# Schematic Design Package

## Modern Tropical Raised Home — Three-Story Pier-Elevated Residence

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REVISION LOG

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SD-01

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May 7, 2026

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Initial Schematic Design Package Issued

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Permit-ready follow-up estimated in 3 weeks from schematic approval. Schematic package issued within 5 business days.

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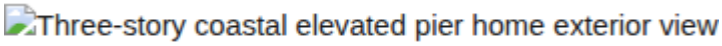


*Reference imagery — similar massing: three-story elevated pier home, coastal tropical neighborhood. Final design per this package.*

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# Section 1: Project Overview & Assumptions

## 1.1 Project Description & Design Intent

This Schematic Design Package documents the architectural concept for a bold, modern three-story tropical residence raised 11 feet above finished grade on exposed architectural concrete piers. The project is sited in a coastal tropical neighborhood characterized by similar three-story elevated massing, pier-supported structures, and varied facade colors and finishes. The design responds emphatically to its tropical coastal context through a layered architecture of transparency, natural ventilation strategy, hurricane-resilient systems, and a rich tropical plant palette integrated directly into the building's facade and ground plane.

The home is designed as a full-family primary residence with significant amenity programming: an entire under-house ground plane devoted to recreation, vehicle storage and workshop use, and spa amenities; three floors of living above; and a fully programmed rooftop terrace. The central design statement is the dramatic inset entry featuring a custom 12-foot-wide by 6-foot-tall hurricane-rated architectural door framed by a programmable multi-color neon L-accent surround — a bold nocturnal presence that simultaneously signals address, personality, and craftsmanship to the street.

## 1.2 Coastal Tropical Design Philosophy

The design philosophy is rooted in the tradition of elevated coastal vernacular architecture — homes lifted out of the flood plane, oriented to maximize cross-ventilation, and wrapped in deep shaded decks that mediate between interior and exterior. This project amplifies that tradition with a contemporary material language: smooth exposed concrete piers, crisp horizontal cement-board siding, expansive impact-rated glazing, and composite Trex decking at every level. The tropical landscape is not decorative afterthought — it is structural to the architecture, with hanging planters embedded in the facade at window level, mature citrus and fig trees organizing the ground plane, and a water feature welcoming the approach sequence from the street.

The under-house ground plane — typically a dead zone of stumps and flood vents in conventional pier homes — is here fully realized as a social, functional, and mechanical zone: a man cave, workshop, spa, and covered outdoor lounge that activates the full 11-foot clear height beneath the main floor. This inversion of the typical pier home hierarchy is the project's most distinctive organizational move.

## 1.3 Assumed Project Parameters

> **[ASSUMPTION]**
>
> All parameters in the table below are working assumptions for schematic design. Each item must be confirmed by the owner, a licensed surveyor, and/or the local Authority Having Jurisdiction (AHJ) prior to permit submittal. See Section 12 for the full Flagged Items Log.

| Parameter | Assumed Value | Source / Flag |
|---|---|---|
| Lot Width | 75 ft | [ASSUMPTION] Requires survey confirmation |
| Lot Depth | 120 ft | [ASSUMPTION] Requires survey confirmation |
| Lot Area | 9,000 SF | [ASSUMPTION] Requires survey confirmation |
| Front Setback | 20 ft | [ASSUMPTION] [REQUIRES LOCAL CODE CONFIRMATION] |
| Rear Setback | 20 ft | [ASSUMPTION] [REQUIRES LOCAL CODE CONFIRMATION] |
| Side Setbacks (each) | 7.5 ft | [ASSUMPTION] [REQUIRES LOCAL CODE CONFIRMATION] |
| Jurisdiction / Code | Coastal tropical municipality, Florida Building Code (FBC) 8th Edition equivalent or similar coastal tropical code | [REQUIRES CONFIRMATION] |
| FEMA Flood Zone | Zone AE, Base Flood Elevation (BFE) 9 ft NGVD | [ASSUMPTION] Confirm via FIRM map / LOMA |
| Finished Grade Elevation | Assumed approximately +2 ft NGVD | [ASSUMPTION] Survey required |
| Main Floor Elevation | +13 ft NGVD (grade +11 ft), above BFE by +4 ft | [ASSUMPTION] Confirm BFE offset with local floodplain administrator |
| Wind Design Speed | 150 mph (3-second gust), Exposure Category D | [ASSUMPTION] Confirm via ASCE 7-22 wind map for AHJ |
| Risk Category | Category II (Standard Residential) | Per FBC / ASCE 7-22 |
| USDA Plant Hardiness Zone | Zone 10b–11 | Consistent with tropical coastal location; confirm for specific municipality |
| Estimated Buildable Area | Approx. 60 ft wide × 80 ft deep (after setbacks) = 4,800 SF footprint max | [ASSUMPTION] |
| Proposed Building Footprint | Approx. 55 ft × 38 ft = ~2,090 SF (piers only at grade, enclosed mass at Level 1+) | To be confirmed at DD phase |
| Neighborhood Context | Three-story elevated pier homes, similar massing, varied facade colors (teal/white, coral/gray, charcoal/wood), varied footprints | Site visit observation assumed; confirm HOA/CC&R restrictions |

## 1.4 Items Requiring Site Survey or Local Code Confirmation

The following items must be resolved prior to permit submittal. This list is not exhaustive; the architect and owner should review with the AHJ at pre-application meeting.

1. Certified boundary and topographic survey including legal lot dimensions, easements, and right-of-way
2. FEMA FIRM panel number and BFE confirmation; LOMA application if finished grade elevation affects flood zone compliance
3. Local zoning setbacks, height limits, and maximum lot coverage — front, rear, and both sides
4. Maximum allowable building height (three stories + rooftop; confirm parapet height inclusion)
5. Zoning classification: confirm workshop/accessory use is allowed within the residential structure under this zoning
6. HOA or CC&R review for facade color palette, neon accent lighting, rooftop hot tub, and accessory use
7. Coastal construction setback line (CCSL) or coastal high-hazard area (CHHA) applicability
8. Septic system location vs. municipal sewer connection — confirm service availability and setback from septic if applicable
9. Utility laterals: water, sewer/septic, electric, gas — confirm locations from utility company before pier layout
10. Geotechnical report requirement: confirm soil bearing capacity, groundwater depth, and pile/caisson depth
11. Driveway apron permit and width approval from local public works or municipality
12. Neon/illuminated sign or decorative lighting permit — confirm if exterior programmable LED accent requires separate sign permit
13. Rooftop hot tub: confirm local code allows rooftop hot tubs and if structural review is separate from building permit

14. Tree removal or preservation ordinance: confirm if existing trees on lot require survey/permit before clearing
15. Environmental review: coastal lot may be subject to environmental agency review for clearing, grading, or proximity to wetlands
16. Energy code compliance path: confirm FBC Energy or IECC 2021 adopted locally and required blower door / duct leakage testing

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# Section 2: Schematic Floor Plans — All Four Levels

> Note:
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> Floor plans at this stage are schematic. All dimensions are target programming dimensions and are subject to refinement during Design Development. Room areas shown are approximate and will be confirmed via detailed drawings. North orientation assumed for rear of property.

LEVEL 0 — UNDER-HOUSE / GROUND PLANE

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11 ft Clear Height Below Main Floor

### 2.1 Level 0 Narrative Description

Level 0 occupies the full footprint beneath the elevated main living floor. With 11 feet of clear structural height, this zone is designed as a high-performance, multi-use ground plane — far beyond the utilitarian storage typical of pier-elevated homes. The under-house experience begins at the street: a crushed shell and concrete-aggregate pathway leads visitors between two flanking orange trees, past a shallow water

feature basin, and into the dramatic inset entry alcove. The arrival sequence is organized around the 12-foot-wide by 6-foot-tall hurricane-rated aluminum-and-glass entry door, which is wrapped on its left vertical edge and full horizontal header by a programmable DMX neon L-accent surround (see Section 8 for full lighting specification).

Moving inward from the entry alcove, the open-plan Man Cave / Hangout Lounge occupies the largest zone at approximately 600 SF, anchored by a 12-linear-foot bar along the rear wall with undercounter refrigeration, a single bowl stainless sink, and tiered glass-panel shelving backlit by RGB LED strip. A lounge seating area with wall-mounted AV system flanks the bar zone. Adjacent to the lounge is the Vehicle Workshop — a minimum 24-ft deep by 14-ft wide clear bay sized to accommodate one classic Dodge Charger (approximately 16 ft 8 in length × 6 ft 3 in width) with full perimeter clearance and a center hydraulic lift area. The workshop features epoxy-sealed concrete floors with flake aggregate, tool storage wall panels, compressed air rough-in, and its own 200-amp sub-panel. A spa / hot tub zone — recessed timber-composite deck with a 6-person in-ground spa — occupies the south perimeter, served by an adjacent equipment closet. An ADA-adaptable full bathroom (approximately 80 SF) serves both the lounge and spa zones. A 4-ft-minimum-width Trex composite perimeter walkway wraps the entire under-house perimeter.

Vehicle access to the workshop is via an 18-ft-wide concrete apron from the driveway, passing under the elevated floor structure. The workshop bay features a roll-up overhead door. The stair tower providing access to Level 1 is positioned at the north-central bay, featuring open-riser tropical hardwood treads on a steel stringer, 12-step flight, with a lockable 10 ft × 8 ft enclosed storage room occupying the volume beneath the stair run.

### 2.2 Level 0 Room Program Table

| Room / Zone | Approx. Dimensions | Approx. SF | Key Notes |
|---|---|---|---|
| Entry Arrival Zone / Crushed Shell Path | 12 ft wide × 20 ft deep (outdoor) | 240 SF (outdoor) | Crushed shell surface; flanked by orange trees and water feature; connects street to alcove |
| Inset Entry Alcove | 14 ft wide × 6 ft deep × 11 ft tall | 84 SF | Houses 12 ft × 6 ft hurricane-rated entry door; neon L-accent surround on left and top; recessed from main facade |
| Stair Tower — Exterior Stair | 6 ft wide × 12 ft deep | 72 SF | 12-step flight, open-riser tropical hardwood treads, steel stringer, 42-in guardrail, leads to Level 1 landing |

| Room / Zone | Approx. Dimensions | Approx. SF | Key Notes |
|---|---|---|---|
| Under-Stair Storage Room | 10 ft × 8 ft | 80 SF | Lockable, hurricane tie-down rated shelving, climate-modified, concrete block or framed walls |
| Man Cave / Hangout Lounge | 30 ft × 20 ft (open plan) | 600 SF | Bar (12 LF), lounge seating, wall-mounted AV; 3000K LED recessed; open to workshop on one wall via pass-through opening |
| Bar Zone (within lounge) | 12 LF × 3 ft deep | 36 SF (within lounge) | Sink, undercounter refrigerator, shelving, RGB LED back-bar lighting |
| Vehicle Workshop | 24 ft deep × 16 ft wide clear | 384 SF | Hydraulic lift area (center), tool storage walls, epoxy floor, compressed air rough-in, 200A sub-panel, roll-up door |
| Hot Tub / Spa Zone | 18 ft × 14 ft (deck + spa) | 252 SF | 6-person in-ground spa, recessed Trex deck surround, salt-chlorine system, separate equipment closet |
| Spa Equipment Closet | 6 ft × 5 ft | 30 SF | Salt cell, pump, heater, electrical disconnect; weatherproof enclosure |
| Accessible Full Bathroom | 10 ft × 8 ft | 80 SF | ADA-adaptable: shower with fold-down seat, toilet, vanity; waterproof tile; moisture-resistant materials throughout |
| Trex Perimeter Walkway | 4 ft wide, full perimeter | ~440 SF | Trex Transcend Tropics, hidden fasteners, code guardrail at open sides |
| Water Feature Zone | 8 ft × 4 ft basin + 4 ft surround | ~64 SF | Precast concrete basin, mosaic tile interior, recirculating pump, LED underwater lighting |
| **Level 0 Total (enclosed + covered)** | | **~2,082 SF** | Excludes outdoor entry pathway; includes all covered under-house area |

## LEVEL 1 — MAIN LIVING FLOOR

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Approx. 12 ft Floor-to-Floor Height

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Elevation: ~+13 ft NGVD

## 2.3 Level 1 Narrative Description

Level 1 is the heart of the residence — the primary social and living floor, elevated 11 feet above grade and well above the Base Flood Elevation. The floor plan is organized around an open-plan Great Room / Living / Dining zone of approximately 900 SF that flows seamlessly through impact-rated sliding glass walls to a covered front Trex deck (24 ft × 12 ft) on the south facade and a covered rear Trex deck (20 ft × 10 ft) on the north. The kitchen — approximately 300 SF — opens directly to the great room and features a large central island with counter seating, a walk-in pantry, and a hurricane-rated pass-through window to the front deck for outdoor entertaining.

