Residential fall protection

This data sheet includes multi-level residences and similar structures, with and without basements. This is a best practice guide to highlight hazards in building a home and an outline of solutions that may be practical to eliminate or control those hazards. Larger residences and historic buildings may have further hazards to be addressed.

2. *Adopt a hierarchy of fall protection:* Elimination, prevention and fall arrest. Administrate through scheduled planning, sequence, correct tools, doing work on the ground before raising, keeping unauthorized people away from the structure, and communications in English and Spanish.

3. *Pre-planning:* Schedule subs to work when hazards are least; have each sub provide a site-specific fall protection plan which is reviewed by the developer or a competent person before filing for adequacy. Subs must be required to call the developer to log in when they are working at each building site to share new developments. Establish a means for protection from unauthorized access, such as real estate agents, youth or prospective homeowners.

4. *Training:* The developer enforces training for all employees; trains the self-employed and regularly observes the work progress for safety.

5. *Technical:* The developer rates anchorage points for prevention and arrest.

6. *Housekeeping:* Pick up daily to avoid tripping over wires, tools, equipment and debris.

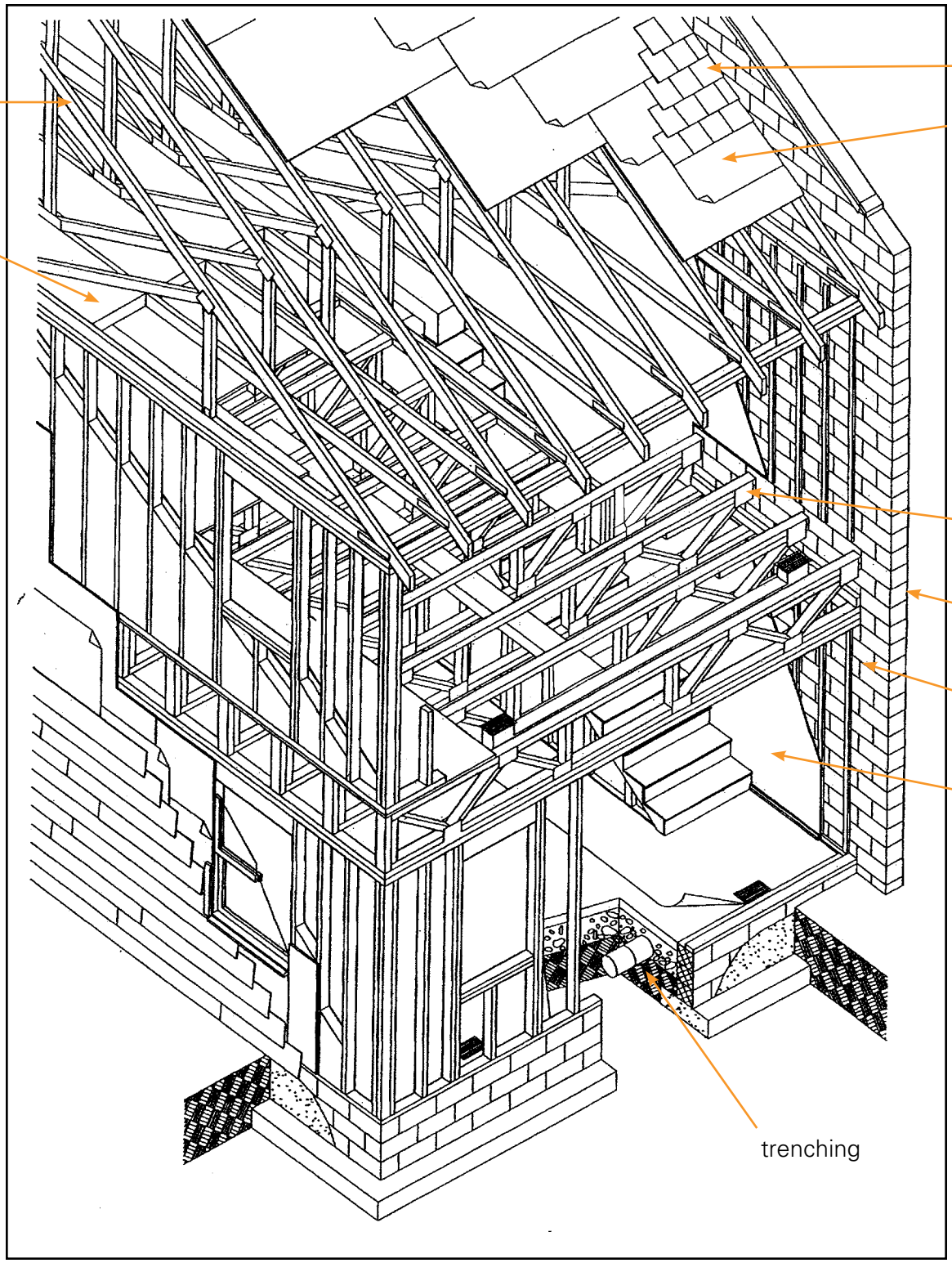
Hazards

