Design Development Package

Modern Tropical Raised Home — DD-01

Three-Story Tropical Residence | Raised Concrete Pier Construction

Project Ref: DD-01 | **Phase:** Design Development | **Revision:** DD-01

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DOCUMENT NOTICE — DESIGN DEVELOPMENT PHASE

This package constitutes the Design Development (DD-01) submission for the Modern Tropical Raised Home project. All dimensions, assemblies, schedules, and specifications herein supersede previous Schematic Design (SD) documents. Items tagged

`[DD CONFIRMED]`

are locked for CD phase. Items tagged

`[PENDING EOR]`

require Engineer of Record review prior to CD issuance. Items tagged

`[FLAGGED FOR CD]`

require resolution before construction documents are finalized. CD set is targeted for issuance Week 6–7 from date of this package.

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SECTION 1 — DD PACKAGE OVERVIEW

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DESIGN INTENT CONFIRMATION

1. DD Package Overview & Design Intent Confirmation

1.1 Phase Summary

The Design Development (DD) phase represents the second of three primary phases in the AIA standard architectural workflow — following Schematic Design (SD) and preceding Construction Documents (CD). Where the SD phase establishes the fundamental concept, massing, spatial relationships, and preliminary material directions of a project, the DD phase transforms those concepts into confirmed, coordinated, and fully dimensioned design decisions that are ready to be translated directly into permit-ready construction drawings.

This DD-01 package accomplishes the following for the Modern Tropical Raised Home project: it locks in all major design decisions derived from the SD phase, integrates preliminary coordination from structural and MEP (mechanical, electrical, plumbing) consultants, finalizes the building material palette and system specifications, establishes a complete room-by-room program with confirmed dimensions, introduces full door and window schedules with manufacturer references, presents wall type assemblies with confirmed thicknesses and ratings, provides a refined cost estimate at DD-level accuracy (typically ±15–20% as opposed to SD-level ±25–30%), and articulates the remaining open items requiring resolution prior to CD issuance.

This DD package is issued as DD-01, dated May 8, 2026. It reflects all client direction received through the SD review meeting and incorporates refinements to the structural approach, specialty systems, and interior finish specifications. Upon owner review and approval of this package, the project will advance to the Construction Documents (CD) phase. The CD permit-ready set is estimated for completion and submission approximately three (3) weeks from the date of this DD issuance, targeting a building permit application submission in Week 6–7 of the overall project schedule.

Consultants to be formally engaged concurrent with or immediately following owner approval of this DD package: Structural Engineer of Record (EOR), MEP Engineering (mechanical, electrical, plumbing), Civil/Site Engineering, and Geotechnical Engineer. The geotechnical report is identified as a critical-path item — see Section 15 for full open items list.

1.2 Design Decisions Confirmed from SD Phase

The following table documents all major design and system decisions that have been reviewed, confirmed, and locked at the DD phase. These items will carry forward into the CD set without further revision absent owner direction. `[DD CONFIRMED]` items are finalized.

Item	Decision / Specification	Status	Notes
Building Footprint	50'-0" wide × 40'-0" deep	[DD CONFIRMED]	Gross footprint; all levels above align to this envelope
Pier Grid Layout	6 piers in 2-row × 3-column; 20'-0" o.c. N-S; 16'-8" o.c. E-W	[DD CONFIRMED]	Pending geotech confirmation of depth and capacity
Entry Door	12'-0" W × 6'-0" H, custom thermally broken aluminum, frosted laminated glass panels, LED backlit	[DD CONFIRMED]	Order immediately — 14–20 week lead time
Neon L-Accent	RGB DMX512 IP67 flex neon, 18 LF total (6 LF vertical + 12 LF horizontal header)	[DD CONFIRMED]	24VDC system; Ltech DMX controller
Rooftop Hot Tub	6-person spa, 12'×12' reinforced slab zone, 120 psf design load	[DD CONFIRMED]	Structural slab zone confirmed; EOR to size transfer framing
Vehicle Workshop	24'-0" D × 14'-0" W × 10'-0" clear ht., for classic Dodge Charger	[DD CONFIRMED]	Hydraulic lift embedded anchors in 6" slab
Exterior Cladding	James Hardie HZ10 cement board, Ocean Teal finish, Antique Ivory trim	[DD CONFIRMED]	HZ10 product line rated for coastal humid climates
Roofing System	24-ga. standing seam aluminum, Kynar 500 coating, Charcoal Gray	[DD CONFIRMED]	Standing seam; concealed clip system; no exposed fasteners
Glazing System	PGT WinGuard impact laminated, Miami-Dade NOA, 160 mph wind rating	[DD CONFIRMED]	All exterior openings; U-0.28, SHGC 0.24
Exterior Decking	Trex Transcend Tropics — Tiki Torch color, all exterior decks	[DD CONFIRMED]	Hidden fastener system; 25-year warranty
HVAC System	Mitsubishi Hyper Heat MXZ multi-zone mini-split; 11.5 tons total, 6 zones	[DD CONFIRMED]	Condensers at L1 above BFE; ERV supplemental ventilation
Foundation Type	12" diameter drilled concrete caissons, f'c = 5,000 psi, min. 10'-0" below grade	[PENDING GEOTECH]	**CRITICAL PATH** — geotech report required before EOR finalizes

1.3 Items Progressed Since SD Phase

The following items represent active development and refinement accomplished between SD and this DD-01 submission:

1. **Floor-to-Floor Heights Confirmed:** Under-house clear height established at 11'-0"; Level 1 floor-to-floor confirmed at 10'-6" to Level 2 finished floor; Level 2 to roof structure confirmed at 10'-6". Total building height from grade to top of parapet approximately 37'-6".
2. **Structural Steel System Defined:** Primary beams at W16×40, secondary beams at W10×22 at 6'-0" o.c., W8×31 or W10×33 steel columns on pier caps — all pending EOR final sizing.
3. **Composite Deck Floor System Confirmed:** 3.5" normal-weight concrete on 2" 18-ga composite metal deck, total 5.5" structural slab at Levels 1 and 2.
4. **Rooftop Slab Specification:** 8" flat slab standard zones; 12" reinforced pad at hot tub zone with galvanized/epoxy-coated #4 rebar mat at 12" o.c. each way.
5. **Workshop Slab Enhanced:** 6" f'c 4,000 psi slab-on-grade with hydraulic lift anchor sleeves (4 sleeves, 1,000 lb each rated), #5 rebar at 18" o.c. each way, 1.5% slope to trench drain confirmed.
6. **Plumbing System Architecture Finalized:** 400A electrical service, 1.5" water main, 4" primary stack in stair tower chase; PEX-A Uponor Wirsbo distribution throughout; Rinnai RU199iN tankless water heater confirmed.
7. **Electrical Service Upgraded:** 400A underground utility feed confirmed; 200A workshop sub-panel; 100A rooftop sub-panel; 22kW Generac standby generator with ATS and buried propane tank.
8. **Millwork & Cabinetry Scope Defined:** Kitchen, master bath, primary suite closet, and bar specifications developed to DD level with KCMA/CARB2 requirements confirmed.
9. **Hanging Garden Planter System Developed:** 11-gauge powder-coated steel planter boxes, hurricane-anchored stainless through-bolts, dedicated drip irrigation zone, coir liner, and plant palette defined.
10. **Interior Finish Schedule Completed:** All finish codes (FIN-F1 through FIN-F5, FIN-W1 through FIN-W6, FIN-C1 through FIN-C3) assigned to every room across all four levels.
11. **Man Cave Program Formalized:** 28'×22' clear area with polished epoxy concrete, 12 LF bar, bar-height counter, LED accent display shelving, and bathroom confirmed at Level 0.

12. **Hurricane Strapping Schedule Preliminary:** Simpson Strong-Tie H2.5A at rafter/joist bearing, LTT19A at shear wall boundaries, SSTB anchor bolts at all sill plates identified for CD detailing.
13. **Neon L-Accent Control Sequence Programmed:** Standard animated cycle, party chase mode, and three static color modes (orange, teal, white) defined; Ltech DMX WiFi bridge specified.
14. **Stormwater System Designed:** 4" primary internal roof drains at 4 corners, 2" emergency overflow scuppers, 12" HDPE infiltration gallery at rear yard, perimeter trench drains at under-house level.
15. **Door and Window Schedules Produced:** Twenty (20) door entries and fifteen (15) window entries fully scheduled with size, material, hardware, glazing, hurricane rating, and special notes.

SECTION 2 — CONFIRMED ROOM-BY-ROOM PROGRAM (DD LEVEL)

2. Confirmed Room-by-Room Program

The following program table documents all rooms across all four levels of the project at DD level. Dimensions, areas, ceiling heights, and finish designations are confirmed for CD incorporation. Net SF reflects interior clear dimensions. Gross SF includes wall thickness. `[DD CONFIRMED]`

Level 0 — Under-House Ground Plane

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Entry Alcove	L0	14' × 10'	110 SF	130 SF	11'-0" clear	Polished concrete, sealed	Painted CMU, smooth finish	Neon L-accent surround; D-01 main entry; LED pathway lighting at grade

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Stair Tower	L0–L2	12' × 8'	Open	96 SF/level	11'-0" to L1 underside	Open-riser tropical hardwood treads	Painted drywall on stud; curtain wall east	Full-height impact glass curtain wall on east face; W-10 glazing; vertical circulation spine
Storage Under Stair	L0	10' × 8'	80 SF	90 SF	Varies to 7'-0"	Epoxy-sealed concrete	Painted drywall	D-17 keyed entry; shelving for beach/outdoor gear
Man Cave / Lounge	L0	28' × 22'	616 SF	650 SF	10'-6" clear	Polished concrete, charcoal/flake epoxy seal	Painted + shiplap accent panel (FIN-W5) feature wall	AV zone, gaming, pool table clearance confirmed; D-18 entry; W-11 window(s)
Bar	L0	12 LF × 6' depth	72 SF	85 SF	10'-6"	Polished concrete	Tile backsplash; painted	42" bar-height counter; 3 undercounter refrigerators; LED bottle display; integrated into man cave
Vehicle Workshop	L0	24' × 14'	336 SF	360 SF	10'-0" clear	6" polished concrete epoxy, non-slip broadcast	Painted CMU; LED shop lights	BendPak XPR-10S hydraulic lift; D-02 roll-up; 200A sub-panel; EV 50A NEMA 14-50; trench drain

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Hot Tub Deck Area	L0	12' × 12'	144 SF	144 SF	Open / outdoor	Trex Transcend Tiki Torch	Open; glass/cable rail perimeter	Ground-level hot tub or spa area (if second spa at ground level); Trex framing system
Hot Tub Equipment Closet	L0	5' × 5'	25 SF	30 SF	7'-0"	Concrete	Weatherproof enclosure; painted CMU	D-19 fiberglass door; pump/heater clearance 24" min; access panel
Bathroom (L0)	L0	10' × 8'	80 SF	92 SF	9'-0"	12×24 porcelain tile, Spa Blue/Gray	12×24 porcelain to 8'-0" AFF; painted ceiling	Serves man cave/workshop; moisture-resistant construction throughout
Mechanical/Electrical Closet (L0)	L0	5' × 5'	25 SF	30 SF	9'-0"	Concrete	Painted CMU	Electrical distribution for L0; conduit stub-outs

Level 1 — Main Living Floor

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Great Room / Living / Dining	L1	30' × 30'	900 SF	950 SF	10'-0" min	24×24 porcelain tile, Ivory/Cream (FIN-F1)	OC-17 White Dove (FIN-W1); HC-157 Newburyport Blue	D-03 to front deck; W-01 ribbon window; open to

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
							accent wall (FIN-W2)	kitchen; cathedral or flat ceiling TBD
Kitchen	L1	20' × 15'	300 SF	330 SF	10'-0"	24×24 porcelain tile (FIN-F1)	OC-17 upper; 4×12 subway tile backsplash (FIN-W3)	W-02 pass-through; island 4'×8'; D-04 to rear deck; Rinnai tankless water heater in mech room
Master Bedroom	L1	20' × 16'	320 SF	345 SF	10'-0"	Engineered white oak hardwood, matte UV (FIN-F2)	OC-17 White Dove; accent wall detail	D-05 entry; W-03 south picture window; en-suite bath access
Master Bath	L1	14' × 12'	168 SF	182 SF	10'-0"	12×24 rectified porcelain, Spa Blue/Gray (FIN-F5)	4×12 subway tile white gloss to 8'-0" AFF (FIN-F5/W4); painted ceiling FIN-C1	D-06; W-04 obscure glass; double vanity 72"; walk-in shower; soaking tub option
Master Walk-In Closet	L1	10' × 8'	80 SF	90 SF	9'-0"	Engineered hardwood (FIN-F2)	OC-17 painted	D-07 double bypass; built-in millwork shelving; LED strip under shelves
Guest Suite	L1	15' × 16'	240 SF	262 SF	9'-0"	Engineered hardwood (FIN-F2)	OC-17 painted	D-08; W-05; private bath access via D-09
Guest Bath	L1	10' × 6'	60 SF	70 SF	9'-0"	12×24 porcelain tile floor +	Tile to 8'-0" AFF;	D-09; tub/shower combo;

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
						walls (FIN-F5)	painted ceiling	single vanity; exhaust fan
Laundry / Utility	L1	12' × 10'	120 SF	132 SF	9'-0"	12×24 porcelain tile (FIN-F5)	Painted; waterproof membrane at wet areas	D-15; W-12; washer/dryer stacked or side-by-side; utility sink; W&D hookups
Mechanical / Electrical Room	L1	10' × 8'	80 SF	90 SF	9'-0"	Painted concrete	Painted CMU	D-16 (20-min rated); Square D 400A main panel; water heater; water softener; ERV unit; SMC
Covered Front Trex Deck	L1	24' × 12'	288 SF	300 SF	Open/covered	Trex Transcend Tiki Torch (FIN-F4)	Open beam soffit, painted white (FIN-C2)	D-03 sliding glass from great room; hanging garden planter zone; ocean/view orientation
Covered Rear Trex Deck	L1	20' × 10'	200 SF	210 SF	Open/covered	Trex Transcend Tiki Torch (FIN-F4)	Painted soffit (FIN-C2)	D-04 from kitchen; outdoor dining zone; cable rail perimeter

Level 2 — Upper Floor

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Primary Suite	L2	24' × 20'	480 SF	510 SF	10'-0"	Engineered white oak hardwood, matte UV (FIN-F2)	OC-17; HC-157 Newburyport Blue textured accent wall (FIN-W2)	D-10 entry; W-06 east picture window; access to private terrace via D-12 impact French door
Primary Bath	L2	16' × 12'	192 SF	208 SF	10'-0"	24×48 large format porcelain (FIN-F5)	24×48 porcelain to 8'-0" AFF + mosaic accent strip; painted ceiling	D-11; W-07 casement obscure; frameless glass shower enclosure; freestanding tub option; double vanity
Primary Walk-In Closet	L2	12' × 10'	120 SF	132 SF	9'-0"	Engineered hardwood (FIN-F2)	OC-17 painted	Floor-to-ceiling millwork built-ins; adjustable shelving; LED strip under shelves; shoe display zone
Private Terrace off Primary	L2	16' × 10'	160 SF	168 SF	Open / outdoor	Trex Transcend Tiki Torch (FIN-F4)	Open; glass/cable rail perimeter	D-12 impact French door; private outdoor retreat; min 42" guardrail
Bedroom 3	L2	16' × 14'	224 SF	242 SF	9'-0"	Engineered hardwood (FIN-F2)	OC-17 painted	D-13; W-08; access to Bath 3
Bath 3	L2	8' × 6'	48 SF	56 SF	9'-0"	12×24 porcelain tile floor + walls (FIN-F5)	Tile to 8'-0" AFF; painted ceiling	Shower/tub combo; single vanity; exhaust fan; shared by Bedrooms 3 & 4

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish	Notes
Bedroom 4 / Flex Office	L2	15' × 14'	210 SF	226 SF	9'-0"	Engineered hardwood (FIN-F2)	OC-17 painted	D-14; W-09; flexible use: bedroom or home office; Cat6A and HDMI rough-in
Corridor / Landing	L2	8' × 15'	120 SF	130 SF	9'-0"	24×24 porcelain tile (FIN-F1)	OC-17 painted	W-13 casement; connects stair to all L2 rooms; guardrail at stair opening per IBC

