CASE STUDY 2.0
REBUILDING LOS ANGELES

A Visionary Catalog for Resilent and Sustainable Homes

Kane AUD | Büro Ehring

INTRODUCTION

Kane AUD | Büro Ehring

Ted Kane
Principal, Kane AUD
Registered Architect
Californa #C 30359

ARCHITECT:

Kane Architecture & Urban Design (Kane AUD) is a design led pracitice with a particular focus on residential environments. Our work explores how spatial experience, material honesty, and environmental performance can come together to shape places that are both deeply personal and broadly adaptable.

From compact urban dwellings to complex multifamily housing and adaptive reuse, we bring a rigorous design process to every project — one that values context, clarity, and the lived experience of space. Our approach integrates high-performance building strategies, natural light, and passive systems with an eye toward long-term resilience. We believe in architecture that elevates the everyday, breaks from the generic, and responds with intelligence and care to its users and surroundings.

Sustainability is a core element of Kane AUD's design approach. The studio's work integrates passive design strategies, low-carbon materials, and high-performance envelope systems to reduce environmental impact while enhancing quality of life. This commitment has been recognized through multiple awards, including two NYSERDA state energy grants supporting the design of net-zero energy developments in New York — one for the adaptive reuse of a historic barn and another for a carbon-neutral hotel in the Hudson Valley. These projects reflect the firm's belief that architecture must not only respond to the present, but actively help shape a more resilient and resource-conscious future.

Ted Kane
Kane AUD is led by founder and design director Ted Kane, a licensed architect in California and New York. Ted received his Master of Architecture from UCLA, where he developed a strong foundation in experimental design and environmental responsiveness — values that continue to inform the studio's work today. With over two decades of professional experience, including more than a decade at internationally recognized firms, Ted brings a deep understanding of both the conceptual and technical dimensions of architecture. His leadership is grounded in a belief that design should be both inventive and grounded — combining innovation with a clear sense of purpose and place.

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Holger S. Schulze-Ehring
Principal Büro Ehring
DIPL.-ING., S.I.A., P.E.

STRUCTURAL ENGINEER:

Büro Ehring is a cross-disciplinary design and engineering firm specializing in innovative structures, high-performance facades, and sustainable building systems. With offices in New York City and Los Angeles, we operate at the intersection of architecture, engineering, and fabrication—challenging conventions to deliver intelligent, buildable solutions tailored to each project's ambitions.

Our team combines deep technical expertise with a design-forward mindset, collaborating closely with architects, developers, and fabricators to realize visionary ideas through reliable structural systems and efficient envelopes. Rooted in a spirit of excellence, we thrive on complexity and are committed to delivering results that seamlessly integrate performance, precision, compliance, and cost-efficiency.

Holger S. Schulze-Ehring
Structural engineer and architect, Holger Schulze-Ehring, is a principal at engineering firm Büro Ehring, where he works on national and international landmark projects, with a focus on long-span, lightweight, specialty, and facade structures. His expertise is in advanced engineering with a collaborative approach to design. He leverages his cross-disciplinary capabilities to deliver novel and specialized solutions to complex architectural challenges for his award-winning projects. A strong technical and creative background forms is considerable proficiency in engineering and designing unique and inventive structures. Mr. Schulze-Ehring was appointed to the Bedford Endowed Chair Professorship at the Rensselaer Polytechnic Institute and has served as a professor, guest lecturer, critic, and juror at numerous universities, including Columbia, Yale, and Princeton.

buroehring.com

PROJECT NARRATIVE

PAVILION HOUSE: AN ORDER OF ROOMS
Our design for Case Study 2.0 reimagines the single-family home as a collection of carefully crafted, room-sized volumes or “pavilions” linked together beneath a low, connecting roof. Inspired by the spirit of the Case Study House program, the project embraces innovation in both design and construction while seeking new architectural models for contemporary living that are efficient, adaptable, and responsive to climate and context.

In the Pavilion house each volume functions as an independent module, allowing for variation in ceiling height, natural light, and window placement to suit its specific use: tall and open for shared living spaces, compact and quiet for bedrooms, or softly illuminated for studios and retreats. Because each volume is structurally self-supporting, the layout is inherently flexible — it can adapt to different sites, evolve over time, or expand as your needs change.

At the heart of the design approach is mass timber, specifically cross-laminated timber (CLT), which serves as the structure for the walls and roof simplifying the structure by eliminating internal or seconary structural elements. The wood material creates warm, expressive spaces that can be exposed also as a finish surface saving on both cost and material use. Each CLT panel is prefabricated offsite with integrated insulation, waterproofing, and window openings, then delivered and craned into place. This streamlined “kit-of-parts” construction method allows for faster, cleaner installation with minimal disruption and waste. The result is a modular architecture that balances standardization with customization — adjusting easily to orientation, site conditions, or personal preferences without compromising the integrity of the design.

