

BOSTON ATHENAEUM

SOUTH BALCONY REHABILITATION

Existing Conditions and Proposed Scope

Supporting Documentation for Beacon Hill Architectural
Conservation District Commission

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OUTLINE SCOPE OF WORK: All work is exterior restoration/rehabilitation, at the two balconies at the second floor and fifth floor levels of the south façade facing the Old Granary Burial Ground. Both balconies function as exterior paved terrace areas, and roofing/waterproofing (beneath the paving) that protects the interior spaces and collections from leakage. The second-floor balcony currently leaks, and neither balcony drains well, both have slippery slate paving with some degree of frost heaving of the setting bed. Thus, the scope of the project is to remove and replace the existing waterproofing and slate paving with new waterproofing and non-slip bluestone paving.

The existing black-painted iron railings are non-original, and likely date to the early to mid 20th century. **These existing railings present a potential life safety hazard in terms of their structural inadequacy, as well as their wide spacing of balusters.** We will replace both railings with new black painted steel railings that match the key visual characteristics of the non-original existing railings as closely as possible, including railing panel height and width, post locations, and decorative accent panels, while modifying the baluster spacing, post sizes, and structural mounting of the new railing to improve life safety and be code-compliance.



SIMPSON GUMPERTZ & HEGER

Engineering of Structures
and Building Enclosures



Second-Floor Balcony – Existing Conditions



Photo 1: Clogged internal drain at second-floor balcony



Photo 2: Interior water damage below second-floor balcony.



Photo 4: Slippery and loose pavers at edge and stairs pose potential tripping hazards.



Photo 3: Non-original railing at second-floor balcony does not comply with current architectural or structural code.



Fifth-Floor Balcony – Existing Conditions



Photo 5: Slippery and loose pavers pose potential tripping hazards and non-original railing at fifth-floor does not comply with current architectural or structural code.



Photo 6: Damaged interior water damage below fifth-floor balcony.



Photo 7: Mortar-set pavers and leaking gutter are contributing to masonry staining and deterioration below the fifth-floor balcony.

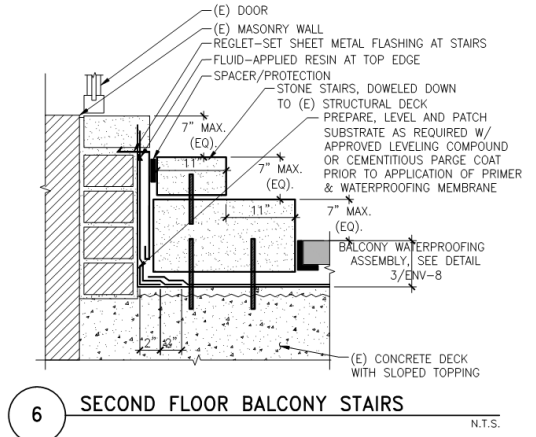
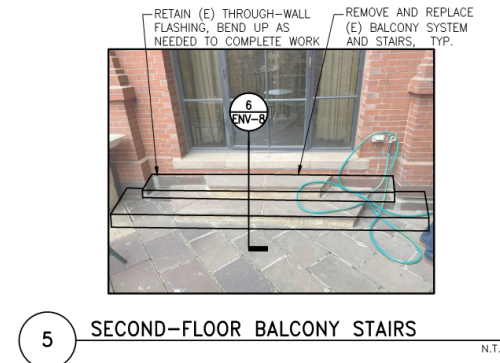
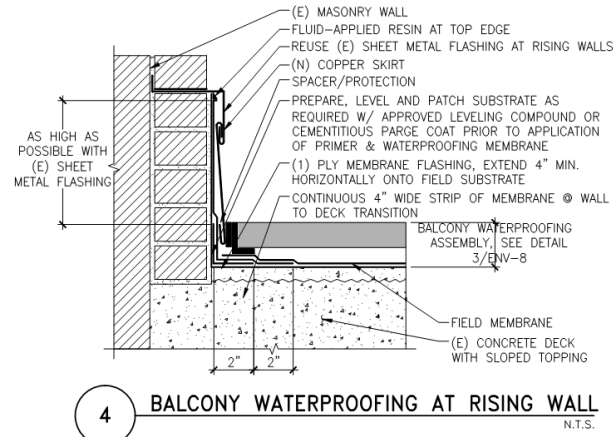
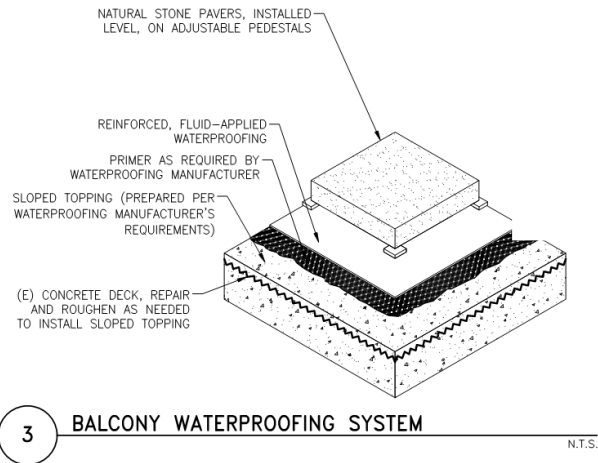