Rooftop Level

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish / Notes	Special Notes
Main Rooftop Deck	Roof	50' × 40' gross	~1,200 SF net usable	2,000 SF	Open sky	Trex Transcend Tiki Torch (FIN-F4)	Open; 42" min parapet; hurricane-rated guardrail posts	Areas deducted for mech screen, hot tub pad, pergola footings, and drainage zones
Hot Tub Zone	Roof	12' × 12'	144 SF (structural pad)	144 SF	Open	Trex surround around hot tub	Reinforced concrete pad; 120 psf design load; 240V/60A GFCI circuit; waterproof Trex surround	`[PENDING EOR]` Transfer framing sizing required; galvanized/epoxy rebar

Room Name	Level	Dimension (L×W)	Net SF	Gross SF	Ceiling Ht	Flooring	Wall Finish / Notes	Special Notes
Outdoor Kitchen	Roof	8 LF counter zone	~64 SF	~80 SF	Open / pergola	Trex deck + sealed concrete counter	1/2" potable supply stub-out; 2" drain; grill, refrigerator, sink provisions	D-20 impact access door from stair tower; weatherproof fixtures throughout
Pergola Zone	Roof	20' × 16'	320 SF	320 SF	Open shade structure	Trex deck	Shade structure overhead; aluminum or painted wood pergola; min 8'-0" clearance under beams	Hurricane anchorage of pergola posts required; `[FLAGGED FOR CD]`
Mechanical Screen Zone	Roof	14' × 8'	112 SF	112 SF	Per parapet ht.	Concrete	Aluminum louver screen enclosure; 24" clearance around hot tub equipment; access panel at roll-out	Hot tub pump/heater housed here; condenser screen if rooftop HVAC unit located here

Program Summary — Area Totals by Level

Level	Conditioned SF	Unconditioned SF	Deck / Patio SF	Notes
Level 0 (Ground/Under-House)	1,208 SF	336 SF (workshop)	144 SF	Man cave, bar, bath, storage, mechanical; workshop semi-conditioned

Level	Conditioned SF	Unconditioned SF	Deck / Patio SF	Notes
Level 1 (Main Living)	2,068 SF	80 SF (mech room)	488 SF (front + rear decks)	Great room, kitchen, master suite, guest suite, laundry
Level 2 (Upper Floor)	1,074 SF	—	160 SF (private terrace)	Primary suite, bedrooms 3 & 4, corridor
Rooftop	—	—	~1,200 SF (net usable deck)	Outdoor kitchen, hot tub, pergola, mechanical screen
Stair Tower (all levels)	~288 SF (3 floors)	—	—	Vertical circulation; curtain wall east face
TOTAL CONDITIONED	**~4,638 SF**	**~416 SF**	**~1,992 SF**	Gross building area approx. 7,046 SF including all decks

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SECTION 3 — BUILDING SECTIONS — NARRATIVE DESCRIPTIONS

3. Building Sections — Narrative Descriptions

The following narrative section descriptions serve as the written basis for the building section drawings to be produced in the CD phase. All structural member sizes are preliminary and subject to Engineer of Record confirmation. `[PENDING EOR]` for all member sizing. All dimensions are from DD-01 and are confirmed for CD incorporation unless otherwise noted.

3.1 Longitudinal Section — Section A-A (North-South Cut Through Building Center)

Section A-A is a full-height, full-length cut taken on the centerline of the building, oriented north-to-south through the primary longitudinal axis of the residence. Beginning at the south face and reading northward, the section reveals the following elements from bottom of foundation to top of parapet:

Below Grade: Native soil (fill or natural, pending geotechnical report — `[FLAGGED FOR CD]`) extends from existing grade downward. Two (2) concrete caissons are visible in this section — one at each north-south row center. Each caisson is 12" diameter, drilled and placed, f'c = 5,000 psi, extending a minimum

of 10'-0" below finished grade. Reinforcement per EOR: minimum 6-#6 longitudinal bars with #3 spirals at 3" pitch anticipated. The bottom of the caisson is belled per geotech recommendation if bearing stratum allows.

At Grade: A 30"×30"×18" deep reinforced concrete pier cap sits atop each caisson at finish grade elevation. The pier cap receives the baseplate of the steel column above via 4 embedded anchor rods (diameter and embedment per EOR). A 12"×18" reinforced concrete grade beam (top bars 3-#5, bottom bars 3-#5, #3 stirrups at 12" o.c.) runs continuous between all pier caps in the N-S direction, connecting the foundation into a unified system. Waterproof coating (crystalline or bituminous) applied to all below-grade and at-grade concrete surfaces.

Under-House Volume — Level 0 (Grade to L1 Underside): Rising from the pier cap, W8×31 or W10×33 steel columns (EOR to confirm) carry the Level 1 floor structure at approximately 11'-0" above finished grade. The under-house volume is 11'-0" clear minimum. In this center section cut, the following spaces are visible: the Entry Alcove and Stair Tower at the east end, the Man Cave / Lounge central volume (28'×22', 10'-6" clear ceiling to underside of L1 structure), and the Bar zone within the man cave at the north portion of the section. CMU stem walls are visible at the perimeter of the under-house enclosure. The underside of the Level 1 composite deck is exposed in section: 2" 18-ga galvanized composite metal deck spanning between secondary beams, with 3.5" normal-weight concrete above, totaling 5.5" structural slab. Insulation at the underside of the slab (R-19 spray-applied closed-cell polyurethane or rigid board) is shown in section. Primary beams visible: W16×40 spanning N-S at 16'-8" between columns. Secondary beams: W10×22 at 6'-0" o.c. spanning E-W across primaries.

Level 1 Floor to Level 2 Floor — Floor-to-Floor Height: 10'-6" nominal: Above the composite deck at Level 1, the exterior wall assembly begins (see Section 3.3, Wall Section C-C). The Great Room / Living / Dining occupies the south-central volume with 10'-0" finished ceiling height. Beyond the great room to the north, the Kitchen is visible with the island at center. Structural columns (wood stud bearing walls at Level 1 exterior per WT-01, interior bearing walls per WT-03) are visible in section supporting the Level 2 floor structure. Level 2 floor: TJI 360 12" engineered wood joists at 16" o.c. (EOR option) or matching W10×22 secondary beams with composite deck — EOR to coordinate. The Level 2 floor assembly is approximately 16"–18" total structural depth.

Level 2 Floor to Roof — Floor-to-Floor Height: 10'-6" nominal: At Level 2, the Primary Suite is visible at the west end of the section; Bedrooms 3 and 4 are visible at the east end. The Level 2 ceiling height is 10'-0" finished. The stair tower volume continues its full-height glass east facade. The rooftop structural slab spans the entire 50'×40' building footprint: 8" flat concrete slab (post-tensioned or conventionally reinforced per EOR) at standard zones, increasing to 12" in the 12'×12' hot tub reinforcement zone on

the rooftop. A 2" slope-to-drain built into the rooftop slab is confirmed. Standing seam aluminum roofing is not visible in this flat-roof section — it applies only to any sloped canopy or carport elements; the primary roof is a flat rooftop deck with Trex surface over structural slab. A 42" minimum CMU or framed parapet wall runs the full perimeter of the roof, capped with an aluminum coping and a continuous waterproof membrane flashing at the coping-to-slab junction.

Structural Annotation Summary (Section A-A — Preliminary, EOR to Confirm):

Element	Preliminary Size	Material	Status
Caissons	12" dia., 10'-0"+ depth	f'c 5,000 psi concrete	[PENDING EOR/GEOTECH]
Grade Beam	12" W × 18" D	f'c 4,000 psi, #5 bars	[PENDING EOR]
Steel Columns (under-house)	W8×31 or W10×33	A992 Grade 50 steel	[PENDING EOR]
Primary Beams (L1 and L2 floors)	W16×40	A992 Grade 50 steel	[PENDING EOR]
Secondary Beams	W10×22 at 6'-0" o.c.	A992 Grade 50 steel	[PENDING EOR]
Composite Deck (L1 and L2)	2" 18-ga galvanized + 3.5" NW concrete = 5.5" total	Steel deck + f'c 3,500 psi LW or NW concrete	[PENDING EOR]
Rooftop Slab (standard zones)	8" flat slab	f'c 4,000 psi, conventionally reinforced or PT	[PENDING EOR]
Rooftop Hot Tub Pad	12" reinforced slab	f'c 4,000 psi, galv./epoxy #4 rebar at 12" o.c. e.w.	[PENDING EOR]
Floor-to-Floor (L0 to L1)	11'-0" clear under-house	—	[DD CONFIRMED]
Floor-to-Floor (L1 to L2)	10'-6" nominal	—	[DD CONFIRMED]
Floor-to-Floor (L2 to Roof)	10'-6" nominal	—	[DD CONFIRMED]
Total Building Height (grade to top of parapet)	Approx. 37'-6" to 39'-0"	—	[FLAGGED FOR CD — confirm per local zoning height limit]

3.2 Transverse Section — Section B-B (East-West Cut Through Entry/Workshop)

Section B-B is a transverse cut taken east-to-west at the entry and workshop zone of the building, revealing the full building width from east face to west face. Reading from east to west, the section shows:

East Face: The Stair Tower occupies the southeast corner and rises the full height of the building. Its east-facing wall is a full-height curtain wall assembly (W-10): thermally broken aluminum curtain wall framing, impact laminated 1" glass, NOA rated at 160 mph. The curtain wall stair enclosure reads as a transparent vertical element from grade to rooftop, allowing the stair to be visible from the street. The Entry Alcove extends east of the stair tower at grade, with the 12'-0" wide entry door (D-01) centered on the alcove. Neon L-accent (18 LF total) frames the alcove opening on the east face of the building.

Interior — Levels 0 through Roof: Moving west from the stair tower, Level 0 shows the Man Cave and Bar occupying the full-width center zone. The under-house steel columns are visible at the 16'-8" E-W bay spacing. At Level 1, the Great Room is visible in section with a 10'-0" finished ceiling; at Level 2, the Corridor and landing transition to the Primary Suite on the upper level. At the rooftop, the outdoor kitchen and pergola zone are visible at east center, with the mechanical screen zone and hot tub to the west.

West Face — Workshop: At the west end of the building at Level 0, the Vehicle Workshop is clearly visible in section: 24' deep by 14' wide clear, 10'-0" clear height, 6" slab-on-grade with trench drain at south end. The commercial roll-up door (D-02) — 16'-0" wide × 10'-0" tall — appears in the west elevation face of the workshop. The CMU wall assembly (WT-07) forms the workshop exterior enclosure. At Levels 1 and 2, the west exterior wall is the standard WT-01 assembly with James Hardie cement board cladding. At the rooftop, the 42" parapet is continuous along the west perimeter.

Clear Height and Member Annotations (Section B-B):

- Under-house clear (all zones): 10'-6" to 11'-0" depending on beam depth
- Level 0 Man Cave clear: 10'-6" to underside of L1 secondary beams
- Workshop clear: 10'-0" to underside of L1 structure (lower due to L1 slab proximity)
- E-W bay: 16'-8" between column centerlines `[DD CONFIRMED]`
- West side decks at L1 and L2 are visible in section: framed Trex deck on aluminum joist hangers extending from primary structure

3.3 Wall Section — Section C-C (Typical Exterior Wall, Footing to Roof)

Section C-C illustrates the typical exterior wall assembly from the bottom of the foundation to the top of the rooftop parapet. This assembly applies to all above-grade exterior walls (WT-01) unless noted otherwise. Reading from bottom to top:

Layer / Element	Material	Thickness	Thermal / Structural Value	Reference Standard
1 — Drilled Caisson	Cast-in-place concrete, f'c = 5,000 psi	12" dia.	Structural: gravity + lateral load transfer	ACI 318; IBC 1802
2 — Pier Cap	Reinforced concrete, f'c = 4,000 psi	30"×30"×18" D	Distributes column load to caisson	ACI 318
3 — Grade Beam	Reinforced concrete, waterproof coating	12" W × 18" D	Ties piers; resists lateral soil; waterproofed with crystalline or bituminous coating	ACI 318; ASTM C 1218
4 — Steel Column	W8×31 or W10×33, A992 Gr. 50	Per EOR	Structural: transfers floor and roof loads	AISC 360
5 — CMU Stem Wall Enclosure (under-house perimeter)	8" CMU, fully grouted at corners and openings	8" nominal	Encloses under-house; lateral resistance at base; STC 52	ACI 530; ASTM C 90
6 — Level 1 Floor Assembly	3.5" NW concrete on 2" 18-ga composite deck on W-shape beams	5.5" structural slab total	Live load: 40 psf (residential); composite action via welded shear studs	AISC 360; IBC 1607
7 — Interior GWB (Level 1 wall, interior face)	5/8" Type X GWB	5/8"	Fire resistance; interior finish substrate	ASTM C 1396
8 — 2×6 Wood Stud Framing	SPF or HF #2 and Better, at 16" o.c.	5-1/2" actual	Structural: gravity and lateral (with sheathing); cavity depth for insulation	AWC SDPWS; IBC 2308
9 — Batt Insulation	R-21 fiberglass batt or mineral wool	5-1/2" (full cavity fill)	R-21 thermal; continuous fill eliminates convective loops	ASHRAE 90.1; IECC 2021
10 — 1/2" CDX Plywood Sheathing	CDX 4-ply plywood, nailed at 6" o.c. at edges, 12" o.c. field	1/2"	Structural shear panel; lateral force resistance; continuous shear load path	AWC SDPWS; PS 1
11 — Weather-Resistant Barrier (WRB)	Henry Blueskin VP100 or Huber ZIP System tape	Self-adhering membrane (negligible)	Air and moisture barrier; secondary drainage plane	ICC AC 212; ASTM E 1677

Layer / Element	Material	Thickness	Thermal / Structural Value	Reference Standard
12 — 1" Rigid Foam Continuous Insulation	Polyisocyanurate or XPS, foil-faced	1"	R-6 continuous; thermal break across studs; reduces condensation risk at thermal bridges	ASTM C 1289; IECC CI requirement
13 — 1×3 Vertical Furring Strips	Pressure-treated wood or aluminum hat track at 16" o.c.	3/4"	Creates drainage cavity behind cladding; allows WRB to drain; ventilated rainscreen	WUFI best practice; HardieZone HZ10
14 — James Hardie HardiePanel or HardiePlank (HZ10)	Fiber cement, 5/4" siding or panel; Ocean Teal (field); Antique Ivory (trim)	5/16" to 7/16"	Exterior cladding; fire-resistant; moisture-resistant; wind-rated; HZ10 rated for hot/humid coastal climates	ASTM C 1186; ICC ESR-2290; Miami-Dade NOA
15 — Paint / Finish	Sherwin-Williams Duration Exterior or James Hardie factory finish	Applied coat	UV and moisture protection; 15-year warranty	AAMA 2604
16 — Rooftop Parapet Extension	CMU or framed continuation of exterior wall; min 42" above finished deck	Per WT-08	Guardrail per IBC; waterproofing cap and flashing at coping	IBC 1015.8; ASCE 7
17 — Aluminum Coping	6063-T5 aluminum coping, Charcoal Gray powder coat, continuous cleat mount	1/2" face + web	Protects parapet top; directs water off face; continuous flashing behind	SMACNA Architectural Sheet Metal Manual

Total Wall Assembly Thickness (C-C): Approximately 9-3/4" to 10-1/4" from interior GWB face to exterior cladding face. `[DD CONFIRMED]`

SECTION 4 — WALL TYPE SCHEDULE

4. Wall Type Schedule

The following wall type schedule defines all distinct wall assemblies used in the project. All assemblies are listed inside-to-outside (interior face first). Fire ratings, STC ratings, and total thicknesses are preliminary at DD level and shall be confirmed by the EOR and fire protection engineer where required. `[DD CONFIRMED]` for assembly compositions; `[PENDING EOR]` for structural verification of bearing walls.

