# Report of Findings

City of New York

# East Side Coastal Resiliency
# Elevated Park Alternative
# Feasibility Analysis

**April 24-26, 2018**

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# SECTION 1

# SUMMARY OF FINDINGS

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On April 24-26, 2018, a collaborative effort among East Side Coastal Resiliency project stakeholders ORR, DPR, DOT, DEP, OMB, DDC, and Law convened along with the AKRF/KSE Joint Venture and members of the value engineering team. The purpose of the working group was to review the feasibility of the alternative to elevate East River Park in lieu of the baseline approach of building a floodwall along the FDR, and to facilitate a more-detailed comparison between the two schemes. This Narrative will summarize the results of that effort.

Following the Narrative are concept plan sketches for the Park, and select sections of the elevated bulkhead and the grading.

## Flood Protection

The proposed alternative elevates and protects much of East River Park, which is made possible by significant changes to three key project constraints: reconstructing the esplanade, installing a floodwall inshore of the esplanade, and reconstructing portions of the Park previously required to remain as existing. A structural flood protection intervention is required along the eastern edge in order to maintain Park program and accessibility – including both universal access for pedestrians and vehicular access for maintenance and emergencies. The western edge of the park is raised adjacent to the shared use path and would remain elevated to the flood protection structure inshore of the esplanade. The Park would meet existing grades and the flood protection would tie into the baseline alignment at the northern and southern limits of the Park. At the northern limit, a new swing gate will probably be required for this transition, while at the southern limit there would be an earthen berm with a clay core and sheet pile wall to transition to the area near the amphitheater site.

The flood protection would be achieved by driving a new steel sheet pile floodwall adjacent to, and inshore of, the existing esplanade structure (minimum of approximately 40 feet from east edge of the esplanade). In addition to providing flood protection, this wall would serve as a retaining structure for the park grading and would act as a seepage barrier. The floodwall may protrude above grade in some locations (exposed height varies). This wall would be integrated into Park landscaping features.

## Access

The shared use path is to remain at grade at its existing alignment in order to leave the Con Edison lines in place. With this alternative, design energy would have to be focused on the shared use path experience to ensure that this highly-used bicycle and pedestrian facility is a positive experience. The Delancey Street and East 10th Street Bridges would be replaced as proposed in the baseline design, though the span would be extended an additional 45 feet to span the at-grade shared use path and land in the elevated park area. New 45-foot span structures would also be

introduced at the Houston Street overpass to cross the at-grade shared use path and at the Cherry Street Bridge if the amphitheater is to be reconstructed. Maintenance vehicles will be able to travel on the reconstructed esplanade as well as the shared use path. Vehicular access across the park and connecting these two paths will be provided by a series of sloped paths between ball fields and program areas similar to the baseline proposal.

## Constraints

Active participation from the various City stakeholders enabled the group to challenge and obtain concurrence to modify certain baseline constraints. The following constraints were changed:

- The Esplanade was allowed to be modified
- The piers under the Williamsburg Bridge may be buried with fill as necessary
- The 6th Street Track & Field Facility may be demolished and reconstructed
- The Tennis House may be demolished and reconstructed
- The LESEC Composting Facility may be re-designed and constructed after ESCR
- The Con Edison lines will be left in place with no tunnel constructed, which requires the shared use path to be left at grade and in the current alignment.

The following constraints were maintained:

- The East River Park program will be the same as in the baseline alternative
- The Flood protection design criteria remains unchanged – el. 16.5' design height
- The Flood protection vegetation offset is required at a distance of 15' clear from trees/woody vegetation on either side of floodwall
- The Pier 42 project is assumed to remain in place and will be constructed before ESCR, which requires a floodwall along the FDR Drive-side of the Pier 42 project
- The project will tie into the existing grades at the north end of East River Park

## Adjustments to Buildings

To be replaced as part of Alternative:

- Tennis house – 1250 SF. Function: houses tennis manager (required for permitted access to tennis courts) and restrooms.
- Track Facility – 4400 SF. Function: East River Park maintenance operations headquarters, storage, and restrooms.

## Grading

In general, the low point of the park will be the shared use path along the FDR Drive. Moving west to east, the park elevation would then be raised with two 3-foot retaining walls to a varying height, typically ranging between el. 14.5' to 18.5'. The park remains raised across its width, meeting the flood protection elevation of 16.5' inshore of the esplanade. The esplanade grade will vary between 14.5' and 16.5' along its length. See attached sketches for plan and section views of the proposed design.

## Proposed Refinements to the Bulkhead and Esplanade

### *Proposed Sheetpile Flood Protection Wall*

The Elevated Park would raise the grade of the Park from about El. 8.5 to about El.16.5. Consequently, the Elevated Park adjustments include a steel sheetpile wall to retain the new fill. The sheetpile wall would actually serve three functions:

- Retains the new fill
- Provides a deep seepage cutoff wall
- Provides flood and wave protection

The sheet pile wall would be below grade and as such, it is not subject to corrosion from wave action during flood events.

At this time, it is not clear whether the function of a deep seepage cutoff is actually needed. Additional geotechnical analyses should be conducted to determine if there is truly a risk of seepage during the design flood event. Considering the width of the park (of 200 to 400 feet) the risk of seepage seems quite small.

For preliminary cost estimating purposes, the proposed steel sheetpile wall would have tip elevations of about El.-35 to El.-40 feet. Its length is about 6,000 lineal feet. The sheet size is AZ-36, although a smaller size can probably be used subject to further design. The sheetpile can be designed as a cantilever structure.

The existing esplanade consists of two structure types. The outboard structure is a concrete deck supported on steel pipe piles. The outboard structure is reportedly 10 to 12 years old. The inboard structure is an older, timber-pile relieving platform. This inboard structure is scheduled for rehabilitation to repair voids and encase the piles in concrete.

The outboard structure was designed for a live load of 300 psf and a vehicular load of HS-20 which would allow access by various maintenance trucks and emergency vehicles. It is recommended that the new elevated outboard esplanade be designed to carry similar loads as the original.

### *Partial Structural Reconstruction of Esplanade*

In addition to the sheetpile flood protection wall, the Alternative would include raising the level of the esplanade to el. 16.5' by reconstructing a new deck on new

girders in order to meet the park elevation and maintain the same program area of the Park.

Existing 24 inch diameter pipe piles and existing concrete pile caps can be maintained. Following local removal of the existing deck slab and hollow core planks, new deep AASHTO concrete girders would be installed in alignment with the existing piles. A new concrete deck would span from girder to girder, perpendicular to the River. The existing soldier pile-supported retaining wall would be increased in height. A new steel sheetpile wall, deadman and integral flood barrier would be installed. The pile caps would be connected to a new deadman with tie rods.

This would allow 100 to 200 psf of pedestrian load, as well as HS 20 vehicle. No other significant loading or planting would be recommended. The length of the bulkhead is about 5000 to 6000 LF of reconstructed structure.

## Utilities and Electrical

The original concept is to replace only portions of existing NYC DEP branch interceptor sewers beneath East River Park with fill over them, retaining most of the existing sewers and all existing regulators, which were only to be hardened.

The alternative concept is to retain existing NYC DEP branch interceptor sewers within the park using lightweight fill, raising sewer manholes to proposed grades and replacing or modifying regulators to meet proposed grades. Allowances have been added for replacement of damaged sewer pipe sections, and for guniting or lining of significant length of sewers.

Some advantages of this alternative concept include retaining the existing NYC DEP sewers by using lightweight fill. This will not increase loading on sewers. Also, lining of pipes will extend service life and avoid expense of full replacement of sewers in this project.

### *Electrical Utilities*

Under the Baseline and the Elevated Park Alternative, electrical utilities infrastructure work will be similar, except that in the Elevated Park, it will not need to be hardened to withstand a prolonged submerged condition. Additional light poles will be needed for the elevated esplanade.

## Risk Comparison

### *Con Edison Tunnel*

The Elevated East River Park Proposal was generated in response to concerns regarding the level of risk posed by the inclusion of the Con Edison utility tunnel in the baseline design. The Con Edison tunnel presents the most significant risk to the project. This risk could result in significant project cost and a prolonged construction schedule. The VE Team believed that this cost is not sufficiently reflected in either the baseline schedule or the cost estimate. They saw the risks as follows:

1. Under normal circumstances a tunnel for the high-tension transmission lines would be built first and the transmission cables and auxiliary pipes installation would follow, not the other way around. Unearthing the [redacted] lines is a major undertaking. All work will involve manual excavation around each – no machinery will be allowed to be used. [redacted]
2. [redacted] This type of work that usually is done by specialty contractors is expensive and extremely time consuming. Since the scope of this work cannot be estimated up front, a substantial allowance should be included in the project cost.
3. Based on the tunnel cross section information included in the 40% plans, [redacted] each pipe may need an individual support structure – possibly as close as every 5 feet.
4. Special attention should be given to positioning the new tunnel around the Con Edison transmission lines in order to maintain a safe passage through the tunnel by the repair/maintenance personnel. [redacted]
5. [redacted] and there is a risk that Con Edison's expected cost will be higher than what is being negotiated.

Adoption of the proposed alternative would avoid the risks involved in shielding the Con Edison high tension lines in East River Park.

### *FDR Drive*

Impacts to the FDR Drive would be dramatically reduced by adoption of the Elevated Park Alternative. Night construction in four-hour increments would no longer be necessary, dramatically shortening the construction of the flood protection and lessening community impacts. With the Elevated Park Alternative, all flood protection components occur within the Park.