Photo 8: The fifth-floor balcony (shown) and second-floor balconies are not open due to safety concerns.



Proposed Balcony Rehabilitation - Overview

- Remove and replace the balcony waterproofing system with a more reliable, self-terminating fluid-applied system (Detail 3).
- Reuse existing base flashing at rising wall (Figure 4)
- Replace existing mortar-set slate pavers with bluestone pavers on pedestals and provide perimeter blue stone curb.
- Rebuild stairs at second-floor balcony.
- Replace existing drain at second-floor balcony.
- Provide new copper gutter at fifth-floor balcony.
- Replace existing non-original railing with new railing that is code-compliant and matches the existing rail aesthetic at each balcony (see next sheets).



Proposed Balcony Rehabilitation - Railings

Overview of Second-floor balcony



Replicate end panel at second-floor balcony

Replace existing guardrails with black matte painted steel guardrail to visually match the existing



Matte black rail finishes

Overview of Fifth-floor balcony

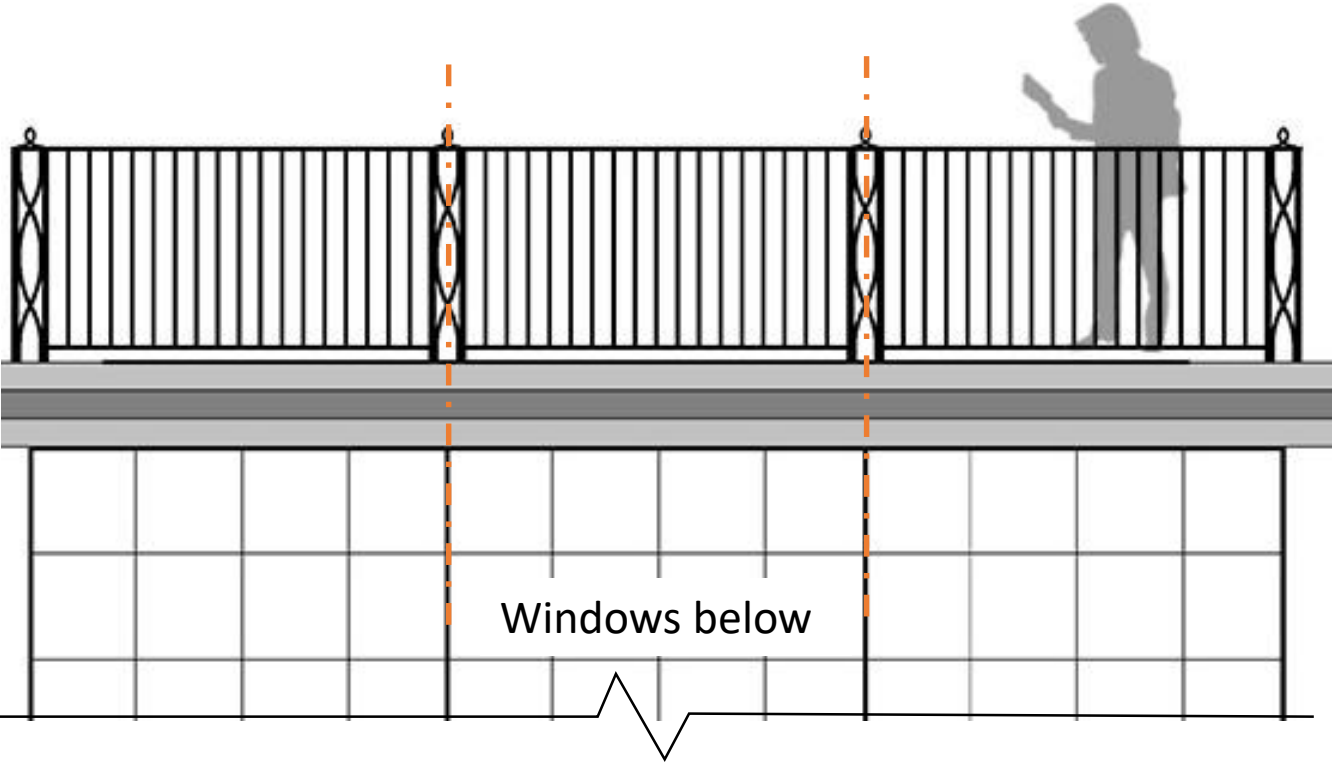


Refurbish and reuse decorative panel at fifth-floor balcony

Proposed Balcony Rehabilitation – Second-Floor Railing



Decorative panels will match existing locations to be centered above window mullions:

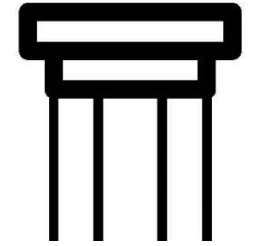


)Proposed guardrail elevation)

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Proposed Balcony Rehabilitation – Second-Floor Railing



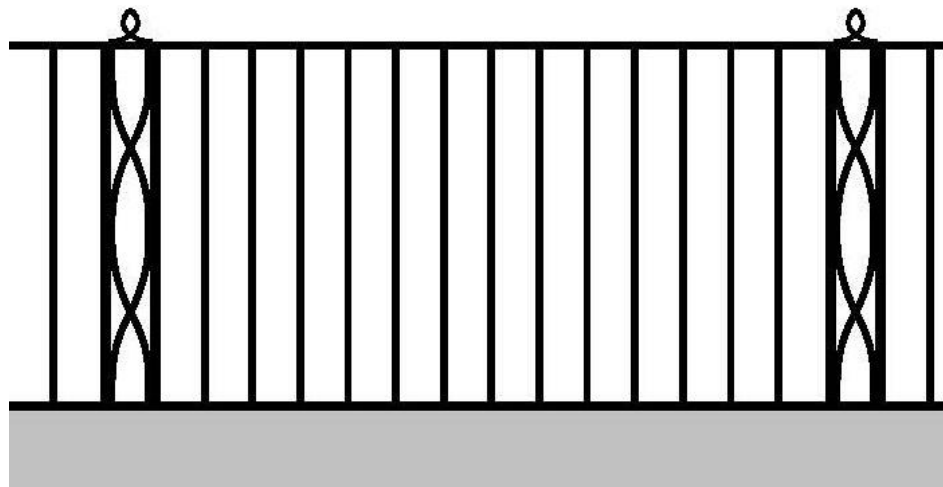
Section detail
at top rail

Existing Railing Design:

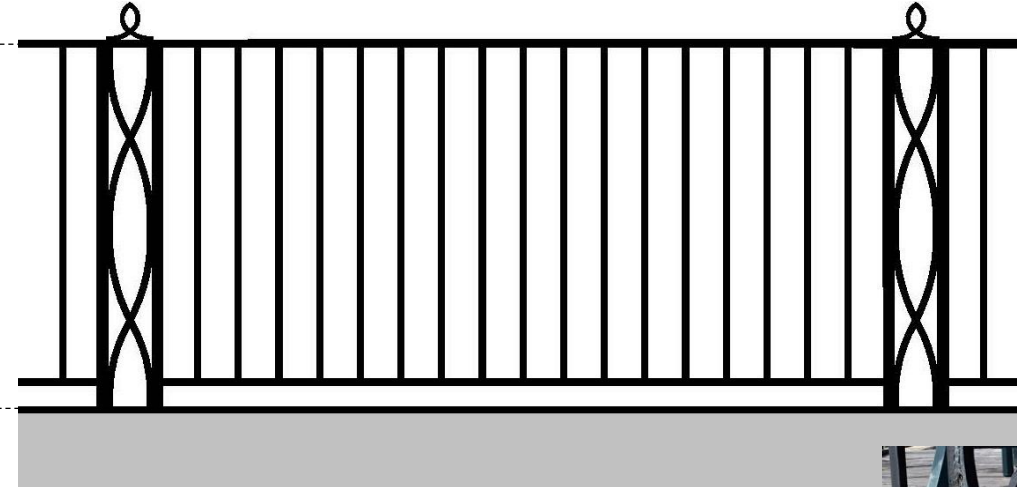
- Height above walking surface = 46"
- Bottom rail to top rail height = 46"
- Baluster size = 5/8" x 7/8"
- Baluster spacing = 5-3/8" clear (not code-compliant)
- Post size = 7/8" square with decorative panel
- Bottom rail = 5/8" x 7/8"
- Top rail = 2-part flat stock, 2" wide

