

RENOVATION PROJECT
SHORING METHODOLOGY
FOR EXISTING FACADES

PREPARED BY
CHM STRUCTURAL ENGINEERS

August 10, 2017

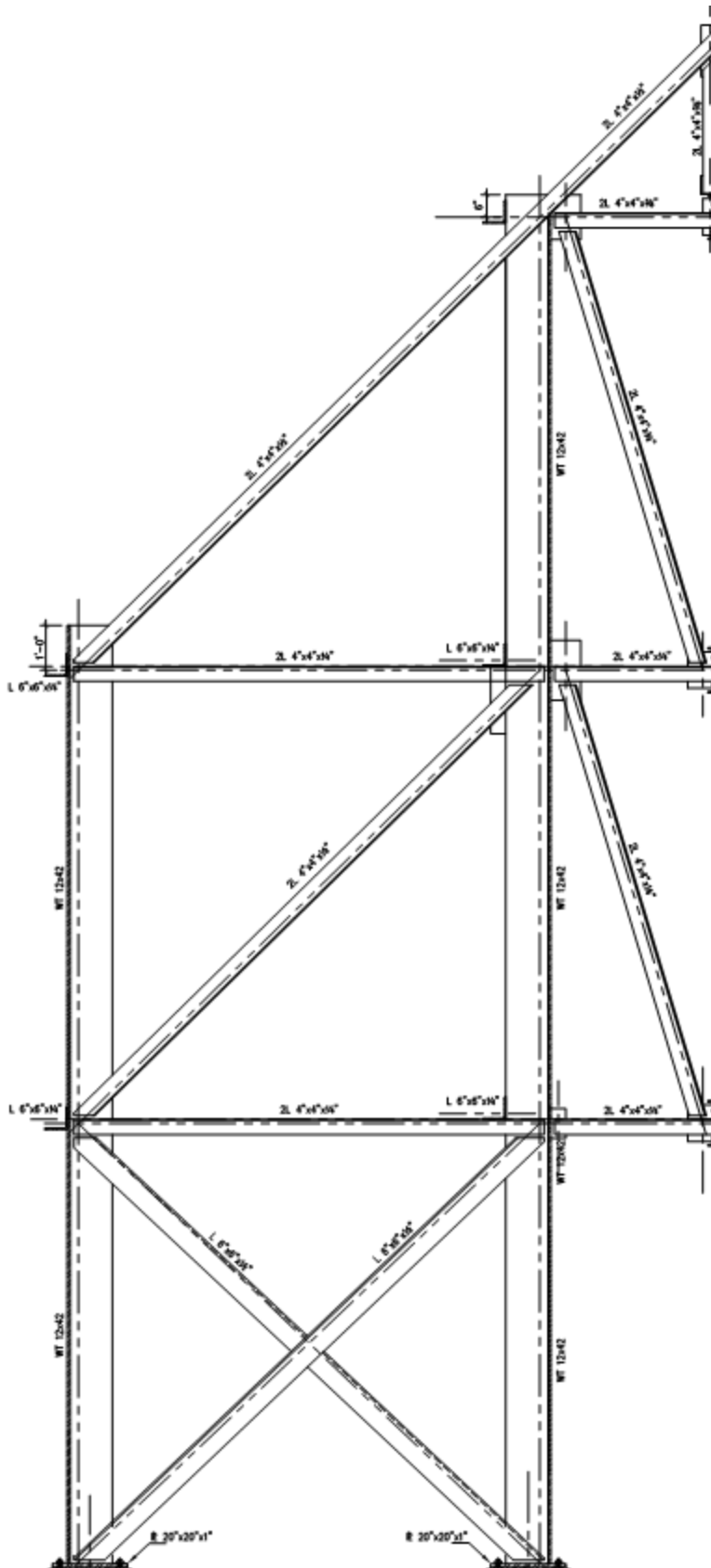


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SHORING METHODOLOGY

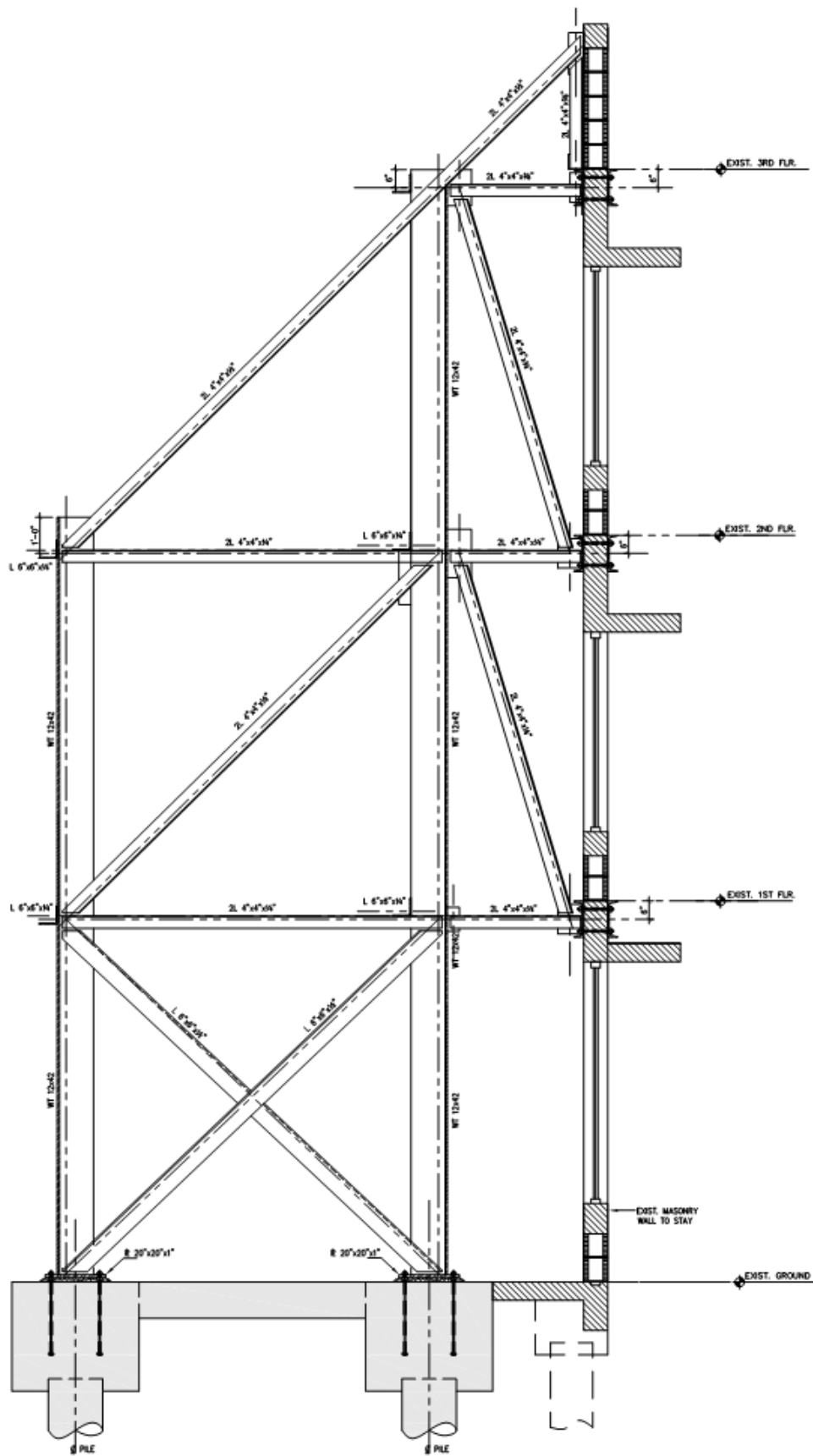
Most existing facades are preserved, while the structures located at the interior of the intervention will be demolished.

Since most of the floors and many of the returning walls will be removed, the lateral stability of facades to remain would be compromised without a structural lateral shoring designed to resist lateral forces until the new structures are built and connected to the existing members.



The general solution adopted, either for one, two or three-level buildings consists on vertical trusses distributed along the facades and connected to the existing beams at an approximate distance of 12'-0", as shown in the following drawing.

This shoring system will be installed towards the interior of the property, therefore not invading public spaces.



STRUCTURAL ENGINEERS, LLC.

