor Parking @ 0.2	5 stalls	3 stalls	Driveway Site Coverage:	11.8 %
FSR:	0.425	0.600	Total Hard Surface Coverage:	26.4 %
Building Site Coverage:	19.4 %	40.0 %		

8. Results

8.1. Scenario Comparison Chart

	FSR	Unit / Ha:	Unit / Acre	# of 3 bdrms	# of 2 bdrms	% of Tandem Stalls	Usable Open Space	Site Coverage	Total Hard surfaces (Excludes Site Coverage)
Scenario 1A	0.608	51.9	21	11	10	100 %	2,011 m2	31 %	15 %
Scenario 1B	0.608	51.9	21	11	10	100 %	2,011 m2	31 %	15 %
Scenario 1C	0.574	49.4	20	10	10	100 %	1,980 m2	30 %	17 %
Scenario 1D	0.517	44.5	18	9	9	100 %	1,886 m2	27 %	22 %
Scenario 2A	0.562	49.4	20	9	11	70 %	2,048 m2	28 %	18 %
Scenario 2B	0.562	49.4	20	9	11	70 %	2,048 m2	28 %	18 %
Scenario 2C	0.574	49.4	20	10	10	70 %	1,893 m2	28 %	21 %
Scenario 2D	0.539	47.0	19	9	10	74 %	1,699 m2	27 %	24 %
Scenario 2D-ss	0.539	47.0	19	9	10	74 %	1,699 m2	27 %	24 %
Scenario 2E	0.471	42.0	17	7	10	65 %	2,097 m2	23 %	21 %
Scenario 2E-ss	0.471	42.0	17	7	10	65 %	2,097 m2	23 %	21 %
Scenario 2Ei	0.517	44.5	18	9	9	72 %	2,089 m2	26 %	21 %
Scenario 2Ei-ss	0.517	44.5	18	9	9	72 %	2,089 m2	26 %	21 %
Scenario 2F	0.574	49.4	20	10	10	70 %	1,703 m2	28 %	24 %
Scenario 2F-ss	0.574	49.4	20	10	10	70 %	1,703 m2	28 %	24 %
Scenario 2Fi	0.574	49.4	20	10	10	70 %	1,870 m2	28 %	22 %
Scenario 2Fi-ss	0.574	49.4	20	10	10	70 %	1,870 m2	28 %	22 %
Scenario 3A	0.574	49.4	20	10	10	50 %	1,993 m2	28 %	19 %
Scenario 3B	0.574	49.4	20	10	10	50 %	1,993 m2	28 %	19 %
Scenario 3C	0.574	49.4	20	10	10	50 %	1,819 m2	28 %	23 %
Scenario 3D	0.494	42.0	17	9	8	53 %	2,016 m2	24 %	22 %
Scenario 3D-ss	0.494	42.0	17	9	8	53 %	1,789 m2	24 %	27 %
Scenario 3E	0.471	39.5	16	9	7	69 %	2,048 m2	23 %	21 %
Scenario 3E-ss	0.471	39.5	16	9	7	69 %	2,048 m2	23 %	21 %
Scenario 3Ei	0.494	42.0	17	9	8	53 %	2,094 m2	24 %	22 %
Scenario 3Ei-ss	0.494	42.0	17	9	8	53 %	2,094 m2	24 %	22 %
Scenario 3F	0.551	47.0	19	10	9	53 %	1,795 m2	27 %	24 %
Scenario 3F-ss	0.551	47.0	19	10	9	53 %	1,795 m2	27 %	24 %
Scenario 3Fi	0.539	47.0	19	9	10	47 %	1,857 m2	26 %	25 %
Scenario 3Fi-ss	0.539	47.0	19	9	10	47 %	1,857 m2	26 %	25 %
Scenario 4A	0.539	47.0	19	9	10	0 %	1,885 m2	25 %	24 %
Scenario 4B	0.539	47.0	19	9	10	0 %	1,885 m2	25 %	24 %
Scenario 4C	0.539	47.0	19	9	10	0 %	1,731 m2	25 %	26 %
Scenario 4D	0.425	37.1	15	7	8	0 %	1,943 m2	19 %	26 %

8.2. Description

The chart above summarizes the scenarios analyzed. The following can be deduced from the analysis:

- (a) An increase in tandem parking results in greater density on the development.
- (b) An increase in tandem parking results in greater site coverage on the development.

- (c) An increase in tandem parking results in a decrease in the amount of hard surfaces on site, not including site coverage caused by buildings, if you included building site coverage with the hard surfaces on site there is no increase or decrease in the relationship of covered site to exposed site with the use of tandem parking.
- (d) An increase in tandem parking results in slightly greater Usable Open Space on the development.

Of the five variables analyzed not including any variances (parking type, usable open space, common activity area, visitor parking, and driveway apron length,) decreasing the number of tandem parking stalls and increasing the driveway apron had the greatest impact on density resulting in a 0.183 difference in FSR (6 unit / Acre).

When the usable open space and common activity area are increased by 5m² for each bedroom type and unit, there is no effect on density. In order to have an effect on density the usable open space and or common activity area should be increased proportionally to the percentage of type of parking on site. The example below increases proportionally 12m² / Unit every for every 10% increase in tandem parking.

- (a) When 10% of the parking is tandem increase usable open space by 12m² / Unit
- (b) When 50% of the parking is tandem increase usable open space by 60m² / Unit
- (c) When 100% of the parking is tandem increase usable open space by 120m² / Unit

When the visitor parking stall component is increased by 2.5 times to 0.5 stalls / unit, density is effected only when 100% of the parking stalls are tandem parking stalls. When double parking stall units are introduced, visitor parking is able to be allocated on site.

By controlling the type of parking stalls on site impact to the massing, architecture, & 'feel' of a site will be effected, the resulting impact of which may or may not be desirable for either to the residents, developer, and / or municipality.

Introducing an analysis of a sloping site does not have a significant impact on the unit layout on site, but in maintaining the density significant retaining will be necessary. The retaining will be necessary to create rear yard area.

Other variables can affect the density of the site in conjunction with controlling tandem parking stalls. Some of the other scenarios to analyze could be:

- (a) reduction of the allowable FSR for the zone.
- (b) 1.2m wide sidewalk along one side of the strata road, while maintaining a certain drive aisle apron.
- (c) an indoor common activity area in addition to the basic area required over a certain density.
- (d) usable open space not allowed to be used in the calculation between the setbacks and property line.
- (e) minimum dimensions to accompany an area for the common activity area

9. Conclusion

This report compares the impact of various combinations of tandem and side by side parking stalls have on a development within the current RM-1 zone. Controlling the type of parking will affect the density, massing and architecture of the buildings. Generally speaking, tandem parking, allows for the use of taller, narrower and higher units as well as greater density. Incorporating parking aprons and side by side parking stalls reduces all of these in relative amounts, depending on their proportionate use.