New Railing Design:

- Height above walking surface = 46"
- Bottom rail to top rail height = 43"
- Baluster size = 5/8" square
- Baluster spacing = 4" clear (more balusters between posts)
- Post size = 1-1/4" x 1-1/2" with decorative panel
- Bottom rail = 3/4" x 1-1/2"
- Top rail = to match existing (see section at top)



Existing guardrail elevation



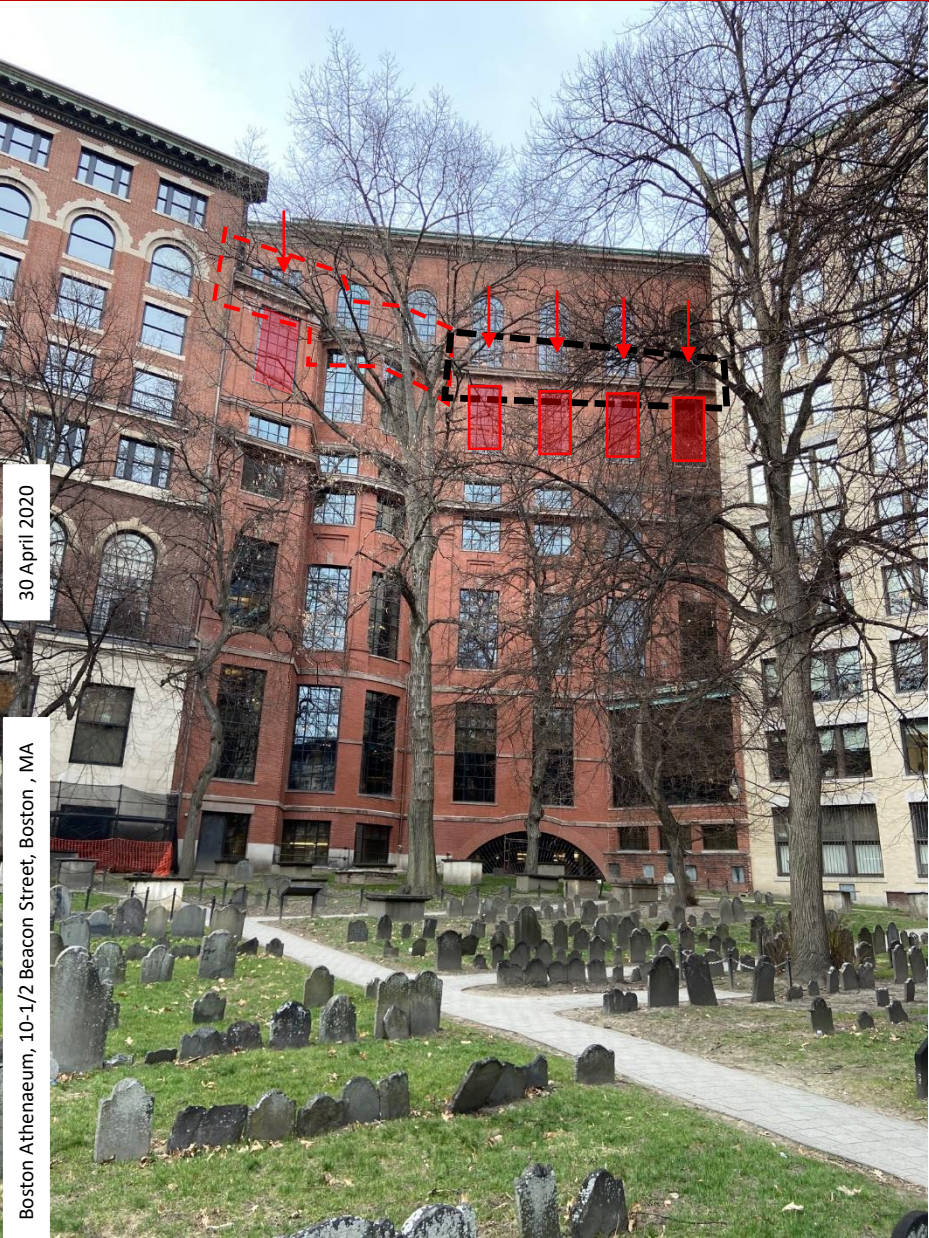
New guardrail elevation

(3" gap at balcony to prevent bottom rail rusting)

