

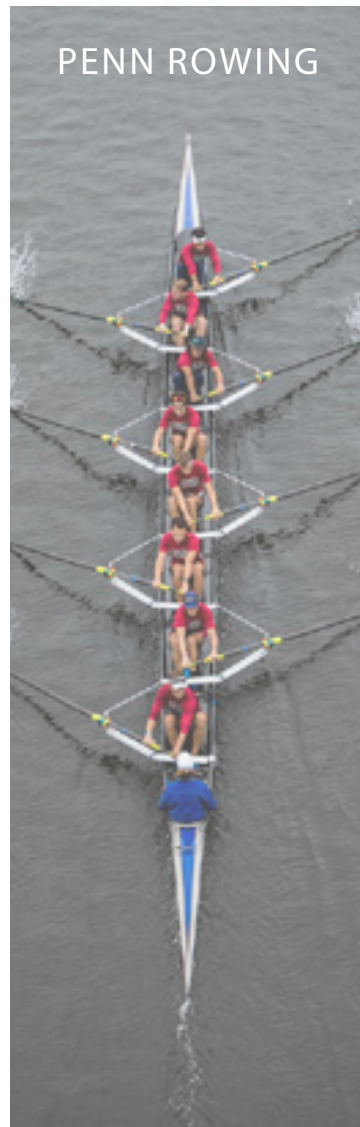


UNIVERSITY OF PENNSYLVANIA BOATHOUSE

RENOVATION & ADDITION TO THE PENN BOATHOUSE

11 Boathouse Row, Philadelphia, PA 19130

Applicant: University of Pennsylvania





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PROJECT GOALS

- ◆ **Showcase Penn Rowing**
- ◆ **Increase Usable Space**
- ◆ **Improve Overall Functionality**
- ◆ **Bolster recruitment**
- ◆ **Expand and Upgrade the Locker Rooms**
- ◆ **Remediate Existing Structural Concerns**
- ◆ **Improve Training and Team Spaces**
- ◆ **Preserve a Historic Landmark**

EXECUTIVE SUMMARY

The University of Pennsylvania College Boat Club crew teams have been at the forefront of elite college rowing teams since first rowing under the UPenn banner in 1879. The College Boat Club is recognized for its historical significance at the local and national levels. The site is individually listed in the Philadelphia Historic Register. Below is a timeline of construction:

- 1874-1875 Initial construction of two story, one-bay by three-bay boathouse
- 1920 North gable end extended to north, one story boat bay addition to east (Edward F. Hoffman, Jr., Architect)
- Circa 1930 Second story built over south end of 1920 east addition
- 1980-1983 Two-story west addition, second story over north end of 1920 east addition, new fire stair, all windows replaced (Francis Cauffman Wilkinson & Pepper, Architects).

The College Boat Club as it stands today has a near-center stone gable (the original boathouse) with lower stucco additions to the east and west. The form and height of the additions allow the original building to predominate the composition on the north (Kelly Drive) and south (Schuylkill River) elevations. These relationships will be maintained in the new Project.

The proposed project will retain and restore the original stone boathouse and 1980-83 west addition, including preservation of existing original trim and reconstruction of the original windows and doors on both the north and south elevations, as well as the original south balcony. The east additions are proposed to be demolished (see page 7, Structural Narrative). The first story, built in 1920, will be reconstructed, including the stucco finish, wood trim, windows and doors, all character-defining features of this addition.

A new second story will be built in the spirit of the existing c. 1930 addition, the principal changes being the addition of larger shed dormers on the south and north elevations, to accommodate new glazed doors onto new balconies. A steep-slope mansard roof, similar to the existing roof, will connect the two gables on the east elevation and mask roof-top HVAC equipment from view. The 1980-1983 west addition will be retained and restored.

Aspects of the boathouse interior that are considered character-defining, and will also be preserved and restored, include the original "members room" on the second floor of the original boathouse, with its decorative exposed truss ceiling and bead-board walls. The character of the 1920 boat bay interior is also worthy of mention, with its exposed wood framing and sawtooth roof and skylights which will be recomposed and define the character of the new Erg Room on the second floor. The interior rehabilitation will also preserve and expose the original exterior stonework at the second floor of the east (side) wall. Second floor windows on this east wall will also be retained, and re-purposed as doorways between the original building and new east addition.

It is a primary objective of this project to provide space and program equity for the men and women crew programs. The original facility, despite multiple additions, has been unable to keep pace with the increased volume of members and program needs. The boathouse footprint is currently maximized relative to its neighbors', Penn AC and Vesper, property lines; additional space is only available through the construction of a second-floor infill addition over the one-story boat bay as proposed. In addition to programmatic expansions and functional improvements, this project will also upgrade all building systems, including heating, cooling, security, and fire protection. Heavy use of the building, wear and tear, exposure to weather, further compounded by settlement of the building and aging infrastructure, inevitably lead to the need for repairs and restoration of parts of the boathouse.



