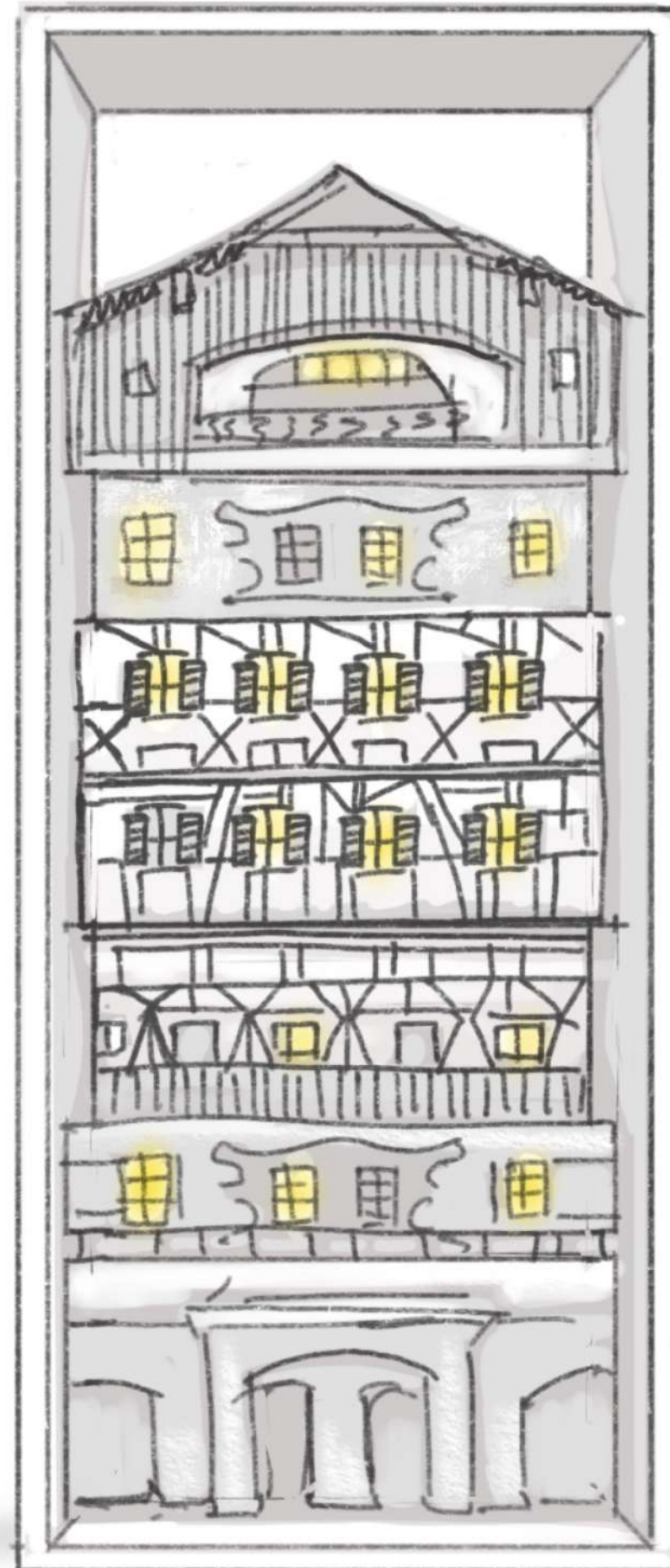




ARCHITECTURAL PORTFOLIO

FRANKIE WINTERS

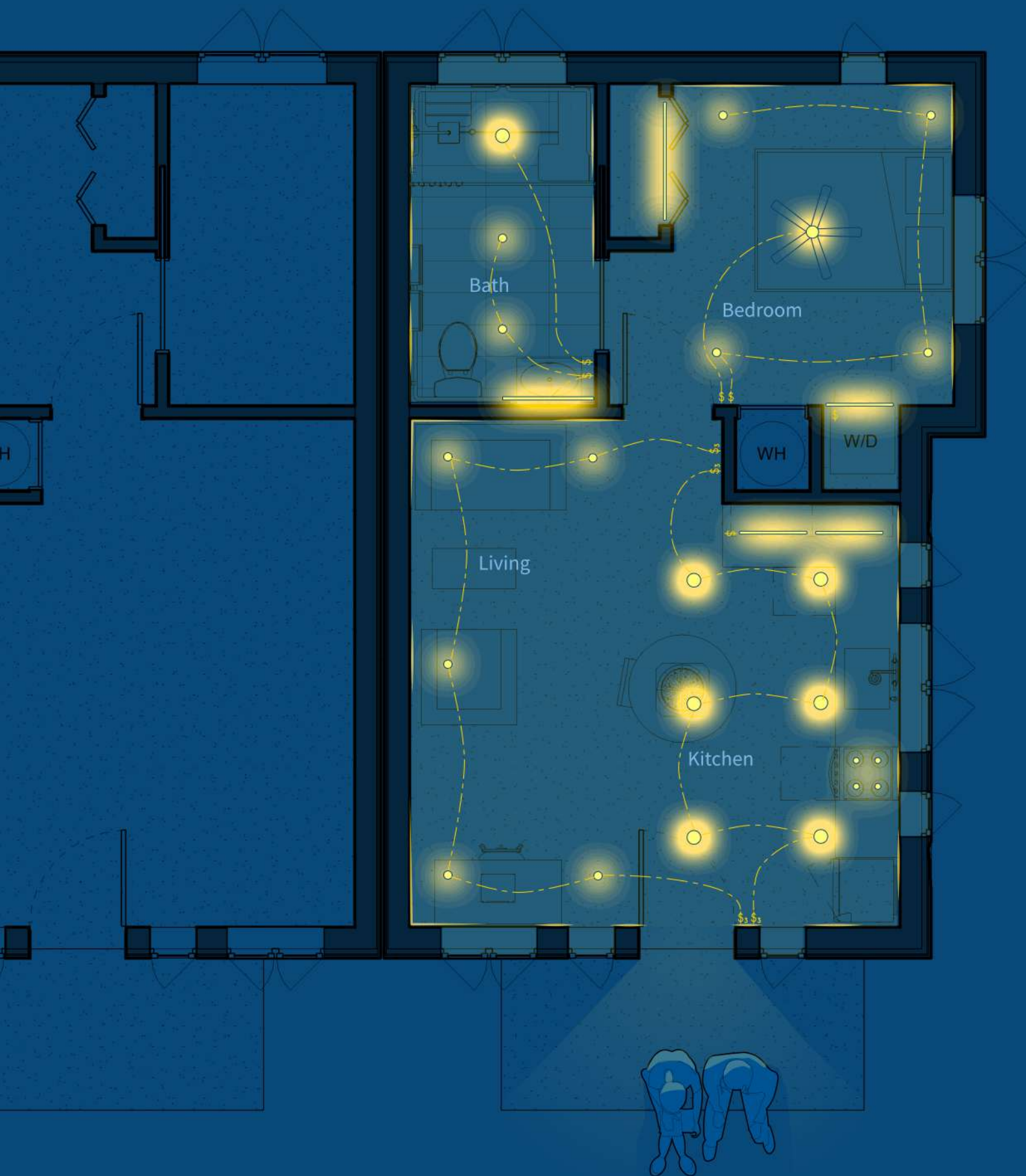
CONTACT INFORMATION

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frankie@winters.design

503-956-4585

Oberammergau Lightbox. Inspired by the architecture of the Bavarian village. Designed and fabricated in 2020. 58in x 24in.



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COTTAGE CLUSTER

Designed to explore the advantages of the cottage cluster provisions of the Portland's Residential Infill Project, the Kenton Cluster places 12 **super-insulated tiny homes** on a 100'x200' lot that would typically only fit four single-family residences.



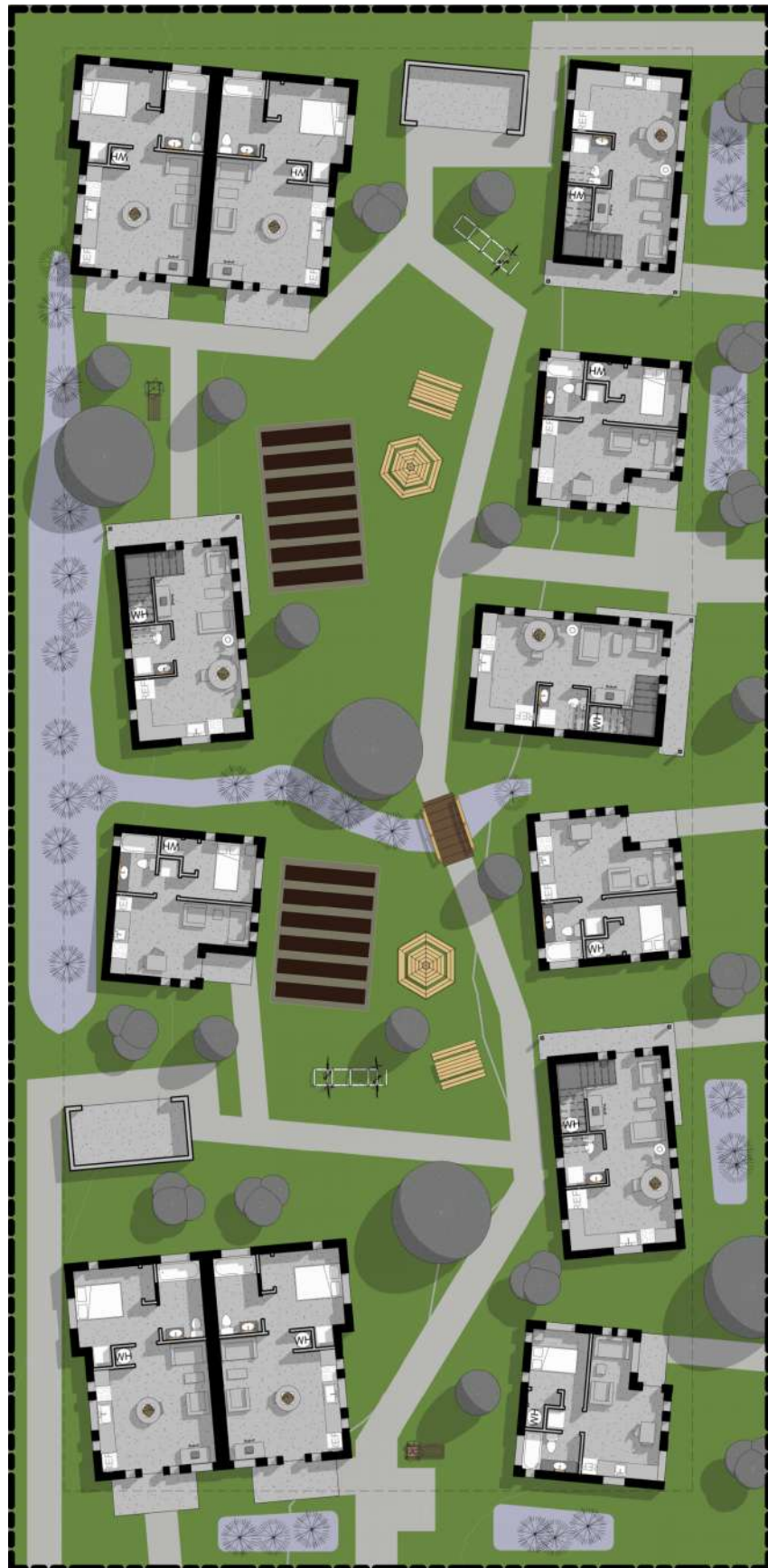
ADA DUPLEX | ≈390 SF ea.



