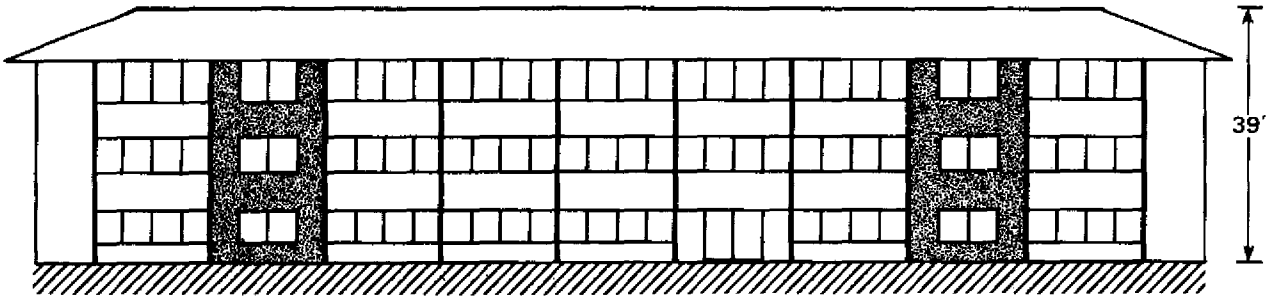


Fig. 7.5 East-west elevation of North Hall, UCSB.