Exterior from Kelly Drive, 12.05.2019



East Elevation, 07.30.2019



Exterior from the Schuylkill, 12.05.2019



West Elevation, 07.30.2019



Exterior from the Schuylkill c.1930



East Elevation , 03.04.2018



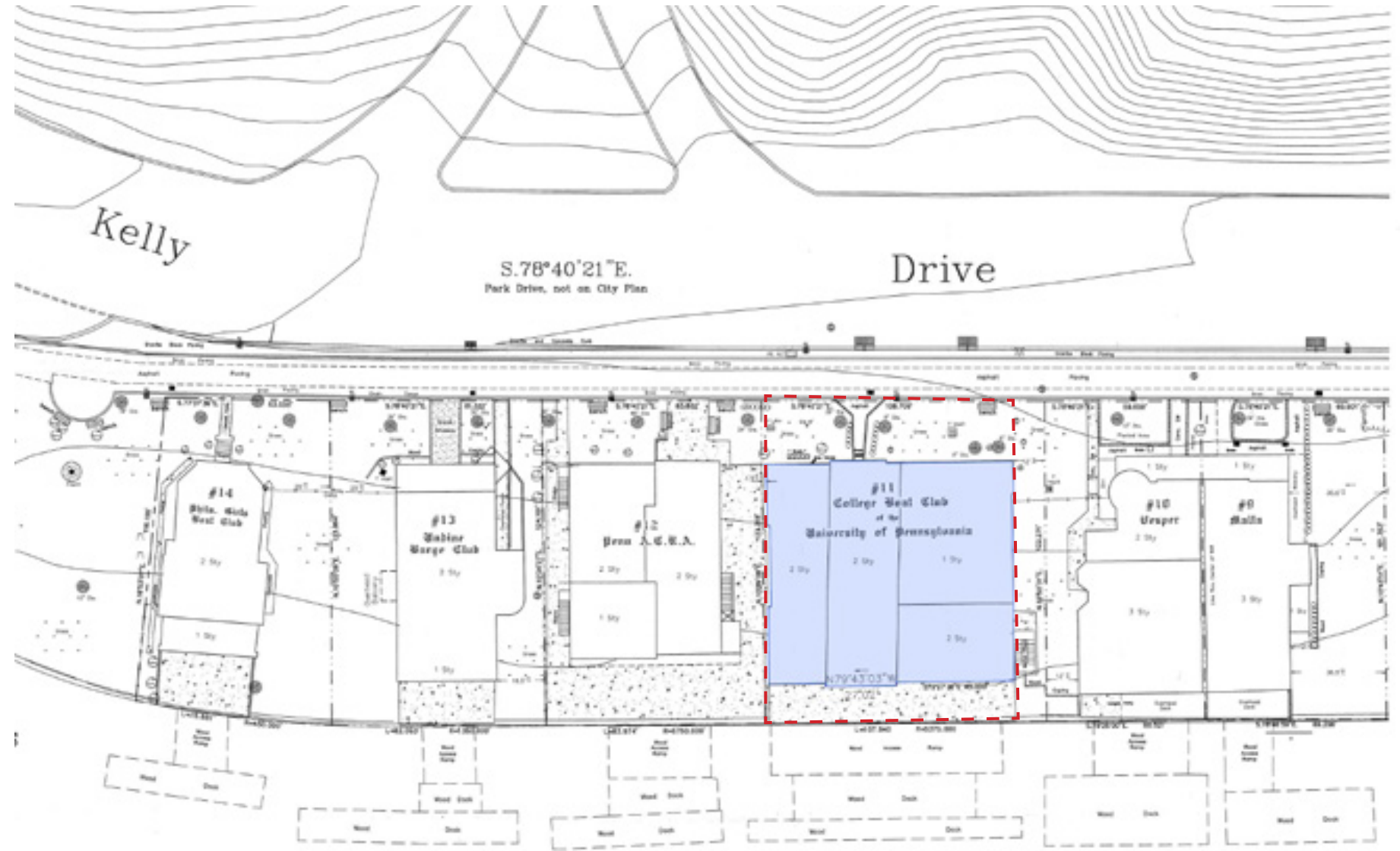
East Elevation 12.05.2019



West Elevation , 07.30.2019



Penn Boathouse Existing Aerial View



Penn Boathouse Survey & Plan of Properties 1999

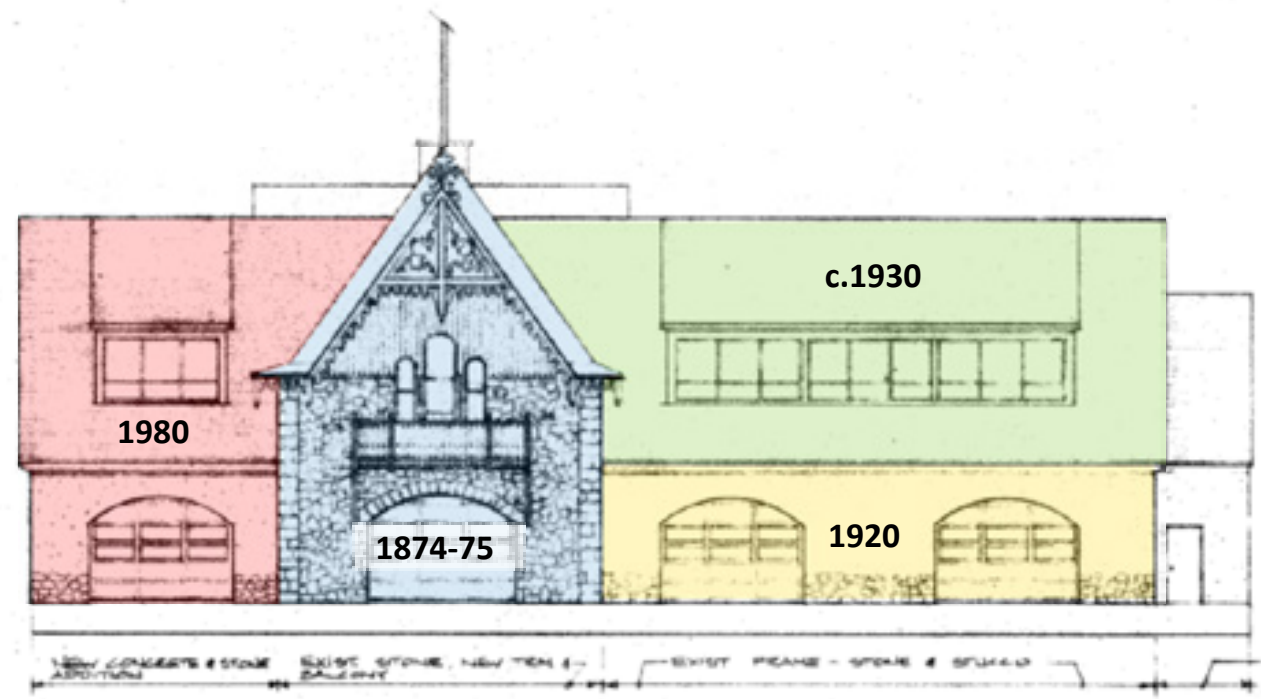


1874-1875 Original Pavilion

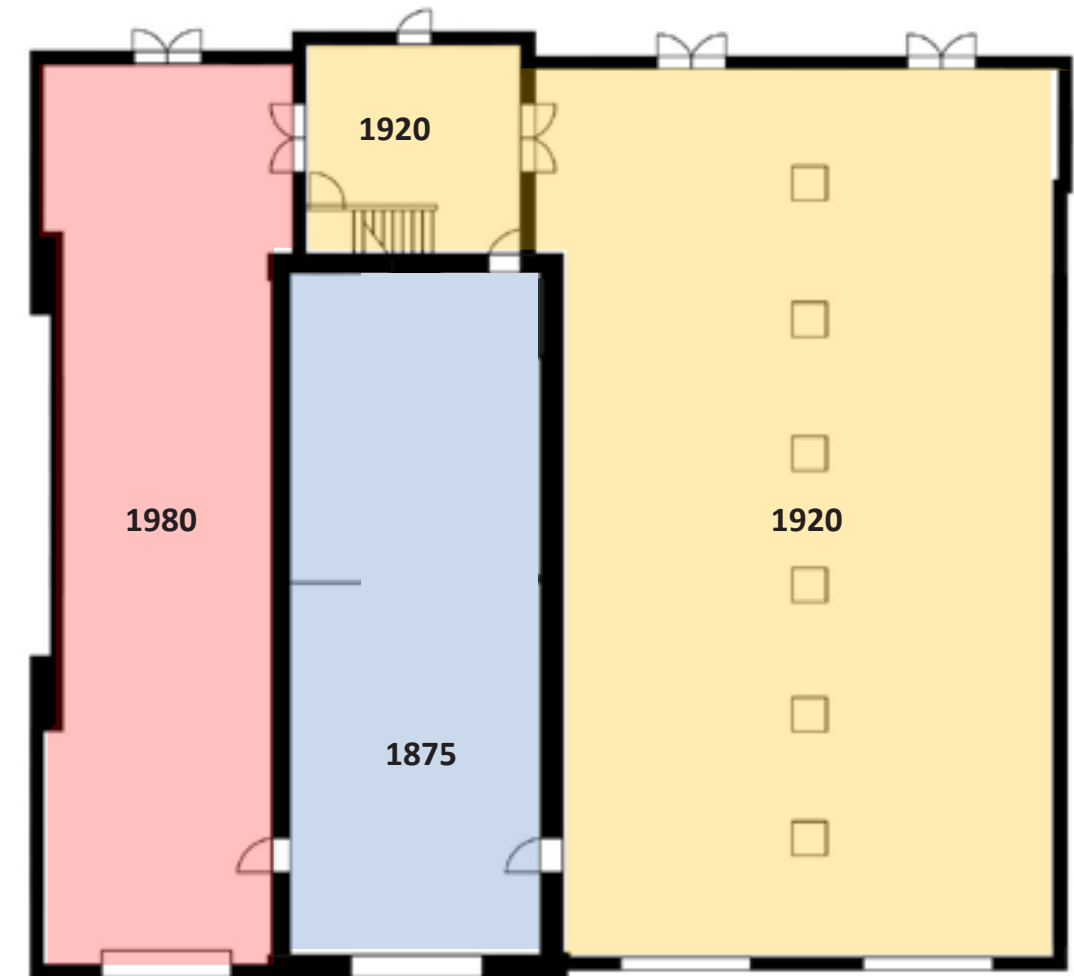
1920 - Addition

c.1930 - Addition

1980 - Addition

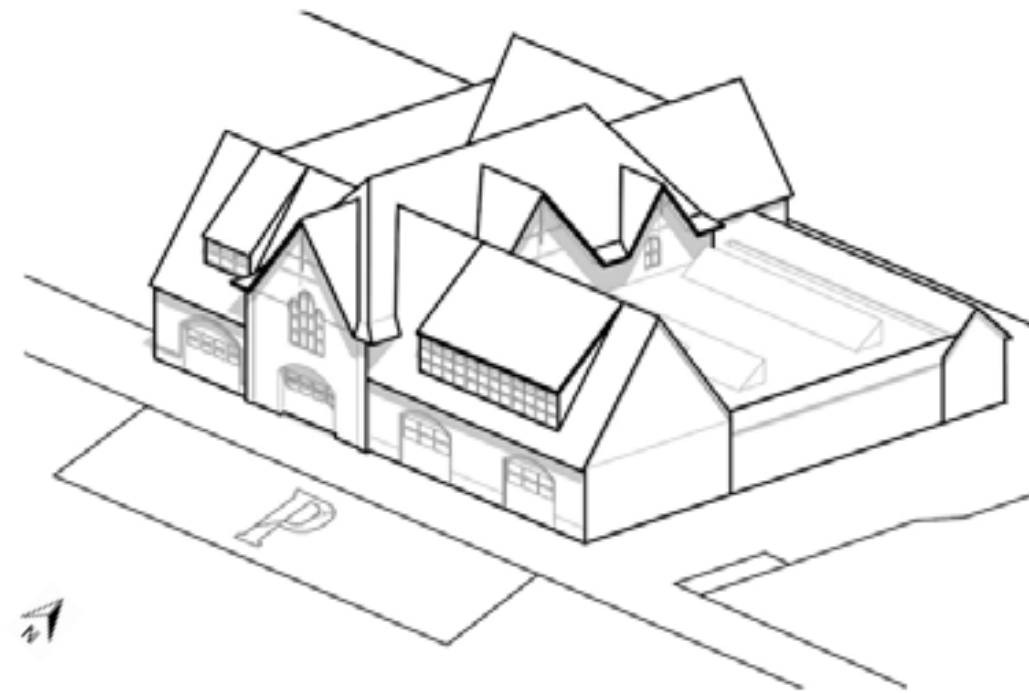


SOUTH ELEVATION.

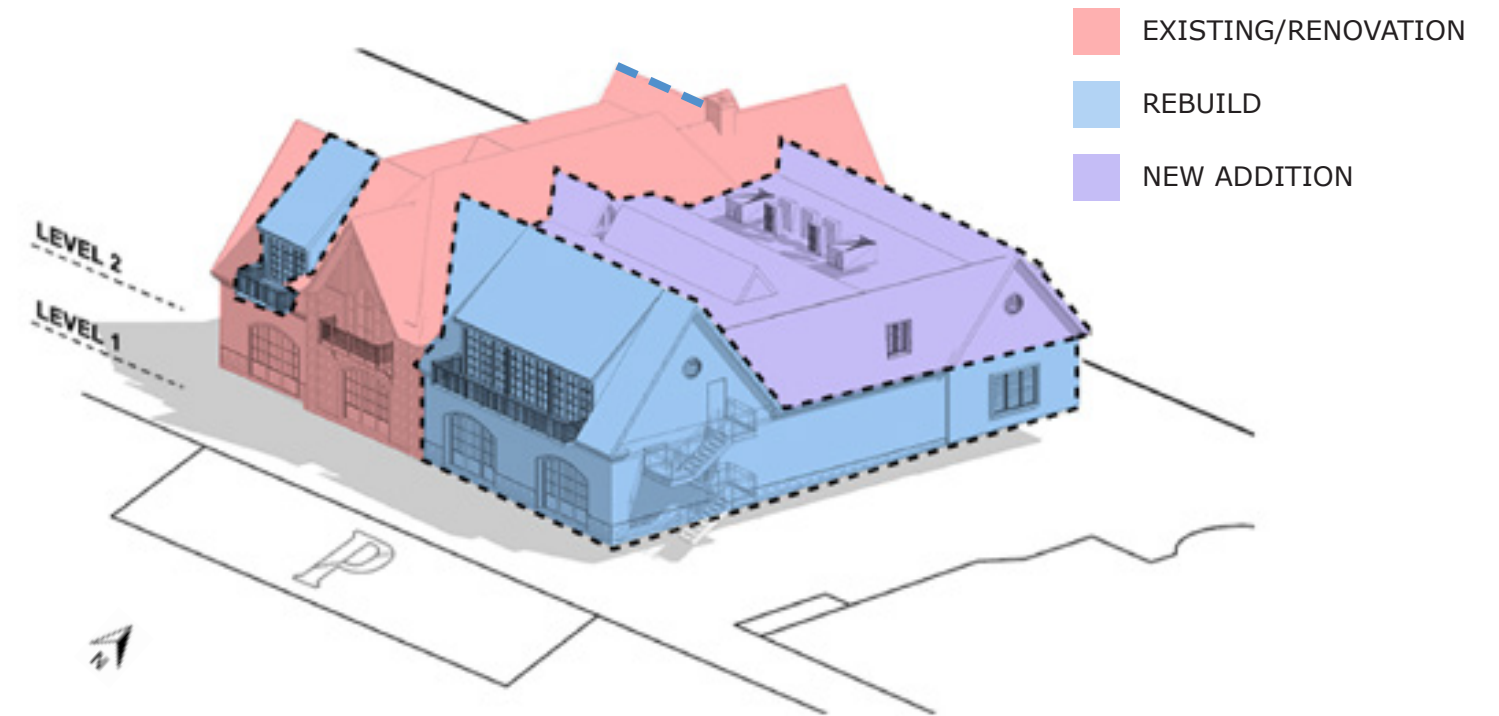


LEVEL 1





**Existing Penn
Boathouse**



**Proposed
Scope**

The addition overbuilds the existing footprint to create additional square footage with a second floor "infill". The axonometric diagrams above show how the new building massing replicates the existing gables and dormers, preserving the scale and character of the Schuylkill elevation.

The proposed addition will reflect the existing building's character and scale, referencing existing details and proportions in the new construction. The material palette is consistent with the original through its use of stone, stucco, wood trim, and roofing composed of synthetic slate and asphalt shingles.

The original boathouse was constructed in 1874 with the east and west wings built in 1921 and 1980, respectively. The west wing is a two-story addition constructed of concrete masonry, steel and wood and was built to house the women's boats. The second floor of the west wing was constructed at a different floor elevation than the floor elevation of the original boathouse. The original east wing was a one-story shed structure that was modified in the early 1930's to include a small vertical addition on the river side. It currently houses the men's boats.

The east wing was constructed primarily with dimensional wood construction forming the exterior stud walls on three sides and the roof. These perimeter walls bear on short concrete foundation walls that do not bear on continuous spread footings. This has accounted for some of the settlement that these walls have experienced. The roof, with its multiple roof monitors, is supported at the east perimeter, west original boathouse masonry wall, and at its centerline by several timber columns that bear on shallow spread footings.

A structural condition assessment was completed for the east wing to determine if the structure could support a full overbuild addition. The assessment determined that the existing foundations, roof framing members, and columns have insufficient vertical load capacity and lateral load resistance to support the code required loads for the proposed program designated for the second floor. An attempt to strengthen the existing roof framing would result in a significant loss of vertical height within the boat bay that would severely diminish the vertical space required to maximize boat stacking. Compounding the loss of vertical space would be the additional loss of footprint to introduce supplemental columns. In addition, all of the foundations would need to be underpinned to increase their bearing capacity. This would be a risky operation in soils that are not known for their cohesiveness.