TINY HOME | ≈300 SF



2 BEDROOM COTTAGE | ≈570 SF



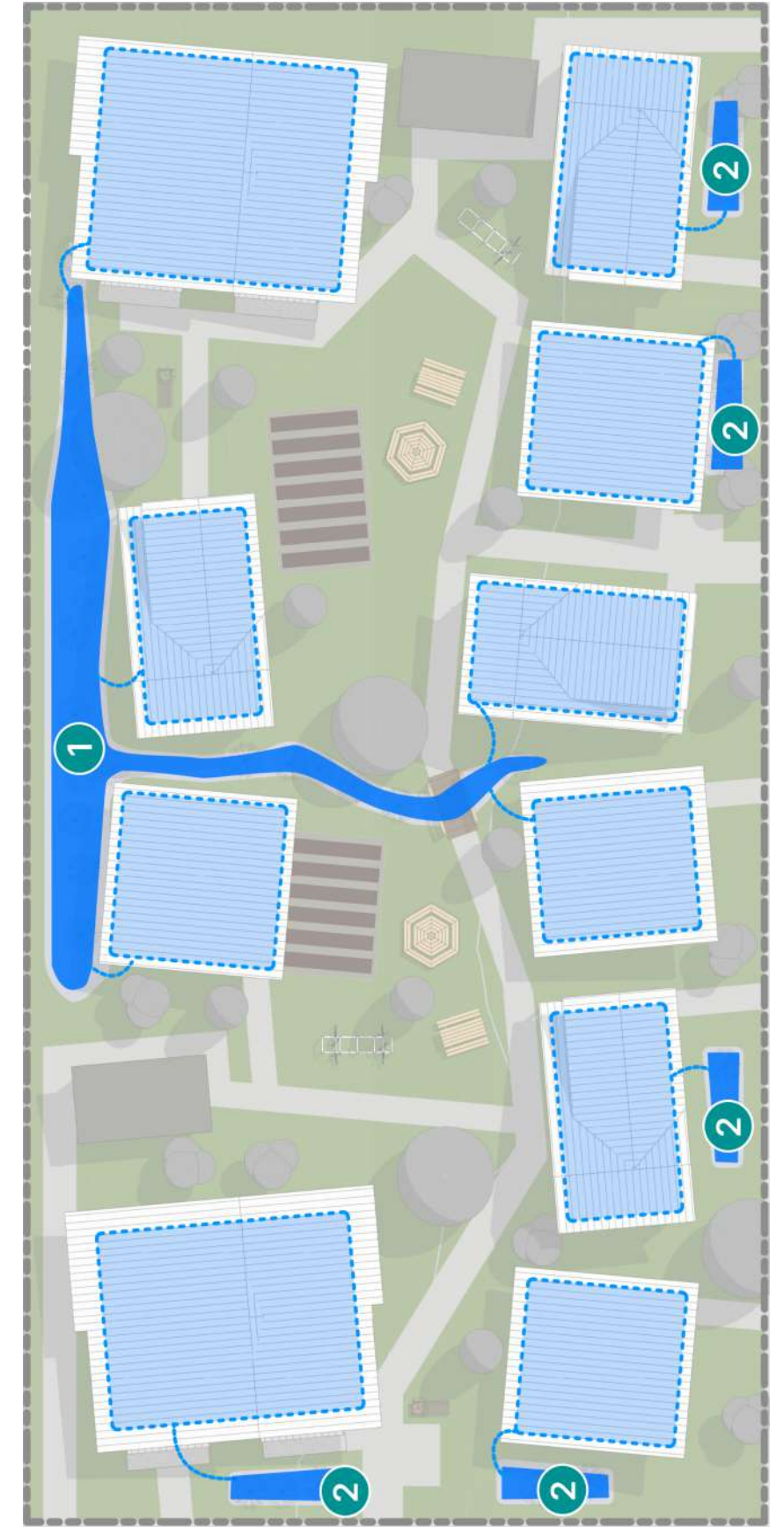
SITE PLAN

Incorporating Four ADA Homes, Four Tiny Homes, and Four Two-Story, Two Bedroom Cottages



COMMUNITY AREA

Gardening beds, outdoor eating and gathering areas, bike and package storage.

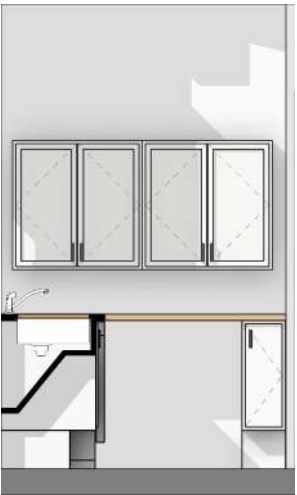
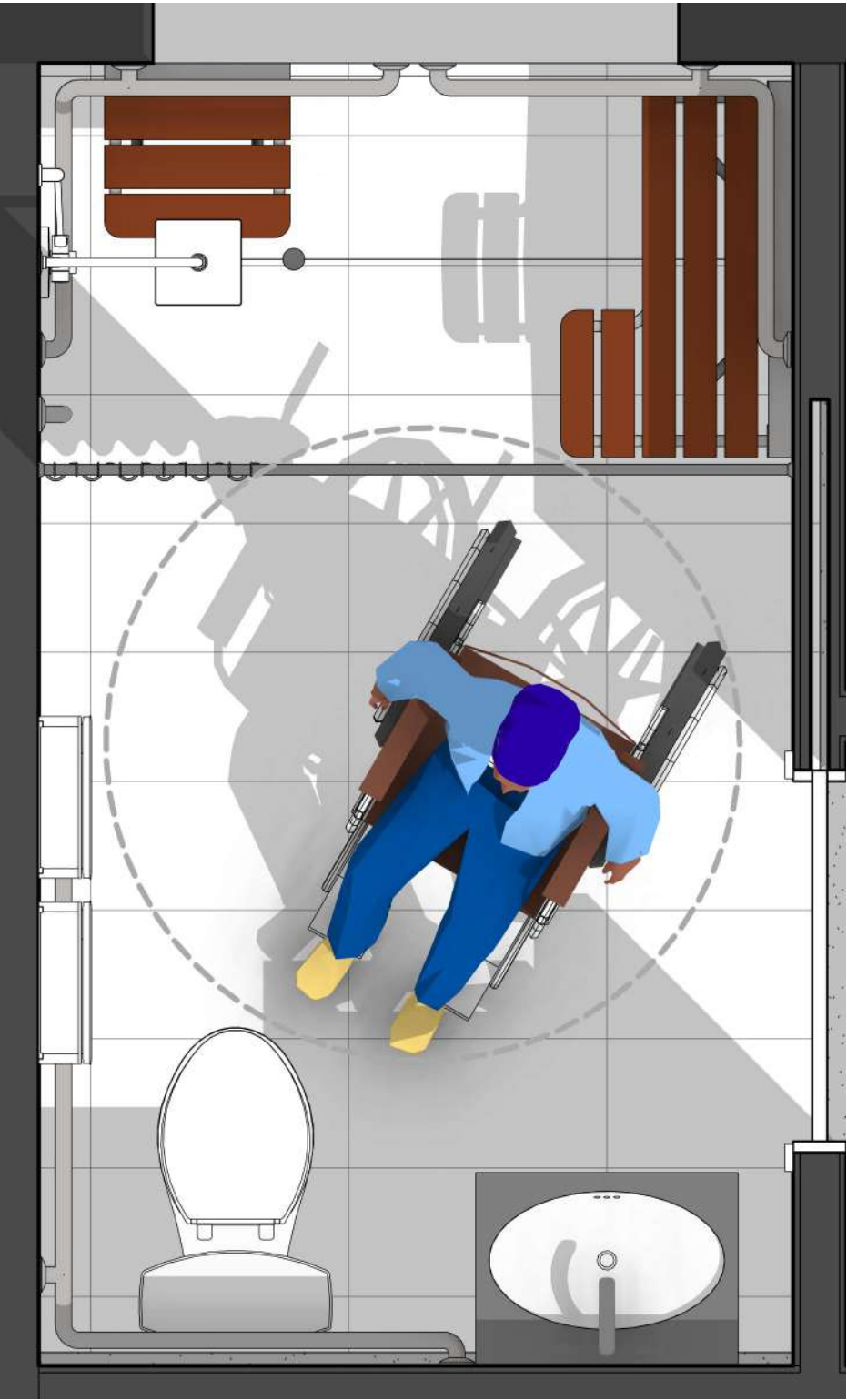


STORMWATER STRATEGY

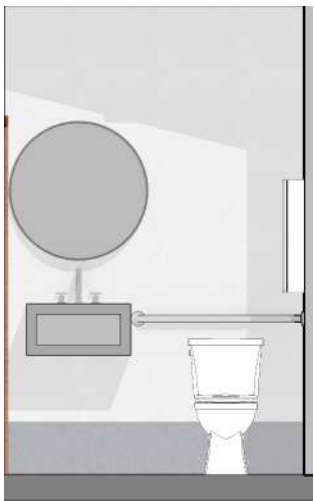
Along the street, infiltration swales double as privacy buffers for each cottage.

ACCESSIBILITY FEATURES

The Residential Infill Project's Cottage Cluster provisions require that 1/3 of the units in a cottage cluster be ADA-accessible. This project includes four units with wheelchair-accessible kitchens and baths, wide doorways and clearances.



An accessible kitchen, with roll-under sink and roll-under prep areas, as well as casework with large toe-kick clearance to facilitate use by an occupant in a wheelchair.



An accessible bathroom including a roll-in shower equipped with fold-down seats, grab bars, and adequate turning radius for wheelchair users.

COTTAGE ENVELOPES

Super-insulated walls, thoughtfully designed roof, floor, and foundation assemblies, and triple-pane windows create extreme energy-efficient building envelope for the cottages.

EAVE AND ROOF DETAILS

A raised-plate wall design reduced thermal bridging at the roof-wall intersection.

