GOT CRACKS?

V2.0 (with DATA)

HORIZONTAL

VERTICAL

DIAGONAL

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Our Mission: Everyone has Someone they Trust with Home Purchase & Repair Decisions

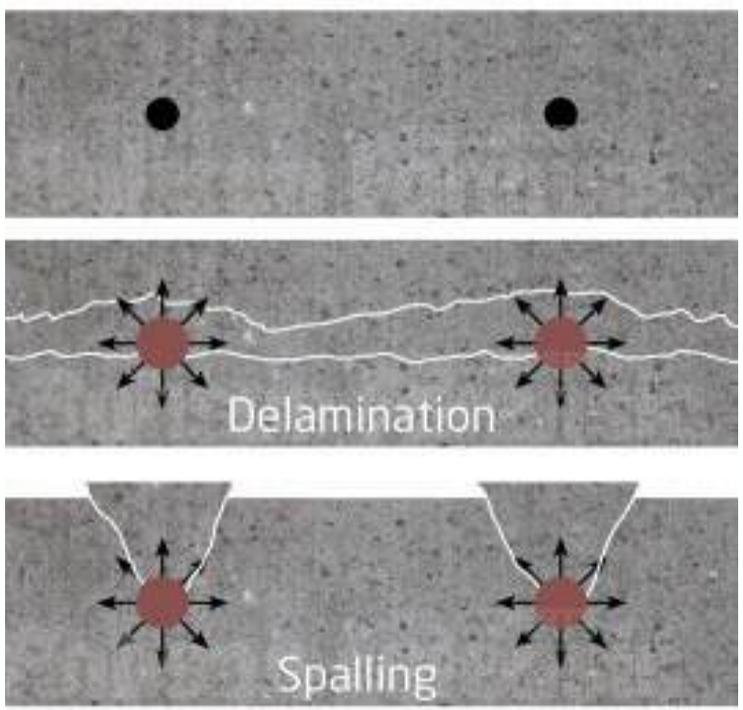
REMOTE CONSULTATIONS

ON-SITE FOUNDATION INSPECTIONS

ABOUT US

HORIZONTAL CRACKS

CAUSE: REBAR RUSTING



MINOR/EARLY STAGES

MAJOR/ADVANCED

CONTRIBUTING FACTORS:

- FOUNDATION IN WET & SALTY SOILS
- LEAKING WATER SOFTENERS
- IRRIGATION LEAKS & CONSTANT WETNESS / GROUNDWATER
- CONSTRUCTION FLAW & REBAR TOO CLOSE TO THE FORM

