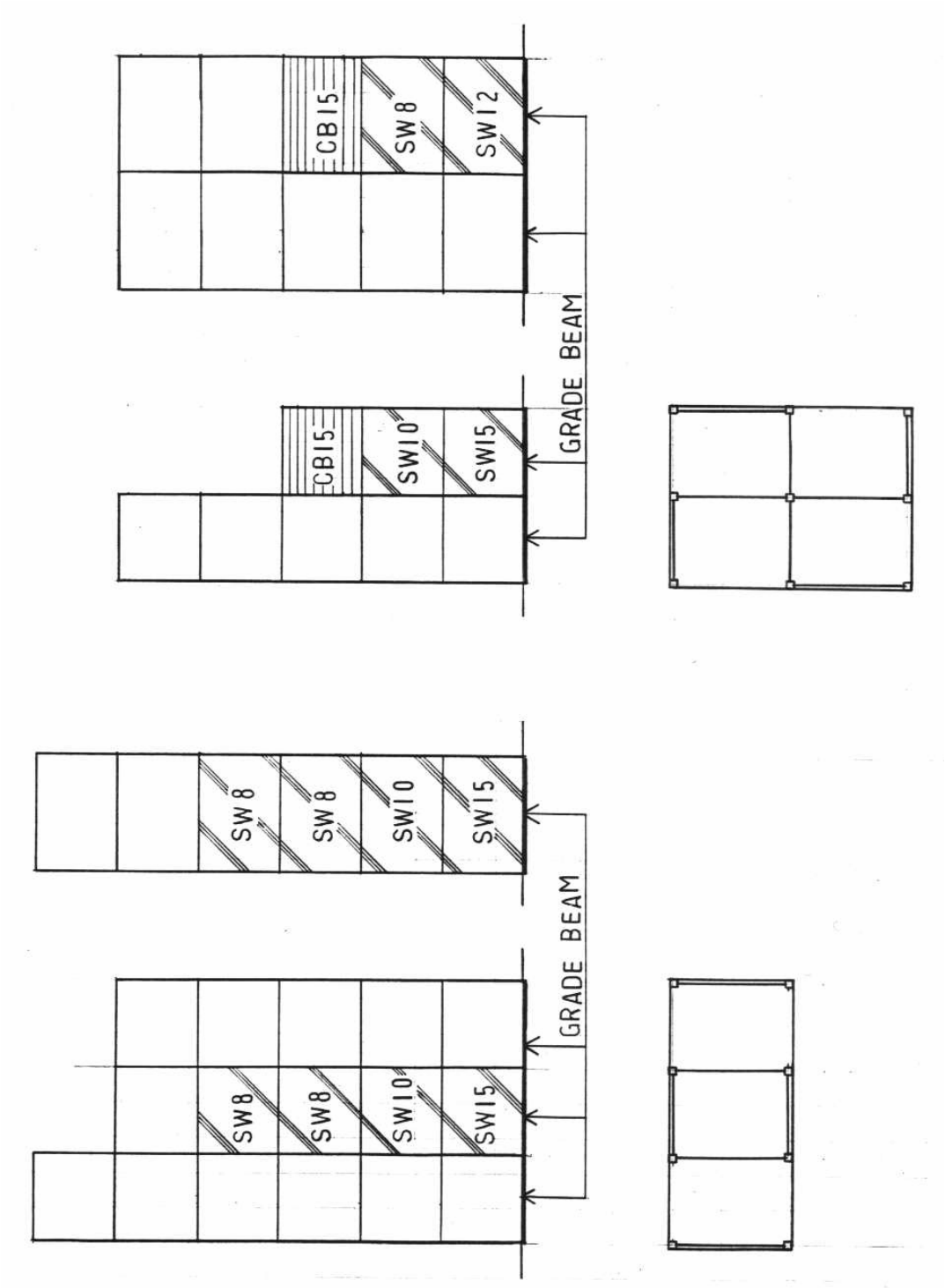


Figure 3.5.20(1) Recommended Seismic Reinforcement Methods for Multi Family House