RENOVATION PROJECT
7450 OCEAN TERRACE

STRUCTURAL CONCEPTUAL REPORT

PREPARED BY
CHM STRUCTURAL ENGINEERS

July 25, 2017



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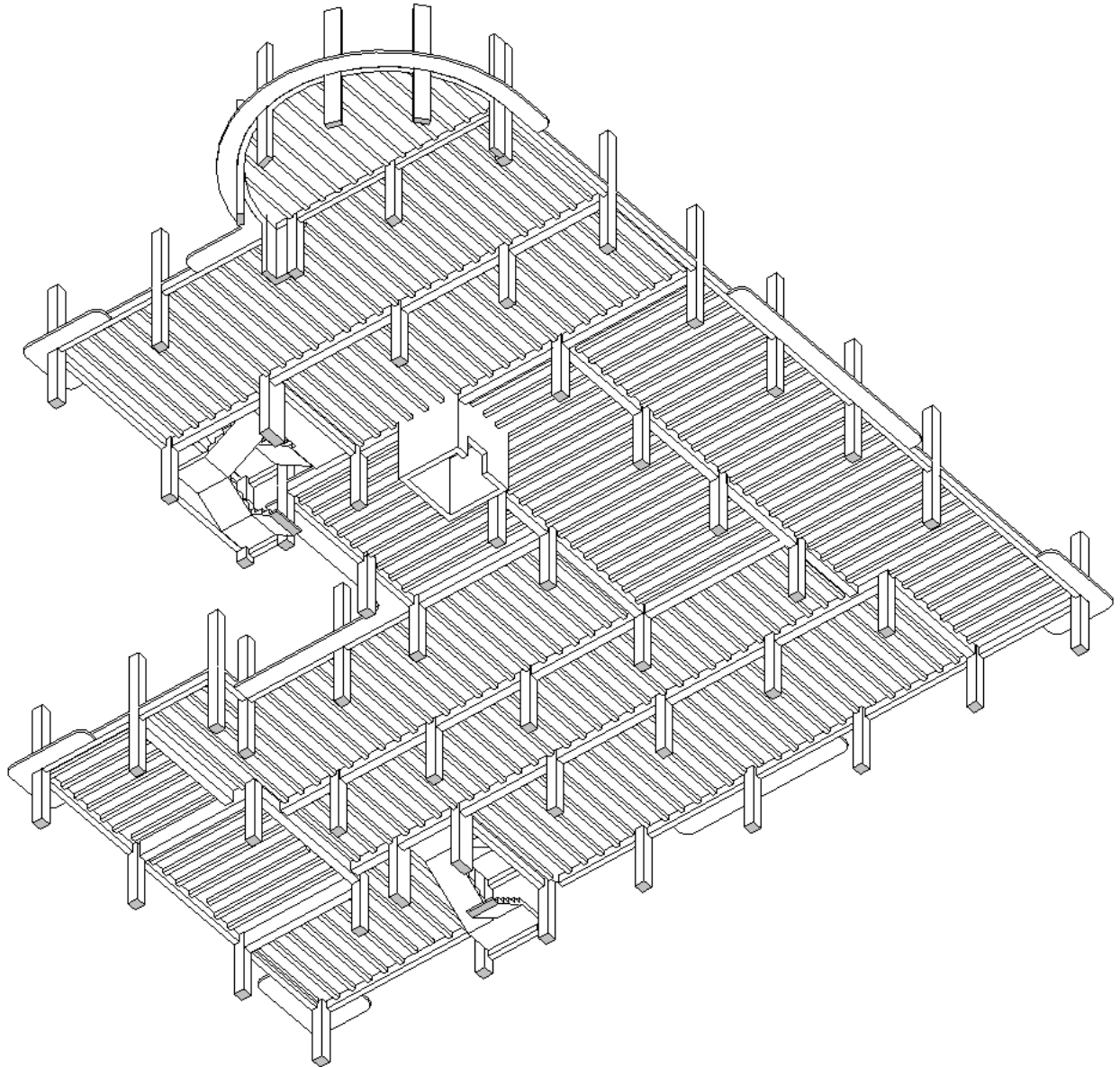


EXISTING BUILDING

The original construction of the Days-Inn hotel goes back to the history of Miami when, slowly during the depression years at the beginning of the 30's and solidly at the end of the decade, the City experienced a significant expansion as a touristic destination, culminating with the building of forty hotels in the year 1940, being the Days-Inn one of them.



The structure of this seven-story building consists of concrete beams and columns, arranged in parallel frames with one-way ribbed slab spanning between them, and with exterior walls made of concrete masonry units, spanning vertically between perimeter beams that also serve as lintels for the windows.