Wall Type ID	Description	Assembly — Inside to Outside	Total Thickness	STC Rating	Notes
WT-01	Exterior Load-Bearing Wall — Typical (L1 and Above)	5/8" Type X GWB | 2×6 SPF stud at 16" o.c. | R-21 fiberglass batt insulation | 1/2" CDX plywood sheathing | Henry Blueskin WRB | 1" polyiso rigid foam (R-6) | 1×3 pressure-treated furring at 16" o.c. | James Hardie HZ10 cement board (5/16") | Ocean Teal factory finish (field) / Antique Ivory (trim)	~10-1/4"	44	Primary exterior wall; rainscreen cavity; continuous insulation; bearing per EOR `[PENDING EOR]`. Hurricane-rated sheathing nailing pattern per AWC SDPWS High Wind zone.
WT-02	Interior Partition — Non-Bearing	5/8" GWB | 3-5/8" metal stud at 16" o.c. | R-11 fiberglass batt (acoustic) | 5/8" GWB	~5"	40	Standard interior partition; acoustic batt for all bedroom and bath partitions. Wet-wall version uses moisture-resistant GWB at one face.
WT-03	Interior Bearing Wall	5/8" GWB | 2×6 SPF stud at 16" o.c. | Insulation optional (no exterior exposure) | 5/8" GWB	~7"	42	Load path wall; size and spacing per EOR. Header sizes at openings per IBC Table 2308.4.2.1. `[PENDING EOR]`
WT-04	Wet Wall — Bathrooms and Kitchen	12×24 porcelain tile | thin-set mortar | RedGard or similar continuous waterproof membrane | 5/8" moisture-resistant GWB or 1/2" cement board | 3-5/8" or 6" metal stud | 5/8" MR GWB (interior face if applicable)	~7"	38	All tile-set wall areas in bathrooms and kitchen backsplash zone. Waterproof membrane extends min 3" onto floor and to full height of tiled area. RedGard or Schluter KERDI system.
WT-05	Under-House CMU Exterior	5/8" GWB (interior) | 1" rigid foam insulation (R-6) | 8" CMU (standard weight, fully grouted at corners, openings, and every	~10-1/4"	52	Perimeter enclosure of under-house at man cave, bar, and bathroom zones. CMU provides

Wall Type ID	Description	Assembly — Inside to Outside	Total Thickness	STC Rating	Notes
	Wall (Ground Level Perimeter Enclosure)	other cell) | exterior surface: painted with Thoroseal or Drylok masonry sealer			mass, sound isolation, and moisture resistance. Waterproof coating on exterior CMU face is mandatory at coastal exposure. `[DD CONFIRMED]`
WT-06	Stair Tower Glass Curtain Wall (East Face)	Interior: exposed framing / painted | Thermally broken 6063-T5 aluminum curtain wall frame (Kawneer 1600 Wall System or equal) | 1" laminated impact insulated glass unit (LOF Starphire or equal) | Exterior: aluminum framing, charcoal anodize or powder coat	~6-1/2"	38	Full-height east face of stair tower. NOA rated at 160 mph. All joints sealed with SIKA or Dow silicone structural sealant. `[FLAGGED FOR CD — EOR to confirm curtain wall anchor conditions at each floor]`
WT-07	Workshop Masonry Wall — Reinforced CMU	Exterior: painted CMU face | 8" CMU, nominal, solid grout at cells with vertical reinforcing — #5 bars at 48" o.c. (EOR to confirm) | #4 horizontal joint reinforcement at every course (Dur-O-Wal or equal) | Interior: exposed CMU with paint finish or epoxy paint	~8"	52	Workshop north, south, and west walls; resists vehicle impact and provides robust lateral support. No insulation required at workshop (semi-conditioned). Confirm hurricane uplift connections at top of CMU to L1 structure. `[PENDING EOR]`
WT-08	Rooftop Parapet Wall	Interior (rooftop face): waterproof elastomeric coating on CMU or GWB on metal studs | CMU or 6" metal stud frame with GWB | Exterior face: James Hardie cladding (matching WT-01) or CMU smooth face with elastomeric paint | Top: aluminum coping cap, continuous, lapped at joints | Back: continuous waterproof membrane (TPO or modified bitumen) lapped over and down rooftop deck surface	~10" to 12"	N/A	Minimum 42" height above finished deck surface per IBC 1015.8. Hurricane-rated post anchor base plates at 4'-0" o.c. for guardrail posts (200 lb concentrated load, any direction, per IBC 1607.9). Coping flashing counter-flashed to rooftop membrane. `[DD CONFIRMED]`

5. Door Schedule

The following schedule documents all doors in the project. Door marks correspond to plan markings in the CD drawings. All exterior doors are hurricane-rated unless noted. All interior doors are 8'-0" height standard unless noted otherwise. Hardware grades: exterior = Grade 1 ANSI/BHMA; interior = Grade 2 minimum. `[DD CONFIRMED]`

ACTION ITEM — CRITICAL LEAD TIME

Door D-01 (Main Entry, Custom Aluminum) requires a 14–20 week lead time from confirmed shop drawing approval. This door must be ordered immediately upon owner approval of this DD package. Failure to order on time will delay substantial completion of the project. Lucian / Calibration Co. to coordinate with selected fabricator (Fortress, CGI, or PGT Custom Division) for submittal and confirmation this week.

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
D-01	Main Entry Alcove (L0 East)	12'-0" × 6'-0"	Custom Double Panel Pivot or Swing	Thermally broken 6063-T5 aluminum, Charcoal Gray powder coat (AAMA 2604);	Hoppe or Assa Abloy multipoint lock; Schlage L-series lever; concealed closer;	3/4" laminated frosted glass (impact-rated); integrated warm white	N/A	Miami-Dade NOA 160 mph	`[ORDER IMMEDIATELY — 14–20 wk lead time]`. Neon L-accent surround at frame. Custom fabricator: Fortress, CGI, or PGT

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
				frosted laminated glass panels	magnetic hold-open; ADA flush threshold	LED perimeter strip, 3000K, dimmable			Custom Division. Backlit LED integrated into frame perimeter.
D-02	Workshop — West Face Roll-Up	16'-0" × 10'-0"	Commercial Roll-Up	Clopay 4300 Series commercial galvanized steel; Charcoal Gray finish	LiftMaster 8500W jackshaft operator; battery backup; manual release	None (solid panel)	N/A	Wind-rated 150 mph (Clopay STC)	Hurricane-rated commercial roll-up; see Section 11.4 for full workshop door spec. Operator on 240V/20A dedicated circuit.
D-03	Great Room to Front Deck (L1 South)	12'-0" × 9'-0"	Impact Sliding Glass Door (multi-panel)	PGT WinGuard aluminum, thermally broken; Charcoal Gray	Multipoint lock (PGT standard); flush pull handles; mortise lock	Laminated impact glass, 1" IGU; low-E coating	N/A	Miami-Dade NOA, 160 mph	Opens to covered front Trex deck; passive ventilation principal opening. Stainless threshold. Confirm clear opening for furniture passage.
D-04	Kitchen to Rear Deck (L1 North)	10'-0" × 9'-0"	Impact Sliding Glass Door	PGT WinGuard aluminum; Charcoal Gray	Multipoint lock; flush handles	Laminated impact glass, 1" IGU	N/A	Miami-Dade NOA, 160 mph	Opens to covered rear Trex deck; outdoor dining connection. Stainless threshold.

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
D-05	Master Bedroom Entry (L1)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood; White Oak veneer or paint-grade	Privacy lever set, Emtek or Schlage; concealed hinges	None	N/A	N/A	Standard interior bedroom door; match all interior doors for hardware consistency.
D-06	Master Bath (L1)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever; concealed hinges	None	N/A	N/A	Moisture-resistant door frame and finish. Exhaust fan interlocked with light.
D-07	Master Walk-In Closet (L1)	3'-0" × 8'-0"	Double Bypass	Prefinished solid-core wood panels	Bypass roller hardware (Häfele or Stanley); flush pull	None	N/A	N/A	Space-saving bypass for closet access; coordinate with millwork built-ins beyond.
D-08	Guest Suite Entry (L1)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever; concealed hinges	None	N/A	N/A	Match master bedroom door for consistency.
D-09	Guest Bath (L1)	2'-8" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever	None	N/A	N/A	ADA-compatible width for guest accessibility; exhaust fan.
D-10	Primary Suite Entry (L2)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever	None	N/A	N/A	Primary entry from corridor; match all L2 bedroom doors.

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
D-11	Primary Bath (L2)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever	None	N/A	N/A	Moisture-resistant frame; solid-core for acoustic separation.
D-12	Primary Suite to Private Terrace (L2)	6'-0" × 8'-0"	Impact French Door (double swing outswing)	PGT WinGuard aluminum; Charcoal Gray powder coat	Multipoint lock; lever handles (exterior rated); astragal; automatic flush bolt at inactive leaf	Laminated impact glass 1" IGU; clear tempered	N/A	Miami-Dade NOA, 160 mph	Opens to private L2 terrace; outswing for hurricane performance; stainless threshold; coordinate with guardrail at terrace edge.
D-13	Bedroom 3 (L2)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever	None	N/A	N/A	Standard interior bedroom.
D-14	Bedroom 4 / Flex Office (L2)	3'-0" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Privacy lever	None	N/A	N/A	Flex office/bedroom; Cat6A and HDMI rough-in coordinated beyond this door.
D-15	Laundry / Utility (L1)	2'-8" × 8'-0"	Single Solid-Core	Prefinished solid-core wood	Passage lever	None	N/A	N/A	Exhaust fan required; waterproof frame base at tile threshold.
D-16	Mechanical / Electrical Room (L1)	3'-0" × 8'-0"	Solid-Core Fire-Rated	Hollow metal (HM) frame; solid-	Keyed entry (B-series or equal);	None	20-minute (UL listed)	N/A	Houses 400A main panel, water heater, softener, ERV; key

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
				core fire door	door closer (LCN 4111 or equal); kick plate; auto-close				access only; fire-rated assembly.
D-17	Storage Under Stair (L0)	3'-0" × 7'-0"	Solid-Core	Prefinished solid-core wood	Keyed entry lever (Schlage B-series)	None	N/A	N/A	Reduced height due to stair geometry; keyed for security. Moisture-resistant base.
D-18	Man Cave / Lounge Entry (L0)	3'-0" × 8'-0"	Solid-Core, Moisture-Resistant	Prefinished wood, moisture-resistant coating; painted	Lever set	None	N/A	N/A	Under-house environment; moisture-resistant door and frame; coordinate with finished floor threshold.
D-19	Hot Tub Equipment Closet (L0)	2'-6" × 6'-8"	Solid-Core, Moisture-Resistant	Fiberglass (Therma-Tru or Masonite Fiberglass); painted	Latch (no lock required); stainless hardware	None	N/A	N/A	Fiberglass door for humidity and salt air resistance; 24" clearance inside for pump/heater service access.
D-20	Outdoor Kitchen / Rooftop Access (Roof)	3'-0" × 8'-0"	Impact-Rated Aluminum	PGT WinGuard aluminum	Multipoint lock; lever (exterior	Laminated impact glass panels	N/A	Miami-Dade NOA rated	Provides access from stair tower to rooftop outdoor

Mark	Location	Size (W× H)	Type	Material	Hardware	Glazing	Fire Rating	Hurricane Rating	Notes
				outswing; Charcoal Gray	grade); closer				kitchen zone; impact rated; outswing for wind performance; stainless threshold.

SECTION 6 — WINDOW SCHEDULE

6. Window Schedule

All exterior windows are PGT WinGuard impact laminated insulated glass units (IGU) unless otherwise noted. All units carry Miami-Dade Notice of Acceptance (NOA) and are rated for 160 mph wind-borne debris exposure (HVHZ compliance). U-values and SHGC values meet IECC 2021 Climate Zone 1 requirements. All frames are thermally broken aluminum, Charcoal Gray powder coat exterior finish to match entry door. `[DD CONFIRMED]`

Mark	Location / Room	Size (W× H)	Type	Frame	Glazing	U-Value	SHGC	Hurricane Rating	Notes
W-01	Great Room — South Face (L1)	12'-0" × 6'-0"	Fixed picture + flanking casement operable units (ribbon window	PGT WinGuard aluminum, thermally broken; Charcoal Gray	Laminated insulated impact glass; low-E coating; 1" IGU	0.28	0.24	NOA 160 mph	Principal view window; ribbon window at main living area; hanging garden planter zone at sill;

Mark	Location / Room	Size (W× H)	Type	Frame	Glazing	U-Value	SHGC	Hurricane Rating	Notes
			assembly)						interior shading via Lutron shade integration.
W-02	Kitchen — Pass-Through (L1)	4'-0" × 3'-0"	Horizontal slider, 2-lite	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; 1" IGU	0.28	0.24	NOA 160 mph	Kitchen pass-through to front deck zone; tropical indoor/outdoor cooking convenience. Countertop height coordination required.
W-03	Master Bedroom — South (L1)	8'-0" × 5'-0"	Fixed picture window	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; 1" IGU	0.28	0.24	NOA 160 mph	Large picture window; south exposure; blackout shade provision (Lutron Serena or equal).
W-04	Master Bath (L1)	3'-0" × 4'-0"	Single-hung	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; obscure/frosted glass	0.28	0.24	NOA 160 mph	Obscure glass for privacy; placed high on wall (5'-0" AFF sill) for natural light while maintaining privacy.
W-05	Guest Suite (L1)	4'-0" × 4'-0"	Single-hung	PGT WinGuard aluminu	Laminated insulated impact; clear low-E	0.28	0.24	NOA 160 mph	Standard bedroom egress window;

Mark	Location / Room	Size (W× H)	Type	Frame	Glazing	U-Value	SHGC	Hurricane Rating	Notes
				m; Charcoal Gray					verify sill height for egress compliance (max 44" AFF per IBC 1030).
W-06	Primary Suite — East Face (L2)	8'-0" × 5'-0"	Fixed picture window	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; 1" IGU	0.28	0.24	NOA 160 mph	Primary view window; sunrise/east orientation; blackout shade provision.
W-07	Primary Bath (L2)	4'-0" × 4'-0"	Casement, single outswing	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; obscure glass	0.28	0.24	NOA 160 mph	Casement for maximum ventilation; obscure glass for privacy; placed above shower enclosure or vanity zone.
W-08	Bedroom 3 (L2)	4'-0" × 4'-0"	Single-hung	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; clear	0.28	0.24	NOA 160 mph	Egress window; verify sill height; bedroom egress per IBC 1030.
W-09	Bedroom 4 / Flex Office (L2)	4'-0" × 4'-0"	Single-hung	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; clear	0.28	0.24	NOA 160 mph	Egress window; verify sill height; may serve as home office glazing if flex use.

Mark	Location / Room	Size (W× H)	Type	Frame	Glazing	U-Value	SHGC	Hurricane Rating	Notes
W-10	Stair Tower — Full Height East Face	10'-0" × varies (full height, multi-story)	Aluminum curtain wall system — punched infill panels and horizontal ribbon	Kawneer 1600 Wall System or PGT custom curtain wall; thermally broken; Charcoal anodize	Impact laminated 1" IGU; low-E; curtain wall structural silicone glazing	0.30	0.25	NOA 160 mph (HVHZ)	Full-height architectural expression element; structural silicone glazed; all joints with SIKA structural sealant; anchor to each floor slab and to roof parapet; EOR to confirm anchor design. `[FLAGGED FOR CD — curtain wall engineering required]`
W-11	Man Cave / Under-House (L0)	4'-0" × 3'-0"	Fixed	Impact aluminum; Charcoal Gray	Laminated impact glass; 1" IGU	0.28	0.24	NOA 160 mph	Natural light to man cave zone; fixed for security; sill at 6'-0" AFF for privacy from street/grade.
W-12	Laundry / Utility (L1)	2'-0" × 2'-0"	Fixed	Impact aluminum; Charcoal Gray	Laminated obscure/translucent impact glass	0.28	0.24	NOA	Natural light to utility room; fixed for simplicity; obscure glass for privacy.

Mark	Location / Room	Size (W× H)	Type	Frame	Glazing	U-Value	SHGC	Hurricane Rating	Notes
W-13	Upper Landing / Corridor (L2)	3'-0" × 3'-0"	Casement	PGT WinGuard aluminum; Charcoal Gray	Laminated insulated impact; clear	0.28	0.24	NOA	Natural ventilation to corridor; casement for cross-ventilation; sill at 48" AFF minimum for safety.
W-14	Mechanical Room (L1)	1'-6" × 1'-6"	Fixed louvered vent (impact-rated)	Impact aluminum louver frame; Charcoal Gray	N/A (louvered only)	N/A	N/A	Impact-rated louver (Miami-Dade approved)	Combustion air and ventilation to mechanical room; impact-rated aluminum louver; coordinate with mechanical engineer for required CFM.
W-15	Workshop — Clerestory (L0)	4'-0" × 2'-0"	Fixed clerestory	Impact aluminum; Charcoal Gray	Laminated impact glass; clear	0.28	0.24	NOA	High clerestory window for natural light in workshop without security concern; sill at 8'-0" AFF above vehicle zone.