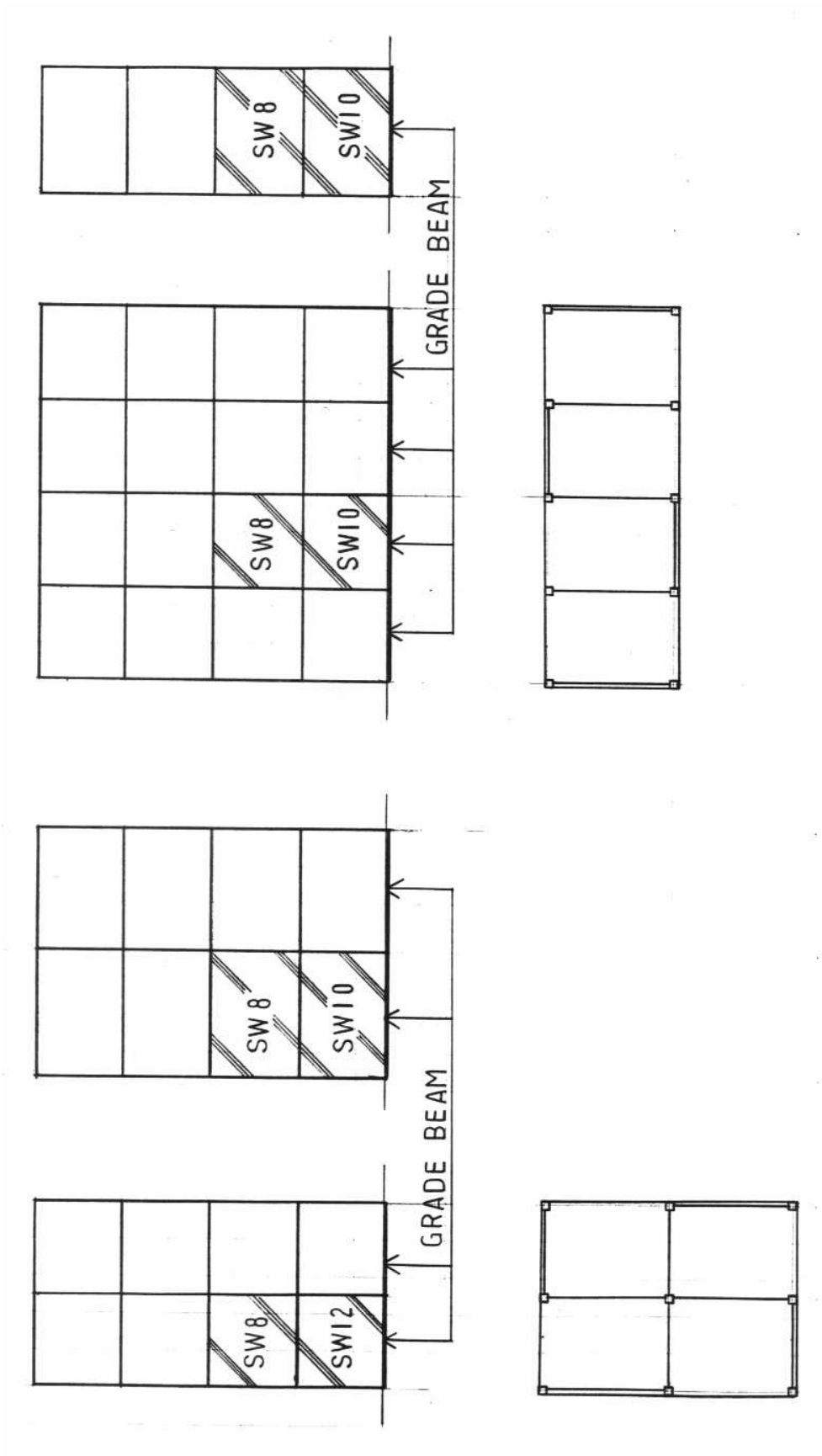


Figure 3.5.20(2) Recommended Seismic Reinforcement Methods for Multi Family

House