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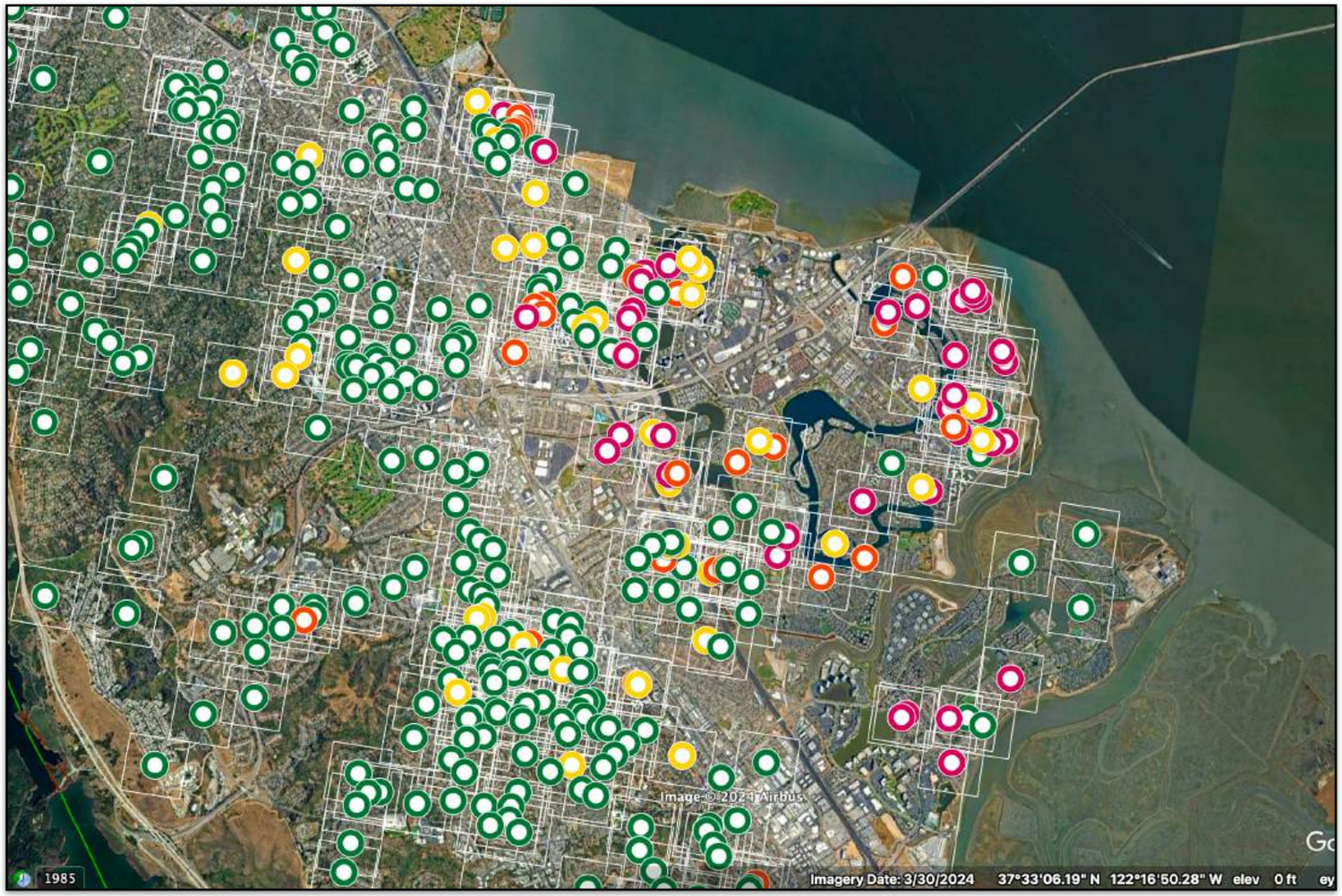
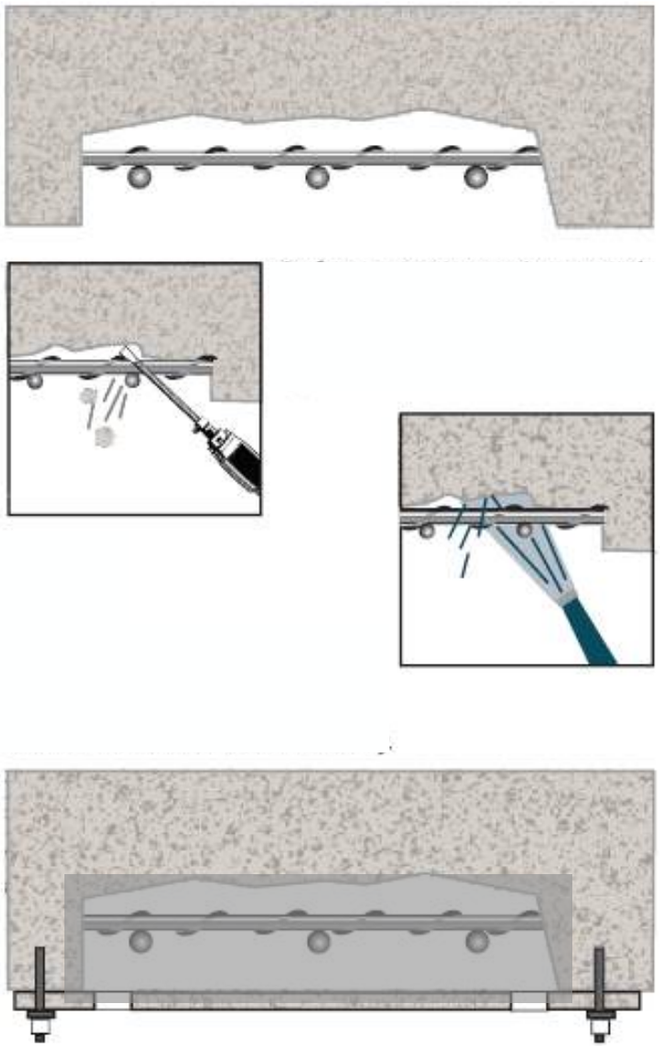
HORIZONTAL CRACKS