The Master Suite occupies the west wing of Level 1 at approximately 500 SF including its en-suite master bath (dual vanity, soaking tub, frameless glass shower, private water closet) and a full walk-in closet. Guest Suite 1 is positioned in the east wing at approximately 300 SF with its own en-suite bath. A Laundry and Utility room of approximately 120 SF is centrally located near the master suite and mechanical chase. The mechanical/electrical room — approximately 80 SF — is positioned in a protected interior location, elevated above BFE, housing the main electrical panel, HVAC air handler for Level 1, and plumbing distribution manifolds. Hanging garden planters at window level animate the front facade from Level 1, with drip irrigation lines running within the facade assembly.

## 2.4 Level 1 Room Program Table

| Room / Zone | Approx. Dimensions | Approx. SF | Key Notes |
|---|---|---|---|
| Great Room / Living / Dining (Open Plan) | 45 ft × 20 ft | 900 SF | 10 ft ceilings; impact sliding glass walls to front and rear decks; large-format porcelain tile floor |
| Kitchen | 20 ft × 15 ft | 300 SF | Central island (8 ft × 4 ft) with seating; pantry (5 ft × 6 ft within); pass-through window; quartz countertops |
| Pantry (within kitchen) | 5 ft × 6 ft | 30 SF | Shelving, hurricane-rated door; included in kitchen SF above |
| Master Suite (Bed + Bath + WIC) | 28 ft × 18 ft total | 504 SF | Bedroom ~280 SF; en-suite bath ~120 SF (dual vanity, soaking tub, glass shower, WC); WIC ~104 SF |
| Master En-Suite Bath | 12 ft × 10 ft | 120 SF | Within master suite; dual vanity, soaking tub, frameless glass shower, private water closet; full tile |
| Master Walk-In Closet | 13 ft × 8 ft | 104 SF | Within master suite; built-in shelving system, center island optional |

| Room / Zone | Approx. Dimensions | Approx. SF | Key Notes |
|---|---|---|---|
| Guest Suite 1 (Bed + En-Suite) | 18 ft × 16 ft | 288 SF | En-suite bath included (~60 SF); engineered hardwood floor |
| Guest Bath 1 | 8 ft × 8 ft | 64 SF | Within guest suite; tub/shower combo, vanity, toilet |
| Laundry / Utility Room | 12 ft × 10 ft | 120 SF | Side-by-side washer/dryer, utility sink, upper cabinets, folding counter |
| Mechanical / Electrical Room | 10 ft × 8 ft | 80 SF | Main electrical panel (400A), HVAC air handler, plumbing manifold; elevated above BFE; lockable |
| Entry Vestibule / Stair Landing | 10 ft × 8 ft | 80 SF | Top of exterior stair; transition to interior; impact-rated entry door to living area |
| Covered Front (South) Trex Deck | 24 ft × 12 ft | 288 SF | Trex Transcend, hanging garden planters at rail/window level, overhead soffit with accent lighting |
| Covered Rear (North) Trex Deck | 20 ft × 10 ft | 200 SF | Trex Transcend, connects to rear stair to rooftop; impact-rated glass guardrail optional |
| Corridor / Circulation | — | ~120 SF | Connecting hallways between bedroom wings and main living |
| **Level 1 Total (enclosed conditioned)** | | **~2,092 SF** | Excludes covered decks; above BFE; all mechanical elevated |

LEVEL 2 — UPPER FLOOR

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Approx. 10 ft Floor-to-Floor Height

### 2.5 Level 2 Narrative Description

Level 2 is the private upper residential floor, housing the Primary Bedroom Suite and two additional bedrooms. The Primary Suite — the most architecturally prominent room on this level — occupies approximately 600 SF and includes a private covered terrace (16 ft × 10 ft) accessed through impact-rated sliding glass doors, a full en-suite bath with a freestanding soaking tub, double shower with frameless enclosure, double vanity, and a generous walk-in closet. The terrace provides treetop views across the neighborhood and a private outdoor sleeping or meditation space. Bedroom 3 is a full

bedroom at approximately 280 SF with its own full bath. Bedroom 4 / Flex Office at approximately 260 SF is designed to serve as either a dedicated home office or a fourth sleeping room, with built-in millwork shelving along one wall to support desk configuration. A central corridor and stair landing of approximately 120 SF connects all rooms to the vertical circulation core.

### 2.6 Level 2 Room Program Table

| Room / Zone | Approx. Dimensions | Approx. SF | Key Notes |
|---|---|---|---|
| Primary Bedroom Suite (total) | 30 ft × 20 ft total zone | 600 SF | Bedroom ~280 SF; en-suite bath ~160 SF; walk-in closet ~160 SF; private terrace separate below |
| Primary En-Suite Bath | 16 ft × 10 ft | 160 SF | Freestanding soaking tub, double shower (frameless, 4 ft × 5 ft each head), double vanity 72 in, water closet; full tile |
| Primary Walk-In Closet | 16 ft × 10 ft | 160 SF | Custom built-in system; island optional; dressing area |
| Private Upper Terrace (off Primary) | 16 ft × 10 ft | 160 SF | Covered; Trex Transcend decking; impact glass sliding door from bedroom; code guardrail 42 in |
| Bedroom 3 | 16 ft × 17 ft | 272 SF | Full bath en-suite; engineered hardwood; impact-rated window |
| Bedroom 3 Full Bath | 8 ft × 8 ft | 64 SF | Tub/shower, vanity, toilet; within bedroom 3 SF above |
| Bedroom 4 / Flex Office | 16 ft × 16 ft | 256 SF | Built-in shelving for office config; closet; engineered hardwood; impact window |
| Corridor / Stair Landing | — | 120 SF | Open railing to stair below; linen closet niche; connects all rooms |
| Stair to Rooftop | 6 ft wide flight | ~50 SF (plan area) | Continues vertical circulation core to Level 3 rooftop; open-riser hardwood treads consistent with main stair |
| **Level 2 Total (enclosed conditioned)** | | **~1,248 SF** | Excludes private terrace; full hurricane envelope |

## LEVEL 3 — ROOFTOP PATIO

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Outdoor Unconditioned

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Approx. Elevation: +35 ft NGVD

### 2.7 Level 3 Rooftop Narrative Description

The rooftop level is a fully programmed outdoor terrace of approximately 1,200 SF of Trex composite decking, designed for elevated entertaining, wellness, and panoramic tropical views. The structural rooftop slab is designed as a reinforced concrete system capable of supporting all imposed loads, with a dedicated 12 ft × 12 ft structural zone in the northeast quadrant reinforced for the full wet weight of a 6-person hot tub (design load 120 psf over the hot tub footprint, per structural engineer's direction). This zone features a raised platform of Trex decking surrounding the spa, with a separate mechanical equipment closet adjacent.

An outdoor kitchen and wet bar anchors the south edge with 8 linear feet of weather-resistant countertop, a built-in grill, undermount sink, and compact refrigerator. A generous lounge zone with weather-proof furniture occupies the center of the deck, shaded by a pergola structure — a free-standing powder-coated aluminum frame with polycarbonate or open-slat shade members. A mechanical screen wall of painted CMU or composite panel screens HVAC equipment, electrical sub-panel, and utility connections from view. The rooftop perimeter is protected by a 42-inch minimum hurricane-rated guardrail system, with code parapet integral to the structural wall system on all sides. String lighting, recessed deck lights, and hot tub underwater LED color systems complete the night-time ambiance.

### 2.8 Level 3 Room Program Table

| Zone | Approx. Dimensions | Approx. SF | Key Notes / Design Load |
|---|---|---|---|
| Main Rooftop Deck (Trex) | ~48 ft × 25 ft total | 1,200 SF | Trex Transcend Tropics, hidden fasteners, sloped to scuppers |

| Zone | Approx. Dimensions | Approx. SF | Key Notes / Design Load |
|---|---|---|---|
| Hot Tub / Spa Zone (reinforced slab) | 12 ft × 12 ft | 144 SF | 120 psf design load; 6-person spa, salt-chlorine system; raised Trex platform surround; 240V/50A circuit |
| Spa Equipment Closet (rooftop) | 5 ft × 4 ft | 20 SF | Salt cell, pump, heater, GFCI disconnect; weatherproof rated enclosure |
| Outdoor Kitchen / Wet Bar | 8 LF × 3 ft deep | 24 SF | Built-in grill, sink, undercounter refrigerator, 8 LF weather-resistant countertop; 20A circuit per appliance |
| Lounge / Seating Zone | 20 ft × 16 ft | 320 SF | Weather-resistant furniture; centered on rooftop; within pergola shade zone |
| Pergola / Shade Structure | 20 ft × 16 ft | 320 SF | Powder-coated aluminum frame, open slat shade members; string light support; hurricane-rated anchor to structural slab |
| Mechanical Screen Wall Zone | 12 ft × 4 ft | 48 SF | CMU or composite panel screen; houses HVAC condensers, rooftop sub-panel (100A), utility connections |
| Perimeter Parapet / Guardrail | 42 in height, full perimeter | — | Hurricane-rated anchoring; 42 in min per FBC; parapet integral to building envelope at edges |
| **Level 3 Total (rooftop outdoor)** | | **~1,200 SF deck** | Structural slab below; all load conditions to be confirmed by structural EOR |

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# Section 3: Exterior Elevations & Perspectives

> Note to Drafter / Renderer:
>
> The following narrative descriptions provide complete guidance for drawing each elevation and producing rendering perspectives. Dimensions are schematic; confirm against plan development. All glazing shown as impact-rated laminated insulated

> units in aluminum frames. All decking shown as Trex Transcend composite. Neon L-accent shown as continuous LED neon flex line in aluminum channel.