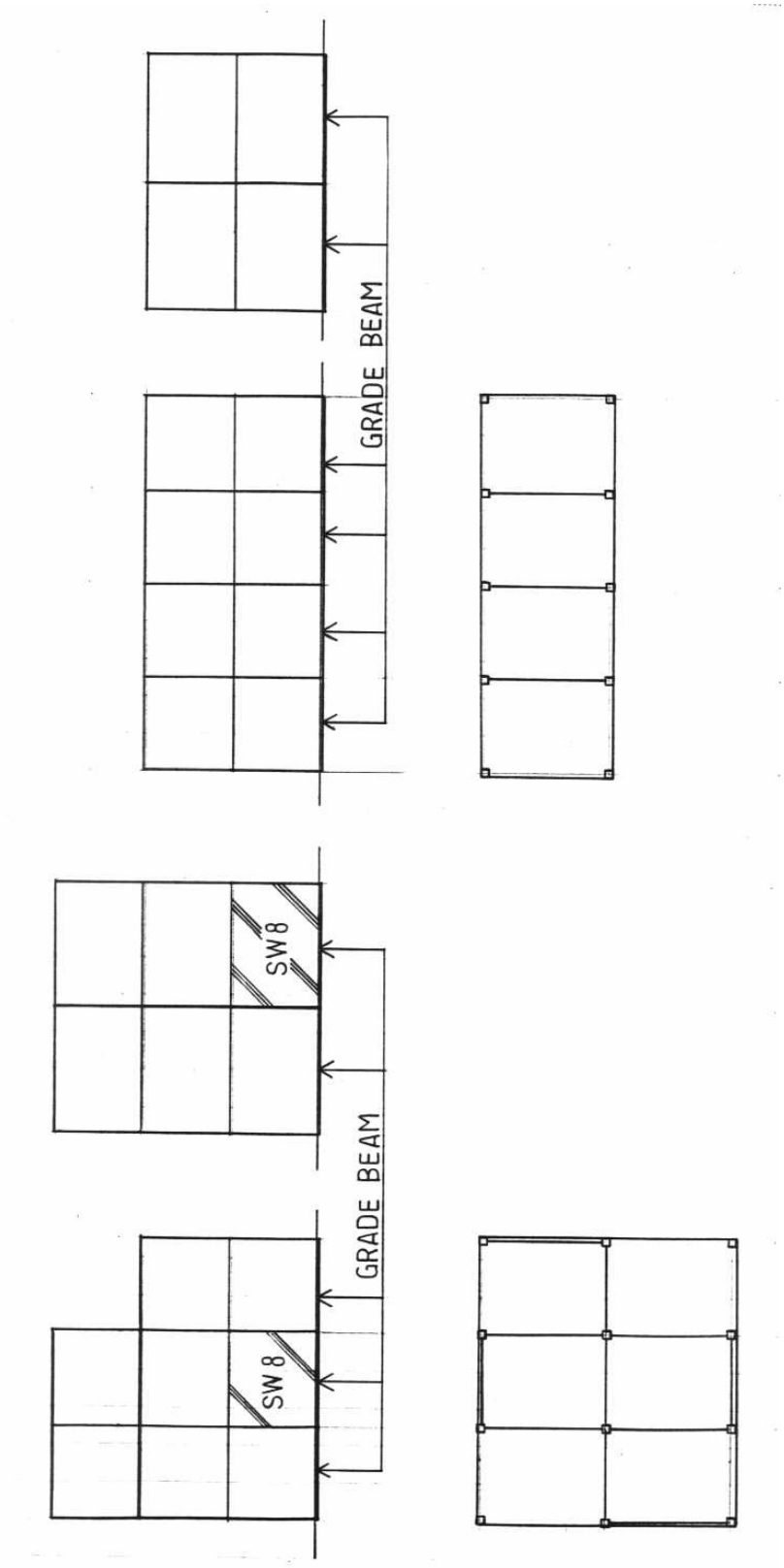
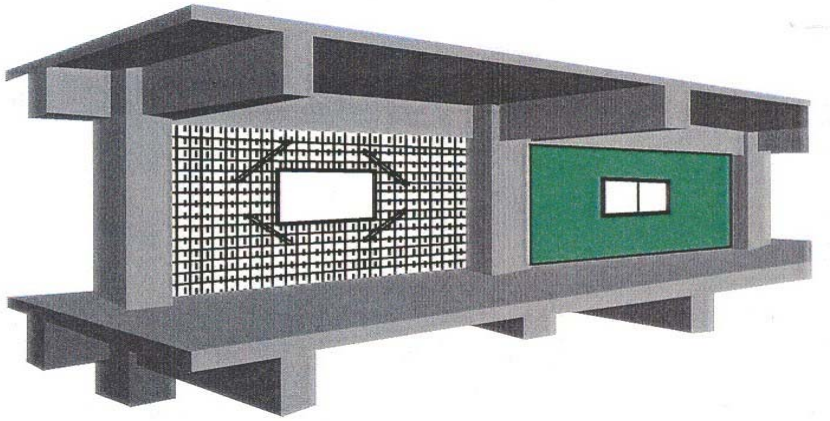
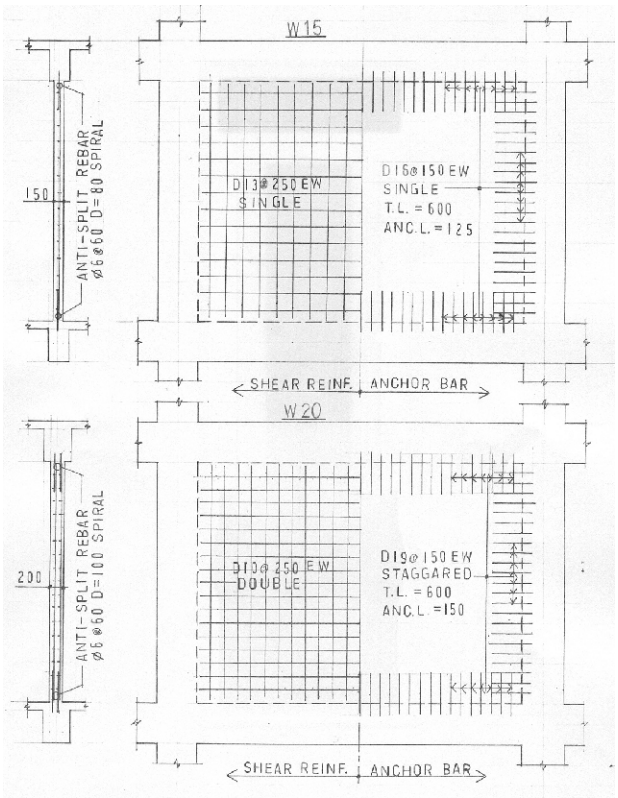


