

Affordable Housing Overlay (AHO) Prototypical Site Models

Cambridge Community Development Department (CDD)

June 20, 2019

With the support of design consultants HFMH Architects, CDD has worked to create conceptual site models based on the Affordable Housing Overlay (AHO) zoning petition. The purpose is to show the overall massing, configuration, and orientation of new residential development that might result from applying the proposed development standards on prototypical example sites. These prototypical sites are not meant to represent specific lots within the city, but they include varied lot sizes and types to illustrate the potential outcomes of the AHO on sites with different dimensions, orientations, and contexts.

Along with the development standards included in the AHO petition, each model includes assumptions about unit sizes and mixes based on contemporary affordable housing projects that receive funding from the Cambridge Affordable Housing Trust. The models also acknowledge basic building standards for residential spaces, such as access/egress routes and windows.

This package includes nine modeled development alternatives across four example sites. Most of the alternatives assume new construction on an empty lot to illustrate the results in a simple and straightforward way, although one alternative shows a potential addition to an existing building. In a real development scenario under the proposed AHO, a site would have a unique set of existing conditions that would factor into its design, and development could combine existing buildings (including non-conforming buildings) with new construction.

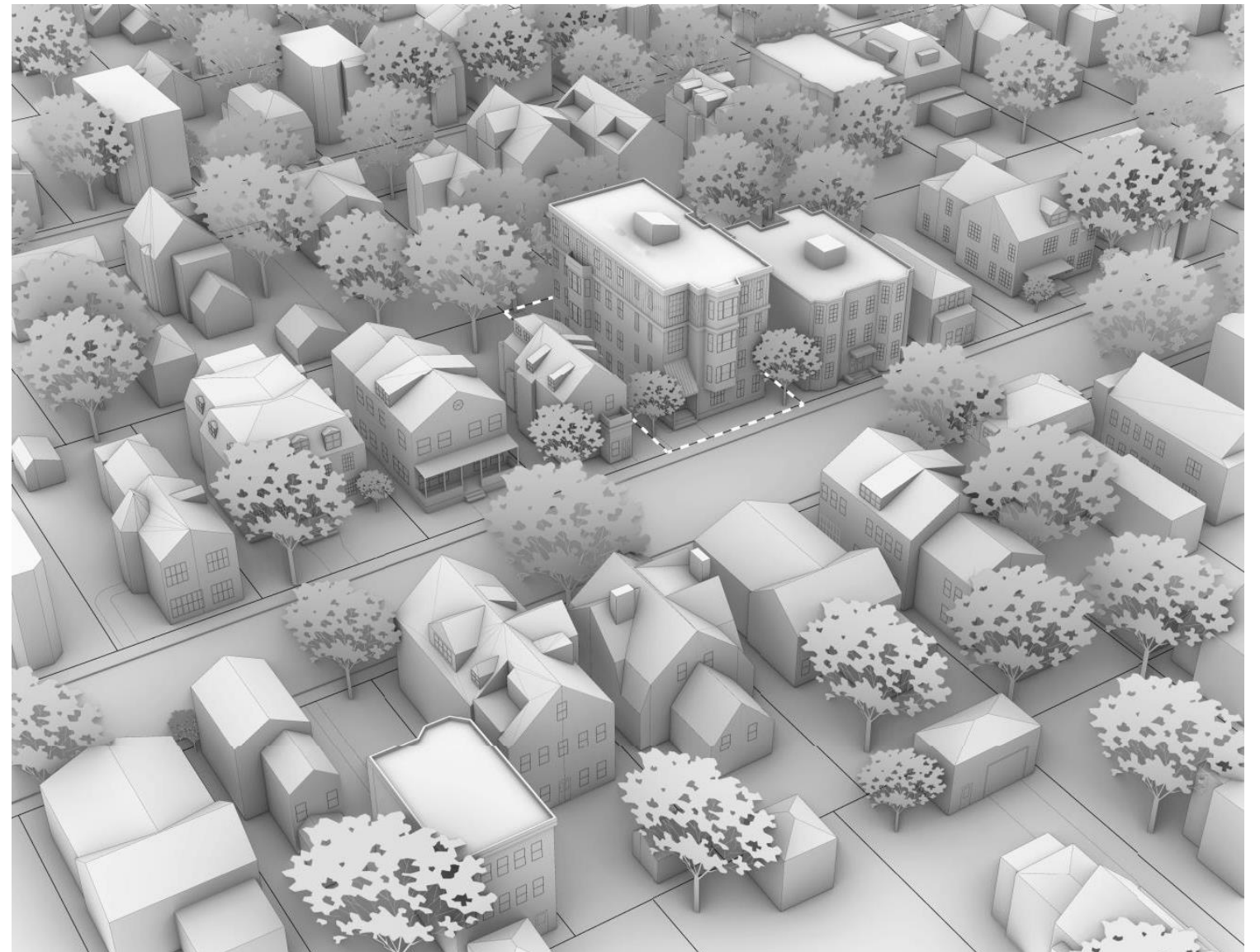
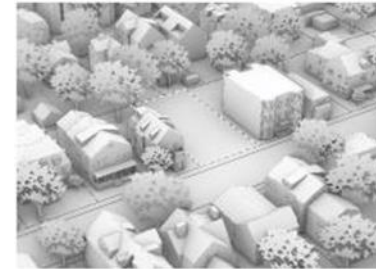
Each example site includes a development alternative with off-street parking at a ratio of 0.4 space per dwelling unit and an alternative without off-street parking, to illustrate the difference in outcomes. Under the current AHO petition text, projects could waive their parking requirement if they meet standards for proximity to transit or historic preservation, or if the project would otherwise require four or fewer parking spaces.