Sustainability is woven into every aspect of the project — from materials to energy systems to long-term performance. CLT offers a renewable, low-carbon alternative to concrete and steel, and the envelope is detailed to Passive House standards, minimizing thermal bridging and maximizing airtightness. Generous openings and shaded breezeways promote passive cooling and cross-ventilation, reducing reliance on mechanical systems. There is an ability to add Integrated rooftop PV systems to achieve net-zero energy use.

In wildfire-prone areas, safety and performance are inseparable, so the home is designed with a comprehensive fire-resistance strategy that includes non-combustible exterior materials, sealed and fire-rated roof assemblies, and ember-resistant ventilation systems with automatic shutoffs. Flat “blue roofs” across several volumes retain shallow pools of water that cool the structure, resist ember ignition, and provide an emergency fire-suppression reservoir. Open eaves are eliminated in favor of clean-edged parapets and fully boxed-in roof forms that mitigate fire risks.

The home is designed to be cost-competitive with conventional construction. Prefabricated CLT construction ensures dimensional accuracy, minimal waste, and fast installation. This approach achieve cost and time savings compared to traditional stick-built homes, without compromising on quality, beauty, or performance.

The Pavilion House offers more than a home — it proposes a new way of living: modular, resilient, and deeply attuned to both place and future. By combining high-performance materials, adaptable design, and fire-conscious strategies, it creates a dwelling that is protective yet open, efficient yet expressive.

PARCEL INFO & DIAGRAMS

ADDRESS: 1037 N ILLIFF STREET

PROJECT DATA

ADDRESS: 1037 N ILIFF STREET
BLOCK:51
LOT:20
ZONING DISTRICT: R1V1
APN: 4423011017
LOT SIZE: 50’ X 130’
LOT AREA: 6,500 SF

FLOOR AREA SUMMARY

BASEMENT	
GARAGE:	400 SF
HABITABLE AREA:	700 SF
LEVEL 01	2060 SF
LEVEL 02	670 SF
TOTAL RESIDENTIAL FLOOR AREA:	2730 SF

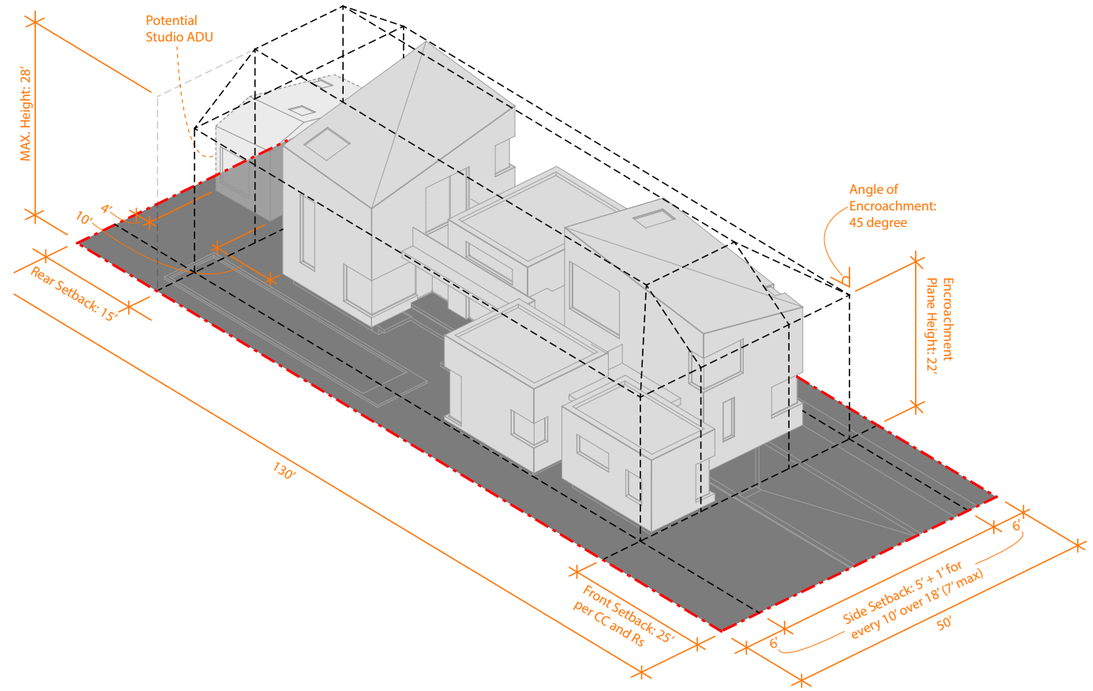
RESIDENTIAL FAR: .42

LOT COVERAGE: 2199 SF (33.8%)

PROGRAM SUMMARY

BEDROOMS: 3 BEDROOMS + FLEXIBLE ROOM
BATHROOMS: 3.5 BATH
PARKING: 2 CAR GARAGE

ZONING AND BUILDING HEIGHT DIAGRAM



ZONING REGULATIONS

APPLICABLE ZONING SECTION	ITEM	REQUIRED/PERMITTED	PROPOSED	COMPLIANCE
LOS ANGELES PLANNING SEC 12.08 A	USE REGULATIONS	ONE OR TWO FAMILY DWELLING	SINGLE FAMILY RESIDENCE + ADU	COMPLIES