### *Parkland Alienation*

The Elevated Park design should not require parkland alienation costs, which are currently given a broad estimate of roughly $200M-$700M for the baseline design.

Because the Alternative proposal protects East River Park, it is believed that this will be deemed to be serving a Park purpose, and therefore will not require alienation.

### *Fill Sourcing*

The quantity of fill is higher in the Alternative proposal than it is in the Baseline design, which increases the risk that fill will be difficult to source.

### *Permitting*

The Elevated Park Proposal will require DEC permitting for the elevated bulkhead. This is a known process for Parks and other agencies, and the process can be started shortly after the decision is made.

### *Impacts on Design Schedule*

Redesign is required to bring the concept of the Elevated Park to the current level of design. Preparation of the EIS will be the critical path for the design schedule. The expenditure of the HUD funding, whether partial or in full, requires certification of the EIS.

## Recommended Plan to Encumber the HUD Funding

To accelerate the design and construction of the project, the following approach could be adopted:

- Complete the FEIS and obtain approvals.
- Concurrently, design and obtain permits for reconstruction of the esplanade as the first construction package. Leave gaps in the bulkhead for reconstruction of sewer outfalls, as needed.
- Assume the contactor will use two crews simultaneously. One crew begins at the north end and the other at the south end. The bulkhead work would be performed from barges.
- Concurrently, complete the design of the park, the bridges and the balance of the project.
- Issue other early construction packages for bid: one for the modified bridges, and another for the imported fill, rough grading, and preloading the soft soils.
- Allow the fill to be delivered either by barge or by truck.

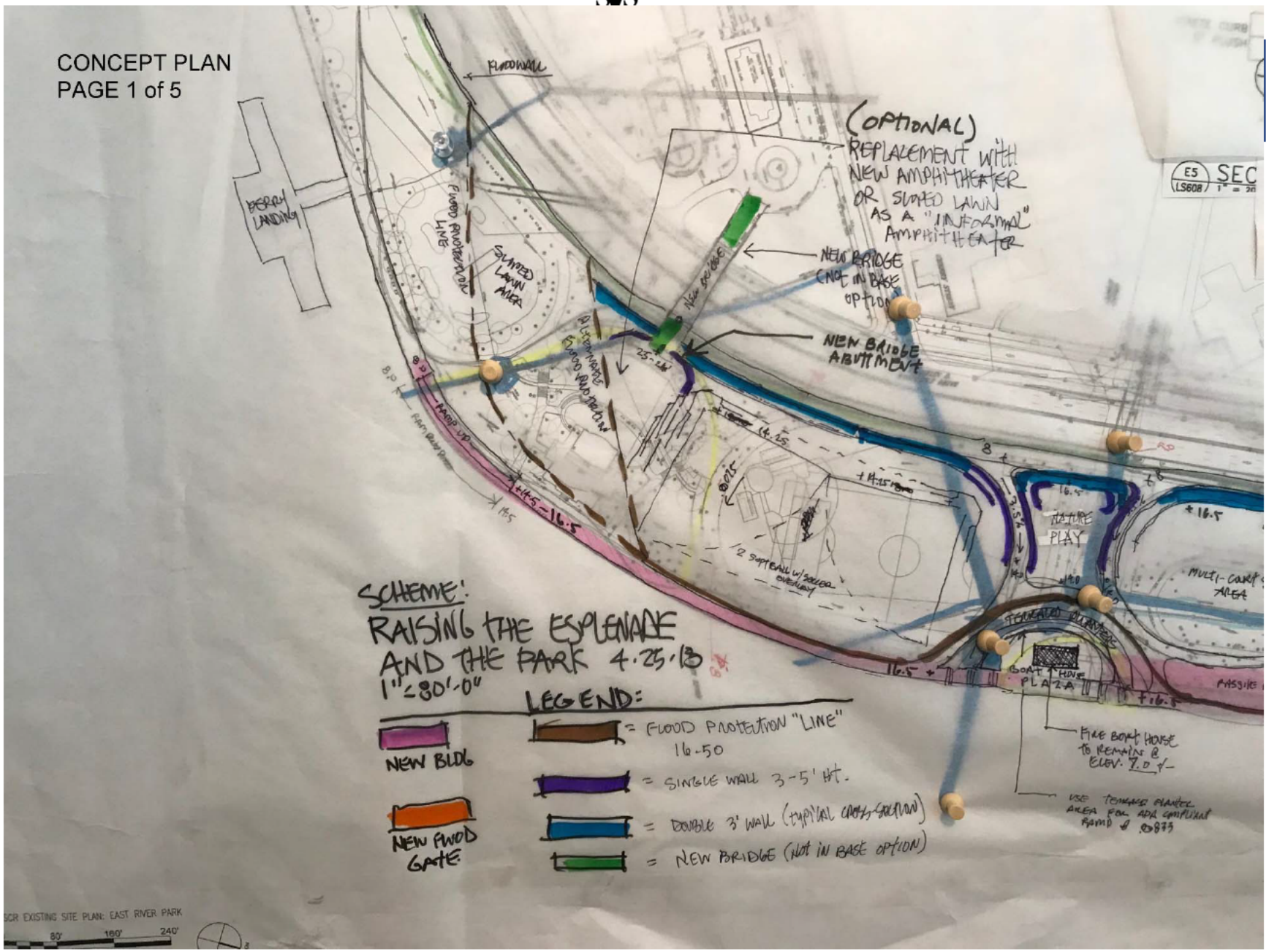
## Conclusion

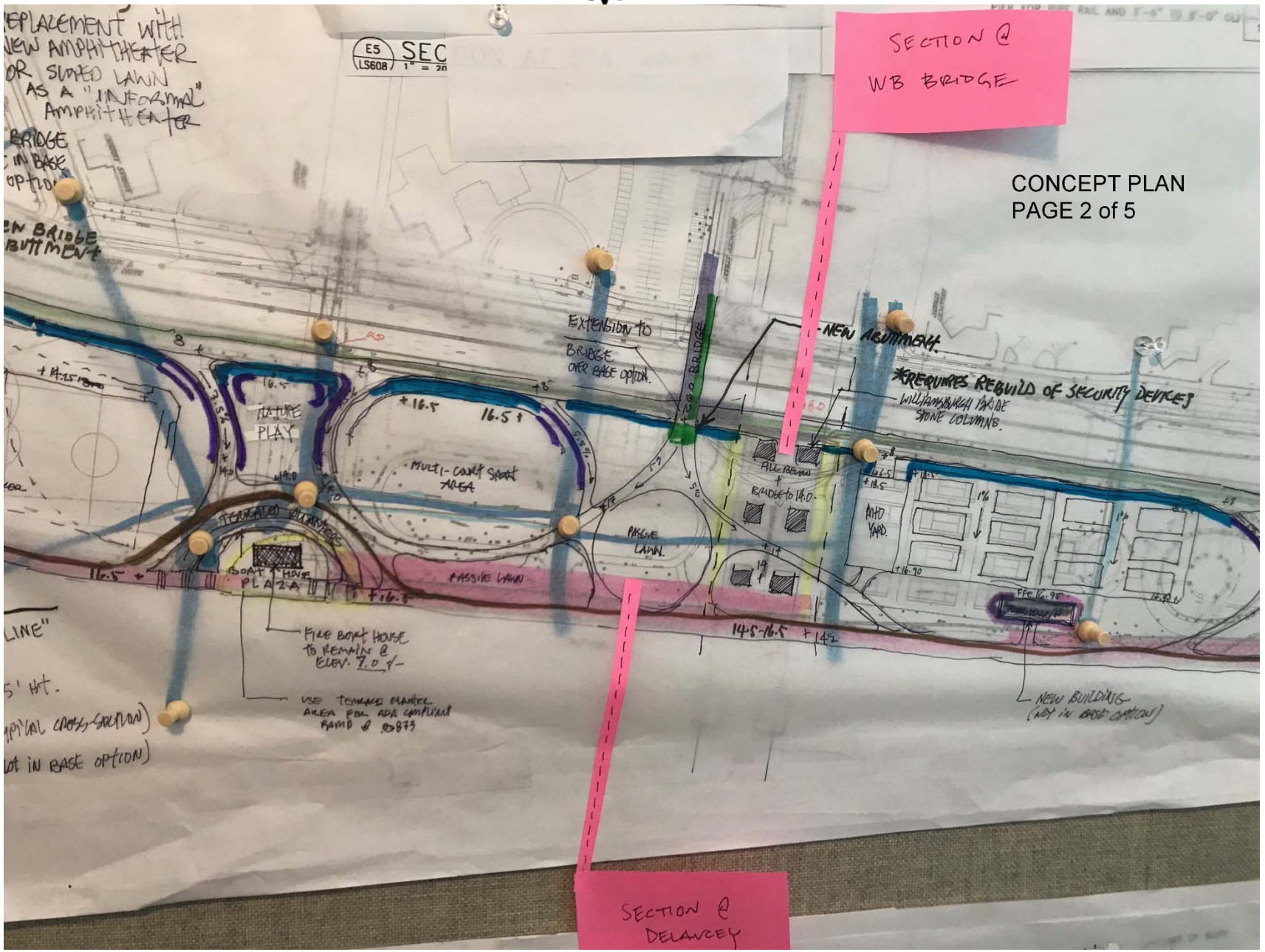
The assembled working group of city agency representatives, design team and VE team members collectively examined the feasibility of the Elevated Park Alternative, and determined that, with some adjustments to assumptions, it is achievable.