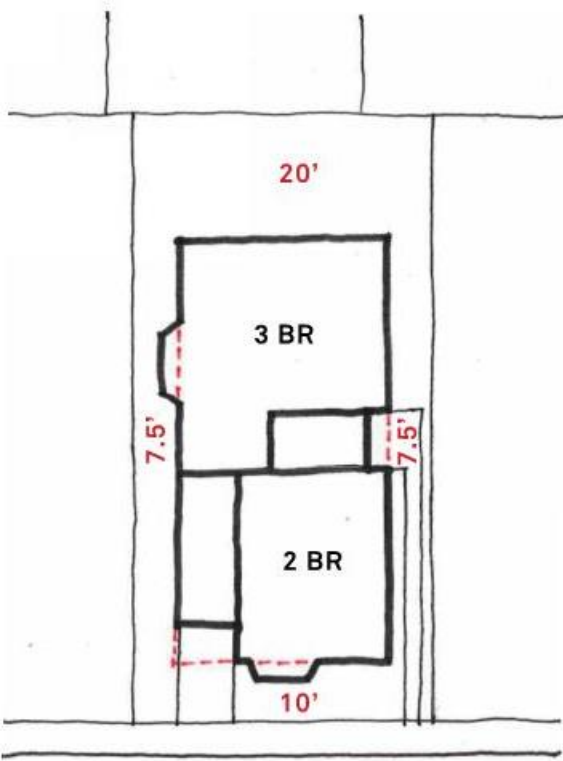
Credits: Images and calculations on Pages 2-5, 8-9, and 12-19 by HMFH Architects. Images and calculations on Pages 6-7 and 10-11 by Cambridge Community Development Department.

Site 1, Alternative A

This prototypical 5,000 square-foot lot has a width of 50 feet and depth of 100 feet, which is a standard lot dimension in the Residence B, C, and C-1 districts. The width of the street (including sidewalks) is about 40 feet. These districts vary throughout the city but are generally characterized by a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

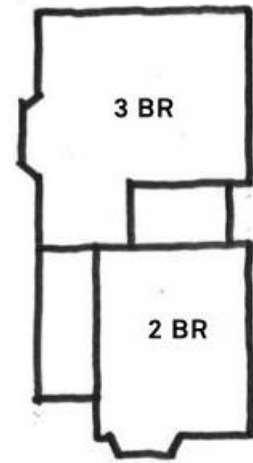
The model alternative assumes an empty lot with a new 4-story housing development and no on-site parking spaces. The setbacks are consistent with proposed AHO development standards in lower-scale residential zoning districts.





Ground Floor Plan

0' 32'



Upper Floors Plan (2-4)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	45 feet
Front Yard Setback	10 feet
Side Yard Setbacks	7.5 feet
Rear Yard Setback	20 feet
Building Footprint	2,450 square feet
Gross Floor Area (GFA)	9,800 square feet
Floor Area Ratio (FAR)	2.0
Dwelling Units	8 (4 two-bedroom, 4 three-bedroom)
Lot Area Per Dwelling Unit	625 square feet
Open Space Ratio	49%
Parking Spaces	0



Street view from front

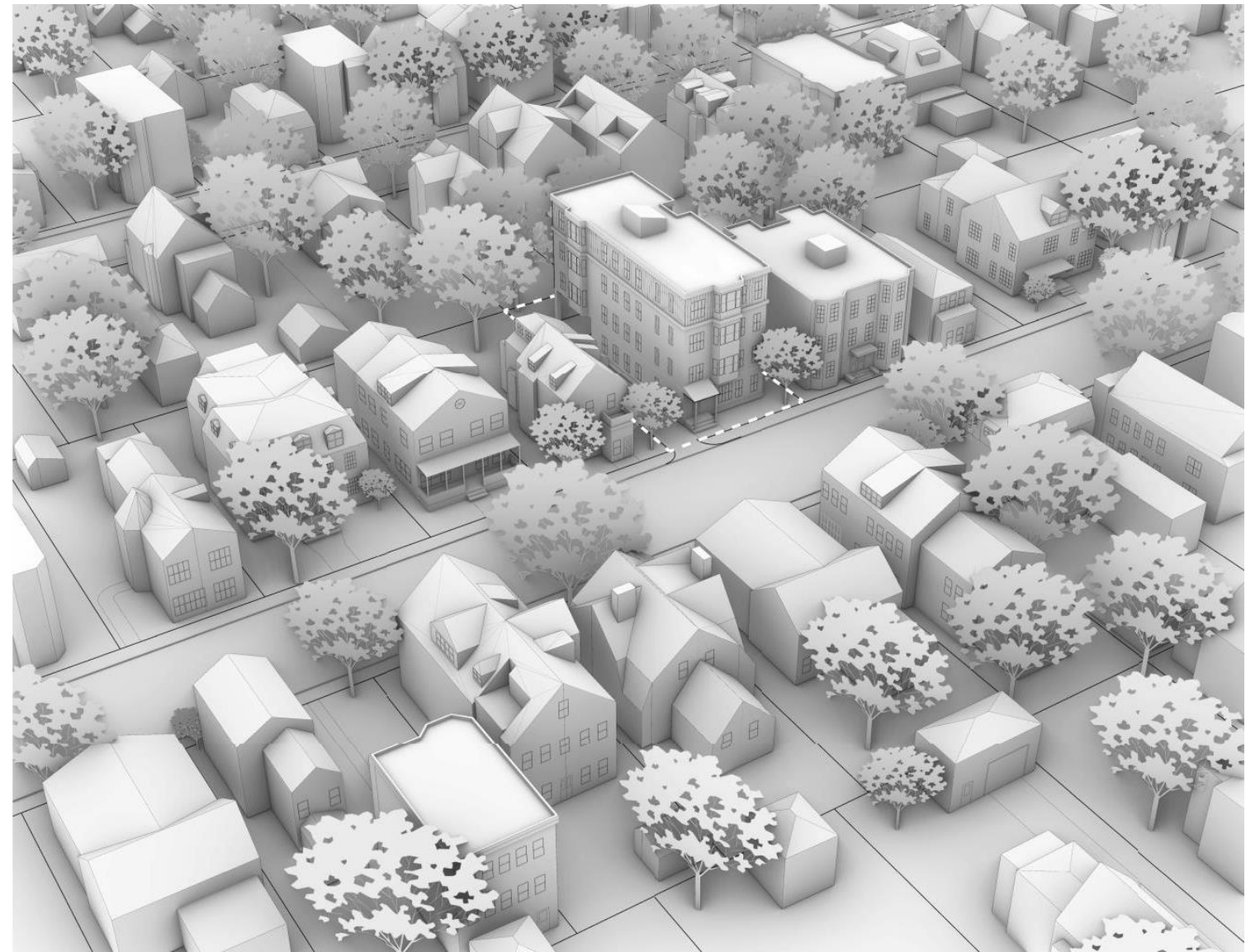
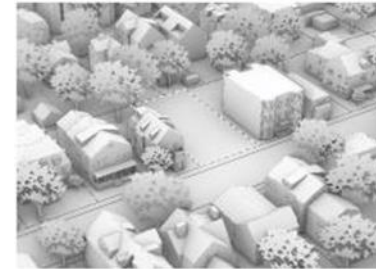


