



Schuylkill River Wall Collapse

1 March 2012

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- Report Findings
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- Additional Concerns
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BACKGROUND

- 100' section of the Schuylkill River wall collapsed in late October 2011.
- City immediately engaged Pennoni Associates to perform an underwater assessment to investigate and determine the possible causes.
- A three person dive team investigated the collapse on November 3rd.
- An assessment report was provided to the City on November 17th.

BACKGROUND

East Park Canoe House
Marine Wall Assessment Report – November 17, 2011



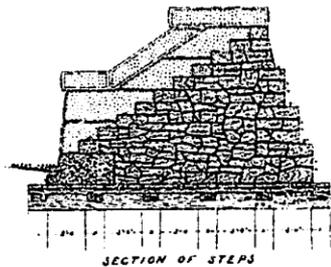
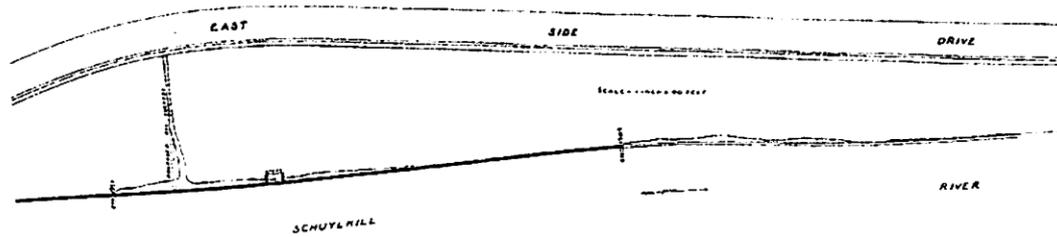
Photo 1: North end of failed section of marine wall looking south

BACKGROUND



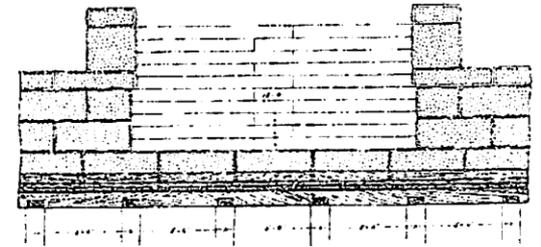
Photo 2: Behind failed section of marine wall looking south