TYPICAL EXTERIOR WALL SECTION

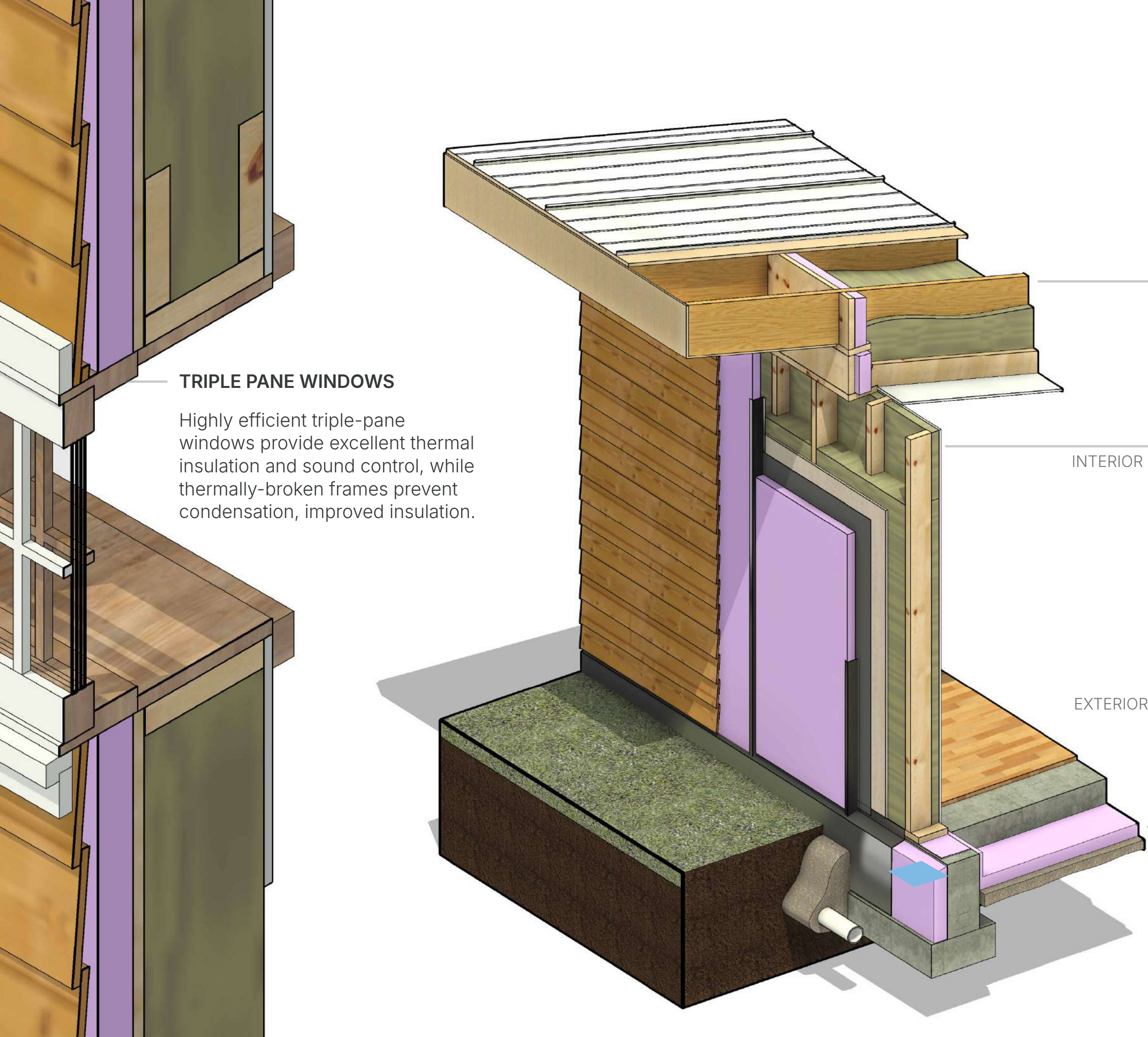
- 1/2" Gypsum Wallboard
- Staggered Stud Structural Assembly w/ continuous Mineral Wool Insulation
- 1/2" CDX Plywood Sheathing
- Water-Resistant Barrier
- Continuous 2" Rigid Foam Insulation w/ Z-Girts
- Drainage Plane
- Cedar Siding

FLOOR AND FOUNDATION DETAILS

An insulated stem wall along with below-slab rigid insulation thermally isolate the floor and foundation from the grade.

TRIPLE PANE WINDOWS

Highly efficient triple-pane windows provide excellent thermal insulation and sound control, while thermally-broken frames prevent condensation, improved insulation.



PERFORMANCE AUDIT

To complete the project, I compared the thermal performance of the envelope to a version with only code-minimum version.

Based on heating cost and greenhouse emissions, the design **performs roughly twice as well as the baseline**. However, due to the small size of the cottages, it would likely be many **years before the initial investment in the envelope would be recouped**.

Opportunities for improvement to the design include revising the eaves for additional window shading and meticulous air sealing with passive-house style windows and doors.

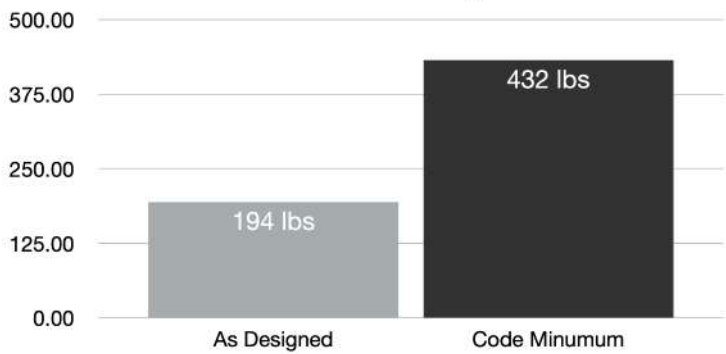
Southern Glazing Solar Gain

Month	Winter BTUs	Summer BTUs
January	4,700	
February	6,500	
March	8,900	
April		7,600
May		6,900
June		5,800
July		7,700
August		8,900
September		7,600
October	8,200	
November	4,700	
December	3,700	
Total per sqft	36,700	44,500
x 53 sqft Glazing	1.9 M	2.4 M

Heating Cost per Year

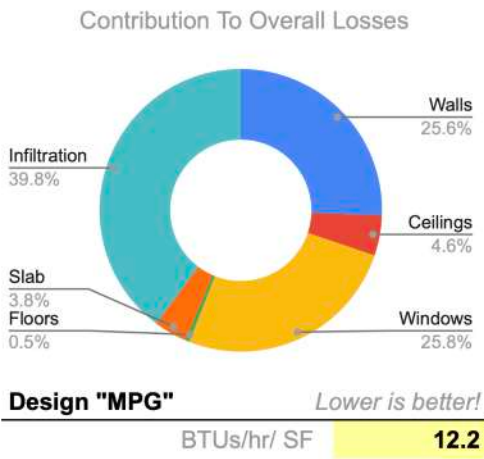


Carbon Emissions per Year



"KENTON KERCHIEF" PERFORMANCE

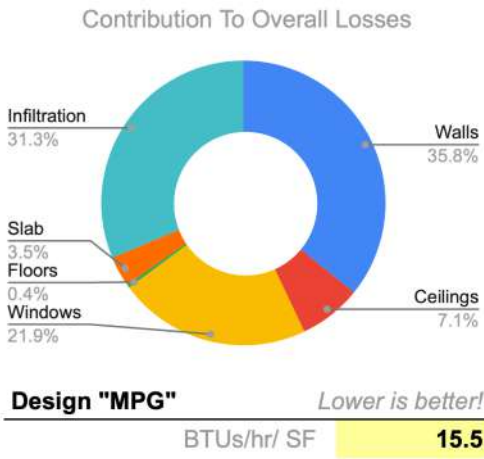
Heat Losses	Per Design		
	UA*	BTUs/Hour	BTUs/Year
Walls	34.2	2053.6	3.7M
Ceilings	6.2	370.4	0.7M
Windows	34.5	2068.5	3.7M
Floors	0.7	39.6	0.1M
Slab (Perimeter)	5.1	305.6	0.6M
Infiltration	53.2	3193.0	5.8M
Subtotals		8030.7	14.5 M
Heat Gains			
Internal Gain*		-905.6	-7.9 M
Other (Solar) Gain	(enter all the digits: 1600000)		1.6 M
Offset Totals		7125.1	-6.3 M



Fuel	Per Unit (Kwh, Gallon, Therms)			Per Design (Yearly)		
	Price	Heating Value*	CO2 (lbs/BTU)	HVAC Efficiency	CO2 (lbs)	Cost to Heat
PGE	\$0.21	3412	0.0000468	350	194	\$255.44

CODE MINIMUM PERFORMANCE

Heat Losses	Per Design		
	UA*	BTUs/Hour	BTUs/Year
Walls	60.9	3655.0	6.6M
Ceilings	12.1	726.0	1.3M
Windows	37.3	2236.2	4.0M
Floors	0.7	39.6	0.1M
Slab (Perimeter)	5.9	352.6	0.6M
Infiltration	53.2	3193.0	5.8M
Subtotals		10202.5	18.5 M
Heat Gains			
Internal Gain*		-905.6	-7.9 M
Other (Solar) Gain	(enter all the digits: 1600000)		1.6 M
Offset Totals		9296.9	-6.3 M



Fuel	Per Unit (Kwh, Gallon, Therms)			Per Design (Yearly)		
	Price	Heating Value*	CO2 (lbs/BTU)	HVAC Efficiency	CO2 (lbs)	Cost to Heat
PGE	\$0.21	3412	0.0000468	200	432	\$567.91

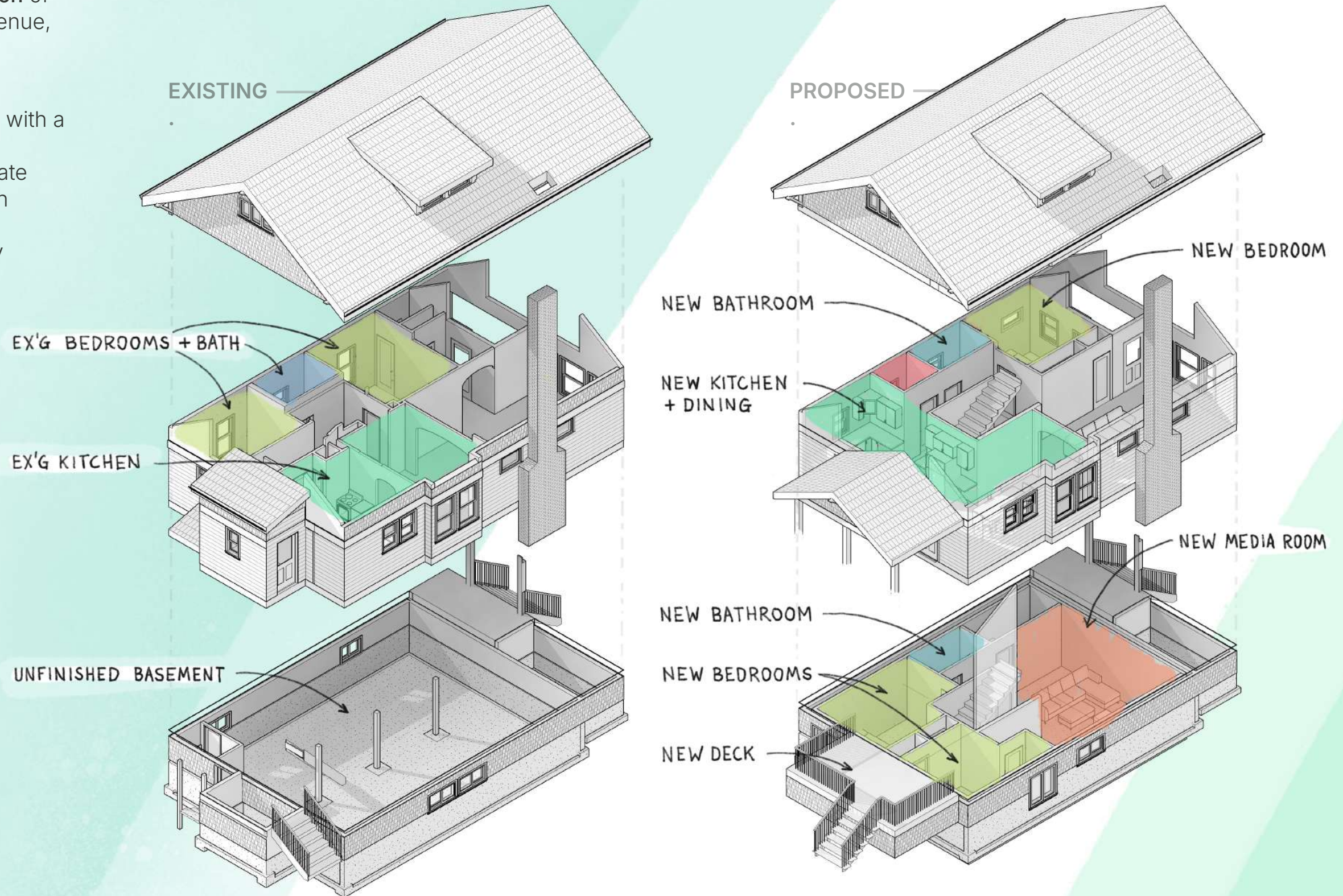
MAJOR RENOVATION

This project proposes a **complete renovation** of an 80-year old two story home on 49th Avenue, **reclaiming 800 sq. ft. of living space from unfinished and under-height basement.**

By consolidating three disparate staircases with a central vertical circulation pattern, and excavating the basement to provide adequate headroom for first-class living area, enough space to expanding the kitchen create an additional bedroom, bathroom, and laundry room.

