

REHABILITATION OF THE HIGH BRIDGE

SCHEMATIC DESIGN

PRESENTATION TO:
COMMUNITY BOARDS 4 (BX) & 12 (MN)

OCTOBER 4 & 5, 2010



City of New York
Parks & Recreation



LOCATION



Washington
Bridge

I-95

MANHATTAN

HIGH BRIDGE

BRONX

Highbridge
Park

Harlem River

AERIAL VIEW



MANHATTAN

HARLEM RIVER

BRONX

WATER TOWER

9-MASONRY ARCH SPANS

1928 STEEL ARCH SPAN

1-MASONRY ARCH SPAN
OVER RAMP

PUBLIC COMMENTS



PUBLIC COMMENTS

Bridge Use

- Design for safe sharing by pedestrians & bicyclists
- Add benches
- Strong, tall fence needed

Bridge Appearance

- Clean the stone arches
- Safety fence should be minimal to preserve views
- Preserve historic appearance
- Show historic aqueduct pipe
- Add lighting on walkway and for decoration

PUBLIC COMMENTS

Education

- Include signs to tell the bridge history
- If possible, create access or views to the aqueduct pipe below

Operations

- Allow regular bicycle commuting/should be open late
- Need security (PEP & Rangers / lighting, fencing, call boxes)
- Have festivals on the bridge
- (Future) Develop public uses for the gatehouses

HISTORICAL SIGNIFICANCE

Exterior

- Granite arches, piers and copings (1848)
- Steel arch (1928)
- Brick walkway (1864 & 1928)
- Iron railings (1864 & 1928)
- Light fixtures (1935)
- Gatehouses - *not in contract*
- Ventilators - *not in contract*

