FIGURE 2-5   Bent-Up Rebars at Exterior Connection in DNY_4
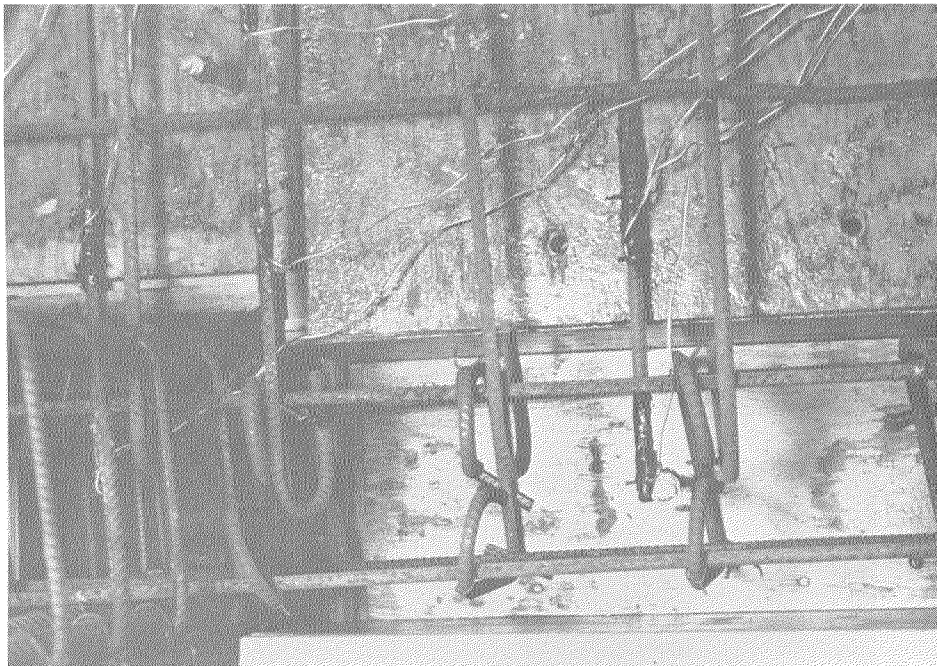


FIGURE 2-6   Reinforcement Detail of Spandrel Beam in DNY_4

In three of the test specimens, the gravity load applied to the slab represented service load condition and it consisted of design dead load plus thirty percent of the live load distributed uniformly over the slab surface. Full dead and live load was added in one specimen to study the effect of high gravity shear on the drift response of connections. A part of the gravity load, corresponding to the service load condition, was applied to the slab by hanging dead weights from cables anchored on the top of the slab surface. Additional load required for full dead plus live load was provided by stacking lead weights on the slab as shown in figure 2-8.

Each specimen was subjected to approximately twenty reversed displacement cycles as shown in figure 2-9. The displacement cycles at drifts of 1.5%, 2% and 4.5% were repeated to estimate the loss of strength and energy dissipation capacity. A number of small amplitude cycles of 1.0% drift were introduced in the routine to estimate degradation of low amplitude stiffness. Furthermore, the specimens were subjected to at least four cycles of drift less than one percent at the beginning of the test to study their elastic response under lateral loading.

## 2.4 Instrumentation

Each specimen was extensively instrumented to measure various response parameters of the sub-assemblies. Load cells at top and bottom of the columns enabled determination of all reactions which provided all moments and shears in the connection regions. LVDT's (Linear Variable Differential Transducers) were attached to the top and bottom of the slab adjacent to the columns to measure the slab rotation relative to the column along the loading direction. Yielding of the slab reinforcement and the loss of anchorage of reinforcement was determined from strain gages attached to slab bars at suitable locations. Targets were attached to the slab surface on a grid pattern which could be read using a level for determining deformed shape of the slab at various stages of the test. All of these instruments were continuously monitored using an automated data acquisition and control system. The formation and development of cracks and deflection measurements were taken while the test was briefly paused at regular intervals for visual observations.