

Phase 100 – Phase 1 and Phase 2
Exterior Structural Conditions and Cost Assessment

For

State of Michigan

Department of Technology, Management and Budget/
Department of Natural Resources
Parks and Recreation Division

To

Belle Isle Boathouse Detroit, Michigan

File No. 751/22346.SMD
WTA Project No. 2022039
September 29, 2022



Prepared By:

WTA Architects
100 S. Jefferson Avenue, Suite 601
Saginaw, Michigan 48607



WTA ARCHITECTS

WIGEN TINCKNELL ASSOCIATES

MacMillan Associates Inc
714 E Midland Street
Bay City, MI 48706

MA MACMILLAN ASSOCIATES
CONSULTING ENGINEERS



PHASE 1 & 2 EXTERIOR STRUCTURAL CONDITIONS & COST ASSESSMENT
BELLE ISLE BOATHOUSE
Detroit, Michigan

Table of Contents

1. Introduction	Page 2
2. Summary	Page 2-3

APPENDICES

- ☐ Appendix A – MacMillan Associates’ Phase 1 Structural Report, dated April 28, 2022 and Report Safety Clarification email string.
- ☐ Appendix B – Phase 2 Opinion of Probable Cost to stabilize and mothball.
- ☐ Appendix C – Phase 2 Opinion of Probable Cost to stabilize building with restricted occupancy within the building. First and Second floor plans indicating restricted conditions.
- ☐ Appendix D – Phase 2 updated Opinion of Probable Cost sections from the Belle Isle Boathouse Building and Site Assessment Report, prepared by SmithGroup, dated December, 2019.
- ☐ Appendix E – SmithGroup Building and Site Assessment report, dated December, 2019 (For refence only).



PHASE 1 & 2 EXTERIOR STRUCTURAL CONDITIONS & COST ASSESSMENT
BELLE ISLE BOATHOUSE
Detroit, Michigan

Introduction

The Michigan Department of Technology, Management and Budget, along with the Department of Natural Resources has contracted with WTA Architects, MacMillan Associates, and Mihn Enterprises to provide a Phase 100 Exterior Assessment Study of the Boathouse Building at Belle Isle in Detroit, Michigan. Phase 100 services include a Phase 1 and Phase 2 portion of the report. Phase 1 includes assessment of the current exterior structural conditions for restricted access. Phase 2 to include the assessment and opinion of probable cost of (3) options. First option includes restoration to stabilize the structure and mothball; second option to stabilize the building and provide restricted occupancy within the building; and third option to review and update the previous SmithGroup report dated December, 2019, for complete restoration of the building.

Summary

Earlier in 2022, a portion of the west exterior concrete Terrace slab had collapsed into Room 115 (See Appendix “A”, Figure 1). This failure was the catalyst for this Assessment. Other than the area of collapse, the Owner questioned the remaining exterior conditions, and if restricted access was required elsewhere. Because time was critical, it had been determined by all parties that this Assessment needed to be separated into phases. Phase 1 would immediately assess the current exterior building conditions, and determine areas of potential restriction. Phase 2 would further address the potential scope of required work and the associated costs for (3) options, as stated above in the Introduction.

Phase 1 - MacMillan Associates, Consulting Engineers developed a Structural Report (Appendix “A”). This report contains a narrative and photos of the observations and conclusions. It had been determined, that the entire building cannot currently be considered safe for occupancy based on the findings. Furthermore, access around the building should also be restricted to a minimum of 75’ from the building, as addressed in the provided string of emails.

Phase 2 - WTA Architects, MacMillan Associates, and Mihn Enterprise worked in conjunction to establish a scope of work and associated costs for (3) options, as stated above in the Introduction. The first option consists of stabilizing the building and mothball (Appendix “B”). Second option addressed stabilizing the building (only) and allowing restricted occupancy within the building (Appendix “C”). Third option consist of updating the original Cost Model Estimate contained within the 2019 SmithGroup report for the renovations/restorations to the building enclosure (Appendix “D” and Appendix “E”).

In order to mothball the building (Appendix “B”), the structure will still need to be stabilized. If not, the building will continue to deteriorate at a rapid rate to the degree where additional structural failures will occur. This could eventually get to a severity where the building would be a complete lost. As indicated in Appendix “B”, the total Opinion of Probable Cost for construction stabilization and mothballing is **\$3,596,901.00**. This amount does not include additional costs such as professional fees, reviews, contingency, etc.

Along with stabilization requirements to the mothball option, the Appendix “C” option addresses restricted occupancy. Areas that would remain restricted after the stabilization work are indicated by Figure 7 and Figure 8. At these areas there are signs of slight displacement of the exterior wall from a lack of proper foundation support. This condition should be continually monitored for any further movement. The total

PHASE 1 & 2 EXTERIOR STRUCTURAL CONDITIONS & COST ASSESSMENT
BELLE ISLE BOATHOUSE
Detroit, Michigan

Opinion of Probable Cost for construction is **\$3,821,567.00**. This amount does not include additional costs such as professional fees, reviews, contingency, etc.

Adjustments to the original SmithGroup Cost Model Estimate (Appendix “D”) utilizes a similar format to the SmithGroup report. The updated information in Appendix “D” has been indicated by red italic. Adjustments take place within section B10 Superstructure, sub-sections B1010 Floor/Terrace Construction and B1020 Roof Construction. The revised sub-total cost for B10 Superstructure is **\$1,856,616.00**. This is **\$974,176.00** more than the original 2019 amount of **\$882,440.00**. The reason for this increase is because of the additional damage that has occurred since what was originally indicated in the 2019 report.

Also evaluated was the original 2019 escalation rate of 5%. It has been determined that this rate has actually rose to 10% in lieu of the 5%. With the increase of the B10 Superstructure cost, along with increases associated with the revised 10% escalation rate, the current total project cost for the Building Enclosure is now **\$16,181,747.00**, a 65% increase from the 2019 amount.

Appendix A

APPENDIX "A"

BELLE ISLE BOAT HOUSE

Phase I Structural Report

April 28, 2022

INDEX

Structural Report	Pages 3 – 6
Building Plans	Pages 7 – 10
Building Elevations	Pages 11 – 12
Photographs	Pages 13 – 28

INTRODUCTION

A portion of the west terrace deck slab at the Belle Isle Boat House has recently collapsed. The building is currently closed to all users as a result of this collapse. MacMillan Associates was requested to perform a visual examination of the building structure to determine if some of the building could be considered safe for occupancy. The review included walk-thru visual observations of accessible portions of the building structure. No destructive examination, testing, or calculations were performed as a part of this assessment. Historic photographs, a limited number of drawings, and previous assessment reports were provided to MacMillan Associates by the Michigan Department of Natural Resources, the current leasee of the building. The building is sub-leased to the Friends of Detroit Rowing.

BUILDING CONSTRUCTION

The three story building structure consists of concrete or wood roof structure, and concrete floors with concrete encased steel beams, all supported on multi-wythe brick masonry and steel columns. The middle portion of the building includes a flat concrete roof with steel beams. The remaining main building roof areas are constructed of wood joist, wood beams, wood trusses and steel beams. The terrace decks and roofs are constructed of concrete. The building is reportedly founded on piles that were driven into the bed of the Detroit River. Masonry pile caps are visible through hatches in the first floor.

The construction of the floor and roof slabs appears to be 5" thick reinforced concrete with an unreinforced 1" thick concrete topping. The slab reinforcing consists of rebar spanning the short direction of the slabs at a spacing that varies from 12" to 19" on centers. These are smooth rebar with hooked ends. There is also a layer of mesh reinforcing installed at or near the bottom of the slabs. The rebar was likely intended as the main reinforcing, with the mesh installed to allow the slab to span between the rebar. The aggregate for the slab appears to be a light weight cinder material. The topping appears to have a fine sand aggregate.

The terrace slabs at the perimeter of the main building appear to include a black liquid applied membrane between the typical slab topping and another tapered topping with a clay tile finish. The tapered topping and tile slopes to exterior wall scuppers. Many of the terrace slabs were exposed weather in the past. Some have been enclosed since the time of construction. The terrace decks that remain outside and roofs have been covered with EPDM membrane in order to provide protection from the weather and minimize leaking of water through the structure.

See the attached Figures 1 through 4 for floor and roof plans. See Figures 5 and 6 for building elevations.

OBSERVATIONS

The flat concrete roof slab over Lounge 319 exhibits rusting rebar and mesh along with spalled concrete. It appears that newer beams were added sometime after original construction in order to reinforce this slab. The rusting reinforcing mesh was not repaired. Long term leaking of the roofing in this area is likely the cause for the damage. See Photo No. 1

Similar roof slab conditions likely exist in an area above Ballroom 304. The wood finished floor exhibits black staining. The underside of this floor was not visible for observation, but similar deterioration of the 3rd floor slab is suspected.

The flat concrete roof slab over the Bar 318, exhibits rusting rebar and mesh, along with spalled concrete. This is visible through a wall hatch at the top of the stairs to the attic. See Photo No. 2.

There is rotted wood noted at the bottom chord of a truss located in the attic over Conference Room 309. Steel angles have apparently been added in order to reinforce the rotted member. The ceiling in the Conference room appears flat, with no indications of continuing excessive deflection. See Photo No. 3.

The concrete railing at the flat concrete roof over Room 319 is severely deteriorated. There are also several large holes in the roofing in this area. See Photo No. 4.

A portion of the west terrace slab collapsed recently. The slab appears to have failed at the exterior end and rotated against the main building wall. The slab remains hung there by the hooked reinforcing bars. The terrace slab just to the north of this collapse was reportedly replaced in the 1950s. See Photo No. 9. The exterior wall at the west terraces was removed in 2015 due to excessive deterioration and leaning of the arched brick wall. See Photo No. 5 – 8.

There is rusted rebar and spalled concrete at the terrace roof just north of the area of the recent deck collapse. See Photo No. 10.

There is extensive rusting of the underside of the terrace slabs along with spalled concrete at the south, west, and north elevations of the building. The extent of deterioration appears to be most extensive at the west elevation above Boat Storage Room 109, but does exist at the underside of most terrace areas. See Photo No. 11 – 12.

The exterior wall of the north terrace, east end is severely deteriorated and leaning outward. The stucco cover over the brick is loose. Much of the brick support columns are severely deteriorated, cracked and spalled. The parapet wall leans outward above the deck level. If this wall were to collapse, it would likely cause severe damage and possibly collapse of the adjacent main building wall. See Photo No. 13. The deck topping slab is severely cracked. The aluminum window and roof canopy framing are in very poor condition. See Photo No. 14. There is a large unprotected hole in the first floor below this terrace. See Photo No. 15.

There is a horizontal crack at the terrace roof level at the north elevation, west end. This may be an indication of problems with the parapet wall in this area. See Photo No. 16.

There are several inches of ponded water at the roofs of the terraces at the north elevation. These could be indications of excessive deflection and distress of these roofs. See Photo No. 17.

The ceilings in many areas of the building, but primarily the terraces, exhibit stained finishes. The building users stated that roofing leaks currently exist.