The proposed two-story addition would be constructed on the footprint of the current east wing. The structure would consist of a cast-in-place concrete supported second floor overtopped by a structural steel and timber roof structure. The new concrete columns would bear on reinforced concrete pile caps supported by mini-piles. The structure would be designed to conform to flood plain management requirements. Other additions would include an elevator within the footprint of the original boathouse. Overbuild construction or construction of a new floor level will be required at the original boathouse's second floor to provide a more uniform second floor elevation for ADA accessibility. Decayed framing within the 1921 addition at the front of the original 1874 boathouse would also be repaired and supplemented.



Test Pit TP-1, Footing 20" Below Grade, Geotechnical Report, September 2019



Test Pit TP-2, No Footing Encountered, Geotechnical Report, September 2019



Roof Above Men's Boat Bay, July 2019



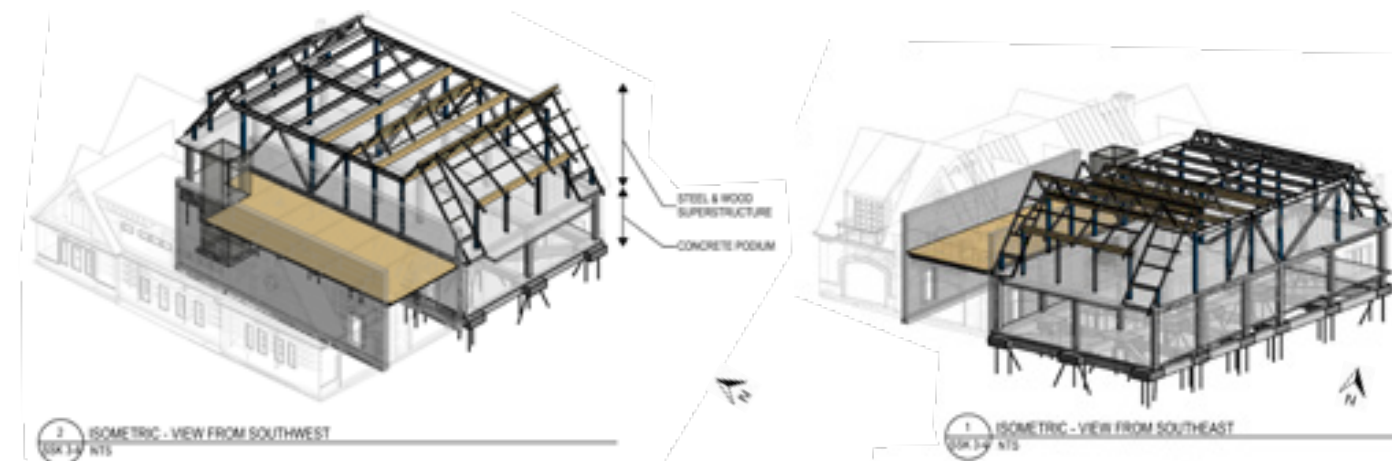
Existing East Wall, August 2019



Existing East Wall, August 2019



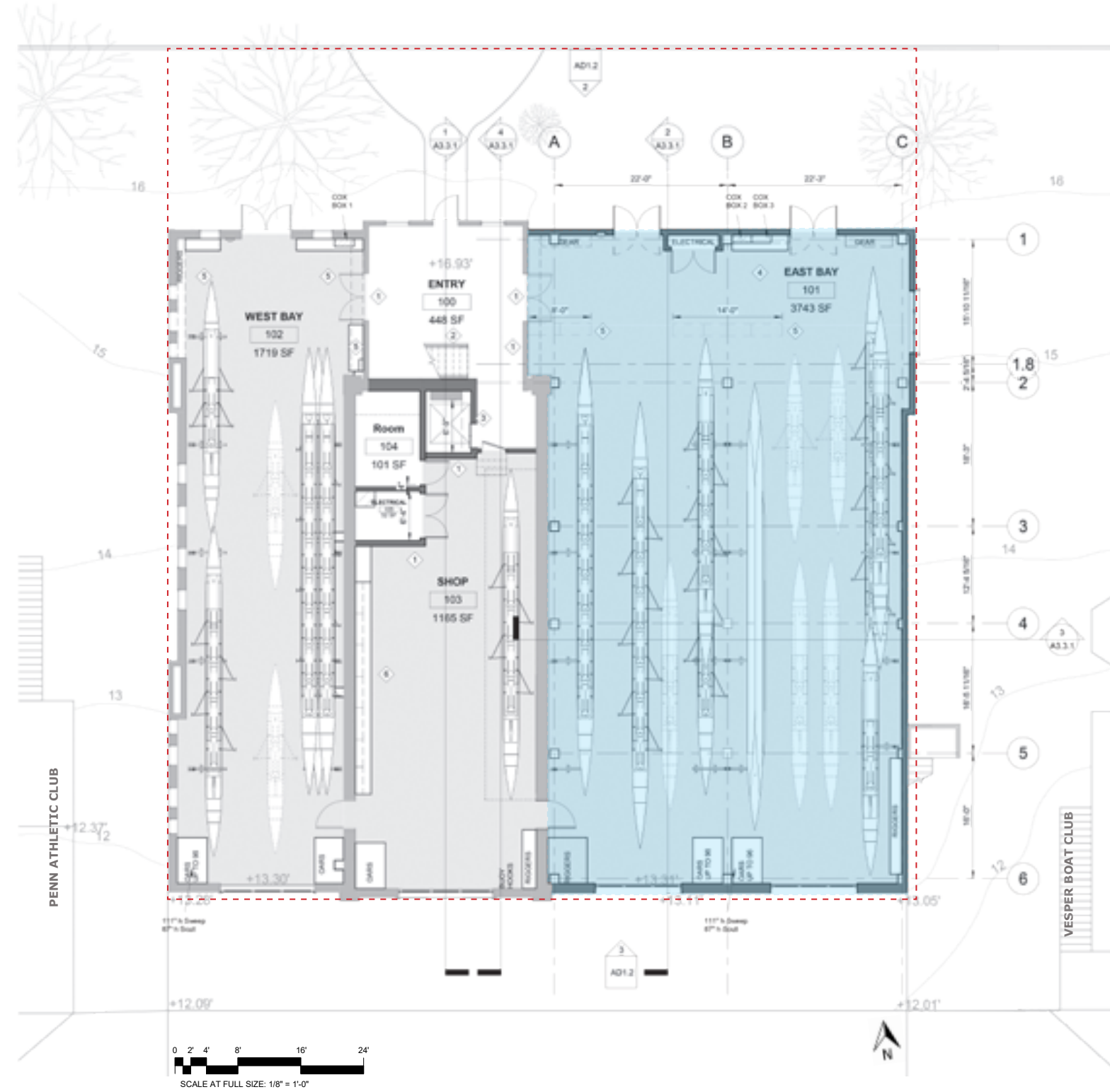
Ceiling Above Main Entry, July 2019



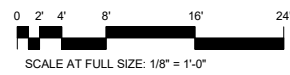
Structural Diagrams



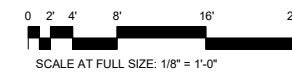
FLOOR 1: EXISTING



FLOOR 1: PROPOSED
REBUILT / NEW CONSTRUCTION



FLOOR 2: EXISTING



**FLOOR 2: PROPOSED
REBUILT /NEW CONSTRUCTION**

PHILADELPHIA HISTORICAL COMMISSION ARCHITECTURAL COMMITTEE COMMENTS

Overview

- Overall massing and scale of proposed addition is large compared to the original central pavilion
- Detail at new dormers is not contextually sensitive

Kelly Drive Facade

- Ridge at new addition should be lowered to match existing West Bay ridge
- Dormer scale should be reduced and detail should comport with existing shed dormer details
- Entrance pavilion should respect historic elements

Schuylkill Facade

- Dormers should be reduced in scale, defer to the original central pavilion and should reference existing shed dormer details
- New East & West Bay balconies should be more recessive
- New balconies should not extend beyond cornice and wall below

East Facade

- Scale of main roof gable facing east is large and undifferentiated
- Consider reducing scale and incorporating glazing

SUMMARY OF DESIGN REVISIONS

Overview

- Reduced overall massing and scale of second story addition, revised dormers and lowered ridge lines
- Revised detailing to be consistent with existing dormer

Kelly Drive Facade

- Ridge lowered 30" to align with West Bay ridge line
 - Concealed flat roof (beyond) and roof top equipment lowered 30"
- Dormer modified - broke into two smaller dormers
 - Reduced elevation of eave
 - Modified detail to reference existing shed dormers
- Window and door configuration respected and balcony element restored

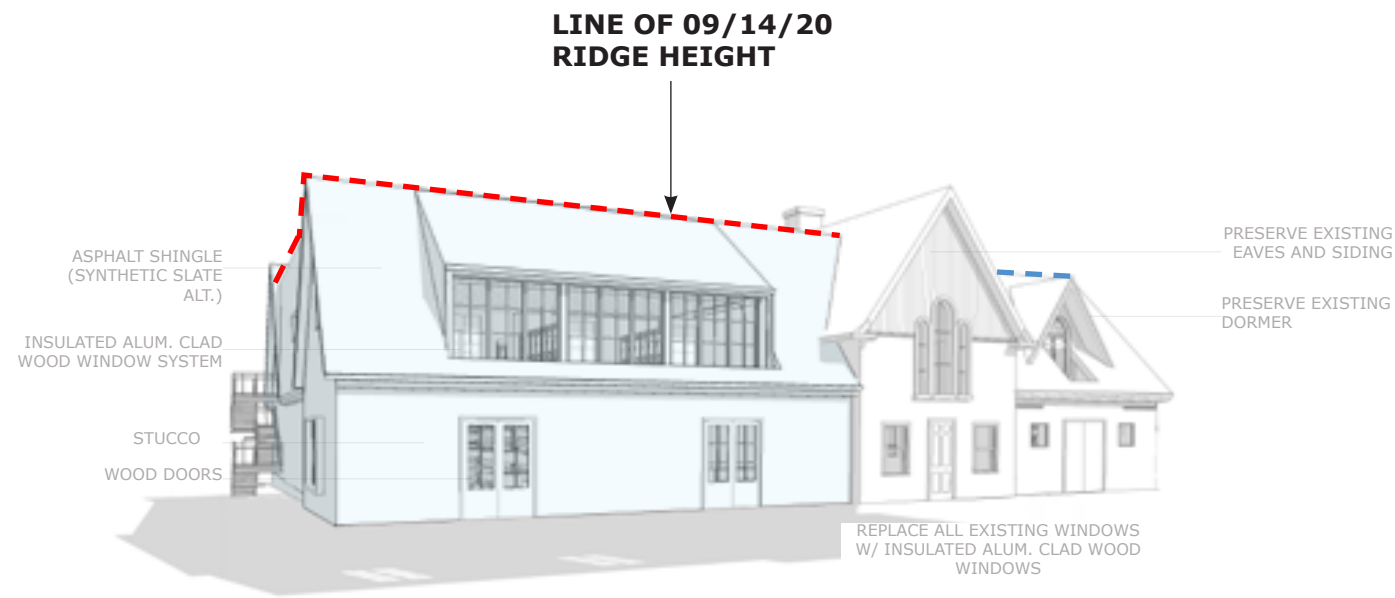
Schuylkill Facade

- Dormers modified
 - Reduced height of dormers and glazing by 24" to match existing West Bay dormer height
 - Modified detailing to reflect existing shed dormer details & materials
 - Doors of main dormer divided into 3 sections
- Modified balconies
 - Reduced projection and scale of balcony elements to be more recessive
 - Modified details to be more contextual
 - Balconies respect cornice and facade below