BULK REGULATIONS

APPLICABLE ZONING SECTION	ITEM	REQUIRED/PERMITTED	PROPOSED	COMPLIANCE
LOS ANGELES PLANNING SEC 12.08 C.1	FRONT YARD REQUIREMENTS	25’ FRONT YARD (PER CC&R’S)	25’ FRONT YARD SETBACK	COMPLIES
LOS ANGELES PLANNING SEC 12.08 C.2	MINIMUM REQUIRED SIDE YARDS	5’ + 1’ FOR EVERY 10’ ABOVE 18’ (7’ MAX)	6’ SIDE YARD SETBACKS	COMPLIES
LOS ANGELES PLANNING SEC 12.08 C.3	REAR YARD REQUIREMENTS	15’ MINIMUM	26’ REAR YARD PROPOSED	COMPLIES
LOS ANGELES PLANNING SEC 12.08 C.5(b)	MAX RESIDENTIAL FLOOR AREA	PPCL LIMIT TO 60% OF LOT AREA= 3900	2,730 SF RFA	COMPLIES
LOS ANGELES PLANNING TABLE 12.08 C.5. (b)	MAX HEIGHT LIMITS	28’ FLAT ROOF, 33’ SLOPE ROOF	26’ MAX HEIGHT	COMPLIES
LOS ANGELES PLANNING TABLE 12.08 C.5. (c)	ENCROACHMENT PLANE	THE HOUSE CANNOT INTERSECT A 45 DEGREE ANGLE PLANE ABOVE A HEIGHT LIMIT OF 22’ FROM THE MINIMUM FRONT AND SIDES SETBACK LINE.	BUILDING IS INSIDE THE ENCROACHMENT PLANE	COMPLIES COMPLIES
LOS ANGELES PLANNING TABLE 12.08 C.5. (b)	R1V1 MAX LOT COVERAGE	48% MAX LOT COVERAGE	33.8% LOT COVERAGE	COMPLIES

DESIGN FEATURES

FIRE RESISTANCE

The design employs non-combustible exterior materials, sealed mass timber assemblies, and careful detailing to slow or prevent ignition during wildfire events. Cross-laminated timber (CLT) panels char predictably under extreme heat, maintaining structural stability and reducing collapse risk.

ROOFING

The use of natural terra cotta tile for the sloped roofs provides exceptional fire resistance, making it ideal for a wildfire-prone region like Pacific Palisades. Its durability, thermal performance, and natural materiality align with the project's sustainable goals. Terra Cotta is non-combustible and Class A fire rated.

BUILDING SIDING

A natural terra cotta tile is also used as building siding materials. The tile's ability to serve both roof and wall applications also simplifies detailing and creates a cohesive appearance across the modular forms. Natural Clay has a low emboided energy and can last 100+ years with minimal maintenance.

WINDOWS & DOORS

The use of high-performance aluminum framed glass doors and windows supports the project's goals of energy efficiency, adaptability, and visual openness. Their slim profiles maximize natural light and views while maintaining a strong thermal envelope through high U-value insulated glazing and thermally broken frames.

DEFENSIBLE SPACE INTEGRATION

The layout of our project strategically separates the dwelling volumes, using hardscape, minimal vegetation zones, and open space between modules to serve as defensible buffers. This configuration helps interrupt the spread of fire and allows access for emergency response. The foundation of the building and basement are of cast in place concrete and extends 16" above grade providing a perimeter weather and fire protection for the main structure placed above.

VENTS

The project employs a ventless roof assembly to eliminate pathways for wind-driven embers, which are a leading cause of structure ignition during wildfires. By sealing the roof system and using non-combustible insulation and sheathing, the design prevents embers from entering cavities and igniting fires from within.

EMBER-RESITANT FEATURES

All exterior openings are fitted with ember-resistant vents, screens, and sealed joints to prevent wind-driven embers from entering the structure. Roof forms are simplified to avoid ember traps, and overhangs are minimized or enclosed for added protection.

SUSTAINABILITY

The home is designed for net-zero energy performance using passive solar orientation, cross ventilation, and all-electric systems. Prefabricated mass timber components reduce construction waste and embodied carbon. The home is designed to operate off all-electric systems, with the option to connect to solar panels and battery backup — reducing carbon emissions and enhancing resilience during grid outages.

DESIGN QUALITIES

Each volume is tuned to its use — tall and open for communal spaces, compact and quiet for private ones — resulting in a spatial rhythm of contrast and connection. Natural light, material continuity, and varied ceiling heights enrich the sensory experience of the home. The spaces between the separated volumes become semi-enclosed courtyards, breezeways, and outdoor rooms that enhance natural ventilation, offer refuge during high-heat days, and expand usable living space without increasing conditioned area.