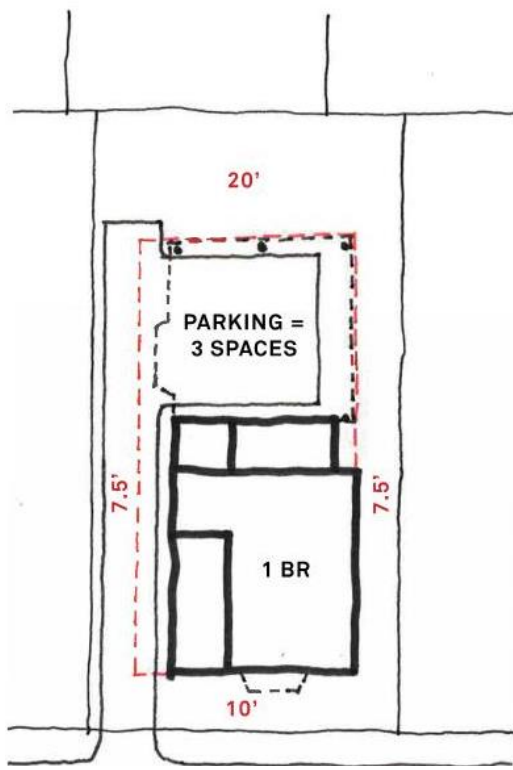
Street view from rear

Site 1, Alternative B

This prototypical 5,000 square-foot lot has a width of 50 feet and depth of 100 feet, which is a standard lot dimension in the Residence B, C, and C-1 districts. The width of the street (including sidewalks) is about 40 feet. These districts vary throughout the city but are generally characterized by a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

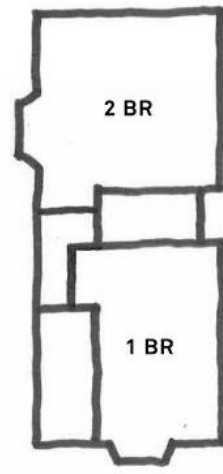
The model alternative assumes an empty lot with a new 4-story housing development and includes off-street parking spaces at a ratio of 0.4 space per dwelling unit. The setbacks are consistent with proposed AHO development standards in lower-scale residential zoning districts.





Ground Floor Plan

0' 32'



Upper Floors Plan (2-4)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	45 feet
Front Yard Setback	10 feet
Side Yard Setbacks	7.5 feet
Rear Yard Setback	20 feet
Building Footprint	2,120 square feet
Gross Floor Area (GFA)	7,560 square feet
Floor Area Ratio (FAR)	1.5
Dwelling Units	7 (4 one-bedroom, 3 two-bedroom)
Lot Area Per Dwelling Unit	714 square feet
Open Space Ratio	42%
Parking Spaces	3



Street view from front



Street view from rear

Site 1, Alternative C

This prototypical 5,000 square-foot lot has a width of 50 feet and depth of 100 feet, which is a standard lot dimension in the Residence B, C, and C-1 districts. The width of the street (including sidewalks) is about 40 feet. These districts vary throughout the city but are generally characterized by a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

The model alternative assumes the preservation of an existing building on the lot, with space for a rear addition. The existing building is about 1,000 square feet in floor area and would be converted to three affordable units. The addition would be four stories and no off-street parking would be included. The setbacks for the addition are consistent with proposed AHO development standards in lower-scale residential zoning districts.





Dimensional Characteristics (ALL FIGURES APPROXIMATE)	
Stories Above Grade	3-4
Building Height	45 feet
Front Yard Setback	10 feet (existing)
Side Yard Setbacks	7.5 feet (addition)
Rear Yard Setback	20 feet (addition)
Building Footprint	1,000 square feet (existing) + 1,230 square feet (addition)
Gross Floor Area (GFA)	7,500 square feet (total)
Floor Area Ratio (FAR)	1.5
Dwelling Units	7 (1 one-bedroom, 5 two-bedroom, 1 three-bedroom)
Lot Area Per Dwelling Unit	714 square feet
Open Space Ratio	55%
Parking Spaces	0



Street view from front



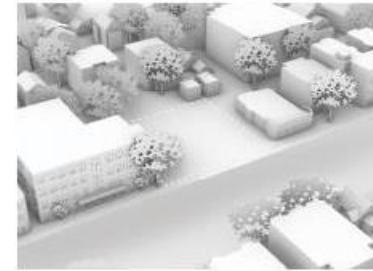
Street view from rear

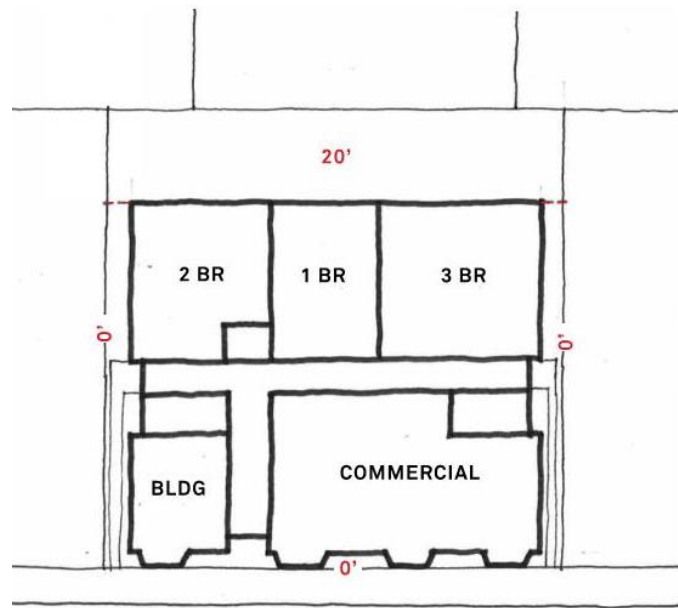
Site 2, Alternative A

This prototypical 10,000 square-foot lot has both a width and depth of 100 feet, which is typical in higher-scale residential and mixed-use districts, although there tends to be a wide variation in lot sizes and dimensions in those districts. The width of the street (including sidewalks) is about 100 feet. The area is generally assumed to be a mixed-use corridor with a variety of commercial and multifamily residential building types ranging from one to four stories, though some districts might have taller existing buildings. Behind this mixed-use corridor, offset from the main road by about 100 feet, is a residential neighborhood of 2-3 story buildings.