Interior

- Aqueduct pipes and pedestals
- Structural brick arch & tie rods

SCHEMATIC DESIGN

**STRUCTURAL
IMPROVEMENTS**

STRUCTURAL REHABILITATION

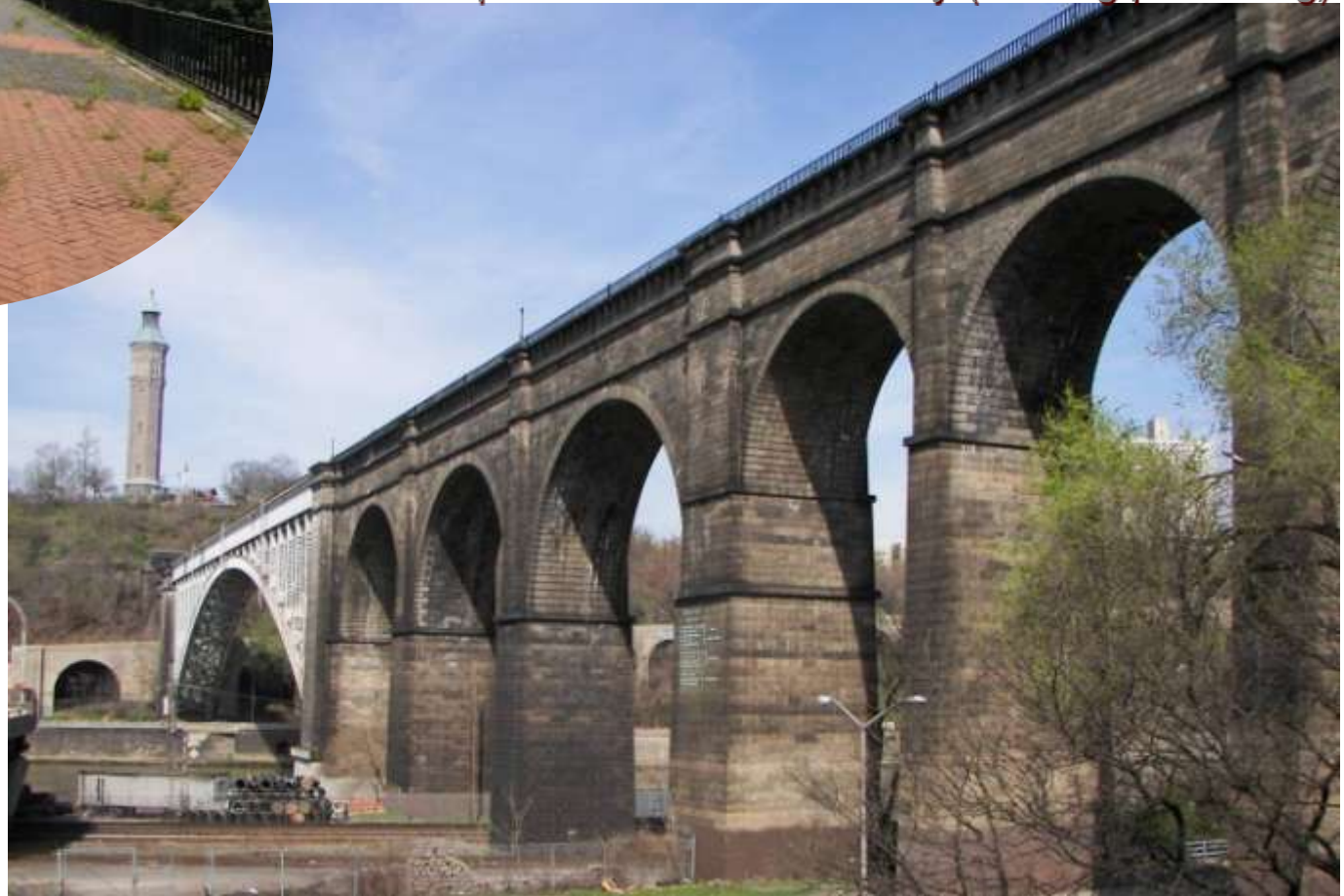
MASONRY ARCH SPANS AND WALKWAY



Waterproof deck

Add new steel tie rods below deck

Repoint & clean all masonry (funding permitting)

