

Home Technology Blueprint

A single design for the whole home — Wi-Fi, cameras, cabling and the equipment that runs them — modeled against this specific floor plan before anything is bought or installed.



Your home, modeled in 3D before anything is installed.

PROPERTY

Desert Willow Residence
Las Vegas, NV

PREPARED FOR

The Bennett Family

PREPARED BY

DOMIVKA

DATE

August 30, 2026

3

Wi-Fi access points

6 + 1

Exterior cameras + video doorbell

8 TB

Recommended surveillance storage

~14 days

Estimated continuous recording

6U

Structured network rack

~925 ft

Planned new network cabling

01 · STARTING POINT

Existing Conditions

Every recommendation in this document starts from what is already in the house. Wiring that works is kept; only what the design actually needs gets added.

EXISTING INFRASTRUCTURE

- Internet service and demarcation enter at the **Utility room**.
- The existing structured wiring panel is located in the same Utility room.
- **Six existing Ethernet home-runs** are already installed through the house.
- Those drops primarily serve bedrooms, the office, the Great Room / media area and other fixed device locations.
- No dedicated Ethernet runs currently exist for ceiling access points.
- No exterior camera pre-wire is currently available.
- Existing doorbell low-voltage wiring is expected to be reused where compatible.

WHAT THE HOMEOWNER ASKED FOR

- Reliable whole-home Wi-Fi, without dead corners
- Strong 5 GHz coverage across all primary living spaces
- Excellent connectivity in the Great Room, Office and Owners' Suite
- Reliable garage connectivity for vehicles and connected devices
- Working Wi-Fi out on the Covered Patio
- Wired connections for fixed media and office equipment
- Exterior security coverage without obvious blind spots
- Infrastructure that can grow without being torn out

How those two lists turn into a design

The house already has wiring in the right rooms but nothing at the ceiling and nothing outside — which is exactly where wireless coverage and camera views have to come from. The plan on the following pages keeps all six existing drops in service and adds runs only for the three access points and six cameras, so the money goes into coverage rather than into rewiring what already works.

Single story, wide footprint

Roughly 60 ft across. Coverage has to reach horizontally rather than between floors, which drives access point placement toward the centre and the two wings.

One utility room, one core

Demarc, panel and rack all land in the same room, so every new run has a single destination and the rack stays out of living space.