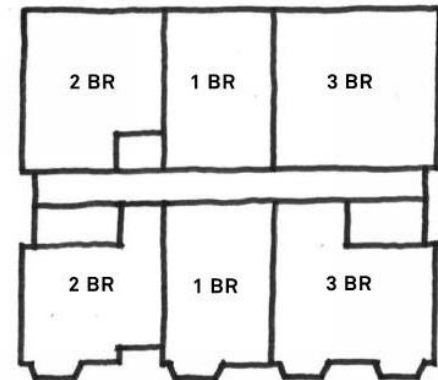
The model alternative assumes an empty lot with a new 7-story housing development, stepping down to 5 stories within 35 feet of the abutting residential area consistent with the proposed AHO standards. A ground-floor commercial space is included and there are no on-site parking spaces.

This model assumes no required front or side yard setbacks, though in some districts the AHO might require a front yard setback of 5-10 feet and side yard setbacks of up to 7.5 feet. Despite the lack of required setbacks, the model assumes a side yard of about 5 feet given building code requirements where windows are provided.

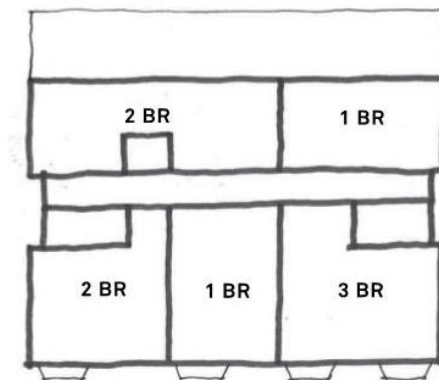




Ground Floor Plan
0' 32'



Upper Floors Plan (2-5)
0' 32'



Upper Floors Plan (6-7)
0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	7
Building Height	80 feet
Front Yard Setback	0 feet
Side Yard Setbacks	5 feet (approx.)
Rear Yard Setback	20 feet
Building Footprint	6,860 square feet
Gross Floor Area (GFA)	46,670 square feet
Floor Area Ratio (FAR)	4.7
Dwelling Units	37 (13 one-BR, 13 two-BR, 11 three-BR)
Lot Area Per Dwelling Unit	270 square feet
Open Space Ratio	31%
Parking Spaces	0



Street view from front



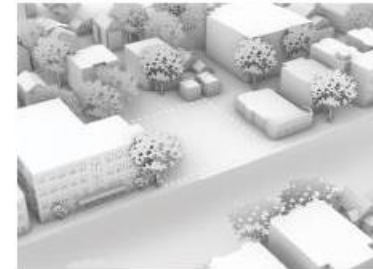
Street view from rear

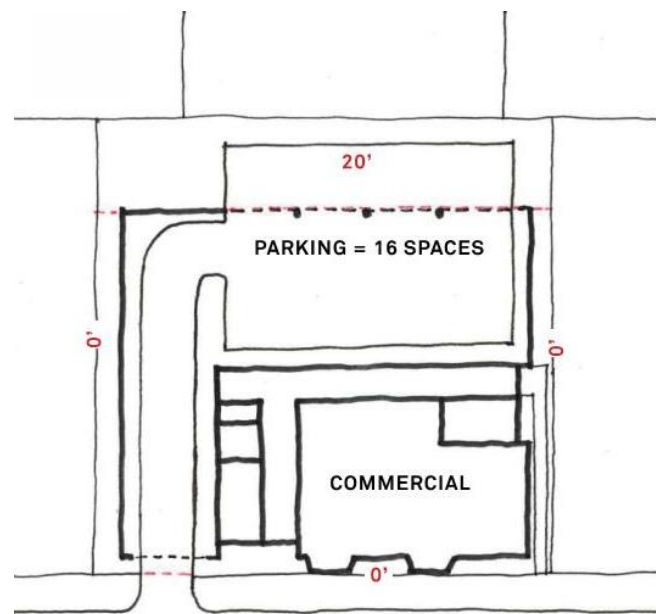
Site 2, Alternative B

This prototypical 10,000 square-foot lot has both a width and depth of 100 feet, which is typical in higher-scale residential and mixed-use districts, although there tends to be a wide variation in lot sizes and dimensions in those districts. The width of the street (including sidewalks) is about 100 feet. The area is generally assumed to be a mixed-use corridor with a variety of commercial and multifamily residential building types ranging from one to four stories, though some districts might have taller existing buildings. Behind this mixed-use corridor, offset from the main road by about 100 feet, is a residential neighborhood of 2-3 story buildings.

The model alternative assumes an empty lot with a new 7-story housing development, stepping down to 5 stories within 35 feet of the abutting residential area consistent with the proposed AHO standards. A ground-floor commercial space is included and parking spaces are provided at a ratio of 0.4 space per dwelling unit. This alternative also includes a variation on the top floor design, suggesting a “mansard” approach.

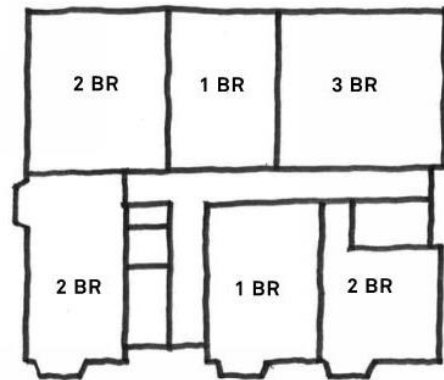
This model assumes no required front or side yard setbacks, though in some districts the AHO might require a front yard setback of 5-10 feet and side yard setbacks of up to 7.5 feet. Despite the lack of required setbacks, the model assumes a side yard of about 5 feet given building code requirements where windows are provided.