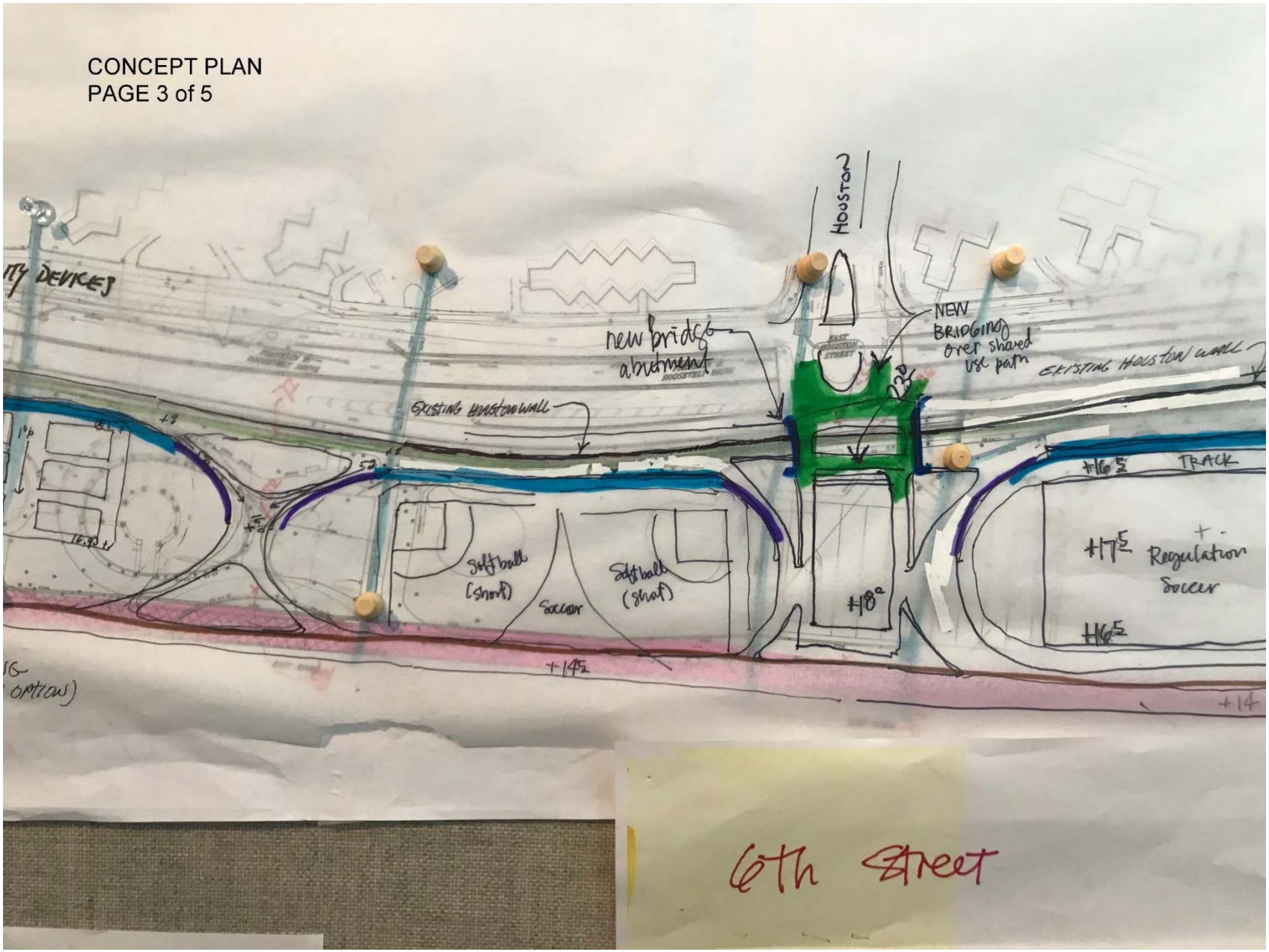
The additional cost for the Alternative is allocated to Park longevity and reduction of risk to the Project.