ENERGY CODE COMPLIANCE NOTE

All glazing specified herein meets the requirements of IECC 2021 for Climate Zone 1 (hot/humid tropical). Maximum U-value: 0.50; Maximum SHGC: 0.25 per CZ1. Specified values (U-0.28; SHGC 0.24) exceed minimum code requirements. Total glazing area shall not exceed 50% of gross wall area per conditioned zone as calculated at CD phase. PGT WinGuard products carry ICC-ES ESR-1780 and are Miami-Dade High Velocity Hurricane Zone (HVHZ) compliant.

`[DD CONFIRMED – subject to CD energy model verification]`

SECTION 7 — INTERIOR FINISH SCHEDULE

7. Interior Finish Schedule

The following finish schedule assigns specific finish codes to every room across all levels. Finish codes reference the legend below the schedule. All paint colors are Benjamin Moore unless otherwise noted. All tile sizes are nominal. All hardwood flooring is pre-finished engineered. `[DD CONFIRMED]`

Finish Code Legend

Code	Type	Product / Description
FIN-F1	Floor	24×24 Porcelain Tile, rectified, Ivory/Cream matte finish — Great Room, Kitchen, Baths, Entry, Corridor
FIN-F2	Floor	Engineered White Oak Hardwood, 5" plank, matte UV finish, Boen or Shaw (equivalent) — All bedrooms, Primary Suite, Office
FIN-F3	Floor	Polished Concrete with Charcoal Epoxy Seal — Flake broadcast, non-slip — Workshop, Man Cave, Bar
FIN-F4	Floor	Trex Transcend Tropics — Tiki Torch — All exterior decks and rooftop usable areas
FIN-F5	Floor	12×24 Porcelain Tile, rectified, Spa Blue/Gray — All bathrooms, Laundry

Code	Type	Product / Description
FIN-W1	Wall	Benjamin Moore Aura Interior Low-VOC, OC-17 White Dove — Standard interior
FIN-W2	Wall	Benjamin Moore HC-157 Newburyport Blue — Accent walls: Great Room feature wall, Primary Suite accent wall
FIN-W3	Wall	4×12 Subway Tile, White Gloss, running bond — Kitchen backsplash
FIN-W4	Wall	12×24 Porcelain tile, floor-to-ceiling or to 8'-0" AFF — All bathroom wet walls
FIN-W5	Wall	Shiplap accent panel, 1×6 primed MDF, painted White Dove OC-17 — Man Cave feature wall
FIN-W6	Wall	James Hardie Ocean Teal (field) / Antique Ivory (trim) — Exterior cladding all elevations
FIN-C1	Ceiling	5/8" GWB painted, Benjamin Moore OC-17 White Dove flat finish — Standard interior ceilings
FIN-C2	Ceiling	Open beam + GWB between — Painted White Dove — Covered deck soffits
FIN-C3	Ceiling	Exposed polished concrete soffit — Under-house viewed from below

Room Finish Schedule — All Levels

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
Entry Alcove	L0	FIN-F1 (polished concrete sealed)	Painted CMU base	FIN-W1 painted CMU	FIN-C3 exposed concrete soffit	11'-0"	OC-17 White Dove walls	Neon L-accent; LED pathway at grade; sealed concrete floor
Stair Tower	L0–L2	Open-riser hardwood treads (white oak to match FIN-F2)	Metal painted	FIN-W1; curtain wall east (WT-06)	FIN-C1 (GWB ceiling at landings)	Full-height continuous	OC-17 White Dove at GWB faces	Glass curtain wall E face; cable/glass guardrail at landings; white oak treads with black

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
								steel open risers
Storage Under Stair	L0	Epoxy-sealed concrete (FIN-F3 simplified)	Painted base	FIN-W1 painted drywall	FIN-C1 GWB painted	Varies to 7'-0"	OC-17	D-17; shelving for beach gear; keyed entry
Man Cave / Lounge	L0	FIN-F3 polished concrete, charcoal/flake epoxy	Painted or coved epoxy base	FIN-W1 (3 walls) + FIN-W5 shiplap accent (feature wall)	FIN-C3 exposed concrete soffit (from L1 above)	10'-6" clear	OC-17 main; FIN-W5 painted White Dove	AV rough-in; recessed LED cans; epoxy floor with non-slip broadcast; W-11 clerestory windows
Bar	L0	FIN-F3 polished concrete	Epoxy cove	FIN-W1 + FIN-W3 tile backsplash behind bar	FIN-C3 exposed concrete	10'-6"	OC-17; tile backsplash: white	42" bar height counter; LED bottle display shelving; 3 undercounter refrigerators; see Section 8
Vehicle Workshop	L0	FIN-F3 polished concrete, 6" slab, broadcast flake, non-slip	Epoxy cove at base	Painted CMU (FIN-W1 equivalent, semi-gloss)	Exposed concrete soffit (FIN-C3) or painted	10'-0" clear	Semi-gloss white or light gray on CMU	LED shop lights (10,000 lm); trench drain; hydraulic lift area marked on floor; EV outlet; D-02 roll-up; D-18

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
								man access
Bathroom (L0)	L0	FIN-F5 12×24 porcelain, Spa Blue/Gray	Painted base or tile base	FIN-W4 tile to 8'-0" AFF; FIN-W1 above to ceiling	FIN-C1 painted GWB	9'-0"	OC-17 ceiling; tile walls	Moisture-resistant throughout; exhaust fan; Kohler fixtures; floor drain
Mech/Elec Closet (L0)	L0	Sealed concrete	—	Painted CMU	Painted exposed	9'-0"	Utility gray or white	No finish requirements; utility space
Great Room / Living / Dining	L1	FIN-F1 24×24 porcelain, Ivory/Cream	4-1/4" painted wood base, OC-17	FIN-W1 (3 walls); FIN-W2 Newburyport Blue (1 accent wall, south or media wall)	FIN-C1 painted GWB flat	10'-0"	OC-17 main; HC-157 accent	D-03 impact slider; W-01 ribbon window; AV rough-in; recessed LED throughout; Lutron Caseta dimming
Kitchen	L1	FIN-F1 24×24 porcelain, Ivory/Cream	4-1/4" painted wood base, OC-17	FIN-W1 upper; FIN-W3 subway tile backsplash (counter to upper cabinet)	FIN-C1 painted GWB flat	10'-0"	OC-17 main; white subway backsplash	See Section 8 millwork; under-cabinet LED 3000K; D-04 to rear deck; W-02 pass-through
Master Bedroom	L1	FIN-F2 engineered white oak	3-1/2" painted wood	FIN-W1 (3 walls); accent wall	FIN-C1 painted GWB flat	10'-0"	OC-17; accent wall: HC-157	D-05; W-03; blackout shades;

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
		hardwood, matte	base, OC-17	(behind bed, FIN-W2 or textured paint)			or texture	LED recessed; ceiling fan rough-in
Master Bath	L1	FIN-F5 12×24 porcelain, Spa Blue/Gray	Tile base at tiled walls; painted at GWB	FIN-W4 12×24 porcelain to 8'-0" AFF; FIN-W1 above tile to ceiling	FIN-C1 painted GWB semi-gloss (moisture)	10'-0"	OC-17 ceiling; spa blue/gray tile walls	72" double floating vanity; walk-in shower (frameless glass per Section 8); Kohler Purist fixtures; heated floor option; D-06; W-04 obscure
Master Walk-In Closet	L1	FIN-F2 engineered hardwood	3-1/2" painted wood base	FIN-W1 painted	FIN-C1 painted GWB	9'-0"	OC-17	Built-in millwork; LED strip under shelves; D-07 bypass; see Section 8
Guest Suite	L1	FIN-F2 engineered hardwood	3-1/2" painted base	FIN-W1 painted	FIN-C1 painted GWB	9'-0"	OC-17	D-08; W-05; ceiling fan rough-in; LED recessed
Guest Bath	L1	FIN-F5 12×24 porcelain	Tile base	FIN-W4 tile to 8'-0" AFF; OC-17 above	FIN-C1 semi-gloss	9'-0"	OC-17 ceiling	D-09; tub/shower; single vanity; Kohler fixtures; exhaust fan; W-05

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
Laundry / Utility	L1	FIN-F5 12×24 porcelain	Tile base	FIN-W1 painted; waterproof membrane at washer alcove	FIN-C1 semi-gloss	9'-0"	OC-17	D-15; W-12; floor drain; utility sink; washer/dryer connections
Mechanical/Electrical Room	L1	Sealed concrete	—	Painted CMU; FIN-W1	Exposed structure; painted	9'-0"	Utility white	D-16 (20-min rated); 400A panel; water heater; ERV; data SMC
Covered Front Deck	L1	FIN-F4 Trex Tiki Torch	Aluminum base (Trex trim)	Open exterior	FIN-C2 open beam + GWB painted white	Open / covered	White soffit	D-03 slider from great room; hanging garden planters; cable/glass guardrail; outdoor fans
Covered Rear Deck	L1	FIN-F4 Trex Tiki Torch	Aluminum trim	Open exterior	FIN-C2 open beam + GWB painted white	Open / covered	White soffit	D-04 from kitchen; outdoor dining; cable/glass guardrail
Primary Suite	L2	FIN-F2 engineered white oak, matte	3-1/2" painted base	FIN-W1 (3 walls); FIN-W2 textured accent wall (behind	FIN-C1 painted GWB flat	10'-0"	OC-17 main; HC-157 accent or venetia	D-10; W-06; D-12 to private terrace; blackout shades; ceiling fan

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
				bed — HC-157 or venetian plaster)			n plaster	rough-in; Lutron dimming
Primary Bath	L2	FIN-F5 24×48 large format porcelain	Tile base	FIN-W4 24×48 porcelain + mosaic accent strip at shower; FIN-W1 above to ceiling	FIN-C1 semi-gloss	10'-0"	OC-17 ceiling; tile walls	Frameless glass shower; mosaic accent strip at shower niche; floating double vanity; freestanding tub option; D-11; W-07
Primary Walk-In Closet	L2	FIN-F2 engineered hardwood	3-1/2" painted base	FIN-W1 painted; built-in millwork to ceiling	FIN-C1 painted GWB	9'-0"	OC-17	Floor-to-ceiling millwork; LED strip under shelves; shoe display; see Section 8
Private Terrace (L2)	L2	FIN-F4 Trex Tiki Torch	Aluminum trim	Open exterior	Open sky	Open	—	D-12 French door; glass/cable rail; min 42" guardrail; outdoor privacy screen option
Bedroom 3	L2	FIN-F2 engineere	3-1/2" painted base	FIN-W1 painted	FIN-C1 painted GWB	9'-0"	OC-17	D-13; W-08; ceiling fan rough-

Room	Level	Floor	Base	Walls	Ceiling	Ceiling Ht	Paint Color Notes	Special Notes
		d hardwood						in; LED recessed
Bath 3	L2	FIN-F5 12×24 porcelain	Tile base	FIN-W4 tile to 8'-0" AFF	FIN-C1 semi-gloss	9'-0"	OC-17 ceiling	Shared with Bedroom 4; shower/tub combo; single vanity; exhaust fan
Bedroom 4 / Flex Office	L2	FIN-F2 engineered hardwood	3-1/2" painted base	FIN-W1 painted	FIN-C1 painted GWB	9'-0"	OC-17	D-14; W-09; Cat6A + HDMI rough-in; flex office or bedroom
Corridor / Landing (L2)	L2	FIN-F1 24×24 porcelain tile	4-1/4" painted base	FIN-W1 painted	FIN-C1 painted GWB	9'-0"	OC-17	W-13 casement; guardrail at stair opening; LED linear cove lighting option
Rooftop Main Deck	Roof	FIN-F4 Trex Tiki Torch	Aluminum trim	Open exterior / parapet	Open sky	Open	—	Hot tub, outdoor kitchen, pergola, mech screen; 42" parapet; stormwater drainage

SECTION 8 — MILLWORK

&

CABINETRY SCHEDULE

8. Millwork & Cabinetry Schedule

All cabinetry shall be KCMA certified (Kitchen Cabinet Manufacturers Association A161.1 standard) and CARB2 compliant for formaldehyde emissions (California Air Resources Board Phase 2). All millwork to be produced by a licensed custom millwork shop; shop drawings required at 50% CD review. All hardware to be soft-close (Blum Blumotion or equivalent). `[DD CONFIRMED — subject to shop drawing review]`

8.1 Kitchen Cabinetry

- **Style:** Flat-panel Euro-style frameless construction with full-overlay doors; gloss white thermofoil or white shaker paint-grade door profile; owner to select between at interior design review.
- **Upper Cabinets:** 42" height upper cabinets at standard ceiling height conditions; full-height uppers to 10'-0" ceiling with glass-fronted display section at upper zone (top 18"); soft-close hinges throughout (Blum Clip Top or equal).
- **Base Cabinets:** 36" height base cabinets standard; 34-1/2" box + 1-1/2" countertop top = 36" finished height; full-extension soft-close drawer slides (Blum Tandem or equal) on all drawers; pull-out trash/recycling unit at sink run.
- **Under-Cabinet Lighting:** LED strip, 3000K warm white, 400+ lm/ft, dimmable via Lutron, continuous under all upper cabinet runs; puck lights to be avoided in favor of linear LED; switch located at backsplash or integrated into upper cabinet bottom rail.
- **Countertop:** Silestone or Caesarstone quartz, 1-1/2" thick, honed finish; color: Cloud Banc (white) or similar neutral with subtle veining; 4" backsplash at countertop-to-wall transition (separate from tile backsplash above).

- **Sink:** Kohler Whitehaven 36" apron-front fireclay single bowl or equivalent; undermount stainless steel alternate option.
- **Faucet:** Kohler Purist pull-down kitchen faucet, matte black or chrome finish.
- **Hardware:** Bar pulls, 6-3/4" or 12" long, matte black or polished chrome — owner to select finish; consistent throughout all kitchen cabinets.

8.2 Kitchen Island

- **Dimensions:** 4'-0" D × 8'-0" L × 36" H (standard counter height); or 42" H (bar height at seating side only — split-level island option for owner consideration).
- **Cabinet Base:** Contrasting color to perimeter cabinets — warm natural wood veneer (white oak or walnut thermofoil) or concrete-look laminate; flat-panel frameless construction to match kitchen.
- **Countertop:** Waterfall countertop option — same quartz slab as perimeter countertops, mitered waterfall drop on seating side (confirm structural blocking in island base for waterfall weight).
- **Seating:** 12" overhang on north face (street/deck side) for 4 bar stools (Emeco or similar); knee space clearance at 9" minimum below overhang.
- **Outlet Strip:** Pop-up outlet module on island top surface or on island end (hidden face at seating side), 2× duplex outlets + USB-C charging integrated; GFCI protected.
- **Island Undercount:** Microwave drawer (Sharp SMD2470AS or equal) in base if microwave is not located above range; trash/recycling pull-out; wine refrigerator (15" wide) at one end.

8.3 Master Bath Vanity (Level 1)

- **Configuration:** Floating (wall-hung) 72" double vanity; two undermount sinks (Kohler Verticyl or Caxton, white); 6" clearance above finished floor for visual lightness and cleaning access.
- **Finish:** Matte white lacquer or gloss white thermofoil; soft-close hinges and drawer slides throughout; 6 drawers + 4 doors minimum.
- **Countertop:** Quartz top, 3/4" thick with 1-1/2" built-up eased edge; white or light gray veined; 4" integral backsplash.

- **Faucets:** Kohler Purist or Artifacts widespread lavatory faucet × 2; chrome or matte black — owner to select; ADA-compliant lever handles.
- **Medicine Cabinet:** Robern M Series or Kohler Catalan mirrored medicine cabinet × 2, surface-mounted or recessed (coordinate with WT-04 wet wall for recess depth); integrated LED perimeter lighting, 3000K, dimmable; electrical stub-in at top of each unit.

8.4 Primary Suite Built-In Closet (Level 2 — Primary Walk-In)

- **Configuration:** Floor-to-ceiling custom millwork on three walls; frameless construction; adjustable shelf pin system on all shelf sections.
- **Zones:** Double-hang zone (40" L minimum, for shirts/jackets), long-hang zone (70" L minimum, for dresses/suits), folded shelf zone (12" D shelves at 12" o.c. adjustable), shoe display shelving (6" D × 6" H cubby shelves at 30" zone), drawer bank (5 drawers, 24" W, at center island or wall-mounted).
- **LED Lighting:** LED strip lighting (3000K, dimmable) installed at underside of each shelf and at ceiling cove at top of millwork; motion sensor activation option.
- **Finish:** Painted MDF, OC-17 White Dove to match walls; or natural white oak veneer to match floors — owner to select.
- **Hardware:** Brushed nickel or matte black closet rods and pulls; consistent with bathroom hardware selection.