There are a number areas of the building where the exterior stucco and brick are severely deteriorated. Several brick arches have vertical cracks at the top of the arch opening. The end of several steel lintels bear on masonry where much of the brick has spalled off leaving a reduced support area. Many of these steel lintels are severely rusted. See Photo No. 18 – 22.

In areas where stucco does not exist over the exterior brick, there is a paint finish. The paint coating is missing or in poor condition. This allows accelerated deterioration of the brick masonry.

The concrete cover on some of the steel beams was found to be spalled off, or loose. This is evident at the few locations where the beams are exposed. Many beams are not accessible for observation.

The north wall of the Women's Locker Rooms 111, 112, and 113 shows signs of foundation settlement. These rooms were reportedly constructed after the time of the building construction. The exterior walls in this area are likely not founded on piles as the majority of the building is. See Photo No. 23.

One stone stair riser at the south main entrance has a large spall near mid span. See Photo No. 24. Another riser has a large crack. These risers appear to be spanning a relatively long distance.

The steel stairs at the north elevation of the building are deteriorated, rusted and in a state of partial collapse. The stairs do not meet the Building Code for railings. These stairs should not be used for egress of the building. See Photo No. 25 – 27.

The interior slabs and ceilings within the tower at the north elevation show signs of water damage.

There are two bridges that serve the building site. The west bridge has reportedly been repaired but may be in need of additional repairs. The east bridge appears to be a relatively shallow structure for the span. The bridges should be evaluated for their load capacity prior to using for any construction equipment. See Photo No. 28 – 29.

CONCLUSIONS

The concrete roofs, floors and terraces are found to have areas that have deteriorated to a point of being unsafe. The exterior wall at the collapsed portion of terrace slab is unbraced due to the loss of the slab. This wall must be braced or the slab replaced. The north terrace wall, east end, is leaning outward and may cause damage or partial collapse of the main building when it fails. There is a large unprotected hole in the first floor below this terrace. The north elevation stairs are deteriorated and unsafe to walk on. Several of the stairs do not have proper railings. The south entry stairs have damage to the risers which must be repaired. There is loose stucco and brick at the exterior and loose concrete at the interior of the building that could fall and cause injury. The concrete railing at the flat roof is deteriorated, and missing members and is considered unsafe. There is missing brick at several steel lintels which compromises the safety of the support. With the above, the building cannot currently be considered safe for occupancy.

There are additional issues that should be addressed in order to maintain the structure and protect it from further damage. These include roofing repairs and replacement of the stucco and paint finishes. A building envelope study would identify these issues. There are several issues identified which require further investigation, such as the apparent settlement of the Women's locker room exterior walls and ponded water at some of the roofs.

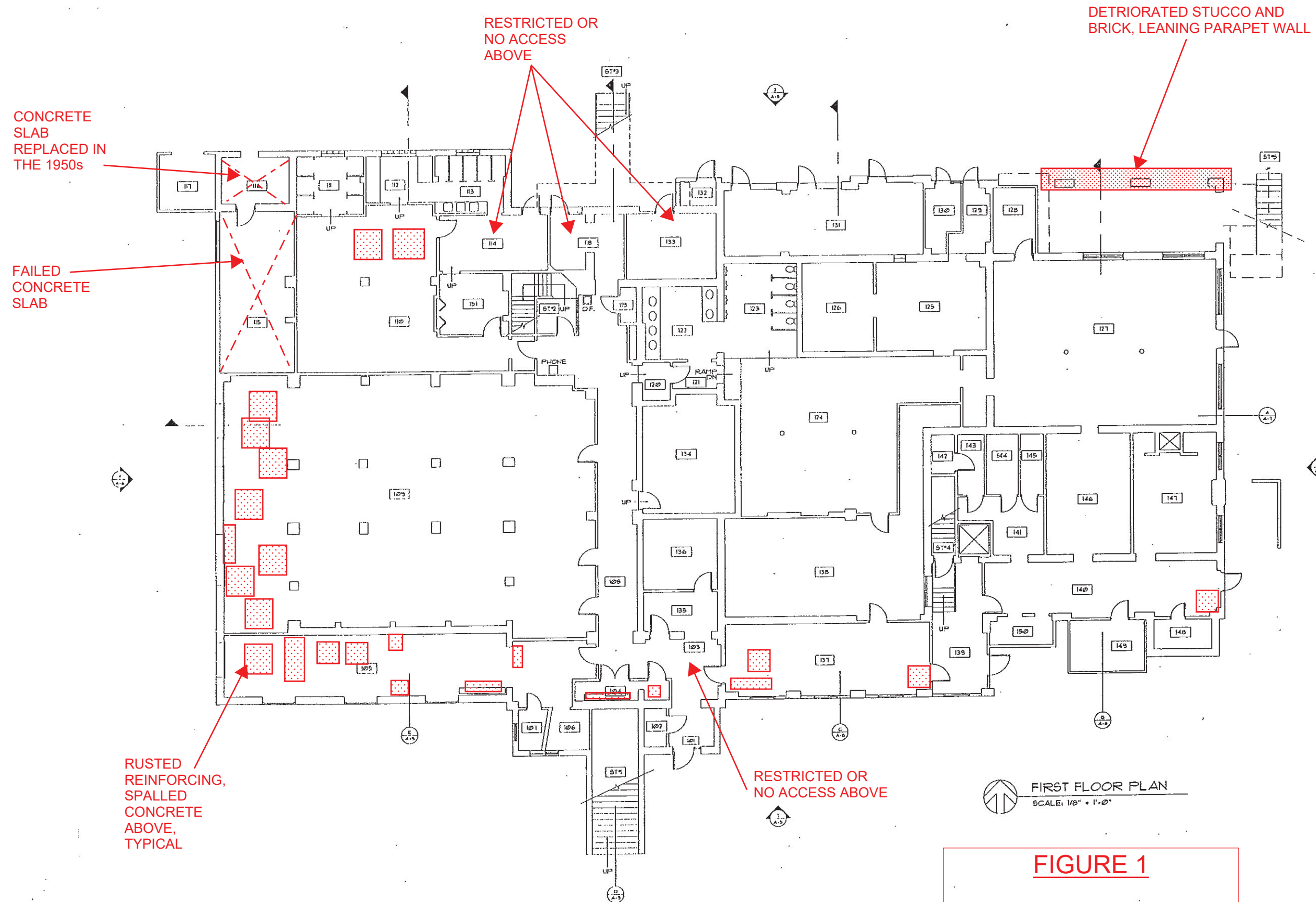
The building should be tested for hazardous materials before any repairs take place.

This evaluation is based on observations of accessible portion of the building. We cannot attest to the safety of areas which remain inaccessible.

MacMillan Associates, Inc.



Douglas F. Reckinger P.E., LEED AP



ROOM LEGEND	AREA (SF)
101 - VESTIBULE	56
102 - CLOSET	25
103 - CORRIDOR	132
104 - ELEC. CLOSET	57
105 - BOAT WORK SHOP	636
106 - STORAGE	50
107 - STORAGE	33
108 - CORRIDOR	522
109 - BOAT STORAGE	2802
110 - WOMEN'S LOCKER RM.	909
111 - WOMEN'S SHOWER	15
112 - WOMEN'S LAVATORY	52
113 - WOMEN'S TOILET	13
114 - FIRST AID	105
115 - OUTSIDE STORAGE	359
116 - OUTSIDE STORAGE	55
117 - PUMP ROOM	17
118 - VESTIBULE	135
119 - CLOSET	18
120 - VESTIBULE	35
121 - VESTIBULE	38
122 - MEN'S LAVATORY	161
123 - MEN'S TOILET	240
124 - MEN'S LOCKER RM.	861
125 - DRYING AREA	280
126 - MEN'S SHOWER	191
127 - EXERCISE ROOM	1103
128 - CONCESSION STAND	64
129 - CORRIDOR	65
130 - FIRST AID / LIFE GUARD	67
131 - POOL EQUIPMENT	417
132 - POOL STORAGE	28
133 - UNKNOWN	114
134 - BOILER ROOM	311
135 - UNKNOWN	93
136 - OFFICE	155
137 - CONFERENCE ROOM	437
138 - WORK OUT ROOM	106
139 - DELIVERY	172
140 - CORRIDOR	368
141 - PANTRY	14
142 - ELEC. CLOSET	21
143 - MEAT STORAGE	48
144 - DAIRY STORAGE	58
145 - VEGETABLE STORAGE	42
146 - KITCHEN	305
147 - UNKNOWN	213
148 - COOLER	51
149 - COOLER	15
150 - STORAGE	53
151 - POWDER ROOM	13
TOTAL GROSS SQUARE FOOTAGE	15,584

FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIGURE 1
Drawing provide by:
Friends of Detroit Rowing