Removing the previous addition makes space for a new deck and back porch that's a better fit for the architectural style of the home, while opening the kitchen to the outdoor grilling area.

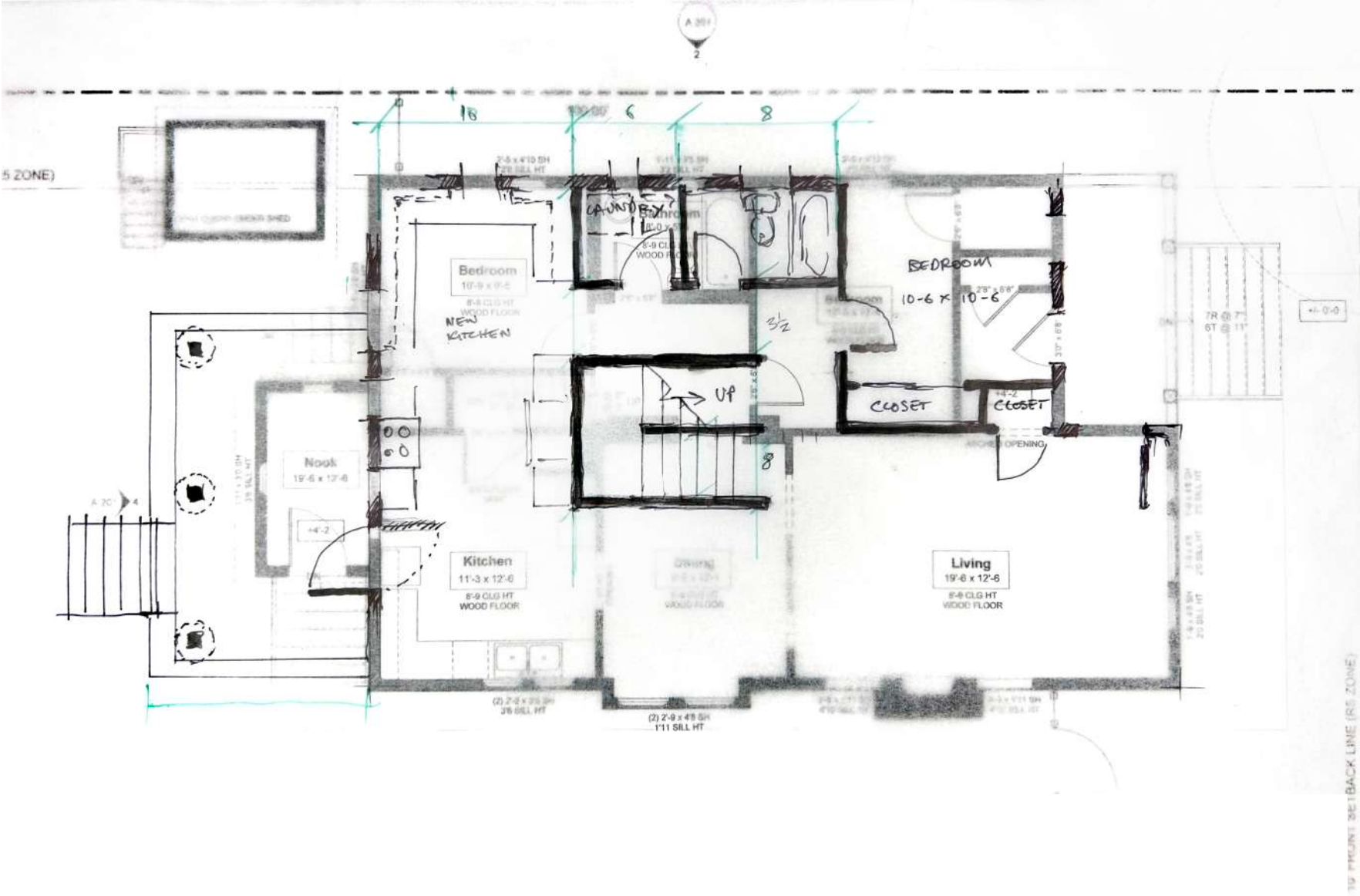
While the internal changes are sweeping, **the existing shell is kept largely intact**, preserving the character of the home and its fit among its peers in the surrounding neighborhood.



CENTRAL VERTICAL CIRCULATION

After a few rounds of hand sketching, figuring out the flow of the floor plan in tandem with replacing steep and narrow staircases, I landed on a new stair layout using a central column of wrap-around half-flight stairs.

This makes a much more intuitive and efficient connection between the new living area in the basement and the heart of the home. A basement excavation is no small project, and **this change addresses real space-planning shortcoming of the existing plan with a solution that aligns with one of the overall goals of the project**, which is to make the new living area feel like an integrated part of the home.



EXISTING CONDITION

PROPOSED



MODERNIZED FLOOR PLAN

The new floor plan introduces a circular flow, **doubles the size of the kitchen**, relocates an undersized bedroom to the basement, increases storage, provides **wider hallways** and **fewer awkward spaces**.