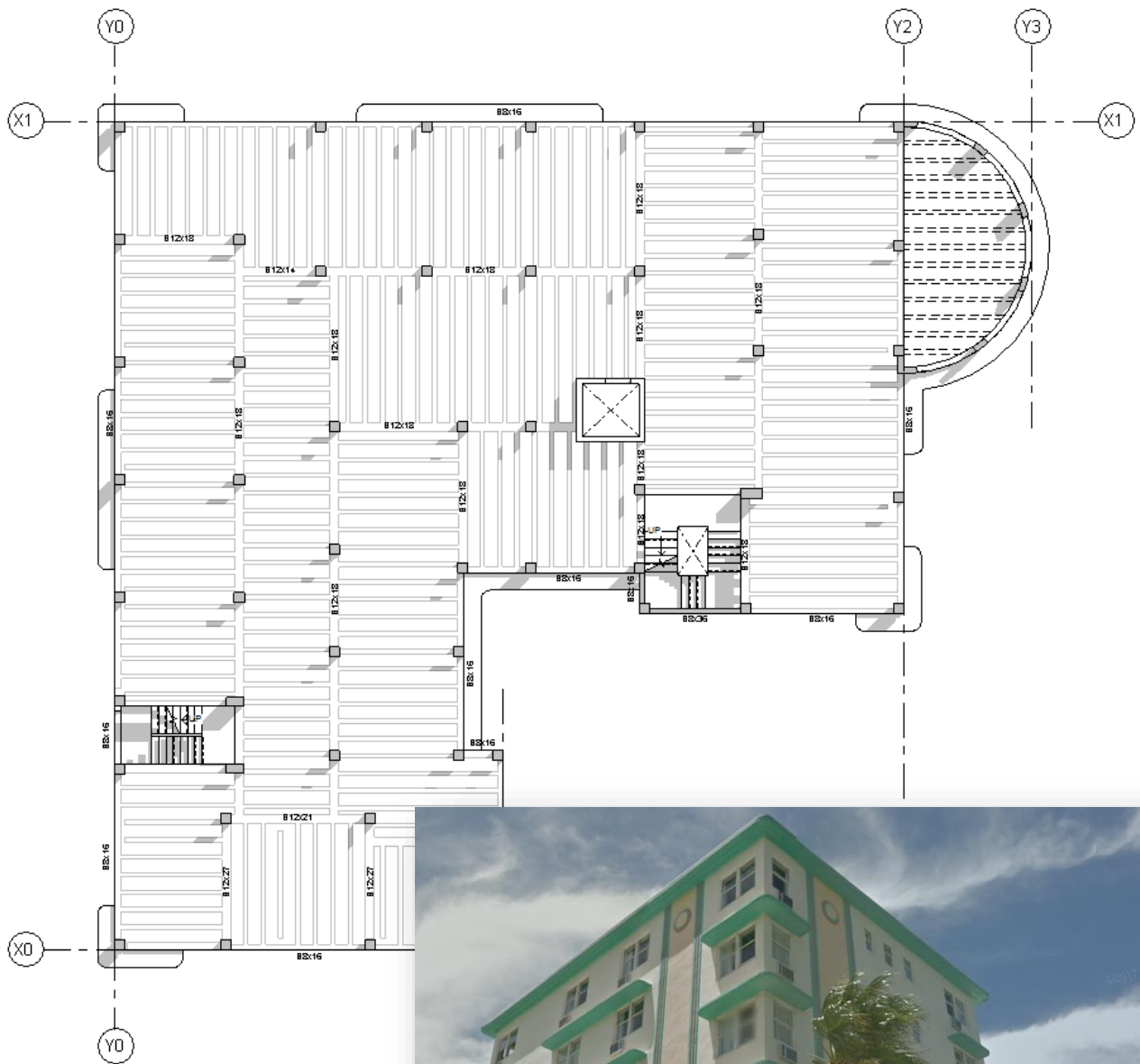


CONCRETE FRAMES AND
RIBBED SLAB AT ELEVATED FLOOR



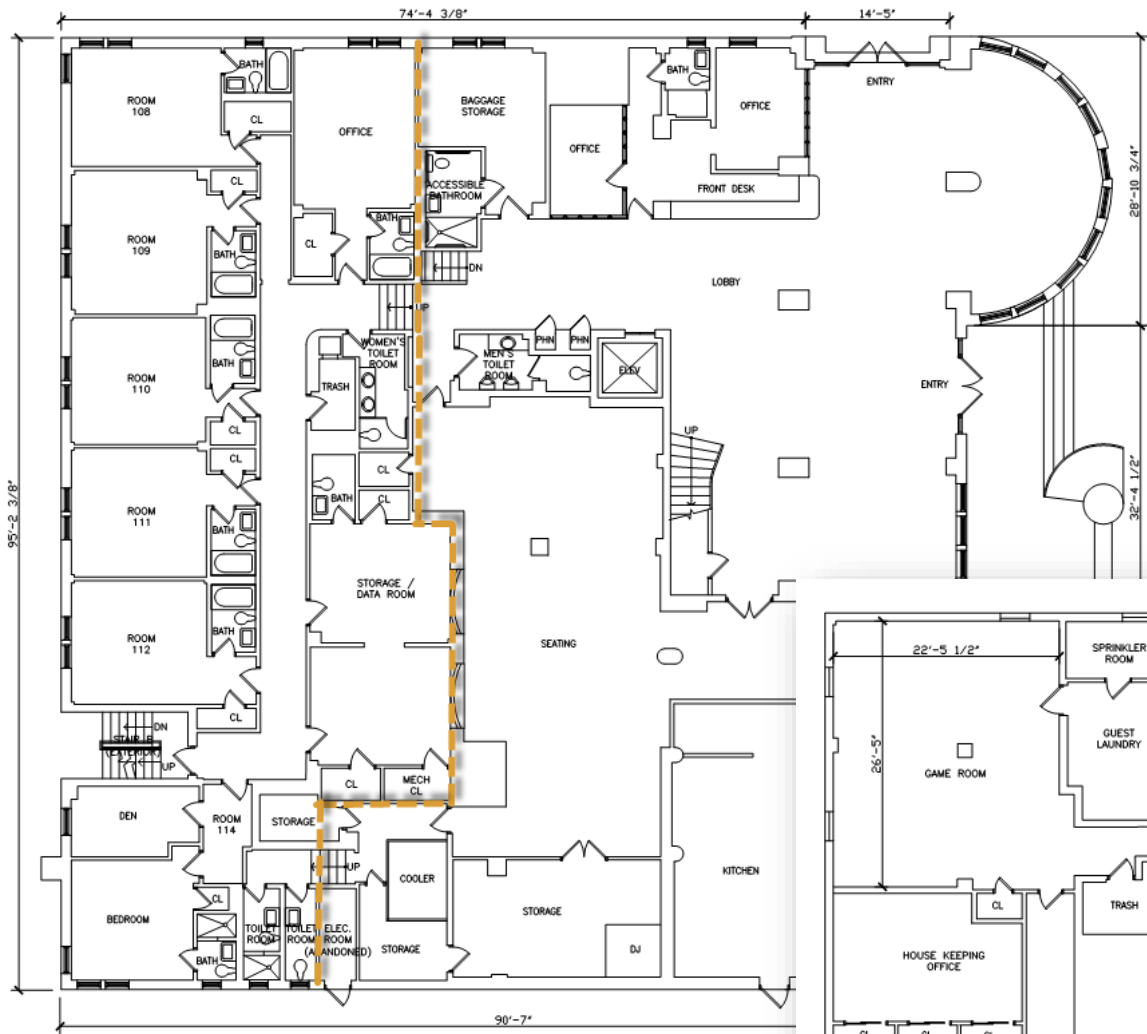
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The plan layout shown below depicts the structural members of an elevated level.

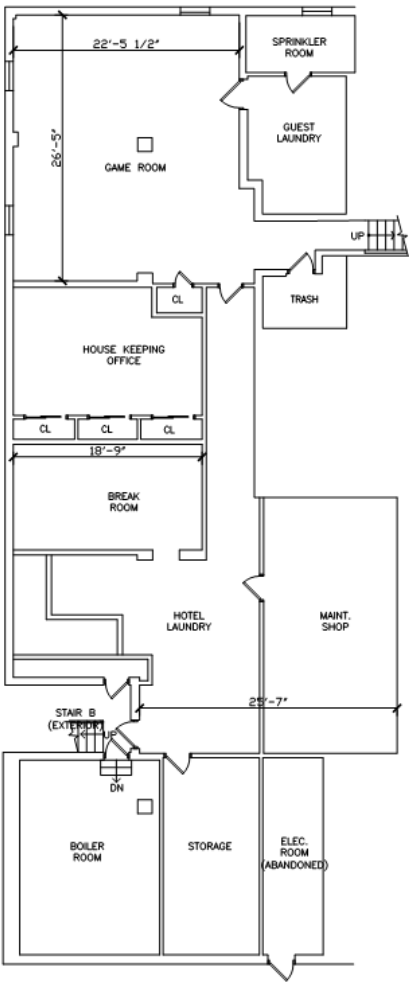


Hotel room windows are protected by eyebrows aligned to the bottom of perimeter beams.

The west portion of the lobby level is raised, coinciding with a half basement where service areas are located.



FIRST FLOOR / LOBBY LEVEL PLAN



BASEMENT FLOOR PLAN



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The building is supported on concrete pile caps.

In absence of reliable documentation, an exploratory demolition was performed to identify the following conditions:

1. The floor at the lobby area has a structural system similar to the elevated floors, with beams and ribbed slabs raised above the elevation of the pile caps defining a crawling space.
2. At the basement level, pile caps are poured directly below the slab on grade.