CONSTRUCTION METHODOLOGY

The home is conceived as a prefabricated kit-of-parts system using CLT panels. Each panel is delivered to the site with pre-installed windows, insulation, and waterproofing, enabling rapid, precise, and low-waste assembly. The panels are craned into place and interconnected to form self-supporting pods and covered interstitial spaces. The modular approach significantly reduces construction time and labor while offering high adaptability to various site conditions and client preferences. Pavilion size, orientation, and configuration can be adjusted without compromising design integrity, allowing a balance of standardization and customization.

EFFICENCY

Efficiency is integrated across spatial, material, energy, and construction domains. Prefabricated CLT construction ensures dimensional accuracy, minimal waste, and fast installation. Exposed CLT panels serve as both structure and finish, streamlining material use and minimizing waste. Each separated room volume is positioned to allow for natural cross-ventilation, reducing the need for mechanical cooling and improving indoor air quality. This passive strategy enhances energy performance and comfort while reinforcing the pavilion-like openness of the design.

STYLE FEATURES

The style of the house is defined by clarity, restraint, and the expressive use of natural materials. The exposed cross-laminated timber (CLT) interiors bring warmth, texture, and structural legibility to each room, while terra cotta cladding and aluminum-framed windows offer durability with a refined, tactile presence. These materials are chosen not only for performance and fire resistance, but for their ability to age gracefully — allowing the house to develop a patina over time, deepening its character and sense of place.

ADDITIONAL FIRE PROTECTIVE FEATURES

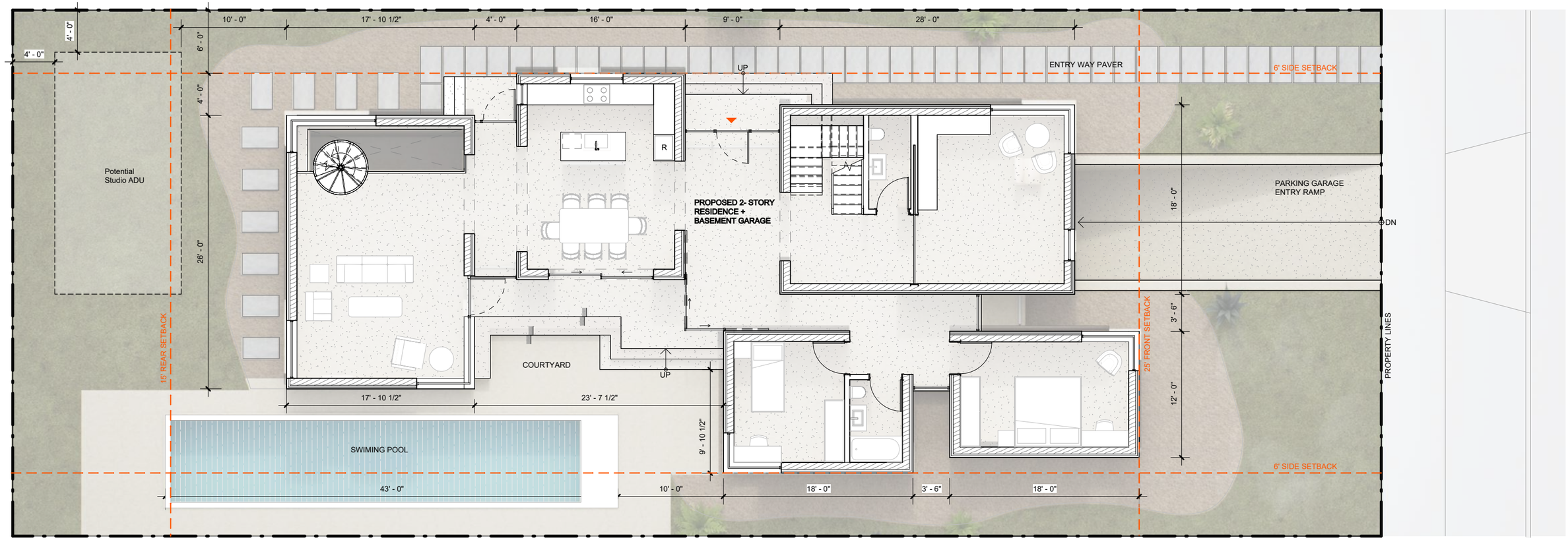
A shallow water feature is provided on three of the pavilion roofs which provide dual functions of offering a passive cooling benefit and as an emergency water source in the event of wildfire. In addition this feature brings a source of beautiful reflected sunlight into the home.

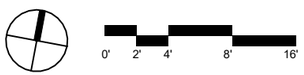
CUSTOMIZATION POTENTIAL

The modular design allows for individualized configurations based on site conditions, program needs, or future expansion. Window placement, volume scale, and interior finishes can all be adapted within the system, offering both consistency and creative freedom. Because the volumes are modular and freestanding, the home can be built in phases — allowing flexibility in budget, lifestyle, or post-disaster rebuilding. It also enables easy expansion for accessory dwellings or generational housing. Modules can be rotated or mirrored depending on site orientation, topography, or solar exposure. This adds to the system's flexibility while ensuring optimal daylighting and passive performance across different lots.