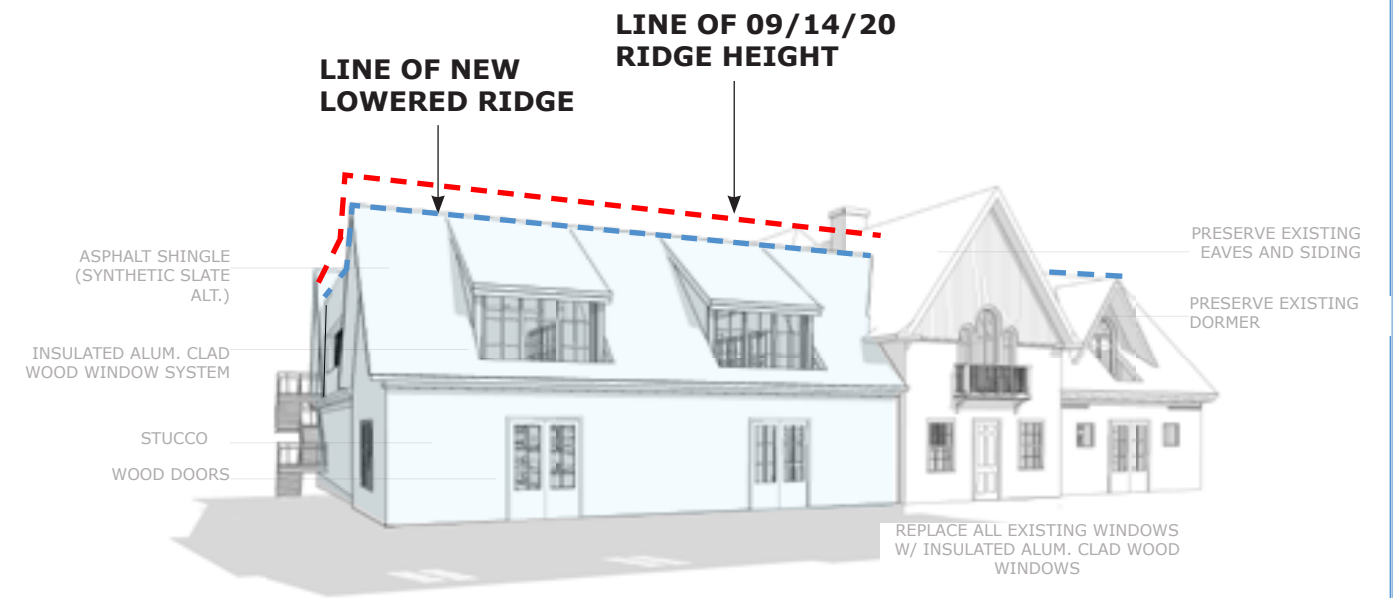
East Facade

- Reduced main gable parapet height by 36" and north gable end height by 30"
- Incorporated fenestration consistent with existing

09/14/2020: North Elevation View



REVISED: North Elevation View



KELLY DRIVE FACADE

Ridge at new addition should be lowered to match existing West Bay ridge

Dormer scale should be reduced and detail should comport with existing shed dormer details

KELLY DRIVE FACADE

Ridge lowered 30" to align with West Bay ridge line

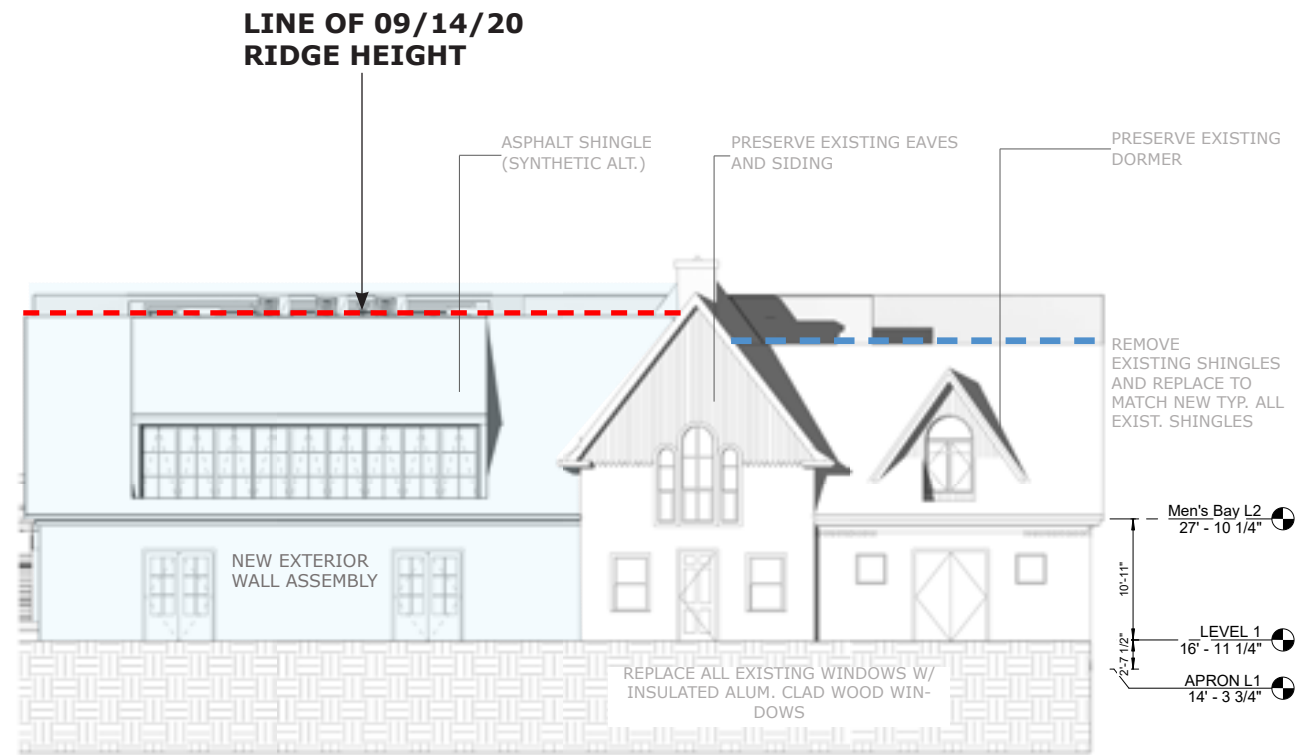
Concealed flat roof (beyond) and roof top equipment lowered 30"

Dormer modified - broke into two separate dormers

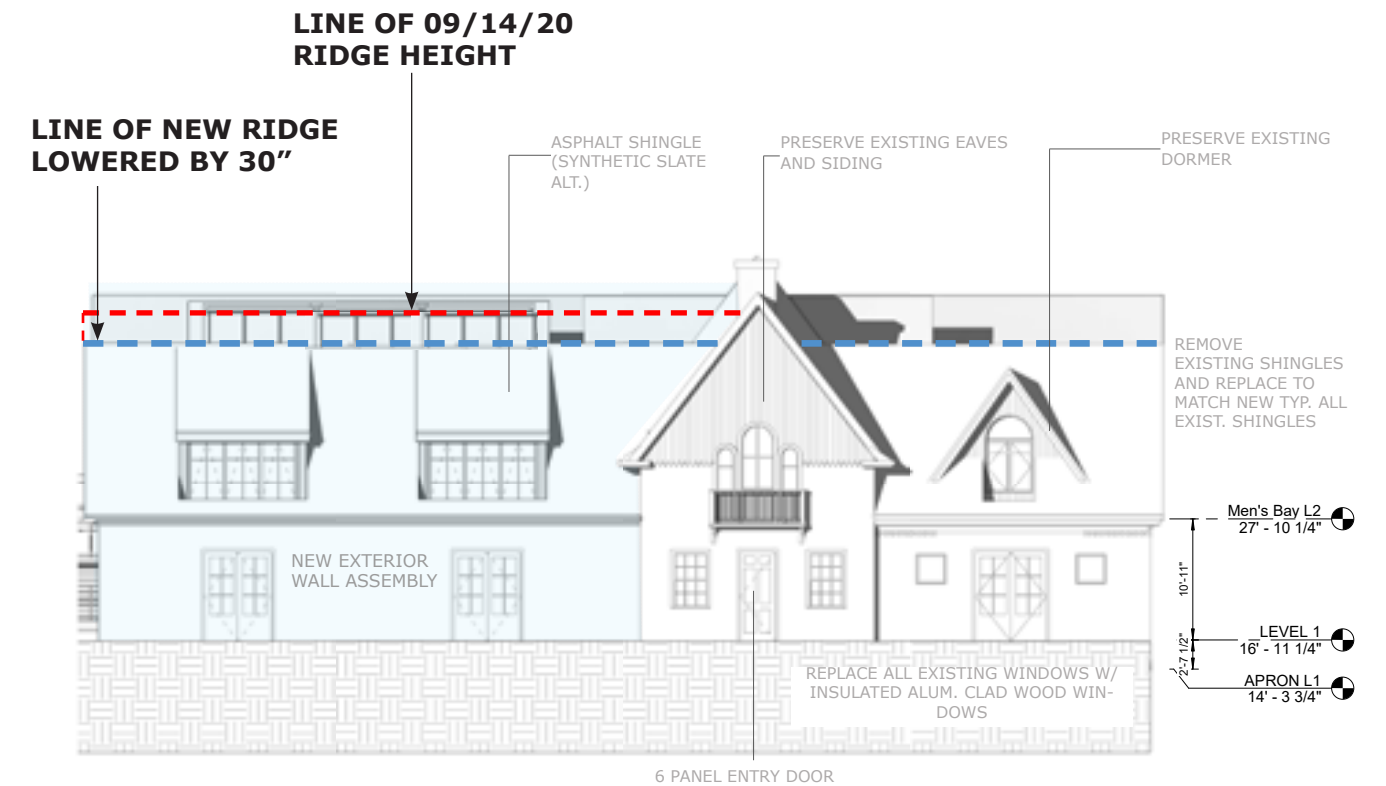
Reduced elevation of eave

Modified detail to reference existing shed dormers

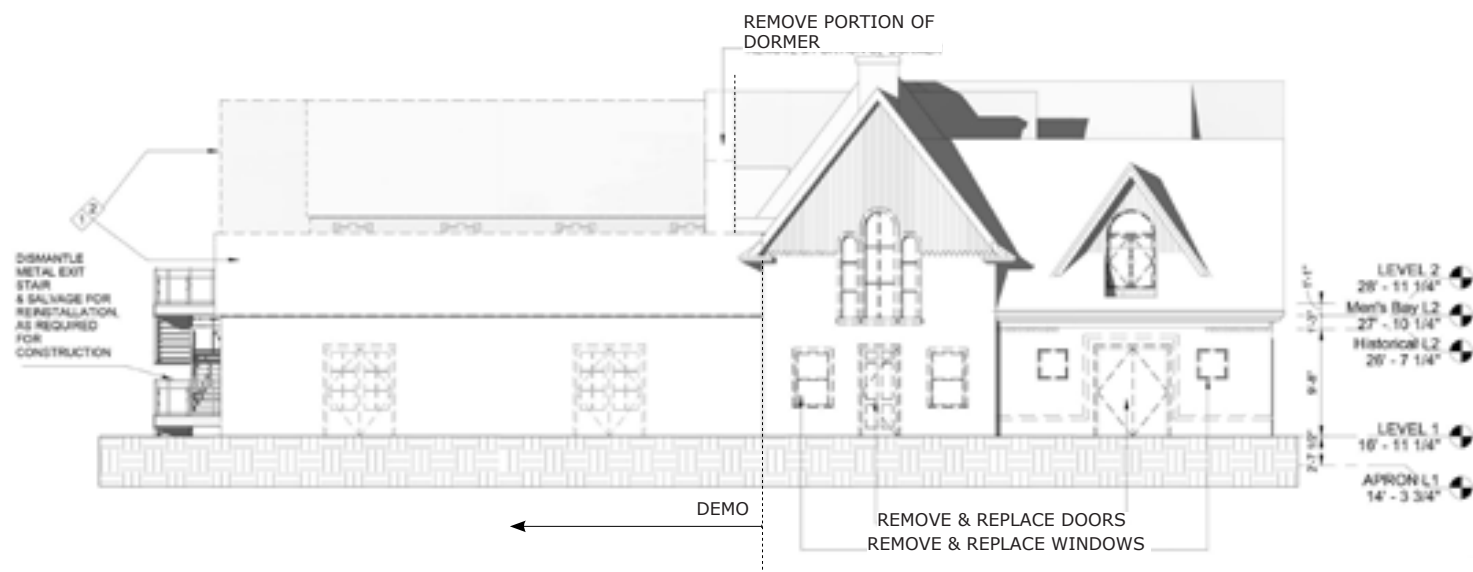
Restored main entry pavilion with historic balcony and original window and door configuration