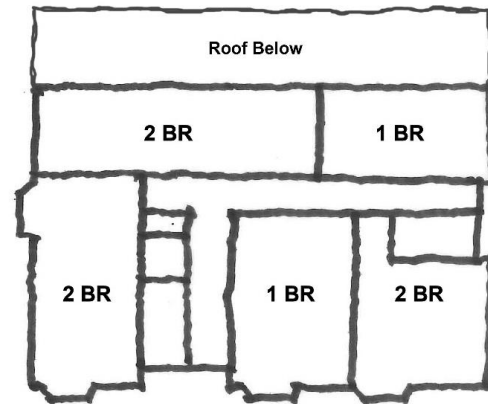
Ground Floor Plan

0' 32'



Upper Floors Plan (2-5)

0' 32'

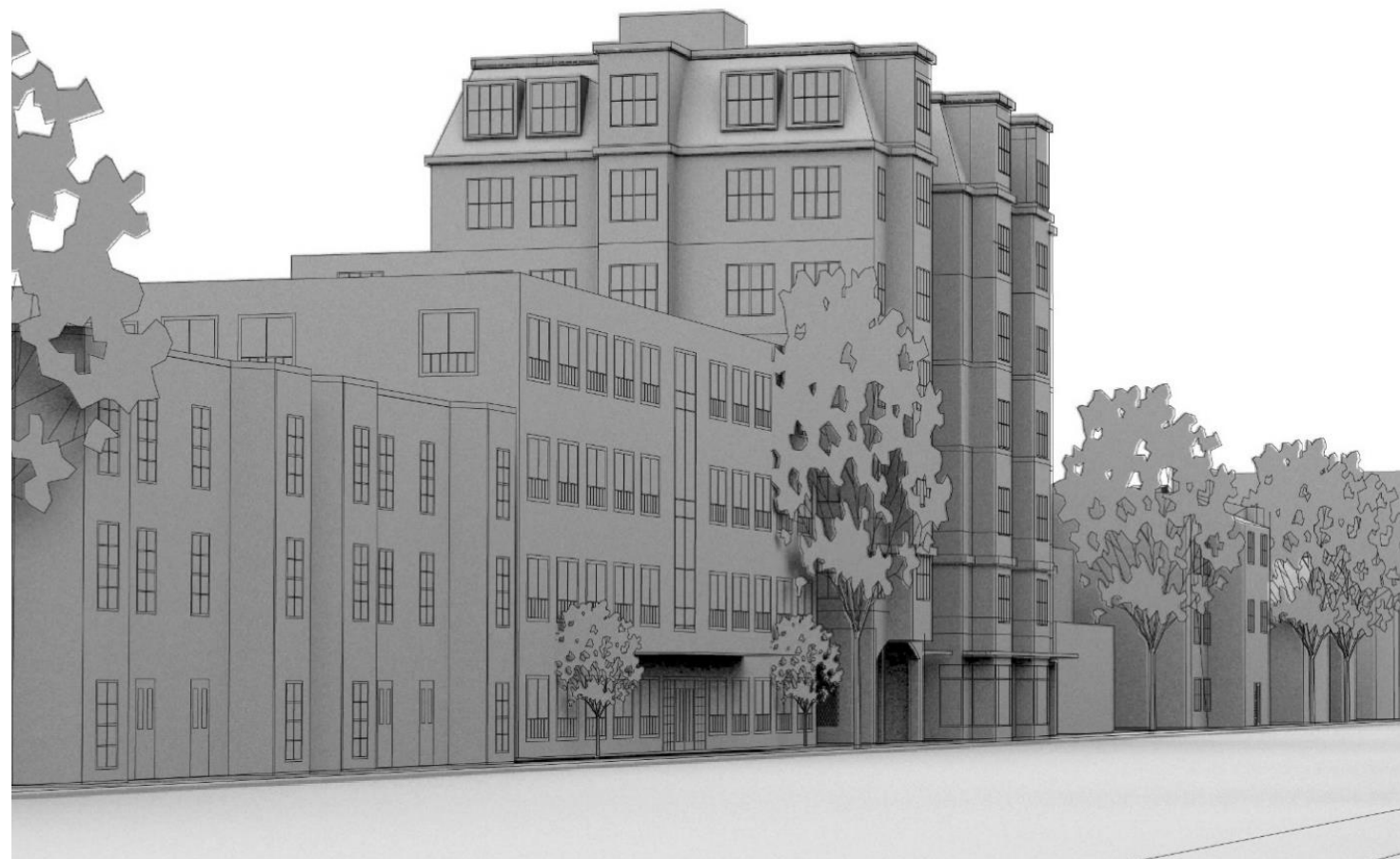


Upper Floors Plan (6-7)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	7
Building Height	80 feet
Front Yard Setback	0 feet
Side Yard Setbacks	5 feet (approx.)
Rear Yard Setback	20 feet
Building Footprint	6,860 square feet
Gross Floor Area (GFA)	42,470 square feet
Floor Area Ratio (FAR)	4.2
Dwelling Units	34 (12 one-BR, 18 two-BR, 4 three-BR)
Lot Area Per Dwelling Unit	294 square feet
Open Space Ratio	22%
Parking Spaces	16



Street view from front

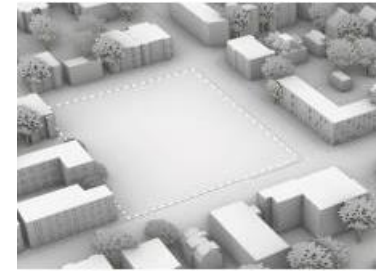


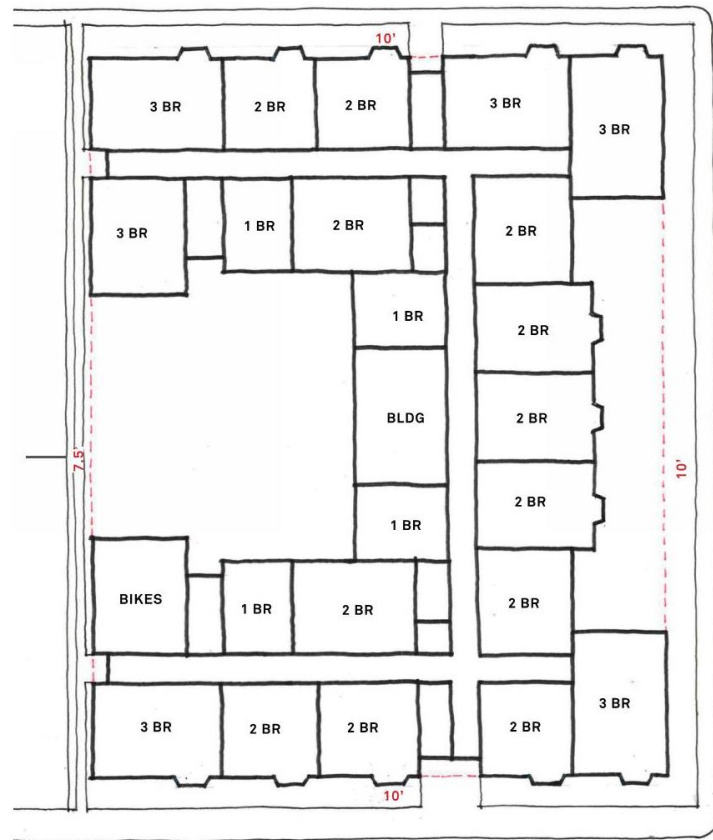
Street view from rear

Site 3, Alternative A

This prototypical 50,000 square-foot lot is located on a corner and has a width of 200 feet and depth of 250 feet. It is assumed to be an atypically large lot in a Residence A-1, A-2, B, C, or C-1 district, and approximates about the largest-size lot on which an affordable housing development might occur in those districts. The fronting streets are about 70 feet and 40 feet wide (including sidewalks). The context is a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

The model alternative assumes an empty lot with a new 4-story housing development and no on-site parking spaces. The massing of the building is articulated to provide courtyard breaks, which also provide light into the residential units. The setbacks are consistent with proposed AHO development standards in lower-scale residential zoning districts.