## 3.1 Front (South) Elevation

**Overall Composition:** The front elevation reads as a bold three-story tower of horizontal layering rising from exposed concrete piers. At grade, eight to ten smooth cylindrical 12-inch-diameter concrete piers emerge from the landscaped ground plane at approximately 8-foot on-center spacing, painted or left in natural light gray exposed aggregate finish. The piers rise to the underside of the Level 1 floor structure at +11 ft above grade, creating a dramatic colonnade effect. The under-house zone between piers is visible, revealing the lush water feature, the inset entry alcove, the Trex perimeter walkway, and the spa deck zone.

**Entry Alcove:** Centered on the facade at the ground level, the inset entry alcove is recessed approximately 6 feet behind the primary pier line. The alcove is 14 feet wide and reveals the 12-foot-wide by 6-foot-tall architectural entry door — a custom thermally broken aluminum frame with a grid of frosted laminated glass panels, backlit by warm LED to create a glowing lantern effect at night. Flanking the left vertical edge of the door frame and wrapping across the full horizontal header is the neon L-accent surround: a continuous run of DMX addressable RGB LED neon flex mounted in a brushed aluminum channel with opal diffuser. At night this forms a luminous "L" of programmable color — electric teal by default, transitioning through gold, coral, violet on seasonal or app-controlled programming. Dimensions of the L: approximately 6 ft vertical left leg + 12 ft horizontal header run = 18 LF total.

**Level 1 Facade:** Above the pier line, the Level 1 facade is clad in smooth James Hardie HZ10 cement board horizontal siding in a primary tropical color (suggested: warm white, soft sage, or pale coral — **[OWNER TO SELECT FROM PALETTE]**). The covered front Trex deck (24 ft wide × 12 ft deep) projects from the Level 1 face, with Trex composite deck boards and a steel-and-glass guardrail at the leading edge. The overhead soffit of the deck ceiling carries four to six adjustable PAR20 LED accent spotlights at 3000K aimed at hanging garden planter boxes mounted to the Level 1 exterior wall at window sill height. Four planter boxes (36 in × 12 in × 14 in, powder-coated steel in a contrasting dark charcoal or matte black

finish) cascade trailing tropicals — bougainvillea, pothos, sweet potato vine — providing a green animated layer across the facade between the deck soffit and the glazing line.

**Level 1 Glazing:** Two large impact-rated sliding glass wall units (each approximately 10 ft wide × 8 ft tall) flank the deck entry points, providing expansive views from the great room. A horizontal aluminum transom line at +8 ft AFF separates the primary glazing from a clerestory band. Frames are powder-coated in dark bronze or matte black consistent with door frames.

**Level 2 Facade:** Level 2 is set back approximately 2 to 4 feet from the Level 1 wall plane, creating a horizontal shadow band at the floor transition. Cement board siding continues, potentially in a second complementary tone — lighter or more saturated to add visual depth. Two pairs of impact-rated casement or fixed windows serve the bedrooms (approximately 4 ft wide × 5 ft tall each pair). The Level 2 upper terrace guardrail is visible at the south-east corner.

**Level 3 / Rooftop Parapet:** At the rooftop level, a clean horizontal parapet line (42-inch minimum height) wraps the building perimeter, capped in aluminum coping. The mechanical screen wall is visible at the north end and kept lower than the visible parapet on the south face. The standing seam metal roof above stairwell penthouse (if any) reads as a flat horizontal cap consistent with the modern composition.

**Color Palette (Suggested — Owner to Confirm):** Primary body: warm white (#F5F0E8); Secondary accent band (Level 2): pale coral or sage green; Trim and frames: matte black or dark bronze; Pier columns: natural light gray concrete; Deck decking: Trex Island Mist or Tiki Torch; Planter boxes: matte charcoal steel; Door frame: dark bronze powder coat.

## 3.2 Rear (North) Elevation

The rear elevation emphasizes the stacking of covered decks creating a vertical cascade of outdoor living. At Level 1, the covered rear Trex deck (20 ft × 10 ft) extends from the north face, its soffit creating shade to the under-house spa zone below. At Level 2, the upper terrace deck (16 ft × 10 ft) off the Primary Suite aligns above the Level 1 rear deck, creating a double-height outdoor wall of decking and glass guardrail. The rooftop parapet is visible above. Glazing on the rear elevation includes the sliding glass walls from the great room at Level 1 and the primary bedroom sliding glass door at Level 2. A secondary stair connecting Level 1 rear deck to the rooftop via an exterior stair tower is shown at the east bay. Mechanical screening on the north parapet caps the rooftop from rear view. The concrete

piers at the rear express the same rhythm as the front — clean vertical lines from grade to underside of Level 1 slab.

## 3.3 Side (East) Elevation

The east elevation is the stair tower elevation. The full-height exterior stair — open-riser tropical hardwood treads on painted steel stringers — is prominently expressed as a diagonal line climbing from grade level at the southeast corner to the Level 1 landing platform. The stair is protected from weather by the overhanging Level 1 deck soffit. The stair guardrail (42-inch cable or flat bar steel) reads as a light linear element against the solid cement board wall behind it. Above the stair, the Level 1 east wall presents a solid cement board panel with one impact-rated window serving the guest suite. At Level 2, a similar solid panel with one bedroom window. The pier rhythm is expressed on the east side with two to three piers visible at the grade corners. At the rooftop level, the parapet and aluminum coping cap the composition.

## 3.4 Side (West) Elevation

The west elevation exposes the vehicle workshop entrance. At grade, an 18-foot-wide commercial-grade roll-up overhead door (insulated steel, painted to match or complement the main facade) provides vehicle access to the workshop bay below the main floor. This door is recessed between two concrete piers and set slightly back from the primary west facade plane, framed by a concrete lintel at the Level 1 underside. The Level 1 west wall above shows a section of cement board siding with no windows (fire-rated condition at side setback — **[REQUIRES CODE CONFIRMATION for setback distance to property line]**). At Level 2, one impact-rated window serves the flex office / Bedroom 4. The pier rhythm continues at three to four piers on the west face. A utility meter base and main service riser is located on the west face near the southwest corner, hurricane-rated weatherhead.

## 3.5 Perspective 1 — Street View from 45-Degree Angle (Rendering Narrative)

The viewpoint is positioned approximately 60 feet from the front-left (southwest) corner of the property at eye level (5.5 ft AFF) on the street, looking northeast at a 45-degree angle. The composition reveals three-quarter of the front (south) facade and a sliver of the west (workshop) side simultaneously. In the foreground, two mature orange trees frame the crushed shell entry path — their round canopies at Level 1 deck height creating a natural softness against the crisp architectural forms. The shallow water feature basin is visible between the trees, catching evening light.

The concrete piers dominate the ground plane — a forest of smooth gray cylinders rising 11 feet, beneath which the entire under-house world is partially revealed: the glowing Trex perimeter walkway, the inset entry alcove glowing with the neon L-accent in electric teal, and the warm amber light of the lounge bar filtering through the open pier bays. Above the piers, the solid mass of the Level 1 living floor floats with authority. The covered front deck with its cascade of hanging tropical planters draping over the guardrail provides an organic green layer. The Level 2 facade sets back slightly, adding depth. The rooftop parapet completes the skyline. Time of day for rendering: golden hour / dusk, with the neon L-accent, under-house lighting, and hanging garden accent spotlights all activated. Sky: tropical, light pink-to-violet gradient with silhouetted palm fronds at upper corners.

## 3.6 Perspective 2 — Entry Approach, Straight-On from Street (Rendering Narrative)

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The viewpoint is dead-center on the property's front axis, approximately 80 feet from the entry alcove at eye level (5.5 ft AFF), looking directly north. This is the approach sequence: the crushed shell path bisects the view, flanked symmetrically by the two orange trees. The water feature is centered in the foreground, its fountain jets catching the light. Behind it, the forest of concrete piers parts to reveal the inset entry alcove: the 12-foot-wide by 6-foot-tall frosted glass entry door glows from within — a translucent lantern of warm white light. The neon L-accent surround frames the door's left edge and full header in electric teal (or program to coral for warm effect), casting a soft colored wash onto the adjacent pier faces and the crushed shell path. The hanging garden planters at Level 1 window height cascade tropical greenery above. The building mass rises symmetrically three stories to the parapet. Time of day: evening / night, when the entry neon and all landscape lighting are fully active. The focus of the eye is entirely drawn through the entry axis to the glowing door — the nocturnal centerpiece of the composition.

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# Section 4: Site Plan Description

> **[ASSUMPTION]**
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> All site plan elements below are based on assumed lot dimensions of 75 ft wide × 120 ft deep and assumed setbacks. A certified survey is required before construction documents are prepared.

## 4.1 Property Lines & Setbacks

The property is assumed to be a rectangular lot, 75 ft wide (east–west) × 120 ft deep (north–south), totaling approximately 9,000 SF. Property lines are shown with a bold dashed line in the site plan drawing. Setback lines are shown as a lighter dashed inner boundary: front (south) 20 ft, rear (north) 20 ft, side east 7.5 ft, side west 7.5 ft. The buildable envelope is therefore approximately 60 ft wide × 80 ft deep. The building footprint (pier outline) is centered within the buildable envelope with slight east bias to accommodate the wider workshop bay on the west side and the stair tower on the east side.

**[REQUIRES LOCAL CODE CONFIRMATION: All setback assumptions flagged for AHJ verification.]**

## 4.2 Driveway & Vehicle Approach

A 12-foot-wide concrete aggregate driveway enters from the street at the west side of the front property line, within the front setback, and runs northward parallel to the west side yard setback line. The drive surface is brushed concrete with exposed aggregate finish and a 2-foot-wide crushed shell border on each side. The drive terminates at the workshop vehicle apron: an 18-foot-wide by 25-foot-deep concrete apron flush with the under-house workshop roll-up door. The apron surface is reinforced 5-inch concrete (design for 3,000 lb axle load). A concrete curb transition delineates the apron edge from the crushed shell landscaping zone.

## 4.3 Water Feature

A rectangular water feature basin (8 ft × 4 ft × 18 in deep) is centered on the front entry axis, approximately 25 feet south of the entry alcove. The basin is constructed of precast concrete with a blue/gray stone mosaic tile interior. A row of three vertical fountain jets along the centerline creates a curtain of water. LED underwater lighting (color-changing, low-voltage, 12V) is recessed flush in the basin floor. An overflow drain connects to the site stormwater system. The recirculating pump is housed in a small waterproof enclosure adjacent to the basin, screened by low ground-cover planting.

## 4.4 Orange Tree Locations

Two orange trees are placed symmetrically flanking the entry pathway, approximately 12 to 15 feet from the path centerline, 30 feet north of the front property line. Species: Valencia or Navel orange (15-gallon minimum at planting). One additional orange tree is placed in the rear yard, northwest corner, approximately 10 feet from rear and side property lines. All orange trees receive bubbler irrigation at root zone (2 GPH emitters, see Section 9), 3-inch mulch ring kept clear of trunk, and are shown on planting plan with labeled species.

## 4.5 Fig Tree Locations

Two fig trees are placed in the rear yard, symmetrically arranged flanking the rear deck approach, approximately 10 feet from the rear property line and 15 feet from the east and west boundaries respectively. Species: Brown Turkey or Chicago Hardy (15-gallon minimum at planting). Fig trees receive bubbler irrigation, mulch ring, and are labeled on planting plan.