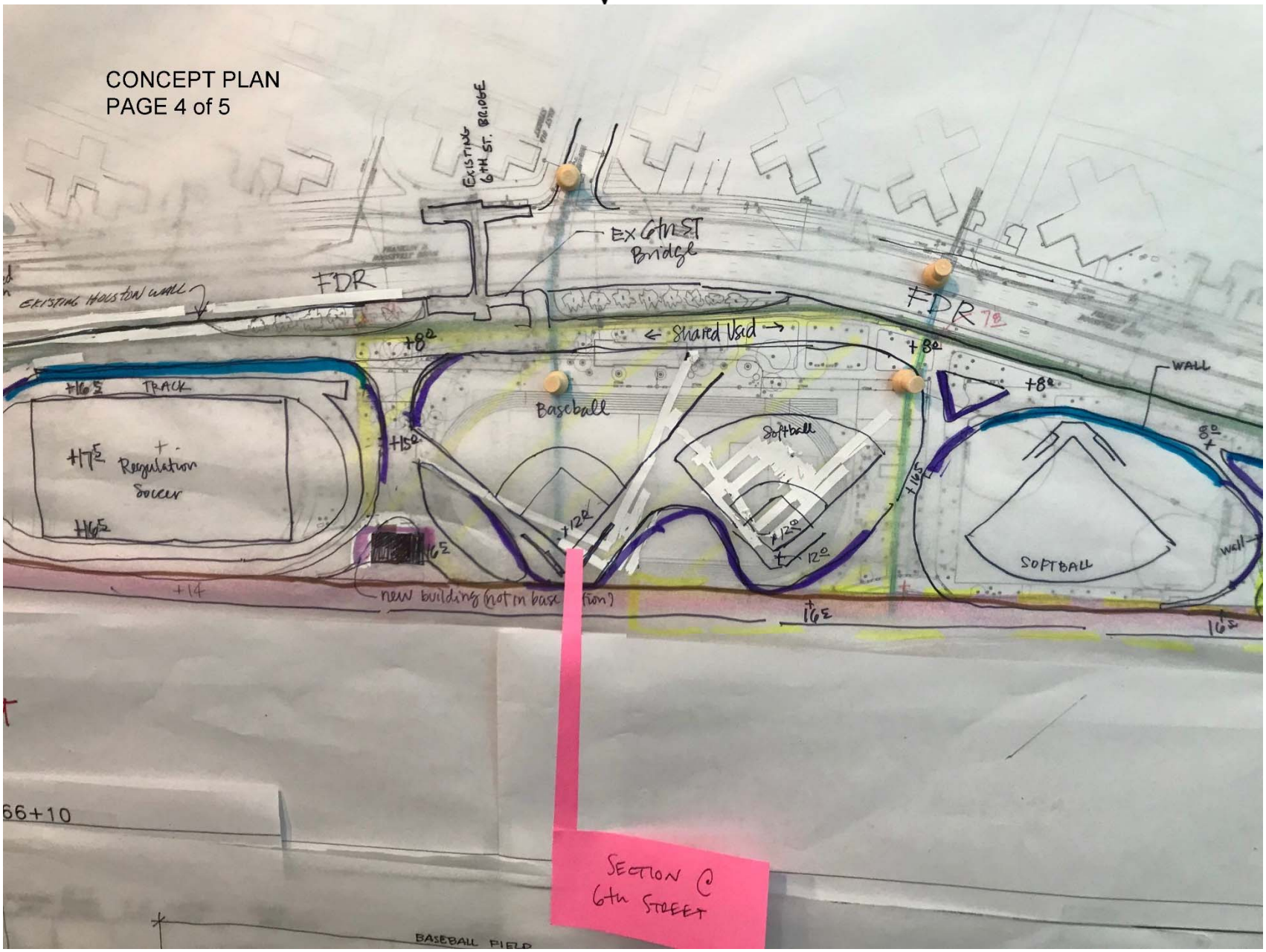
# SECTION 2

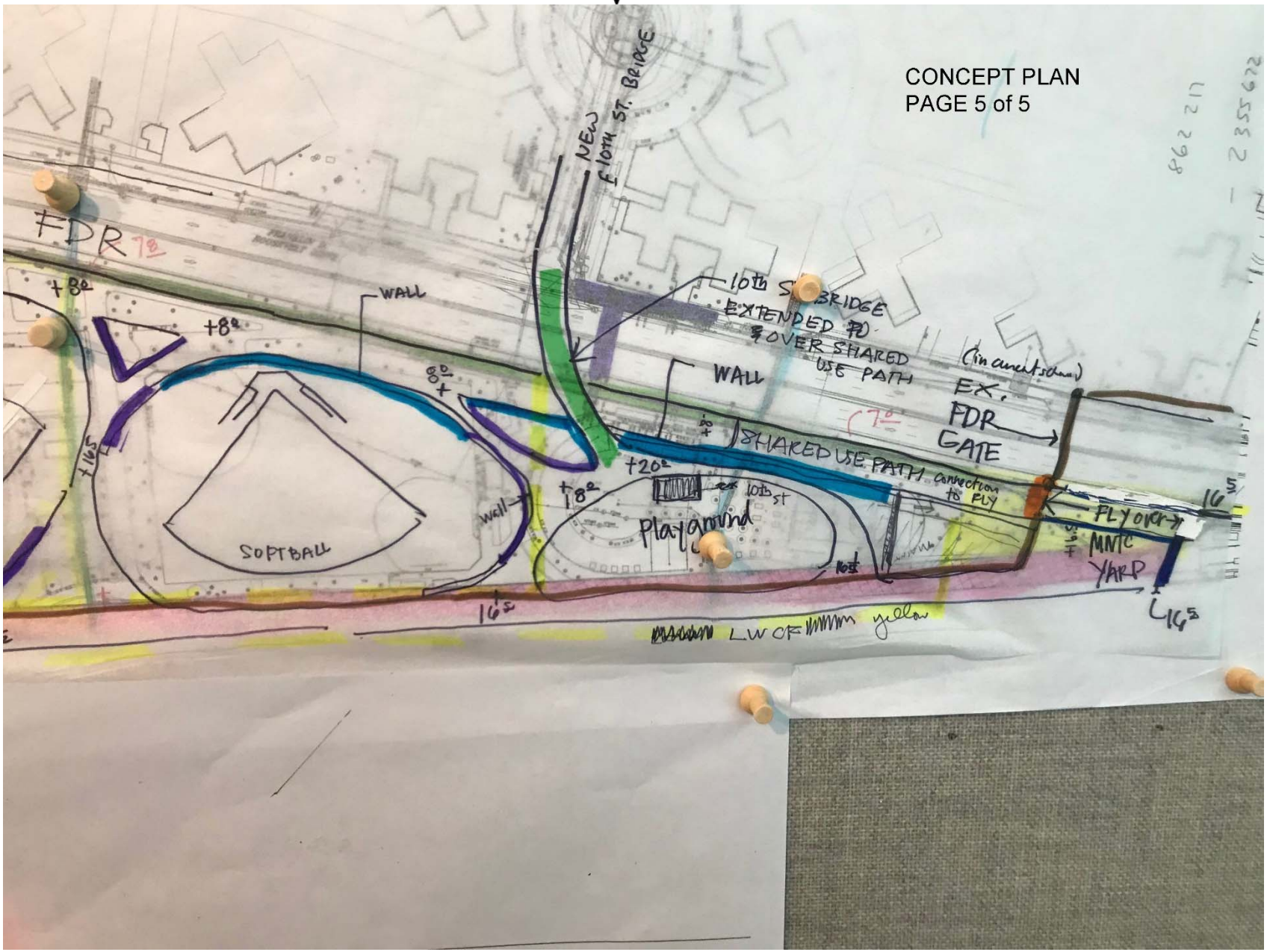
# GRAPHICS

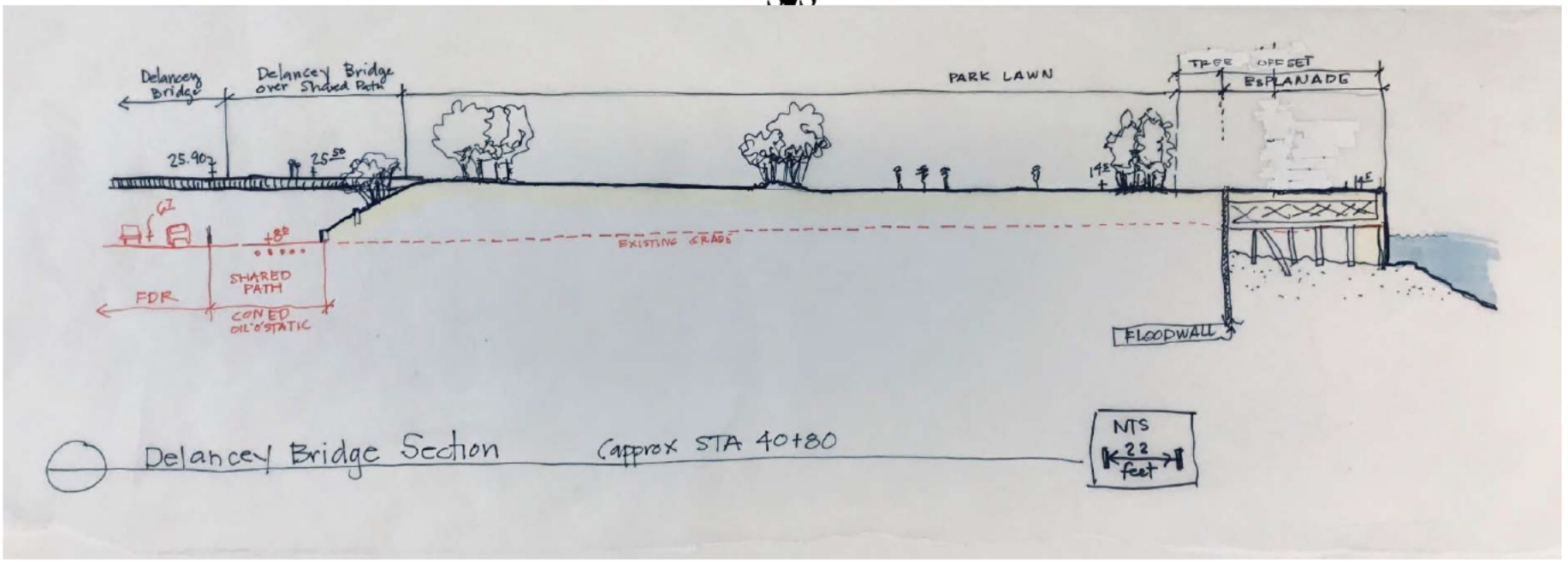

CONCEPT PLAN
PAGE 1 of 5
FLOODWALL
BERRY LANDING
FLOOD PROTECTION LINE
SLOPED LAWN AREA
(OPTIONAL)
REPLACEMENT WITH NEW AMPHITHEATER OR SLOPED LAWN AS A "INFORMAL" AMPHITHEATER
NEW BRIDGE END IN BASE OPTION
NEW BRIDGE ABUTMENT
ALTERNATE FLOOD PROTECTION
RAMP UP
+14.5-16.5
+14.25
+16.5
NATURE PLAY
MULTI-COURT AREA
TERRACED PLANTERS
GOAT HOUSE PLAZA
SCHEME:
RAISING THE ESPLENADE AND THE PARK 4.25.13
1"=30'-0"
LEGEND:
NEW BLDG
NEW FLOOD GATE
= FLOOD PROTECTION "LINE" 16-50
= SINGLE WALL 3-5' HT.
= DOUBLE 3' WALL (TYPICAL CROSS-SECTION)
= NEW BRIDGE (NOT IN BASE OPTION)
FIRE BOAT HOUSE TO REMAIN @ ELEV. 7.0 +/-
USE TERRACED PLANTER AREA FOR ADA COMPLIANT RAMP @ 8.5%
SCR EXISTING SITE PLAN: EAST RIVER PARK
80' 160' 240'