Ground Floor Plan



Upper Floors Plan (2-4)

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	45 feet
Front Yard Setbacks	10 feet
Side Yard Setback	7.5 feet
Rear Yard Setback	N/A
Building Footprint	31,120 square feet
Gross Floor Area (GFA)	124,480 square feet
Floor Area Ratio (FAR)	2.4
Dwelling Units	98 (23 one-BR, 48 two-BR, 27 three-BR)
Lot Area Per Dwelling Unit	510 square feet
Open Space Ratio	38%
Parking Spaces	0



Street view from front



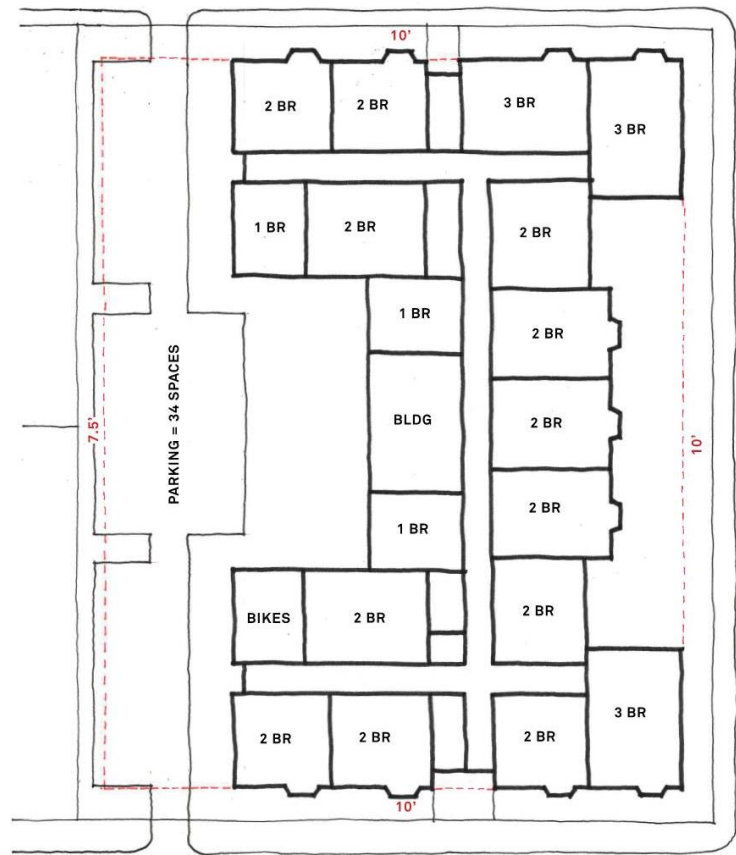
Street view from corner

Site 3, Alternative B

This prototypical 50,000 square-foot lot is located on a corner and has a width of 200 feet and depth of 250 feet. It is assumed to be an atypically large lot in a Residence A-1, A-2, B, C, or C-1 district, and approximates about the largest-size lot on which an affordable housing development might occur in those districts. The fronting streets are about 70 feet and 40 feet wide (including sidewalks). The context is a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

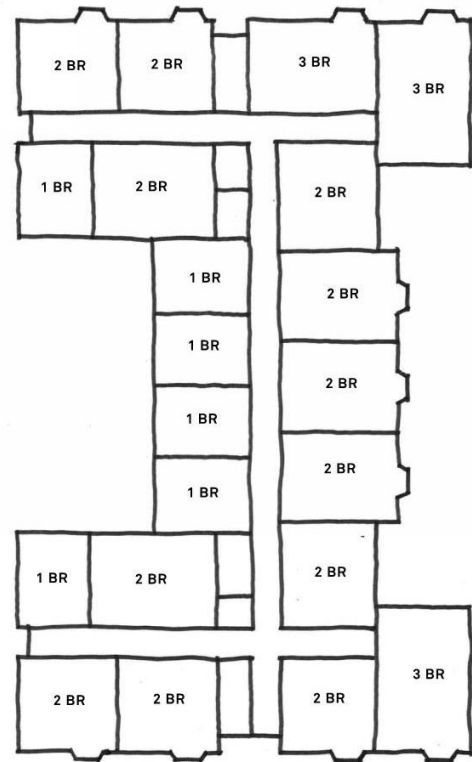
The model alternative assumes an empty lot with a new 4-story housing development and off-street parking spaces provided in a surface parking lot at a ratio of 0.4 space per dwelling unit. The massing of the building is articulated to provide courtyard breaks, which also provide light into the residential units. The setbacks are consistent with proposed AHO development standards in lower-scale residential zoning districts.





