

Pre-Wire Specification for Single-Family Homes

One stud bay. One circuit. A revenue-generating home.

Making a home **Nanocenter Ready™** is a single rough-in task completed during normal electrical work. You are reserving one exterior-facing stud bay and landing a dedicated branch circuit and communications drop so a Nanocenter™ compute appliance — a wall-mounted unit the size and profile of a Tesla Powerwall — can be installed later by our certified team. No special tools. No proprietary hardware at rough-in. When you're done, the home earns the **Nanocenter Ready™** badge. Leave the included Nanocenter Ready™ adhesive decal for the drywall finisher to affix to the garage wall after completion. This decal indicates to future installer that this is the Nanocenter Ready™ bay.

The Four Requirements

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|----------|----------------------------|--|
| 1 | Selected Stud Bay | One 16" or 24" OC stud bay with a clear MEP-free zone (the Clear Zone) from 26" to 42" AFF . |
| 2 | Ventilation Path | Clear zone for future ventilation routing available through a 16" or 24" OC stud bay on an exterior building wall from 26" to 42" AFF. |
| 3 | Dedicated Circuit | 10/3 NM-B w/ ground, landed in the chassis outlet zone, on a 30A / 240V GFCI breaker with top of 4-11/16" metal box at 48" AFF on the right . |
| 4 | Communications Drop | Cat 6A or Fiber-ready ¾" ENT (smurf) with low voltage box or bracket with the top at 48" AFF on the left . |

Where it goes

- **Preferred location:** Garage wall of a single-family home in an exterior-adjacent stud bay to simplify a future ventilation path to the exterior. The opposite side of the selected bay must be outdoors.
- **Profile:** Same footprint and visual profile as a Powerwall. The Nanocenter unit measures 25.5" wide x 45" tall, mounted directly to standard **16" or 24" on-center** framing.
- **Why the garage:** Conditioned-adjacent, secure, code-friendly, and out of living space.



You are not installing the appliance. You are leaving it ready. Nanocenter handles final mount, commissioning, insurance, and the homeowner agreement. Your scope ends at a stubbed 10/3 and Cat 6A and/or ENT box and a stud bay where there are no obstructions (MEP or otherwise) from 26" to 42" AFF.

The Mounting Bay (the "Nanocenter Zone")

- Select **one 16" OC stud bay** on the designated wall.
- **Keep the vertical band from 26" to 72" AFF completely free of MEP obstructions** — no horizontal runs, junction boxes, water lines, gas, low-voltage, or HVAC crossing through this band.
- **Insulation may remain** in the bay. It does not need to be removed.
- The clear band guarantees room for the appliance body **plus its upper and lower ventilation ports**.

Ventilation Path (the Clear Zone)

- The appliance cooling system (inverter-driven compressor) uses an **vent port** to access outside air.

- Reserve the ability to route the port through a **16" or 24" stud bay to the exterior in the MEP clear zone.**
- Do not block the bay with mechanical, electrical or plumbing between **26" to 42" AFF band** where vent transitions will land. Insulation in the clear zone is okay.
- The goal of the **clear zone** is to make installation of a future Nanocenter™ possible without future re-routing of MEP paths.

Communications (Data)