HISTORICAL PLANS



SECTION OF STEPS

PLAN OF RIVER WALL EAST SIDE SOUTHWARD FROM TROLLEY BRIDGE FAIRMOUNT PARK

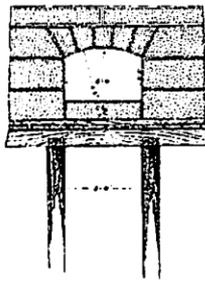


FRONT ELEVATION OF STEPS

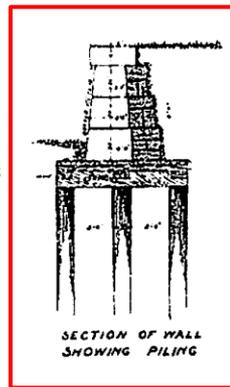


SECTION OF CULVERT

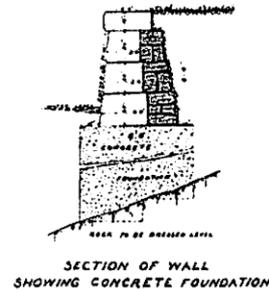
SCALE OF DETAILS
1/8" = 1' FEET



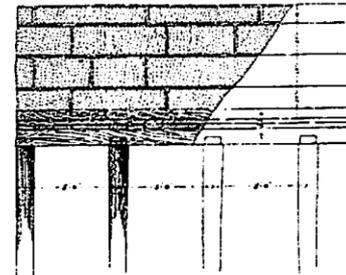
ELEVATION OF
CULVERT



SECTION OF WALL
SHOWING PILING



SECTION OF WALL
SHOWING CONCRETE FOUNDATION

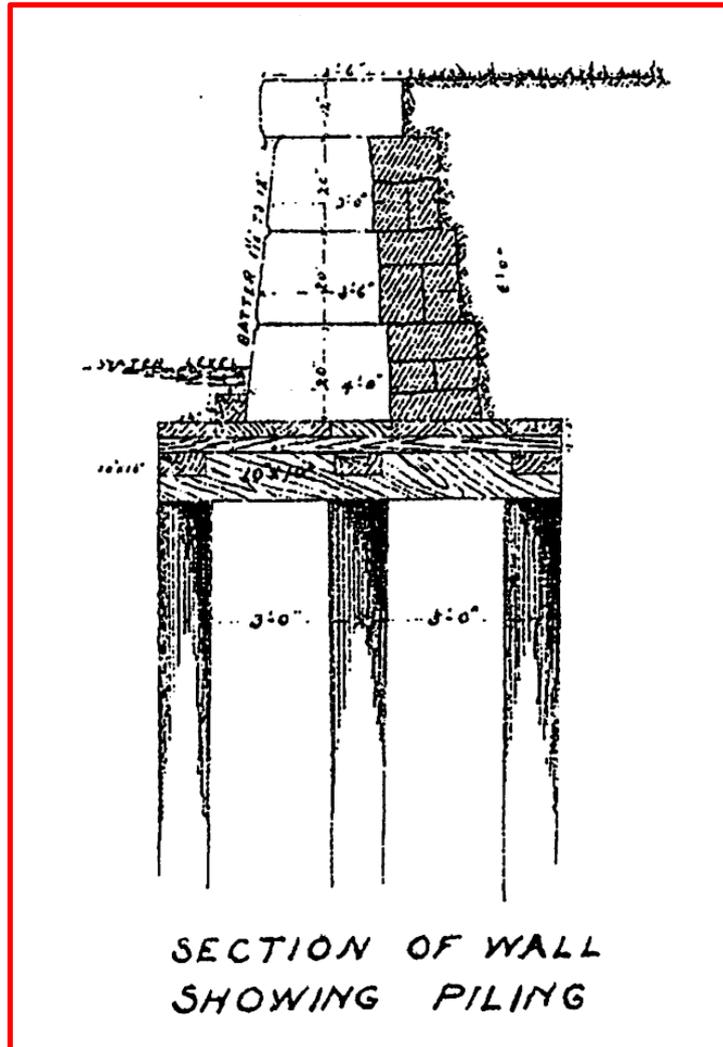


FRONT ELEVATION OF WALL

APPROVED
BY
CHIEF ENG. AND SUPT.
FAIRMOUNT PARK

1904

HISTORICAL PLANS



REPORT FINDINGS

The following factors may have contributed to the wall collapse:

- Scour & undermining of the timber cribbing.
- Deterioration & section loss of the timber members (cribbing and piles).
- Increased hydrostatic pressure behind the wall due to lack of drainage & heavy rainfall.
- Additional dead and live loads applied near or on the wall, such as debris and equipment.

REPORT FINDINGS

- Cracked, broken or missing mortar over 75% to 90% of the entire wall length.
- Moderate to severe vegetation growth in the wall.
- Anchors and attachments into the wall.