Ground Floor Plan

0' 32'



Upper Floors Plan (2-4)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	45 feet
Front Yard Setbacks	10 feet
Side Yard Setback	7.5 feet
Rear Yard Setback	N/A
Building Footprint	25,230 square feet
Gross Floor Area (GFA)	100,920 square feet
Floor Area Ratio (FAR)	2.0
Dwelling Units	82 (22 one-BR, 48 two-BR, 12 three-BR)
Lot Area Per Dwelling Unit	609 square feet
Open Space Ratio	34%
Parking Spaces	33



Street view from front

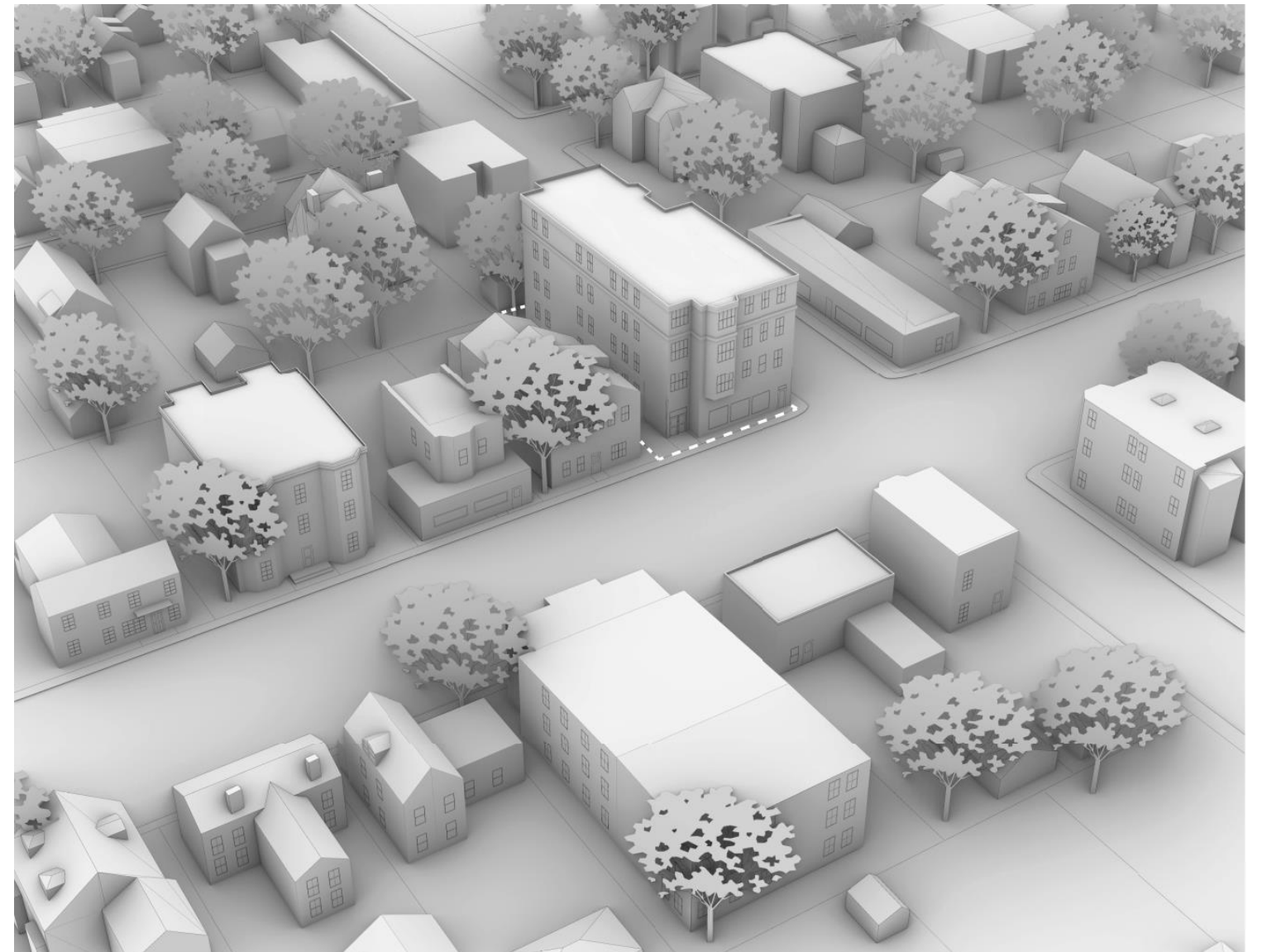
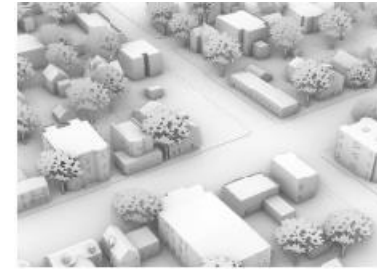


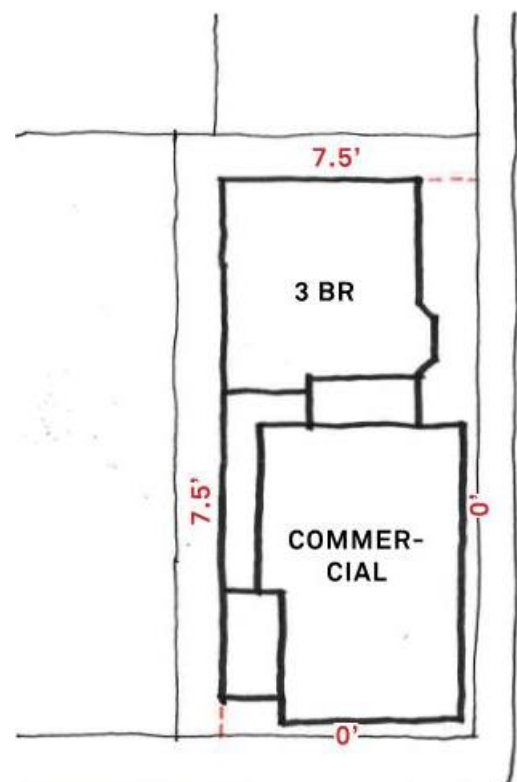
Street view from corner

Site 4, Alternative A

This prototypical 5,000 square-foot lot is located on a corner and has a width of 50 feet and depth of 100 feet, which is a standard lot size in lower-scale hybrid commercial/residential district, such as Office 1 or Business A-1. The fronting streets are about 70 feet and 40 feet wide (including sidewalks). The context is a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

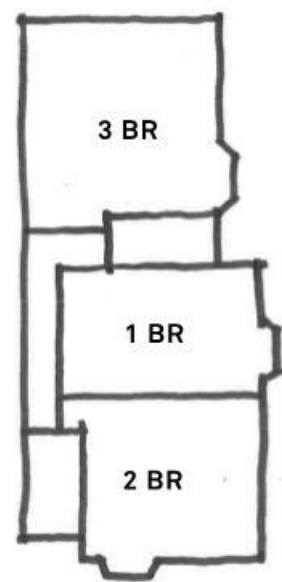
The model alternative assumes an empty lot with a new 4-story housing development and no on-site parking spaces. The ground floor contains a commercial space, resulting in a slightly taller ground floor and overall height. The setbacks are consistent with proposed AHO development standards in lower-scale mixed-use zoning districts.