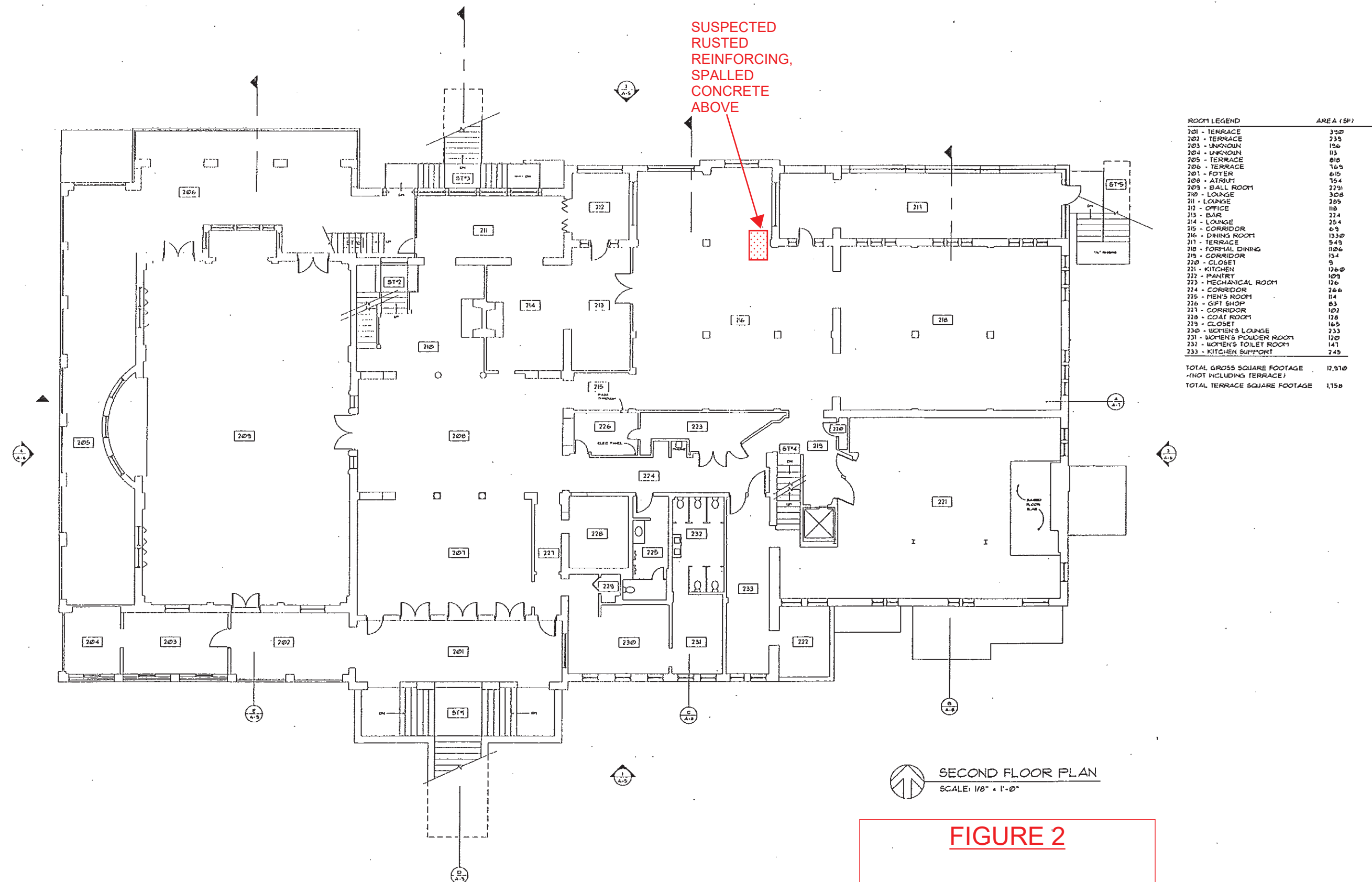
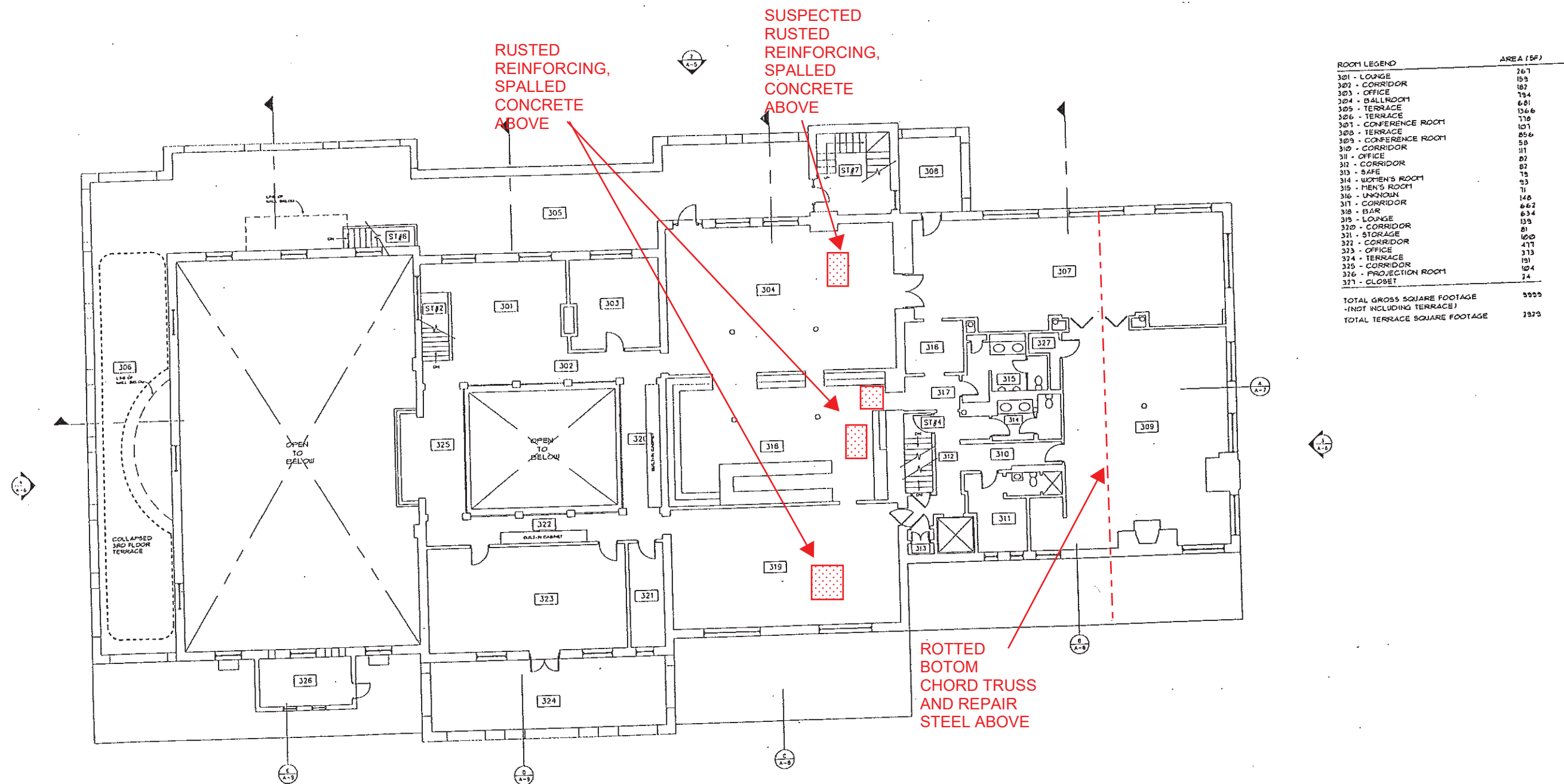


FIGURE 2

Drawing provide by:
Friends of Detroit Rowing

Sheet Number:
EXISTING
SECOND FLOOR PLAN



ROOM LEGEND	AREA (SF)
301 - LOUNGE	267
302 - CORRIDOR	153
303 - OFFICE	183
304 - BALLROOM	794
305 - TERRACE	601
306 - TERRACE	1366
307 - CONFERENCE ROOM	719
308 - TERRACE	101
309 - CONFERENCE ROOM	856
310 - CORRIDOR	58
311 - OFFICE	111
312 - CORRIDOR	82
313 - SAFE	82
314 - WOMEN'S ROOM	73
315 - MEN'S ROOM	93
316 - UNKNOWN	71
317 - CORRIDOR	148
318 - BAR	662
319 - LOUNGE	634
320 - CORRIDOR	133
321 - STORAGE	81
322 - CORRIDOR	102
323 - OFFICE	477
324 - TERRACE	373
325 - CORRIDOR	191
326 - PROJECTION ROOM	184
327 - CLOSET	24
TOTAL GROSS SQUARE FOOTAGE (NOT INCLUDING TERRACE)	5929
TOTAL TERRACE SQUARE FOOTAGE	1979

THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIGURE 3
Drawing provide by:
Friends of Detroit Rowing