09/14/2020: North Elevation



REVISED: North Elevation

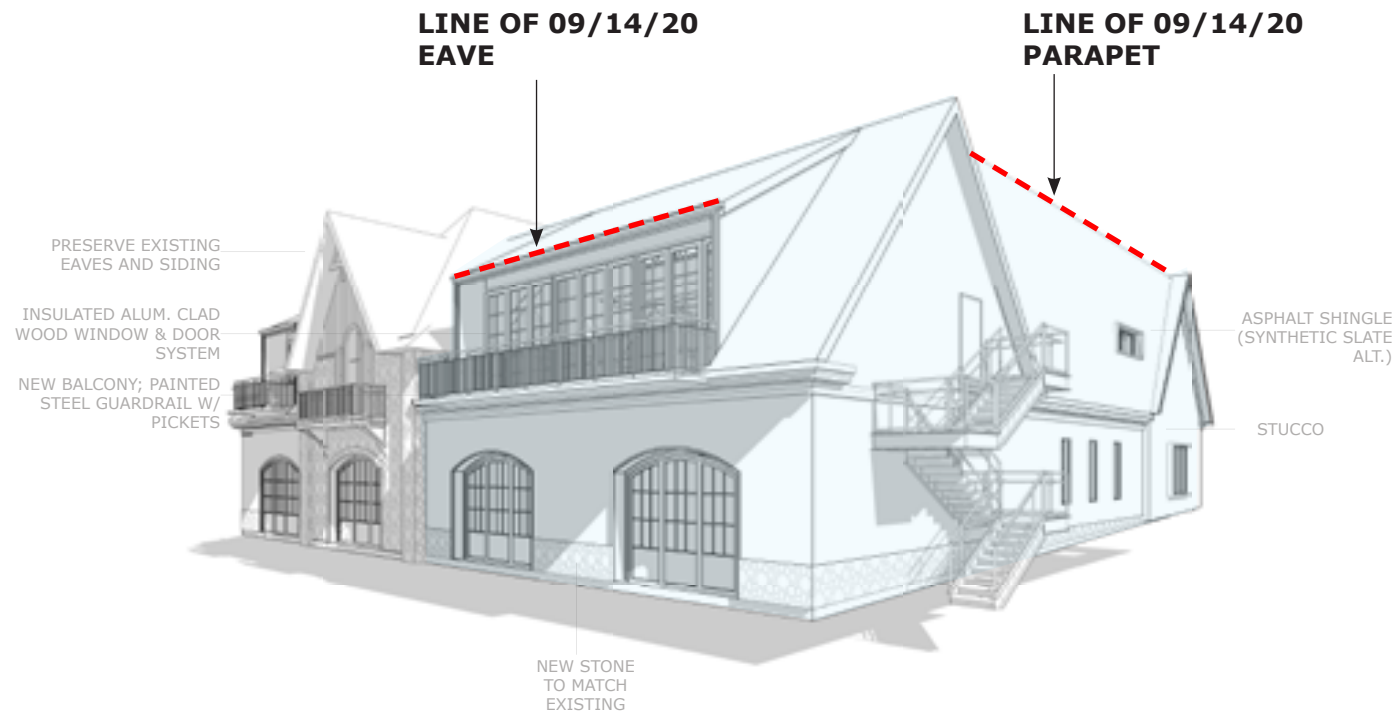


EXISTING: North Elevation



Revised North Elevation Rendering from Kelly Drive

09/14/2020: South Elevation View

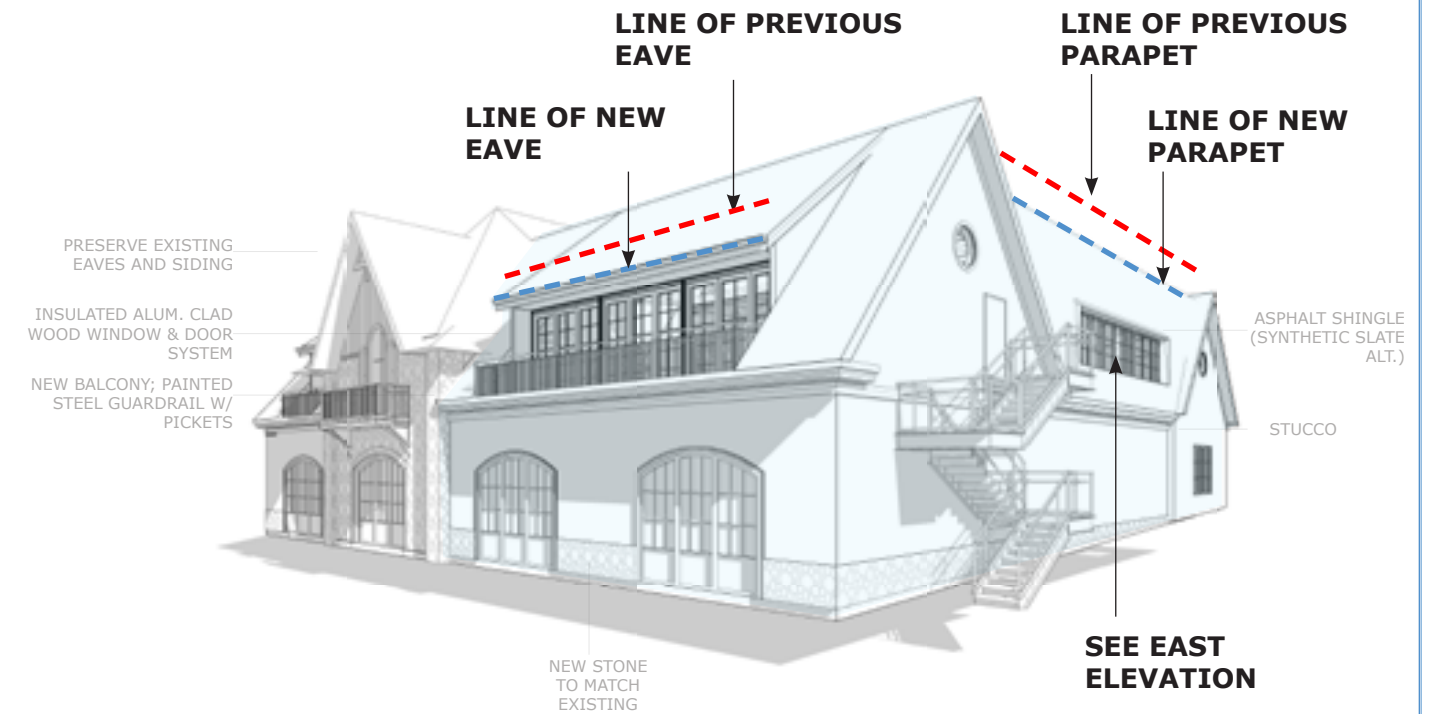


SCHUYLKILL FACADE

Dormers overwhelm the facade - they should be reduced in scale and character should reference existing shed dormer details

New East & West Bay balconies overwhelm facade

REVISED: South Elevation View



SCHUYLKILL FACADE

Dormers modified

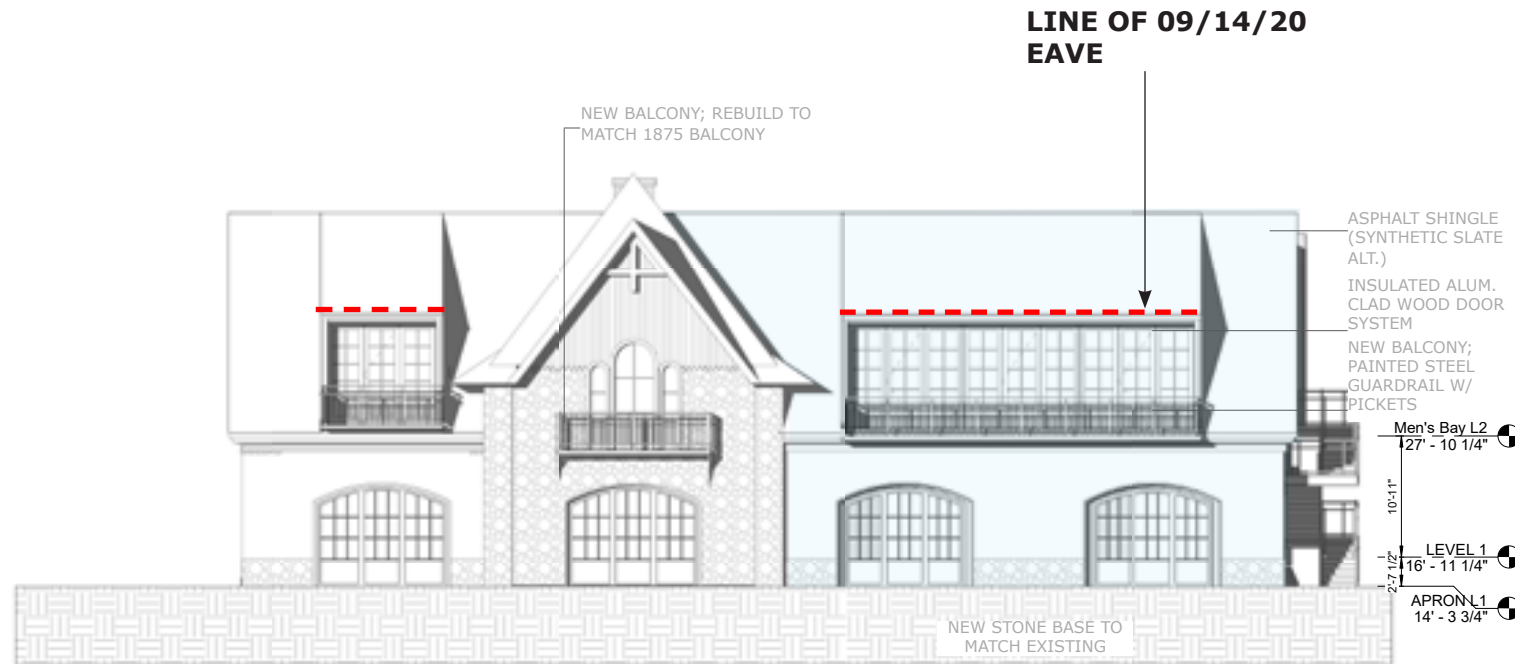
Reduced height of dormers and glazing by 24" to match existing West Bay dormer height