8.5 Bar — Under-House (Level 0)

- **Bar Counter:** 12 LF continuous at 42" height (bar-height); concrete look laminate or 2" thick butcher block white oak top; 12" overhang at front face for bar-stool seating; structural blocking in base to support counter and overhang loads.
- **Undercounter Equipment:** 3 undercounter refrigerators (EdgeStar CBR1501 or equal, 15" wide each); one unit dedicated to beverages, one to wine (wood-faced front panel if possible), one general.

- **Open Back Shelving:** Floor-to-ceiling open display shelving (L0 ceiling ht. = 10'-6") behind bar — floating painted MDF or white oak shelves at 12" D; display bottles and glassware; LED strip behind bottles at each shelf level (indirect back-lit, 3000K, dimmable via Ltech or Lutron controller).
- **Sink:** Kohler Vault 6" undermount single bowl bar sink; Kohler Purist bar faucet, matte black.
- **Base Cabinets:** Below-counter storage cabinets (flat panel, painted charcoal or navy for contrast); ice bin provision (drain to floor drain); speed rail provisions.
- **Compliance:** KCMA certified, CARB2 compliant; all adhesives and finishes low-VOC.

8.6 General Millwork Notes

- All millwork shop drawings to be submitted to Lucian / Calibration Co. for review and approval prior to fabrication.
- All millwork to be dimensionally coordinated with plumbing stub-outs, electrical outlets, and switch plates prior to final shop drawing issue.
- Wood veneer grain direction to be specified at interior design review.
- All exposed plywood edges to receive matching hardwood edge banding, minimum 1/16" thick, heat-activated.
- CARB2 certification documentation to be provided with millwork submittals.

SECTION 9 — STRUCTURAL DESIGN DEVELOPMENT COORDINATION

9. Structural Design Development Coordination

CRITICAL FLAG — GEOTECH REPORT NOT YET RECEIVED

The geotechnical investigation report has not been received as of the date of this DD-01 package (May 8, 2026). ALL pier depths, caisson diameters, bearing capacity assumptions, and grade beam sizing contained herein are PRELIMINARY and are based on engineering assumptions for a coastal sandy/silty soil profile typical of the project region. The Engineer of Record (EOR) SHALL NOT finalize any foundation design until the geotechnical report is in hand. This is the single most critical pending item for the project. See Section 15 for action items.

9.1 Foundation / Pier System — DD Refinement

Caisson / Pier System

- **Pier Layout:** 6 piers total — 2 rows × 3 columns; N-S span: 20'-0" center-to-center; E-W span: 16'-8" center-to-center. `[DD CONFIRMED]`
- **Caisson Diameter:** 12" nominal drilled concrete caisson. `[PENDING GEOTECH – may increase to 16" or 18" per soil bearing]`
- **Caisson Concrete:** f'c = 5,000 psi, Type V cement (sulfate-resistant) if sulfate presence confirmed by geotech. `[PENDING GEOTECH]`
- **Caisson Depth:** Minimum 10'-0" below finished grade assumed. Actual depth to be determined by geotech engineer based on bearing layer depth. `[FLAGGED FOR CD – geotech required]`
- **Reinforcement (assumed):** 6-#6 longitudinal bars with #3 spiral ties at 3" pitch at top 5'-0", 6" pitch below; all rebar epoxy-coated for coastal corrosion resistance.
- **Uplift:** Hurricane uplift loads per ASCE 7-22 HVHZ zone; tension demand on caissons to be verified by EOR against soil skin friction and end bearing in tension. `[PENDING EOR]`

Pier Cap and Grade Beam

- **Pier Cap:** 30"×30"×18" deep reinforced concrete cap at top of each pier; 4 embedded anchor rods (3/4" dia. A307 minimum, EOR to size) for W-shape steel column base plates; cap tied to caisson with dowels extending 24" into caisson.

- **Grade Beam:** 12" W × 18" D reinforced concrete grade beam connecting all pier caps continuously in both directions; top and bottom bars: 3-#5 each face; stirrups: #3 at 12" o.c. maximum; all grade beam concrete waterproofed with crystalline waterproofing additive (Kryton Krystol Internal Membrane or equal) or bituminous coating on exterior faces.
- **Grade Beam Top of Concrete:** To be set at or slightly above finished grade to provide above-flood-elevation condition for steel column bases per FEMA floodplain requirements. `[FLAGGED FOR CD — FEMA elevation certificate required to confirm BFE and set finished grades]`

Steel Columns

- **Column Size (preliminary):** W8×31 or W10×33, A992 Grade 50, one per pier cap. `[PENDING EOR]`
- **Base Plate:** 10"×10"×3/4" ASTM A36 base plate; 4 anchor rods; grout bed at bottom of plate; all exposed steel galvanized or painted with Tnemec Series 90 or equal primer + finish for coastal salt air.
- **Column-to-Beam Connection:** Shear tab (simple) or moment connection at EOR option based on lateral system design.
- **Fireproofing:** Steel columns exposed in under-house are not required to be fireproofed (open-air under-house condition); columns enclosed within L1 walls to receive spray-applied fireproofing or intumescent paint at EOR and fire marshal direction.

Level 1 and Level 2 Floor Structure

- **Primary Beams:** W16×40 spanning N-S at 16'-8" between columns (preliminary). `[PENDING EOR]`
- **Secondary Beams:** W10×22 at 6'-0" o.c., spanning E-W across primary beams (preliminary). `[PENDING EOR]`
- **Composite Metal Deck:** 2" 18-gauge galvanized composite metal deck (Vulcraft 2VLI or equal); welded shear studs for composite action with concrete slab.
- **Concrete Slab:** 3.5" lightweight or normal-weight concrete (f'c = 3,500 psi minimum) over deck; total structural slab depth = 5.5"; wire mesh (6×6 W2.9×W2.9) or fiber reinforcement as supplemental reinforcement per EOR.

- **Level 2 Option:** EOR may specify 12" TJI 360 engineered wood joists at 16" o.c. on W-shape support beams as an alternative to composite deck at Level 2 for cost reduction and reduced weight. Both options have been carried in the estimate. `[PENDING EOR SELECTION]`

Rooftop Structure and Hot Tub Zone

- **Rooftop Standard Zones:** 8" flat concrete slab, f'c = 4,000 psi, conventionally reinforced with #4 bars at 12" o.c. each way, or post-tensioned per EOR preference and cost optimization. `[PENDING EOR]`
- **Hot Tub Reinforced Zone:** 12"×12' plan zone; 12" total slab thickness (4" thickened above standard 8" rooftop slab); #4 galvanized or epoxy-coated rebar mat at 12" o.c. each way (top and bottom mat); design load confirmed at 120 psf. `[PENDING EOR – transfer framing required below]`
- **Hot Tub Load Confirmation:** 62.4 lb/cf × 2.5 ft water depth = 156 psf water load; plus spa shell weight (approx. 850 lb) / 144 SF = 5.9 psf; plus bather loads (6 persons × 250 lb / 144 SF = 10.4 psf); total ≈ 172 psf absolute maximum — conservative 120 psf applied for structural design as partial fill operating condition is typical. EOR to verify actual applied load against spa manufacturer's specifications. `[PENDING EOR VERIFICATION]`
- **Rooftop Slope:** 1/4" per foot minimum slope built into top of structural slab or topping slab to all roof drains; confirm drain locations with plumbing engineer.

Workshop Slab-on-Grade

- **Thickness:** 6" slab-on-grade. `[DD CONFIRMED]`
- **Concrete:** f'c = 4,000 psi, Type I/II Portland cement.
- **Reinforcement:** #5 rebar at 18" o.c. each way (single mat, mid-depth); fiber reinforcement supplemental (0.5% by volume polypropylene fiber).
- **Vapor Barrier:** 6-mil polyethylene vapor retarder (Stego Wrap or equal), lapped 12" at joints, taped.
- **Sub-base:** 4" clean crushed stone (3/4" clean stone) over native or compacted fill; confirm by geotech.

- **Hydraulic Lift Anchor Sleeves:** 4 sleeves (BendPak manufacturer-specified or 3/4" dia. A36 anchor bolts, embedded in slab per BendPak XPR-10S installation requirements); position confirmed by EOR; minimum 6" embedment in slab; position layout from architect's plan.
- **Floor Drain:** 4" cast iron trench drain at south end of workshop, sloped 1.5% toward drain from all directions; floor drain connects to sanitary or storm per civil/plumbing engineer.

9.2 Shear Wall Layout

The lateral force-resisting system (LFRS) for this building relies on a combination of structural shear walls, the stiff CMU masonry core, and rigid frame action at the steel pier system. The following preliminary shear wall locations are identified for EOR development into a full shear wall layout drawing at CD phase:

- **Level 1 and 2 Exterior Corners:** Corner returns at each of the 4 building corners provide minimum 4'-0" long shear wall panels in both principal directions; CDX plywood sheathing nailed at 4" o.c. at edges per high-wind nailing schedule (8d common nails, AWC SDPWS Table 4.3A).
- **Stair Tower:** The stair tower, with its rigid framed curtain wall on the east face and framed CMU or stud walls on north and south, serves as the primary lateral element for E-W seismic and wind loads; anchor to each floor slab with Simpson LTT19A or comparable hold-downs at boundaries.
- **Workshop CMU Core:** The 8" reinforced CMU workshop walls at Level 0 act as a very stiff lateral element at grade; moment transfer from CMU walls to pier system grade beams provides additional base fixity for the entire structure under wind loading.
- **Interior Bearing Walls:** Select interior bearing walls (WT-03) may participate in lateral resistance; EOR to identify and detail at CD phase.
- **Continuous Load Path:** Complete continuous load path documentation (roof-to-wall-to-floor-to-column-to-caisson) is required for building permit in High Velocity Hurricane Zone. Simpson Strong-Tie Hurricane Strapping Schedule to be included in CD structural drawings: H2.5A at every rafter/joist-to-plate bearing; LTT19A at shear wall boundaries; SSTB anchor bolts at all sill plates over concrete. `[FLAGGED FOR CD — EOR to produce full load path diagram]`

9.3 Rooftop Parapet and Guardrail

- **Parapet Height:** 42" minimum above finished deck at all edges of rooftop and all occupied decks. `[DD CONFIRMED per IBC 1015.8]`
- **Parapet Structure:** 8" CMU or 6" metal stud framed wall at rooftop; CMU preferred for mass/stability; framed acceptable with solid blocking at post anchor locations.
- **Guardrail Post Anchors:** Hurricane-rated post base anchors at 4'-0" o.c. maximum; Simpson Strong-Tie ABU44 or LBP44 post anchor minimum; or custom welded plate anchor per EOR; post design load = 200 lb concentrated, applied horizontally at 42" height, any direction per IBC 1607.9.
- **Guardrail Infill:** Tempered or laminated glass infill panels (preferred for coastal aesthetics) or Type 316 stainless 1/8" cable rail system at 3" maximum open spacing; all fittings 316 stainless; no carbon steel hardware at exterior.
- **Coping:** Continuous aluminum coping at top of parapet; 6063-T5 alloy; lapped joints; continuous cleat anchor; weep holes at 4'-0" o.c.

SECTION 10 — MEP DESIGN DEVELOPMENT

10. MEP Design Development

10.1 Mechanical (HVAC) — DD Level

System Type: Mitsubishi Electric Hyper Heat MXZ multi-zone mini-split ductless / ducted system. System provides both heating and cooling; rated for ambient temperatures as low as -13°F (Hyper Heat), exceeding tropical climate requirements. `[DD CONFIRMED]`

Zone	Areas Served	Equipment	Capacity	Unit Type	Notes
Zone 1	L1 Great Room + Kitchen	Mitsubishi SEZ-KD (ducted cassette)	4 tons (48,000 BTU/hr)	4-way ceiling cassette (concealed in soffit plenum)	Largest zone; high occupancy; connected to D-03

Zone	Areas Served	Equipment	Capacity	Unit Type	Notes
	(1,200 SF combined)				and D-04 glass door thermal loads
Zone 2	L1 Master Bedroom + Master Bath (488 SF)	Mitsubishi MSZ-FS (high wall)	2 tons (24,000 BTU/hr)	High-wall unit, concealed grille option	Dedicated to master suite; occupancy sensing; night setback mode
Zone 3	L1 Guest Suite + Guest Bath (300 SF)	Mitsubishi MSZ-FS (high wall)	1 ton (12,000 BTU/hr)	High-wall unit	Guest zone; set to standby when unoccupied
Zone 4	L2 Primary Suite + Primary Bath (672 SF)	Mitsubishi MSZ-FS (high wall) or concealed cassette	2 tons (24,000 BTU/hr)	High-wall or ducted cassette	Top-floor thermal loads; separate unit for primary suite privacy and comfort
Zone 5	L2 Bedrooms 3 + 4 + Corridor (434 SF)	Mitsubishi MSZ-FS (high wall)	1.5 tons (18,000 BTU/hr)	High-wall unit (1 per bedroom at corridor supply)	Two bedrooms + corridor; may use single multi-room cassette or one unit per room
Zone 6	Rooftop / Covered Decks (outdoor comfort zone)	Mitsubishi MLZ-KP (weatherproof cassette)	1 ton (12,000 BTU/hr)	Weatherproof outdoor ceiling cassette	Supplemental comfort cooling for rooftop covered zones only; not a full enclosure unit
TOTAL	All conditioned areas	MXZ multi-zone outdoor unit(s)	**11.5 tons (138,000 BTU/hr)**	2 outdoor condenser units (7-ton + 4.5-ton or similar split per Mitsubishi configuration)	`[PENDING MEP ENGINEER — final equipment selection and layout]`

Additional HVAC Notes

- **Condensers:** All outdoor condensing units located at Level 1 grade/deck level on vibration-isolated platforms; platforms elevated minimum 12" above finished grade and above Base Flood Elevation (BFE) as determined by FEMA flood map. `[FLAGGED FOR CD — BFE elevation to be confirmed]`
- **Return Air:** High-wall return air grilles in each zone; transfer grilles at room-to-corridor transitions where doors are closed; filter access panels at each AHU location.

- **Fresh Air / Ventilation:** Panasonic WhisperComfort ERV (FV-04VE1 or FV-10VE2) or Fantech VHR series; 150 CFM total minimum; balanced supply/exhaust; MERV-8 filter; installed in L1 mechanical room; duct to all occupied zones per ASHRAE 62.2 minimum ventilation requirements.
- **Ductwork:** Where ducted units are used (Zone 1 cassette): 26-ga galvanized round or flat-oval spiral duct; all joints mastic-sealed (no tape only); all duct insulated with R-8 flexible duct wrap or R-8 duct liner in unconditioned spaces.
- **Thermostats:** ecobee SmartThermostat Premium (EB-STATE6-01) at each zone; WiFi + app + Alexa/Google voice control; occupancy and temperature sensors; SmartRecovery pre-conditioning; all thermostats integrated into single app dashboard.
- **Man Cave HVAC:** Separate Mitsubishi mini-split (1.5 ton, 18,000 BTU) for man cave and bar — under-house semi-conditioned space; not included in Zone 1–6 totals above; coordinate with condenser location.

10.2 Plumbing — DD Level

Water Service and Distribution

- **Water Main:** 1.5" Type K copper or Schedule 80 PVC water service from street to building; meter pit at east pier grade level; pressure regulating valve (PRV, Watts 25AUB or equal) at entry to building set to 60 psi; isolation shutoff valve at meter and at PRV.
- **Distribution Piping:** PEX-A Uponor Wirsbo (crosslinked polyethylene, expansion fitting system) throughout; 1" main trunk per floor rising in stair tower/chase; 3/4" branch lines to kitchen, master bath, primary bath; 1/2" lines at all individual fixtures.
- **Water Heater:** Rinnai RU199iN condensing tankless natural gas water heater; 199,000 BTU input; 9.4 GPM at 35°F rise; mounted on wall in L1 mechanical room; dedicated 3/4" gas line; Category IV flue piping to exterior; recirculation pump (Grundfos CM5 or equal) for instant hot water to distant fixtures.
- **Alternative:** If natural gas is unavailable at site: Rheem ProTerra 80-gallon heat pump water heater (PROPH80 T2 RH350); 120V/240V; EF 3.75; located in mechanical room. `[FLAGGED – confirm gas availability with utility provider prior to CD]`

- **Water Softener:** EcoWater ESD2500 or Kinetico Q850 salt-based ion exchange softener; 48,000 grain capacity; mounted in L1 mechanical room; bypass valve; brine tank alongside; backwash drain to sanitary.