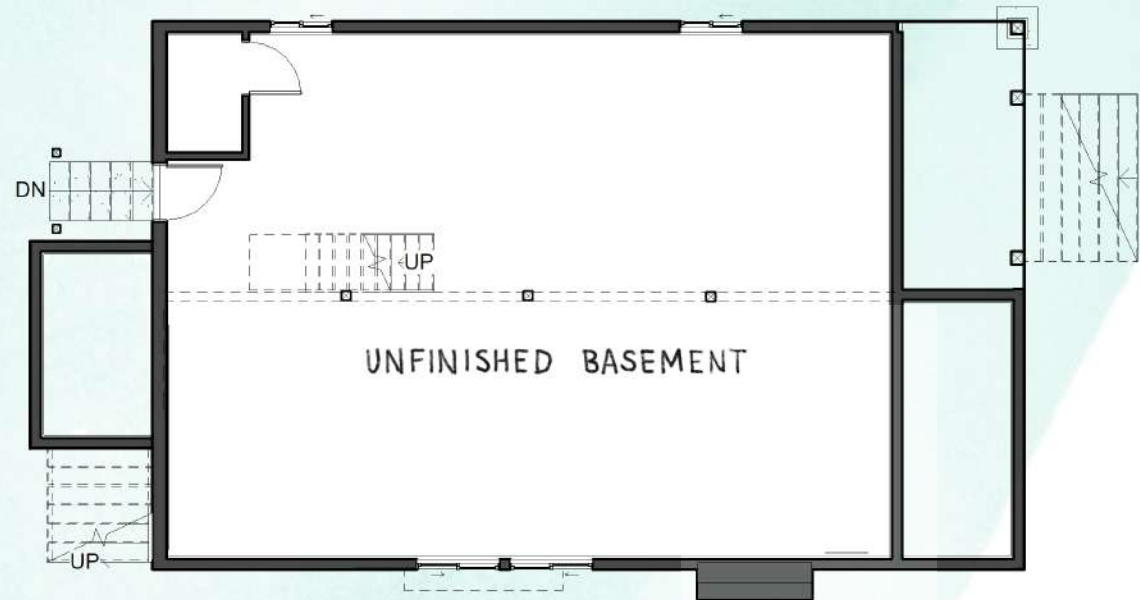
EXISTING FIRST FLOOR PLAN



PROPOSED FIRST FLOOR PLAN

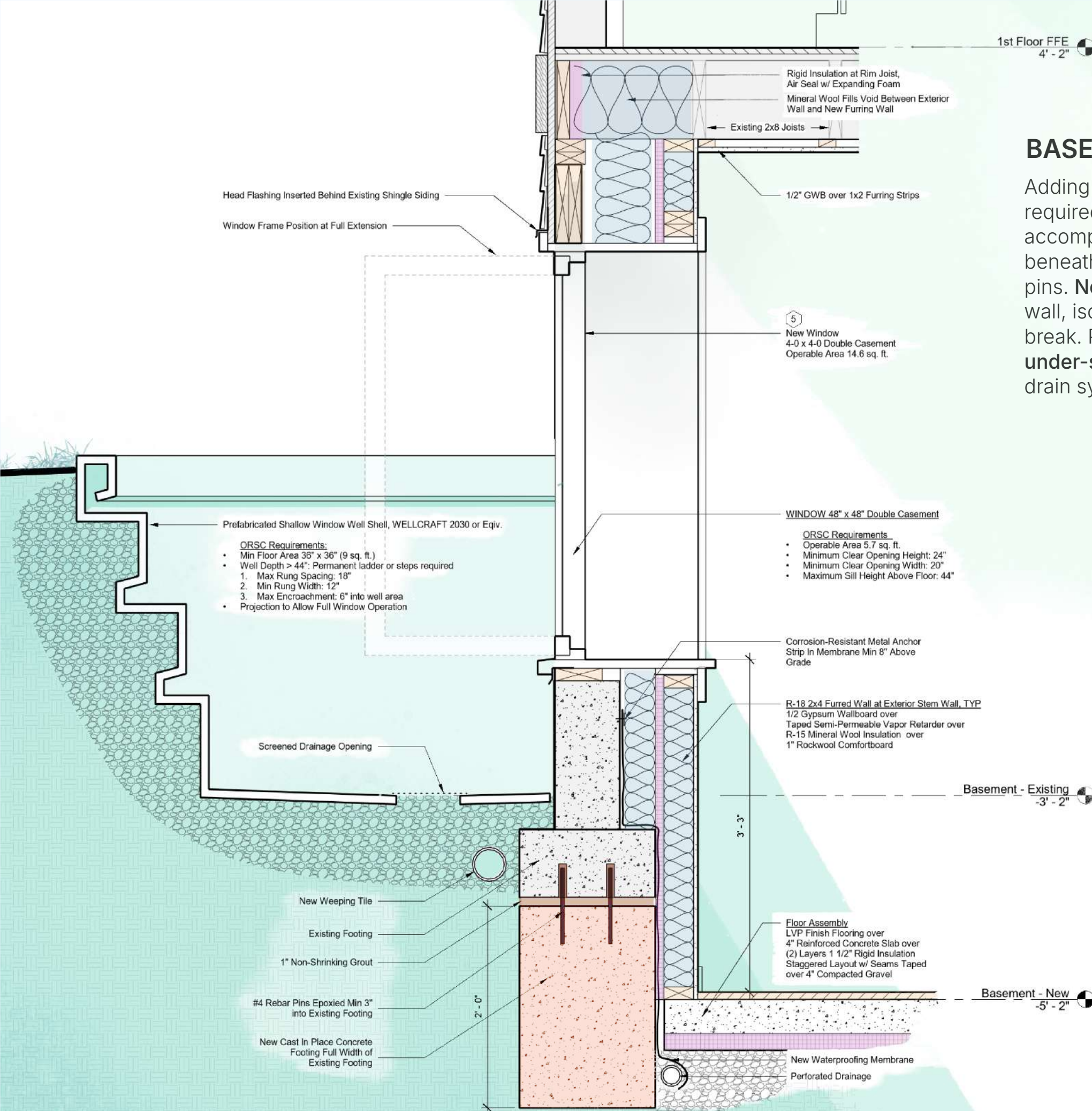


EXISTING BASEMENT FLOOR PLAN



PROPOSED BASEMENT FLOOR PLAN





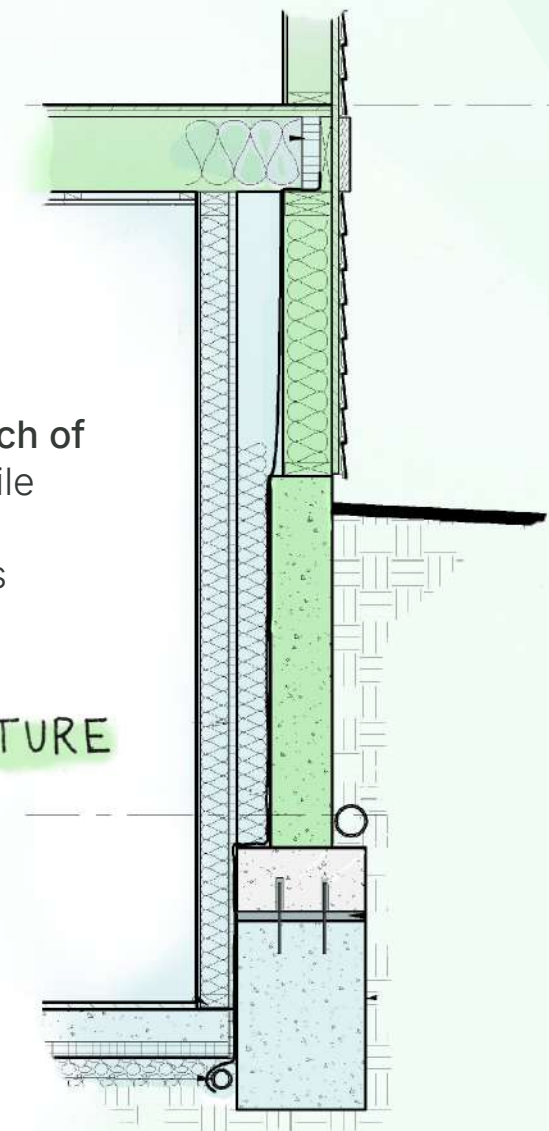
BASEMENT EXCAVATION & UNDERPINNING

Adding 800 sq. ft of new living space in the basement required lowering the floor by two feet. Structurally this is accomplished with **new bearing footings** poured beneath the existing, grouted in place over epoxied rebar pins. **New furred walls** are place over the existing stem wall, isolated by Rockwool Comfortboard as a thermal break. Pouring a new floor provides an opportunity for **under-slab insulation**, while a new internal perimeter drain system ensures moisture remains under control.

This effort **preserves much of the existing building**, while getting more living space inside the envelope that's already there.

PRESERVED STRUCTURE

NEW STRUCTURE



DAYLIGHT BASEMENT ADU

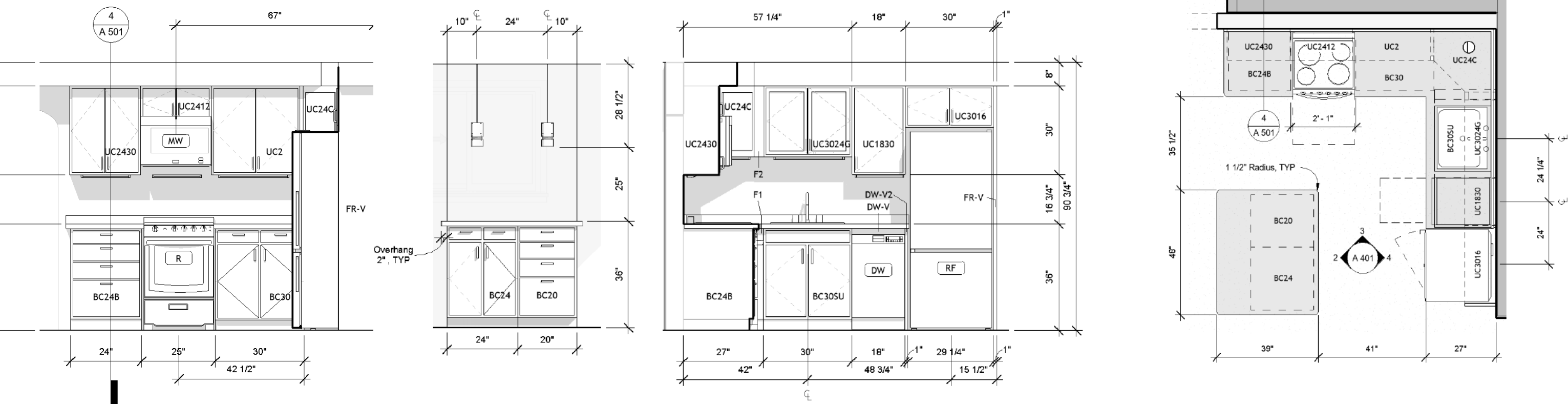
An unfinished basement in Beaverton is converted into an ADU/AirBNB unit.

Roughly half the space is allocated to the new living areas, with a walk-in closet including laundry, a full-size bathroom and generous kitchen.

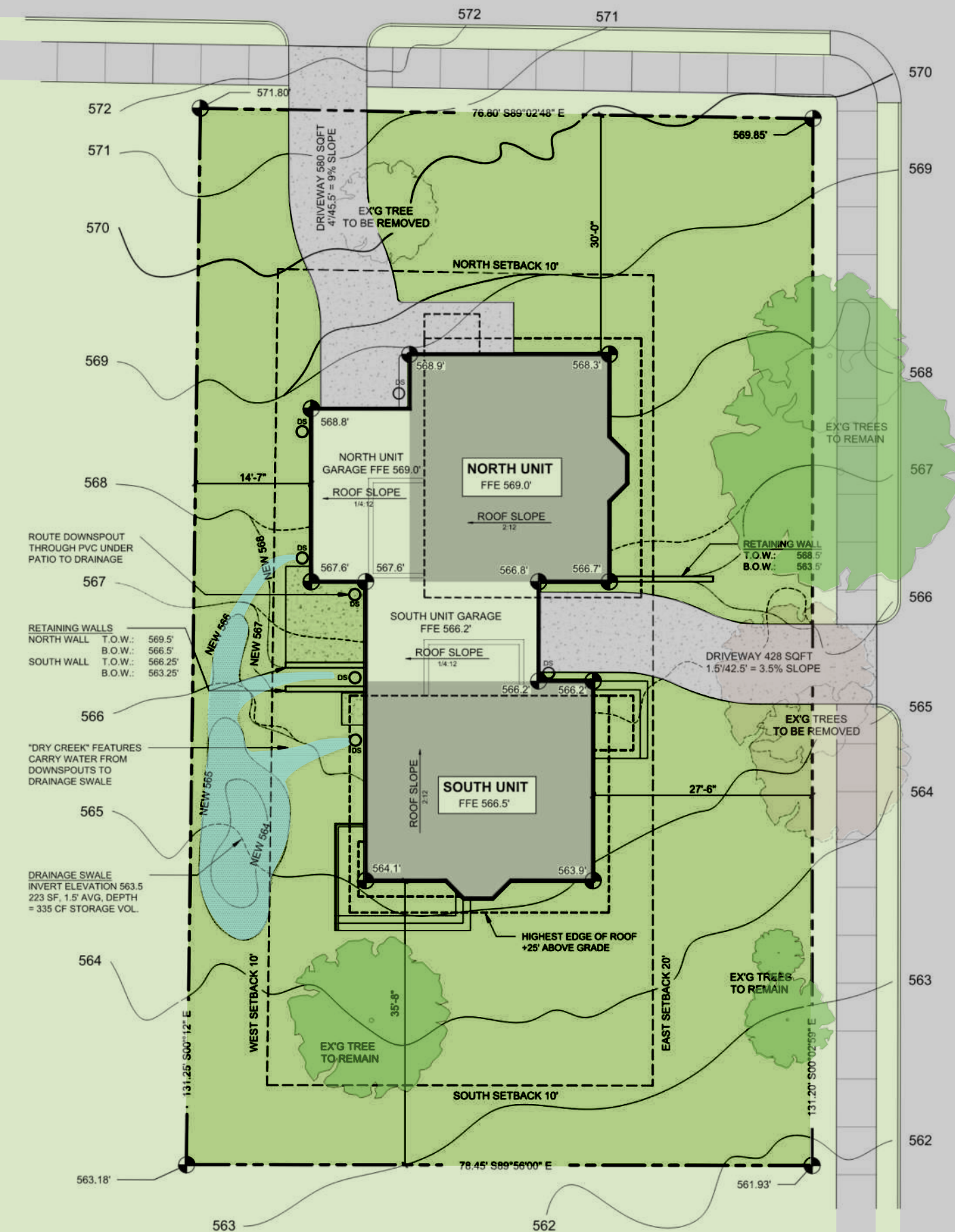
A minimal addition in keeping with the style of the home provides a secure and separate entry to the space.



KITCHEN PLANS & RENDERINGS



SW MARICARA ST



PARKSIDE LIVE/WORK/RETIRE

Each unit is adapted with a specialized focus.

The North unit features a **wheelchair-accessible first floor** and two bedroom suites on the second floor.