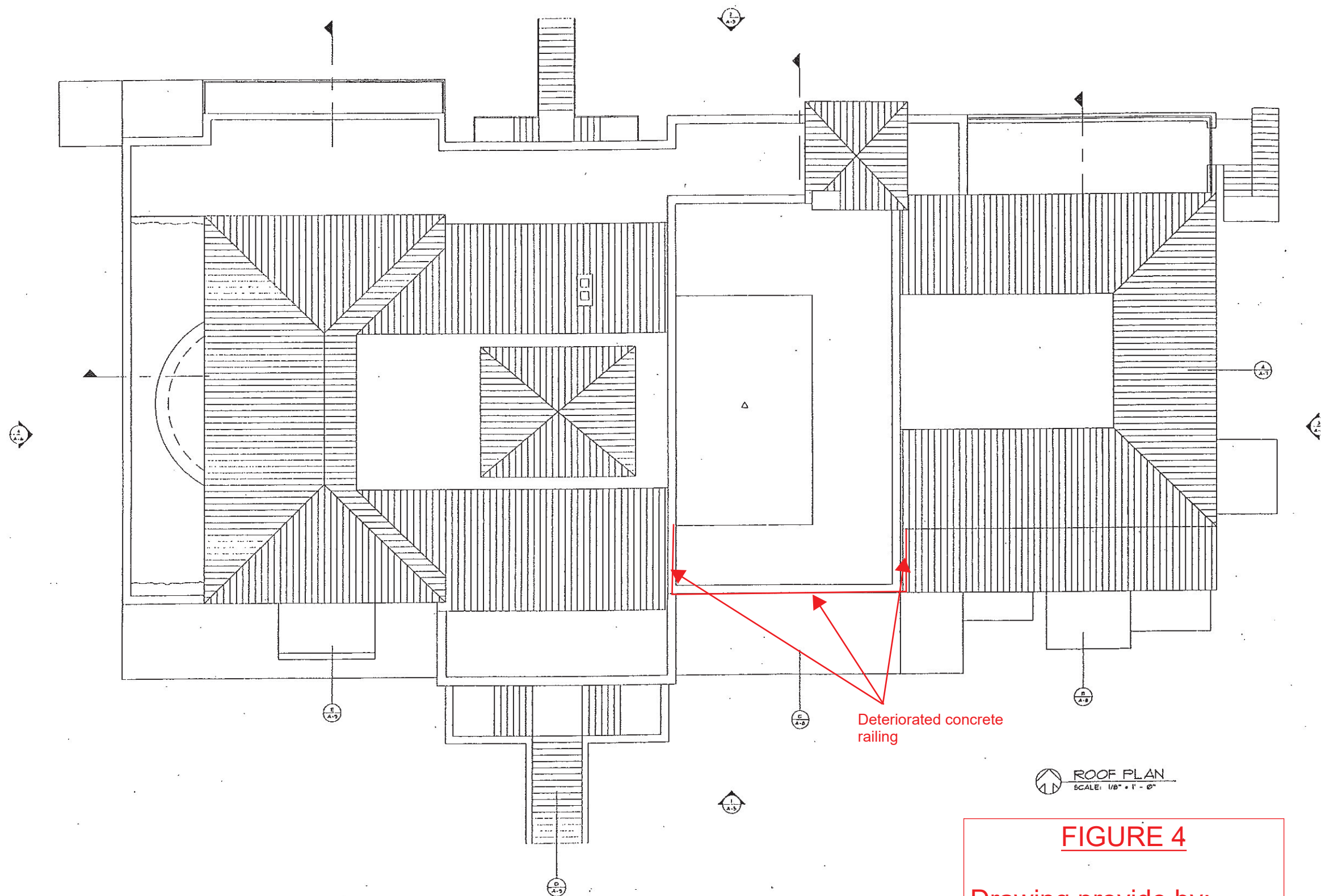


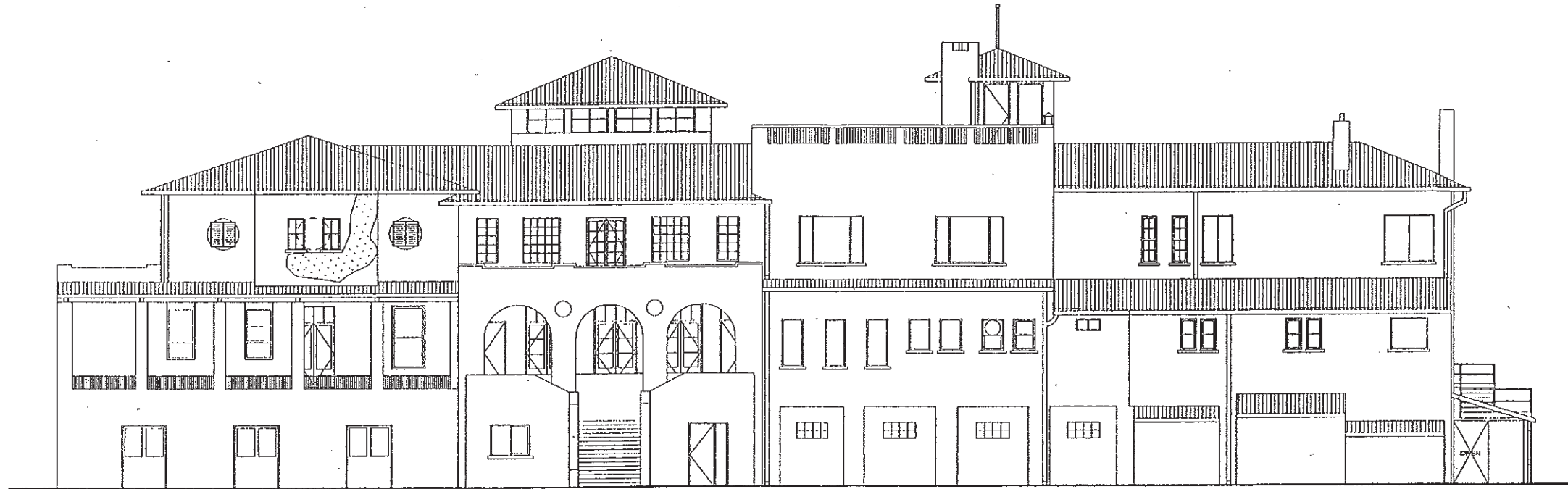
FIGURE 4

Drawing provide by:
Friends of Detroit Rowing

Sheet Description
EXISTING
ROOF PLAN

Sheet Number:

A4



2 SOUTH ELEVATION
A1A2A3 SCALE: 1/8" = 1'-0"



1 NORTH ELEVATION
A1A2A3 SCALE: 1/8" = 1'-0"

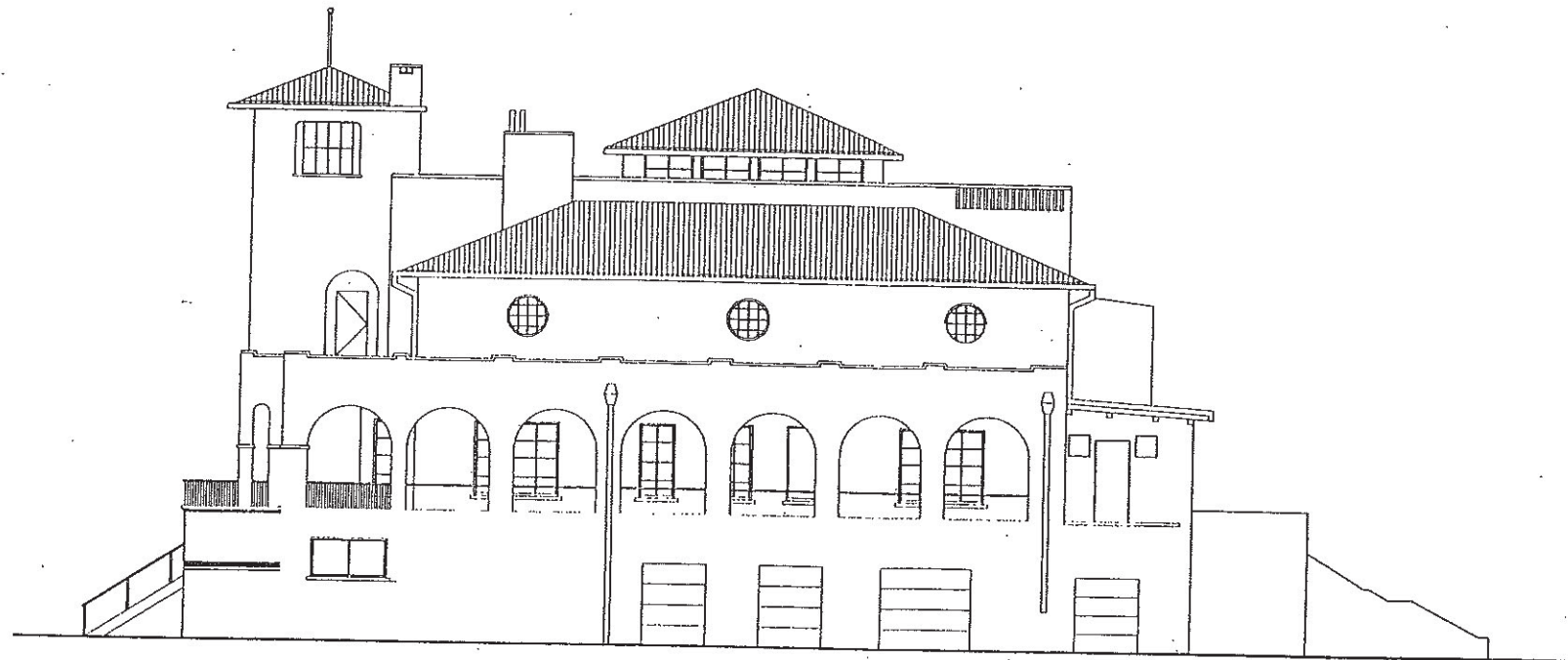
FIGURE 5

Drawing provide by:
Friends of Detroit Rowing

Sheet Description:
EXISTING ELEVATIONS

Sheet Number:

A5



4 WEST ELEVATION
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION
SCALE: 1/8" = 1'-0"

FIGURE 6

Drawing provide by:
Friends of Detroit Rowing

Sheet Description:
EXISTING ELEVATIONS

Sheet Number:

A6



Photo No. 1 – Roof slab above Lounge 319. Rusted reinforcing and spalled concrete. Note newer red steel.



Photo No. 2 – Roof slab over Bar 318.



Photo No. 3 – Bottom chord wood truss over Conference Room 309. Red steel reinforcement. Note knife in rotted wood.



Photo No. 4 – Roof over Lounge 319. Deteriorated railing and posts.



Photo No. 5 – Failed west side terrace slab.



Photo No. 6 – Terrace slab layers.

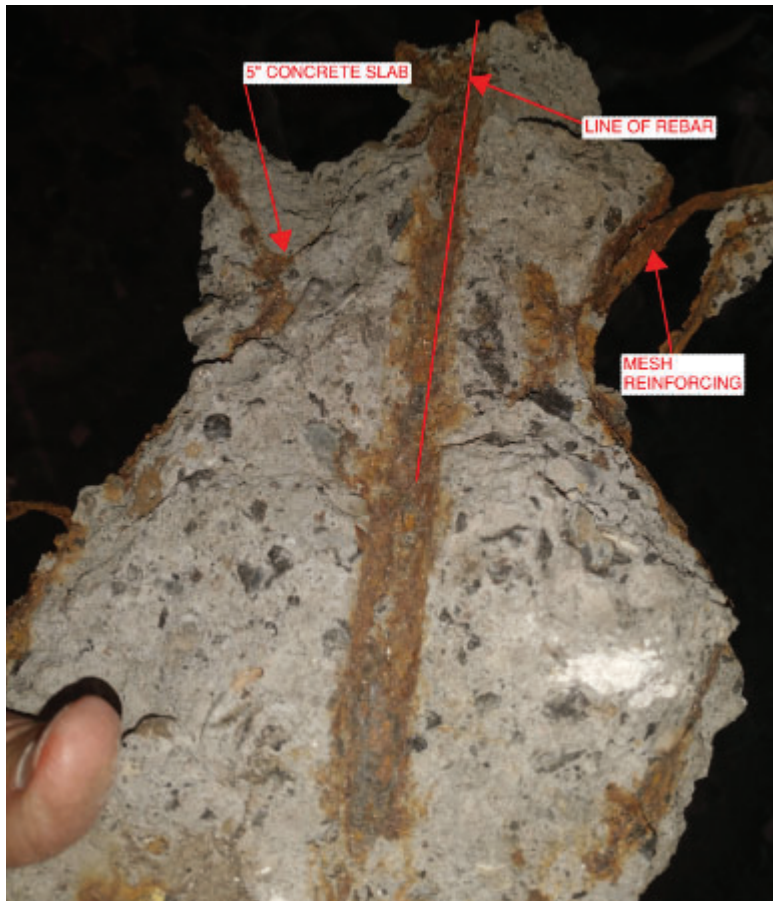


Photo No. 7 – Piece of terrace slab showing rust stain from a rebar and rusted steel mesh.



Photo No. 8 – Failed terrace slab viewed from topside.



Photo No. 9 – Underside of 1950s replacement slab.



Photo No. 10 – Terrace roof slab with rusted rebar, spalled concrete.



Photo No. 11 – Underside of terrace slab.



Photo No. 12 – Underside of terrace slab.



Photo No. 13 – North terrace, east end, exterior wall



Photo No. 14 – North terrace, east end. Deteriorated concrete topping, loose canopy and screen wall framing.



Photo No. 15 – Hole in first floor slab under the north terrace, east end.



Photo No. 16 – Cracked brick masonry.



Photo No. 17 – Ponded water at the north terrace, west end.



Photo No. 18 – Distressed masonry.



Photo No. 19 – Deteriorated masonry, brick missing at steel bearing.



Photo No. 20 – Deteriorated masonry at south main entrance.



Photo No. 21 – Deteriorated brick masonry near south main entrance.



Photo No. 22 – Cracked stucco.



Photo No. 23 – Cracked exterior wall at Women's Locker Room.



Photo No. 24 – Spalled stone stair riser.



Photo No. 25 – Rusted stair riser.



Photo No. 26 – Deteriorated stair riser.



Photo No. 27 – Deteriorated stair landing. Missing rail screen.



Photo No. 28 – Access bridge at main entrance.



Photo No. 29 – Access bridge southeast of the building.

File: 2022-1524.002

APPENDIX "A"

From: Kenneth C. LeMiesz
Sent: Thursday, August 18, 2022 11:49 PM
To: Treadwell, Amanda (DNR)
Cc: dreckinger@macmillanassociates.com; Floyd, Karis (DNR); Bissett, Thomas (DNR); DeKorte, Scott (DTMB)
Subject: Re: Belle Isle Structural Report Safety Clarification

Amanda,

Our initial discussion regarding the 50 feet for a potential collapsed zone was a distance that was used for discussion purposes only at the moment during our meeting. It was not based on any calculation, but instead was an arbitrary number used for discussion purposes at that time. It was always the intention to further review the issue with regards to what distance should be considered.