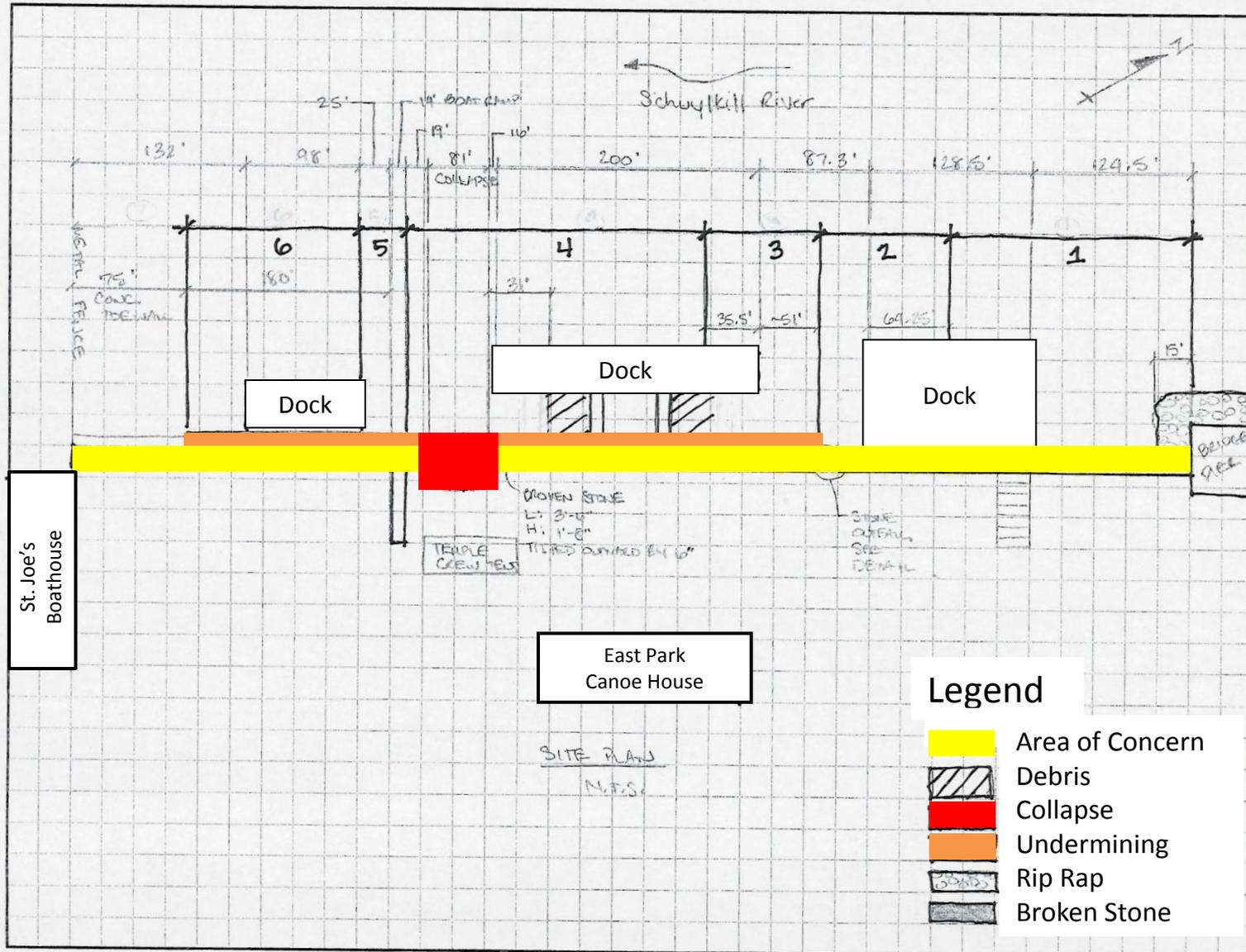
IMPORTANT NOTE: The contributing factors which were identified in the report apply not only to the 100 foot section of wall which collapsed, but also to the total length of **800 feet** from the St. Joseph's Boathouse north to the Strawberry Mansion Bridge.