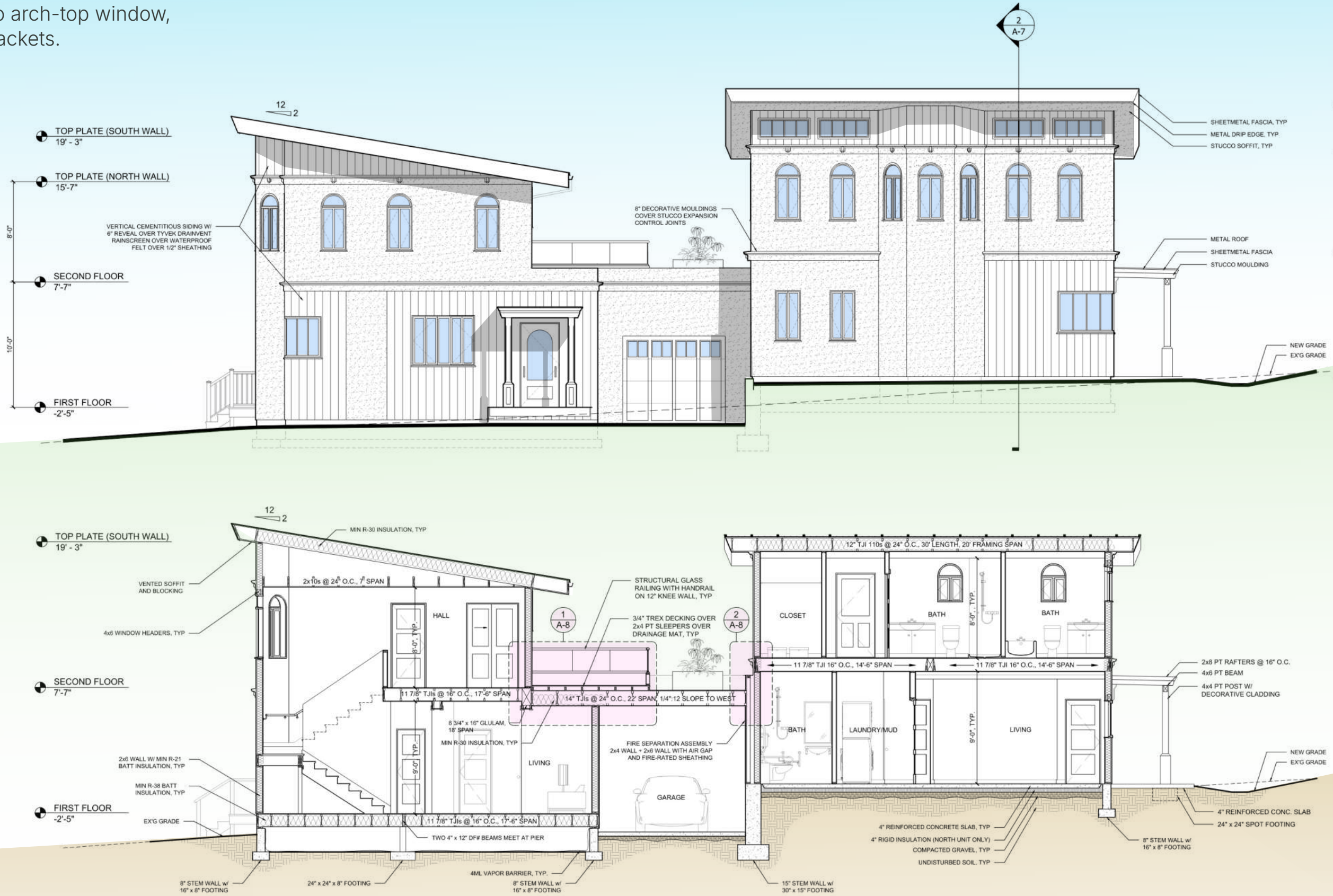
The South unit **accommodates a live/work lifestyle** with an office featuring a separate entry on the first floor and private living quarters on the second floor.



STYLE & DESIGN FEATURES

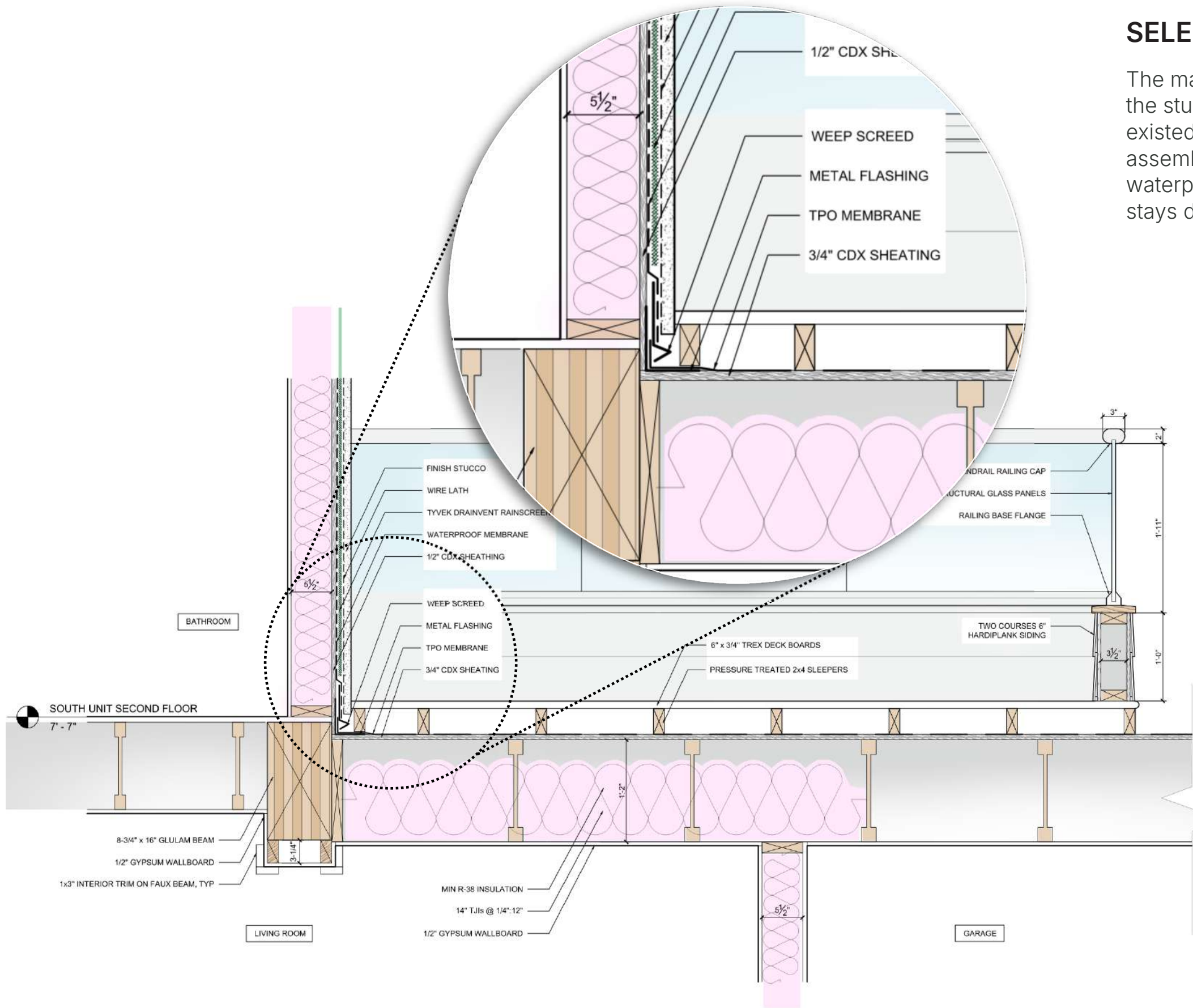
Both units have a combination stucco and vertical cementitious cladding. Standing-seam metal shed roof with a low slope provides a shade for clerestory glazing and lends modern compliment to arch-top window, stucco molding and Italianate brackets.

The South unit has a framed floor over a crawlspace while the North unit has slab-on-grade floor to facilitate wheelchair access.



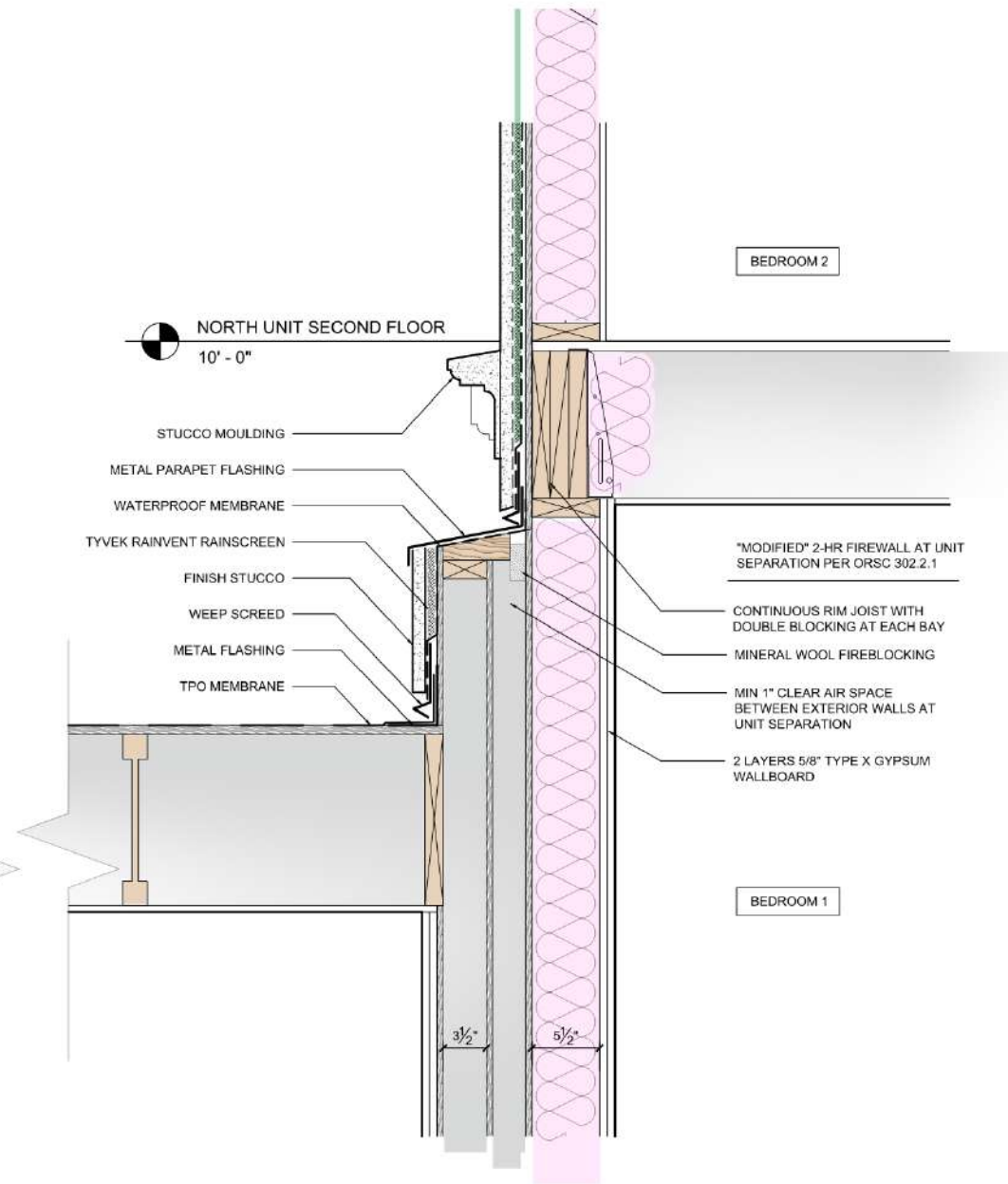
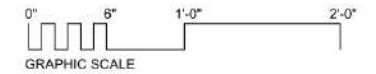
SELECTED DETAILS

The magnification to the left shows the termination of the stucco finish where a flat roof and rooftop deck existed over conditioned space. A carefully ordered assembly of rainscreen, weep screed, flashing and waterproof membrane ensures the living room below stays dry.