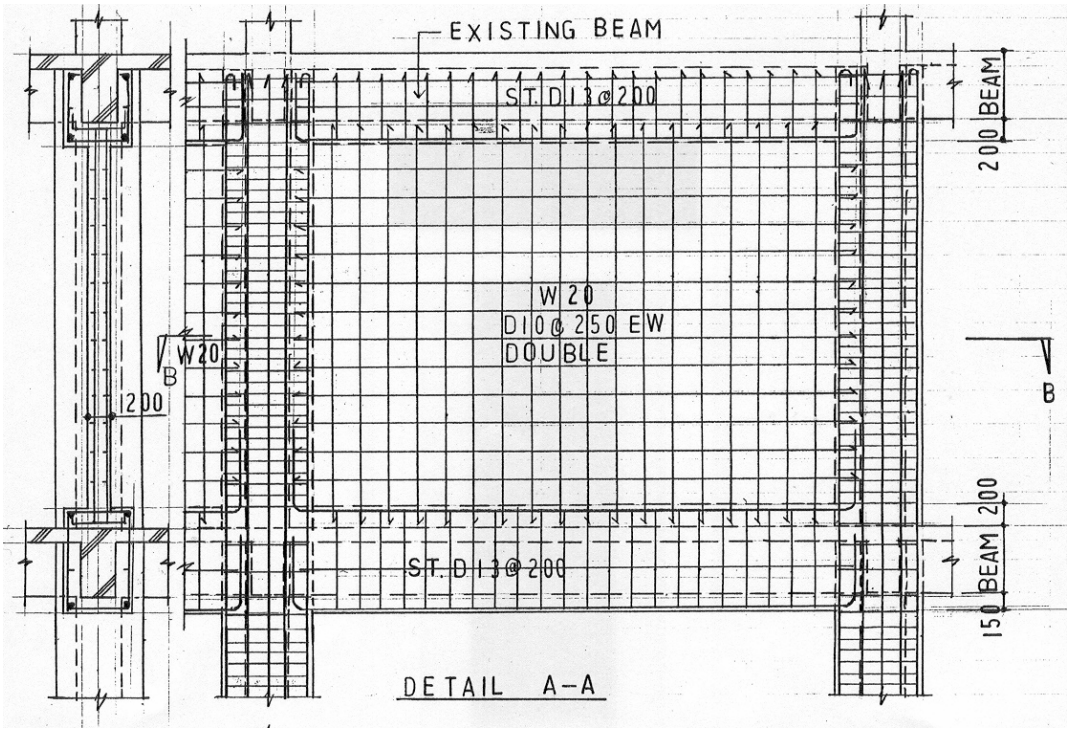
Figure 3.5.20(3) Seismic Reinforcement Methods for Multi Family House