Ground Floor Plan

0' 32'



Upper Floors Plan (2-4)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	50 feet
Front Yard Setbacks	0 feet
Side Yard Setbacks	7.5 feet
Rear Yard Setback	N/A
Building Footprint	3,325 square feet
Gross Floor Area (GFA)	13,300 square feet
Floor Area Ratio (FAR)	2.7
Dwelling Units	10 (3 one-BR, 3 two-BR, 4 three-BR)
Lot Area Per Dwelling Unit	500 square feet
Open Space Ratio	33%
Parking Spaces	0



Street view from front

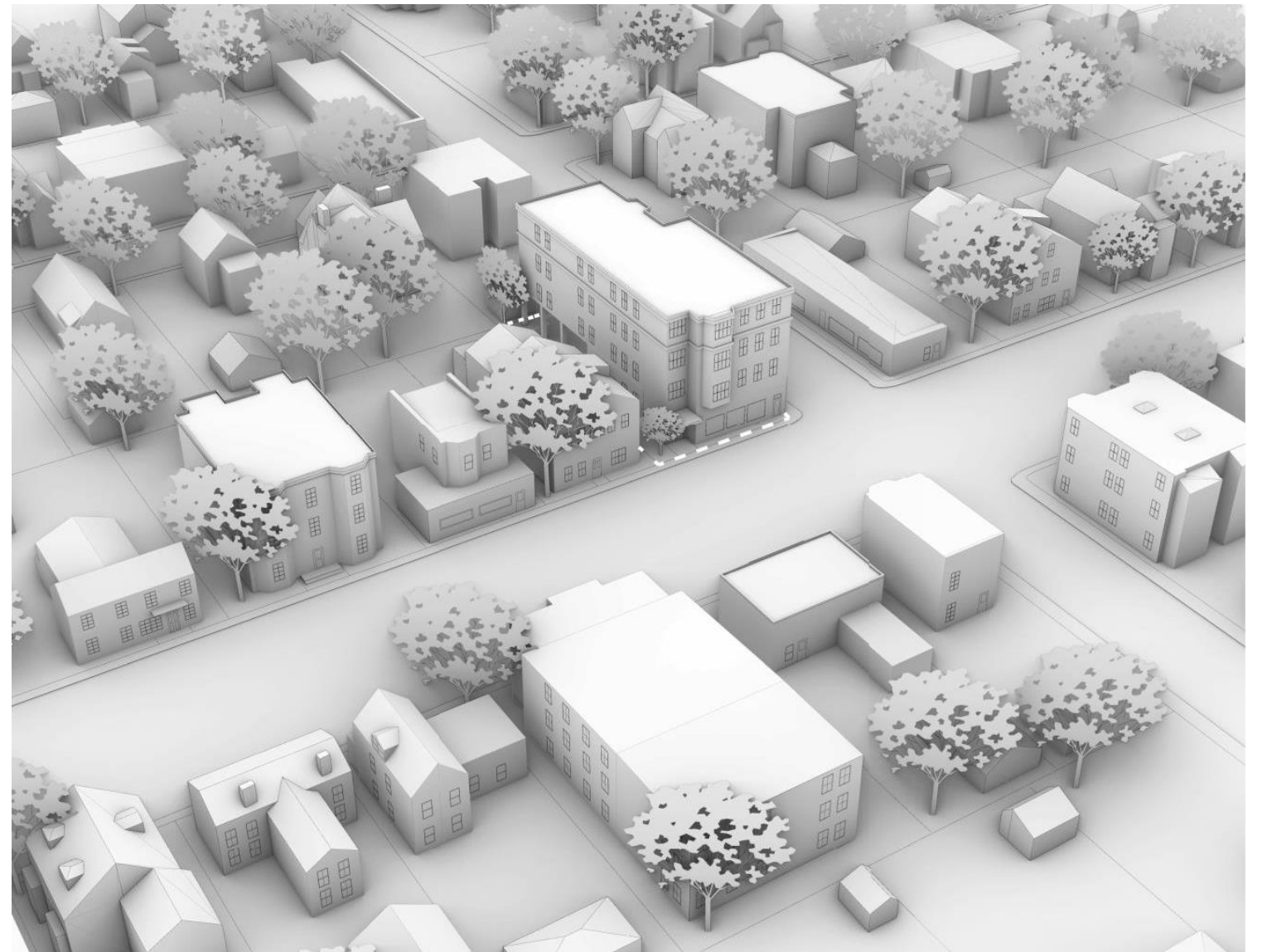


Street view from rear

Site 4, Alternative B

This prototypical 5,000 square-foot lot is located on a corner and has a width of 50 feet and depth of 100 feet, which is a standard lot size in lower-scale hybrid commercial/residential district, such as Office 1 or Business A-1. The fronting streets are about 70 feet and 40 feet wide. The context is a mix of single-family, two-family, and multifamily housing at a prevailing scale of 2-3 stories.

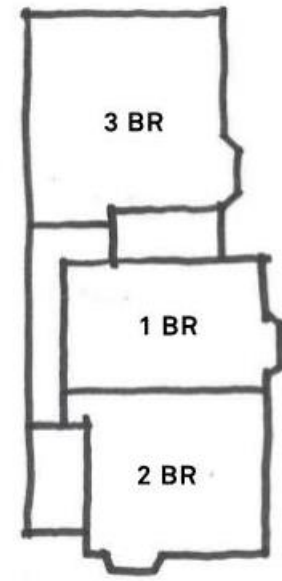
The model alternative assumes an empty lot with a new 4-story housing development and off-street parking spaces provided at a ratio of 0.4 space per dwelling unit in a parking lot underneath part of the structure. The ground floor contains a commercial space, resulting in a slightly taller ground floor and overall height. The setbacks are consistent with proposed AHO development standards in lower-scale mixed-use zoning districts.





Ground Floor Plan

0' 32'



Upper Floors Plan (2-4)

0' 32'

Dimensional Characteristics (ALL FIGURES APPROXIMATE)

Stories Above Grade	4
Building Height	50 feet
Front Yard Setbacks	0 feet
Side Yard Setbacks	7.5 feet
Rear Yard Setback	N/A
Building Footprint	3,325 square feet
Gross Floor Area (GFA)	12,180 square feet
Floor Area Ratio (FAR)	2.4
Dwelling Units	9 (3 one-BR, 3 two-BR, 3 three-BR)
Lot Area Per Dwelling Unit	555 square feet
Open Space Ratio	32%
Parking Spaces	4



Street view from front



Street view from rear