EXPLORATION OF EXISTING FOUNDATION
AT PARTIAL BASEMENT

RENOVATION PROJECT

The renovation project designed by Revuelta Architecture International will restore the existing historical building while integrating the intervention in a wider scope that comprises existing and new adjacent constructions.

Even though most of the existing layout is maintained, local modifications will require structural interventions to strengthen some members either because of changes in loads or layout.

The challenges of renovating this building are not unique. Many of its contemporary hotels have already been subject of restoration efforts, facing as an inevitable part of them the preliminary need of investigating existing conditions and repairing structural members that have endured throughout the years similar damages and deteriorating processes.

In order to assess its present condition and to determine whether the building has suffered or not substantial damage, two evaluation approaches will be considered:

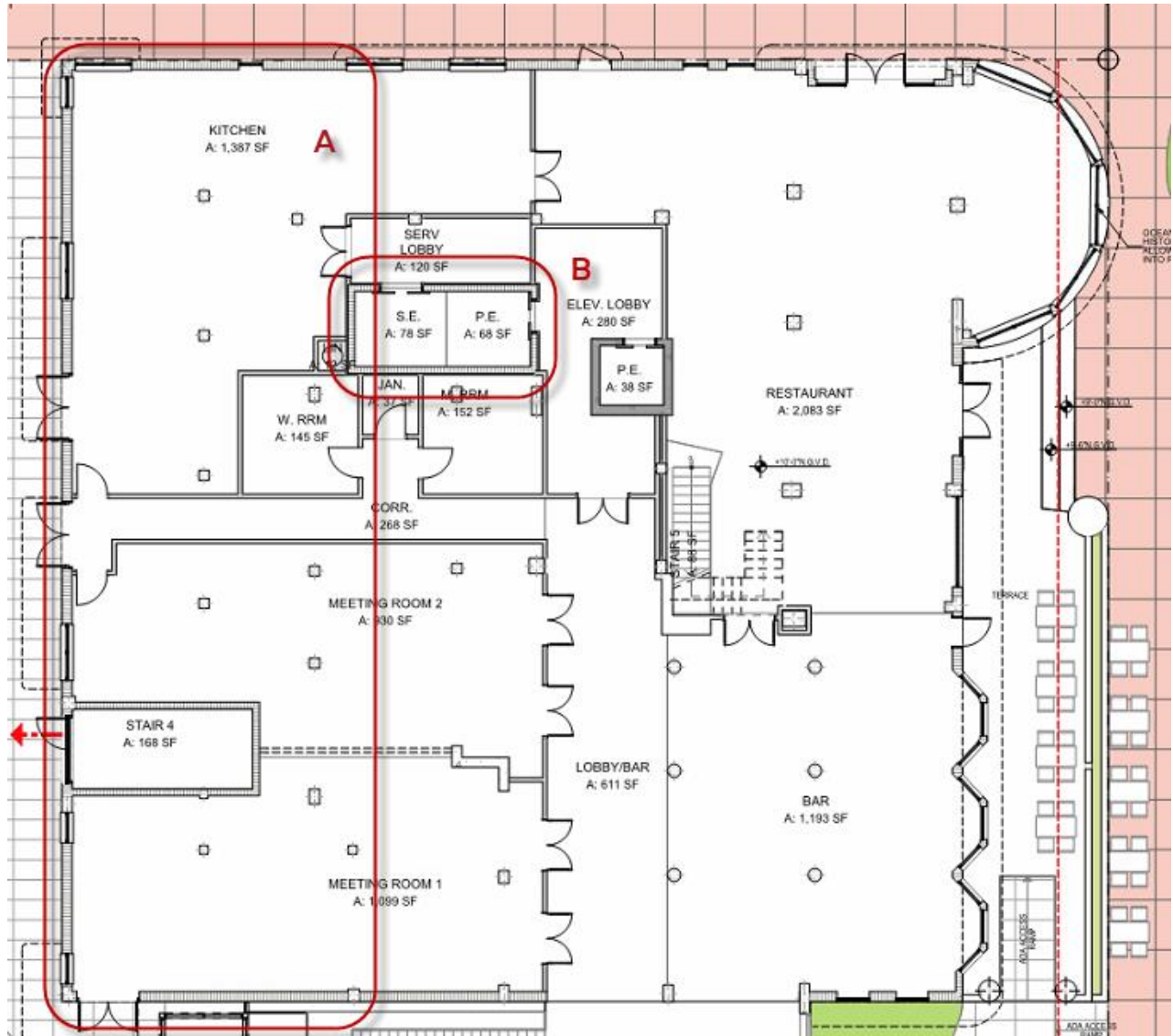
1. Visual inspection and documentation of damages and deficiencies.
2. Extraction and testing of cores at foundations, beams, slabs and columns on different levels.