Fixture Schedule Summary

- **Fixture Specification:** Kohler Purist or Artifacts series (primary), chrome or matte black finish throughout — owner to select finish at interior design review; consistent finish throughout all bathrooms and kitchen.
- **Fixtures by Zone:** Master Bath: dual lavatory faucets, tub filler, shower valve, hand shower; Primary Bath: dual lavatory, tub filler, shower system (Kohler DTV or equal); Guest Bath and Bath 3: single lavatory faucet, tub/shower combo valve; Kitchen: pull-down kitchen faucet; Bar (L0): bar faucet; Laundry: utility faucet.
- **GFCI Protection:** All kitchen, bath, laundry, garage/workshop, and outdoor receptacles on GFCI circuits per NEC 210.8.

Drain, Waste, and Vent (DWV)

- **Main Stack:** 4" cast iron (no-hub, Clamp-All or equal), routed vertically within stair tower chase; horizontal runs in floor/ceiling cavities sloped at 1/4" per foot minimum.
- **Secondary Stacks:** 3" ABS or cast iron for secondary wet cores; 2" PVC vent lines to roof termination minimum 12" above finished rooftop deck surface.
- **Under-House:** All plumbing stub-outs at underside of L1 structural slab; exposed runs to be insulated where in unconditioned under-house space; all clean-outs at grade accessible locations.
- **Hot Tub Plumbing (Rooftop):** Dedicated 2" supply line (fill) and 2" return line from mechanical screen zone to spa; ball valves at each; drain to sanitary with P-trap and cleanout; backflow preventer (vacuum breaker type) at fill connection.
- **Rooftop:** 1/2" Type L copper potable supply to outdoor kitchen island; 2" drain from outdoor kitchen sink to internal 4" downspout/stack.
- **Irrigation:** 1" dedicated irrigation branch taken off water main before PRV; reduced pressure zone (RPZ) backflow preventer (Watts 009 or equal) required per local code.

10.3 Electrical — DD Level

Service and Distribution

- **Electrical Service:** 400A, 240V, single-phase, 3-wire underground utility service from transformer to meter base at east pier grade level. Underground conduit: 2" Schedule 40 PVC; coordinate routing and transformer location with local utility provider. `[DD CONFIRMED]`
- **Main Panel:** Square D QO 400A Main Lug Only (MLO) load center in L1 Mechanical Room; 60 spaces minimum; copper bus; AFCI and GFCI breakers as required by NEC 2023; panel located above BFE elevation. `[FLAGGED FOR CD — confirm BFE elevation for panel mounting height]`
- **Workshop Sub-Panel:** Square D QO 200A panel in workshop zone; 40 spaces; feeds: (4) 20A 240V equipment circuits; (6) 20A 120V general circuits; (1) 240V/60A hydraulic lift circuit; (1) 50A NEMA 14-50 EV outlet; (1) LED shop light circuit.
- **Rooftop Sub-Panel:** 100A Square D QO; weatherproof NEMA 3R enclosure; feeds: hot tub (60A GFCI disconnect); rooftop kitchen circuits; rooftop lighting and outdoor mini-split Zone 6.
- **Generator:** 22kW Generac Guardian (7043-0) air-cooled standby generator; propane-fueled (buried propane tank, 500-gallon minimum, at rear yard with road-accessible fill); automatic transfer switch (ATS, Generac RXSW200A3 200A); ATS between meter and main panel. `[FLAGGED — confirm whether natural gas service available; prefer natural gas if available for fuel cost and maintenance]`

Lighting Control

- **Interior Lighting:** Lutron Caseta Pro smart dimmer system throughout; app + voice control (Alexa, Google, Apple HomeKit compatible); occupancy sensors in bathrooms, mechanical rooms, closets; dimming at all habitable room main circuits.
- **Exterior Lighting:** Lutron Caseta outdoor smart plugs and dimmers at deck and soffit lighting; motion sensors at entry alcove and driveway; dusk-to-dawn capability.
- **Neon Accent Control:** Ltech EN-LED-DMX-1 WiFi bridge controller; dedicated 24VDC 150W Mean Well waterproof driver (LPF-90D-24 or equal) per zone (2 zones); see Section 11.2 for full neon specification.

Special Systems

- **Solar Ready:** 2" conduit stub-outs from electrical room to roof penetration (4 locations) for future PV array conductors; main panel spare capacity for 60A solar feed breaker; 10kW future PV system capacity reserved.
- **EV Ready:** 50A NEMA 14-50 outlet in workshop; Wallbox Pulsar Plus or ChargePoint Home Flex Level 2 EVSE ready conduit stub from workshop sub-panel to mounting location; 50A breaker reserved.
- **Security System:** Ring Pro Wired Doorbell at D-01 main entry; Ring Spotlight Cam at all 4 building exterior corners + workshop door (D-02) + rear deck; Ring Alarm Pro base station at L1 mechanical room; monitor panel (Ring Keypad) at primary suite bedroom; all cameras Cat6A hard-wired.
- **Low-Voltage / Data:** Cat6A data drops at: all bedrooms, great room, kitchen, primary suite, flex office (2 drops), man cave (2 drops), L1 mechanical room (SMC); HDMI rough-in (2" conduit) at great room (TV wall) and primary suite; Structured Media Center (SMC, Legrand or equal) panel in L1 mechanical room; all Cat6A home-runs to SMC; router/switch rack in SMC.

10.4 Drainage and Stormwater — DD Level

- **Rooftop Primary Drains:** 4" cast iron interior roof drains at each of the 4 rooftop corners; Zurn Z100 or equal with dome strainer; connect to 4" cast iron vertical downspout within building envelope routed to underground storm line at grade; all connections no-hub gasketed; cleanouts at base of each downspout.
- **Rooftop Emergency Overflow:** 2" aluminum emergency overflow scuppers through parapet wall at 2" above primary drain rim elevation; 2 scuppers minimum (one per long side of building); scuppers discharge to splash blocks at grade level.
- **Under-House Perimeter Drainage:** 4" cast iron trench drains at perimeter of under-house concrete/grade plane; slope 1% minimum toward trench drain centerline; connect to on-site catch basin; catch basin to site storm line or retention gallery.
- **Workshop Floor Drain:** 4" floor drain at south end of workshop trench drain; discharge to sanitary with oil-water separator (OWS) per local authority jurisdiction; OWS: Thermaco Big

Dipper or equal, sized for workshop flow. `[FLAGGED FOR CD — confirm AHJ requirement for oil-water separator at workshop drain]`

- **Site Stormwater Retention:** 12" HDPE perforated pipe infiltration gallery at rear yard; 50 LF minimum run; 6" crushed stone base, 6" stone over pipe, geotextile fabric wrap; sized by civil engineer for 100-year storm event per local municipality requirements. `[PENDING CIVIL ENGINEER]`
- **Planter Overflow:** 1/2" copper tube drain from each hanging planter box; directed into integrated soffit drainage channel at front deck; channel connects to nearest downspout penetration.

SECTION 11 — SPECIALTY SYSTEMS — DD LEVEL

11. Specialty Systems — DD Level

11.1 Entry Door System (D-01) — Detail Specification

PROCUREMENT ACTION — ORDER THIS WEEK

The D-01 custom entry door system requires 14–20 weeks from confirmed shop drawing approval to delivery. Lucian / Calibration Co. must contact fabricators this week (week of May 8, 2026) to begin the quotation and lead time process. Target fabricators: Fortress Building Products (impact aluminum specialty), CGI Windows

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Doors (custom impact door division), or PGT Custom Division. Delay in initiating this procurement will push substantial completion.

Item	Specification
Manufacturer	Custom fabrication — Fortress, CGI Custom Division, or PGT Custom Division (to be confirmed with bid)
Frame Material	6063-T5 extruded aluminum; thermally broken construction; powder coat Charcoal Gray (AAMA 2604 15-year warranty coating)
Door Panels	3/4" laminated frosted impact glass set in aluminum grid frame within door panel; glass to meet Miami-Dade HVHZ; SGCC certified
LED Integration	Warm white 3000K dimmable LED strip (IP44 minimum) at interior perimeter of each glass panel and at frame perimeter; powered by dedicated 24VDC driver in adjacent wall cavity; Lutron Caseta 0-10V dimmer
Hardware — Lockset	Hoppe 0862 multipoint tilt-and-turn or swing multipoint lock system; Schlage L-Series commercial grade lever handle; keyed exterior, thumb-turn interior
Hardware — Closer	LCN 4110-3077 concealed overhead closer or Dorma ED200 electromechanical hold-open; integrated in door frame; ADA compliant opening force max 5 lb
Hardware — Hold-Open	EMF Seco-Larm E-941FB magnetic hold-open; 24VDC; fire alarm interface (holds closed on fire alarm)
Sill/Threshold	Flush aluminum threshold, 1/2" max rise, ADA compliant; integral thermal break; stainless steel drainage channel at exterior face
Finish	All aluminum Charcoal Gray powder coat (AAMA 2604); neon L-accent channel surrounds frame on three sides (see Section 11.2)
Hurricane Rating	Miami-Dade NOA; minimum 160 mph design wind speed; Large Missile Impact (LMI) compliant glazing
Lead Time	14–20 weeks from shop drawing approval `[ORDER IMMEDIATELY]`
Code	Florida Building Code (FBC) 8th Edition; ASCE 7-22 HVHZ; ANSI/BHMA A156.2 Grade 1 hardware

11.2 Neon L-Accent — Detail Specification

Item	Specification
Product	Signcomplex RGB LED Neon Flex or Elco Lighting Neonflux PRO or equivalent — confirm IP67 and 24VDC
Voltage / Power	24V DC; 12W per meter consumption; total 18 LF ≈ 5.5 m; total load: 66W
Housing	Silicone extrusion with frosted opal diffuser; 12mm × 12mm profile; 120° beam angle; CRI >80

Item	Specification
Color	RGB (Red, Green, Blue) full color; 16 million color combinations; addressable or non-addressable per zone
IP Rating	IP67 — submersion rated; coastal salt spray rated; UV-stable silicone housing
Total Length and Layout	18 LF total: 6 LF vertical leg (left side of entry alcove) + 12 LF horizontal header (top of entry alcove). L-shape profile. Vertical and horizontal legs connected at interior corner with manufacturer pre-made 90° bend or custom formed corner.
Mounting Channel	Klus ALU surface-mount aluminum extrusion channel (KLUS-B08 or equivalent) with opal polycarbonate diffuser cover; surface-mounted to concrete or framing at alcove edges; stainless steel Type 316 machine screws at 12" o.c. to prevent wind movement
Power Supplies	Mean Well LPF-90D-24 waterproof LED driver × 2 (one per leg); 90W output, 24VDC; IP67; mounted in weatherproof electrical enclosure (NEMA 3R minimum) adjacent to each leg in wall cavity or inside alcove at concealed location
DMX Controller	Ltech EN-LED-DMX-1 WiFi to DMX512 bridge; controls both zones from single app (iOS and Android); programmed preset modes: (a) Standard: slow 60-second RGB animated cycle, (b) Party: fast RGB chase sequence, (c) Static Orange (RGB 255/60/0), (d) Static Teal (RGB 0/200/180), (e) Static White (RGB 255/255/255); Alexa/Google integration via Ltech app
Dimming	0–100% PWM dimming via Ltech controller; smooth dimming curve; no flicker at any level; 0–10V compatible alternative
Wiring	Marine-grade tinned copper 2-conductor 18AWG in liquid-tight flexible metallic conduit (LFMC) between driver and LED strip; all connections with IP67 waterproof wire connectors (WAGO 221 or Ideal In-Sure with waterproof boot)
End Caps and Seals	Factory-supplied silicone end caps; sealed with Dow Corning 795 UV-stable silicone at terminations and channel-to-wall interface; full perimeter sealed against moisture ingress
Life Rating	50,000+ hours rated LED life; replacement access from front face of channel (snap-on diffuser)

11.3 Rooftop Hot Tub — Detail Specification

Item	Specification
Product	Bullfrog Spas A9L (109"×109"×38"H, 6-person, 400 gal capacity) or Caldera Utopia Cantabria 6-person; confirm final selection with owner
Approximate Footprint	110" × 110" (9'-2" × 9'-2"); confirm by manufacturer
Capacity	6 persons; approximately 400 gallons water capacity

Item	Specification
Structural Pad	12' × 12' (144 SF) reinforced concrete pad at rooftop; 12" total slab thickness at this zone; #4 epoxy-coated rebar at 12" o.c. top and bottom mats; concrete f'c = 4,000 psi; galvanized or epoxy-coated all rebar for corrosion at salt air coastal rooftop
Design Load	120 PSF dead + live (conservative operating condition); EOR to calculate transfer framing from pad to rooftop structural beams below; galvanized post-installed anchors if additional PT is required `[PENDING EOR]`
Electrical	240V / 60A dedicated circuit from rooftop sub-panel; GFCI disconnect switch (Square D or Siemens, weatherproof NEMA 3R) mounted within 5'-0" of spa and no closer than 5'-0" (NEC 680.42); dedicated 60A GFCI breaker in rooftop sub-panel
Plumbing Supply	2" Type L copper or Schedule 80 CPVC supply from potable cold-water line; ball valve shutoff; vacuum breaker at fill point (above spa rim per NEC 680)
Plumbing Drain	2" ABS drain line from spa drain port; connect to sanitary stack with P-trap (vented) and cleanout; slope 1/4" per foot to stack
Equipment	Pump and heater located in mechanical screen zone (14' × 8' zone at rooftop adjacent to hot tub); min 24" service clearance; roll-out access panel at screen wall; all equipment selected by spa manufacturer and submitted with equipment submittal
Surround	Trex Transcend Tiki Torch deck surround at three sides of spa (one side against screen wall/service); spa flush with deck surface or with integrated step-up; Trex handrail around spa perimeter at 3 sides (non-structural, safety grabrail)
Rooftop Access	D-20 impact-rated access door from stair tower; confirm spa delivery route to rooftop (crane lift over parapet or alternative)
Delivery / Installation	Spa to be crane-lifted to rooftop prior to installation of rooftop parapet or with parapet panel removed; coordinate spa delivery sequence with structural framing schedule `[FLAGGED FOR CD — crane lift coordination required at rooftop]`

11.4 Vehicle Workshop — Detail Specification

Item	Specification
Clear Dimensions	24'-0" deep × 14'-0" wide × 10'-0" clear height (to underside of L1 structure). Classic Dodge Charger (1969) footprint: 17'-0" L × 6'-2" W × 4'-5" H — clearance confirmed on all axes. `[DD CONFIRMED]`
Hydraulic Lift	BendPak XPR-10AS two-post asymmetric lift; 10,000 lb capacity; 220V/60A dedicated circuit from workshop sub-panel; 4 anchor bolts 3/4" dia. × minimum embedment per BendPak installation manual; embedded in 6" concrete slab during pour; coordinate anchor layout with EOR prior to slab pour `[FLAGGED FOR CD — anchor layout to be confirmed with BendPak before slab pour]`
Compressed Air	1/2" Schedule 40 black iron pipe loop rough-in; 4 wall outlets (Milton Type V or ARO industrial quick-coupler fittings); stub to compressor pad at NE corner (24"×24"

Item	Specification
	concrete pad, conduit stub for 240V/30A compressor circuit); drain leg at low points of air line loop
Utility Sink	24" Elkay LR2522 single bowl stainless utility sink; wall-mounted or on stand; 3/4" hot/cold supply; 2" waste to floor drain; Moen Commercial lever faucet
Electrical	200A workshop sub-panel (see Section 10.3); (4) 240V/20A equipment duplex outlets on walls; (6) 120V/20A general outlets at 48" AFF; 50A NEMA 14-50 EV ready; LED shop lights on dedicated circuit
Lighting	10,000 lm total output minimum; four (4) 2,500-lm LED shop lights (UFO High Bay or linear 4-lamp LED, 5000K, CRI 90+, dimmable); ceiling-mounted; dedicated 20A circuit
Roll-Up Door	Clopay 4300 Series commercial insulated steel roll-up; 16'-0" W × 10'-0" H; wind-rated 150 mph; insulated (R-value 12.9); LiftMaster 8500W jackshaft wall-mount operator; 240V/20A circuit; battery backup (Model 485LM compatible); manual release rope; exterior keypad entry
Floor	6" concrete slab, f'c = 4,000 psi; 1.5% cross-slope toward trench drain at south end; epoxy seal (RockSolid Polycuramine or Rust-Oleum EpoxyShield Heavy Duty) with decorative flake broadcast; non-slip aggregate broadcast; trench drain connection to oil-water separator before sanitary
Man Door	D-18 — 3'-0" × 8'-0" solid-core moisture-resistant door from man cave to workshop; no lock required (adjacent spaces)
Ventilation	Exhaust fan (Dayton or Soler & Palau industrial), minimum 1,500 CFM, for exhaust fumes and carbon monoxide; CO detector hardwired (Kidde 900-0076) in workshop; interlock exhaust fan with CO detector; makeup air via W-15 clerestory and door D-02 when open