7. *Foundation/basement:* While pouring the foundation or basement, ensure access with a ramp with planks and open A-frame ladders straddling walls. For access/ingress, use a ramp with planks, bracket scaffolds or rolling scaffolds if a slab is in place. In the event of trench failure during excavation, remove wall forms and benching. Park the concrete truck 4 feet from the edge of construction and ensure the spoil pile is out of the truck's way. Floor joists and floor decking should have ground floor openings. TGI prefab joists should have a rolling scaffold, stepladder or a rough terrain forklift if no adequate crane is available. Sheet – first edge, with a catch platform or, for perimeter protection, use a bracket scaffold.

8. Wall construction on the next level: Protect edges with railings or cleats for a pivot point. For edges and wall openings, use a crane with a spreader bar. When stick building wall edges, use guardrails or other restraints during installation and sheathing before raising wall. When constructing stairway openings use stair rails, platforms and pick window openings. When working in open stairways, use a railing or prefabricated temporary railings with a safety boot.

- Increase the height of the railing for plastering on upper stair platform using stilts or (A-frame) ladders.
- Install as soon and as early as possible to avoid falls into the basement

9. *Trusses:* Trusses are prefabricated roof sections – install one by one – traditionally walking top plate; convert top plate to a railing only using hook-on platforms. When using sawhorses with planks check for proper anchorage and truss manufacturer objections. Spreader bar; prefabricated roof section on ground, use a crane and stepladders from inside on the plywood floor.