## 4.6 Crushed Shell Landscaping

All non-hardscape, non-deck zones at the ground level are surfaced with crushed oyster shell or crushed limestone to a compacted depth of 4 inches over a woven polypropylene weed barrier fabric stapled at 12-inch intervals. The crushed shell promotes natural stormwater infiltration consistent with the site drainage strategy. All planting bed edges are delineated by aluminum edging set flush with shell surface.

The crushed shell zones include: front yard flanking the driveway and entry path; east and west side yards; and rear yard ground plane areas between fig trees and property line.

## 4.7 Trex Walking Decks & Pathways

Labeled separately from Level 1 and rooftop decks, the following Trex composite walking deck areas are shown at site plan level: (a) 4-foot-wide perimeter walkway wrapping the full under-house perimeter, connecting the entry alcove, spa zone, and workshop apron; (b) front entry landing and transition zone at the base of the exterior stair; (c) rear yard connector path from the rear under-house perimeter walkway to the rear yard lawn or crushed shell zone, approximately 4 ft wide × 20 ft long, spanning between pier bases. All Trex deck sections are Trex Transcend Tropics with hidden fastener system and are shown with directional decking lines in the site plan.

## 4.8 Neighbor Massing Study

For context, the adjacent lots at both east and west property lines host similar three-story elevated pier homes. The east neighbor presents a teal body with white trim and a two-car-wide pier base, similar 11-foot elevation, flat roof with parapet. The west neighbor is a coral/warm gray two-tone cement board home, slightly narrower footprint, hip metal roof at Level 3, matching pier height. Across the street, varied homes show charcoal body with natural wood soffit accents and light gray piers. This neighborhood establishes a consistent elevated-pier vocabulary of approximately 35–38 feet to roofline, with significant variety in color, material, and facade composition — supporting the design's bold but contextually consistent ambitions. **[ASSUMPTION — based on described neighborhood character; site visit and photos required for accurate massing study in DD drawings.]**

## 4.9 Stormwater Strategy

Primary stormwater management relies on three integrated strategies: (1) Perimeter French drain — a 6-inch perforated pipe in a 12-inch-wide × 18-inch-deep gravel trench (washed #57 stone) runs along the inside edge of the property line on the east, west, and north sides, sloping at 0.5% minimum to a collection point at the rear, connecting to the municipal storm system or a dry well / infiltration chamber per local code. (2) Crushed shell infiltration — the pervasive use of 4-inch compacted crushed

shell at all non-hardscape zones reduces impervious coverage and promotes infiltration of low-intensity rainfall events directly into the native sandy coastal soil. (3) Swale at rear — a 4-foot-wide by 12-inch-deep landscaped swale runs across the rear of the property just inside the rear setback, sloping 2% east to west to a catch basin connected to the perimeter French drain. Rooftop drainage is handled by internal scuppers and downspouts (see Section 7). All drainage to comply with local stormwater ordinance. **[REQUIRES CONFIRMATION: stormwater permit requirements to be confirmed with AHJ and civil engineer.]**

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# Section 5: Materials & Finishes Board

| Component | Material / Product | Finish / Color | Notes / Standard |
|---|---|---|---|
| Concrete Piers | 12-in diameter cast-in-place concrete, smooth formed | Natural light gray exposed architectural finish | f'c = 5,000 psi; #8 rebar cage; FBC compliant; no sealer required, optional waterproof coating |
| Foundation / Piles | Drilled concrete caissons or pile caps, continuous grade beam | Below grade; waterproof coating above grade beam | Engineer of record to confirm depth via geotechnical report; minimum 10 ft below grade assumed |
| Structural Framing — Primary | Concrete masonry unit (CMU) core walls at vertical circulation; engineered lumber or light-gauge steel secondary framing | CMU: unpainted structural; framing: concealed | Hurricane straps at all connections: Simpson Strong-Tie H2.5A or equivalent; continuous load path per FBC |
| Structural Framing — Floor/Roof | Engineered wood joists (TJI) or concrete slab at rooftop; LVL beams at long spans | Concealed in assembly | Rooftop: reinforced concrete slab for hot tub zone; engineer to specify |
| Exterior Walls — Siding | James Hardie HardiePanel or HardiePlank HZ10 fiber cement board, smooth or light texture | Owner-selected tropical color palette; suggest warm white, sage, or soft coral per Benjamin Moore or Sherwin-Williams exterior grade | HZ10 rated for hurricane-zone coastal exposure; primed and painted; 6 in min clearance from grade; installed per manufacturer's coastal specs |

| Component | Material / Product | Finish / Color | Notes / Standard |
|---|---|---|---|
| Roofing | Standing seam aluminum roofing, 24-gauge, concealed clip fastener system | Kynar 500 fluoropolymer coating; color: Slate Gray or Charcoal | 160 mph wind-rated per UL 580; FBC compliant; R-30 insulation below deck; continuous waterproof membrane underlayment |
| Hurricane Glazing — Windows | Impact-rated laminated insulated glass units in thermally broken aluminum frames; PGT WinGuard, CGI, or approved equal | Dark bronze or matte black powder-coated frames; clear Low-E glass | Miami-Dade NOA required; U-0.30 max; SHGC 0.25 max; all units to have FL Product Approval number |
| Hurricane Glazing — Sliding Walls | Impact-rated multi-panel sliding glass wall system; PGT WinGuard or Andersen Coastal series or approved equal | Dark bronze powder-coated frames; clear Low-E glass | Panels up to 10 ft wide × 8 ft tall; verify product certification at this size; Miami-Dade NOA |
| Entry Door | Custom 12 ft wide × 6 ft tall thermally broken aluminum frame; frosted laminated safety glass panel grid; multi-point locking system | Dark bronze powder coat exterior; brushed aluminum interior hardware | Hurricane-rated; custom fabrication required; confirm FL Product Approval or engineer's special certification; minimum 12–16 week lead time **[FLAG: long lead]** |
| Interior Floors — Level 1 Living | Large-format rectified porcelain tile, 24 in × 24 in | Light gray or warm greige; matte or satin finish | Grout joint 1/16 in with rectified tile; anti-slip coefficient of friction min 0.60 wet; set in full mortar bed |
| Interior Floors — Bedrooms | Engineered hardwood; white oak species, 5-in plank | Natural or light wire-brushed matte finish | Floating installation over sound-isolation mat; acclimate to coastal humidity; pre-finished or site-finished |
| Interior Floors — Workshop / Man Cave | 6-in polished concrete slab with epoxy seal | Light/medium gray with color flake aggregate broadcast | 2-part polyaspartic or epoxy coating; UV stable; anti-slip additive; 100 psi surface abrasion resistance |
| Decking — All Levels | Trex Transcend Tropics composite decking | Island Mist or Tiki Torch color; hidden Trex Hideaway fastener system | No painting or staining required; 25-year fade/stain warranty; 6-in ventilation gap at stringer; aluminum or steel substructure |

| Component | Material / Product | Finish / Color | Notes / Standard |
|---|---|---|---|
| Landscaping — Ground Cover | Crushed oyster shell or crushed Florida limestone, 4-in compacted depth | Off-white / natural shell color | Over woven polypropylene weed barrier; aluminum edging at beds; promotes infiltration |
| Water Feature | Precast concrete basin with blue/gray stone mosaic tile interior | Blue-gray mosaic, smooth stone border cap | Recirculating pump, 1/2 HP; LED underwater lighting 12V color-changing; overflow drain to site storm |
| Neon L-Accent | DMX512-addressable RGB LED neon flex, IP67, 24V DC, min 12W/m; aluminum channel with opal diffuser | Full RGB programmable; default: electric teal | See Section 8 for complete specification; 18 LF total; IP67 rated for weather exposure; power supply: 24VDC 150W waterproof driver |
| Interior Paint | Low-VOC latex paint; Benjamin Moore Aura exterior/interior or equal | Owner-selected palette; tropical accent walls in living and primary bedroom | Primer + 2 coats minimum; mold/mildew resistant formula for coastal humidity |
| Cabinetry — Kitchen & Baths | Flat-panel Euro-style frameless cabinetry; white or light natural wood veneer (thermofoil or lacquer) | White gloss or warm light oak veneer; soft-close hinges and drawer slides | KCMA certified; Blum or Häfele hardware; plywood box construction |
| Countertops | Kitchen: engineered quartz (Caesarstone, Silestone, or equal); Baths: honed concrete or quartz | Kitchen: white or light gray; Baths: warm white or concrete gray | Seam locations at cooktop; undermount sinks; quartz preferred for coastal durability; concrete requires penetrating sealer |
| Plumbing Fixtures | Kohler, Delta, or Moen; chrome or matte black finish | Matte black preferred for contemporary tropical aesthetic | WaterSense certified; dual-flush toilets; low-flow showerheads 2.0 GPM max; freestanding tub: soaking depth min 16 in |
| Bar — Under-House & Rooftop | Concrete or quartz countertop; stainless steel bar sink; Perlick or True undercounter refrigerator | Concrete gray or white quartz; stainless appliances | Code-compliant ventilation for any gas appliance; GFCI outlets at all wet bar locations per NEC 210.8 |

# Section 6: Structural Load Notes

> DISCLAIMER:
>
> The following structural narrative is provided for schematic design coordination only. All structural systems, members, connections, and load calculations must be designed, stamped, and sealed by a licensed Structural Engineer of Record (EOR) prior to permit submittal. Values shown are preliminary assumptions for design development coordination only.

## 6.1 Design Basis

Structural design basis: Florida Building Code (FBC) 8th Edition, Structural provisions, ASCE 7-22 (Minimum Design Loads and Associated Criteria for Buildings and Other Structures). Risk Category: II (Standard Residential Occupancy, per Table 1.5-1, ASCE 7-22). Exposure Category: D (open coastal terrain, within 600 feet of shoreline per ASCE 7-22 Section 26.7). **[ASSUMPTION — confirm Exposure Category with EOR based on actual site location.]**

## 6.2 Concrete Pier System

The primary vertical load-carrying system consists of cast-in-place circular concrete piers, minimum 12-inch diameter, f'c = 5,000 psi at 28 days, with a minimum reinforcement cage of four #8 vertical bars with #3 spiral ties at 6-inch pitch. Piers are to be drilled (auger cast or rotary) to a minimum depth of 10 feet below existing grade, terminating in competent bearing stratum as determined by geotechnical investigation. A continuous reinforced concrete grade beam (pier cap) interconnects all piers at the base, acting as a grade-level tie system and providing platform for under-slab mechanical and utility routing. Pier caps to receive waterproofing membrane above grade. All pier locations to be verified by survey prior to drilling; no piers to be placed within required setbacks without variance. **[REQUIRES EOR SIGN-OFF AND GEOTECHNICAL REPORT]**

## 6.3 Gravity Load Summary

| Load Type | Code Reference | Assumed Value | Notes |
|---|---|---|---|
| Dead Load — Structural Framing | ASCE 7-22 Table C3-1 | 15 psf | Includes framing, sheathing, MEP rough-in |
| Dead Load — Finishes (residential) | ASCE 7-22 | 5 psf | Tile flooring, ceiling finish, insulation |
| Total Dead Load | — | 20 psf | Combined SDL + DL |
| Live Load — Residential Floors | ASCE 7-22 Table 4.3-1 | 40 psf | Residential occupancy, all floors |
| Live Load — Roof Terrace (Assembly) | ASCE 7-22 Table 4.3-1 | 100 psf | Rooftop patio / assembly occupancy zone |
| Roof Live Load (standing seam metal) | ASCE 7-22 | 20 psf min | Reducible per code; tropical: no snow load |
| Snow Load | ASCE 7-22 Chapter 7 | 0 psf | Not applicable — tropical coastal location |
| Hot Tub — Rooftop (full water + bathers) | ASCE 7-22 / Project-Specific | 120 psf over 12 ft × 12 ft zone | Full water volume ~62.4 pcf × ~3 ft effective depth = ~187 psf; structural slab + transfer framing to distribute; EOR to design specific transfer system |
| Workshop Slab — Vehicle Axle | IBC Table 1607.1 | 3,000 lb concentrated axle load | Design grade slab for vehicle loads; hydraulic lift anchor plates: 4 anchors, 10,000 lb each rated capacity |

## 6.4 Lateral Load — Wind Design

Wind design speed: 150 mph (3-second gust, ultimate design wind speed Vult), per ASCE 7-22 Chapter 26, Exposure Category D. The building is classified as Enclosed Building (MWFRS per Chapter 27 and C&C per Chapter 30). Design procedure: Directional method (MWFRS) for the primary structural system; components and cladding wind pressures to be determined for all wall, roof, and glazing elements.