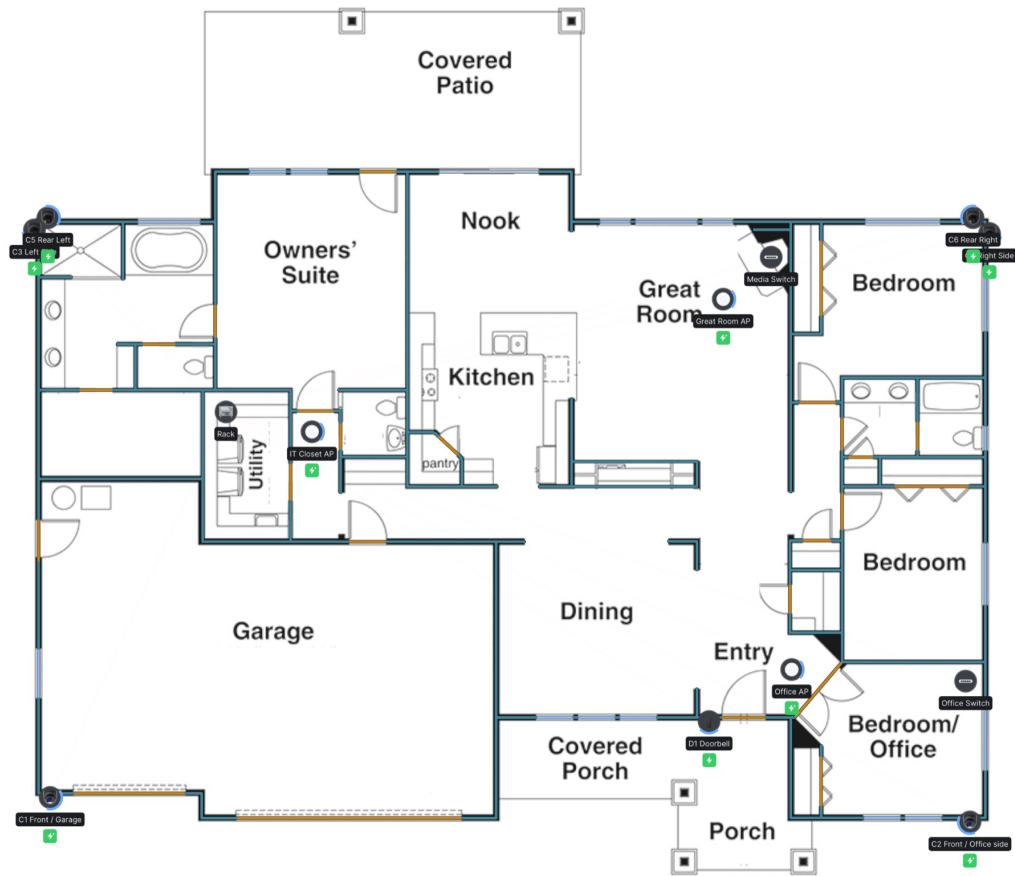
Outdoor living matters

Covered Patio, Covered Porch and Porch are all used space. They are treated as rooms for coverage purposes, not as an afterthought.

02 · THE DESIGN

Recommended Technology Plan

Where every piece of equipment goes, and what each one is there to do.



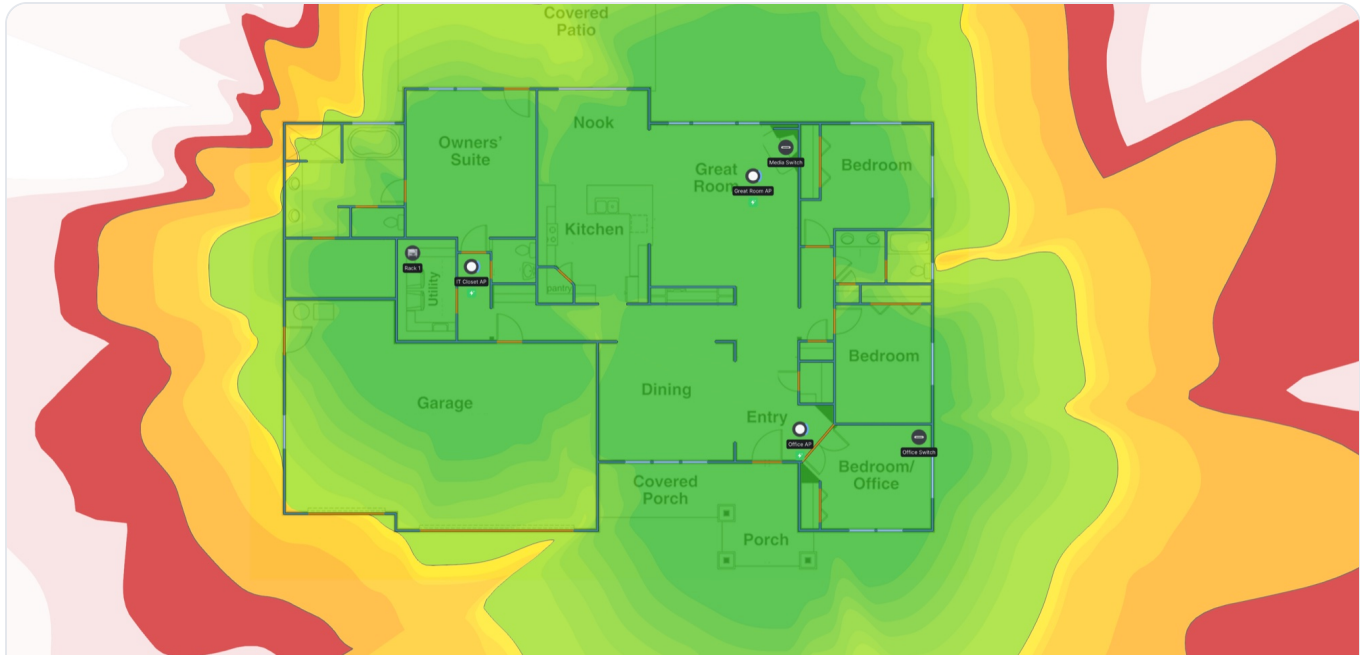
Device plan — Floor 1. Access points, exterior cameras, video doorbell, distributed switches and the network core, positioned against the actual floor plan.