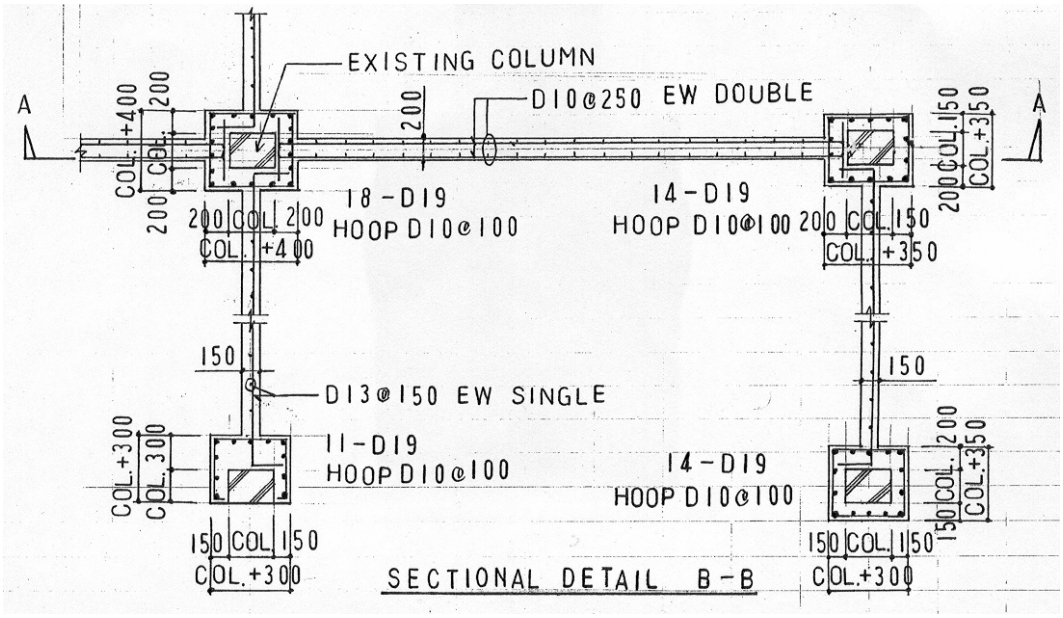


Source: JICA Study Team

Figure 3.5.21 Seismic Reinforcement Method by Addition of RC Shear Wall



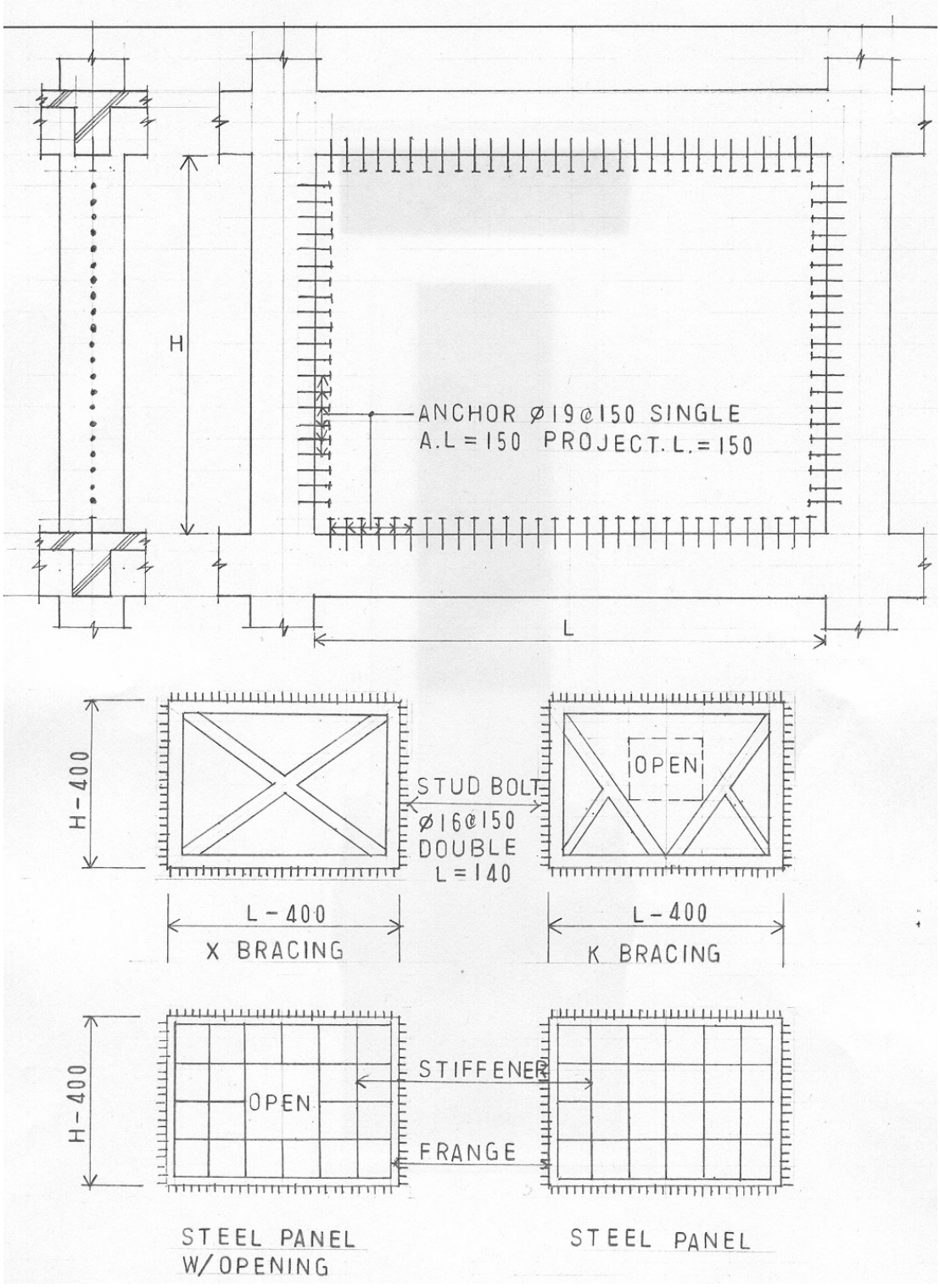