A rule of thumb for determining collapsed zone distances is 1.5 times the height of the building. This is a calculation that many fire departments utilize when estimating that distance when they are fighting a structure fire. From the existing building elevations provided, it was measured that the approximate height of the east portion of the building, from grade to the highest point of the roof, is 42' +/- . That would require a minimum distance of 63'. Additionally, consideration needed to be taken for the throw of debris beyond that point, all it would take is one thrown 4 lb. brick to cause great harm. Based on the above, a 75' distance seemed appropriate.

A possibility for consideration would be to verify the actual height of the building, calculate the 1.5 multiplier, and install an adequate protection scaffolding system at that determined distance that would protect from flying debris. Although, it should be noted that this rule of thumb is arbitrary, the DNR can adjust as they feel comfortable.

Best regards,

Ken Lemiesz

Sent from my iPad

On Aug 18, 2022, at 12:35 PM, Treadwell, Amanda (DNR) <TreadwellA@michigan.gov> wrote:

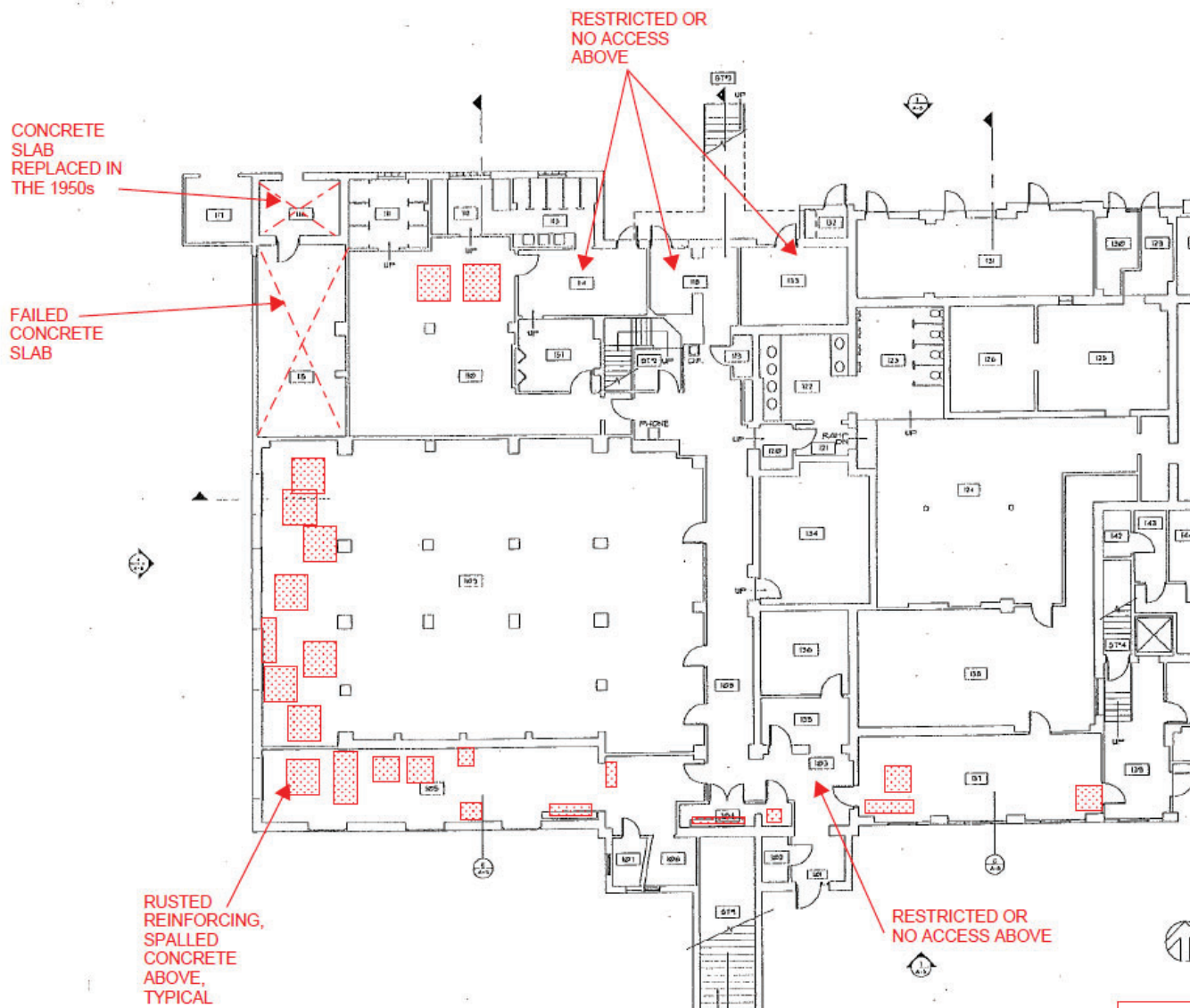
Hi Ken and Doug,

Thank you for your safety recommendations regarding access to the perimeter of the Boathouse site for the rowers. Certainly, the primary goal is the safety of users accessing the sites. We want to be sure to protect users as much as possible and allow for programming without compromising user safety. On that note, I would like to ask for further clarification on the extension of the original 50' safety buffer to the 75' buffer. I understand the added buffer protection, especially along the sides where eminent

failure has been identified. For the SE corner, the access point just about splits the difference between the 50 and 75' buffers, only because blocking the end of the bridge would require a significant hurdle to accessing the area am I asking for clarification about how the 75' buffer was determined at this corner of the building and if there is room to reconsider access at this point without compromising the safety of users.

- Please review feasibility of permitting a sliver of access within the 60' buffer based upon the conditions of the SE corner of the structure.





Amanda Treadwell, PLA
Urban Area Field Planner
Southern Michigan – Metro Detroit District
MDNR – Parks and Recreation Division
C: 313.269.7430, treadwella@michigan.gov



From: Kenneth C. LeMiesz <klemiesz@wtaarch.com>
Sent: Wednesday, August 17, 2022 5:18 PM
To: Treadwell, Amanda (DNR) <TreadwellA@michigan.gov>
Subject: RE: Belle Isle Structural Report Safety Clarification

CAUTION: This is an External email. Please send suspicious emails to
abuse@michigan.gov

Amanda,

I believe at first, we were discussing staying outside a 50' perimeter from the building edge that would have allowed utilizing that far east bridge. After Doug reviewed it further, and based on the height of the building, he felt that it should be increased to the 75' in lieu of the original 50' discussed. It is our understanding that the far east bridge is within that 75' perimeter, maybe someone could verify that? If it is within the 75', could a temporary bridge (barge) be placed further east?

Thank you,

Kenneth C. Lemiesz, AIA
Partner

989 752 8107 : p | 989 860 7384 : c



WTA ARCHITECTS

HONORING THE PAST | DESIGNING THE FUTURE

100 S Jefferson Ave, Suite 601
Saginaw, MI 48607

WTAARCH.COM

From: Treadwell, Amanda (DNR) <TreadwellA@michigan.gov>
Sent: Wednesday, August 17, 2022 5:01 PM
To: Kenneth C. LeMiesz <klemiesz@wtaarch.com>
Cc: Bissett, Thomas (DNR) <BissettT@michigan.gov>; Floyd, Karis (DNR) <FLOYDK@michigan.gov>; DeKorte, Scott (DTMB) <DeKorteS@michigan.gov>; Hunt,

Nicole (DNR) <HuntN1@michigan.gov>

Subject: FW: Belle Isle Structural Report Safety Clarification

Ken,

Doug notes in his 8/5 email that the space inside a 75' perimeter from the building edge should not be accessed. I recall on the conversation about access to the island we discussed accommodating a path from the bridge to the area outside of the 75'. Could you help us clarify this point? FODR is looking for confirmation that they can utilize and ACCESS the space. As we know, the space can only be accessed from the east bridge.

- Based on our current knowledge of the structure and its condition, any entry into the building cannot be considered safe. Furthermore, it is not considered safe to access the island that the building sits on via the two bridges at the south side due to their proximity to the structure. I recommend a minimum 75' distance from the building in determining safe zones on the building site.



Thank you,

Amanda

Amanda Treadwell, PLA
Urban Area Field Planner
Southern Michigan – Metro Detroit District
MDNR – Parks and Recreation Division

C: 313.269.7430, treadwella@michigan.gov



From: Kenneth C. LeMiesz <klemiesz@wtaarch.com>
Sent: Friday, August 5, 2022 9:58 AM
To: DeKorte, Scott (DTMB) <DeKorteS@michigan.gov>; Treadwell, Amanda (DNR) <TreadwellA@michigan.gov>
Subject: FW: Belle Isle Structural Report Safety Clarification

CAUTION: This is an External email. Please send suspicious emails to
abuse@michigan.gov

Scott/Amanda,

Please see Doug Reckinger's email below regarding further clarification on safety concerns at the Belle Isle Boathouse building, and surrounding site conditions.

Thank you,

Kenneth C. Lemiesz, AIA
Partner

989 752 8107 : p | 989 860 7384 : c



WTA ARCHITECTS

HONORING THE PAST | DESIGNING THE FUTURE

100 S Jefferson Ave, Suite 601
Saginaw, MI 48607

WTAARCH.COM

From: dreckinger@macmillanassociates.com <dreckinger@macmillanassociates.com>
Sent: Friday, August 5, 2022 8:51 AM
To: Kenneth C. LeMiesz <klemiesz@wtaarch.com>
Subject: Belle Isle Structural Report Safety Clarification

Ken,

We indicated in our Phase I Structural Report of the Belle Isle Boat House, that the building is not currently safe for occupancy. See attached. We have been asked to clarify that statement as to whether that excludes all entry into the building, and how close to the building access should be restricted.

Based on our current knowledge of the structure and its condition, any entry into the building cannot be considered safe. Furthermore, it is not considered safe to access the island that the building sits on via the two bridges at the south side due to their proximity to the structure. I recommend a minimum 75' distance from the building in determining safe zones on the building site.

Let me know if you have any questions, or require further assistance.