REF	WIRELESS & NETWORK	REF	CAMERAS
AP1	Great Room — central living, kitchen, nook	C1	Front / garage approach
AP2	Utility / IT closet — west wing, garage, Owners' Suite	C2	Front / office-side cross coverage
AP3	Office / Entry — east bedrooms, office, front porch	C3	Left side access path
MN	Media Node — Great Room switch for TV and AV	C4	Right side access path
ON	Office Node — workstation, printer, fixed devices	C5	Rear left — Owners' Suite side
NC	Network Core — 6U rack in the Utility room	C6	Rear right — Great Room side

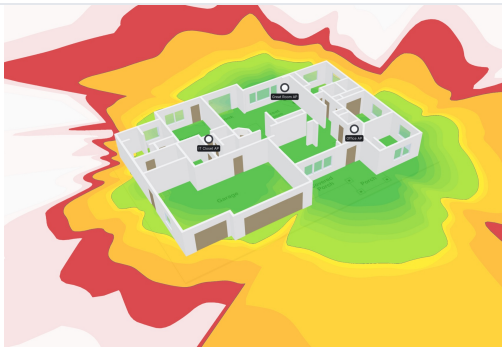
03 · WIRELESS

Whole-Home Wi-Fi Design

Three access points, placed so that coverage overlaps where people actually spend time — including the garage, the entry and the Covered Patio.



Estimated 5 GHz coverage — Floor 1. The primary everyday layer: phones, tablets, laptops, streaming and office use.



Coverage modeled through the actual layout and wall structure of the home.

6 GHz — HIGH-PERFORMANCE ZONES

6 GHz is treated as a high-performance local layer rather than whole-property coverage. It is concentrated around the primary living areas, bedrooms and the office, where compatible devices benefit most.

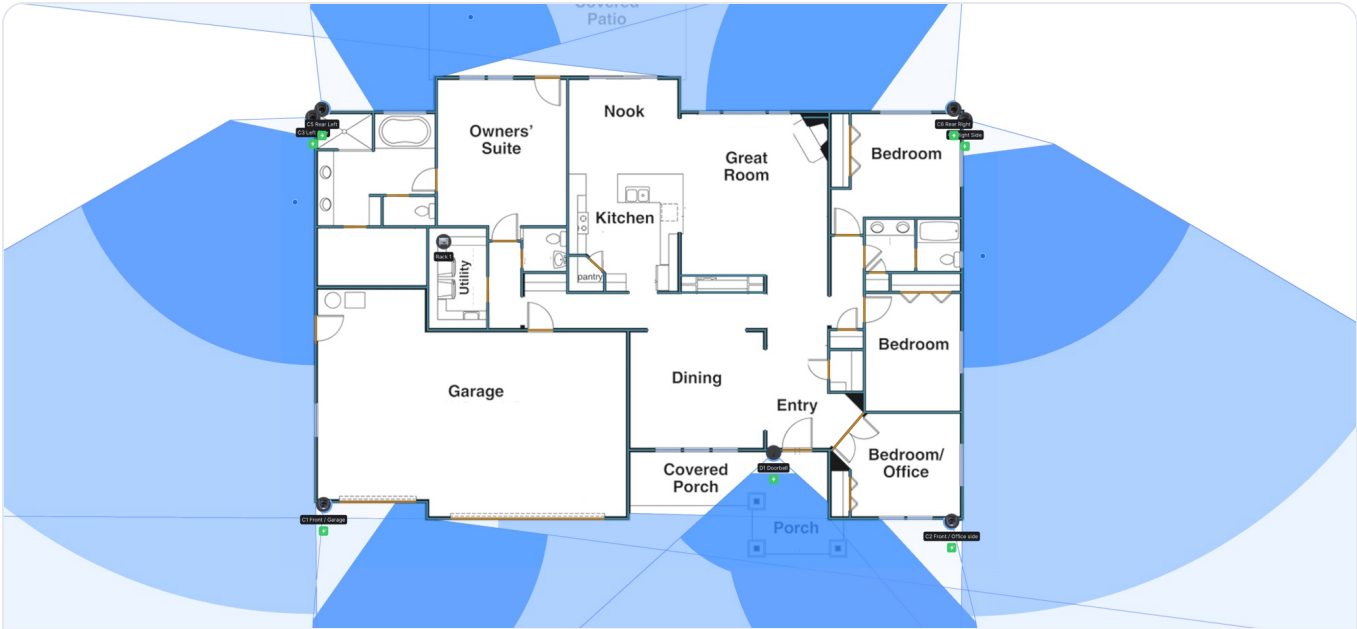
2.4 GHz remains available primarily for IoT devices and extended-range connectivity.