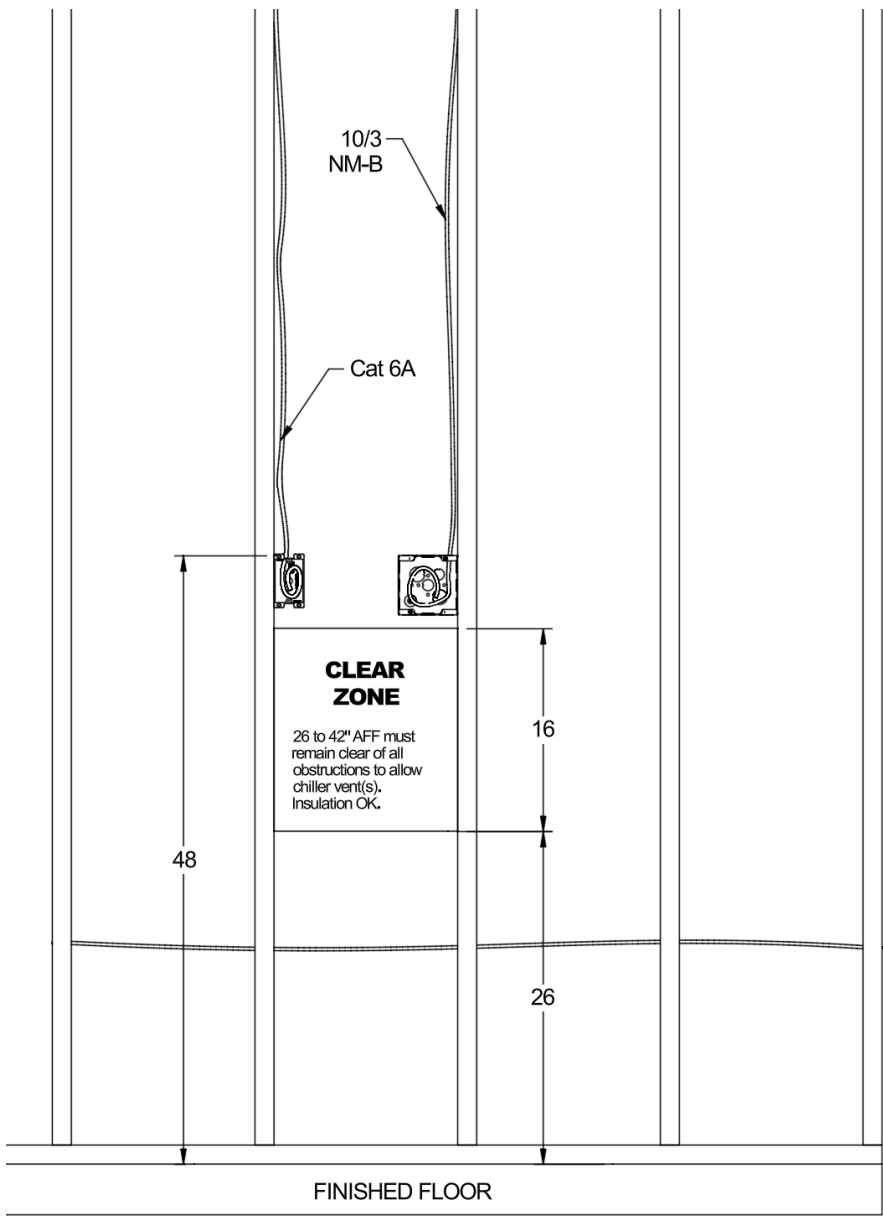
Item	Specification
Networking Drop	On the opposing stud in the selected bay (when facing the stud bay from the inside of the garage, the left stud), a low voltage box with either Cat 6A drop or ¾" ENT (smurf tube) home-run to the home's communications hub.
Separation	While NEC 800.133 requires 2" separation on parallel runs, the Nanocenter specification requires 6" (or more, if determined by the AHJ). This applies to both Cat 6A and ENT. When making your home-run to the panel or communications hub, please ensure at least 6" of separation on parallel runs or make sure all crossovers are perpendicular.
Box	Single-gang, stubbed into the chassis outlet zone, inside the stud bay, on the left, at 48" AFF.
Box height	Land within the outlet zone with the top of the box at 48" AFF.
Finish	Receptacle optional — see Section D

The "Outlet Zone"

The Nanocenter chassis includes an internal **outlet zone** — a recessed clearance area built into the enclosure.. You do **not** need pinpoint accuracy. 48" AFF, +/- 1/4" tolerance is acceptable.

- **Stub the box anywhere inside the outlet zone window** (see diagram).
- The receptacle is **optional**. You may:
 - **(a)** Install a receptacle, or
 - **(b)** Land conductors, cap, and cover with a blank plate.
- In either case, apply the supplied **Nanocenter Ready™ decal** to the cover plate. The decal is the homeowner's and builder's proof of readiness.

Diagram — Elevation View



ROUGH-IN QUICK REFERENCE — POST-SHEATHING, PRE-MEP

 READ THIS BEFORE YOU START

The stud bay behind this notice is a designated **Nanocenter Ready™** bay. It has special requirements. Please review before running any wire, pipe, duct, or conduit in or through this bay.

► **IDENTIFY THE BAY**

Item	Detail
Bay type	Exterior garage wall, standard stud bay
Stud spacing	16" OC or 24" OC (verify, mark "OC" on stud face)
Wall	Garage exterior wall — interior face
This notice	Affixed to the stud face facing the interior of the bay — DO NOT REMOVE UNTIL DRYWALL IS INSTALLED

► **TWO BOXES — TOP AT 48" AFF**

Install **two** device boxes on the interior stud faces of this bay. The **top edge of each box** must be at exactly **48" Above Finished Floor (AFF)**. Tolerance: $\pm\frac{1}{4}$ ".

Box	Type	Purpose	Notes
POWER BOX	Single- or double-gang, flush-mount	10/3 NM-B termination	Home-run to service panel. 30A 2-pole breaker. No splices.

LOW-VOLTAGE BOX	Low-voltage mounting bracket or open-back box	Cat 6A and/or ¾" ENT (smurf)	Home-run to residential comm hub. Pull string if ENT only.
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Do not share a box. Power and low-voltage conductors must enter separate boxes.