Thank you,

Doug

Douglas Reckinger P.E., LEED AP
dreckinger@macmillanassociates.com



714 East Midland Street
Bay City, MI 48706

(989) 529-8813

MacMillan Associates, Inc. * CONSULTING ENGINEERS * Since 1963 * 714 East Midland Street - Bay City, MI 48706 - (989) 894-4300 - www.macmillanassociates.com

Appendix B

Cost to Stabilize and Mothball				
Description	Labor	Materials	Equipment	Total Cost
1. Removal of unstable portions of the building at the North Terrace East End.	\$112,500	\$47,500	\$44,500	\$204,500
2. Stabilize the unsound masonry in various locations around the building. Assume 50% of brick to be repaired behind stucco. Install Cement Wash at edges of parge coating.	\$268,000	\$56,200	\$115,800	\$440,000 \$172,000
3. Demo/Reroof of the Flat Roof Portions on 3rd Floor.				\$225,000
4. Repairing any loose and missing roof tile. Replacement of bad decking (Alternate: Price to replace all with new clay roof tile.)	\$8.55 s.f.	(Assume 20%)	\$480,000	\$395,000 \$31,535
5. Close 6 openings at eave/Soffit area.				\$22,000
6. Repair roof structure damage at the center flat roof area.	\$50,000	\$10,000	8,000	\$68,000
7. Secure Building Doors: Windows:	*Note: We will restrict access to rooms 116,111,112 & 113*			\$18,000 \$62,006
8. Install Central Surveillance System	Total cost for Burglar, Fire, Access and Cameras.			\$68,344
9. Cover hole in 1st floor slab Under North Terrace, East End	\$3,500	\$200	*Tape off and install wood frame cover*	\$3,700
10. Recommend Leaving heat on. Cost to install Louvers in lieu of leaving heat on.	\$50,000	\$60,000		\$110,000
11. Restore temporary bracing on N.W. side.	\$20,000	\$5,000	\$10,000	\$35,000
12. Additional Support beneath Limestone step.	\$10,000	\$1,500		\$11,500

Description	Labor	Materials	Equipment	Total Cost
13.Install new gutters and Downspouts on the entire Building.				\$68,500
14.Scrape loose finish coat on stucco & repoint cracks.	\$500,000		\$120,000	\$620,000
15. Restore temporary bracing on N.W. side.	\$20,000	\$5,000	\$10,000	\$35,000
16. Replace deteriorated concrete floor slabs.	\$483,870	\$90,322	\$70,968	\$645,160
*17. Mobilization and demobilization.				\$46,000
Total:				\$3,281,245
General Conditions(8%):				\$262,500
Bond(1.5%):				\$53,156
Grand Total:				\$3,596,901

*Mobilization and demobilization pricing includes the cost to move and remove equipment to the jobsite and over the canal.

Figure a yearly escalation average of 10%. This is based of off the U.S. Bureau of Labor Statistics of Wages which saw a 6% increase and the latest Producer Price Index(PPI) report that stated a 33% increase in materials since March 2022.

Appendix C

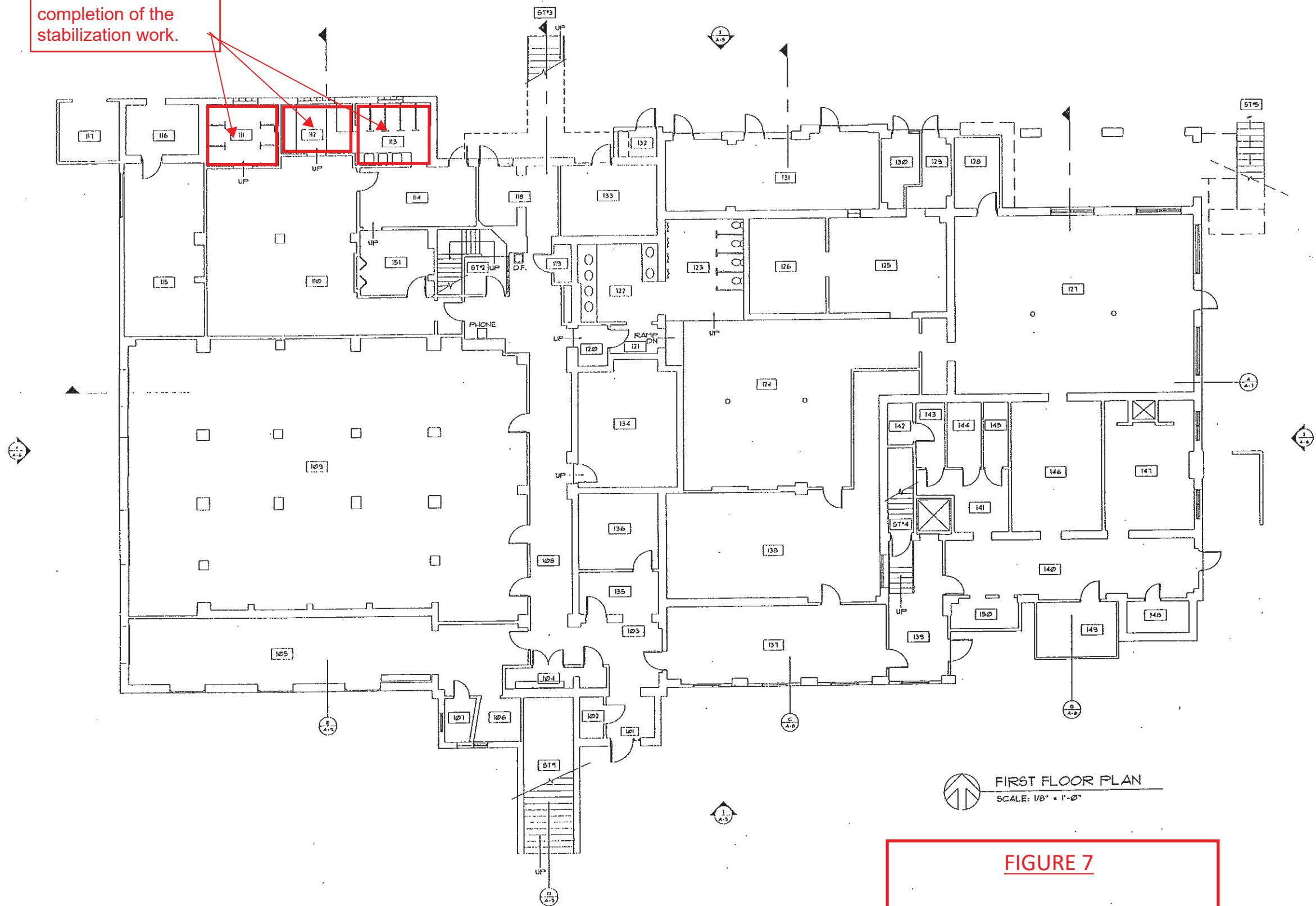
Cost to Stabilize Building With Restricted Occupancy Within the Building				
Description	Labor	Materials	Equipment	Total Cost
1. Removal of unstable portions of the building at the North Terrace East End.	\$112,500	\$47,500	\$44,500	\$204,500
2. Stabilize unsound masonry in various locations around building. Assume 50% repaired behind stucco.	\$268,000	\$56,200	\$115,800	\$440,000
Install cement wash at edges of parge coating.				\$172,000
3. Demo/Reroof of the Flat Roof portions on 3rd floor. Replace all other EPDM.				\$225,000 \$250,000
4. Repair of any loose and missing roof tile. Replacement of bad decking. (Alternate): Price to replace all with new clay roof tile.	\$8.55 s.f.	(Assume 20%)		\$395,000 \$31,535
			(\$480,000)	
5. Close 6 openings at eave/soffit area.				\$22,000
6. Repair roof structure damage at the center flat roof area.	\$50,000	\$10,000	\$8,000	\$68,000
9. Cover hole in 1st floor slab Under North Terrace, East End.	\$15,000	\$4,000		\$19,000
10. Replace deteriorated concrete floor slabs.	\$483,870	\$90,322	\$70,968	\$645,160
11. Repair the South Entry Stairs. Additional support beneath limestone step.	\$40,000	\$2,500		\$42,500
	\$10,000	\$1,500		\$11,500

Description	Labor	Materials	Equipment	Total Cost
12.Repair Metal Stairway at NE end of building and Fabricate new Metal landing with modifications to window for	\$67,500	\$48,000	\$8,000	\$123,500
13.Rebuild Key Stones for Arches at N. Side.	\$40,000	\$2,500	\$1,500	\$44,000
Rebuild cracked Corner N.	\$20,000	\$1,500	\$1,500	\$23,000
14.Install new gutters and Downspouts on the entire Building.				\$68,500
15.Scrape loose finish coat on stucco & repoint cracks.	\$500,000		\$120,000	\$620,000
16. Restore temporary bracing on N.W. side.	\$20,000	\$5,000	\$10,000	\$35,000
*17. Mobilization and demobilization.				\$46,000
Total:				\$3,486,195
General Conditions(8%):				\$278,896
Bond(1.5%):				\$56,476
Grand Total:				\$3,821,567

*Mobilization and demobilization pricing includes the cost to move and remove equipment to the jobsite and over the canal.

Figure a yearly escalation average of 10%. This is based off the U.S. Bureau of Labor Statistics of Wages which saw a 6% increase and the latest Producer Price Index(PPI) report that stated a 33% increase in materials since March 2022.

Areas to remain restricted after the completion of the stabilization work.



ROOM LEGEND	AREA (SF)
101 - VESTIBULE	56
102 - CLOSET	25
103 - CORRIDOR	132
104 - ELEC. CLOSET	57
105 - BOAT WORK SHOP	636
106 - STORAGE	50
107 - STORAGE	33
108 - CORRIDOR	522
109 - BOAT STORAGE	2802
110 - WOMEN'S LOCKER RM.	909
111 - WOMEN'S SHOWER	15
112 - WOMEN'S LAVATORY	52
113 - WOMEN'S TOILET	13
114 - FIRST AID	105
115 - OUTSIDE STORAGE	359
116 - OUTSIDE STORAGE	55
117 - PUMP ROOM	17
118 - VESTIBULE	135
119 - CLOSET	18
120 - VESTIBULE	35
121 - VESTIBULE	38
122 - MEN'S LAVATORY	161
123 - MEN'S TOILET	240
124 - MEN'S LOCKER RM.	661
125 - DRYING AREA	288
126 - MEN'S SHOWER	191
127 - EXERCISE ROOM	1103
128 - CONCESSION STAND	64
129 - CORRIDOR	65
130 - FIRST AID / LIFE GUARD	67
131 - POOL EQUIPMENT	417
132 - POOL STORAGE	28
133 - UNKNOWN	114
134 - BOILER ROOM	311
135 - UNKNOWN	93
136 - OFFICE	155
137 - CONFERENCE ROOM	437
138 - WORK OUT ROOM	106
139 - DELIVERY	172
140 - CORRIDOR	368
141 - PANTRY	14
142 - ELEC. CLOSET	21
143 - MEAT STORAGE	48
144 - DAIRY STORAGE	58
145 - VEGETABLE STORAGE	42
146 - KITCHEN	305
147 - UNKNOWN	213
148 - COOLER	51
149 - COOLER	15
150 - STORAGE	53
151 - POWDER ROOM	13
TOTAL GROSS SQUARE FOOTAGE	15,584