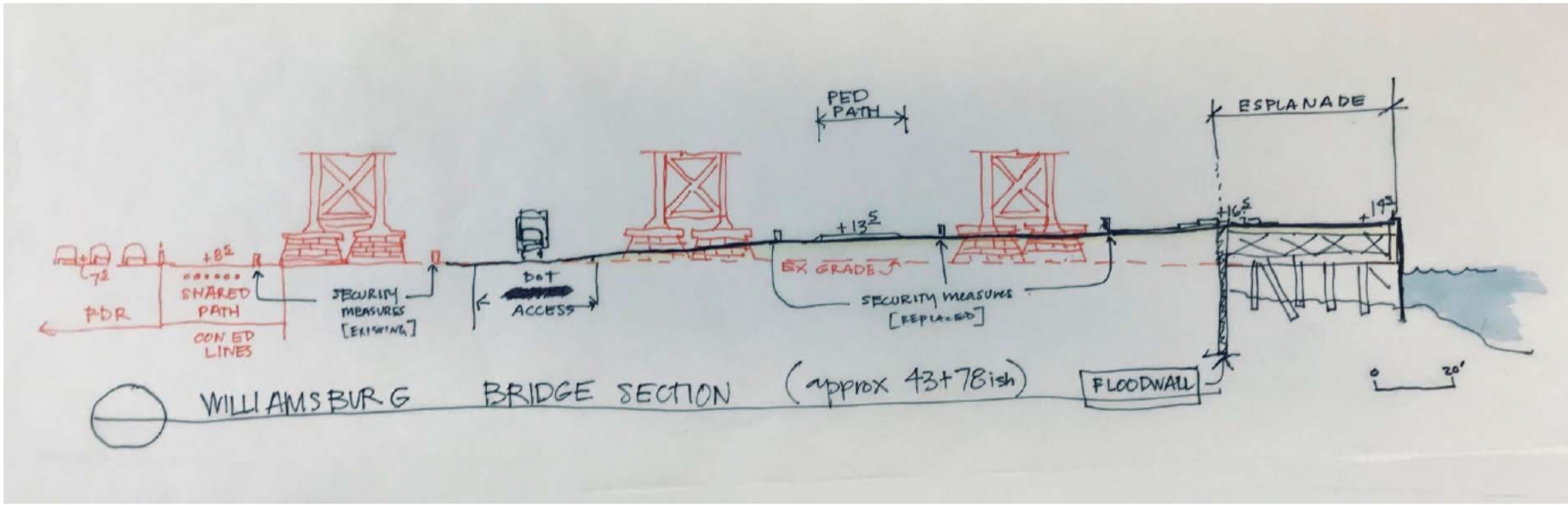

SECTION @
WB BRIDGE
CONCEPT PLAN
PAGE 2 of 5
SECTION @
DELANCEY

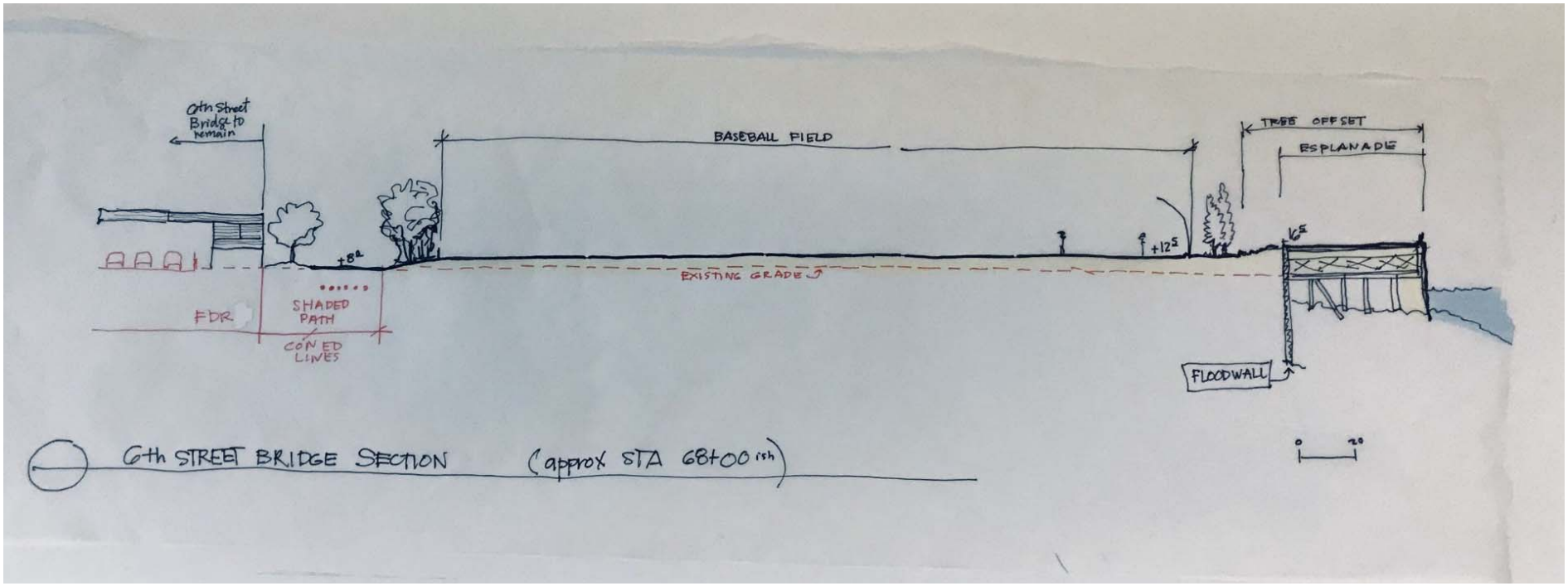

CONCEPT PLAN
PAGE 3 of 5
HOUSTON
NEW BRIDGING over shared use path
new bridge abutment
EXISTING HOUSTON WALL
EXISTING HOUSTON WALL
TRACK
Softball (short)
Soccer
Softball (short)
Regulation Soccer
6th Street

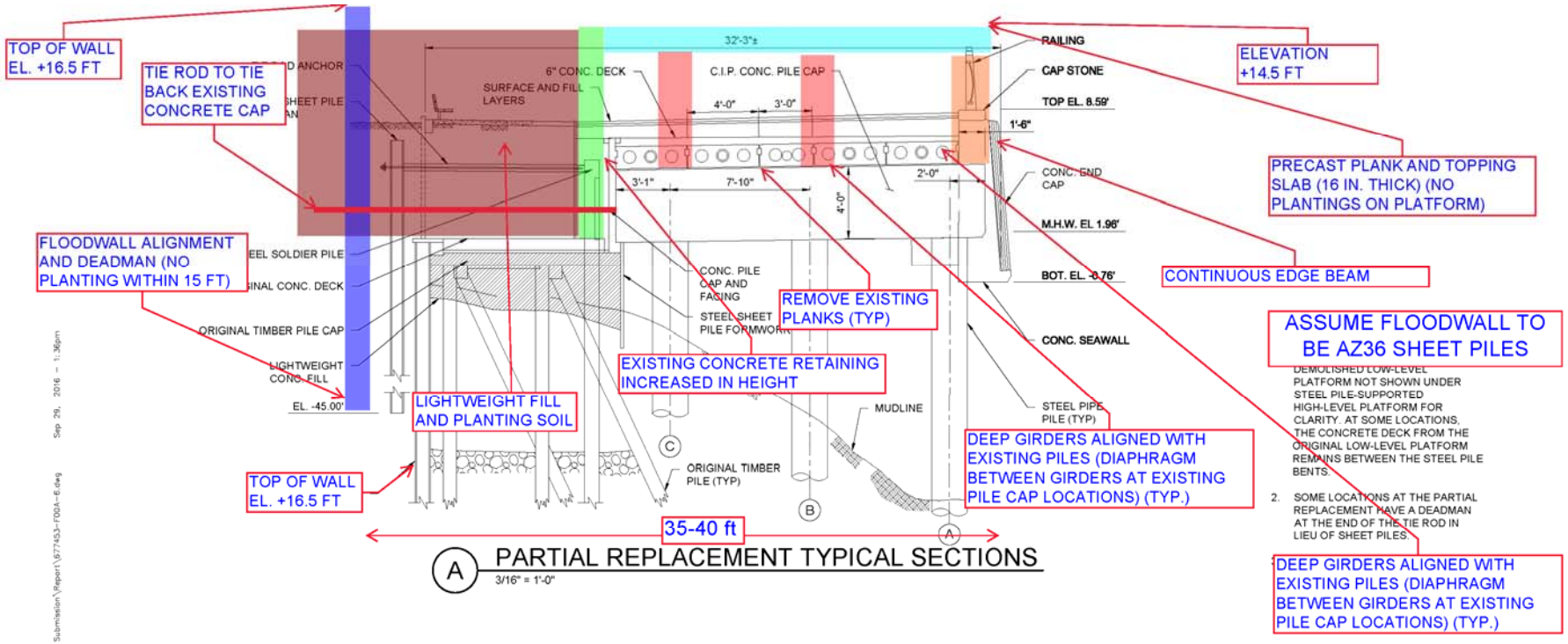

CONCEPT PLAN
PAGE 4 of 5
EXISTING 6TH ST. BRIDGE
EXISTING Bridge
FDR
EXISTING HOUSTON WALL
FDR
← Shared Used →
+8²
+8²
+8²
+16²
TRACK
+17²
Regulation Soccer
+16²
+15²
Baseball
Softball
WALL
+12²
+12²
12²
+16²
SOFTBALL
wall
+14
new building (not in base
+16²
+16²
66+10
SECTION @ 6th STREET
BASEBALL FIELD


CONCEPT PLAN
PAGE 5 of 5
FDR
WALL
+8°
+8°
80'+
NEW 10TH ST. BRIDGE
10th St BRIDGE
EXTENDED PED.
OVER SHARED
USE PATH
WALL
(in current scheme)
EX.
FDR
GATE
SHARED USE PATH connection to PLY
+20°
+18°
Playground
SOFTBALL
wall
FLY OVER
MNTC
YARD
LW OF yellow


Delancey Bridge
Delancey Bridge over Shared Path
PARK LAWN
TREE OFFSET
ESPLANADE
25.90
25.50
+8.2
EXISTING GRADE
SHARED PATH
FDR
CONED OIL & STATIC
FLOODWALL
Delancey Bridge Section (approx STA 40+80
NTS
22 feet


PED PATH
ESPLANADE
+13.5
+16.5
+19.3
+8.2
SHARED PATH
FDR
CONED LINES
SECURITY MEASURES [EXISTING]
DOT ACCESS
EX GRADE
SECURITY MEASURES [REPLACED]
FLOODWALL
0
20'
WILLIAMSBURG BRIDGE SECTION (approx 43+78ish)


6th Street Bridge to remain
BASEBALL FIELD
TREE OFFSET
ESPLANADE
+8'
+12'
EXISTING GRADE
FDR
SHADED PATH
CON ED LINES
FLOODWALL
0
20
6th STREET BRIDGE SECTION (approx STA 68+00 ish)




A PARTIAL REPLACEMENT TYPICAL SECTIONS
3/16" = 1'-0"

TYPICAL SECTION FOR RAISING OF EXISTING ESPLANADE PLATFORM

3/16"=1'-0" 0 5 10 FT.