Coverage shown is a predictive design model. Actual wireless performance can vary based on construction materials, interference, client devices and final installation conditions.

04 · SECURITY

Security Camera Coverage

Six exterior cameras covering the front approach, both side access paths and the rear patio areas, with a video doorbell for a face-level view at the primary entrance.



Camera coverage — Floor 1. Planned viewing directions and useful range for each exterior position.

REF	COVERAGE RESPONSIBILITY
C1	Front / garage approach
C2	Front / office-side cross coverage
C3	Left side access
C4	Right side access
C5	Rear / Owners' Suite side
C6	Rear / Great Room side
D1	Front entry — package and face-level view



Sightlines checked in three dimensions, not only on a flat plan.

Coverage areas are a design model of viewing direction and useful range. They are used to reduce blind spots at approaches, entrances and side access paths — not as a guarantee of detection or identification in every condition. Final aiming is adjusted on site.

05 · CABLING & INFRASTRUCTURE

Built Around the Home — Not Around the Hardware

The design adapts to the wiring this house already has. Nothing that works gets replaced to make a product catalogue tidier.

EXISTING INFRASTRUCTURE REUSED

6 existing Ethernet home-runs

Retained wherever practical, with a small managed switch placed at the drops that serve several devices.

Great Room

Existing Ethernet → local managed switch → TV, Apple TV, console, future AV

Office

Existing Ethernet → local managed switch → workstation, printer, fixed devices

NEW INFRASTRUCTURE

9 new dedicated Cat6 runs

Added only where the design needs something the house does not already have.

- **3 runs** — ceiling access points
- **6 runs** — exterior security cameras

Doorbell wiring is reused where compatible.

PLANNED CABLING

≈ 925 ft Cat6

ESTIMATED PLANNED CABLE REQUIREMENT

Cable quantity is based on the current design model and includes planning slack. Final routing may change based on attic access, wall construction and actual field conditions.

Cabling standard

Permanent network cabling is solid bare-copper Cat6. No copper-clad aluminium.

Every run terminates at the rack on a patch panel rather than directly into equipment, so any single device can be swapped, moved or added later without disturbing the cabling.

Cameras stay wired

Power and data over one cable to each camera. No batteries, no separate outlets, no wireless dependency for recording.

Access points on the ceiling

Ceiling mounting is what makes three access points enough. Wall or shelf placement would require more of them.

Room to grow

Spare capacity is planned into the rack and the patch panel so future rooms or devices are a patch, not a rebuild.

06 · THE CORE

The Technology Core

One rack in the Utility room holds the gateway, the switching, the recording and the backup power.

Conceptual rack layout — 6U. Gateway, patch panel, PoE switching, vented space and UPS.

WHAT IS IN THE RACK

Dream Machine Pro	Gateway, controller, video recording
24-port patch panel	Every run terminated and labelled
Pro 24 PoE switch	Power and data to APs and cameras
1U vented panel	Airflow plus spare rack space
2U UPS	Rides through short power interruptions

Final rack layout and component placement may be adjusted during installation.

SYSTEM ARCHITECTURE



RECORDING & STORAGE

8 TB

≈ 14 days estimated retention

Designed around a two-week continuous recording target

0 DAYS

≈14 DAYS

30 DAYS

7

Camera streams

24/7

Continuous local recording

Smart

Detection for faster review

Estimated retention only

Actual recording history varies with camera resolution, frame rate, bitrate, compression, scene activity and recording configuration.

If two weeks is not enough

The recorder accepts a larger internal drive, so retention can be extended later without changing the cameras, the cabling or the rack. Sizing beyond this design is quoted separately.

Storage drive pricing is currently volatile. Equipment figures in this Blueprint reflect published pricing on the date of this document.