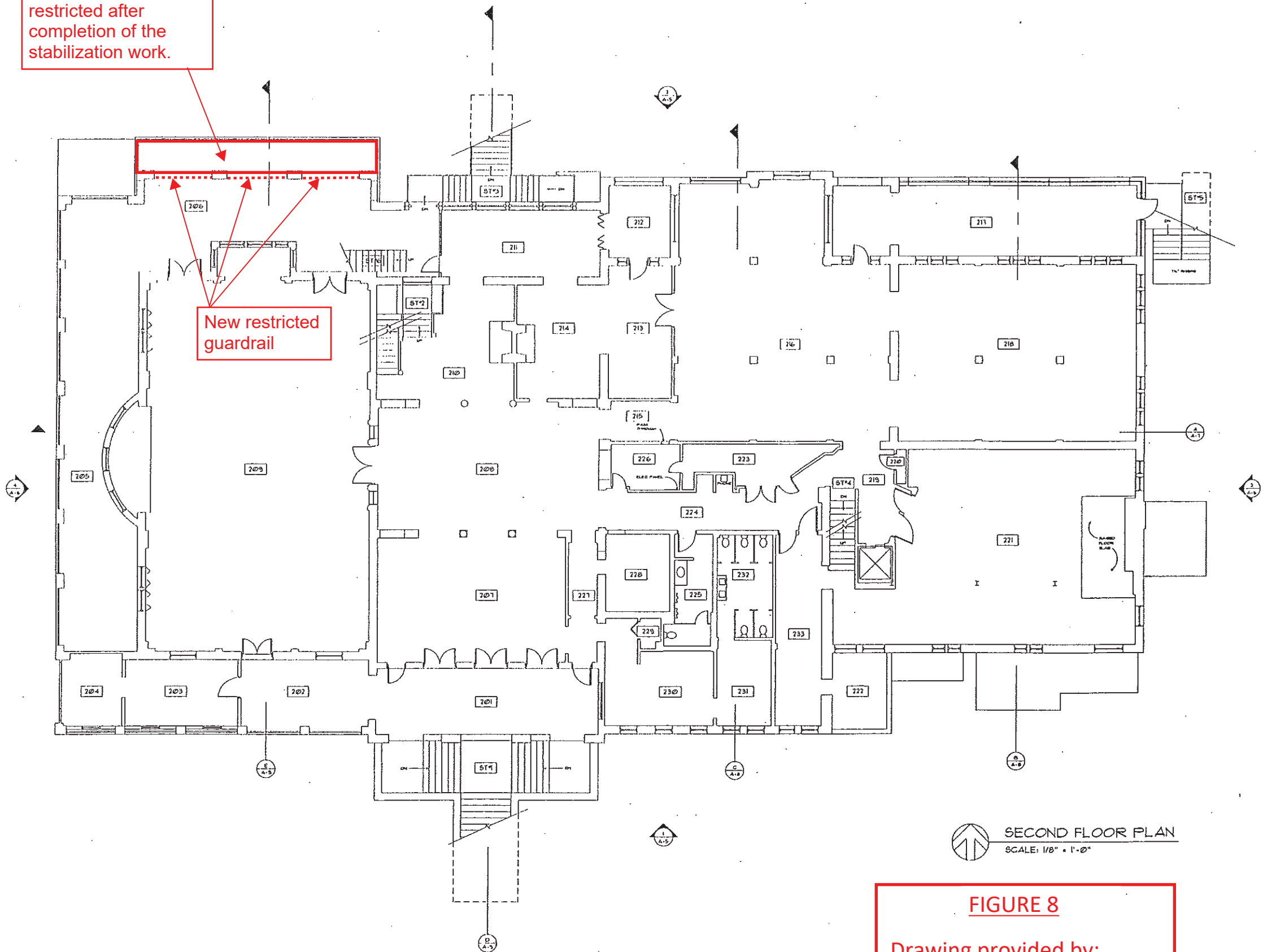
FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIGURE 7
Drawing provided by:
Friends of Detroit Rowing

Area to remain restricted after completion of the stabilization work.

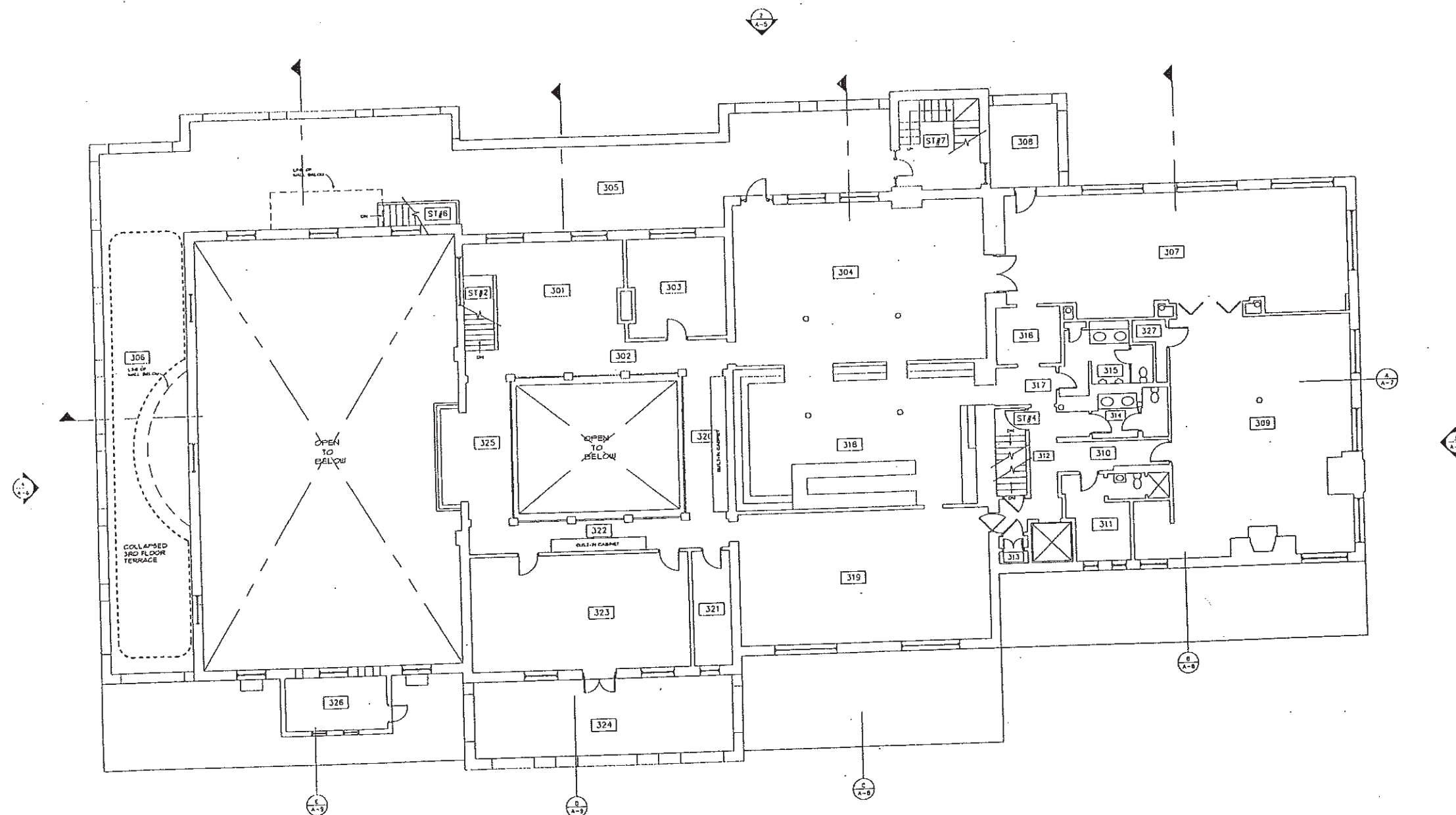
New restricted guardrail

ROOM LEGEND	AREA (SF)
201 - TERRACE	330
202 - TERRACE	233
203 - UNKNOWN	196
204 - UNKNOWN	113
205 - TERRACE	818
206 - TERRACE	165
207 - Foyer	615
208 - ATRIUM	154
209 - BALL ROOM	2791
210 - LOUNGE	3008
211 - LOUNGE	285
212 - OFFICE	118
213 - BAR	274
214 - LOUNGE	254
215 - CORRIDOR	63
216 - DINING ROOM	1330
217 - TERRACE	543
218 - FORMAL DINING	1106
219 - CORRIDOR	134
220 - CLOSET	9
221 - KITCHEN	1760
222 - PANTRY	109
223 - MECHANICAL ROOM	126
224 - CORRIDOR	266
225 - MEN'S ROOM	114
226 - GIFT SHOP	83
227 - CORRIDOR	102
228 - COAT ROOM	128
229 - CLOSET	165
230 - WOMEN'S LOUNGE	233
231 - WOMEN'S POWDER ROOM	120
232 - WOMEN'S TOILET ROOM	141
233 - KITCHEN SUPPORT	245
TOTAL GROSS SQUARE FOOTAGE	17,310
(NOT INCLUDING TERRACE!)	
TOTAL TERRACE SQUARE FOOTAGE	1,158



SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIGURE 8
Drawing provided by:
Friends of Detroit Rowing