DEPARTMENT OF DESIGN AND CONSTRUCTION
NEW YORK, NEW YORK

EAST RIVER PARK
HIGH-LEVEL PLATFORM
TYPICAL SECTIONS (SHEET 1 OF 2)

FIG A-6

S:\6\677453 - DDC ESCR Detailed Design\SUBMITTAL\(2016-09-29) Task 18 Final Submission\Report\677453-F00A-6.dwg Sep 29, 2016 - 1:36pm

# SECTION 3

# ESTIMATED COST COMPARISON

# SECTION 3
# ESTIMATED COST COMPARISON

ESCR BASELINE TO ELEVATED PARK COST COMPARISON

| Item | Description | ESCR Baseline | ESCR Elevated Park |
|---|---|---|---|
| *01* | ***BASE DESIGN*** | | |
| **01** | **FLOOD PROTECTION** | | |
| CSOC | Combined Sewer Crossings | 236,659 | 236,659 |
| DEMO | Demolition & Clearing | 4,191,989 | 4,747,309 |
| GATE | Flood Gates | 21,656,180 | 22,029,615 |
| STRU-B | Brick Wall Reconstruction | 877,297 | 877,297 |
| STRU-I | "I" Wall | 41,227,898 | 23,371,573 |
| STRU-L | "L" Wall | 38,710,092 | 6,402,890 |
| STRU-T | "T" on Grout Column | 7,952,715 | 7,952,715 |
| STRU-UT | Con Ed Tunnel | 70,329,632 | |
| UC | Utility Crossing | 42,209,765 | 42,209,765 |
| | **01 FLOOD PROTECTION** | **227,392,227** | **107,827,823** |
| **02** | **PARK LANDSCAPING** | | |
| ASPHALT | Paving | 4,844,896 | 4,844,896 |
| BELGIAN | Salvage Granite Block Pavers at Base Course | 488,414 | 488,414 |
| BENCH | Benches | 964,914 | 964,914 |
| BIKE PATH | Bike Path | 693,615 | 693,615 |
| BIKE RACK | Bike Racks | 55,579 | 55,579 |
| BOLLARD | Bollards | 22,383 | 22,383 |
| CL FENCE | CL Fencing | 1,648,315 | 1,648,315 |
| CONC | Sidewalks | 149,424 | 149,424 |
| DRAINAGE | Drainage | 2,610,000 | 2,610,000 |
| ELEC | Electrical | 89,242 | 89,242 |
| FILL IMP | Impervious Fill | 961,850 | 961,850 |
| FILL LS | Landscape/Plantable Fill | 6,606,622 | 6,606,622 |
| LIGHT | Lighting | 4,696,451 | 4,696,451 |
| PAVING | Paving | 7,362,052 | 7,362,052 |
| PLAYGROUND | Playgrounds | 6,771,499 | 6,771,499 |
| PLUMBING | Plumbing | 1,181,271 | 1,181,271 |
| RAILING | Railings | 2,792,416 | 2,792,416 |
| RAMP | DOT Pedestrian Sidewalk Ramp | 261,008 | 261,008 |
| SEATWALL | Seatwall | 1,696,723 | 1,696,723 |
| SPORT LIGHT | Sports Lighting | 3,916,801 | 3,916,801 |
| SYN TURF | Synthetic Turf | 2,920,734 | 2,920,734 |
| TABLES | Tables | 481,030 | 481,030 |
| TRASH | Trash Receptacles | 211,266 | 211,266 |
| TRENCH | Utility Trenching | 270,492 | 270,492 |
| WI FENCE | Wrought Iron | 418,534 | 418,534 |
| | **02 PARK LANDSCAPING** | **52,115,531** | **52,115,531** |
| **03** | **PARK UTILITIES** | | |
| CB | Catch Basin Modification | 66,700 | 66,700 |
| DEMO | Demolition & Clearing | 6,524 | 6,524 |
| DW | Domestic Water Distribution | 1,946,318 | 1,946,318 |
| ELEC | Electrical | 14,500,000 | 14,500,000 |

## ESCR BASELINE TO ELEVATED PARK COST COMPARISON

| | | | |
|---|---|---|---|
| IRRIG | Irrigation | 435,000 | 435,000 |
| LIGHT | Lighting | 7,250,000 | 7,250,000 |
| NG | Natural Gas Distribution | 36,250 | 36,250 |
| PLUMBING | Plumbing | 10,804 | 10,804 |
| WATER | Water Main | 210,605 | 210,605 |
| **03** | **PARK UTILITIES** | **24,462,201** | **24,462,201** |
| **04** | **PEDESTRIAN BRIDGES** | | |
| PB | Pedestrian Bridge | 41,221,906 | 41,221,906 |
| **04** | **PEDESTRIAN BRIDGES** | **41,221,906** | **41,221,906** |
| **05** | **COMBINED SEWER SYSTEM** | | |
| MH-M | Manhole Modifications | 2,193,550 | 2,193,550 |
| MH-R | Manhole Repairs (By Type) | 347,212 | 347,212 |
| MH-SR | Manhole Reconstructed @ Sewer Replacement | 2,252,549 | 2,252,549 |
| REG | Regulator Strengthening | 6,697,355 | 6,697,355 |
| SEWER | Sewer Reconstruction | 41,816,051 | 41,816,051 |
| **05** | **COMBINED SEWER SYSTEM** | **53,306,716** | **53,306,717** |
| **06** | **COMFORT STATION** | | |
| Comfort Sta | Comfort Station | 2,799,225 | 2,799,225 |
| **06** | **COMFORT STATION** | **2,799,225** | **2,799,225** |
| **07** | **INTERCEPTOR GATES** | | |
| INT | Install Interceptor Gates | 11,600,000 | 11,600,000 |
| **07** | **INTERCEPTOR GATES** | **11,600,000** | **11,600,000** |
| **08** | **WATER MAIN RELOCATION (24")** | | |
| WATER | Water Main | 2,612,204 | 2,612,204 |
| **08** | **WATER MAIN RELOCATION (24")** | **2,612,204** | **2,612,204** |
| **10** | **AMENDMENTS** | **5,500,000** | 0 |
| ***01*** | ***BASE DESIGN SUBTOTAL*** | ***421,010,011*** | ***295,945,607*** |
| ***11*** | ***PARK ADJUSTMENTS*** | | |
| **02** | **PARK LANDSCAPING** | | |
| Fill | Fill | | 4,445,733 |
| Fire Hse | Fire house | | 82,500 |
| Ops Bldg | Operations Building | | 3,281,250 |
| Ret Walls | Retaining Walls | | 2,642,111 |
| Tennis Bldg | Tennis Building | | 5,250,000 |
| Track&Fld | Track & Field | | 4,361,000 |
| **02** | **PARK LANDSCAPING** | | **20,062,594** |
| **04** | **PEDESTRIAN BRIDGES** | | |
| PB | Pedestrian Bridge | | 7,613,630 |
| **04** | **PEDESTRIAN BRIDGES** | | **7,613,630** |
| **05** | **COMBINED SEWER SYSTEM** | | |
| MH-SR | Manhole Reconstructed @ Sewer Replacement | | 719,964 |
| **05** | **COMBINED SEWER SYSTEM** | | **719,964** |
| **06** | **COMFORT STATION** | | |
| Comfort Sta | Comfort Station | | 2,392,500 |
| **06** | **COMFORT STATION** | | **2,392,500** |
| ***11*** | ***PARK ADJUSTMENTS SUBTOTAL*** | ***0*** | ***30,788,689*** |
| ***12*** | ***ESPLANADE ADJUSTMENTS*** | | |

## ESCR BASELINE TO ELEVATED PARK COST COMPARISON

| | | | |
|---|---|---|---|
| **05** | **COMBINED SEWER SYSTEM** | | |
| SEWER | Sewer Reconstruction | | 3,100,000 |
| **12** | **ESPLANADE PARTIAL WIDTH SECTION A** | | |
| BELGIAN | Salvage Granite Block Pavers over Base Course | | 2,357,762 |
| Demo | Demolition | | 1,586,053 |
| FILL LS | Landscape/Plantable Fill | | 20,480,527 |
| LW Fill | LW Fill | | 5,976,356 |
| RAILING | Railings | | 3,371,252 |
| Structure | Structure | | 24,987,099 |
| Topping | Topping | | 819,154 |
| | **12 ESPLANADE PARTIAL WIDTH SECTION A** | | **59,578,202** |
| **13** | **ESPLANADE FULL WIDTH SECTION B** | | |
| BELGIAN | Salvage Granite Block Pavers over Base Course | | 2,167,619 |
| Demo | Demolition | | 1,209,734 |
| FILL LS | Landscape/Plantable Fill | | 18,828,872 |
| RAILING | Railings | | 3,099,377 |
| Structure | Structure | | 34,713,331 |
| Topping | Topping | | 1,257,227 |
| | **13 ESPLANADE FULL WIDTH SECTION B** | | **61,276,161** |
| | ***12 ESPLANADE ADJUSTMENTS SUBTOTAL*** | ***0*** | ***123,954,363*** |
| ***15*** | ***SEWER REHABILITATION*** | | |
| **05** | **COMBINED SEWER SYSTEM** | | |
| SEWER | Sewer Reconstruction | | 12,504,194 |
| | **05 COMBINED SEWER SYSTEM** | | **12,504,194** |
| **09** | **REGULATORS** | | |
| REG | Regulator Strengthening | | 39,000,000 |
| | **09 REGULATORS** | | **39,000,000** |
| | ***15 SEWER REHABILITATION SUBTOTAL*** | ***0*** | ***51,504,194*** |
| | **Total with Adjustments** | **421,010,011** | **502,192,852** |