07 · EQUIPMENT

Recommended Equipment

The equipment behind every plan, map and diagram in this Blueprint. Project cost is summarised by category on the following page.

ITEM	MODEL	QTY	PURPOSE
NETWORK CORE			
Dream Machine Pro	UDM-Pro	1	Gateway, controller and local video recording
Pro 24 PoE switch	USW-Pro-24-POE	1	Power and data to every access point and camera
6U toolless mini rack	U-Rack-6U-TL	1	Houses the core in the Utility room
24-port patch panel	UACC-Rack-Panel-Patch-Blank-24	1	Every run terminated, labelled and serviceable
1U vented panel	UACC-Rack-Panel-Vented-1U	1	Airflow plus spare rack space
Rack UPS, 2U	UPS-2U	1	Rides through short power interruptions
WI-FI			
U7 Pro access point	U7-Pro	3	Ceiling-mounted whole-home coverage
SECURITY			
G6 Pro Turret camera — 4K	UVC-G6-Pro-Turret	2	Longer-range front and rear approaches
G6 Turret camera — 4K	UVC-G6-Turret	4	Side access paths and rear yard
Video doorbell	UVC-Doorbell-B	1	Face-level and package view at the entry
Enterprise surveillance drive, 8 TB	UACC-HDD-E-8TB	1	Local recording, ≈14-day target
DISTRIBUTED NETWORKING			
Flex Mini managed switch	USW-Flex-Mini	2	Great Room and Office wired devices
CABLING & INSTALLATION MATERIALS			
Approx. 925 ft Cat6	—	—	9 new structured runs, terminated at the patch panel
Installation materials	—	—	Patching, terminations, connectors, cable management and mounting hardware

Why this list and not a longer one

Standard consumables — patch cords, keystones, connectors, fasteners and cable management — are covered inside the installation categories rather than itemised here. The list above is the equipment that determines how the system actually performs.

08 · INVESTMENT

Implementation Options

DOMIVKA RECOMMENDATION

Recommended

3 access points · 6 cameras + doorbell · 8 TB storage

The configuration shown throughout this Blueprint — the best balance of coverage, security, infrastructure and cost for this home.

Equipment & Storage	Hardware, storage, taxes and supplier surcharges	\$5,376
Structured Wiring	9 new Cat6 runs — routed, terminated, labeled, tested	\$2,475
Device Installation & Commissioning	10 devices	\$1,450
Network Core & System Configuration	Rack, gateway, switching, UPS, configuration and handoff	\$1,450
Recommended Project Total		\$10,751

\$10,751

PLANNING TOTAL

Other Ways to Build the Plan

The Recommended design is what this Blueprint documents. The two directions below show how it can be simplified or expanded depending on budget and long-term goals.

ESSENTIAL

Smart reuse of existing infrastructure

\$7,692

3 AP · 4 Cameras + Doorbell · 4 TB

- Keeps a three-access-point whole-home design, using U7 Pro Wall units
- Existing Ethernet locations reused for access points where practical
- 4 exterior cameras plus the video doorbell, with 4 TB local storage
- Same professional network core, rack and patching architecture
- Only 4 new Cat6 camera runs required

The trade-off. Lower installation cost by leaning on wiring the home already has. Camera overlap is reduced, and access point placement follows existing Ethernet locations rather than ideal coverage.

FUTURE-READY

Performance, resilience & expansion

\$13,618

4 AP · 7 Cameras + Doorbell · 16 TB · Multi-Gig

- 3 × U7 Pro XGS indoors plus 1 × U7 Pro Outdoor for patio and backyard
- Dream Machine Pro Max with multi-gig Pro Max switching
- 7 exterior cameras — 3 × G6 Pro Turret plus an added garage camera
- 16 TB storage, second bay free for future RAID 1 redundancy
- 11 new Cat6 runs and more PoE headroom for later expansion

What the difference buys. Higher performance, stronger outdoor connectivity, longer retention and room to expand without replacing the core.

The plans, coverage maps, camera layouts, rack design and equipment throughout this Blueprint represent the **Recommended** configuration. Essential and Future-Ready are alternative implementation paths and would require changes to device locations and final coverage.

Planning prices are based on the current design, current equipment pricing including applicable supplier surcharges and estimated local equipment taxes, plus standard installation assumptions. Final implementation pricing is confirmed separately after field verification and before work begins.