REPORT FINDINGS

Pennoni Associates Inc.
Consulting Engineers

PROJECT SCHUYLKILL LEVEL WALK
SUBJECT UNDERMINING INSPECTION

JOB NO. _____
SHEET 1 OF 5
DATE 11/03/11
BY: JLC
CHK'D: JLC
DATE 11/11/11

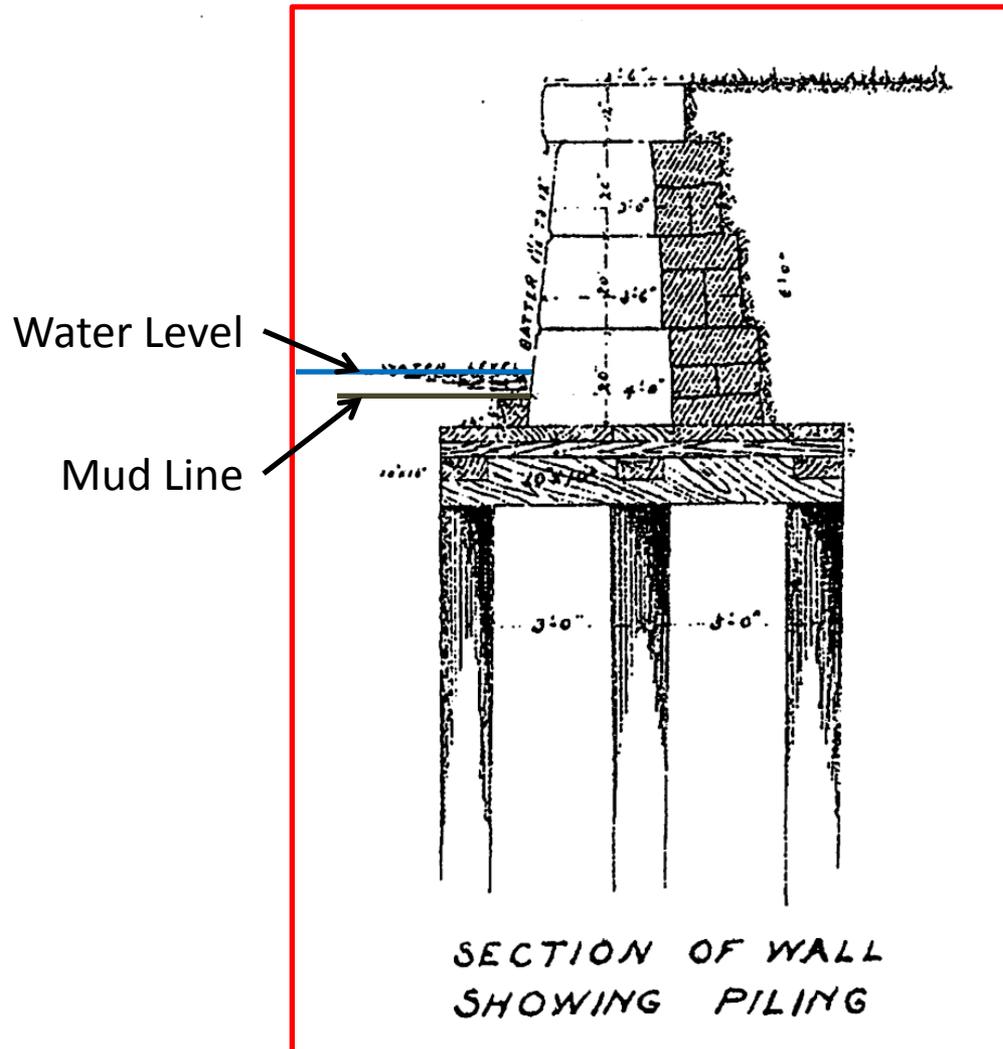


Legend

- Area of Concern
- Debris
- Collapse
- Undermining
- Rip Rap
- Broken Stone

SITE PLAN
N.P.S.