The structure of the existing buildings will be modeled to account for the new loads due to the projected public use of a roof deck, the removal of a portion of the lobby (which will modify the slenderness of some columns) and the concrete compressive strengths obtained by core testing.

The main areas of impact that the renovation project has on the existing structure may be categorized in three groups:

- A. Demolition of raised portion of lobby level and extension of slab at lobby elevation to the west edge of the building abandoning existing partial basement.
- B. Addition of a new passenger and service elevators to the NE of the existing one.
- C. Excavation and construction of an underground connection between the existing hotel and projected new service areas located to the west and outside of the footprint of the building.

Those three areas of intervention will require the following targeted solutions.

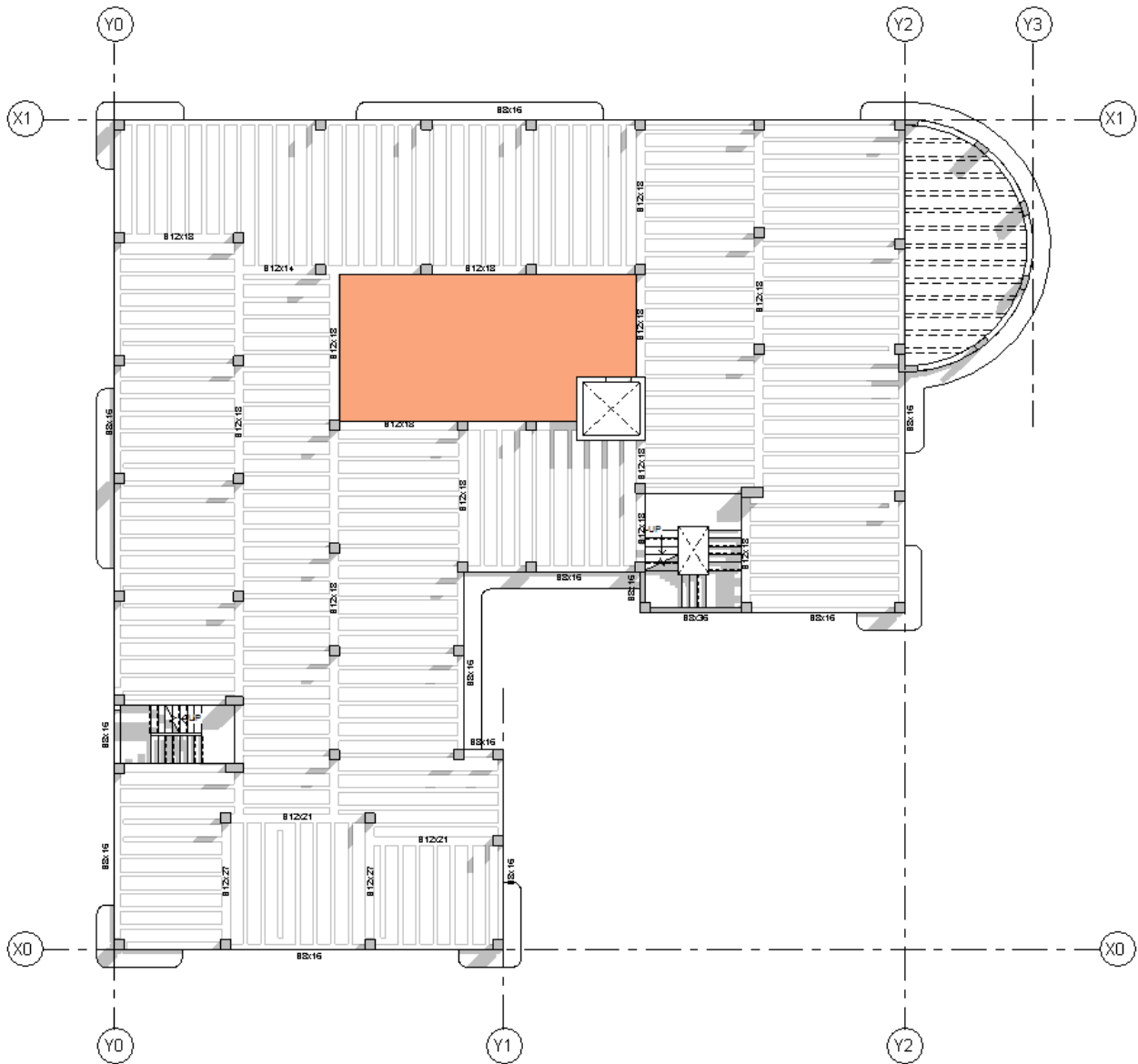


A. Before the partial demolition of the raised, slab and columns will be strengthened by new concrete encasement as required by analysis taking into account their modified slenderness.

