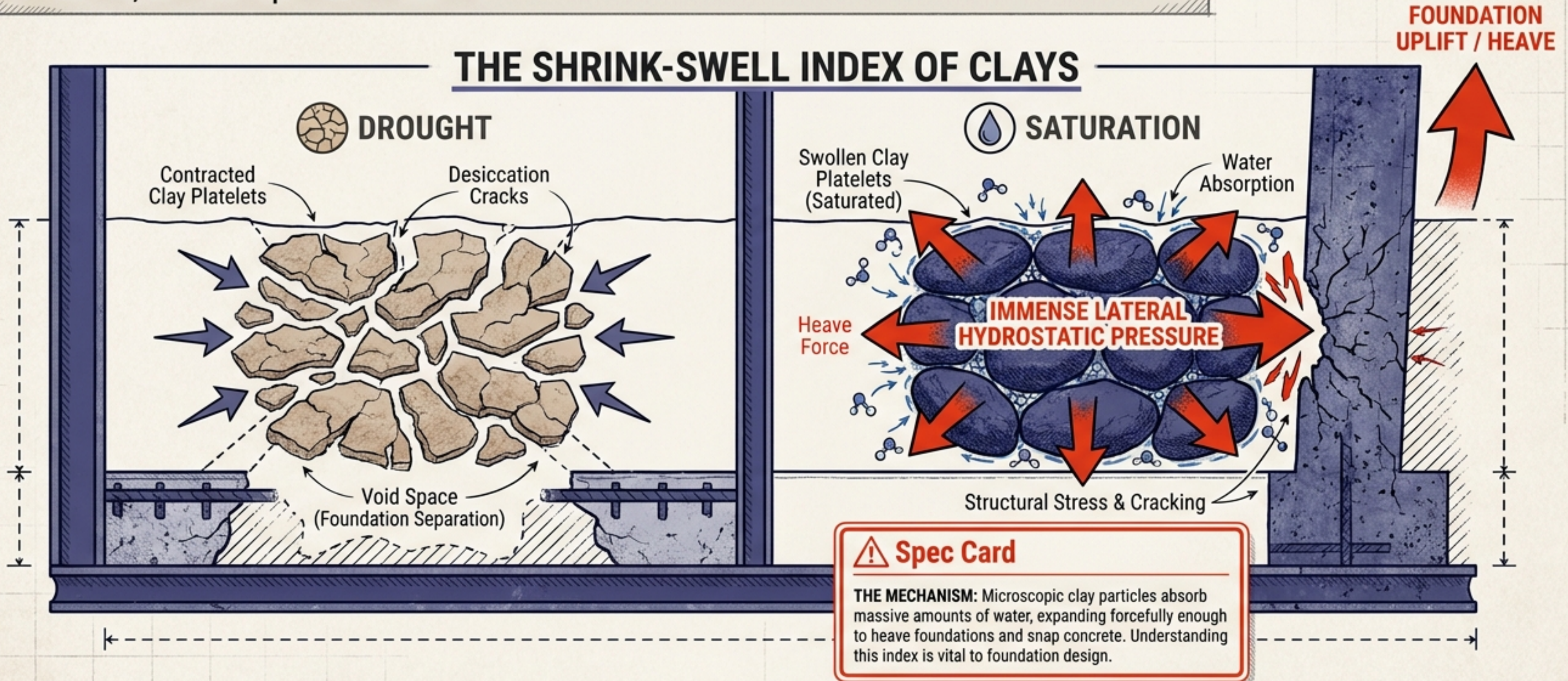


The Hazard of Expansive Soils

Expansive soils cause billions in structural damage in the U.S. every year—more than hurricanes, tornadoes, and earthquakes combined.