Modified detailing to reflect existing shed dormer details & materials

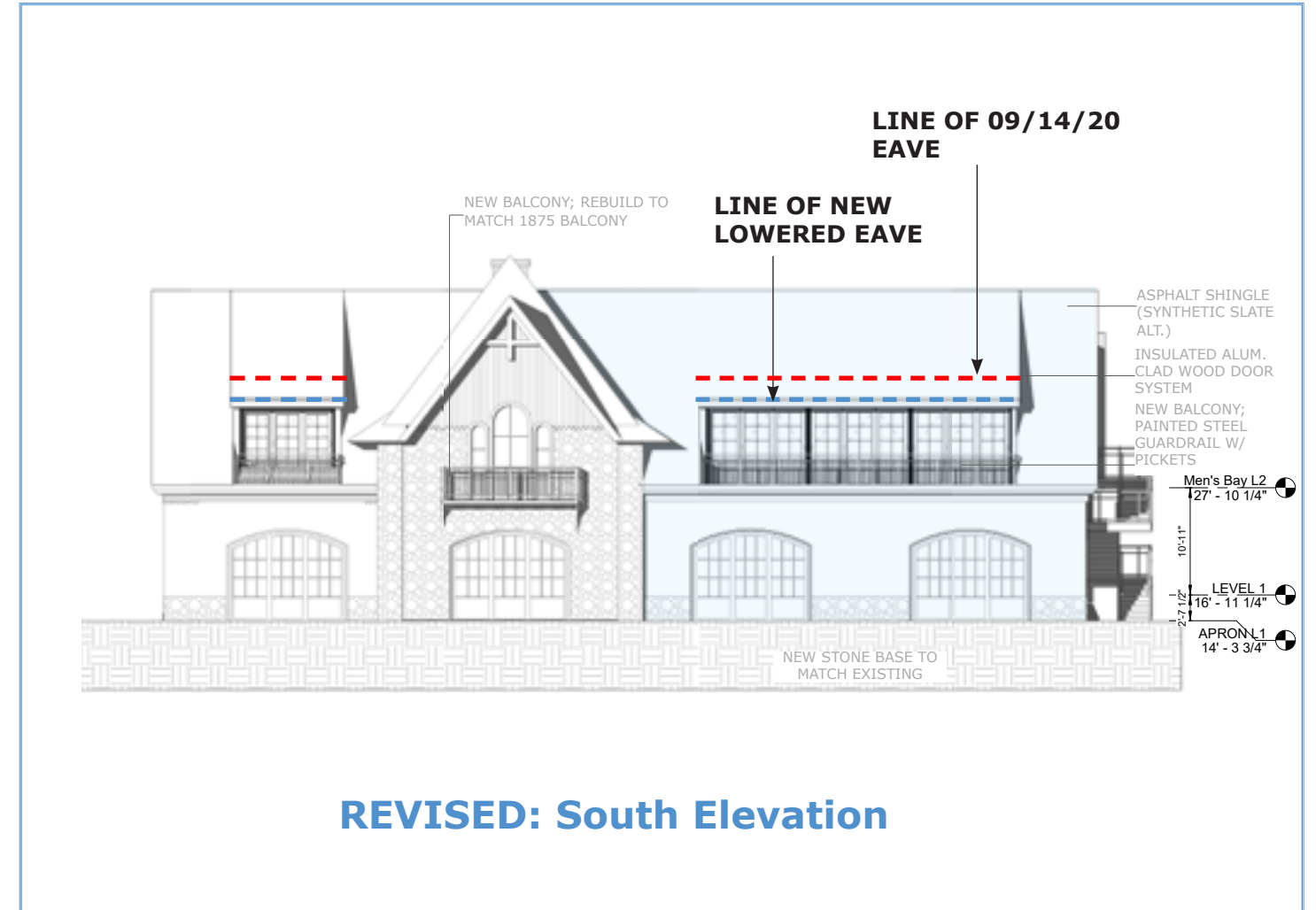
Modified balconies

Reduced projection and scale of balcony elements to be within cornice and wall below