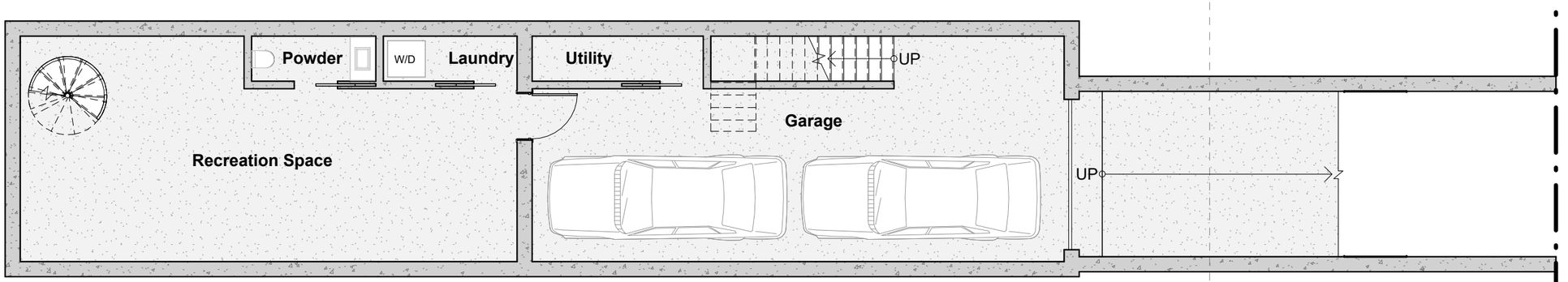
PLANS

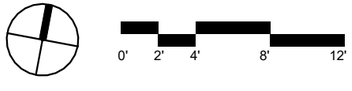
SITE PLAN


10' - 0"
17' - 10 1/2"
4" - 0"
16' - 0"
9' - 0"
28' - 0"
4' - 0"
4' - 0"
6' - 0"
4' - 0"
26' - 0"
ENTRY WAY PAVER
6' SIDE SETBACK
UP
R
Potential
Studio ADU
PROPOSED 2- STORY
RESIDENCE +
BASEMENT GARAGE
PARKING GARAGE
ENTRY RAMP
18' - 0"
DN
15' REAR SETBACK
COURTYARD
UP
3' - 6"
12' - 0"
25' FRONT SETBACK
PROPERTY LINES
17' - 10 1/2"
23' - 7 1/2"
9' - 10 1/2"
SWIMING POOL
43' - 0"
10' - 0"
18' - 0"
3' - 6"
18' - 0"
6' SIDE SETBACK

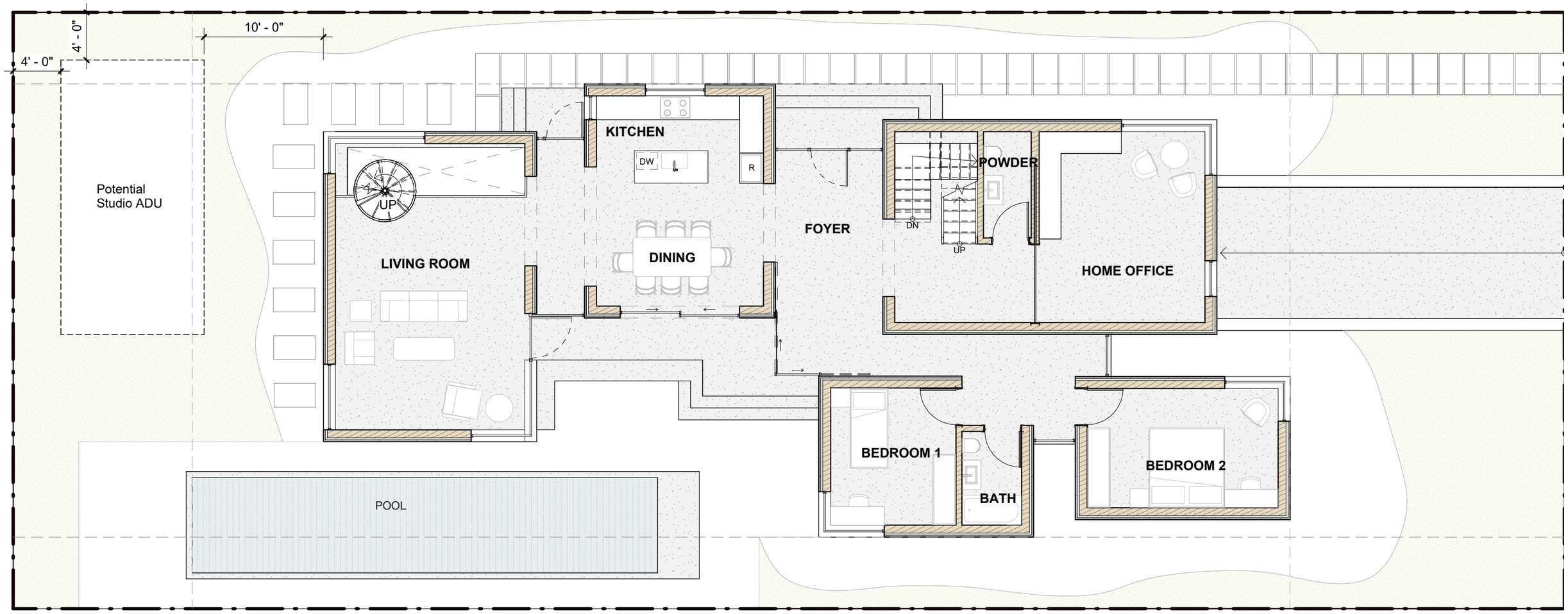

0'
2'
4'
8'
16'