## ESCR BASELINE TO ELEVATED PARK COST COMPARISON

**Direct Cost with Markups**

| | ESCR Baseline | ESCR Elevated Park |
|---|---|---|
| Labor | 253,731,259 | 329,027,124 |
| Material | 107,343,633 | 119,125,380 |
| Subcontract | | |
| Equipment | 35,034,715 | 28,935,274 |
| Other | 24,900,405 | 25,105,074 |
| | **421,010,012** | **502,192,852** |
| Contingency | 126,303,003 | 150,657,856 |
| | **547,313,015** | **652,850,708** |
| Escalation 3.34 year x 4% | 76,350,165 | 91,072,674 |
| | **623,663,180** | **743,923,382** |
| GC General Conditions | 62,366,318 | 74,392,338 |
| | **686,029,498** | **818,315,720** |
| Overhead & Profit (10%&5%) | 102,904,425 | 122,747,358 |
| | **788,933,923** | **941,063,078** |
| Contractor Bond & Insurance | 15,778,678 | 18,821,262 |
| | **804,712,601** | **959,884,340** |
| Tree Mitigation | 21,783,580 | 33,783,580 |
| DEP Interior Drainage | 161,967,141 | 161,967,141 |
| | **988,463,322** | **1,155,635,061** |
| **Total** | **988,463,322** | **1,155,635,061** |
| Alienation Mitigation Allowance | 300,000,000 | 0 |
| **TOTAL CONSTRUCTION** | **$1,288,463,322** | **$1,155,635,061** |

# SECTION 4

# ATTENDEES

# SECTION 4
# ATTENDEES

## OMB TECHNICAL SERVICES UNIT
### VE MEETING ATTENDANCE SHEET

*VETC* [redacted] SVS *DATE:* Tuesday, April 24th, 2018

*LOCATION* 255 Park Place, 8th Floor, Conference Room 8-S1/S2

*STUDY* ESCR VE Meeting

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 1. Robert Collyer | NYCDOT - Bridges | Phone 212 839-6300<br>Fax<br>E-Mail rcollyer@dot.nyc.gov |
| 2. Leslie Wolf | NYC DOT - Capital Plan. | Phone 212 839-4975<br>Fax<br>E-Mail LWOLF@DOT.NYC.GOV |
| 3. [redacted] | Mueser Rutledge Consulting Engineers | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 4. [redacted] | ditto | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 5. Leslie Peoples | Parks | Phone 718 393 7381<br>Fax<br>E-Mail Leslie.Peoples@parks.nyc.gov |
| 6. Alyssa Cobb Kohen | Parks | Phone<br>Fax<br>E-Mail alyssa.cobb@parks.nyc.gov |
| 7. Julia Kerson | Mayor's office DMOps | Phone<br>Fax<br>E-Mail jkerson@cityhall.nyc.gov |
| 8. Sarah Neilson | NYC Parks | Phone Sarah.neilson@<br>Fax parks.nyc.gov<br>E-Mail |
| 9. Lawrence Mauro | NYC Parks | Phone<br>Fax LAWRENCE.MAURO@<br>E-Mail PARKS.NYC.GOV |
| 10. Owen Wells | NYC Parks | Phone 212-360-3492<br>Fax<br>E-Mail owen.wells@parks.nyc.gov |

# OMB TECHNICAL SERVICES UNIT
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***STUDY*** **ESCR VE Meeting**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 11. CARL RODRIGUES | CITY HALL / HDS | Phone 212 341 5350<br>Fax<br>E-Mail crodrigues@cityhall.nyc.gov |
| 12. Ben Furnas | City Hall / FDM | Phone 212-341-5093<br>Fax<br>E-Mail bfurnas@cityhall.nyc.gov |
| 13. JAINEY BAVISHI | ORR | Phone 212-748-0333<br>Fax<br>E-Mail jbavishi@cityhall.nyc.gov |
| 14. [redacted] | SITEWORKS | Phone<br>Fax<br>E-Mail [redacted] |
| 15. CARRIE GRASSI | ORR | Phone<br>Fax<br>E-Mail Cgrassi@Cityhall.nyc.gov |
| 16. Minelly DeCoo | ORR | Phone mdecoo@cityhall.nyc.gov<br>Fax<br>E-Mail |
| 17. Jim Garin | DEP | Phone 718.595-5501<br>Fax<br>E-Mail jgarin@dep.nyc.gov |
| 18. Eleanor Rogers | DDC | Phone<br>Fax<br>E-Mail ROGERSEL@DDC.NYC.GOV |
| 19. Brian Pellicore | OMB | Phone 212 788 6346<br>Fax<br>E-Mail pellicorb@omb.nyc.gov |
| 20. [redacted] | CH2M / Jacobs | Phone [redacted]<br>Fax<br>E-Mail [redacted] |

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| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 21. [redacted] | CH2M / Jacobs | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 22. [redacted] | LAZ. ENG. | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 23. [redacted] | MNLA | Phone<br>Fax<br>E-Mail [redacted] |
| 24. Scott Johnson | OMB TECHNICAL SERVICES | Phone 212-788-6144<br>Fax 6200<br>E-Mail JohnsonS@cmb.nyc.gov |
| 25. Jill Weller | OMB Tech Svcs | Phone 212.788.6137<br>Fax 6200<br>E-Mail wellerj@omb.nyc.gov |
| 26 [redacted] | MNLA | Phone [redacted]<br>Fax<br>E-Mail |
| 27. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 28. [redacted] | ONE ARCHITECTURE | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 29. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 30. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |

# OMB TECHNICAL SERVICES UNIT
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*STUDY* **ESCR VE Meeting**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 31. [redacted] | ARCADIS | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 32. ERAM QADRI | NYCOMB | Phone 212-788-6241<br>Fax<br>E-Mail qadrie@omb.nyc.gov |
| 33. THU-LOAN DINH | NYCDDC | Phone<br>Fax DINHTH@DDC.NYC.GOV<br>E-Mail [redacted] |
| 34. Haley Stein | NYC Law | Phone<br>Fax<br>E-Mail hstein@law.nyc.gov |
| 35. Curtis Cravens | CER | Phone<br>Fax ccravens@cityhall.nyc.gov<br>E-Mail |
| 36. Cherry Mui | ORR | Phone<br>Fax<br>E-Mail cmui@cityhall.nyc.gov |
| 37. Enam Haque | DEP | Phone<br>Fax<br>E-Mail ehaque@dep.nyc.gov |
| 38. Christina Larkin | OMB CDBG-DR | Phone (212)788-8236<br>Fax<br>E-Mail LARKINC@omb.nyc.gov |
| 39. CALVIN JOHNSON | OMB CDBG-DR | Phone 212 788 6224<br>Fax<br>E-Mail johnsonc@omb.nyc.gov |
| 40. Judy Chang | DOT | Phone 212-839-9798<br>Fax<br>E-Mail jchang1@dot.nyc.gov |

# OMB TECHNICAL SERVICES UNIT
## VE MEETING ATTENDANCE SHEET

*VETC* [redacted] SVS *DATE:* Tuesday, April 24th, 2018

*LOCATION* 255 Park Place, 8th Floor, Conference Room 8-S1/S2

*STUDY* ESCR VE Meeting

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 41. Matthew Wentel | C/DOT | Phone<br>Fax<br>E-Mail mwentel@dot.nyc.gov |
| 42. Jaye Li | Mayor's Office DM Ops | Phone<br>Fax<br>E-Mail jli@cityhall.nyc.gov |
| 43. Terry Michaud | OMB Tech Serv | Phone (212) 788-6167<br>Fax 6200<br>E-Mail michaudt@omb.nyc.gov |
| 44. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 45 [redacted] | ONE ARCHITECTURE | Phone<br>Fax<br>E-Mail [redacted] |
| 46. [redacted] | STRATEGIC VALUE SOLUTIONS, Inc. | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 47. [redacted] | Strategic Value Solutions, Inc. | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 48. Travis Godsoe | OMB Tech Services | Phone 212-788-6158<br>Fax 212-788-6200<br>E-Mail godsoet@omb.nyc.gov |
| 49. [redacted] | MVA | Phone<br>Fax<br>E-Mail |
| 50. | | Phone<br>Fax<br>E-Mail |

# OMB TECHNICAL SERVICES UNIT
## VE MEETING ATTENDANCE SHEET

***VETC*** [redacted]SVS ***DATE:*** **Wednesday, April 25th, 2018**

***LOCATION*** **255 Park Place, 8th Floor, Conference Room 8-S1/S2**

***STUDY*** **ESCR VE Meeting**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 1. Travis Godsoe | OMB Tech Services | Phone 212-788-6158<br>Fax 212-788-6200<br>E-Mail |
| 2. Lacy SHELBY | NYC DOT | Phone<br>Fax<br>E-Mail LSHELBY@DOT.NYC.GOV |
| 3. Jill Weller | OMB Tech Svcs | Phone 212.788.6137<br>Fax 6200<br>E-Mail wellerj@omb.nyc.gov |
| 4. [redacted] | Strategic Value Solutions, Inc. | Phone<br>Fax<br>E-Mail [redacted] |
| 5. [redacted] | Strategic Value Solutions, Inc. | Phone<br>Fax<br>E-Mail [redacted] |
| 6. Terry Michaud | OMB Technical Services | Phone (212) 788-6167<br>Fax 6200<br>E-Mail michaudt@omb.nyc.gov |
| 7. Scott Johnson | OMB Technical Services | Phone 212-788-6114<br>Fax 6200<br>E-Mail JohnsonS@dep.nyc.gov |
| 8. Mathew Winkell | NYC DOT | Phone<br>Fax<br>E-Mail MWinkell@dot.nyc.gov |
| 9. Habey Stern | NYC Law | Phone<br>Fax hstein@law.nyc.gov<br>E-Mail |
| 10. Jim GARIN | NYC-DEP | Phone<br>Fax<br>E-Mail jgarin@dep.nyc.gov |