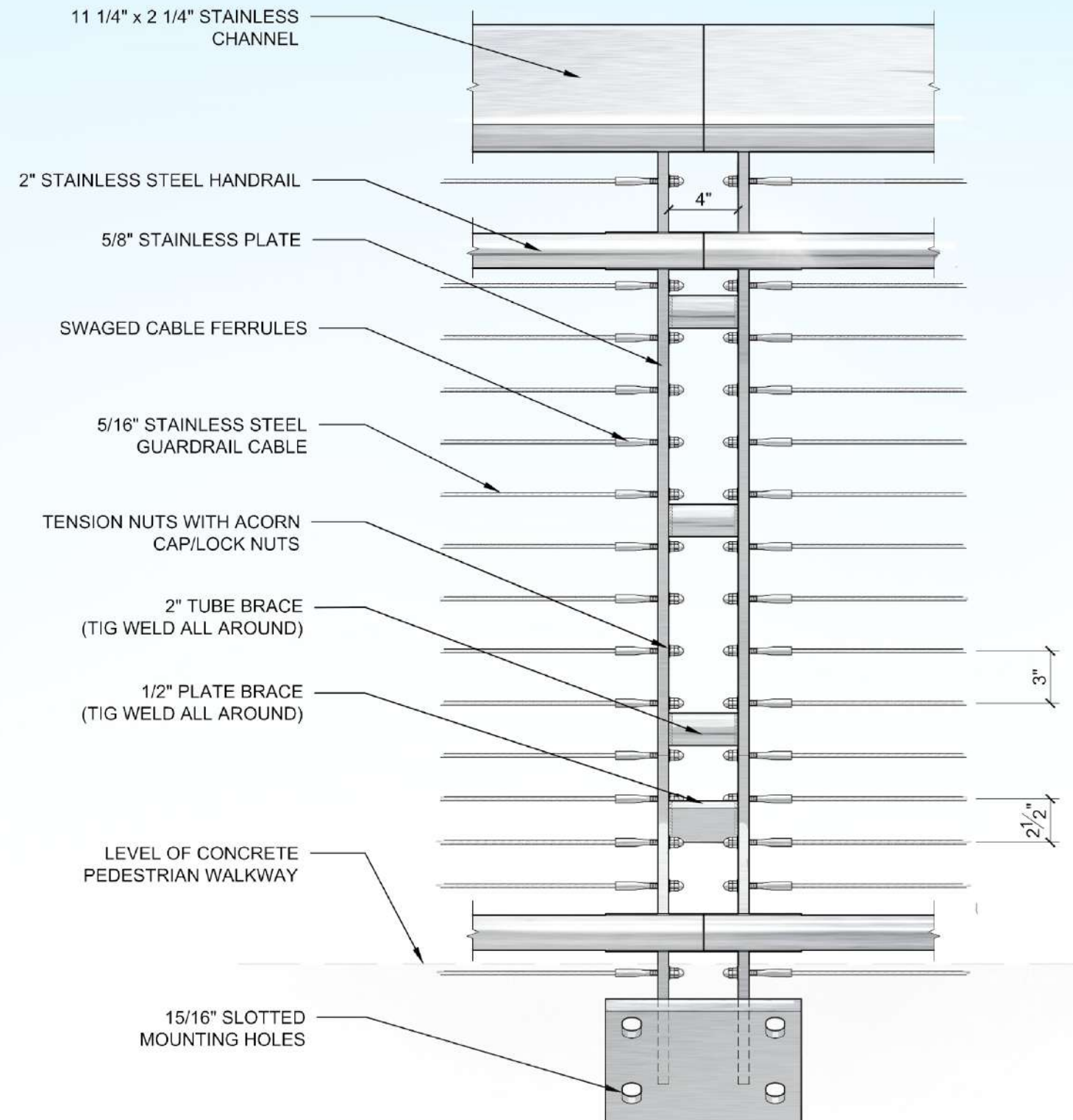
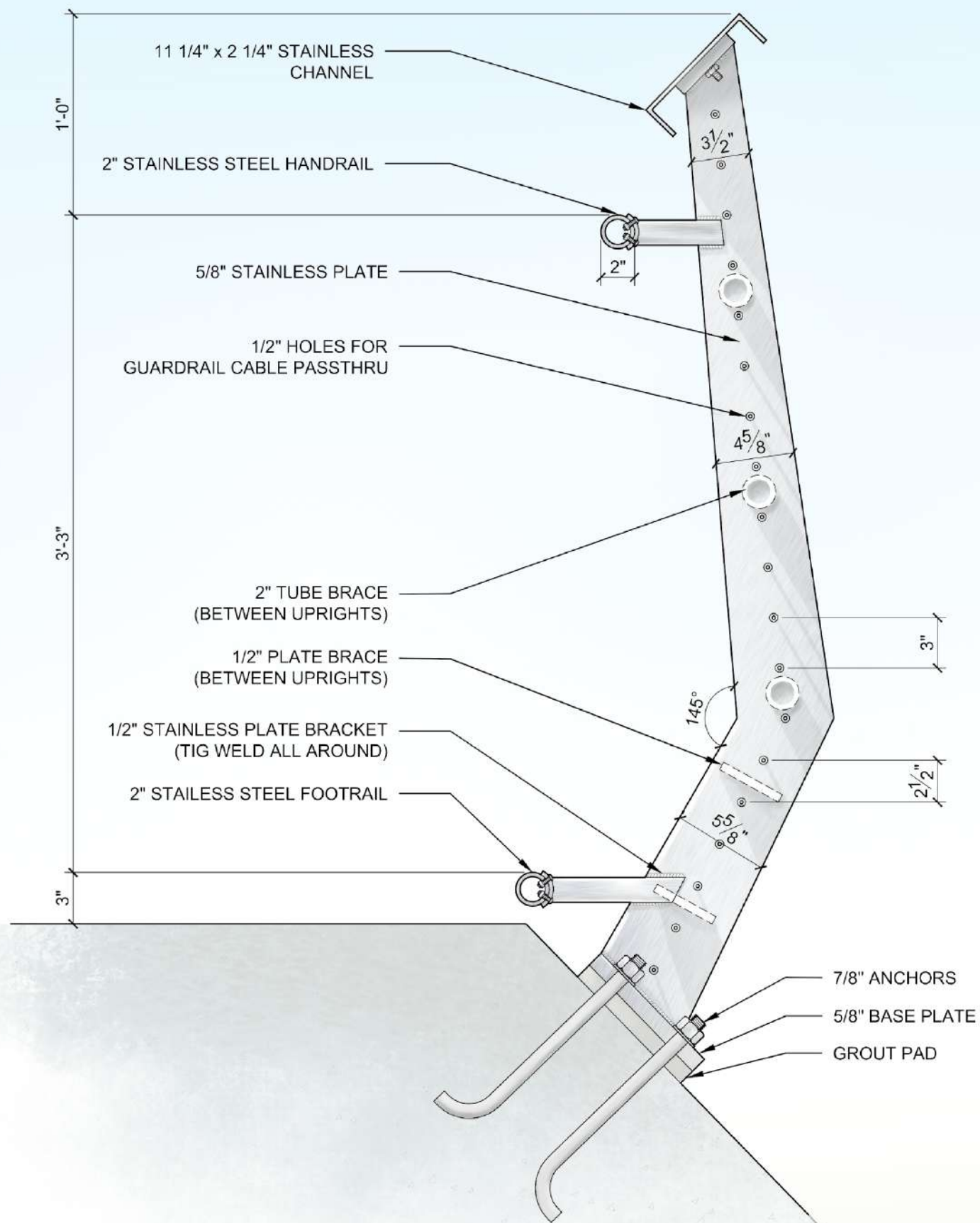
1 DETAIL AT SOUTH UNIT GARAGE ROOF

SCALE: 1 1/2" = 1'-0"



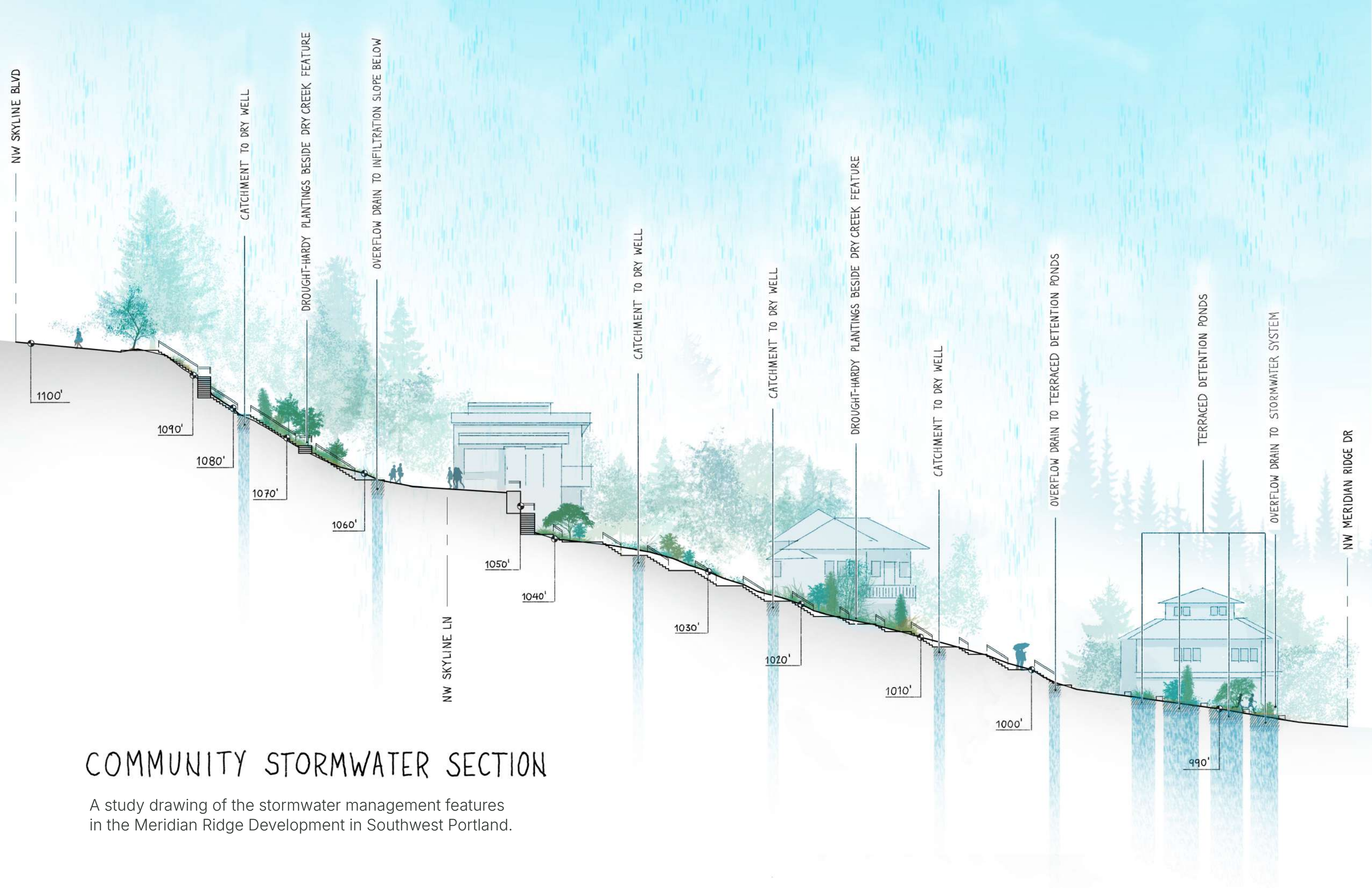
2 DETAIL AT FIRE SEPARATION WALL

SCALE: 1 1/2" = 1'-0"



TILLIKUM BRIDGE HANDRAIL DETAIL

Derived from in-person measurements and sketches, these drawings show the double-plate junction between lengths of cable handrails.