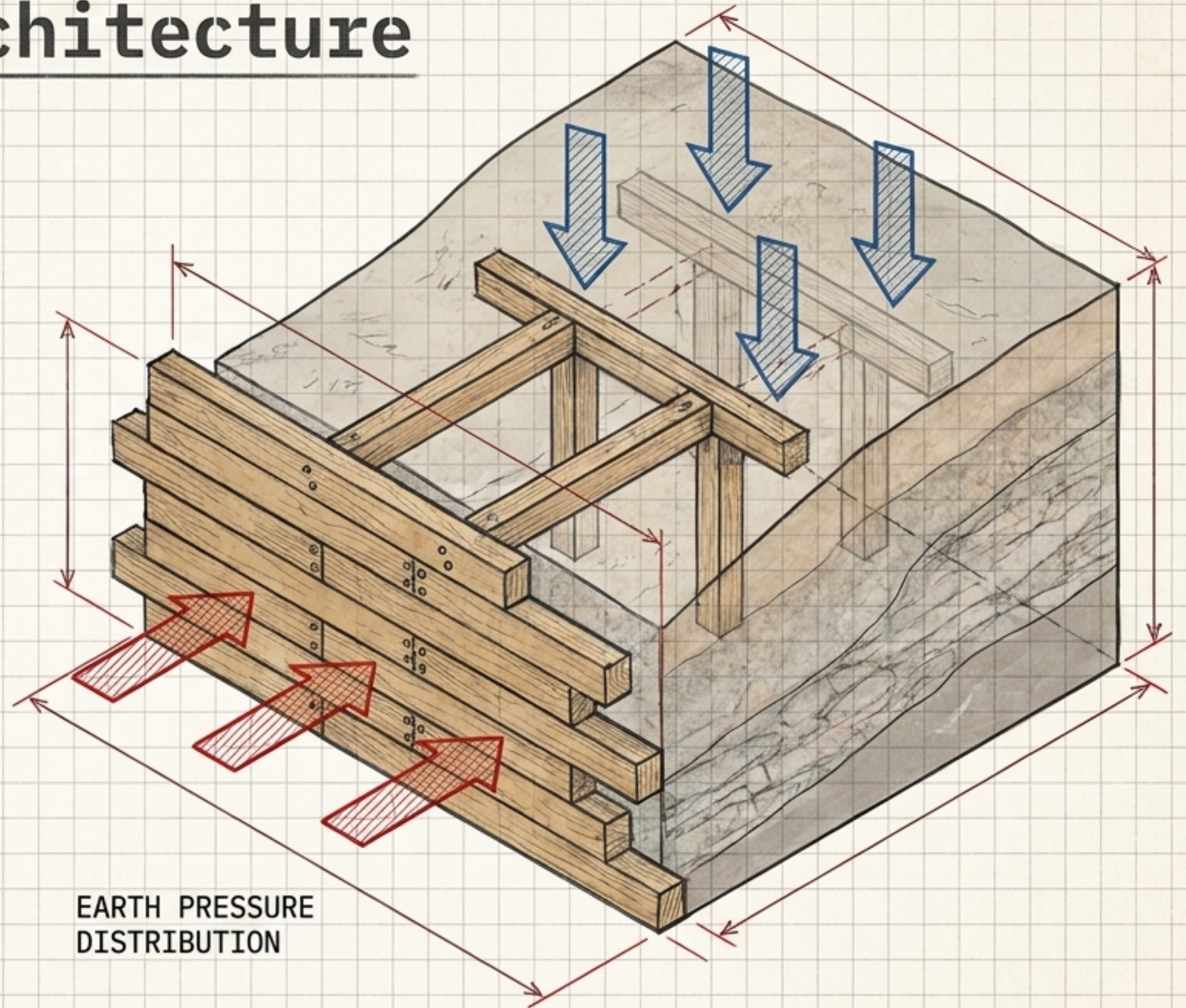
THE SHRINK-SWELL INDEX OF CLAYS



Timber System Architecture

STRUCTURAL SPECIFICATIONS

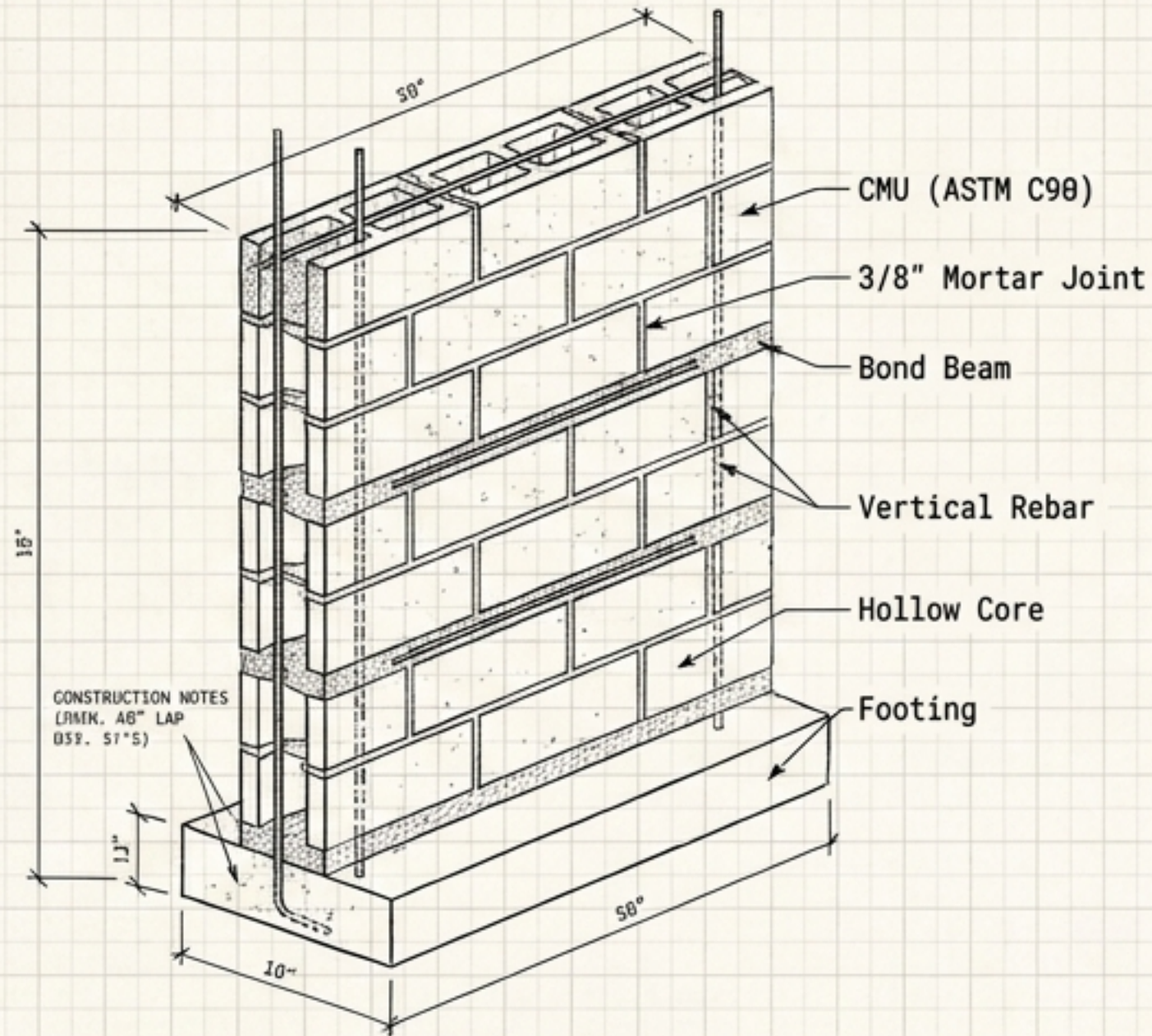
- CORE MATERIAL: 6x6 southern pine, grade #2 or better.
- PRESERVATIVE: UC4A treated for ground contact.
- FASTENERS: 60d spikes (galvanized/stainless) driven into pre-drilled holes.
- ANCHORING: Structural deadmen placed every 8 feet on center.
- GEOMETRY: Staggered joints minimum 3'-6" between courses.