BASEMENT PLAN

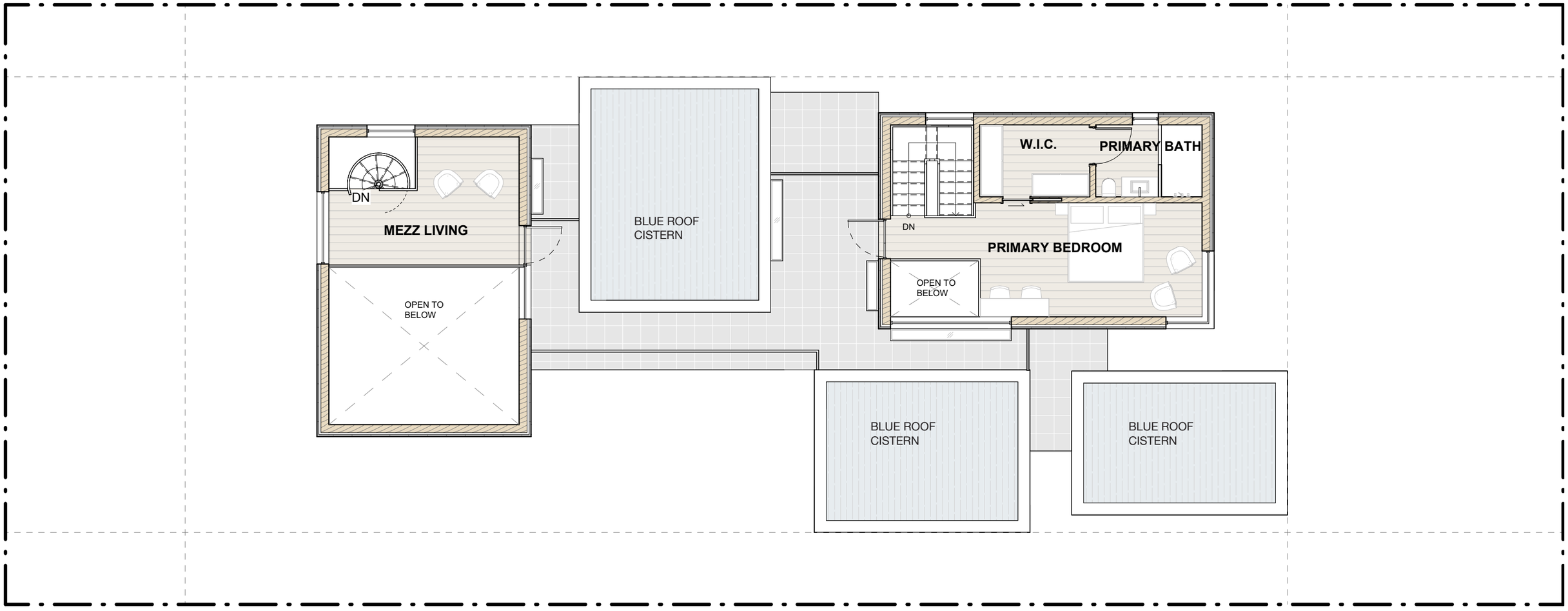




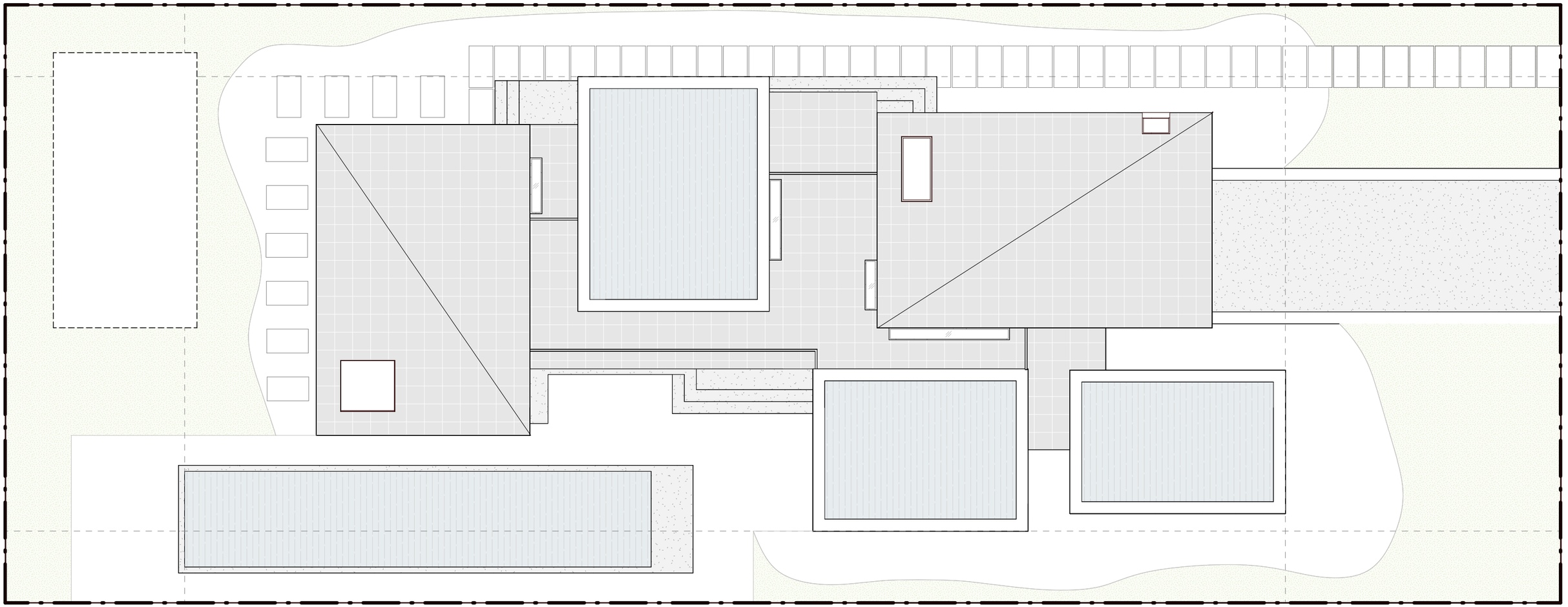
GROUND LEVEL



SECOND LEVEL