Retaining walls will also be evaluated and adequately retrofitted to consider the changed support configuration after the removal of the top boundary currently provided by the raised slab.

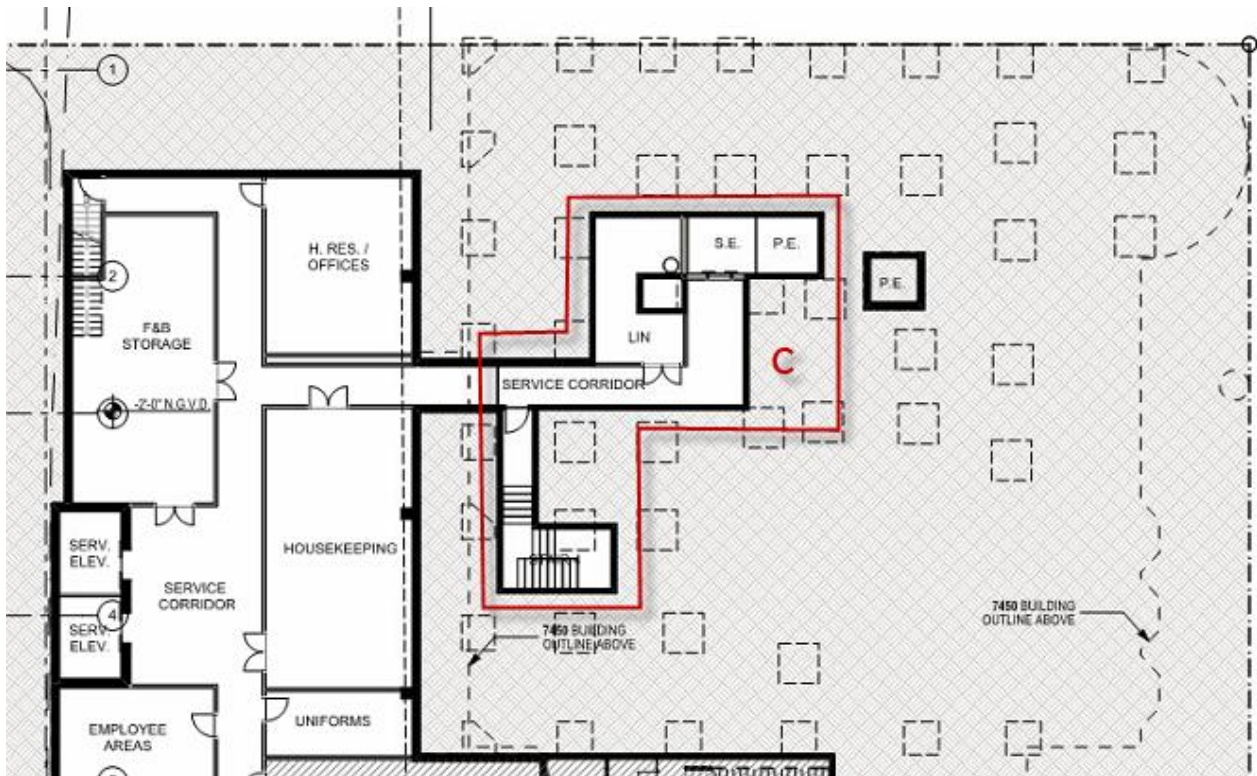
After strengthening provisions are implemented, demolition will be performed in steps by removing the ribbed slab panels first and framing beams afterwards.

B. The location of the new elevator core has been proposed to cause the minimum possible impact to the existing structure, requiring only the removal of the ribbed system highlighted below throughout the building.



The removal of the above indicated area has no negative impact on the remaining beams, not requiring special shoring or strengthening provisions.

C. Finally, the underground connection between the hotel and the new service areas will require building a hydrostatic slab between the existing footings and at an elevation slightly below the bottom of the pile caps.



After having performed an accurate survey of the existing conditions, the final layout of the architectural intervention will be adjusted to work around the existing footings.

Pin piles will be driven to support the new slab and retaining walls designed to support hydrostatic loads. These new structural members will also be detailed and designed, connected to the existing adjacent pile caps, to confer the lateral stability that could otherwise be undermined by the removal of the excavated soil.

The intervention, repairs and procedures conceptually described in this report will restore the structural integrity of the building to an improved condition that will extend its useful life.