Masonry and Solid Poured Concrete

RIGID SYSTEMS: SELECTING BETWEEN BLOCK AND CAST-IN-PLACE

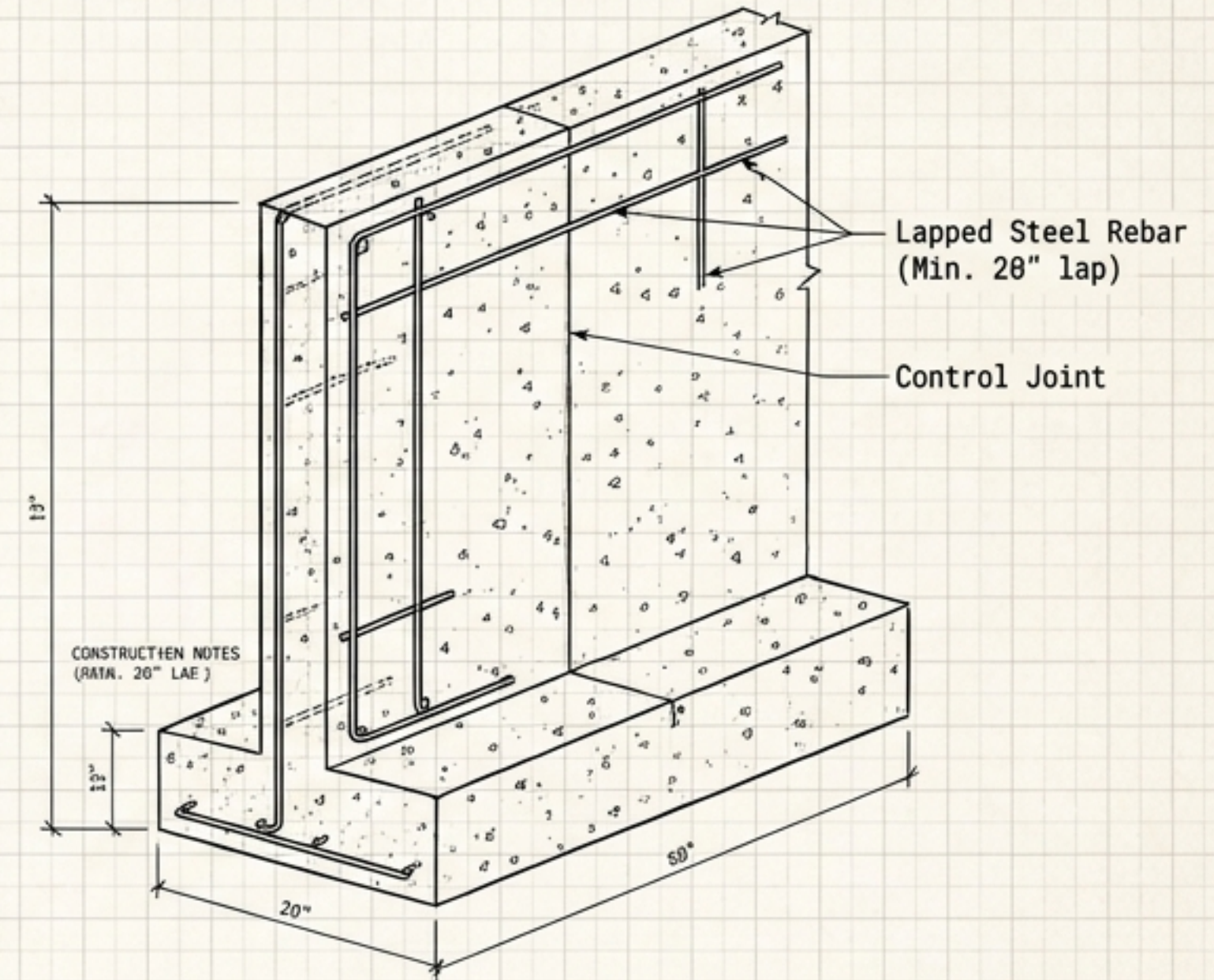
MASONRY (BLOCK SYSTEMS)



Spec Card

- **MATERIAL**: ASTM C90 concrete masonry units.
- **MORTAR**: 3/8-inch head and bed joints.
- **REINFORCEMENT**: Integrated bond beams at the top course and alternating intermediate courses.

SOLID POURED CONCRETE



Spec Card

- **MATERIAL**: 3,500 psi concrete minimum compressive strength at 28 days.
- **THE SKELETON**: Lapping steel rebar by a minimum of 20 inches.
- **JOINTING**: Control joints every 20 feet to prevent arbitrary cracking.