Section



Plan

Source: JICA Study Team

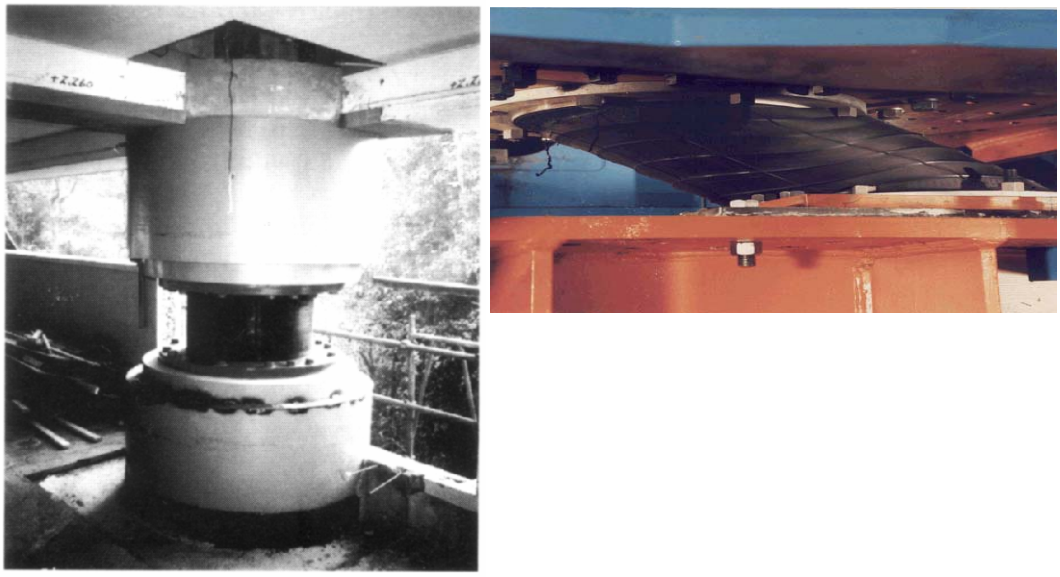
Figure 3.5.22 Seismic Reinforcement Method by Shear Wall with Column and Beam