HISTORICAL PLANS

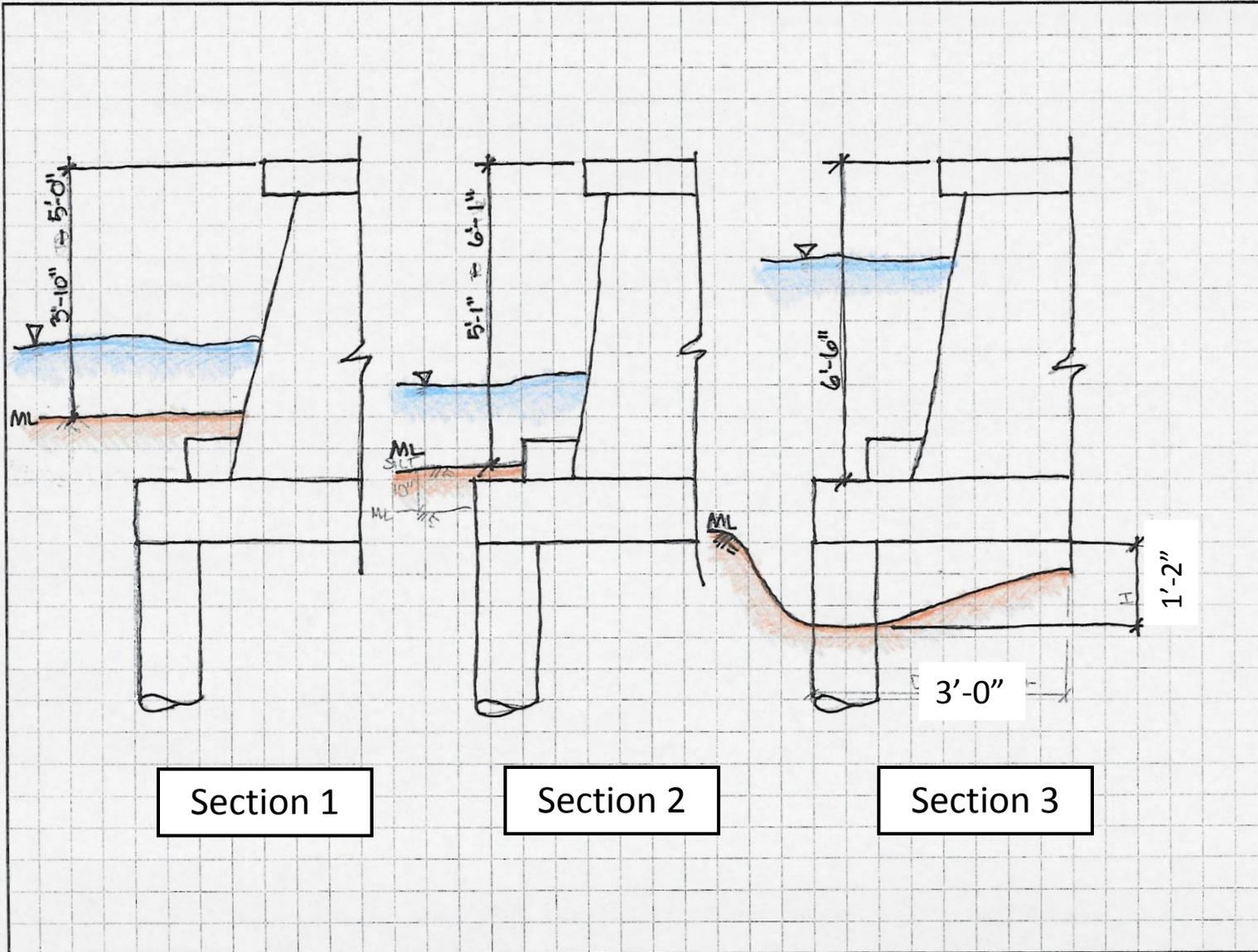


REPORT FINDINGS

Pennoni Associates Inc.
 Consulting Engineers

PROJECT SCHUYLER BLVD. BRIDGE
 SUBJECT UNDERGROUND INSPECTION

JOB NO.
 SHEET 3 OF 5
 BY: JCL
 CHKD: JCL
 DATE 1/23/11
 1/11/11



Section 1

Section 2

Section 3

REPORT FINDINGS

Pennoni Associates Inc.
 Consulting Engineers

PROJECT *Schuykill River Walk*

SUBJECT *UNDESIRABLE VEGETATION*

JOB NO.