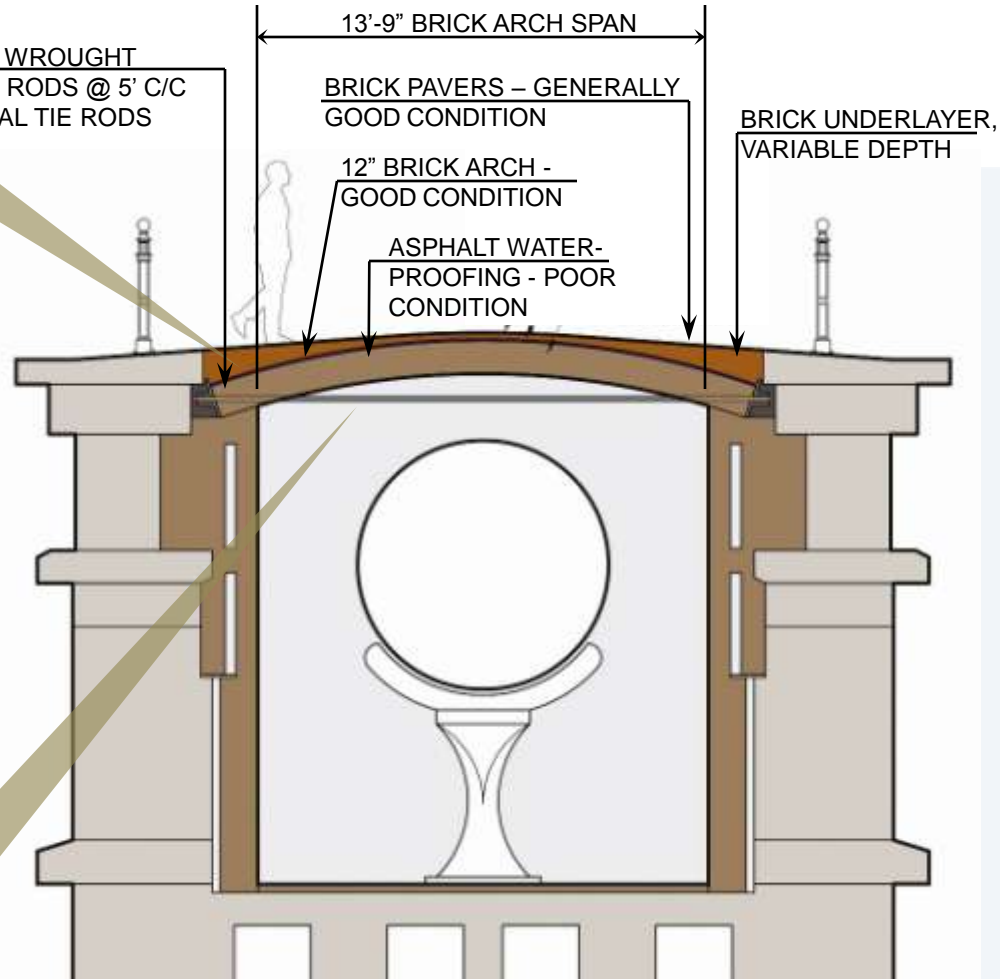


STRUCTURAL REHABILITATION

MASONRY ARCH SPANS AND WALKWAY



1 3/4" DIA. WROUGHT
IRON TIE RODS @ 5' C/C
*175 TOTAL TIE RODS



* TIE RODS – 5% TO 90% MATERIAL SECTION LOSS
90 TIE RODS HAVE > 25% MATERIAL SECTION LOSS

MASONRY ARCH SPAN SCHEMATIC
SECTION THROUGH ATTIC

STRUCTURAL REHABILITATION

STEEL ARCH SPAN AND WALKWAY

Waterproof deck

Repair and strengthen steel members

Abate lead paint and repaint

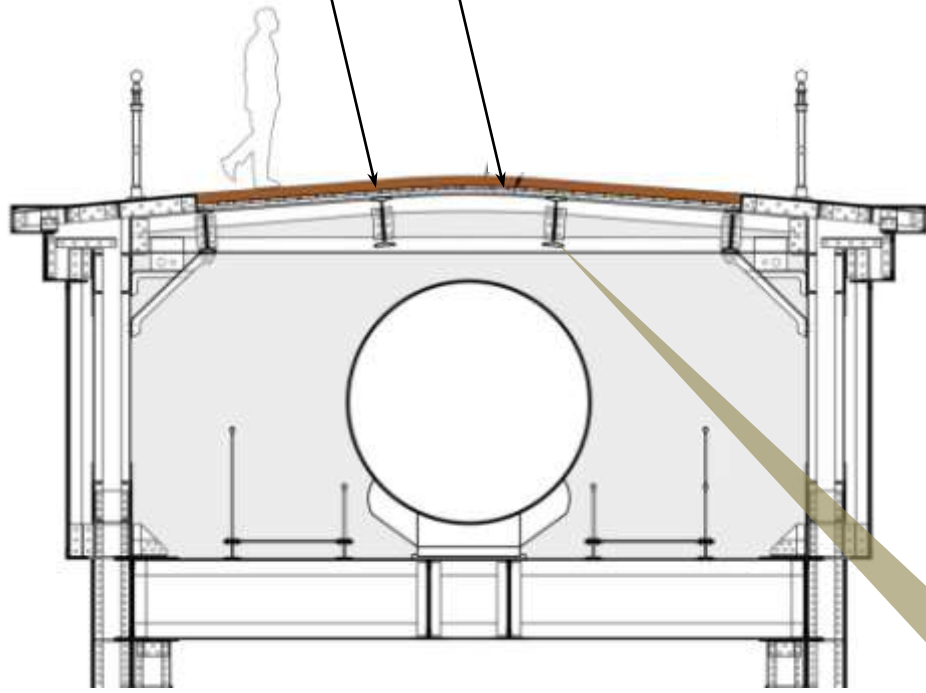


STRUCTURAL REHABILITATION

STEEL ARCH SPAN AND WALKWAY

BRICK PAVERS – 1" VERTICAL
DISPLACEMENT AT EDGES
DUE TO FROST HEAVE

3" MORTAR SLAB WITH MESH REINFORCING