DATA LEGEND

- No HC
- 1 to 10'
- 11' to 40'
- Over 40' HC

HORIZONTAL CRACKS – REPAIR OPTION 1



Surface Inward Repair

The overview of the procedure is that the cracked areas are chipped away, the rebar is then either cleaned or replaced and then special epoxies and mortar are used to seal and patch the area.

BUDGETARY REPAIR COSTS

- **$400 PER LINEAR FT (+/- 30%) FOR LONG DISTANCES**
- **$600 PER LINEAR FT (+/- 30%) FOR SHORT DISTANCES**

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HORIZONTAL CRACKS – REPAIR OPTION 2

Partial Foundation Replacement

- Original foundation stem wall is jackhammered out & supported along the way
- Epoxy coated vertical & horizontal steel reinforcing bar dowels are installed into the remaining bottom portion of the foundation
- Concrete forms are installed & poured with concrete

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BUDGETARY REPAIR COSTS

- **$700 PER LINEAR FT (+/- 30%) FOR LONG DISTANCES**
- **$1,000 PER LINEAR FT (+/- 30%) FOR SHORT DISTANCES**

DIAGONAL CRACKS (& RELATED INDICATIONS)

Most Likely Cause: differential movement / settlement

Foundation

Exterior

Walls

Ceiling

Other Possible Indications

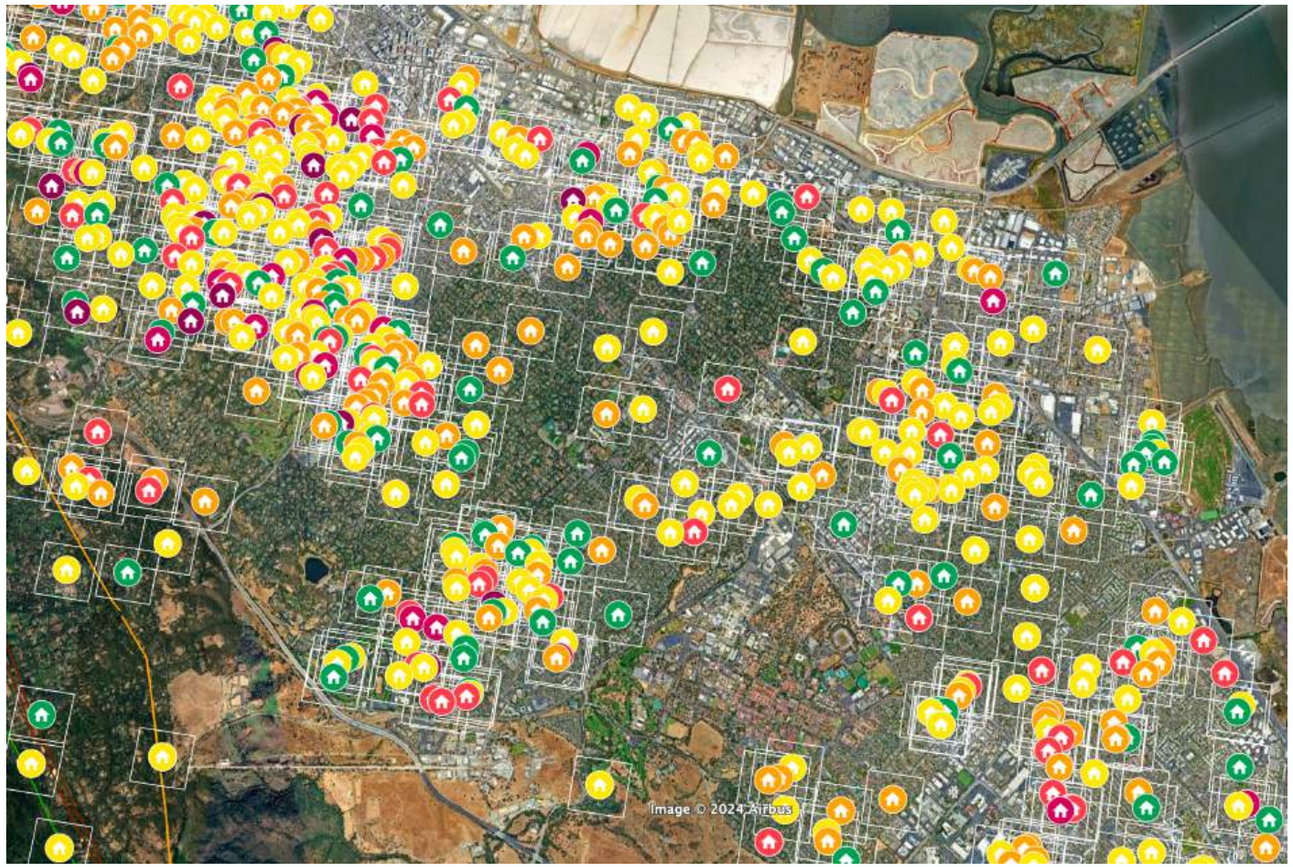
Sloping Floors

Baseboard Gaps

Sticking Doors & Windows

