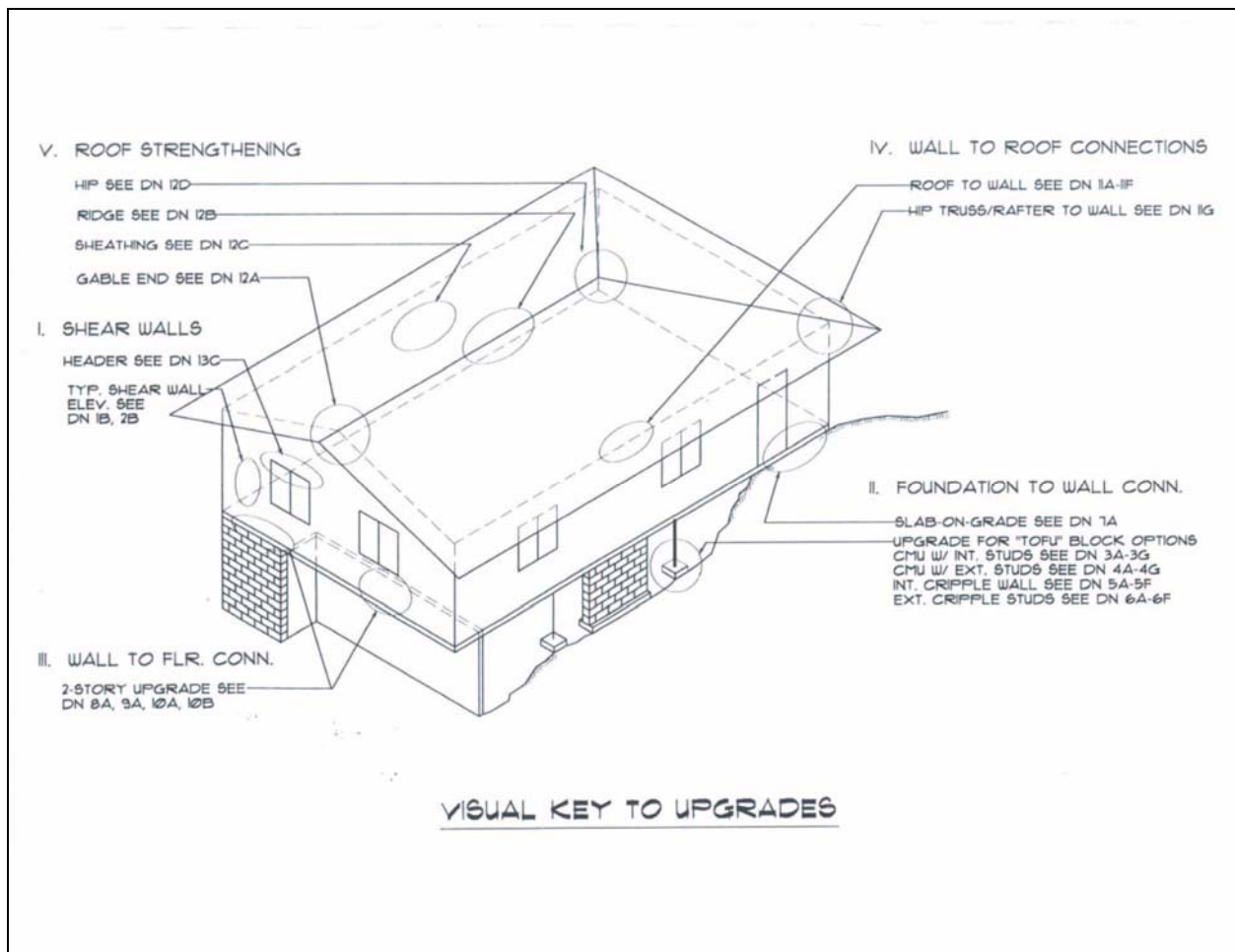


Items to be Upgraded for Earthquake Retrofits

- I. Shear Walls
- II. Foundation to Wall Connections
- III. Wall to Floor Connections
- IV. Roof Strengthening



Upgrade Procedure

- I. Shear Walls: The first step is to determine the length of shear walls required on each side of your home. Shear walls are needed to resist the lateral (horizontal) forces on the house due to an earthquake.
 - A. The tables on Drawing Numbers (DN) 1A & 2A will help determine the length of shear walls required for one and two story houses respectively. The required length depends on the overall plan dimensions of your house.
 - B. The minimum length requirement on a given side may be satisfied by one long wall section or the cumulative length of two or more wall sections provided that each wall section is not less than 4 feet long.
 - C. DN 1B & 2B illustrate how the plywood should be nailed to the studs, plates and headers.
 - D. DN 10A & 10B show typical stud & plate details used for wall framing.