# OMB TECHNICAL SERVICES UNIT
## VE MEETING ATTENDANCE SHEET

*VETC* [redacted] SVS *DATE:* **Wednesday, April 25th, 2018**

*LOCATION* **255 Park Place, 8th Floor, Conference Room 8-S1/S2**

*STUDY* **ESCR VE Meeting**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 11. Lawrence Masucci | Parks | Phone<br>Fax<br>E-Mail |
| 12. [redacted] | Slow Construction Consulting | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 13. [redacted] | AKRF | Phone<br>Fax<br>E-Mail [redacted] |
| 14. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 15. Enam Haque | DEP | Phone<br>Fax<br>E-Mail ehaque@dep.nyc.gov |
| 16. Julia Kerson | Mayors Office | Phone<br>Fax<br>E-Mail jkerson@cityhall.nyc.gov |
| 17. [redacted] | HDR | Phone<br>Fax<br>E-Mail [redacted] |
| 18. Eleanor Rogers | DOC | Phone<br>Fax<br>E-Mail ROGERSEL@DOC.NYC.GOV |
| 19. [redacted] | SITEWORKS | Phone<br>Fax<br>E-Mail [redacted] |
| 20. Leslie Peoples | NYC Parks | Phone<br>Fax<br>E-Mail Leslie.Peoples@parks.nyc.gov |

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## VE MEETING ATTENDANCE SHEET

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***STUDY*** **ESCR VE Meeting**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 21. Alda Chan | NYC Parks | Phone 2123603413<br>Fax<br>E-Mail Alda.Chan@parks.nyc.gov |
| 22. [redacted] | Jacobs | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 23. [redacted] | ARCADIS | Phone [redacted]<br>Fax<br>E-Mail |
| 24. Jady Chang | DOT | Phone (212) 839-9798<br>Fax<br>E-Mail jchang1@dot.nyc.gov |
| 25. SARAH NEILSON | NYC PARKS | ~~Phone~~<br>~~Fax~~ sarah.neilson@parks.nyc.gov<br>E-Mail |
| 26. [redacted] | ONE ARCH. | Phone<br>Fax<br>E-Mail [redacted] |
| 27. [redacted] | LAZ. ENG. | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 28. [redacted] | MVVA | Phone<br>Fax<br>E-Mail |
| 29. | | Phone<br>Fax<br>E-Mail |
| 30. | | Phone<br>Fax<br>E-Mail |

# OMB TECHNICAL SERVICES UNIT
## VE MEETING ATTENDANCE SHEET

*VETC* [redacted] **SVS, Inc.**

*LOCATION* **OMB, 255 Greenwich Street, 7th Floor, Conference Room E-10**

*STUDY* **ESCR Proposal Review** *DATE:* **Thursday, April 26th, 2018**

| NAME | Company /Agency | - |
|---|---|---|
| 1. [redacted] | Mueser Rutledge | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 2. [redacted] | MUESER RUTLEDGE | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 3. Owen Wells | Parks | Phone<br>Fax<br>E-Mail owen.wells@parks.nyc.gov |
| 4. Lacy Shelby | DOT | Phone<br>Fax<br>E-Mail LShelby@DOT.NYC.GOV |
| 5. THU-LOAN DINH | NYC DDC | Phone<br>Fax<br>E-Mail DINHTH@DDC.NYC.gov |
| 6. [redacted] | ARUP | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 7. [redacted] | ONE ARCHITECTURE | Phone<br>Fax<br>E-Mail [redacted] |
| 8. Scott Johnson | OMB TECH SERVICES | Phone 212-788-6114<br>Fax 6200<br>E-Mail JohnsonS@omb.nyc.gov |
| 9. Cheryl Mui | ORR | Phone<br>Fax<br>E-Mail cmui@cityhall.nyc.gov |
| 10. Carie Grassi | ORR | Phone<br>Fax<br>E-Mail cgrassi@cityhall.nyc.gov |

# OMB TECHNICAL SERVICES UNIT
## VE MEETING ATTENDANCE SHEET

*VETC* [redacted] **SVS, Inc.**

*LOCATION* **OMB, 255 Greenwich Street, 7th Floor, Conference Room E-10**

*STUDY* **ESCR Proposal Review** *DATE:* **Thursday, April 26th, 2018**

| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 11. [redacted] | AICRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 12. [redacted] | MNLA | Phone<br>Fax<br>E-Mail [redacted] |
| 13. SARAH NEILSON | NYC PARKS | Phone<br>Fax sarah.neilson@parks.nyc.gov<br>E-Mail |
| 14. Mirelly DeCoo | ORR | Phone<br>Fax<br>E-Mail mdecoo@cityhall.nyc.gov. |
| 15. Eleanor Rogers | DDC | Phone<br>Fax<br>E-Mail ROGERSEL@DDC.NYC.GOV |
| 16. Judy Chang | DOT | Phone 212-839-9798<br>Fax<br>E-Mail jchang1@dot.nyc.gov |
| 17. Matthew Winchell | DOT | Phone<br>Fax<br>E-Mail mwinchell@dot.nyc.gov |
| 18. Thomas Adams | Parks | Phone 718-760-6468<br>Fax<br>E-Mail Thomas.adams@parks.nyc.gov |
| 19. Jill Woller | OMB Tech SVCES | Phone 212.788.6137<br>Fax 6200<br>E-Mail wollerj@omb.nyc.gov |
| 20. [redacted] | HDR | Phone<br>Fax<br>E-Mail [redacted] |

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| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 21. [redacted] | SVS | Phone<br>Fax<br>E-Mail |
| 22. [redacted] | SVS | Phone<br>Fax<br>E-Mail |
| 23. [redacted] | SLL | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 24. [redacted] | Toedts | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 25. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 26. [redacted] | AKRF | Phone<br>Fax<br>E-Mail [redacted] |
| 27. [redacted] | MVVA | Phone<br>Fax<br>E-Mail [redacted] |
| 28. Julia Kerson | Mayors Office | Phone<br>Fax<br>E-Mail jkerson@cityhall.nyc.gov |
| 29. Alyssa Cobb Kanor | NYC Parks | Phone alyssa.cobb@parks.nyc.gov<br>Fax<br>E-Mail |
| 30. Lesue Wolf | NYC DOT | Phone 212 839-4975<br>Fax<br>E-Mail LWOLF@DOT.NYC.GOV |

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| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 31. [redacted] | AKRF | Phone [redacted]<br>Fax<br>E-Mail [redacted] |
| 32. Brian Pellicore | OMB | Phone 212 788 6346<br>Fax<br>E-Mail pellicoreb@omb.nyc.gov |
| 33. Tom Pellicano | OMB | Phone 212-788-3709<br>Fax<br>E-Mail pellicanot@omb.NYC.GOV |
| 34. Curtis Cram | GRR | Phone -<br>Fax<br>E-Mail ccramm@cityhall.nyc.gov |
| 35. JIM GARIN | NYC-DEP | Phone<br>Fax<br>E-Mail Jgarin@dep.nyc.gov |
| 36. JAINEY BAMSHI | GRK | Phone 212-748-0333<br>Fax<br>E-Mail jbamshi@cityhall.nyc.gov |
| 37. Christina Larkin | OMB CDBG-DR | Phone (212)788-8286<br>Fax<br>E-Mail LARKINC@OMB.NYC.GOV |
| 38. Eram Qadri | OMB CDBG-DR | Phone 212-788-6241<br>Fax<br>E-Mail qadrie@omb.nyc.gov |
| 39. Susan Amron | NYC Law | Phone 212-356-2070<br>Fax<br>E-Mail samrons@law.nyc.gov |
| 40. Robert Martin | NYC Law | Phone 212-356-2184<br>Fax<br>E-Mail rmartin@law.nyc.gov |

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| NAME | Company /Agency | Phone/Fax/E-Mail |
|---|---|---|
| 41. Haley Stern | NYC Law | Phone<br>Fax<br>E-Mail hstern@law.nyc.gov |
| 42. Ben Furnas | City Hall / FDM | Phone 212-341-[illegible]<br>Fax<br>E-Mail bfurnas@cityhall.nyc.gov |
| 43. ROBERT COLLYER | NYCDOT - BRIDGES | Phone 212 839 6300<br>Fax<br>E-Mail rcollyer@dot.nyc.gov |
| 44. [redacted] | VETRAN/ITOR | Phone<br>Fax<br>E-Mail [redacted] |
| 45. CARL RODRIGUES | CITYHALL | Phone [redacted]@CITYHALL.NYC.GOV<br>Fax<br>E-Mail |
| 46. JULIA KERSON | MAYORS OFFICE | Phone<br>Fax<br>E-Mail jkerson@cityhall.nyc.gov |
| 47. How Sheen Pau | NYCDDC | Phone 718 391 2093<br>Fax<br>E-Mail pauh@ddc.nyc.gov |
| 48. Owen Wells | NYC Parks | Phone<br>Fax<br>E-Mail owen.wells@parks.nyc.gov |
| 49. Tami Vest | ORR | Phone<br>Fax<br>E-Mail tvest@cityhall.nyc.gov |
| 50. | | Phone<br>Fax<br>E-Mail |