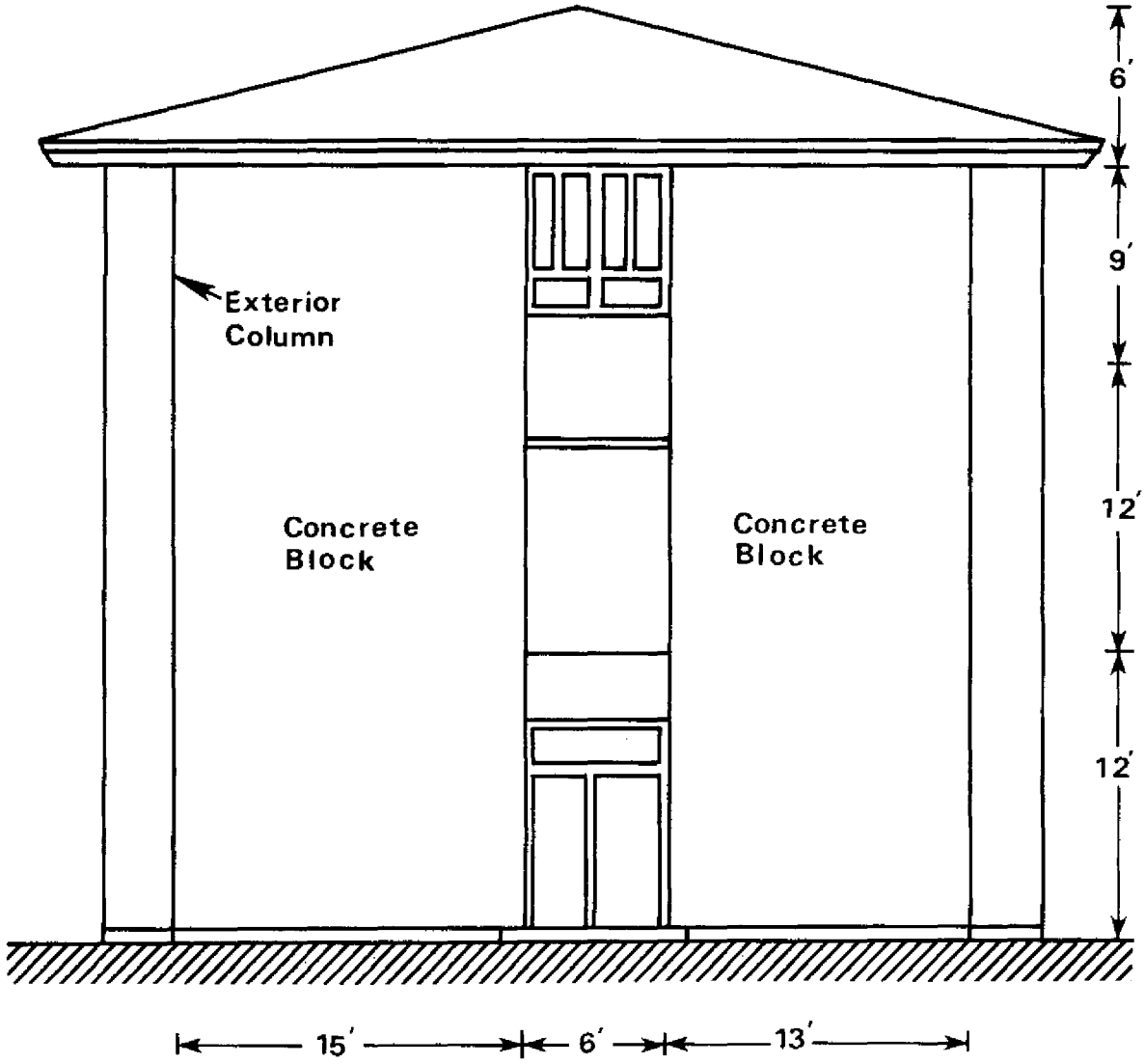
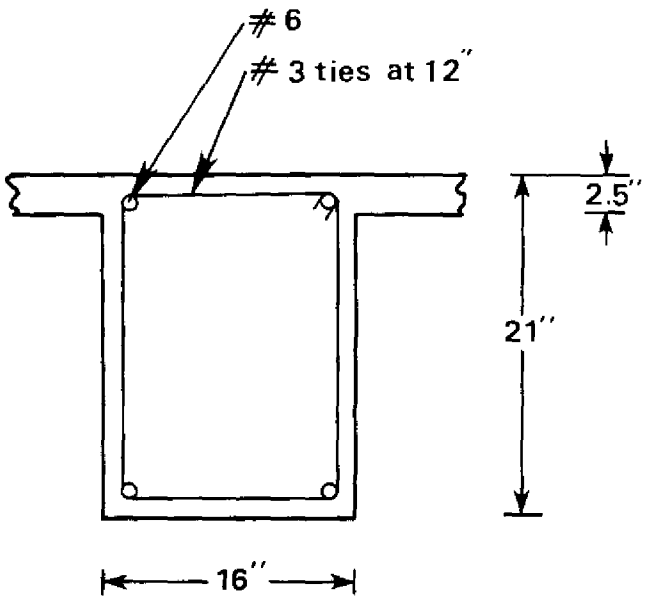
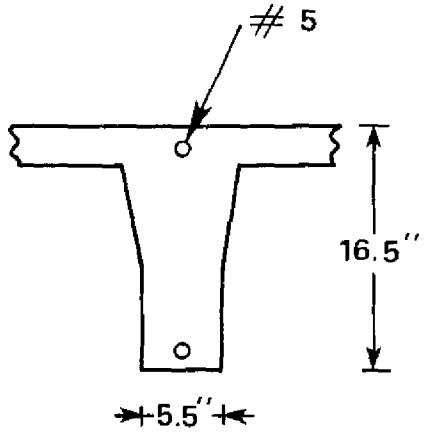


Fig. 7.6 North-south elevation of North Hall, UCSB.