Note: These are things agents can look for in homes & reports

DIAGNOSING VERTICAL & DIAGNOAL CRACKS



TOTAL DIFFERENTIAL ACROSS THE HOUSE (INCHES)

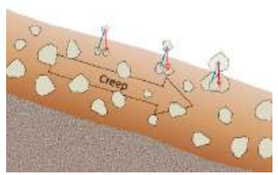
- 0-1”
- 1-2”
- 2-3”
- 3-4”
- 4-5”
- >5”

CAUSES OF DIFFERENTIAL SETTLEMENT

MOST COMMON

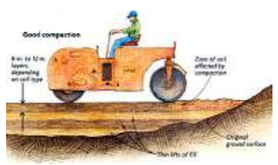
Expansive Soils

Expansive soils will swell when wet and contract when dry and this active movement causes the foundation to shift



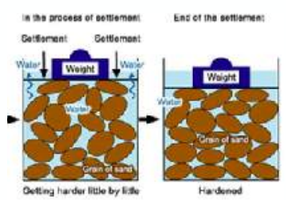
Lateral Sliding/Soil Creep

Caused by slow downward movement of expansive soils under the influence of gravity and the effect of moisture changes.



Poor Fill Compaction

Where soils are not adequately compacted, they can compress under a foundation load.



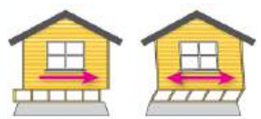
Consolidation

Landfill areas where it moves the first 30 years then settles out.

LEAST COMMON

Impact from Trees

Root systems can expand and can draw moisture from the soil beneath the foundation causing settlement & large roots can push up foundations.



Seismic Activity

Vibration from seismic activity during major earthquakes

Soil Erosion

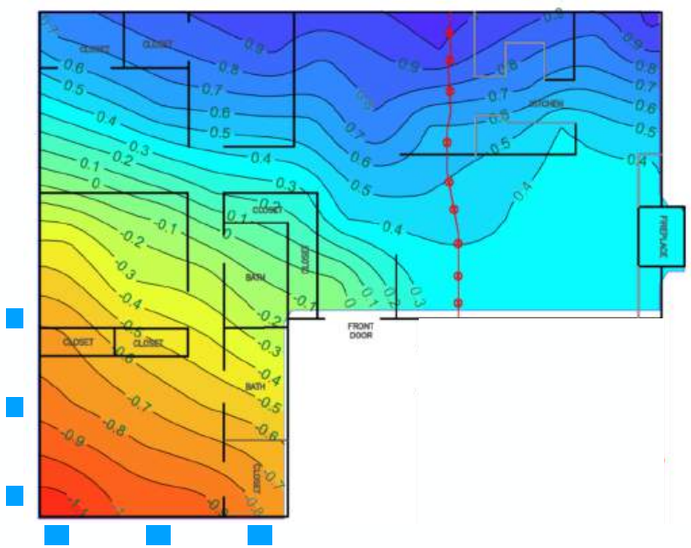
Hillside locations, poor surface drainage, leaks or other underground water movements.