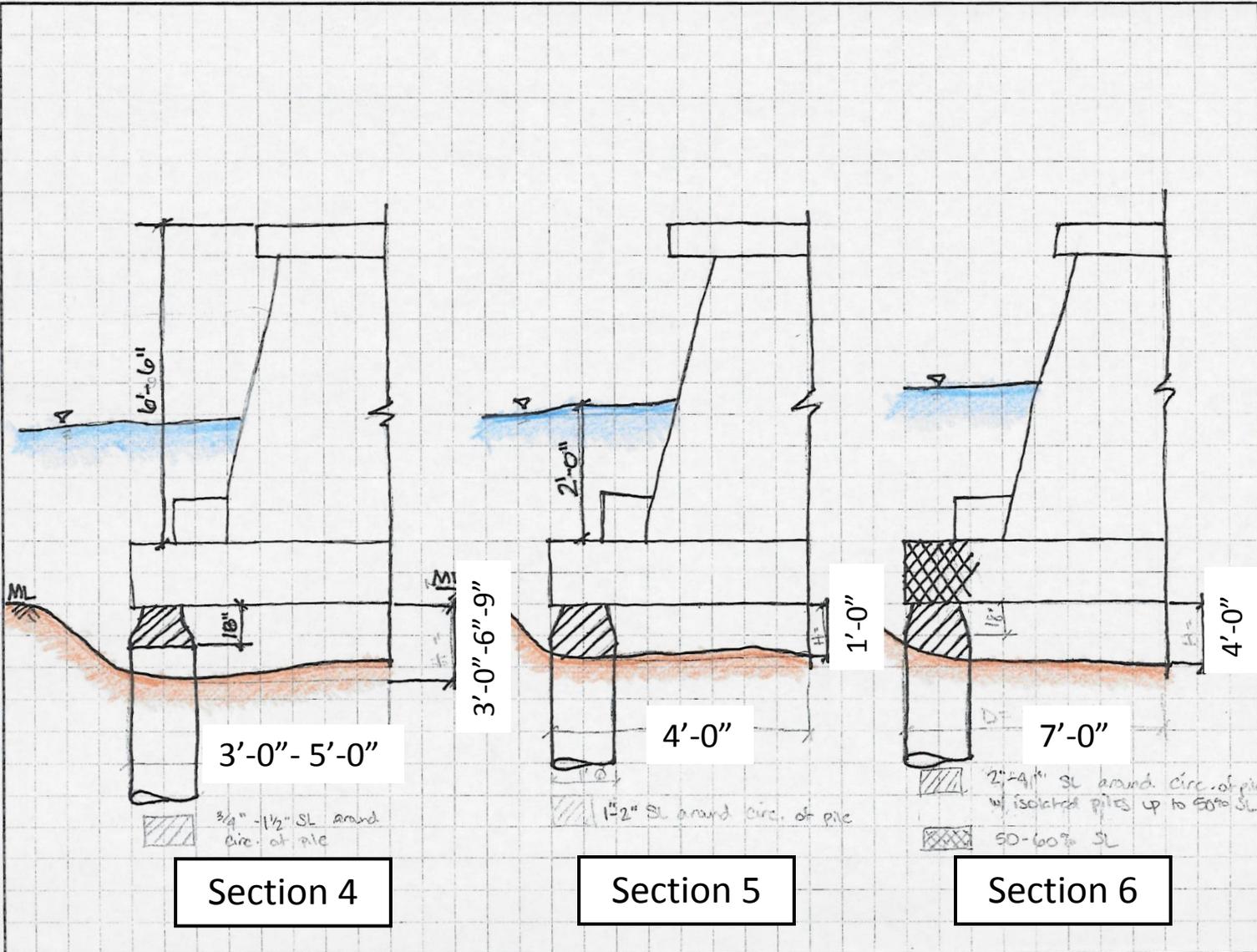
SHEET *4* OF *5*

BY: *JL*

CHK'D *JL*

DATE

1/20/11



COST IMPACTS

- Three sections of the Schuylkill River wall have collapsed since the mid-1990s; each about 100' in length.
- Each cost over \$1 million to rebuild.
- Estimate to rebuild the current collapse is \$1.25 million for the 100' section.
- If the entire 800' needs to be rebuilt, the cost could be up to 10 million dollars.
- FEMA denied City's request for emergency funding in January 2012.

TEMPORARY ACCOMMODATIONS

- Pending results of additional diver investigation, the East Park Canoe House dock will be shifted to a location south of the St. Joseph's Boathouse.
- All river access, including staging of regattas and other river festivals, will take place from this location.
- St. Joe's has agreed to allow the first two regattas to launch from their dock if the East Park Canoe House dock is not relocated in time.

TEMPORARY ACCOMMODATIONS

- The parking lot between the East Park Canoe House and St. Joseph's Boathouse will remain available for public use.
- For safety, the entire 800' length of the river wall will be fenced off to prohibit public access.
- There will be no vehicular ramp into the river along Kelly Drive in East Fairmount Park.
- No other docks or water craft (including dragon boats) will be allowed to anchor to any dock or section of the river wall.

TEMPORARY ACCOMMODATIONS

- Temple University's tents will be moved to a safe location in the vicinity of the East Park Canoe House.
- Outrigger canoes will enter the river from M.L. King Drive near the PA Adaptive Sports facility (Black Road parking area).