PROBE REVEALED SEVERAL HOLLOW AREAS



STEEL ARCH SPAN SCHEMATIC
CROSS SECTION



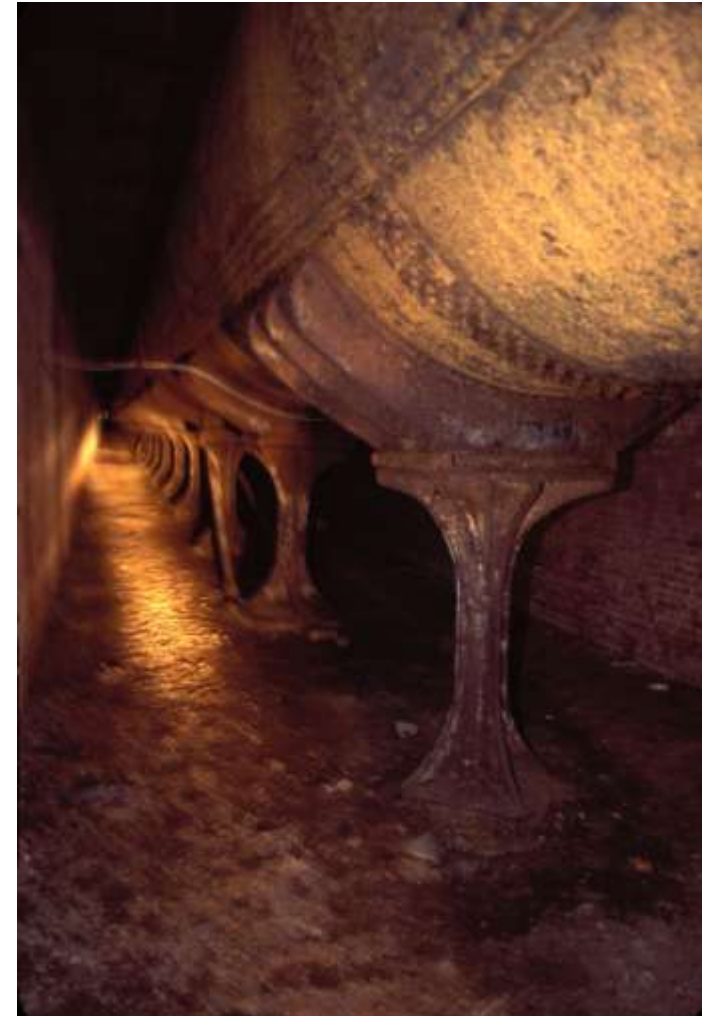
STEEL ARCH FRAMING - STRINGER

STRUCTURAL REHABILITATION

AQUEDUCT PIPE

Stabilize and preserve pipes

Reset shifted cradle supports



HIGH BRIDGE

SAFETY IMPROVEMENTS

EXISTING WALKWAY AND LIGHTING



SAFETY FENCE

FENCE MATERIAL ALTERNATIVES



McNICHOLS 1"X1" Opening Wire Mesh



Jakob W50mm Aperture w/ 3mm Dia. Rope



McNICHOLS 1"X3" Opening Wire Mesh



Jakob W60mm Aperture w/ 3mm Dia. Rope



Jakob W40mm Aperture w/ 3mm Dia. Rope



Jakob W60mm Aperture w/ 2mm Dia. Rope

SAFETY FENCE AND RESTORED LIGHTING



ARCHITECTURAL LIGHTING (*UNFUNDED*)