NOTE: Reinforcement varies with loading

Fig. 7.7 Floor girder



NOTE: Reinforcement varies with loading

NOTE: Joists 3'-0" on center

Fig. 7.8 Pan joist

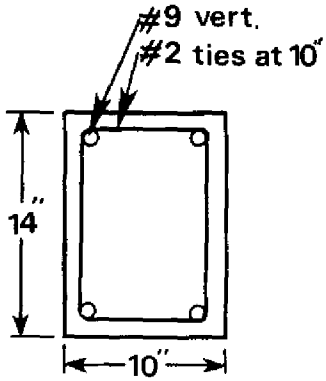


Fig. 7.9 Interior column

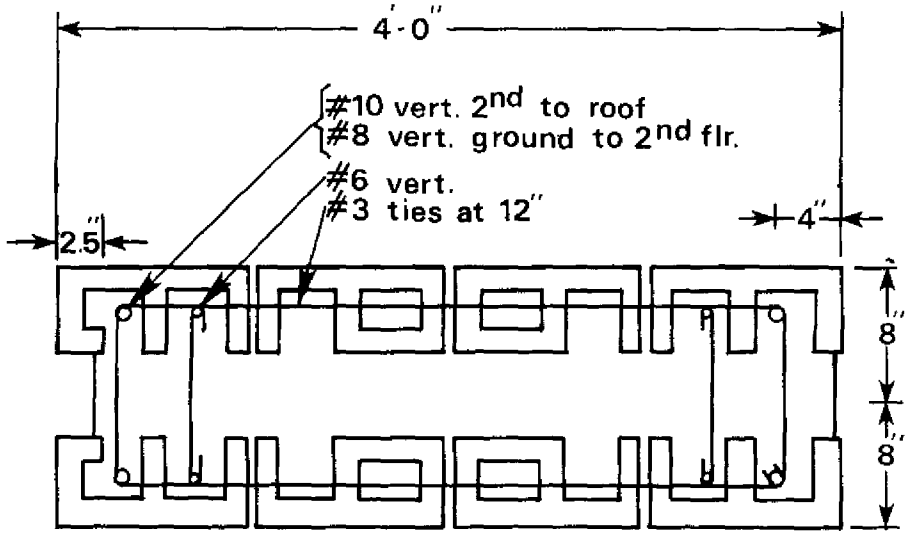


Fig. 7.10 Exterior column

North Hall, UCSB.

TABLE 7.1

DETAILS OF REINFORCEMENT IN SHEAR WALLS, NORTH HALL, UCSB

Wall (Fig. 7.4)	Specified Reinforcement
a	12 inch reinforced concrete wall vertical: #4 bars at 13 inches on centers, each face horizontal: #4 bars at 13 inches on centers, each face (additional horizontal and vertical reinforcement around window openings.)
b	6 inch reinforced concrete wall vertical: #4 bars at 13 inches on centers horizontal: #4 bars at 13 inches on centers
c	8 inch concrete block wall, stacked bond vertical: #4 bars at 24 inches on centers horizontal: #4 bars at 24 inches on centers

The minimum 28 day compressive strengths of the concrete mix are as follows: 3000 psi for the columns, floor beams, roof framing, and the new shear walls, and 1500 psi for the floor slab. In the new shear walls the reinforcing steel is grade 60 for #4 bars and larger, grade 40 for #3 bars and smaller, and is A36. Reinforcing steel in all other parts of the building is intermediate grade deformed bars meeting the requirements of A.S.T.M. A-15 and A-305, with an allowable stress of 20,000 psi (Hart and others, 1978; Mendes, 1973).

Structural damage to North Hall caused by the earthquake consisted of moderate cracking of the shear walls. Significant cracking occurred in all three stories of the newly constructed shear walls, with the most severe cracking occurring in the north-south walls in the first story. Very little cracking occurred in the original shear walls. The typical pattern of cracking to north-south shear walls consisted of primarily diagonal trending cracks of several feet in length, with some apparent X patterns as shown in Figs. 7.11-7.16. In the lower stories these cracks could often be identified on each side of the wall, indicating that the cracks extended through the entire thickness of these 6 inch shear walls. Some vertical cracks were occasionally observed parallel with the connection to the exterior columns.