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SECTION 12 — HANGING GARDEN PLANTER SYSTEM — DD DETAIL

12. Hanging Garden Planter System — DD Detail

The hanging garden planter system is located at the Level 1 covered front deck zone, adjacent to the W-01 ribbon window, creating a living tropical garden wall visible from the great room interior and the street approach. The following specifications define the complete DD-level design for this signature landscape element. `[DD CONFIRMED]`

Item	Specification
Planter Box Fabrication	11-gauge (1/8" nominal) steel plate; welded construction, all seams fully welded inside and out; powder-coated finish (Charcoal Gray or Matte Black, to complement building palette); dimensions: 36" L × 12" W × 14" D (exterior); drainage holes: 1/2" dia. at 6" o.c. along bottom plate (minimum 6 holes per box); 4 stainless steel Type 316 mounting bolts integral to box back plate
Quantity	Approximately 8–12 planter boxes along front deck face (depends on final deck framing layout — confirm at CD); evenly spaced or grouped in clusters per landscape designer direction
Structural Mounting	2 stainless Type 316 3/4" diameter through-bolts per planter; bolt through planter back flange into solid blocking; blocking: Douglas Fir 4×6 at 16" o.c. horizontally in exterior wall framing at L1 sill height; tension bracket (Hafele Series or custom fabricated from 3/16" plate) at top of each planter to prevent outward swing in high wind
Hurricane Anchoring	Each mounting bolt backed by 3"×3"×1/4" steel washer plate on interior face of wall; minimum pull-out capacity per bolt: 1,400 lb per hardware manufacturer rating; EOR to verify pull-out demand under design wind load (ASCE 7-22 HVHZ) on filled planter (approx. 65 lb per box filled) with 130 mph design gust `[PENDING EOR VERIFICATION]`
Irrigation Manifold	Hunter Pro-HC 8-zone WiFi irrigation controller (HPC-400i or equal) in L1 mechanical closet; dedicated planter zone valve (Hunter PGV-101MMB or equal); 1/2" poly main drip line from valve to manifold at planter zone; Hunter MP Rotator or Rain Bird LRC emitters at each plant location; 0.5 GPH emitter per plant position (6 emitters per 36" box); timer: daily morning cycle, 3 minutes per zone; rain sensor: Hunter RainClik wireless
Overflow / Drainage	1/2" Type L copper drain tube at base of each planter (at drainage hole zone); directed downward to integrated 3" aluminum soffit drainage channel below planter line; channel slopes 1/4" per foot to nearest downspout penetration; downspout inside wall to grade level storm drain
Liner	CocoTek Premium coconut coir fiber liner; cut to fit each planter box interior; prevents soil loss through drainage holes; biodegradable; replace annually or as needed
Growing Medium	50% perlite / 50% peat moss by volume; Osmocote Outdoor & Indoor 19-6-12 slow-release fertilizer (6-month formula); top-dressed annually; lightweight mix (approx. 50 lb per box fully saturated — confirm against structural capacity)
Plant Palette	Trailing Bougainvillea (Barbara Karst red or Purple Queen variety — 2 plants per 36" box); Golden Pothos (Epipremnum aureum — 2 per box as trailing filler); Tradescantia fluminensis or pallida (Purple Heart — trailing accent); Spanish Moss (Tillandsia usneoides — draped accent at corners and ends of planter rows)
Maintenance Access	Trex deck at L1 front deck provides direct standing-height access to all planters from inside the deck guardrail zone; no separate maintenance ladder required; replanting and irrigation adjustment can be performed from within the deck envelope by standing on deck surface
Winter / Tropical	Prior to forecasted Category 1+ hurricane: remove all plants and liner; retract or secure all emitter drip lines inside the planter box; steel boxes remain in place

Item	Specification
Storm Protocol	(engineered anchors remain engaged); steel construction withstands 160+ mph impact without structural failure

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SECTION 13 — UPDATED COST ESTIMATE — DD LEVEL

13. Updated Cost Estimate — DD Level

13.1 Estimating Basis and Methodology

This DD-level cost estimate supersedes the preliminary Schematic Design (SD) estimate and represents a substantially refined projection of construction cost. At the SD phase, estimates are typically prepared at ±25–30% accuracy based on gross square footage and building type benchmarks. At the DD phase, with confirmed room-by-room programs, finalized material specifications, confirmed structural systems, and defined specialty systems, estimate accuracy improves to approximately ±15–20%.

This estimate has been prepared using the CSI MasterFormat division structure, incorporating: (a) confirmed 2026 coastal construction market pricing for the relevant project region, (b) the contractor premiums typical of custom high-specification residential construction in coastal areas, (c) the confirmed specialty systems (full neon system, two hot tubs, 400A electrical service, hydraulic lift, impact glazing throughout), and (d) the confirmed structural complexity of a steel pier-supported composite deck building over 4 levels. Unit costs have been cross-referenced against RSMeans 2026 data and regional bid history.

The wide range shown in each division reflects the uncertainty inherent in pre-bid estimation — specifically: variation in subcontractor bid levels for specialty items, owner-driven material upgrade potential at finish selections (tile, hardware, appliances), and potential geotech findings requiring additional foundation depth or caisson upsizing. The General Contractor (GC) bidding process during the CD phase will narrow this range to approximately ±10% for the chosen GC's guaranteed maximum price (GMP) or lump-sum bid.

13.2 DD-Level Cost Estimate by CSI Division

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
Division 01 — General Conditions	Site supervision (superintendent + PM), temporary facilities (trailer, fencing, power, sanitation), project insurance (Builder's Risk, GL), performance and payment bond, project management overhead, administrative	$65,000	$95,000	Coastal project premium; bond rate on custom residential approximately 1.5–2%; duration-dependent
Division 02 — Existing Conditions / Site Work	Site clearing and grubbing, demolition if applicable, earthwork, grading for drainage, soil conditioning, site survey staking	$55,000	$85,000	Assumes greenfield or lightly developed site; significant demo would increase; confirm existing conditions
Division 03 — Concrete	Drilled caissons (6 piers, 12" dia., 10'-0" depth assumed), reinforced pier caps, grade beams (continuous), L1 and L2 composite deck concrete topping, rooftop structural slab (8" standard + 12" hot tub zone), workshop slab-on-grade (6"), all reinforcing steel	$185,000	$265,000	Largest single driver is caisson drilling cost — coastal sandy soils may require greater depth pending geotech; hot tub pad adds premium; 4-level concrete system is extensive
Division 04 — Masonry	CMU at under-house perimeter enclosure (WT-05), CMU at workshop (WT-07 reinforced), CMU rooftop parapet, lintels, grout, reinforcing, masonry accessories	$40,000	$65,000	Under-house enclosure and workshop are substantial CMU packages; parapet at rooftop adds area
Division 05 — Metals /	W-shape primary and secondary beams (W16×40, W10×22), steel columns (W8×31 or W10×33),	$145,000	$215,000	Steel framing for a 4-level structure over

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
Structural Steel	composite metal deck (2" 18-ga), baseplates and connection hardware, stair structure (open-riser steel), railings, cable guardrail (all decks and rooftop), stainless cable rail fittings, hurricane strapping and anchors			pier system is a significant cost center; composite deck adds material and labor; custom steel stair is premium; 316 stainless guardrail at coastal is expensive
Division 06 — Wood / Plastics / Composites	Wood framing L2 (2×6 exterior, TJI option at L2 floor), wall framing all levels, roof blocking and nailers, all interior millwork and cabinetry (kitchen, master bath, primary closet, bar — Section 8), Trex Transcend decking system (all decks + rooftop = approx. 2,000 SF), Trex framing, blocking, hardware	$75,000	$115,000	Trex decking at 2,000 SF is a significant line; full custom millwork package (kitchen, bar, closets) is the second-largest driver in this division
Division 07 — Thermal / Moisture Protection	Standing seam aluminum roofing (24-ga Kynar 500 Charcoal Gray, concealed clip), rooftop waterproof membrane (TPO or modified bitumen under Trex), building wrap and WRB (Henry Blueskin), rigid continuous insulation (1" polyiso all exterior walls), spray foam at rim conditions, all flashing and metal trim, foundation waterproofing at grade beams	$65,000	$95,000	Premium standing seam roofing; dual-layer roof system (structural slab + waterproof membrane + Trex); high-performance WRB; coastal-grade all flashing and sealants
Division 08 — Openings	All PGT WinGuard impact windows (W-01 through W-15), D-01 custom entry door (largest cost item — custom aluminum impact, LED integrated), D-03 and D-04 impact sliding glass doors, D-12 impact French door, D-02 commercial roll-up door (Clopay 4300),	$110,000	$165,000	D-01 custom entry door alone: est. $25,000–$45,000 custom fabrication. Curtain wall

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
	D-20 rooftop impact door, W-10 stair tower impact curtain wall, all interior doors			stair tower: $15,000–$25,000. All PGT WinGuard windows at this scale: $35,000–$55,000. Interior doors: $8,000–$15,000.
Division 09 — Finishes	All tile (24×24 porcelain FIN-F1 and FIN-F5 at baths/kitchen/corridor), engineered white oak hardwood flooring (all bedrooms + primary suite — approx. 1,500 SF), epoxy concrete floor system (FIN-F3 workshop + man cave — 1,000 SF), all GWB (framing, tape, finish, paint — all levels), all painting (interior: Benjamin Moore Aura; exterior: James Hardie factory finish), frameless glass shower enclosures (master bath + primary bath), mosaic tile accent strips, shiplap feature wall	$120,000	$185,000	Hardwood flooring at this scale + quality: premium; epoxy concrete is labor-intensive; frameless shower glass: $3,500–$6,000 each; large format tile installation labor is premium; painting multiple levels of custom home
Division 10 — Specialties	Bath accessories (towel bars, TP holders, mirrors — Kohler Purist series throughout), signage, mailbox, exterior address numbers, flagpole, fire extinguishers and cabinets, louvered vent W-14, specialty items	$20,000	$35,000	Premium Kohler accessory package across 5 bathrooms adds up; coordinate with millwork for integrated medicine cabinets
Division 11 — Equipment	Kitchen appliances (range, hood, refrigerator, dishwasher, microwave drawer — specify package at owner design review), washer/dryer, workshop BendPak XPR-10AS hydraulic lift, outdoor kitchen equipment (grill,	$65,000	$95,000	Appliance package quality drives range significantly; BendPak lift: $4,500–$6,500 installed;

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
	undercounter refrigerator), bar undercounter refrigerators (×3)			hydraulic lift requires electrical circuit; bar refrigerators: $800–$1,500 each
Division 12 — Furnishings	Window treatments (Lutron Serena motorized shades or equivalent at all bedrooms, great room), remaining closet system components beyond millwork scope, custom window bench cushions if specified, outdoor furniture allowance for decks	$15,000	$25,000	Lutron motorized shades at 8+ windows: $500–$900 per window installed; owner may supplement with furniture allowance
Division 13 — Special Construction	Rooftop hot tub (Bullfrog A9L or Caldera Utopia, incl. crane lift to rooftop), neon L-accent system (18 LF, complete with drivers, controller, channels, DMX bridge), hanging garden planter system (steel boxes, irrigation manifold, plant palette initial installation), irrigation controller and zone valve, dedicated drip system	$45,000	$75,000	Rooftop hot tub complete with crane: $15,000–$25,000 (spa unit) + $3,000–$5,000 (crane); neon system complete: $8,000–$15,000; planter system with irrigation complete: $12,000–$20,000; crane premium at coastal rooftop
Division 14 — Conveying	No elevator required at this time	$0	$0	Note: Optional future elevator (pneumatic or cable, ~$20,000–$35,000) may be added as owner option; shaft space should be

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
				considered in CD if desired
Divisions 21–23 — Fire / Plumbing / HVAC	Complete plumbing system (PEX-A distribution, Rinnai tankless water heater, water softener, all Kohler fixtures, all DWV rough and trim), rooftop hot tub plumbing, outdoor kitchen plumbing, irrigation system, Mitsubishi Hyper Heat multi-zone mini-split system (6 zones + man cave zone, approx. 13 tons total capacity, all equipment and installation), ERV system (Panasonic), 22kW Generac generator with ATS and buried propane tank	$135,000	$195,000	Generator + ATS + propane tank: $12,000–$18,000; Mitsubishi multi-zone full system: $45,000–$70,000 installed; plumbing fixture package at Kohler Purist level: $15,000–$25,000; ERV: $3,500–$6,000
Division 26 — Electrical	400A underground service, Square D QO main panel (400A), workshop sub-panel (200A), rooftop sub-panel (100A), Lutron Caseta smart lighting system throughout, neon electrical supply (dedicated 24VDC drivers), Ring security camera system (7 cameras + panel), Cat6A structured wiring (all rooms, home-runs to SMC), HDMI rough-in, smart thermostat (ecobee × 6 zones), all receptacles, circuits, panel, wire, and trim	$85,000	$125,000	400A service and 3 panels are substantial; Lutron smart system at scale: $8,000–$15,000; Ring professional system: $3,500–$6,000; Cat6A home runs + SMC: $5,000–$8,000; large home electrical at coastal premium
Divisions 31–33 — Site / Civil	Driveway and approach (asphalt, pavers, or crushed shell), crushed shell landscaping areas, stormwater drainage system (12" HDPE infiltration gallery, catch basins, yard drains), underground utility coordination, site grading final, erosion control	$55,000	$85,000	Infiltration gallery sizing and permitting by civil engineer; crushed shell driveway vs. paver cost differential: $5,000–

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
				$15,000; stormwater system at coastal: regulatory compliance premium
Division 32 — Exterior Improvements	Landscaping (tropical plant species, palms, ornamental grass, ground cover), tree installation with root barriers, drip irrigation for landscape, exterior LED landscape lighting (path lights, uplights at palms, step lights at grade), water feature if specified	$45,000	$70,000	Mature tropical palm trees: $1,500–$4,000 each installed; landscape lighting: $8,000–$15,000; full tropical landscape at coastal custom home: premium
Contingency (10% — DD Phase)	Design development contingency applied to base construction cost subtotal; reflects remaining design uncertainty, site unknowns pending geotech, potential scope growth at CD/owner selections	**$133,000**	**$195,000**	10% is appropriate at DD phase per AIA best practices; reduces to 5% at CD and bid phase
Soft Costs	Architecture (Calibration Co., remaining DD + CD + CA phases), structural engineering (EOR), MEP engineering, civil/site engineering, geotechnical investigation, building permit fees, elevation certificate, survey, title, testing and inspection (concrete, soil, wind mitigation)	**$90,000**	**$135,000**	Architecture + engineering fees at this complexity: 8–12% of construction; permit fees: $8,000–$15,000 coastal custom; testing and inspection: $5,000–$10,000
TOTAL DD ESTIMATE	**All divisions + contingency + soft costs**	**$1,348,000**	**$2,000,000**	**Mid-range target for owner budgeting: $1,650,000. GC bid process**

CSI Division	Scope Description	Low Estimate	High Estimate	Notes
				during CD phase will narrow to ±10%.

13.3 Comparison to SD Phase Estimate and Range Justification

The SD-phase preliminary estimate for this project was prepared on a cost-per-square-foot basis using coastal custom residential benchmarks. The DD-level range is wider in absolute dollars principally because the full scope has been confirmed and expanded through the DD process. Key drivers of the DD estimate range increase versus the SD preliminary figure include:

- **Structural Steel System:** The confirmed use of W-shape primary and secondary steel beams, composite metal deck, and welded steel connections across 4 levels (rather than lighter wood framing assumed in early estimates) represents a substantial structural premium of approximately $80,000–$120,000 above conventional wood framing.
- **Specialty Systems (Fully Scoped):** The DD phase confirms and fully prices the neon L-accent system, rooftop hot tub with crane delivery, BendPak hydraulic lift with embedded anchors, hanging garden planter system with dedicated irrigation, and 400A service — items carried only as allowances at SD.
- **Custom Entry Door (D-01):** The custom 12'×0" wide, LED-integrated impact aluminum door was confirmed at DD; custom fabrication cost of $25,000–$45,000 was not fully captured at SD.
- **Impact Glazing System:** 100% PGT WinGuard HVHZ impact glazing throughout all exterior openings, including the full-height stair tower curtain wall, represents a premium of approximately $40,000–$60,000 above standard glazing for this building size.
- **Higher-Specification Finishes:** Confirmed Kohler Purist/Artifacts fixture specification, engineered white oak hardwood at 1,500+ SF, large-format porcelain at all bathrooms, and the full epoxy concrete system at workshop and man cave (approximately 1,000 SF combined) represent finish premiums confirmed at DD.