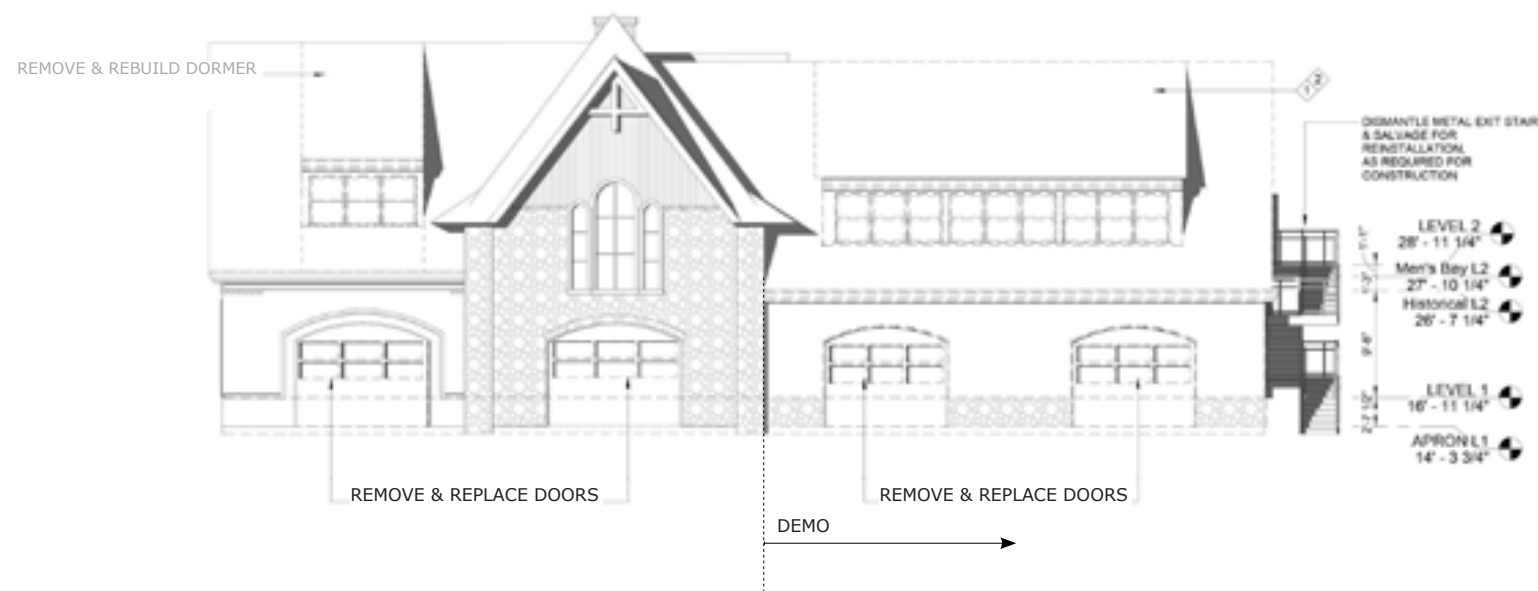
Modified details to be more contextual



09/14/2020 South Elevation



REVISED: South Elevation



EXISTING: South Elevation

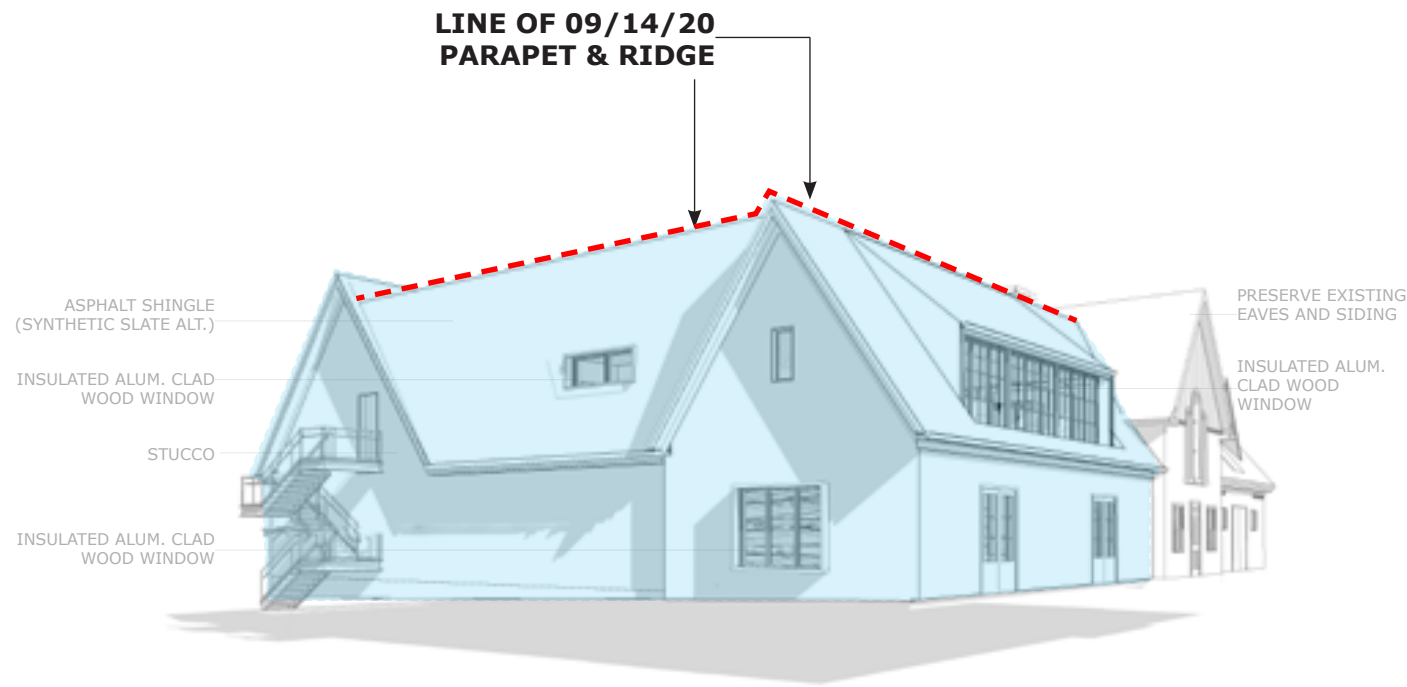


Revised South Elevation Rendering



Revised View from the Schuylkill

09/14/2020 East Elevation View

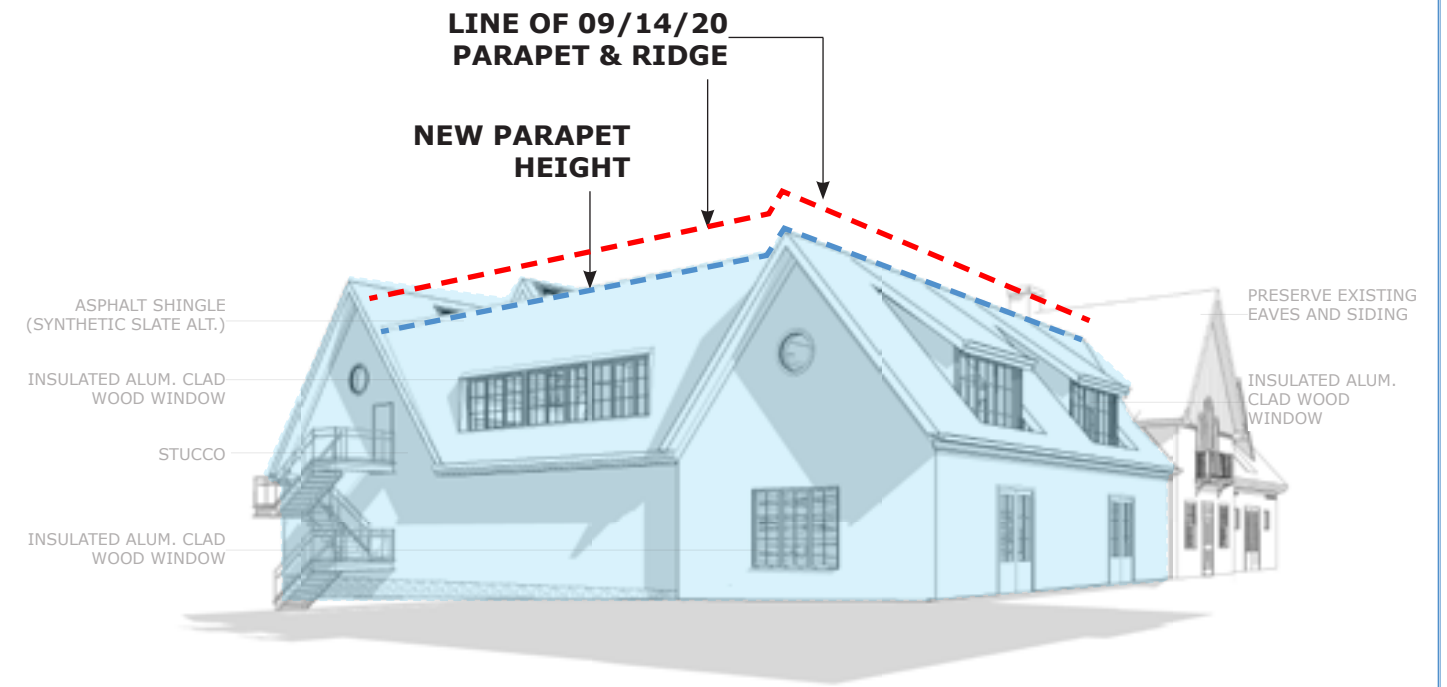


EAST FACADE

Facade scale is too large and undifferentiated (looks like a "billboard")

Facade should reference existing facade - reduce scale, incorporate glazing

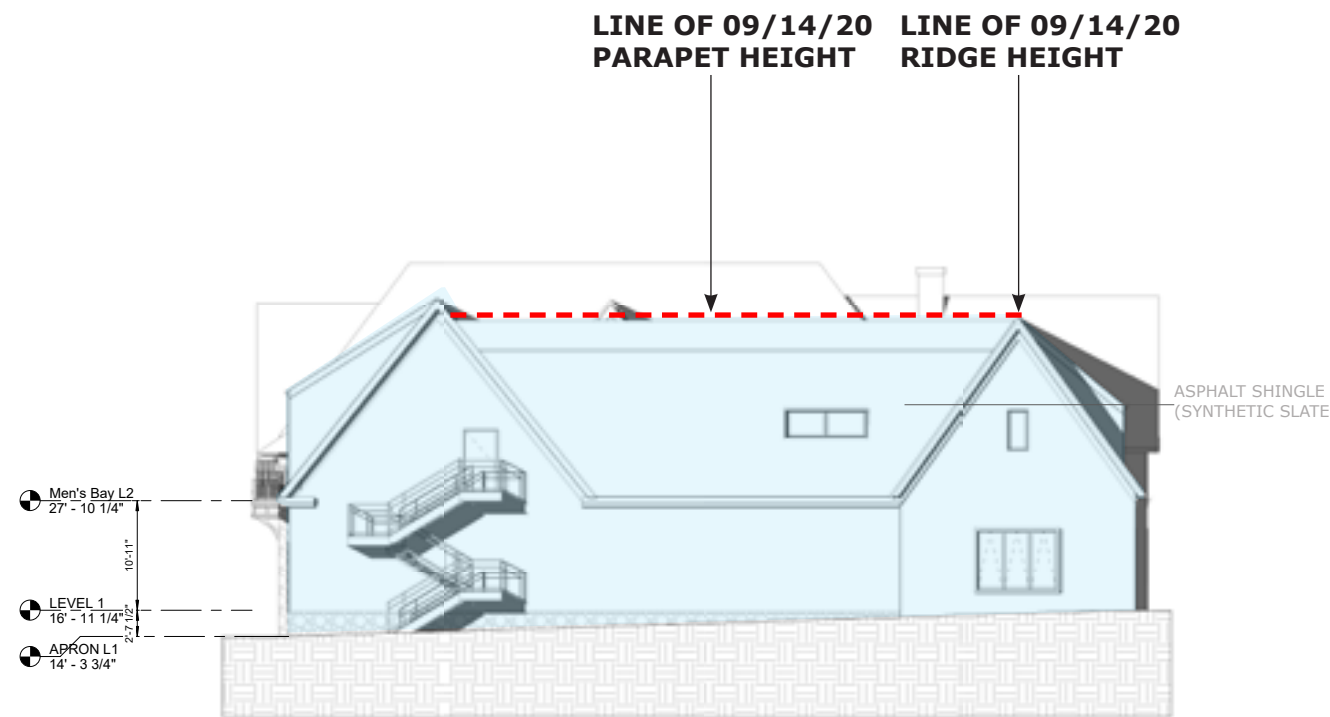
REVISED: East Elevation View



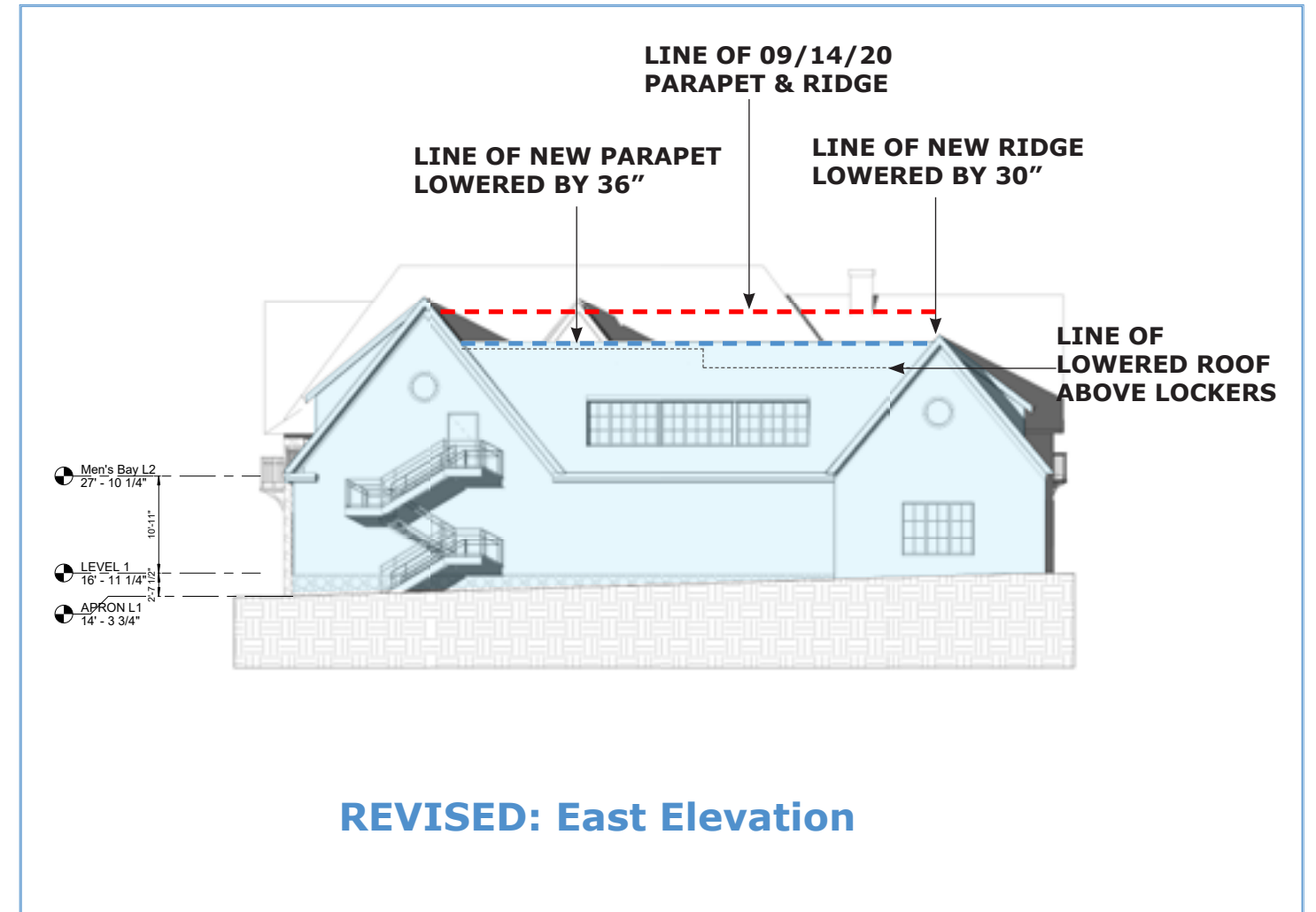
EAST FACADE

Reduced parapet height by 36" and north gable end by 30"

Incorporated fenestration consistent with existing, including rounds and double-hungs



PREVIOUS: East Elevation



REVISED: East Elevation



EXISTING: East Elevation

EXISTING



Current View from the Schuylkill River Trail 07.30.2019

SIGHTLINE STUDIES

The revised design consists of a lowered ridge line of the Kelly Drive facade by 30", and lowered parapet of the East Elevation by 36". In order to reduce equipment visibility, the roof area hosting the equipment was also lowered by 30".

The view to the left shows the current visibility of the East Facade with boat racks adjacent to the facade. The images below, show the previous design with higher ridge line and steeper slopes on the left, and on the right a revised design showing reduced slopes and lowered ridge.