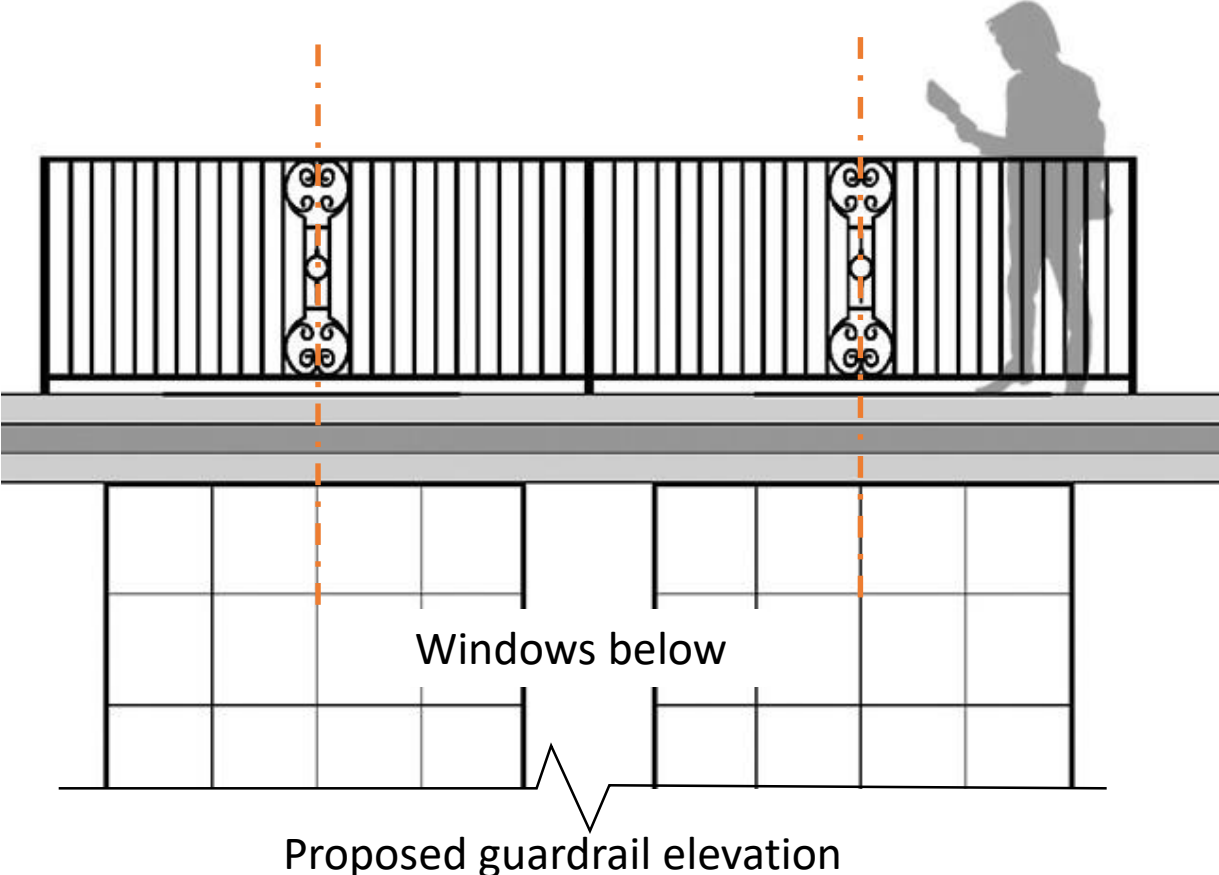
Rusting at
bottom rail



Proposed Balcony Rehabilitation – Fifth-Floor Railing



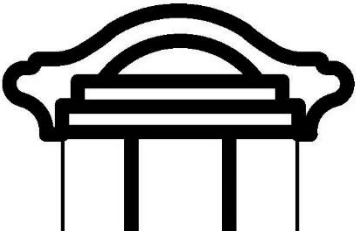
Decorative panels will be refurbished and reinstalled in current location (centered above window mullions):



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Proposed Balcony Rehabilitation – Fifth-Floor Railing



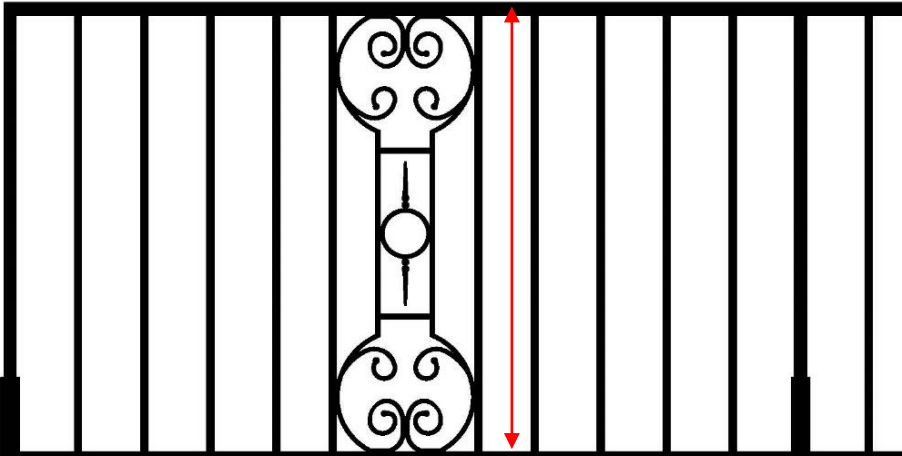
Section detail at top rail

Existing Guardrail Design

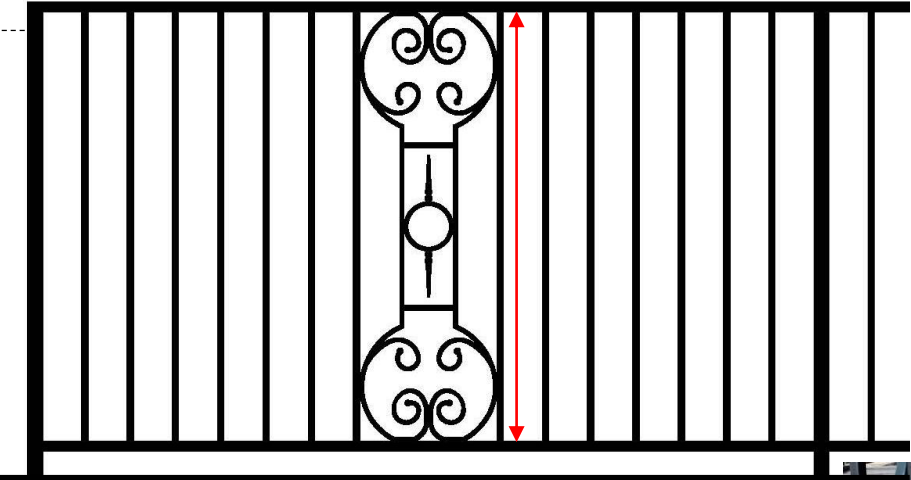
- Height above walking surface = 45"
- Baluster size = 5/8" square
- Baluster spacing = 6-1/8" clear (does not meet current code)
- Post size = 1" square
- Bottom rail = 1/2" x 1-1/4"
- Top rail = Decorative profile
- **Mid-panel height = 44"**

New Guardrail Design

- Height above walking surface = 48-5/8"
- Baluster size = 5/8" square
- Baluster spacing = 4" clear (more balusters between posts)
- Post size = 1-1/2" square
- Bottom rail = 1" x 1-1/2". 3" gap at balcony to prevent bottom rail rusting
- Top rail = will match existing from Julius Blum
- **Mid-panel height = 44"**