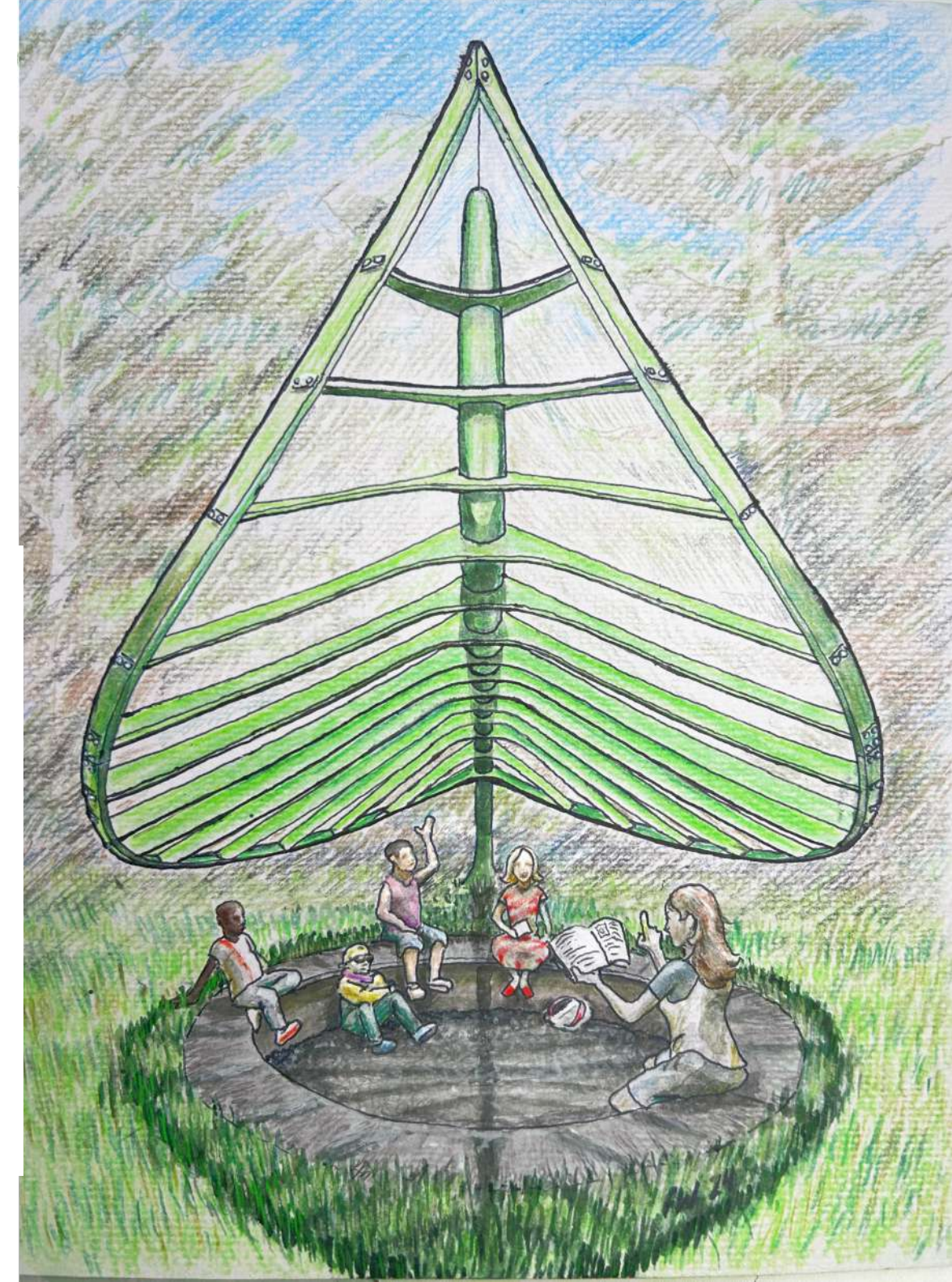
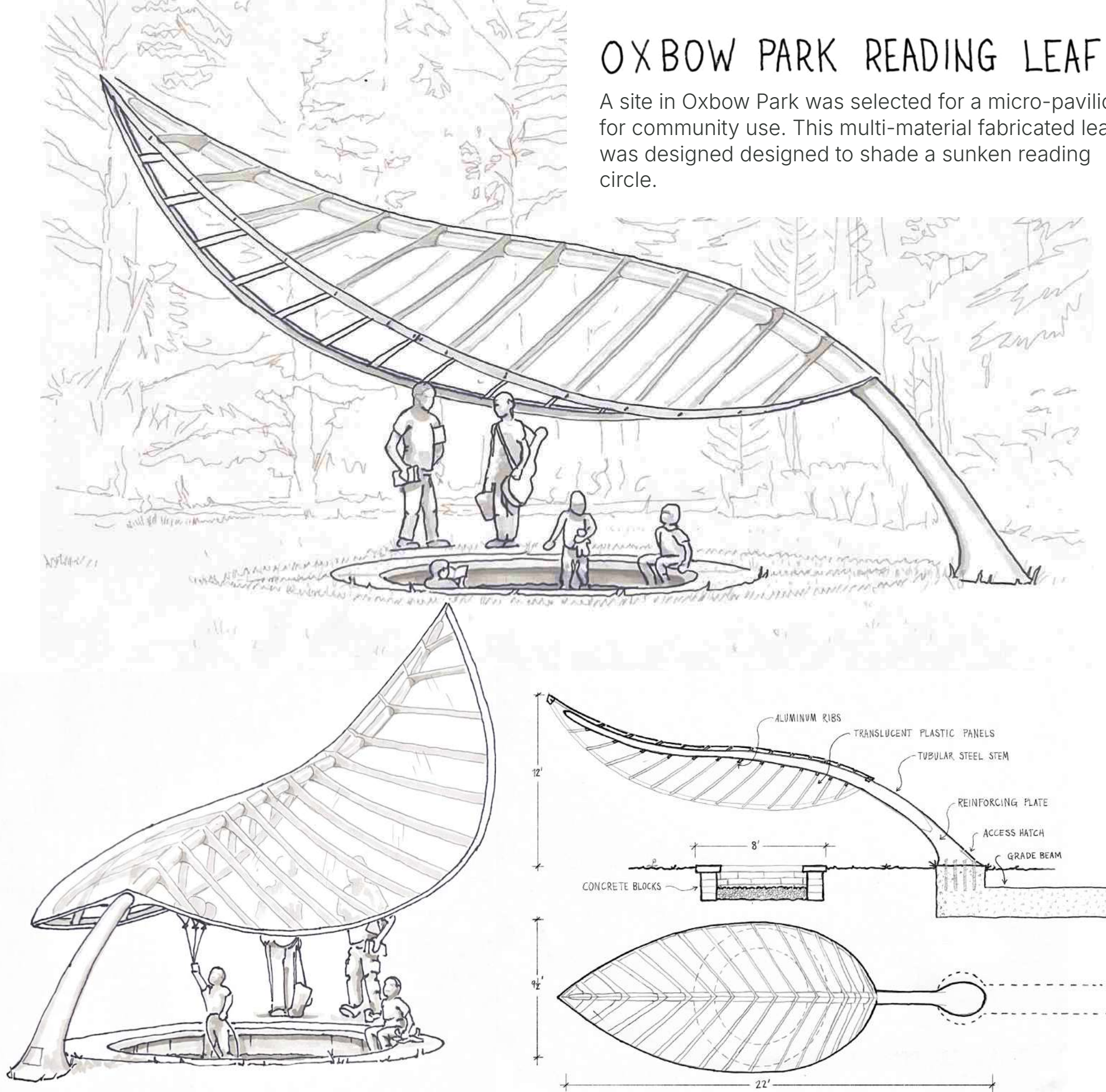


COMMUNITY STORMWATER SECTION

A study drawing of the stormwater management features in the Meridian Ridge Development in Southwest Portland.

OXBOW PARK READING LEAF

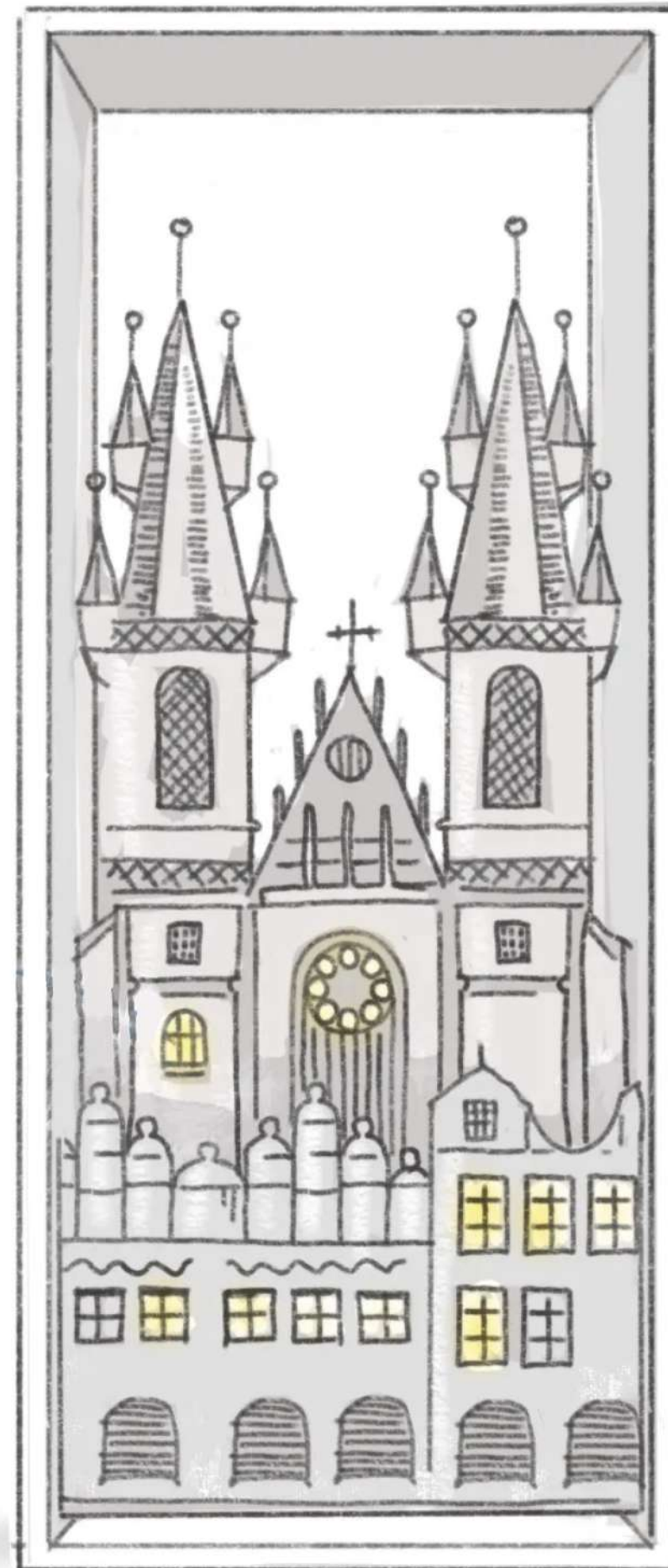
A site in Oxbow Park was selected for a micro-pavilion for community use. This multi-material fabricated leaf was designed designed to shade a sunken reading circle.



Thanks for your time.
FW

CONTACT INFORMATION

Frankie Winters
503-956-4585
frankie@winters.design



Church of the Mother of God Lightbox. Inspired by the Church of Our Lady before Týn in the Czech Republic. Designed and fabricated in 2020. 58in x 24in.