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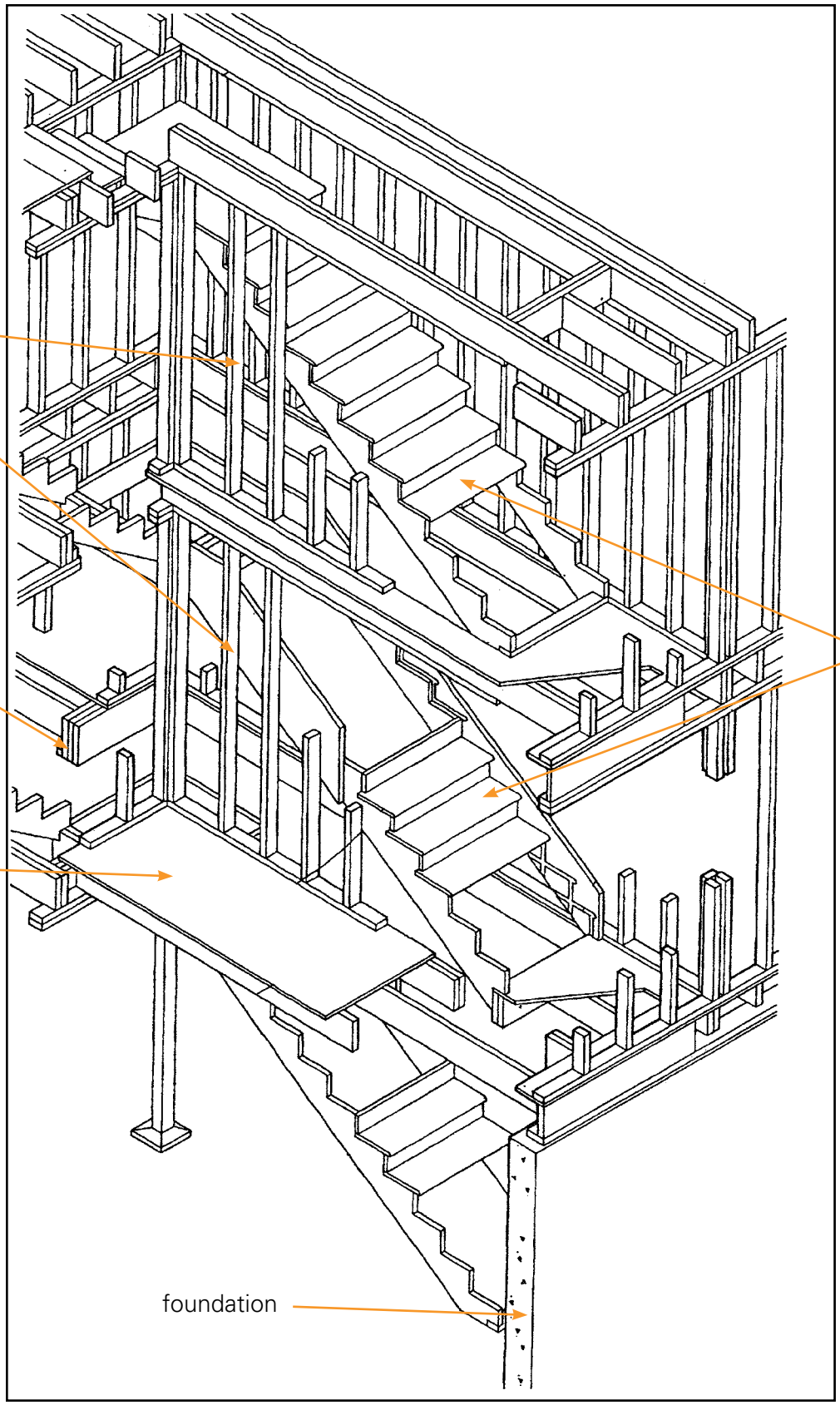

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When using non-truss roof support, or stick built, use a catch platform or rolling scaffold.

10. *Dormers, look-outs and overhangs:* Pre-build dormers on the ground. Use 2-inch x 4-inch plywood floors as a temporary railing or floor to prevent falls through trusses.

11. *Decking/sheathing:* Put bottom sheet on first, use a scaffold as a catch platform. Nail board immediately to truss before standing or walking.

12. *Skylights and chimneys:* When constructing skylights pay attention to sequence. The skylight hole is exposed at the last moment before work begins. Use guarding and covering to restrict exposure beforehand. When constructing chimneys, use scaffolds from the ground or center of the roof as applies.

13. *Roofing:* When using felt and shingles, use engineered fall protection. Ladders must be prevented from moving, and reach three rung lengths above the eave. This will leave no access at eave and no damage to gutters. *Slideguards are secondary to conventional fall protection after January 2013

14. *Gutters and downspouts:* Leave fall protection anchorage in the ridge for reuse later and then connect the SRL/harness. Alternatively, use a safety strap or equivalent. Plumbers installing or finishing roof vents arrange fall protection through the developer and the roof sub; if doing sprinklers use Baker scaffolds with railings.

15. *Siding, brick and stone:* Typically use pump jacks. On a steep roof, use fall arrest and possibly scaffolding.

16. *Insulation in attics:* When installing, use plywood boards for access.

17. *Dry wall, finish carpentry, painters, electricians:* Use Baker scaffolds and A-frame ladders. Painters should use high-reach roller tools for cathedral ceilings, if possible.

Sources of information

CalOSHA Fall Protection for the Construction Industry 11 01

Carpenters – Fall Protection for Residential Construction

NAHB Residential Construction Industry Fatalities 93-97

NAHB Fatal Falls in the Residential Construction Industry 98

NAHB Scaffold Safety Handbook 04 (English/Spanish) 04

NAHB Jobsite Safety Handbook (English/Spanish) 02

OSHA/BLS Data on fall deaths and injuries for residences

OSHA STD 03-11-002 and 1926.500 Appendix E

OSHA Guidance Document
www.osha.gov/doc/guidance.html

Acknowledgment

This data sheet was prepared by the Construction Division of the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143.