Owner Budget Recommendation: Lucian / Calibration Co. recommends the owner establish a working budget of **$1,650,000** (mid-range of DD estimate) for planning, financing, and owner cash-flow purposes. This figure should be considered a planning number only until GC bids are received. Value engineering options below provide potential savings pathways if the owner's target budget is below the mid-range.

13.4 Value Engineering Options

VE Option	Description	Estimated Savings	Impact on Project
VE-01: L2 Floor System Change	Switch Level 2 floor from composite steel deck to 12" TJI 360 engineered wood joists on reduced steel support framing	$18,000 – $28,000	Minimal — EOR to confirm span and load equivalence; reduces dead load at L2
VE-02: Reduce Custom Entry Door Specification	Substitute D-01 custom fabricated door with CGI or PGT standard impact door (large format) — still impact rated, but within standard product line vs. fully custom fabrication	$12,000 – $22,000	Reduces visual impact of entry element; retain LED backlit glass panels if possible in standard product
VE-03: Reduce Rooftop Hot Tub to Single Spa	Eliminate rooftop spa if a ground-level spa is retained at L0 hot tub deck area; eliminates crane delivery cost, reinforced pad, and dedicated rooftop sub-panel circuit	$20,000 – $32,000	Significant reduction in rooftop structural complexity and MEP; retains spa experience at ground level
VE-04: Standard Glazing at Non-Hurricane-Rated Zones	If local AHJ permits, use impact-rated aluminum frame with non-laminated glass at interior-facing windows only (where window does not face an unprotected exterior) — review with code consultant	$8,000 – $15,000	Minimal visual impact; may not be permitted in HVHZ — confirm with AHJ before pursuing
VE-05: Generator Elimination or Deferrment	Defer 22kW Generac standby generator to Year 2; stub conduit and ATS conduit now (included) but purchase and install generator after occupancy	$12,000 – $18,000	Power outage risk at completion; conduit and panel space reserved; generator can be added later at same cost without disruption
VE-06: Reduce Appliance Package Specification	Select mid-range appliance package (Samsung or LG chef series) instead of premium professional appliance brands (Viking, Wolf, Sub-Zero); retain all rough-in locations for future upgrade	$10,000 – $20,000	Functional equivalence; appliances are owner-replaceable without construction; good VE option

VE Option	Description	Estimated Savings	Impact on Project
VE-07: CMU at Rooftop Parapet vs. Framed Wall	Substitute CMU rooftop parapet with 6" metal stud framed parapet with James Hardie cladding; lighter weight, lower cost if rooftop slab is sized for framed parapet dead load	$8,000 – $14,000	Slightly reduced mass and sound dampening at parapet; EOR to verify hurricane uplift at framed parapet; aesthetically equivalent
VE-08: Simplify Hanging Garden Planter System	Reduce planter box count from ~12 to 6; retain full irrigation system but reduce steel fabrication and plant material cost; reduce to high-impact zones flanking entry	$6,000 – $10,000	Retains primary aesthetic effect at entry; reduces ongoing maintenance burden; reduces structural blocking requirement in wall

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SECTION 14 — PERMIT CHECKLIST — DD LEVEL UPDATE

14. Permit Checklist — DD Level Update

The following table updates the permit tracking matrix from the SD phase with DD-phase status for each required permit and approval. Building permit application is targeted for submission at Week 5–6 of the project schedule, upon completion of the 100% CD set. Flag: all `[NOT STARTED]` items that are critical-path must be initiated immediately. `[DD CONFIRMED — tracking matrix is live]`

Permit Type	Issuing Agency	Status at DD	Action Required	Est. Timeline to Approval
Building Permit — New Construction	Local Building Department / AHJ	`NOT STARTED`	Complete 100% CDs; submit full permit application package with architectural, structural, MEP drawings, energy compliance (IECC), and product approvals (NOAs)	Target submit Week 6–7; approval 6–12 weeks after submission depending on AHJ backlog
Zoning / Land Use Approval	Local Planning / Zoning Department	`IN PROGRESS`	Confirm zoning classification allows 3-story raised construction; confirm setbacks	Pre-application meeting recommended;

Permit Type	Issuing Agency	Status at DD	Action Required	Est. Timeline to Approval
			from site survey; confirm total height does not exceed zoning maximum	2–4 weeks for confirmation
Site Survey / Legal Description	Licensed Land Surveyor	NOT STARTED — CRITICAL PATH	Engage licensed surveyor; obtain boundary, topographic, and legal description survey; required for building permit application	2–3 weeks from engagement
Geotechnical Investigation / Report	Licensed Geotechnical Engineer	NOT STARTED — CRITICAL PATH	Engage geotech firm immediately; soil borings at minimum 4 pier locations; lab testing; report to EOR and Calibration Co.	Field work 1 week; report 2–3 weeks; total 3–4 weeks from engagement
FEMA Elevation Certificate	Licensed Land Surveyor / NFIP	NOT STARTED	Obtain existing FEMA flood map panel for property; commission elevation certificate from licensed surveyor; required for permit and flood insurance	2–3 weeks concurrent with site survey
Floodplain Development Permit	Local Floodplain Administrator	NOT STARTED	Submit floodplain development permit application; confirm finished floor elevation above BFE; no fill in floodplain zones; submit concurrent with building permit	2–4 weeks after FEMA EC received; may be concurrent with building permit
HOA / Architectural Review Board (ARB)	HOA / CC&R Body (if applicable)	STATUS UNKNOWN	Confirm whether HOA exists and has design review authority; submit color board, elevations, and site plan; obtain written approval before CD finalization	2–6 weeks depending on HOA meeting schedule; initiate immediately if HOA exists
Utility Service Confirmation — Electrical	Local Electric Utility (PSEG, FPL, or similar)	NOT STARTED	Contact utility for 400A service availability at service point; confirm transformer capacity; obtain service point designation; coordinate underground conduit route	4–8 weeks; utility companies require advance notice for large residential service
Utility Service Confirmation — Natural Gas or Propane	Local Gas Utility or Propane Provider	NOT STARTED — AFFECTS SYSTEM DESIGN	Confirm whether natural gas service is available at property; if gas, obtain service availability and route; if not, confirm buried propane tank size and setback requirements with propane provider	2–4 weeks; affects water heater and generator fuel specification

Permit Type	Issuing Agency	Status at DD	Action Required	Est. Timeline to Approval
Sewer Service or Septic System Permit	Local Utilities Department / Health Department	NOT STARTED — AFFECTS SITE DESIGN	Confirm whether public sewer is available or septic system is required; if septic, engage soil scientist for percolation test; obtain septic permit before building permit	If public sewer: 2–3 weeks. If septic: perc test + design + permit = 6–10 weeks
Stormwater / NPDES Permit	State Environmental Agency / Local SWMD	NOT STARTED	Submit stormwater management plan (by civil engineer) including infiltration gallery design; obtain stormwater permit before land disturbance begins; SWPPP required if disturbing >1 acre	3–6 weeks; civil engineer to prepare concurrent with CD phase
Environmental / Wetlands Review	US Army Corps of Engineers / State DEP	STATUS UNKNOWN — CONFIRM WITH SURVEY	Confirm with site survey and site visit whether any wetlands, waterway setbacks, or coastal setback zones affect property; wetland delineation if within 300' of water; Section 404 permit if fill in wetlands	If no wetlands: documentation only, 2–3 weeks. If wetlands affected: 3–6 months minimum
Notice of Acceptance (NOA) — All Exterior Products	Miami-Dade County BCCO (or applicable HVHZ jurisdiction)	IN PROGRESS — PGT WinGuard NOAs on file	Compile NOAs for all exterior products: PGT WinGuard windows and doors, D-01 custom entry door (NOA to be obtained from manufacturer), D-02 roll-up door, James Hardie cladding, standing seam roof; include in permit submittals	PGT NOAs in hand; custom door NOA required from fabricator — coordinate with Section 11.1 procurement
Energy Code Compliance Calculation	Local Building Department / AHJ	NOT STARTED — REQUIRED AT CD	Engage energy code consultant to prepare IECC 2021 CZ1 compliance calculation (Res-Check or equivalent) based on confirmed insulation, glazing, HVAC, and lighting; submit with building permit application	1–2 weeks from start of energy calculation after CD issue
Contractor Licensing Verification	State Contractor Licensing Board	NOT STARTED	Verify GC, electrical, plumbing, and HVAC contractor licenses are current in state; confirm certificates of insurance and workers compensation; required before permit issuance	GC selection during CD phase; verification 1–2 weeks
Structural Engineer of Record	EOR / Structural Engineer	NOT STARTED — ENGAGE IMMEDIATELY	Engage structural EOR this week; provide DD package; EOR to produce stamped structural drawings for permit set;	6–8 weeks from engagement; geotech report

Permit Type	Issuing Agency	Status at DD	Action Required	Est. Timeline to Approval
Stamped Drawings			coordinate with geotech; required for building permit	needed within that window

PERMIT SUBMISSION TARGET

Based on the current DD-01 issuance date of May 8, 2026, and the 3-week CD production schedule, the target date for building permit application submission is approximately June 16–23, 2026 (Week 6–7). This timeline is achievable only if: (1) the geotechnical investigation is initiated immediately, (2) the structural EOR is engaged this week, (3) the MEP engineers are engaged this week, and (4) the site survey is ordered within the next 5 business days. Delays in any of these items will delay the permit submission date one-for-one.

SECTION 15 — REMAINING OPEN ITEMS

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NEXT STEPS

15. Remaining Open Items & Next Steps

15.1 Outstanding Information Required for CD Phase

The following items are outstanding as of DD-01 issuance (May 8, 2026) and are required to be in hand before the CD set can be finalized, permitted, and submitted. Items are listed in priority order:

16. **Geotechnical Report [CRITICAL PATH]:** The geotechnical investigation is the single most critical outstanding item. No foundation design can be finalized — caisson diameter, depth, reinforcing, and grade beam sizing are all contingent on geotech findings. Engage immediately. Target: report in hand by May 22–29, 2026.
17. **Site Survey with Topography and Legal Description:** Required for building permit, floodplain determination, and site grading plan. Must include FEMA flood zone identification, all property corners, topography at 1-ft contours, utilities at grade. Engage licensed surveyor immediately. Target: survey in hand by May 22, 2026.
18. **FEMA Elevation Certificate:** Concurrent with survey; required for floodplain development permit and flood insurance. Licensed surveyor to certify base flood elevation (BFE) and proposed finished floor elevation (FFE). All condenser units, main electrical panel, and floor levels must be set above BFE — confirm exact BFE for this property before confirming any grade elevations in CD.
19. **HOA / CC&R Approval (if applicable):** Owner to confirm whether the property is subject to HOA design review authority. If so, submit preliminary color board, building elevations, and site plan to HOA or ARB for approval. Obtain written approval before CDs are finalized. If no HOA: provide written confirmation from owner and title.
20. **Utility Service Confirmation — Gas (Natural or Propane):** Contact utility provider or propane supplier to confirm service type. This decision directly affects the water heater specification (Rinnai tankless gas vs. Rheem heat pump electric) and the generator fuel specification. Required before CD mechanical drawings are finalized.
21. **Utility Service Confirmation — Sewer vs. Septic:** Confirm whether public sewer is available at the property frontage. If public sewer: obtain sewer connection permit and tap fee information. If septic: engage licensed soil scientist for percolation test immediately — this can take 6–10 weeks and is a separate critical path item.
22. **Entry Door D-01 Manufacturer Confirmed and Lead Time Initiated:** As flagged in Section 11.1 and Section 5, the custom 12'-0" wide impact aluminum entry door must be ordered immediately. Lucian to contact Fortress, CGI, and PGT Custom Division for quotes and confirm fabricator by May 15, 2026. Shop drawing submittal target: May 22, 2026.

23. **Structural Engineer of Record (EOR) Engaged:** The EOR must be selected and under contract before structural drawings can begin. Provide EOR with this DD package, geotech report (when received), and the CD schedule. EOR deliverable: stamped structural drawings for permit submission by CD 100% issue date.
24. **MEP Engineers Engaged:** Mechanical, Electrical, and Plumbing engineers must be under contract to produce stamped MEP drawings for permit submission. Provide this DD package (Section 10) as the MEP basis of design basis. Target: MEP engineers engaged by May 15, 2026.
25. **Civil/Site Engineer Engaged:** Required for stormwater management plan, site grading, utility coordination drawings, and NPDES/stormwater permit preparation. Civil engineer to coordinate with surveyor and geotech.

15.2 DD-to-CD Phase Transition Schedule

Week	Dates (approx.)	Milestone / Activity	Responsible Party	Status
Week 1 (Current)	May 8–15, 2026	DD-01 Package Issued to Owner; geotech engagement; survey engagement; EOR engagement; MEP engineers engagement; entry door procurement initiated; owner review of DD-01 begins	Lucian / Calibration Co. + Owner	IN PROGRESS
Week 2	May 15–22, 2026	Owner DD Review Meeting (all consultants present if possible); owner comments on DD-01 documented and prioritized; structural, MEP, and civil consultants begin preliminary drawings; geotech field work in progress; survey in progress	Owner + Lucian + All Consultants	UPCOMING
Week 3	May 22–29, 2026	Owner DD comments incorporated into CD base drawings; geotech report target received; survey target received; structural EOR begins foundation and framing drawings; MEP engineers begin system layout drawings; Calibration Co. begins CD architectural base sheets	Lucian + EOR + MEP + Civil	UPCOMING
Weeks 4–5	May 29 – Jun 12, 2026	Construction Documents (CD) 50% Review Set issued; all disciplines coordinated; structural drawings 50% complete; MEP drawings 50% complete; interior details developed; specifications (CSI 3-part) drafted; 50% CD review meeting with owner and consultants	Lucian + All Consultants	UPCOMING
Weeks 6–7	Jun 12–26, 2026	CD 100% / Permit Submission Set completed; all disciplines stamped and signed; all product NOAs	Lucian + All Consultants	UPCOMING

Week	Dates (approx.)	Milestone / Activity	Responsible Party	Status
		compiled; energy compliance calculation submitted; building permit application submitted to AHJ; concurrent stormwater permit submission		
Week 8+	Jun 26, 2026+	Building permit under review by AHJ (6–12 weeks typical); GC invitation to bid issued (GC shortlist prepared during CD phase); GC bid period (3–4 weeks); subcontractor pre-qualification; bid leveling and GMP negotiation; contract award; construction mobilization target Q4 2026 pending permit	Owner + Lucian + GC	UPCOMING

15.3 Project Contact Block

PROJECT OF RECORD — DESIGN DEVELOPMENT PACKAGE DD-01

Project Lead:	Lucian
Firm:	Calibration Co.
Email:	lucian@calibration-co.com
Phone:	732-666-0496
NCARB License:	692-666
Document No.:	DD-01
Date Issued:	May 8, 2026
Phase:	Design Development Package
Revision:	DD-01 (Initial Issue)
Next Milestone:	Owner DD Review Meeting — Week of May 15, 2026

Prepared and Issued By:

Lucian

Project Lead | Calibration Co. | NCARB 692-666

Date: May 8, 2026 Package: DD-01 Revision: Initial Issue

END OF DD-01 DESIGN DEVELOPMENT PACKAGE

This document constitutes the complete Design Development Package DD-01 for the Modern Tropical Raised Home project. All sections are issued for owner review and consultant coordination. Items tagged

`[PENDING EOR]`

and

`[FLAGGED FOR CD]`

require resolution prior to CD finalization. Owner signature on this package confirms approval to proceed to Construction Documents phase.

Calibration Co. | lucian@calibration-co.com | 732-666-0496 | NCARB 692-666 | Document: DD-01 | Date: May 8, 2026 | Modern Tropical Raised Home — Design Development Package