Continuous load path: The structural system must provide a complete, continuous load path from the roof diaphragm through the floor diaphragms, through the vertical lateral force-resisting system (CMU shear walls and/or moment frames at piers), and into the drilled caisson foundation system. No interruptions in load path are permitted. All connections to be designed with the continuous load path philosophy per FBC and ASCE 7-22.

**Hurricane Tie-Down Requirements:** All wood-frame-to-concrete and wood-to-wood connections to use listed hurricane straps. Suggested catalog items (EOR to confirm): Simpson Strong-Tie H2.5A at rafter/top plate, LTP4 lateral tie plate at floor diaphragm edges, LSSU210 at ledger connections, HHDQ11 heavy hold-down at shear wall ends. All hardware to be hot-dipped galvanized (HDG) or stainless steel (SS) for coastal exposure per ASTM A153 / AISI. **[EOR TO SPECIFY FINAL HARDWARE SCHEDULE]**

## 6.5 Foundation — Geotechnical Requirements

A geotechnical investigation by a licensed geotechnical engineer is required prior to foundation design. The following parameters are assumed for schematic planning only: allowable soil bearing pressure 2,000–3,000 psf (sandy coastal soil, assumed — **[FLAGGED FOR GEOTECH CONFIRMATION]**); seasonal high groundwater depth: assumed 2–4 ft below grade (coastal — flagged); estimated pile tip elevation: -10 to -15 ft NGVD (flagged for geotech). The geotechnical report shall include: standard penetration test (SPT) boring logs to minimum 25 ft depth, laboratory soil classification, liquefaction potential analysis, corrosion potential of soils (for rebar protection), and recommendations for pile type, diameter, and depth. Geotechnical report to be prepared before Design Development drawings begin.

## 6.6 Structural Items Requiring Engineer of Record Sign-Off

- Pier diameter, reinforcement, depth, and spacing based on geotechnical report and gravity/lateral load analysis
- Grade beam / pier cap sizing and reinforcement
- Level 1 floor diaphragm system design (span, joist sizing, LVL beams)
- Rooftop reinforced concrete slab thickness and reinforcement for hot tub zone (120 psf)
- Transfer framing at hot tub location to route loads to primary structure

- Lateral force-resisting system: shear wall schedule and location, drag strut design
- Continuous load path documentation — connection schedule from roof to foundation
- Hydraulic lift anchor plate design in workshop slab (4 anchors, 10,000 lb each)
- Parapet design for rooftop (wind uplift on 42-inch parapet at 150 mph)
- Pergola structure anchor design (wind uplift at rooftop, open-frame structure)
- Stair stringer connections at Level 0 and Level 1 landings
- All special inspections: high-strength concrete, welded connections, caisson installation

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# Section 7: Mechanical & Drainage Strategy

## 7.1 HVAC Strategy

The primary HVAC system is a fully ducted or ductless multi-zone mini-split system by Mitsubishi Electric (M-Series or Hyper-Heat, not required in tropical climate) or Daikin (VRV or Aurora series), rated SEER 20 or greater. The system is organized in three independent zones corresponding to building levels, each with its own outdoor condensing unit and indoor air handling. All equipment is elevated above the Base Flood Elevation (BFE) — condensing units are mounted on elevated galvanized steel platforms a minimum of 12 inches above Level 1 finished floor elevation or on rooftop structural supports. Indoor air handlers are ceiling-recessed or mounted in conditioned mechanical spaces above BFE.

| Zone | Approx. Cooling Capacity | System Type | Notes |
|---|---|---|---|
| Level 1 — Main Living / Kitchen / Bedrooms | ~4 tons (48,000 BTU/h) | Ducted mini-split or VRF multi-zone | Manual J load calc required; 4 tons is schematic estimate for ~2,100 SF at tropical climate |
| Level 2 — Upper Bedrooms / Primary Suite | ~3 tons (36,000 BTU/h) | Ducted mini-split or VRF multi-zone | Schematic estimate for ~1,250 SF upper floor |

| Zone | Approx. Cooling Capacity | System Type | Notes |
|---|---|---|---|
| Under-House Lounge / Man Cave | ~1.5 tons (18,000 BTU/h) | Wall-mount or ceiling cassette mini-split | Below BFE; use equipment rated for partial outdoor exposure; consult manufacturer |
| Rooftop / Pergola Zone | Mini-split cassette (supplemental) | Single-zone ceiling cassette or none | Rooftop is primarily outdoor; supplemental unit for covered pergola zone only if owner desires |

All refrigerant lines are routed through interior chases. Impact-rated louvers for fresh air intakes and exhaust. Energy Recovery Ventilator (ERV) recommended for tropical climate — maintains humidity control without full AC operation. MERV-13 filtration minimum at all air handlers. **[ASSUMPTION — Manual J energy load calculation required to confirm capacities.]**

## 7.2 Plumbing Strategy

All supply and drain/waste/vent (DWV) piping is routed above the Base Flood Elevation wherever feasible. Any piping that must pass through the flood zone (under slab, or in pier zone at grade) is encased in concrete, floodproofed, or made of flood-resistant materials per FEMA Technical Bulletin 1-93. Supply: PEX-A cross-linked polyethylene, manifold distribution system with individual shutoffs per fixture. DWV: Schedule 40 PVC, properly sloped and vented per FBC Plumbing. Water heater: tankless gas (Rinnai RU199eN or equal) or heat pump water heater (Rheem or A.O. Smith ProLine), elevated above BFE, with expansion tank and pressure relief valve. A whole-house water softener / conditioner is strongly recommended given coastal mineral content in water supply — sized for household demand (3 GPM minimum service rate). Backflow preventer required at water meter. Hose bibs at all deck levels.

## 7.3 Electrical Strategy

| Component | Specification | Location | Notes |
|---|---|---|---|
| Main Service | 400A, 120/240V single phase | Utility meter at ground pier (weatherhead elevated) | Underground service feed preferred; confirm utility availability |

| Component | Specification | Location | Notes |
|---|---|---|---|
| Main Distribution Panel | 400A main breaker panel | Mechanical room, Level 1 (above BFE) | Full surge protection device (SPD) required; arc-fault and GFCI per NEC 2023 |
| Workshop Sub-Panel | 200A, 120/240V | Vehicle workshop, Level 0 | Dedicated circuits: hydraulic lift (60A), compressed air compressor (30A), lighting (20A x2), outlets (20A x4 min) |
| Rooftop Sub-Panel | 100A, 120/240V | Rooftop mechanical screen zone | Feeds rooftop hot tub (50A), outdoor kitchen (20A x2), lighting circuits, pergola outlets |
| Generator Transfer Switch | Manual or automatic transfer switch, 100A minimum | Adjacent to main panel, Level 1 | Generator-ready; owner to select generator size; suggest 22–26 kW whole-house standby; conduit stub-out for future generator |
| Hot Tub Circuits — Level 0 | 240V / 50A, GFCI, dedicated circuit | Spa equipment closet, Level 0 | Bonding per NEC 680.26; GFCI protection at panel or spa disconnect; weatherproof disconnect within sight of spa |
| Hot Tub Circuit — Rooftop | 240V / 50A, GFCI, dedicated circuit | Rooftop sub-panel | Same NEC 680 requirements; bonding of all metal parts within 5 ft of spa |
| Surge Protection | Whole-home SPD, Type 1+2 | Main panel | Eaton, Siemens, or Square D SPD; coastal lightning risk; coordinate with insurance |
| Neon Accent Power | 24VDC, 150W minimum per zone, waterproof LED driver | Concealed in entry alcove soffit or adjacent enclosure | See Section 8; feed from Level 0 lighting circuit via 120V to 24VDC driver |

## 7.4 Drainage Strategy

**Rooftop Drainage:** Primary drainage via internal scupper drains, minimum 4-inch diameter, at all low points of the rooftop deck, connected to downspouts run within interior column chases to underground infiltration chamber or connection to site storm system. Secondary overflow scuppers at 2 inches above primary drain elevation, minimum 2 scuppers per roof zone, 3-inch minimum each, discharging through parapet to the exterior of the building above grade — visible outlets to be stainless steel trim rings at pier faces. Rooftop membrane waterproofing: 60-mil TPO or 60-mil EPDM fully adhered beneath Trex deck substructure, with 6-month standing water retention test before decking installation.

**Under-House Floor Drainage:** The under-house concrete ground plane (slab on grade or structural slab) is sloped at minimum 1% in all directions to perimeter trench drains. Trench drains (ACO Drain or equal, stainless steel grate, 4-inch channel) run along the east and west perimeter and connect to site storm drain. Spa equipment closet at Level 0 has its own floor drain. All under-house drains are equipped with debris baskets, cleaned semi-annually.

**Site Drainage:** As described in Section 4.9 — perimeter French drain (6-inch perforated pipe in gravel), crushed shell promotes infiltration, rear swale at 2% to catch basin. All downspouts from Level 1 roof overhangs connect to the underground storm collection system. No discharge to neighboring properties.