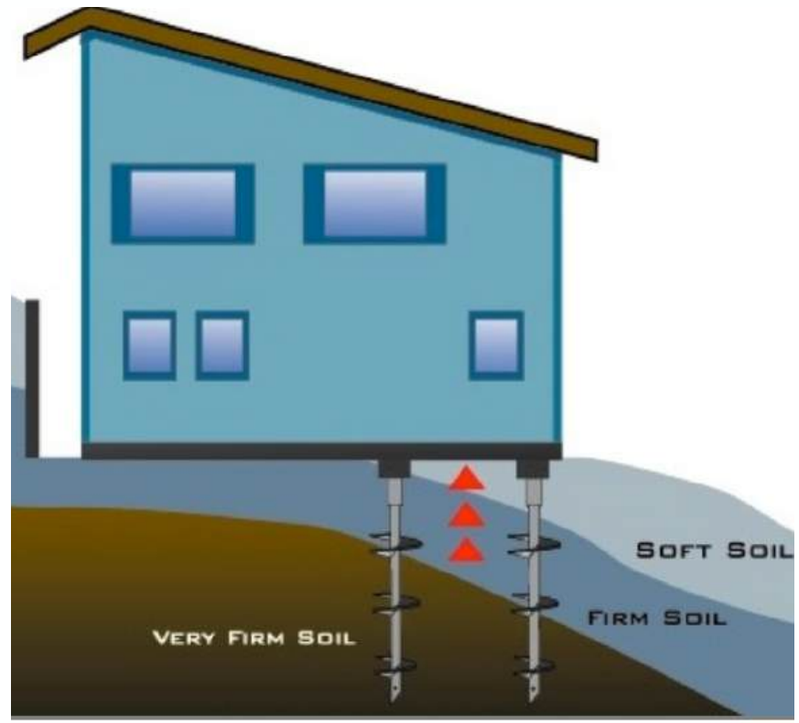
Insufficient Footers

Sometimes footers are either nonexistent, designed too small for the current loads or not built to the design at the time and hence have inadequate bearing capacity.

DIAGNOSIS & REPAIR (if required)

DIAGNOSED VIA FLOOR LEVEL SURVEY
(1 INCH PER 20 FT IS STANDARD TOLERANCE
EXAMPLE: 50 FT LONG HOUSE = 2.5 INCHES)





UNDERPINNING ELEMENTS EVERY 4 - 6 FT @ $3-4K PER LOCATION

VERTICAL CRACKS

TYPICAL CAUSES

- **Expansive soils** combined with **shallow foundations**
- Lack of rebar (pre mid 1940's)
- Seismic/earthquake activity
- Foundation settlement

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VERTICAL – 'SMALL' (approx 1/8" to 1/4")

Epoxy Injection is the typical repair

- approx $500 per crack (+/- 30%)
- Sometimes just mark & monitor

Repair Process

Repair Completed

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VERTICAL – 'MEDIUM' (approx 1/4" to 3/4")

Plate & Epoxy Repair Process

- Injection of a structural epoxy or mortar combined with a steel plate (or rebar stitches) which will span the crack and are anchored into the foundation on either side
- Budgetary price range of $1,000/crack (+/- 30%)

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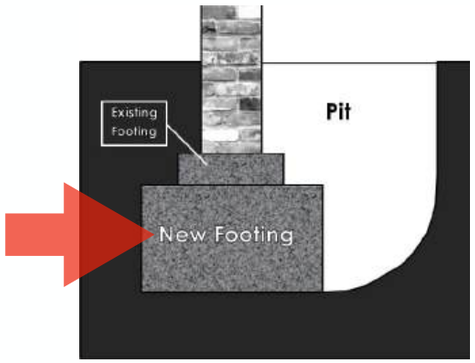
VERTICAL – LARGE (approx 3/4” plus separation)



TYPICAL REPAIR PROCESS

- Localized underpinning with concrete and rebar to reinforce this area below and on the sides
- Budgetary price range of $2K - $3K per crack +/- 30%

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THANKS!!

HORIZONTAL

VERTICAL

DIAGONAL

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