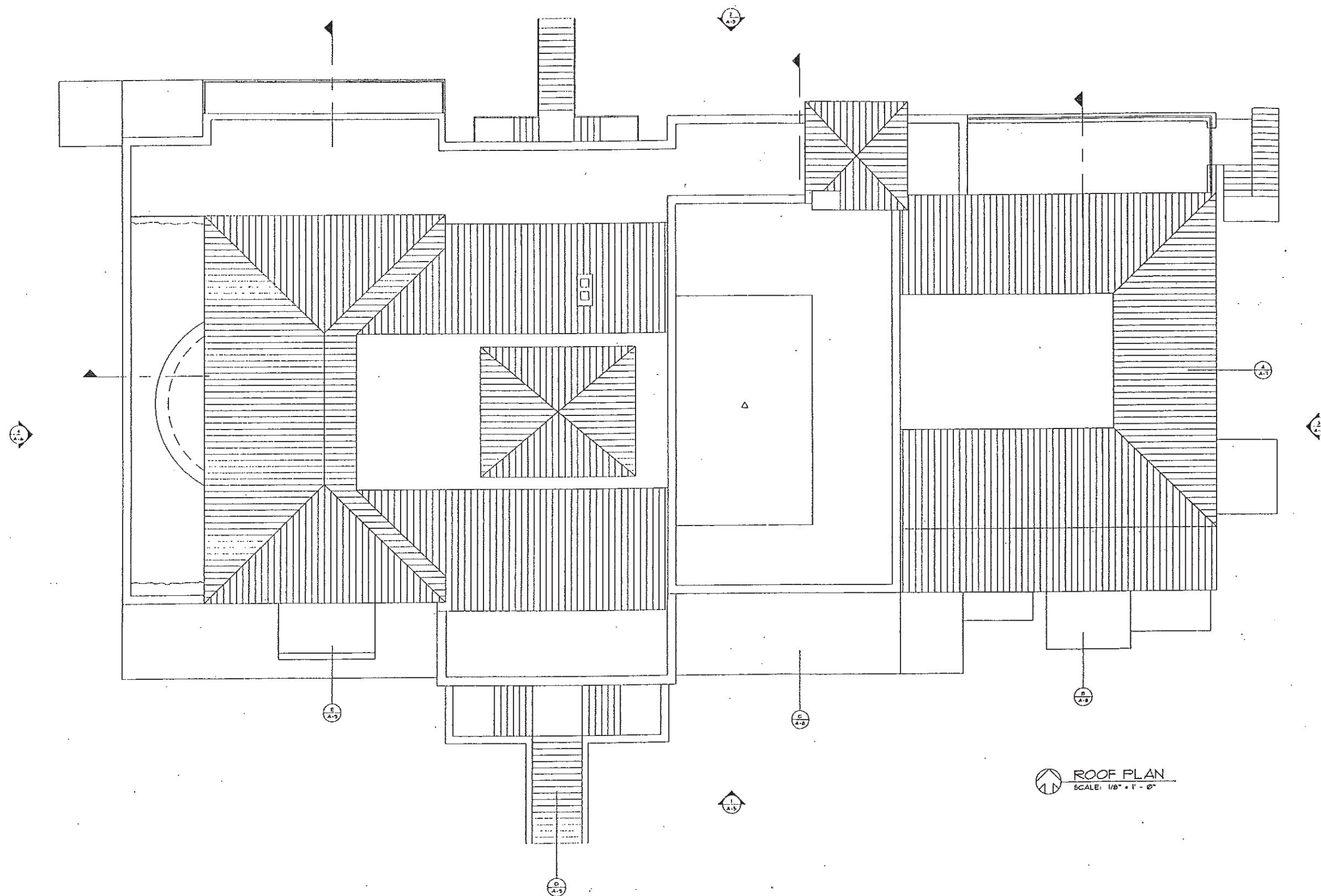


ROOM LEGEND	AREA (SF)
301 - LOUNGE	267
302 - CORRIDOR	183
303 - OFFICE	194
304 - BALLROOM	601
305 - TERRACE	1366
306 - TERRACE	119
307 - CONFERENCE ROOM	101
308 - TERRACE	856
309 - CONFERENCE ROOM	58
310 - CORRIDOR	111
311 - OFFICE	82
312 - CORRIDOR	82
313 - SAFE	13
314 - WOMEN'S ROOM	93
315 - MEN'S ROOM	71
316 - UNKNOWN	148
317 - CORRIDOR	462
318 - BAR	634
319 - LOUNGE	133
320 - CORRIDOR	81
321 - STORAGE	100
322 - CORRIDOR	417
323 - OFFICE	313
324 - TERRACE	191
325 - CORRIDOR	184
326 - PROJECTION ROOM	24
327 - CLOSET	14
TOTAL GROSS SQUARE FOOTAGE (NOT INCLUDING TERRACE)	5929
TOTAL TERRACE SQUARE FOOTAGE	1279

THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

Sheet Number:
EXISTING
THIRD FLOOR PLAN

Sheet Number:
A3



ROOF PLAN
SCALE: 1/8" = 1' - 0"

Sheet Description
EXISTING
ROOF PLAN

Sheet Number
A4



2 SOUTH ELEVATION
A1A2A3 SCALE: 1/8" = 1'-0"

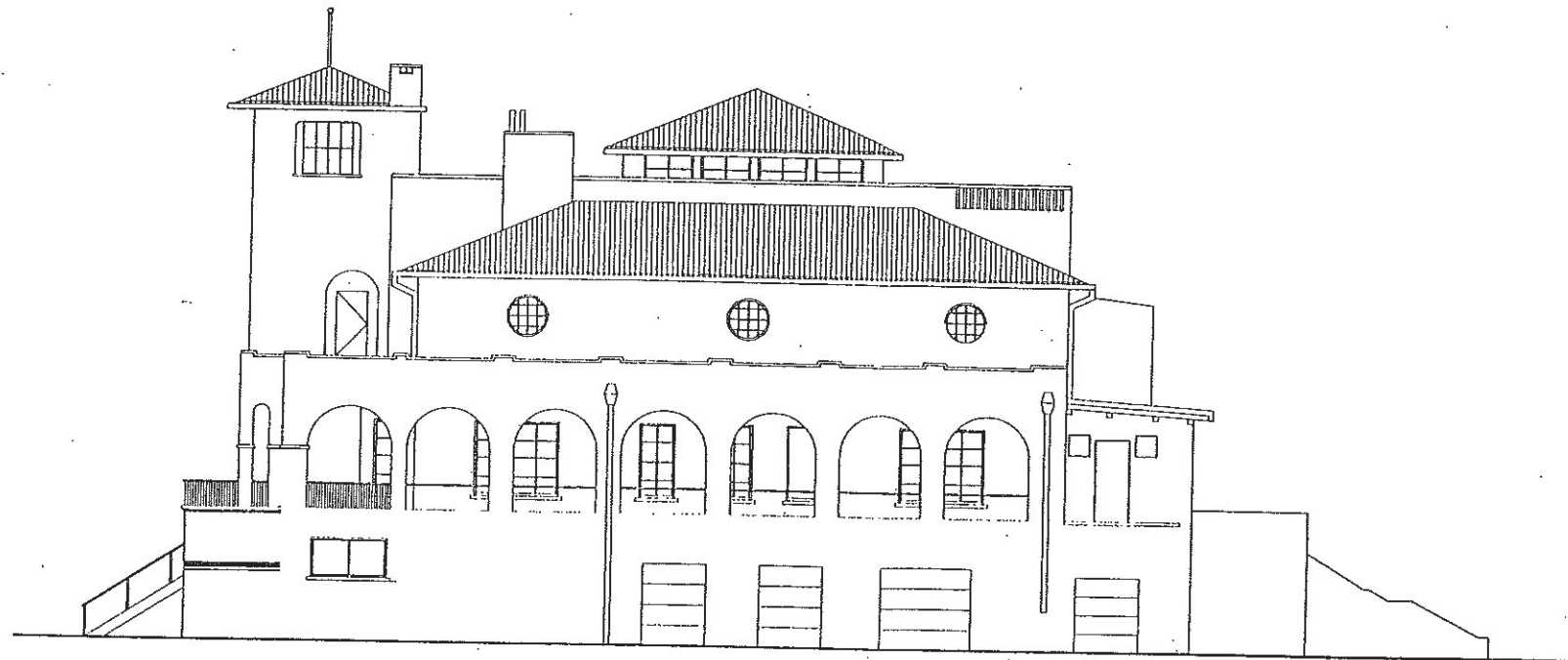


1 NORTH ELEVATION
A1A2A3 SCALE: 1/8" = 1'-0"

See Details
EXISTING ELEVATIONS

Sheet Number

A5



4 WEST ELEVATION
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION
SCALE: 1/8" = 1'-0"

Sheet Description:
EXISTING ELEVATIONS

Sheet Number:
A6

Appendix D

Belle Isle Boathouse**Renovations**

Detroit, Michigan

Cost Model Estimates

November 29, 2019

** Updated September 27, 2022 (Red Italic)***APPENDIX "D"**

Description		Total Cost	Cost/SF
Building Enclosure Summary		44,095 GSF	
B10 Superstructure		<i>\$1,856,616</i>	<i>\$42.10</i>
B20 Exterior Closure		\$2,806,215	\$63.64
B30 Roofing		\$734,970	\$16.67
D20 Plumbing		\$336,500.00	\$7.63
D40 Fire Protection		\$31,000	\$0.70
D50 Electrical		\$45,989.00	\$1.04
Sub-Total Trades Building Enclosure		<i>\$5,811,290</i>	<i>\$131.79</i>
Design Contingency	10%	<i>\$581,129</i>	<i>\$13.18</i>
Escalation <i>**10%</i> per year to midpoint 7/1/2025			
67 months @ <i>**10%</i> =	<i>70.3%</i>	<i>\$4,493,871.00</i>	<i>\$101.91</i>
Sub-Total Contingencies		<i>\$5,075,000</i>	<i>\$115.09</i>
Sub-Total Building + Contingencies		<i>\$10,886,290.00</i>	<i>\$246.88</i>
General Conditions 24 Months	3%	<i>\$326,589</i>	<i>\$7.41</i>
GC Personnel	<i>1.77%</i>	<i>\$198,468</i>	<i>\$4.50</i>
GC Fee	4%	<i>\$456,454</i>	<i>\$10.35</i>
Bond	1%	<i>\$118,678</i>	<i>\$2.69</i>
Total Construction Cost Building Enclosure		<i>\$11,986,479</i>	<i>\$271.83</i>
Owner Project Costs	35%	<i>\$4,195,268</i>	<i>\$95.14</i>
Total Project Costs		<i>\$16,181,747</i>	<i>\$366.97</i>
Total Project Cost Percentage Increase	65%		

Note:

**Red, Italic information has been updated from the original information indicated in the November 29, 2019 Smithgroup Report. (See Appendix "E")*

***Adjusted yearly escalation average of 10% is based off the U.S. Bureau of Labor Statistics of Wages which saw a 6% increase, and the latest Producer Price Index (PPI) report that stated a 33% increase in materials since March 2022.*

**Belle Isle Boathouse
Renovations/Restorations**

Detroit, Michigan
Cost Model Estimates
November 29, 2019

** Updated September 27, 2022 (Red Italic)*

APPENDIX "D"

Description		Unit	Unit Cost	Total Cost	Cost/SF
Building Enclosure				44,095 GSF	
Superstructure					
B1010 Floor/Terrace Construction					
New third floor terrace at west side	1,366	SQFT	\$150.00	\$204,900	\$4.65
Shore existing roof structure at west side where existing wall is removed/replaced	68	LNFT	\$5,000.00	\$340,000	\$7.71
Remove/replace <i>damaged terrace concrete floors throughout</i>	1	LPSM	<i>\$645,160.00</i>	<i>\$645,160</i>	<i>\$14.63</i>
Remove/replace struture for terrace 217, <i>also repair exterior stairs</i>	564	SQFT	<i>\$419.00</i>	<i>\$236,316</i>	<i>\$5.36</i>
<i>Repair north & south exterior stairs</i>	1	LPSM	<i>\$177,500.00</i>	<i>\$177,500</i>	<i>\$4.03</i>
Sub-Total Floor Construction				<i>\$1,603,876</i>	<i>\$36.37</i>
B1020 Roof Construction					
New green house roof over terrace 217	564	SQFT	\$200.00	\$112,800	\$2.56
Remove/replace wood decking at 10% of the area of low slope roofs 4311 sf x 10% =	341	SQFT	\$25.00	\$8,525	\$0.19
Remove/replace wood decking at 20% of the area of high slope roofs 7638 sf x 20% =	1,537	SQFT	\$25.00	\$38,415	\$0.87
Temporary roof protection	1	LPSM	\$25,000.00	\$25,000	\$0.57
<i>Damaged roof framing repairs</i>	1	LPSM	<i>\$68,000.00</i>	<i>\$68,000</i>	<i>\$1.54</i>
Sub-Total Roof Construction				<i>\$252,740</i>	<i>\$5.73</i>
Sub-Total B10 Superstructure				<i>\$1,856,616</i>	<i>\$42.10</i>

Note:

**Red, Italic information has been updated from the original information indicated in the November 29, 2019 Smithgroup Report. (See Appendix "E")*

Appendix E



Belle Isle Boathouse Building and Site Assessment

E Picnic Way, Belle Isle, Detroit, MI 48207

SMITHGROUP

500 Griswold, Suite 1700, Detroit, MI. 48226

SG 11774.000

December 2019