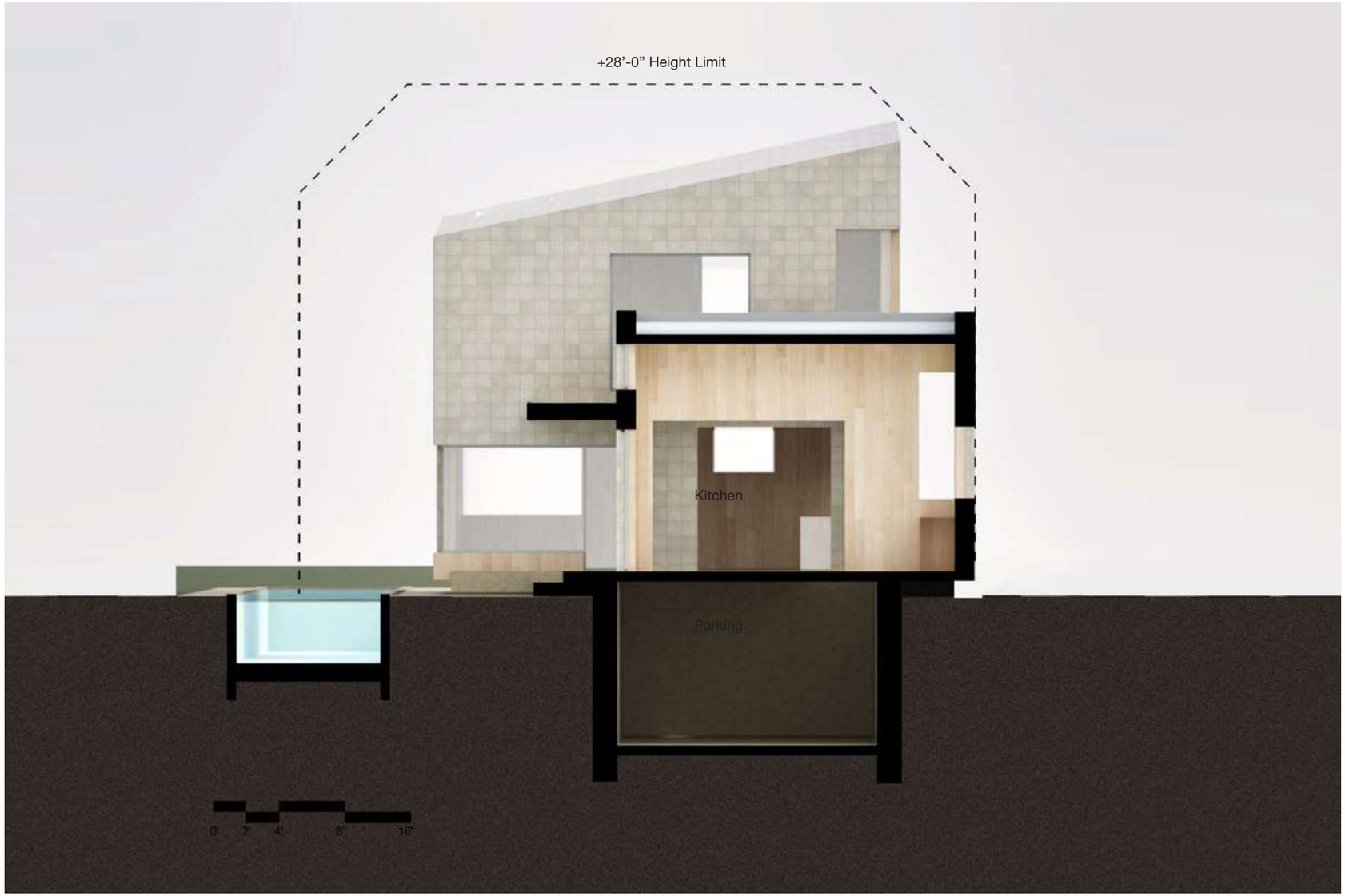


ROOF



SECTIONS


+28’-0” Height Limit
Living Mezz.
Living Room
Kitchen
Foyer
Primary Bedroom
Home Office/Guest