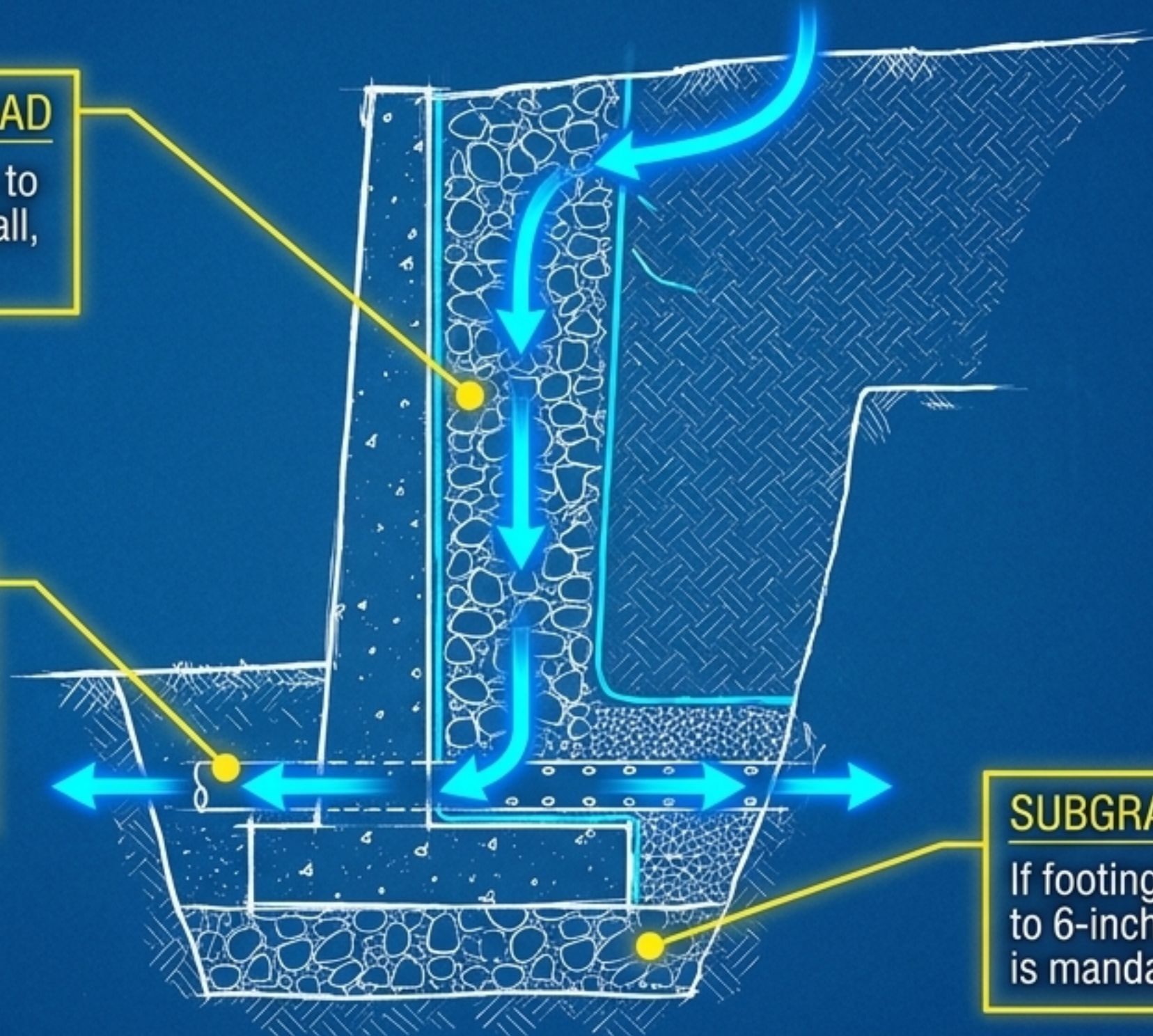
The Golden Rule of Drainage

ERADICATING HYDROSTATIC LOAD

Crushed stone backfill must extend to within 12 inches of the top of the wall, preventing backfill clay saturation.

THE PRESSURE RELEASE VALVE

4-inch minimum perforated drain pipe running the full length of the wall, wrapped in a 12x12 or 12x24 filter-fabric gravel burrito.



SUBGRADE ADAPTATION

If footing rests on soft clay, a 4- to 6-inch bed of crushed stone is mandated to handle volatility.