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# Section 8: Lighting & Neon L-Accent Specification

## 8.1 Entry Neon L-Accent — Full Specification

| Parameter | Specification |
|---|---|
| Type | DMX512-addressable RGB LED neon flex, continuous run |
| Voltage | 24V DC |
| IP Rating | IP67 — fully weatherproof, submersible to 1 meter; required for coastal exterior application |
| Power Density | Minimum 12W/m (approximately 3.65W/ft); total system approximately 65W for 18 LF run |
| Beam Angle | 120 degrees; diffused output via opal PMMA diffuser integrated in neon flex tube |
| Mounting | Aluminum extrusion channel (recessed "top-bend" or "side-bend" profile as required at corner); opal PC diffuser cover clip-fastened; channels screwed to structural blocking in concrete alcove or CMU wall with stainless machine screws |
| L-Shape Geometry | Vertical leg: approximately 6 ft (left side of door opening, floor to door header level); Horizontal header: approximately 12 ft (full width of door header from left edge to right edge of alcove); Total: 18 LF; corner bend: custom bend or pre-bent section with matching IP67 connector |
| Color Capability | Full RGB, 16.7 million colors; programmable via DMX512 protocol or proprietary app; default color: electric teal (R:0 G:210 B:220); holiday/seasonal mode presets: warm white (holiday), coral (summer), violet (evening), green/red (December) |

| Parameter | Specification |
|---|---|
| Power Supply | Waterproof 24VDC LED driver, minimum 150W capacity per zone; Meanwell LPV-150-24 or equal; IP67; mounted in weatherproof enclosure in adjacent wall cavity or mechanical closet |
| Controller | Ltech LT-903 DMX controller or Enttec ODE MK2 with WiFi/Ethernet bridge; compatible with Alexa, Google Home voice control via Matter or cloud integration; supports iOS and Android smartphone app with scene programming and scheduling |
| Wiring | 3-conductor 18AWG stranded tinned copper, waterproof rated, run in conduit within wall assembly from controller location to neon channel; all connections: waterproof IP68-rated push-in connectors |
| Maintenance Access | Channel cover is tool-removable for LED flex strip replacement; design for 50,000-hour rated LED life; driver is accessible from adjacent mechanical closet |

## 8.2 Hanging Garden Area Lighting

Overhead soffit of the covered front deck (Level 1, south facade) is fitted with four to six adjustable recessed accent spotlights: PAR20 LED, 12W each, 3000K warm white, CRI 90+, dimmable via 0-10V or TRIAC dimmer, housed in moisture-rated recessed can (IP44 minimum) suitable for exterior soffit installation. Fixtures are aimed downward at the hanging planter boxes at window-sill height, creating a warm-lit planted wall effect visible from the street. Fixtures spaced evenly across the 24-ft soffit span; confirm final count with lighting designer.

## 8.3 Under-House Lounge Lighting

The under-house lounge zone receives recessed LED linear downlights in a suspended or structural soffit: 3000K, CRI 90+, dimmable, moisture-rated IP44 minimum (under-house partial outdoor exposure). Target illuminance: 30–50 foot-candles average at working/bar surface. Supplemental LED strip accent lighting is integrated into the bar back-wall shelving: addressable RGB strip, 24V DC, IP44, run in aluminum channel behind glass shelving panels, backlit to create a glowing bar back-bar effect. Color programmable to coordinate with entry neon accent. Control: Lutron Caseta or Leviton Decora smart dimmer with smartphone app for lounge zones.

## 8.4 Workshop Lighting

Industrial LED shop lights — high-bay or vapor-tight strip format — are specified for the vehicle workshop: 5000K (daylight/cool white) for maximum task visibility, minimum 10,000 lumens per fixture, 4 fixtures minimum for 384 SF workshop area, mounted to underside of Level 1 floor structure above. LED driver: 120/277V universal input, DLC Premium listed, L70 life rating of 50,000 hours. One dedicated switch circuit per side of workshop for half-on switching during partial use. Confirm no heat-sensitive finishes above fixture locations.

## 8.5 Exterior Perimeter Lighting

Surface-mounted weatherproof LED wall sconces are specified at each pier face along the primary perimeter: 5000K, 12W each, die-cast aluminum housing, IP65 rated, flat-panel or cylindrical design consistent with modern aesthetic. One sconce per pier at approximately 8 ft AFF (under Level 1 soffit). Path lighting in crushed shell zones: hybrid solar+low-voltage hardwired landscape path lights, 12V, warm white 2700K, stake-mounted in crushed shell at 8-foot spacing along entry path and perimeter walkway. Coordinate path light locations with irrigation head locations.

## 8.6 Interior Lighting — Living Areas

All interior living areas receive recessed LED downlights, 3000K, CRI 90+, dimmable, 4-inch or 6-inch trim, on Lutron Caseta smart dimmer system (WiFi-enabled, Alexa/Google compatible). Kitchen island receives 2–3 pendant statement fixtures — owner to select (suggested: rattan-wrapped or satin brass contemporary pendant, 12–16 in diameter). Under-cabinet LED strip lighting in kitchen: 3000K, CRI 90+, 24V. Bathrooms: recessed LED at 3000K plus vanity bar at 2700K warm for accurate skin-tone rendering at mirrors. All light fixtures in wet areas (bath, shower) to be rated for wet or damp location as required by NEC.

## 8.7 Rooftop Lighting

Weatherproof Edison-style LED string lights (3000K, S14 bulbs, shatterproof polycarbonate) are strung across the pergola frame in a grid pattern — suggest 4 runs of 20 feet each. Recessed deck lights are

installed flush in the Trex deck field: low-profile 12V warm white (2700K), cast stainless or brushed nickel, IP67, spaced at 3-foot intervals along deck perimeter and at stair landing. Hot tub underwater color LED light: two to three underwater spa lights, 12V, full color RGB, foam-mount compatible with spa shell (Pentair MicroBrite or equal). All rooftop lighting on dedicated circuit from rooftop sub-panel, controlled via Lutron Caseta bridge or smart switch local to stair head.

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# Section 9: Irrigation & Hanging Garden Planter Details

## 9.1 Hanging Garden Planters — Facade System

Hanging garden planters are mounted to the Level 1 south facade at window-sill height, providing a lush green animated layer visible from the street and from the covered front deck. Each planter box is a custom powder-coated steel fabrication: 36 inches long by 12 inches wide by 14 inches deep, 14-gauge steel, welded seams, drain hole at bottom with stainless mesh cover. Finish: matte charcoal or dark bronze powder coat, consistent with window frames. Mounting: wall-mounted to structural blocking (2x6 pressure-treated, through-bolted to exterior wall framing) via heavy-duty stainless steel through-bolts, minimum 3/8-inch diameter, with stainless backing plate at interior face. Minimum four planters per window pair; total of four to six planters across the front facade.

Interior liner: coconut coir insert (removable) sized to planter interior. Growing medium: 60% lightweight perlite, 30% coco coir, 10% compost — target wet weight not to exceed 30 lb per planter (structural blocking designed for 50 lb per planter including planter weight and saturated soil). Plant palette: trailing tropicals — bougainvillea (magenta or orange), golden pothos (Epipremnum aureum), sweet potato vine (Ipomoea batatas, chartreuse or purple), asparagus fern, or heart-leaf philodendron. Plant selection should consider wind exposure at Level 1 height — species must tolerate warm coastal wind; avoid large-leaf tropicals in wind-exposed positions.

## 9.2 Drip Irrigation — Hanging Planters

A drip irrigation manifold serving the hanging planters is mounted in the facade soffit cavity or within the front deck overhead structure. System: 1/2-inch polyethylene tubing supply from a dedicated zone valve at the central irrigation controller; individual 1/4-inch emitter tubing with pressure-compensating drip emitters (1 GPH each) at each plant position within the planter (2–3 emitters per planter). Overflow drain tube routed from each planter drain hole downward, directed to the front deck gutter or a dedicated overflow drain connection — not allowed to drain freely onto deck or street. System operates on a timer: recommend 5-minute run, 3 times per week in dry season; rain sensor bypass active. All irrigation components must be UV-resistant for exterior installation.

## 9.3 Landscape Irrigation System

A Hunter or Rain Bird residential drip and spray irrigation system serves all landscape zones. Main supply: 1-inch copper or Schedule 80 PVC supply from backflow preventer assembly at water meter, branching to zone valve manifold near front-right (northeast) corner of structure. Zone valve manifold: 6 to 8 zones as follows:

- **Zone 1:** Front yard — tree wells for 2 orange trees (bubbler heads, 2 GPH each)
- **Zone 2:** Front yard — ground cover / crushed shell perimeter micro-spray (micro-spray heads at 3 ft radius, 0.5 GPM)
- **Zone 3:** Entry path planting areas (if annual or perennial planting beds are included alongside path)
- **Zone 4:** Rear yard — fig trees (bubbler heads, 2 GPH each)
- **Zone 5:** Rear yard — rear orange tree (bubbler head)
- **Zone 6:** Rear yard ground cover / border micro-spray
- **Zone 7:** Hanging garden planters (per Section 9.2 above)
- **Zone 8:** Rooftop planters (if provided — low-flow drip, see Section 9.5)

Controller: Hunter X2 or Rain Bird ESP-TM2, WiFi-enabled, app-controlled, with integrated rain sensor (Hunter Mini-Click or Rain Bird WR2) to suspend irrigation during and after rain events. Backflow preventer: reduced-pressure zone (RPZ) assembly at meter — required by Florida plumbing code for any in-ground irrigation system. All zone valves to be installed in valve boxes with locking lids at grade level.

## 9.4 Orange and Fig Tree Specifications

| Tree | Species / Variety | Quantity | Location | Planting Stock | Irrigation | Notes |
|---|---|---|---|---|---|---|
| Orange | Citrus sinensis 'Valencia' or 'Navel' | 2 | Front yard, flanking entry path, 15 ft from path CL | 15-gallon min, Florida-certified nursery stock | 2 GPH bubbler per tree, Zone 1 | 3-in mulch ring, 18-in radius, clear of trunk; stake first year; citrus fertilizer per UF/IFAS schedule |
| Orange | Citrus sinensis 'Valencia' or 'Navel' | 1 | Rear yard, northwest corner | 15-gallon min | 2 GPH bubbler, Zone 5 | Same as above |
| Fig | Ficus carica 'Brown Turkey' or 'Chicago Hardy' | 2 | Rear yard, flanking rear deck approach | 15-gallon min, Florida-certified | 2 GPH bubbler per tree, Zone 4 | 3-in mulch ring; prune annually after harvest; confirm species is not invasive in local ordinance **[VERIFY LOCALLY]** |

## 9.5 Rooftop Planter Provisions

If any planter containers are placed on the rooftop deck, only structural-weight-optimized lightweight composite planters may be used. Maximum total loaded weight (planter + soil + plant + water-saturated): 20 lb per planter. Recommended products: Crescent Garden or similar lightweight composite resin planters. Growing medium: 100% lightweight soilless mix (perlite/peat/coco coir). All rooftop planters are connected to Zone 8 of the irrigation controller via 1/4-inch drip tubing routed through the rooftop floor assembly chase in rigid conduit; each planter receives 1 GPH pressure-compensating emitter. Drainage from planters drains to rooftop deck, which drains to primary rooftop scuppers. No potted planter to obstruct scupper or emergency overflow location. Structural EOR to confirm allowable point loads at any planter locations on rooftop.

# Section 10: Builder-Ready Brief & Code/Permitting Checklist

## 10.1 Project Summary for General Contractor

This project is the new construction of a three-story, single-family tropical residence raised 11 feet above finished grade on exposed architectural concrete piers, located in a coastal tropical neighborhood. The building program includes a full under-house ground level (man cave/lounge, vehicle workshop, spa, bathroom — approximately 2,082 SF covered), a main living floor (approximately 2,092 SF), an upper bedroom floor (approximately 1,248 SF), and a fully programmed rooftop terrace (approximately 1,200 SF). Total conditioned area is approximately 3,340–3,500 SF; total covered area including under-house and decks exceeds 5,000 SF. Key specialty features requiring early procurement include: the custom 12 ft × 6 ft hurricane-rated entry door (12–16 week lead), the DMX neon L-accent entry system, the under-house vehicle hydraulic lift, two 6-person hot tubs (one Level 0, one rooftop), and all impact-rated glazing (6–12 week lead typical). The structural foundation (drilled concrete caissons) requires a licensed subcontractor with coastal drilling experience and coordination with the geotechnical report. The project is assumed to be subject to the Florida Building Code 8th Edition equivalent, FEMA AE flood zone compliance, and 150 mph wind exposure D design requirements.