PREVIOUS DESIGN



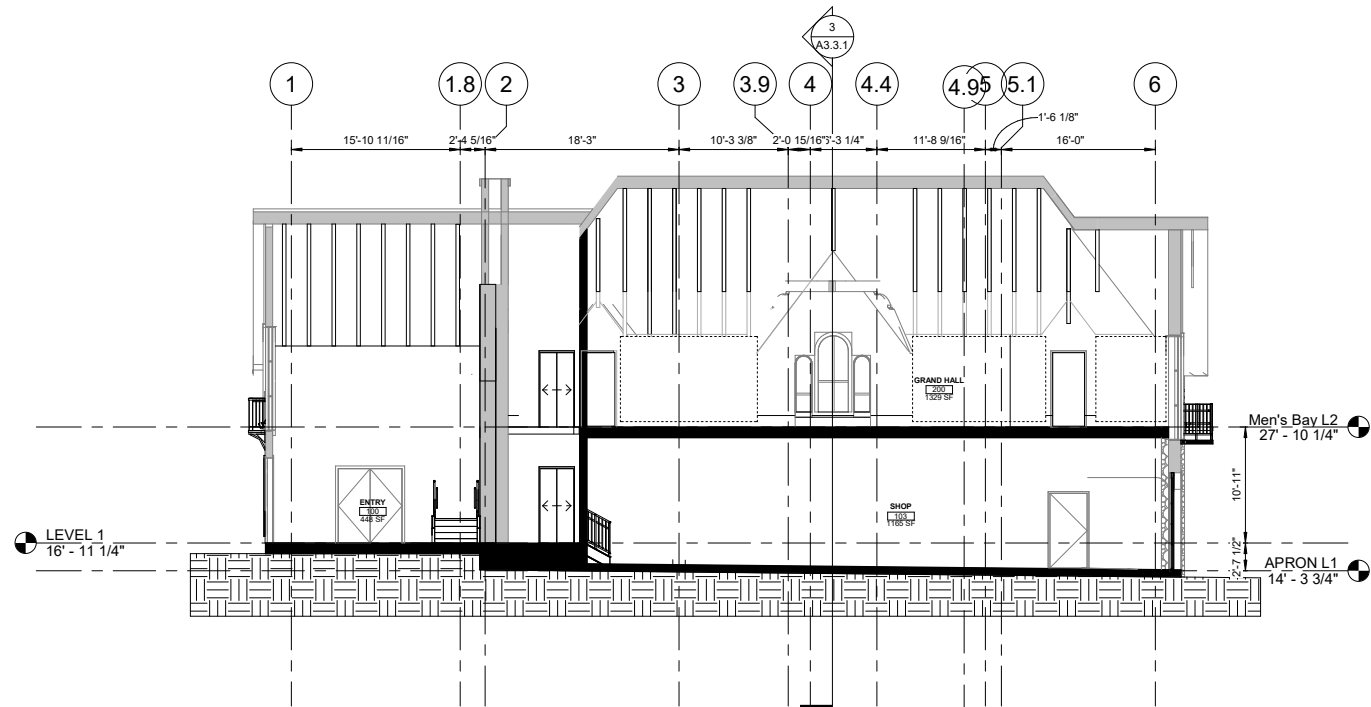
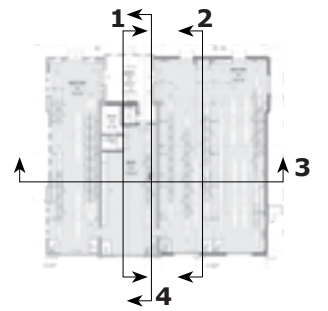
Rendering from the Schuylkill River Trail: **Raised Roof Parapet to Conceal Roof Equipment**

REVISED DESIGN

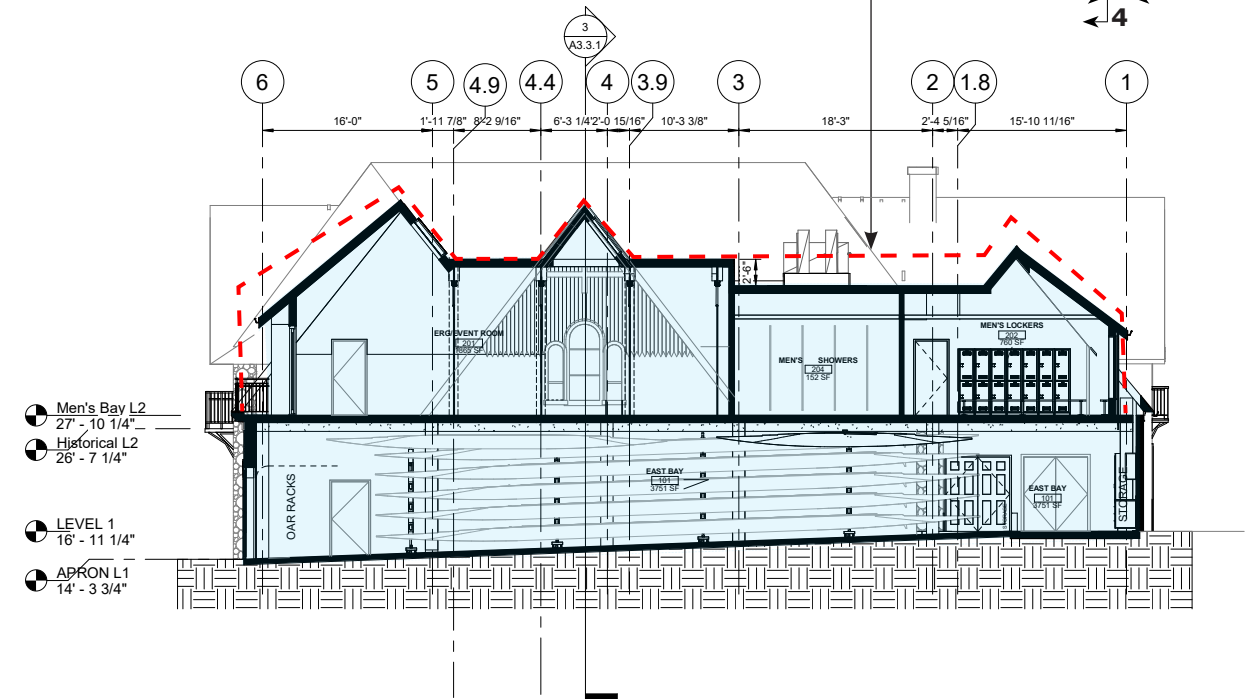


Rendering from the Schuylkill River Trail: **Lowered Ridge & Equipment to Align with West Bay**

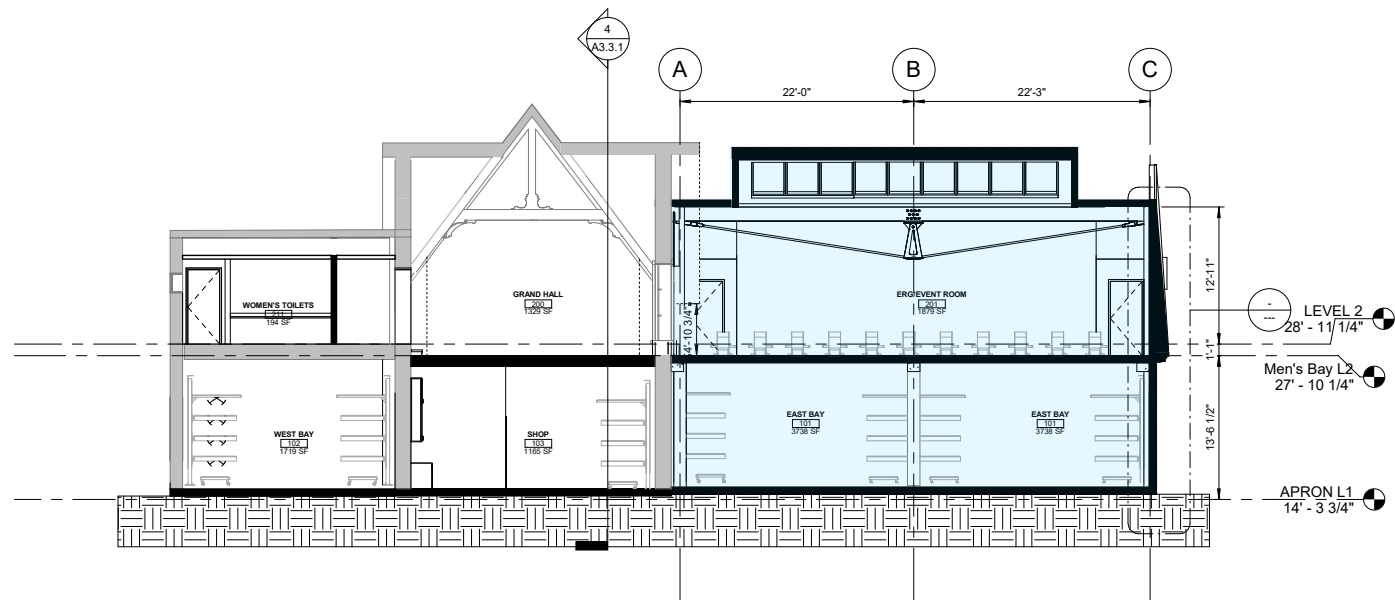
09/14/20
SECTION PROFILE



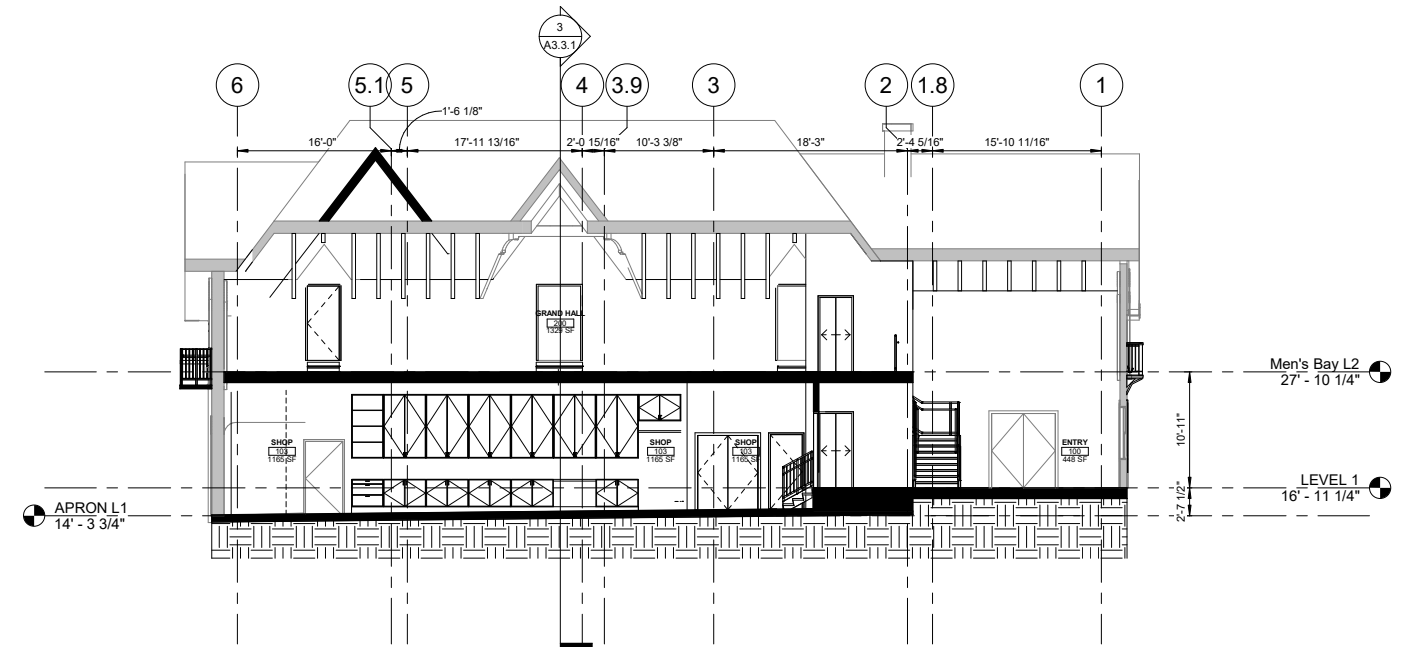
1 N-S SECTION 1
SCALE: 1/8" = 1'-0"



2 N-S SECTION 2
SCALE: 1/8" = 1'-0"



3 W-E SECTION 2
SCALE: 1/8" = 1'-0"



4 S-N SECTION
SCALE: 1/8" = 1'-0"

REVISED 11/05/2020



North Elevation Rendering from Kelly Drive



South Elevation Rendering



View of the East Elevation from Kelly Drive



View from the Schuylkill