HIGH BRIDGE

ACCESS & USE IMPROVEMENTS

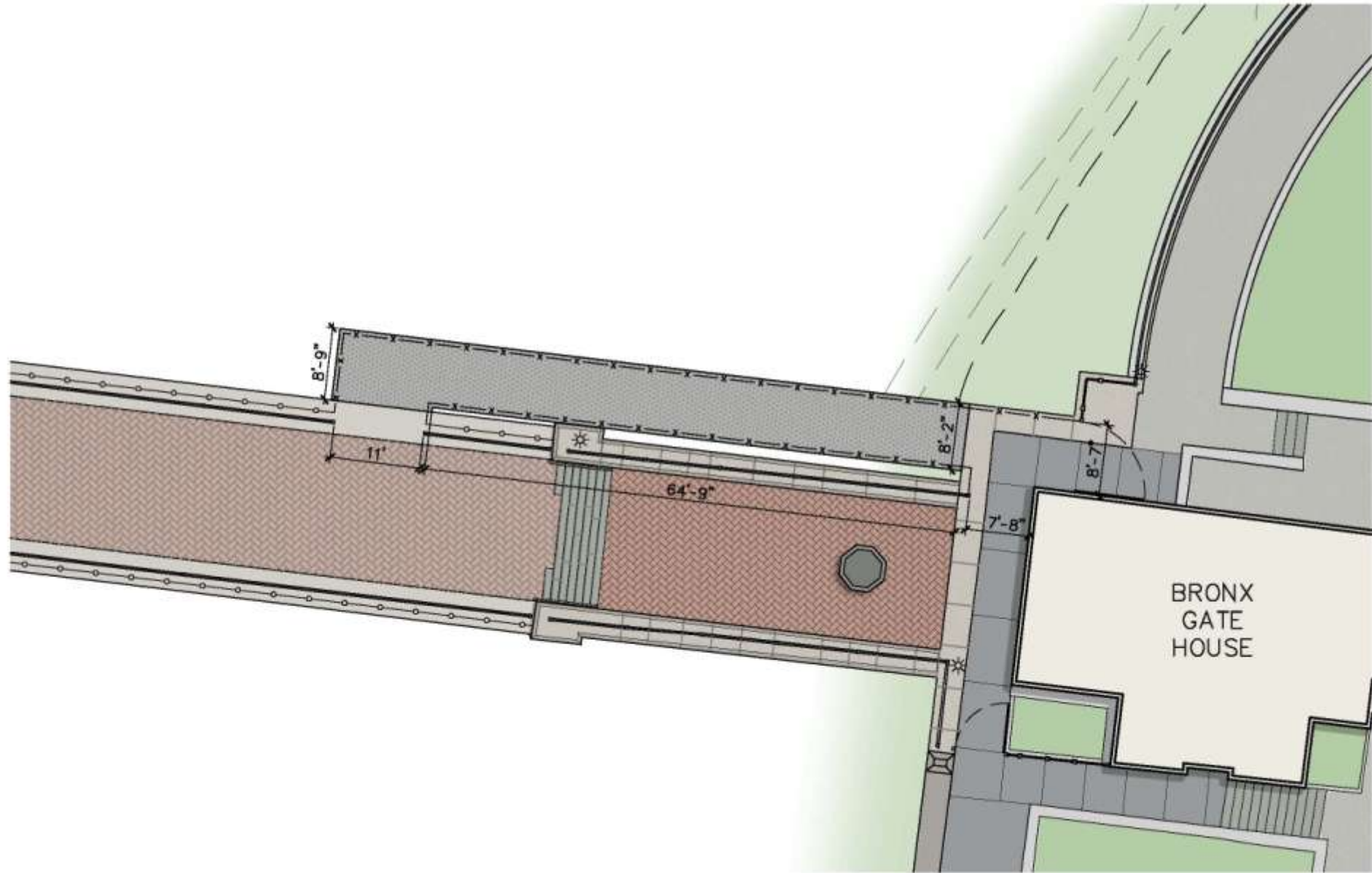
EXISTING BRIDGE ACCESS - BRONX



EXISTING BRIDGE ACCESS - MANHATTAN



ACCESS RAMPS BRONX



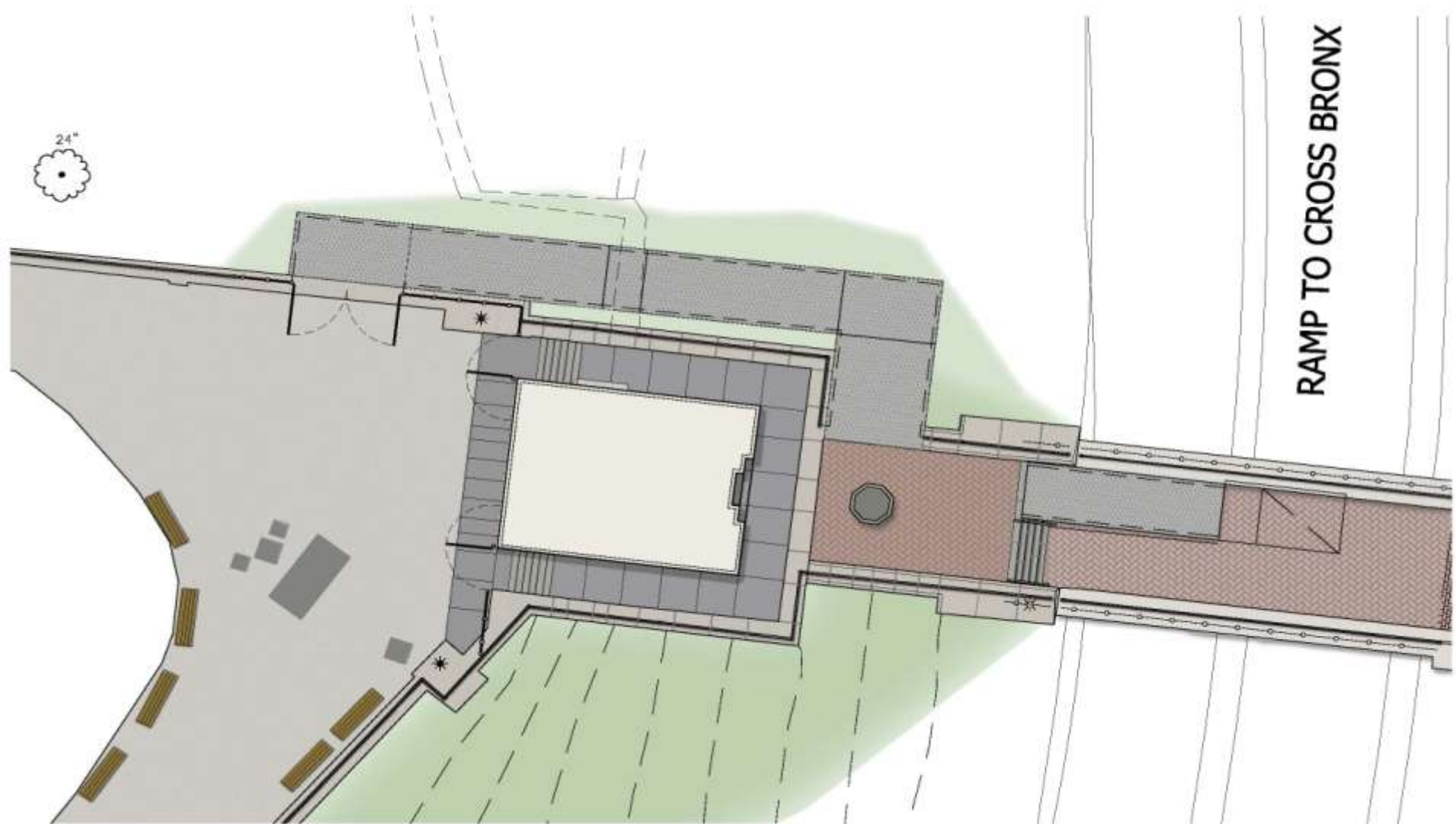
ACCESS RAMP RENDERING BRONX



ACCESS RAMP RENDERING BRONX



ACCESS RAMPS MANHATTAN



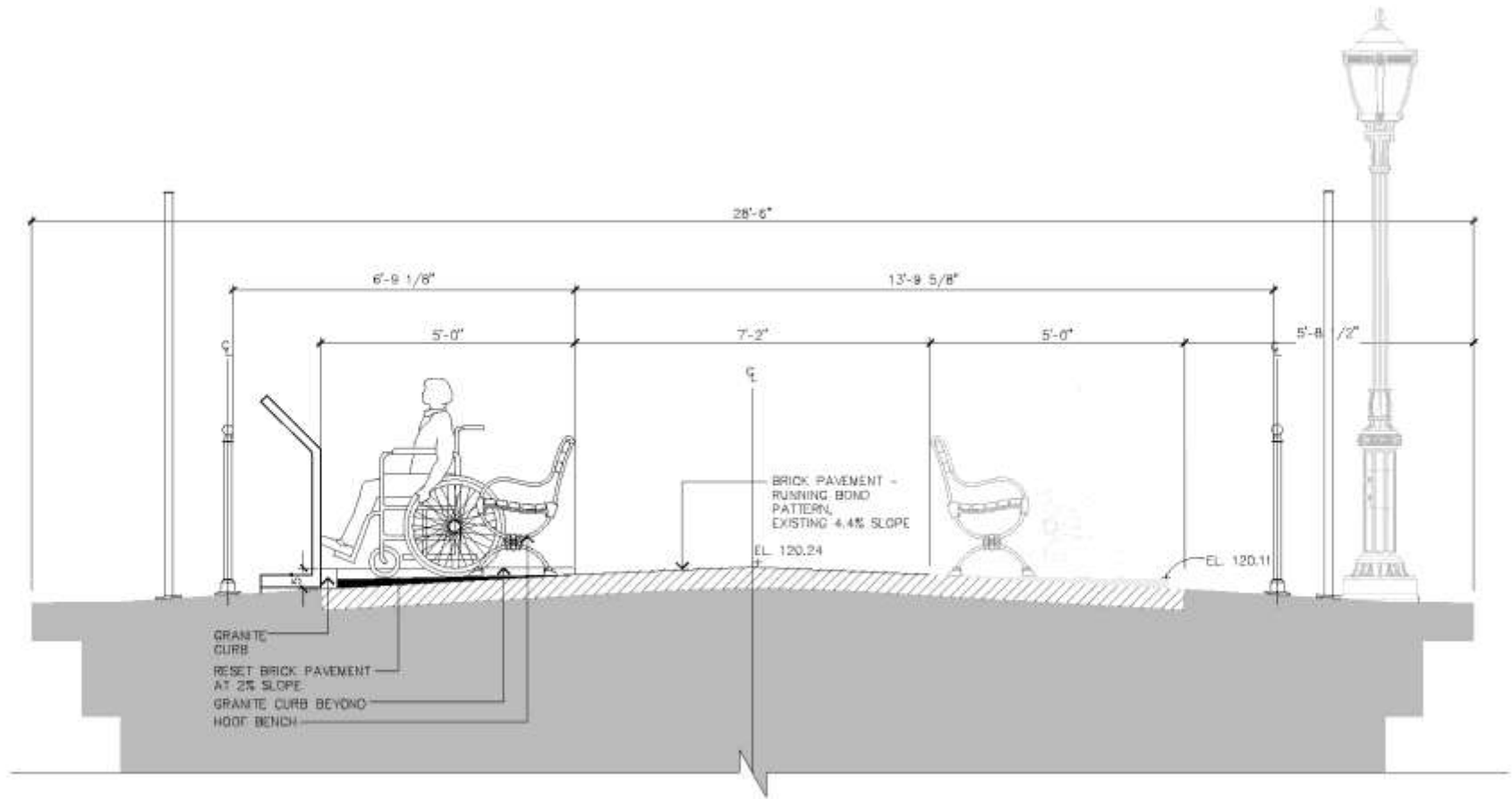
ACCESS RAMP RENDERING MANHATTAN



ACCESS RAMP RENDERING MANHATTAN



ACCESS VIEWING PLATFORMS



PROJECT SCHEDULE

Design Start	FEBRUARY 2010
Final Design Completion	SPRING 2011
Construction Start	FALL 2011
Construction Completion	FALL 2013

PROJECT FUNDING

Total Funding = \$62 Million

- \$49.6 Million through PlaNYC
- \$5 Million through Rep. José E. Serrano
- \$7.2 Million in other federal grants



Rehabilitation of the High Bridge has been made possible by funding allocated by Mayor Bloomberg. It is one of eight Regional Parks to be improved through the PlaNYC program, providing expanded recreation to local residents and regional visitors. Unveiled on Earth Day 2007, PlaNYC is an ambitious and practical plan to make New York City America's first sustainable city. As part of this plan, Mayor Bloomberg has pledged to provide more recreational opportunities to keep New Yorkers healthy and active.



City of New York
Parks & Recreation

The High Bridge is owned and operated by the Department of Parks & Recreation.



The rehabilitation project is managed by the Department of Design + Construction.



The project design team is led by Lichtenstein Consulting Engineers, PC.