## 10.2 Key Design Intent Notes (for GC)

- The entry alcove and neon L-accent are a signature feature — all pier locations, structural blocking, and wall substrate in the entry zone must be coordinated with the architect before framing to ensure the alcove recess, door rough opening, and neon channel backing are built correctly the first time.
- The under-house ground plane must achieve a minimum 11 ft clear finished height below the Level 1 structural floor system. Coordinate MEP routing to avoid conflicts with this height requirement.

- The rooftop reinforced slab at the hot tub zone (12 ft × 12 ft, 120 psf design load) must be separated in the structural drawings and poured as a reinforced concrete slab — this is not a standard light-frame rooftop; structural EOR to issue rooftop framing plan before proceeding.
- All glazing must be impact-rated with Miami-Dade NOA and FL Product Approval numbers. No substitutions without architect approval. Glazing contractor must provide installation per NOA requirements, including flashing, anchoring, and testing documentation.
- The vehicle workshop roll-up door is an 18-ft-wide opening — verify that the structural header/beam at the Level 1 underside spanning this opening is designed and in place before framing is closed up. Coordinate with EOR.
- All mechanical, electrical, and plumbing equipment must be elevated above the BFE. The GC is responsible for confirming the BFE elevation with the local floodplain administrator and verifying all MEP installation heights at rough-in inspection.
- Crushed shell landscaping and French drain installation is a late-phase site work item but the perforated pipe trenches should be sleeved under the concrete apron and driveway before hardscape is poured — do not miss this sequencing step.

## 10.3 Site Work Sequence (Recommended Phasing)

17. Site clearing, demolition of any existing structures, tree preservation fencing per arborist
18. Rough grade and establish building pad elevation; temporary erosion control
19. Underground utilities rough-in: water lateral, sewer/septic lateral, electric conduit stub, gas service, French drain sleeving under future hardscape
20. Geotechnical boring and report (if not yet completed); pier layout survey
21. Pier drilling and caisson installation; special inspection during pour; grade beam pour
22. Under-house slab-on-grade pour (workshop, lounge zone) with trench drains and anchor plate blockouts
23. Level 1 floor structure framing, temporary shoring if required
24. Level 2 framing; Level 3 rooftop slab formwork and pour (hot tub zone reinforced)

25. Roof structure (over stair penthouse or mechanical enclosure); standing seam metal roofing installation with waterproof membrane
26. Exterior envelope: windows and doors (impact-rated), cement board siding, flashing, and waterproofing
27. MEP rough-in: plumbing DWV, supply rough; electrical conduit and rough wiring; HVAC ductwork and refrigerant lineset
28. Insulation: spray foam at roof deck underside; batt or rigid at walls; continuous air barrier
29. Drywall, interior finishes, cabinetry, tile
30. MEP trim-out: fixtures, devices, equipment start-up
31. Specialty installations: neon L-accent system, hydraulic lift, hot tubs, Trex decking, hanging planters
32. Exterior sitework: driveway and apron pour, Trex perimeter walks, crushed shell, water feature, landscaping, irrigation, landscape lighting
33. Final inspections, punch list, certificate of occupancy

## 10.4 Permitting Checklist

| Permit / Review Type | Agency | Notes / Typical Timeline |
|---|---|---|
| Building Permit — New Construction | Local Building Department (AHJ) | Primary permit; submit complete construction documents including structural, MEP; typical 4–12 weeks depending on municipality |
| Zoning / Land Use Review | Local Zoning / Planning Department | Confirm use, height, setbacks, lot coverage, FAR; may require variance hearing if any design parameter exceeds limits; 2–8 weeks |
| FEMA LOMA (Letter of Map Amendment) | FEMA (federal) + local floodplain administrator | Required if finished grade elevation affects flood zone determination; owner's surveyor prepares; 4–12 weeks at FEMA |
| Environmental / Coastal Setback Review | State DEP or local coastal agency | Required if within Coastal Construction Control Line (CCCL) or near wetlands; survey and coastal study may be required; 4–16 weeks |

| Permit / Review Type | Agency | Notes / Typical Timeline |
|---|---|---|
| Plumbing Permit | Local Building Department | Concurrent with building permit or separate submittal; include hot tub plumbing diagrams; 1–3 weeks |
| Electrical Permit | Local Building Department | Concurrent or separate; include panel schedules, hot tub circuits, neon power; 1–3 weeks |
| Mechanical (HVAC) Permit | Local Building Department | Concurrent or separate; submit Manual J and equipment schedules; 1–3 weeks |
| Rooftop Hot Tub — Structural Permit | Local Building Department | Confirm if separate structural supplemental required for rooftop spa load; EOR-stamped drawings; included in building permit or separate; clarify with AHJ |
| Stormwater / Drainage Review | Local Public Works / Water Management District | If impervious area exceeds local threshold; drainage study may be required; 2–6 weeks |
| Landscape / Tree Permit | Local Planning / Urban Forestry | If existing trees removed or if local landscape code requires plan review; 1–4 weeks |
| Sign / Lighting Permit (Neon Accent) | Local Building / Zoning Department | Exterior programmable LED neon may be classified as illuminated sign; confirm with AHJ; may require separate sign permit; 1–4 weeks |
| Workshop / Accessory Use Permit | Local Zoning Department | Confirm vehicle workshop is permitted use within residential structure in this zoning district; may require accessory use application or notation on building permit; clarify before permit submittal |
| Driveway Apron Permit | Local Public Works / FDOT (if state road) | Required for new driveway connection to public right-of-way; 1–4 weeks |
| Fire / Life Safety Review | Local Fire Marshal | May be required for three-story structure; confirm egress compliance (two exits from Level 2 — stair and terrace door); smoke detection, CO detection per FBC; 1–4 weeks |
| HOA / Architectural Review | Homeowners Association (if applicable) | Submit facade renderings, color palette, neon lighting description, rooftop hot tub proposal; timeline varies by HOA; can be parallel with building permit |

## 10.5 Code Compliance Checklist

| Code Area | Standard | Status |
|---|---|---|
| Building Code Compliance | Florida Building Code 8th Edition (or applicable coastal tropical equivalent) | **[ASSUMED — confirm adopted edition with AHJ]** |
| FEMA Flood Zone Compliance | NFIP, FEMA AE Zone, BFE +1 ft freeboard recommended | **[ASSUMED — confirm BFE via FIRM map]** |
| Wind Resistance | ASCE 7-22, 150 mph, Exposure D; continuous load path per FBC | **[ASSUMED — EOR to confirm]** |
| ADA Accessibility | ADA Standards for Accessible Design (for ground-level accessible path); FBC accessibility provisions | Ground-level entry with no step to entry alcove door (ADA path from accessible parking space to entry door); vertical access via elevator not required for single-family residential, but consider future-proofing with elevator shaft rough-in |
| Energy Code | FBC Energy Conservation / IECC 2021 equivalent | SEER 20+ HVAC, U-0.30 glazing, R-30 roof insulation, continuous air barrier required; blower door test required at final; **[CONFIRM local energy code path with AHJ]** |
| Fire / Egress | FBC Building / IBC Chapter 10 | Three-story single family: confirm egress from all sleeping rooms (operable window or door to exterior); stair width minimum 36 in; stair guardrail 42 in min |
| Wind Mitigation Documentation | Florida 1802 Wind Mitigation Inspection Report | Required for insurance purposes; inspector to visit at roof deck and opening protection stages; document all features (roof covering, opening protection, roof deck attachment) |

## 10.6 Special Inspections Required

- Drilled caisson / pier installation: continuous special inspection during drilling and concrete pour
- High-strength concrete (f'c = 5,000 psi): cylinder breaks at 7 and 28 days for all pier and grade beam pours
- Reinforcing steel placement: inspection before concrete pour at all structural elements
- Welded connections (if any): AWS D1.1 inspection by CWI; apply to stair stringer welds and any structural steel connections

- Window and door installation: inspection and documentation per Miami-Dade NOA and FL Product Approval
- Rooftop slab — hot tub zone: reinforcement placement inspection before pour
- Waterproofing membrane: visual inspection before Trex deck installation (rooftop)
- Hurricane tie-down hardware: framing inspection at each level to verify installation per approved plans
- Energy code: blower door test at completion, duct leakage test if ducted system

## 10.7 Subcontractor Scope Breakdown

| Trade | Scope Summary |
|---|---|
| General Contractor / CM | Overall project management, scheduling, coordination, safety, temporary facilities, final punch list |
| Civil / Earthwork | Site clearing, grading, erosion control, underground utilities, French drain, site concrete flatwork, driveway, apron |
| Structural / Foundation | Caisson drilling, pier concrete, grade beam, rooftop slab, special inspections coordination |
| Structural Framing Carpenter | Wood-frame secondary framing, floor joists, LVL beams, stair framing, sheathing |
| Masonry / CMU | CMU core walls at vertical circulation and shear wall locations |
| Roofing | Standing seam metal roof installation, rooftop waterproof membrane (TPO/EPDM), flashings, scuppers |
| Impact Windows & Doors | Supply and install all impact-rated glazing, sliding glass walls, entry door; installation per NOA |
| Siding / Exterior Envelope | Cement board siding installation, exterior primer and paint, soffit, fascia |
| Plumbing | Underground rough, DWV, supply PEX, fixtures, water heater, water softener, hot tubs, backflow preventer, irrigation main |
| Electrical | 400A service, all panels, wiring, devices, fixtures, hot tub circuits, generator transfer switch, SPD, neon power supply |
| HVAC | Mini-split system installation, refrigerant lineset, ductwork (if ducted), controls, ERV |
| Insulation | Spray foam at roof deck, batt at walls, continuous air and vapor barrier |

| Trade | Scope Summary |
|---|---|
| Drywall | Board, tape, texture (level 5 finish at living areas), moisture-resistant board in baths |
| Tile / Stone | All tile setting (floors, baths, water feature); grout and sealing |
| Cabinetry & Millwork | Kitchen cabinets, bath vanities, built-in closets, bar millwork, countertops |
| Flooring | Engineered hardwood installation, epoxy workshop floors, Trex deck installation |
| Painting | Interior and exterior paint; primer required on cement board |
| Lighting / Neon Specialty | Neon L-accent installation, DMX controller programming, landscape lighting, interior fixture installation |
| Landscaping / Irrigation | Crushed shell installation, weed barrier, planting (trees, ground cover), irrigation system installation, hanging planter installation |
| Specialty — Workshop | Hydraulic vehicle lift installation, compressed air rough-in, roll-up door installation, epoxy floor |
| Hot Tub / Spa | Both hot tub units (Level 0 and rooftop) supply and installation, salt-chlorine system, equipment enclosures |

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# Section 11: Preliminary Cost Estimate

> DISCLAIMER:
>
> This preliminary cost estimate is provided for schematic design budgeting purposes only. It is based on 2026 coastal tropical construction cost data and is not a guaranteed maximum price. Actual costs will vary significantly based on final design, contractor bids, material availability, and market conditions. Owner is strongly advised to solicit competitive GC bids during Design Development. All specialty items (impact glazing, neon system, custom entry door, hydraulic lift, hot tubs) carry significant lead time and price escalation risk — early procurement decisions are recommended.