16’

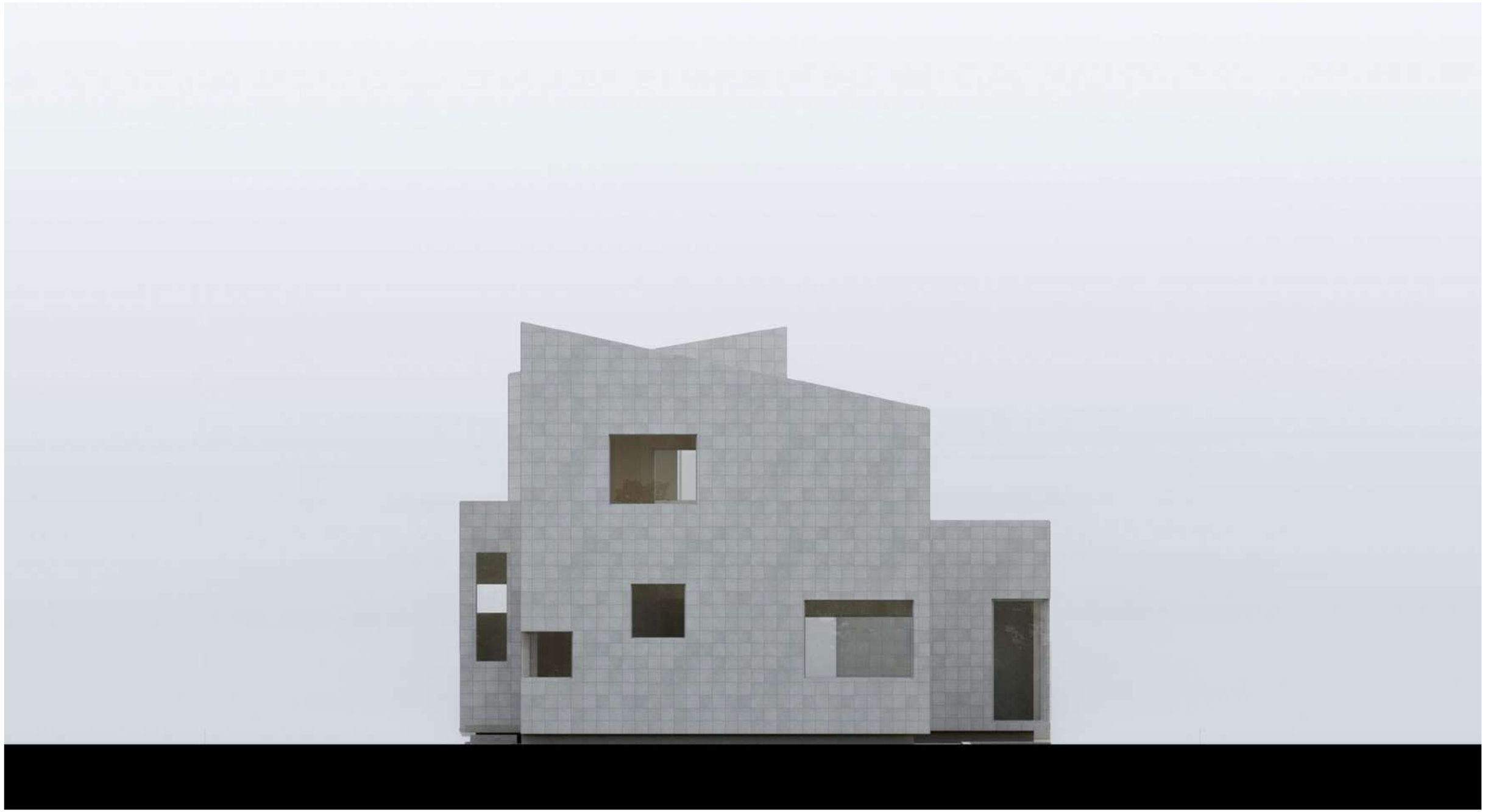

+28’-0” Height Limit
Kitchen
Parking
0
2'
4'
8'
16'

ELEVATIONS

NORTH

SOUTH

EAST



RENDERINGS