Source: JICA Study Team

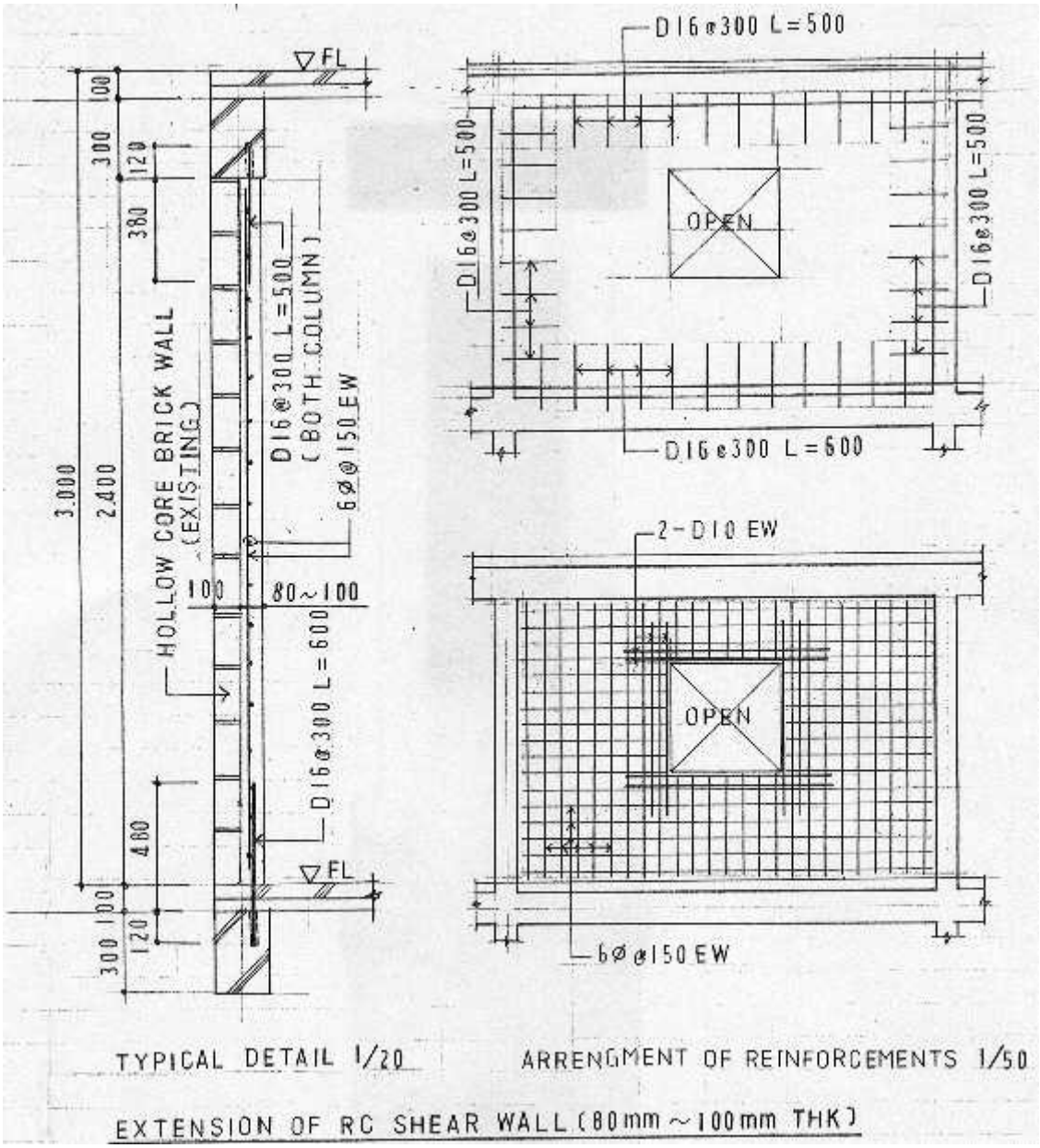
Figure 3.5.23 Seismic Reinforcement Method by Steel Bracing and Steel Panel

Figure 3.5.24 Sample of Steel Bracing Reinforcement



Isolator **Large Deformability of Isolator**

Figure 3.5.25 Base Isolation System



Source: JICA Study Team

Figure 3.5.26 Seismic Reinforcement Method by Addition of RC Shear Wall

Source: JICA Study Team

Figure 3.5.27 Reinforcement of Exterior Walls and Columns by Jacketing Method

Year	05	06	07	08	09	10	15	16	17	18	19	20
Rapid Visual Screening (RVS)	3 yeares 100 Engineers Urban: 62,600 Buildings											
	Rural &Barrio: 184,900 Buildings											
Detailed Seismic Evaluation	13 years 800 Engineers Urban: 50,080 Buildings											
	Rural &Barrio: 166,400 Buildings											
Seismic Reinforcement Design	13.5 years 640 Engineers Urban: 40,060 Buildings											
	Rural &Barrio: 142,700 Buildings											
Construction Work	14 years Urban: 40,060 Buildings											
	Rural &Barrio: 142,700 Buildings											