<u>Dwg. No.</u>	<u>Sheet Description</u>
1A	Shear Wall Table - Single Story Dwelling
1B	Typical Shear Wall Elevation - Single Story Dwelling
2A	Shear Wall Table - Two Story Dwelling
2B	Typical Shear Wall Elevation - Two Story Dwelling
10A	Typical Stud Wall Framing Details
10B	Typical Top Plate Details

- II. Foundation to Wall Connections: In addition, shear walls must be connected properly to their foundations. Several different upgrade options are provided to the homeowner. Choose one of the following:
 - A. DN 3A-3G provide an upgrade for a single wall house on a "tofu" block foundation by adding studs interior to the existing walls connected to a new CMU wall foundation.
 - B. DN 4A-4G provide an upgrade for a single wall house on a "tofu" block foundation by adding studs exterior to the existing walls connected to a new CMU wall foundation.
 - C. DN 5A-5F provide an upgrade for a single wall house on a "tofu" block foundation by adding studs interior to the existing walls connected to cripple stud walls on a concrete foundation.
 - D. DN 6A-6F provide an upgrade for a single wall house on a "tofu" block foundation by adding studs exterior to the existing walls connected to cripple stud walls on a concrete foundation.

- E. DN 7A provides an upgrade for a single wall house on an existing slab-on-grade foundation.

<u>Dwg. No.</u>	<u>Sheet Description</u>
3A	"Tofu" Blk. Found. Upgrade w/ Studs Added to Interior Side
3B	Typ. Intermediate Shear Wall Condo
3C	Typ. Corner Shear Wall Condo
3D	Typ. Corner Shear Wall Condo
3E	Upgrade w/ Inter. Studs, Plywd. Shthg. & Tie Strap
3F	Angle Connecting 4x Beam to CMU Wall
3G	Hold-down Connection to CMU Wall @ Ends of Shear Walls
4A	"Tofu" Blk. Found. Upgrade w/ Studs Added to Exterior Side
4B	Typ. Intermediate Shear Wall Condo
4C	Typ. Corner Shear Wall Condo
4D	Typ. Corner Shear Wall Condo
4E	Upgrade w/ Ext. Studs, Plywd. Shthg. & Tie Strap
4F	Angle Connecting 4x Beam to CMU Wall
4G	Hold-down Connection to CMU Wall @ Ends of Shear Walls
5A	"Tofu" Blk. Found. Upgrade w/ Studs Added to Interior Side
5B	Typ. Intermediate Shear Wall Condo
5C	Typ. Corner Shear Wall Condo
5D	Typ. Corner Shear Wall Condo
5E	Upgrade w/ Inter. Studs, Plywd. Shthg. & Tie Strap
5F	Hold-down Connection to Cripple Wall
6A	"Tofu" Blk. Found. Upgrade w/ Studs Added to Exterior Side
6B	Typ. Intermediate Shear Wall Condo
6C	Typ. Corner Shear Wall Condo
6D	Typ. Corner Shear Wall Condo
6E	Upgrade w/ Ext. Studs, Plywd. Shthg. & Tie Strap
6F	Shear Connecting 4x Beam to Shear Wall
7A	Single Wall Upgrade - Slab-an-Grade Foundation

- III. Wall to Floor Connection: Applies to existing two-story houses showing hold down connections.

DN 8A & 9A show upgrade for second floor single wall over existing double wall and CMU wall respectively.

<u>Dwg. No.</u>	<u>Sheet Description</u>
8A	Single Wall Upgrade on Existing CMU Wall
9A	Single Wall Second Story Upgrade - Dble. Wall Below

- IV. Roof Strengthening: A roof diaphragm is needed to distribute the lateral forces to the shear walls. Refer to DN 11A for details.

<u>Dwg. No.</u>	<u>Sheet Description</u>
11A	Plywood Roof Sheathing Nailing Details