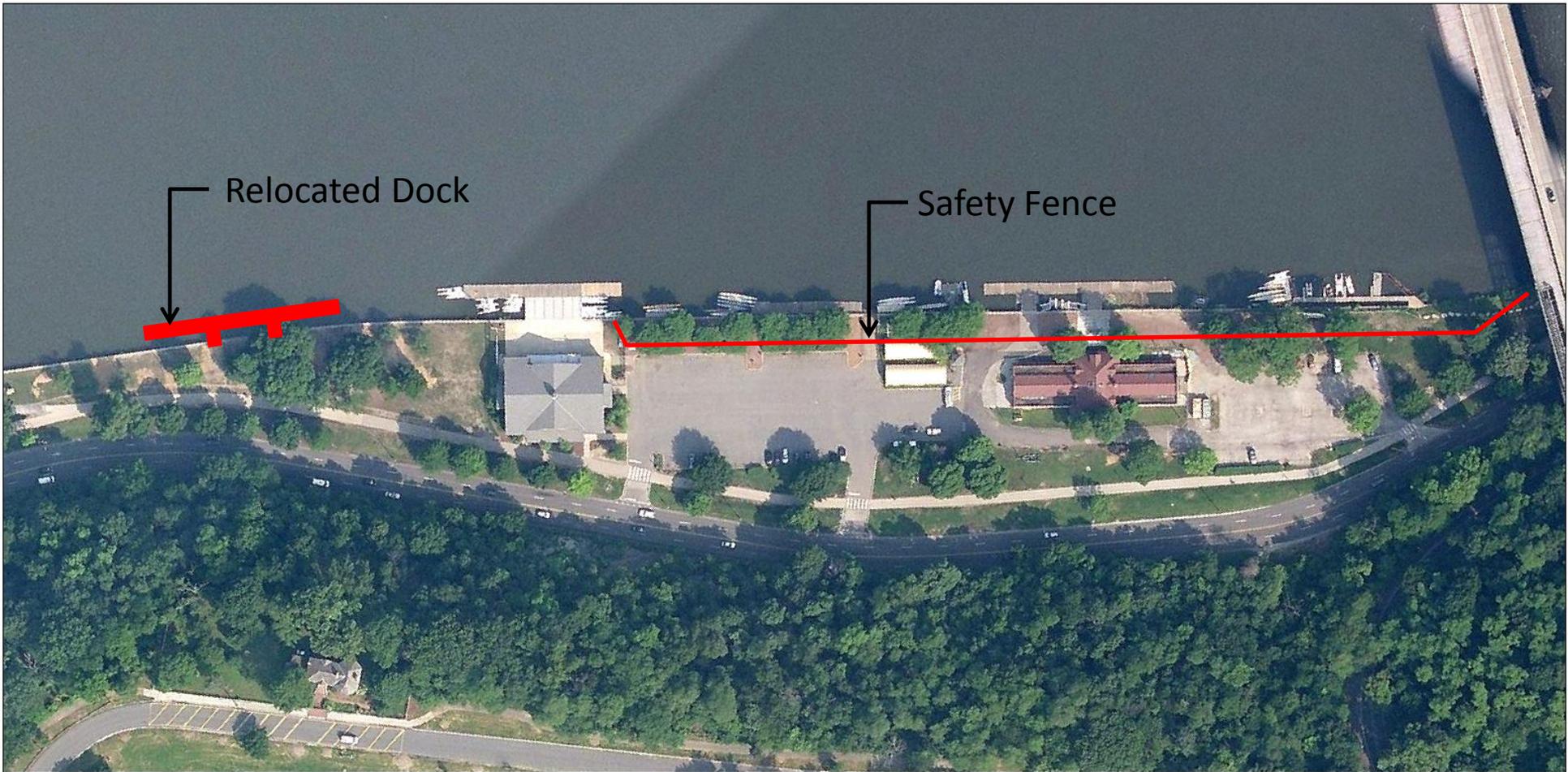
IMPORTANT NOTE – Depending on the extent of wall reconstruction, when funding is available and the length of time required to obtain permits; these temporary accommodations may be in place for several years.

NEXT STEPS – RIVER ACCESS

- Get divers in the river to investigate stability of river wall south of St. Joseph's Boathouse.
- If determined to be stable, relocate East Park Canoe House dock.
- Relocate Temple's tents.
- Install fencing to prohibit public access to the river wall from St. Joseph's Boathouse north to Strawberry Mansion bridge.

NEXT STEPS – WALL

- Determine extent, methods and scope of wall repair and reconstruction.
- Continue to pursue funding.
- If required, begin permitting process with PA DEP and US Army Corps of Engineers.



Relocated Dock

Safety Fence

ADDITIONAL CONCERNS



Sinkholes which have developed behind the river wall adjacent to the parking lot north of the grandstand.



QUESTIONS

Inquiries / Questions, please contact:

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