Source: The JICA Study Team

Figure 3.5.28 Schedule of Seismic Reinforcement Plan for Buildings

Photo 3.5.1 Barrio houses on a hill (1)

Photo 3.5.2 Barrio Houses on a hill (2)

Photo 3.5.3 A Barrio House under Construction

Photo 3.5.4 A Barrio House on a Slope(1)

Photo 3.5.5 A Barrio House on a Slope(2)

Photo 3.5.6 Site Grading Work

Photo 3.5.7 Excavation Work

Photo 3.5.8 Column Work

Photo 3.5.9 Beam Work

Photo 3.5.10 Floor Work

Photo 3.5.11 Column Work

Photo 3.5.12 Roof Work

Photo 3.5.13 Brick Wall work

Photo 3.5.14 Concrete Mixing

Photo 3.5.15 Coarse Aggregate

Photo 3.5.16 Portland Cement (45kg/bag)

Photo 3.5.17 Concrete Test Cylinder

Photo 3.5.18 Fabrication of Re-bars(1)

Photo 3.5.19 Fabrication of Re-bars(2)

Photo 3.5.20 Fabrication of Re-bars(3)

Photo 3.5.21 Excavation for Foundation

Photo 3.5.22 Concrete Casting for Foundation

Photo 3.5.23 Short Column Re-bar

Photo 3.5.24 Short Column Form Work(1) **Photo 3.5.25 Short Column Form Work(2)**

Photo 3.5.26 Short Column Concreting **Photo 3.5.27 Short Column Concreted(1)**

Photo 3.5.28 Short Column Concreted(2) **Photo 3.5.29 Short Column Concreted(3)**

Photo 3.5.30 Long Column Concreting

Photo 3.5.31 Long Column Concreted

Photo 3.5.32 Floor Beam

Photo 3.5.33 Beam Re-bar Installation

Photo 3.5.34 Construction Joint at beam

Photo 3.5.35 Removal of Form Work

Photo 3.5.36 Long Column and Floor **Photo 3.5.37 Tabelone Floor and Concreting**

Photo 3.5.38 Column Form Work (1) **Photo 3.5.39 Column Form Work (2)**

Figure 3.5.40 Roof Beam Form Work **Photo 3.5.41 Roof Floor Work**

Photo 3.5.42 Clay Brick Wall Work (1)

Photo 3.5.43 Clay Brick Wall Work(2)

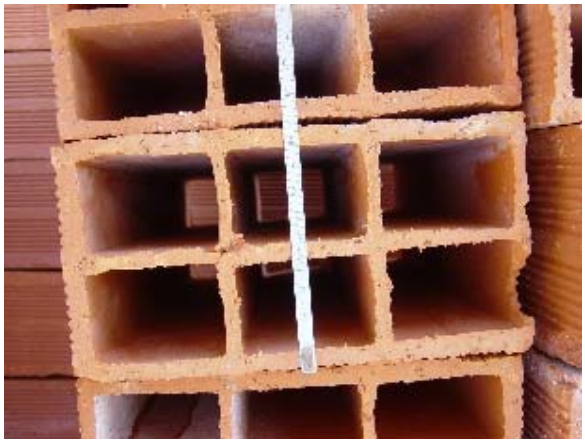


Photo 3.5.44 Hollow Clay Brick

Photo 3.5.45 Grade Beam

Figure 3.5.46 Concrete Block Wall Work(1) Photo 3.5.47 Concrete Block Wall Work(2)

Photo 3.5.48 Retaining Wall

Photo 3.5.49 Completion of Models

Photo 3.5.50 Overview

Photo 3.5.51 Steel Frame for Load Transfer

Photo 3.5.52 Hydraulic Jack

Photo 3.5.53 Hydraulic Pump

Photo 3.5.54 Measurement Equipment (1)

Photo 3.5.55 Measurement Equipment (2)

Photo 3.5.56 Model 1-Short Column Failure (1)

Photo3.5.57 Model 1-Short Column Failure(2)