| Div. | Scope | Low Estimate | High Estimate | Notes |
|---|---|---|---|---|
| 01 | Site Work & Earthwork | $45,000 | $75,000 | Clearing, grading, erosion control, underground utilities, driveway/apron prep |
| 02 | Concrete Foundation / Drilled Caissons & Grade Beam | $120,000 | $185,000 | 12-in drilled piers (est. 12–16 piers), grade beam, rooftop reinforced slab (hot tub zone); geotech not included |
| 03 | Structural Framing (CMU, Wood Frame, LVL) | $130,000 | $200,000 | CMU core walls, engineered framing all levels, hurricane straps, sheathing |
| 04 | Exterior Envelope — Siding & Waterproofing | $55,000 | $90,000 | HardiePlank siding, house wrap, flashing, exterior primer/paint, soffit/fascia |
| 05 | Roofing — Standing Seam + Membrane | $45,000 | $75,000 | 24-gauge aluminum standing seam, Kynar 500; rooftop TPO membrane; scuppers; gutters |
| 06 | Impact Windows & Sliding Glass Walls | $90,000 | $150,000 | PGT WinGuard or equal; Miami-Dade NOA; all levels; installation included; lead time 6–12 weeks |
| 07 | Custom Entry Door (12 ft × 6 ft Hurricane-Rated) | $35,000 | $65,000 | Custom aluminum-frame, frosted laminated glass, hurricane-rated, backlit; fabricator lead time 12–16 weeks |
| 08 | Rough MEP (Plumbing, Electrical, Mechanical Rough-In) | $95,000 | $145,000 | All rough-in labor and materials; excludes equipment and fixtures |
| 09 | HVAC Equipment & Installation | $65,000 | $100,000 | Multi-zone mini-split system (~8.5 tons total), ERV, elevated equipment platforms, controls |
| 10 | Electrical Equipment, Panels & Fixtures | $55,000 | $90,000 | 400A main, sub-panels, generator transfer switch, SPD, lighting fixtures, smart dimmers |

| Div. | Scope | Low Estimate | High Estimate | Notes |
|---|---|---|---|---|
| 11 | Plumbing Fixtures & Equipment | $40,000 | $70,000 | Kohler/Delta fixtures, tankless water heater, water softener, shower assemblies, tubs |
| 12 | Interior Finishes (Tile, Flooring, Drywall, Paint) | $110,000 | $175,000 | 24x24 rectified tile (Level 1), engineered hardwood (upper), epoxy floor (workshop), paint (all), drywall |
| 13 | Cabinetry, Millwork & Countertops | $65,000 | $110,000 | Kitchen, all baths, bar millwork, walk-in closet systems, quartz countertops |
| 14 | Trex Decking — All Levels | $55,000 | $85,000 | All Trex decks (Level 0 perimeter, Level 1 front/rear, Level 2 terrace, rooftop ~1,200 SF), steel substructure, hidden fasteners |
| 15 | Specialty — Neon L-Accent System | $12,000 | $22,000 | DMX neon flex, aluminum channels, power supplies, controller, WiFi bridge, installation; 18 LF entry system |
| 16 | Specialty — Vehicle Hydraulic Lift | $15,000 | $28,000 | 2-post or 4-post hydraulic lift, 10,000 lb capacity; anchor plates in slab; installation; electrical connection |
| 17 | Specialty — Hot Tubs (2 units) | $25,000 | $50,000 | Two 6-person spas (Level 0 + rooftop), salt-chlorine systems, plumbing, electrical, equipment enclosures; spa shells and decking surround |
| 18 | Landscaping, Irrigation & Sitework | $55,000 | $90,000 | Crushed shell (full site), planting (trees, ground cover, hanging planters, planter boxes), Hunter/Rain Bird irrigation, water feature, landscape lighting, French drain, swale |
| 19 | Softcosts — Design, Engineering, Permitting, Geotech, Survey | $85,000 | $130,000 | Architect (SD through CA), structural EOR, MEP engineer, civil, geotech report, survey, permit fees, special inspections, wind mitigation report |
| 20 | Contingency (15%) | $110,700 | $183,000 | Applied to construction hard costs; recommend 15% minimum for coastal custom new construction |
| **TOTAL PROJECT BUDGET** | **$1,008,700** | **$1,618,000** | **Midpoint: approx. $1,313,000 \| ~3,400–4,200 SF conditioned area \| 2026 coastal tropical construction costs** | |

| Div. | Scope | Low Estimate | High Estimate | Notes |
|---|---|---|---|---|
| (ESTIMATED RANGE) | | | | |

Key Escalation Risk Items — Early Procurement Recommended:

- Custom 12 ft × 6 ft hurricane-rated entry door: 12–16 week fabrication lead; confirm fabricator and issue purchase order by end of Design Development phase
- Impact-rated glazing (windows and sliding walls): 6–12 week lead from approved shop drawings; submit for approval concurrent with permit application
- DMX neon system components: specialty import items; 4–8 week lead; order at permit stage
- Hydraulic lift: installation requires anchor plate blockouts in workshop slab — confirm lift model and anchor pattern before slab pour
- Hot tub units: confirm dimensions and equipment closet size before framing; spa shells typically 10–14 week lead from specialty supplier
- Standing seam roofing in Kynar 500: 4–8 week lead; lock in color early as custom colors may extend lead time

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# Section 12: Flagged Items & Assumptions Log

Priority Legend:

HIGH

= Must resolve before permit submittal |

MEDIUM

= Must resolve before Design Development complete |

LOW

= Confirm before construction begins

| No. | Item | Assumption Made | Action Required | Priority | Owner |
|---|---|---|---|---|---|
| 1 | Lot Dimensions | 75 ft × 120 ft (9,000 SF) assumed | Commission certified boundary and topographic survey; confirm legal description and lot area | **HIGH** | Owner / Surveyor |
| 2 | Setback Requirements | Front 20 ft, Rear 20 ft, Sides 7.5 ft each assumed | Confirm with local zoning code and AHJ at pre-application meeting; variance required if design exceeds any setback | **HIGH** | Architect / AHJ |
| 3 | FEMA Flood Zone & BFE | Zone AE, BFE 9 ft NGVD assumed | Pull FIRM panel for specific property address; confirm BFE; apply for LOMA if finished grade elevation affects zone | **HIGH** | Owner / Surveyor / FEMA |
| 4 | Soil Bearing Capacity | 2,000–3,000 psf sandy coastal soil assumed; groundwater 2–4 ft assumed | Commission geotechnical investigation (SPT borings, lab analysis, liquefaction assessment); geotechnical report required before structural design | **HIGH** | Owner / Geotech Engineer |
| 5 | Wind Speed Zone | 150 mph, Exposure Category D assumed | Confirm wind speed via ASCE 7-22 wind map for exact municipality and site coordinates; confirm Exposure Category with EOR | **HIGH** | Structural EOR |
| 6 | Applicable Building Code | Florida Building Code 8th Edition equivalent or similar coastal tropical code assumed | Confirm adopted code edition with AHJ; confirm any local amendments; confirm if FBC 9th Edition has been adopted | **HIGH** | Architect / AHJ |
| 7 | Workshop / Accessory Use Zoning | Vehicle workshop within residential | Confirm with local zoning department that workshop/garage use within residential building is allowed; | **HIGH** | Architect / Zoning |

| No. | Item | Assumption Made | Action Required | Priority | Owner |
|---|---|---|---|---|---|
| | | structure assumed to be permitted use | confirm if accessory use permit required | | |
| 8 | HOA / CC&R Restrictions | No HOA restrictions assumed; neighborhood described with varied colors and finishes | Review any recorded CC&Rs; submit facade design, color palette, neon lighting, rooftop hot tub, and workshop for HOA architectural review if applicable | **MEDIUM** | Owner / Attorney |
| 9 | Sewer vs. Septic | Municipal sewer assumed available | Confirm sewer availability and connection requirements from local utility; if septic required, engage licensed septic designer — may affect site layout significantly | **MEDIUM** | Owner / Civil Engineer |
| 10 | Utility Locations | Water, sewer, electric, gas service available at street; locations unconfirmed | Contact all utility companies for service availability maps; confirm lateral locations before pier layout is finalized | **MEDIUM** | Owner / Civil / GC |
| 11 | Neon Accent Signage Permit | Entry neon L-accent assumed to be permitted as decorative lighting without separate sign permit | Confirm with local AHJ whether DMX programmable exterior LED neon requires separate sign or lighting permit; some municipalities classify programmable exterior lighting as signage | **MEDIUM** | Architect / AHJ |
| 12 | Rooftop Hot Tub Local Code | Rooftop hot tub assumed permitted under local residential code with structural review | Confirm with AHJ that rooftop spa installation is permitted for residential use; confirm structural permit path and inspection requirements | **MEDIUM** | Architect / AHJ |
| 13 | Driveway Apron Permit & Width | 18-ft-wide driveway apron assumed permitted; street curb cut assumed available | Apply to local public works or DOT (if state road) for driveway apron permit; confirm allowed width of curb cut for this zone type | **MEDIUM** | Owner / Civil / Public Works |

| No. | Item | Assumption Made | Action Required | Priority | Owner |
|---|---|---|---|---|---|
| 14 | Tree Species Code Compliance | Brown Turkey / Chicago Hardy fig assumed non-invasive in this jurisdiction | Confirm with local code or extension office that fig species selected are not on invasive species list; check Florida invasive plant council list | **MEDIUM** | Landscape Architect / Owner |
| 15 | Coastal Construction Setback Line (CCCL) | CCCL applicability not confirmed; assumed site is not within CCCL or CHHA | Check Florida DEP CCCL database for property; if within CCCL, a DEP permit is required before construction and may impose additional requirements | **MEDIUM** | Architect / DEP |
| 16 | Entry Door Fabricator Lead Time | 12–16 week lead time assumed for custom 12 ft × 6 ft hurricane-rated aluminum entry door | Solicit quotes from specialty fabricators (impact door manufacturers in Florida or custom aluminum door shops) during Design Development; lock in order ASAP; confirm hurricane rating path (FL Product Approval or engineer certification) | **MEDIUM** | Architect / Owner / GC |
| 17 | Elevator / Vertical Accessibility | No elevator included; stairs only | Owner to confirm if future-proofing with elevator shaft rough-in is desired; single-family residential exempted from ADA elevator requirement but owner should consider aging-in-place planning | **LOW** | Owner |
| 18 | Generator Size and Fuel | Generator-ready conduit stub only; no generator specified | Owner to select whole-house standby generator model (suggested 22–26 kW propane or natural gas); confirm fuel availability; size transfer switch accordingly | **LOW** | Owner / Electrical |
| 19 | Rooftop Planter Loading | Lightweight composite planters <20 lb max loaded weight; no structural impact assumed | EOR to confirm allowable point loads at rooftop Trex deck support framing before any planters are specified; do not exceed rooftop live load allowance | **LOW** | Structural EOR |
| 20 | USDA Plant Zone | Zone 10b–11 assumed for tropical coastal site | Confirm exact USDA zone for municipality; validate plant palette species against zone tolerance, especially for any | **LOW** | Landscape Architect |

| No. | Item | Assumption Made | Action Required | Priority | Owner |
|---|---|---|---|---|---|
| | | | plants spec'd from northern sources | | |

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