► THE CLEAR ZONE — 26" AFF TO 42" AFF

A **Clear Zone** exists in the vertical region from **26" AFF to 42" AFF** in this stud bay.

WHAT IS ALLOWED IN THE CLEAR ZONE:

✓ **Insulation** (any type per building spec)

WHAT IS NOT ALLOWED IN THE CLEAR ZONE:

- ✗ Plumbing lines of any kind
- ✗ HVAC ductwork or flex runs
- ✗ Conduit (EMT, ENT, PVC, or otherwise — except the short ENT stub-out to the low-voltage box above 42")
- ✗ Extra junction boxes
- ✗ Fire-blocking (unless required by code — coordinate with GC)
- ✗ Cable runs that are merely passing through
- ✗ Fasteners, hangers, straps, or clips on the stud faces
- ✗ **Anything** that a future drywall cut could contact

CLEAR DIMENSION REQUIRED:

A minimum **14.5 inches** of clear, unobstructed horizontal space — **stud face to stud face, centered** — must be maintained throughout the entire Clear Zone (26" AFF through 42" AFF).

Why? A future contractor will cut drywall in this zone to install ventilation ports for the Nanocenter unit. Any MEP in this zone risks being damaged by that cut. **If your work is found in the Clear Zone at pre-drywall inspection, you will be called back to move it.**

► SEPARATION RULES — POWER vs. LOW-VOLTAGE

Requirement	Minimum	Specification
Parallel separation (NM-B to Cat 6A or ENT)	6"	When the power and low-voltage runs travel parallel to each other, maintain ≥6 inches side-to-side. (<i>NEC 800.133 requires only 2"; Nanocenter Ready™ requires 6".</i>)
Crossover points	90° perpendicular	Every point where the NM-B and low-voltage cross must be a clean 90° angle. No diagonal or angled crossings.
Shared holes	NEVER	NM-B and low-voltage may never share the same bored hole, notch, or plate. Period.
Slack at boxes	6" minimum	Per NEC 300.14, extend ≥6" of free conductor from the face of each box.

► SECURING THE 10/3 NM-B

Per NEC 334.30:

Requirement	Detail
Support interval	Every 4' 6" (54") maximum

Distance from box to first support	12" maximum
Bending radius	5× overall cable diameter, minimum
Bored holes in studs	≥2" from edge, or install listed nail plates per NEC 300.4(A)

► IF USING ENT (SMURF TUBE) FOR LOW-VOLTAGE

Per NEC Article 362:

Requirement	Detail
Minimum trade size	
Support interval	Every 3' maximum (NEC 362.30)
Distance from box to first support	3' maximum
Bending radius	6× trade size, minimum (NEC 362.24)
Pull string	Install and leave accessible at both ends
Separation from NM-B	Same 6" parallel / 90° perpendicular crossover rules apply

► QUICK CHECKLIST — VERIFY BEFORE DRYWALL

- ☐ Both box tops at 48" AFF ($\pm\frac{1}{4}$ ")
- ☐ 10/3 NM-B home-run from panel — no splices
- ☐ 10/3 NM-B secured per NEC 334.30
- ☐ Cat 6A or ENT home-run to comm hub

- ☐ Pull string in place (if ENT used)
 - ☐ Parallel separation $\geq 6"$ between NM-B and low-voltage
 - ☐ All crossovers at 90° perpendicular
 - ☐ No shared holes between NM-B and low-voltage
 - ☐ $\geq 8"$ conductor slack at each box (or required by jurisdiction)
 - ☐ Clear Zone (26"–42" AFF) free of ALL obstructions
 - ☐ 14.5" minimum clear horizontal, full Clear Zone height
 - ☐ Insulation installed (if applicable) — **permitted** in Clear Zone
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► IF YOU'RE NOT SURE — ASK

Do not improvise. If field conditions make any requirement on this sheet impossible to meet, stop and contact the GC before proceeding. The Nanocenter Ready™ program coordinator is available to answer questions and approve field deviations:

Nanocenter, Inc. | [Nanocenter.ai](https://nanocenter.ai) | Nanocenter Ready™ Program Coordinator

The Nanocenter Ready™ specification is a residential appliance pre-installation standard, not a commercial data center standard. This branch circuit is no different in kind from an EV charger pre-run or a solar inverter branch circuit.

Always verify with your local AHJ. Local amendments to the NEC or IRC may impose additional requirements. Where local code conflicts with this specification, the more stringent requirement governs.

DOCUMENT: NC-RDY-FIELD-001 | **REVISION:** A | **EFF. DATE:** May 6, 2026