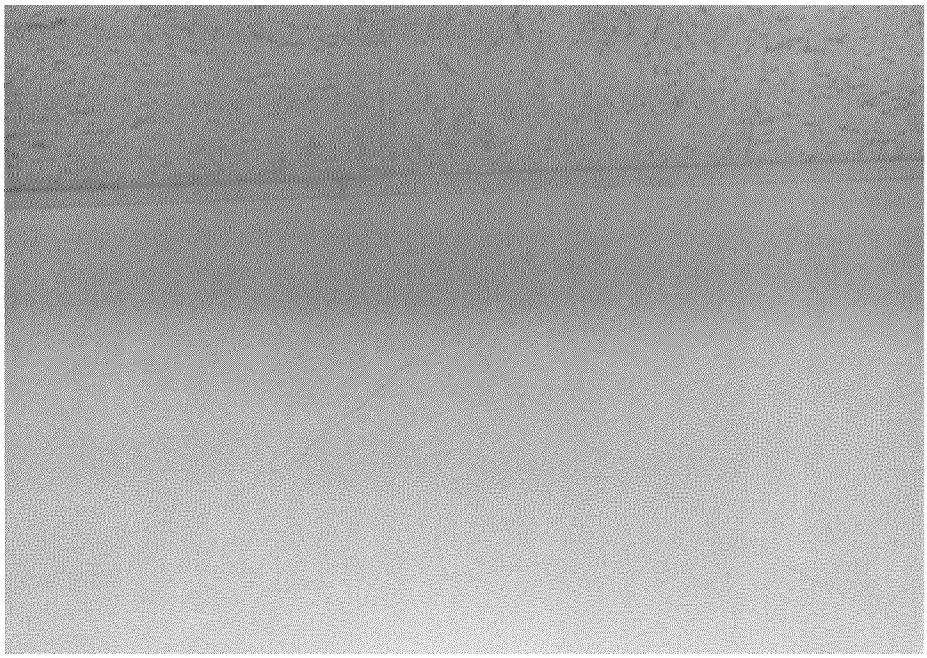


Fig. 7.11 Typical pattern of X cracking of north-south shear walls in first story of North Hall.

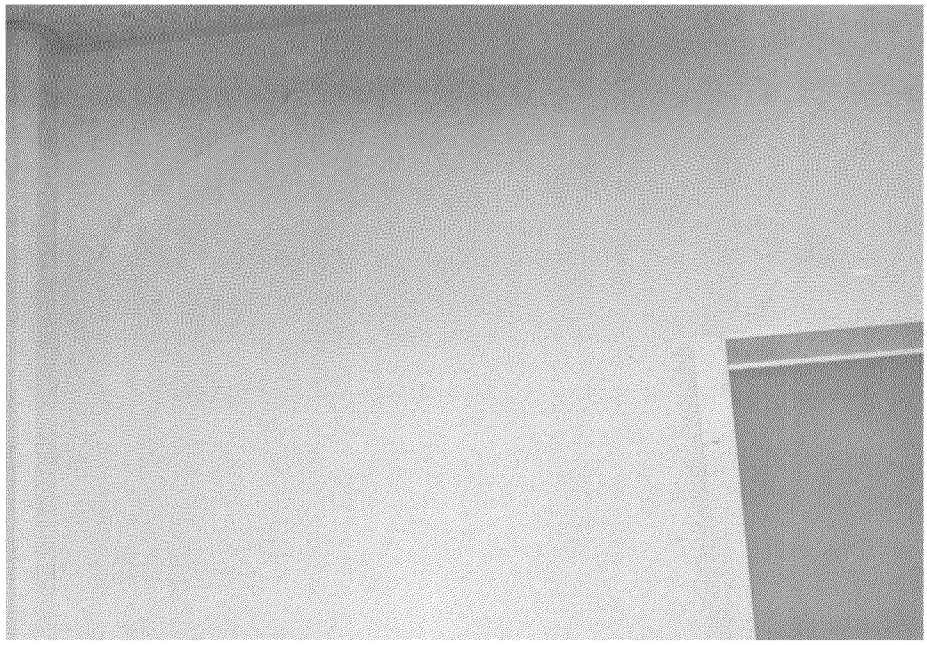


Fig. 7.12 Diagonal cracking of north-south shear wall in first story of North Hall. Vertical member at left is an interior column.