Existing guardrail elevation



New guardrail elevation

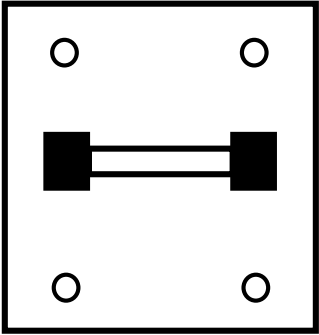
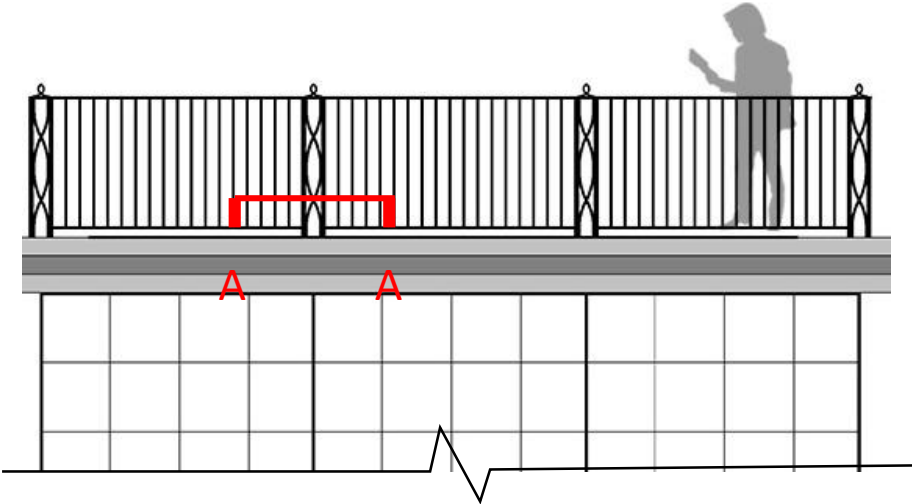
3" gap at balcony to prevent bottom rail rusting

Rusting at bottom rail



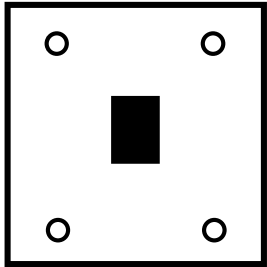
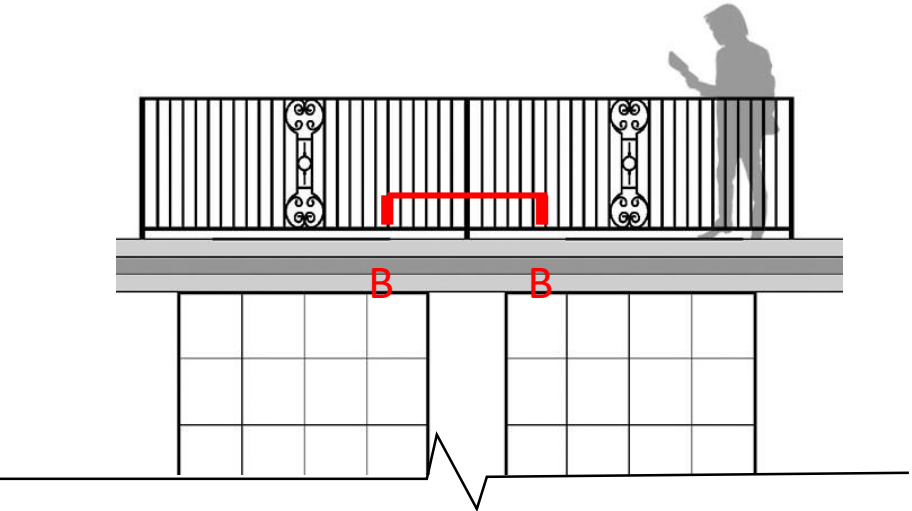
Proposed Balcony Rehabilitation – Railing Base Plates

Second-Floor Balcony Railing Base Plate Configuration (below pavers):



SECTION A-A

Fifth-Floor Balcony Railing Base Plate Configuration (below pavers):



SECTION B-B