Project: **<u>South Battery Park City Resiliency Project:</u>**
<u>Wagner Park / Museum of Jewish Heritage</u>
<u>Site Work Construction Services Project</u>
<u>(the "Project") Request for Proposals ("RFP")</u>

Date: July 12, 2022

RE: Addendum #12
# of Pages: 206

REVISIONS TO RFP:

1) The following revised Wagner/MJH Project Drawings and Specifications are hereby formally incorporated into the RFP's *<u>Exhibit B-1</u> – Construction Documents (Project Drawings & Specifications)*. Please note that some of the below-listed revised Civil Drawings replace and supersede the prior revised versions issued as part of Addendum #10 to the RFP.

- **<u>Drawings Sheet Index Pages G002, G003, and G004 – Attachment #1</u>:** The updated content, compared to the content included in the versions of the Drawings Sheet Index pages included as part of the RFP's *<u>Exhibit B-1</u> – Construction Documents (Project Drawings and Specifications)*, is bubbled.

- **<u>Landscape Drawings – Attachment #2A</u>:** Note that the changes to the below-listed drawings are indicated via a "bubble" that circles the area of the drawings that is revised. Also note that the below-listed drawings are subject to NYC Public Design Commission approval.

L101 – MJH Materials Plan
L102 – MJH Flood Alignment Plan
L103 – MJH Pavement Plan
L105 – MJH Lighting Key Plan
L105A – MJH Lighting Coordinates
L109 – MJH Salvage Stone Key Plan
L109A – MJH Salvage Stone D.D. Inventory
L110 – MJH Layout Plan
L111 – MJH Bench & Curb Layout
L112 – MJH Granite Pavement Layout
L119 – Materials Schedule – MJH
L120 – MJH Soils Plan
L130 – MJH Planting Plan – Trees
L130A – MJH – Tree Coordinate Plan
L131 – MJH Planting Plan – Understory
L132 – MJH Planting Plan – Herbaceous 1
L139 – MJH Master Planting Schedule
L140 – MJH Planter Elevation Key Plan
L142 – Elevations – MJH Planter B12A
L143 – Elevations – MJH Planter B12
L201 – WP Materials Plan A
L202 – WP Materials Plan B
L203 – WP Paving Plan A
L206 – WP Signage Plan B
L207 – WP Materials – Stone Plan A
L212 – WP Curb Jointing Plan 1
L212A – WP Curb Jointing Plan 2
L212B – WP Curb Jointing Plan 3
L212C – WP Curb Jointing Plan 4
L212D – WP Curb Jointing Plan 5
L212E – WP Curb Jointing Plan 6
L213 – WP Curb Enlargement Key Plan A
L214 – WP Rail Plan A
L215 – WP Rail Plan B
L222 – WP Lighting Plan A
L222A – WP Lighting Plan A Coordinates
L223 – WP Lighting Plan B
L223A – WP Lighting Plan B Coordinates
L501 – MJH Tree Protection Plan
L509 – Tree Protection Schedule and Notes 4
L900 – Details – Paving and Curbs
L901 – Details – Paving and Accessible Ramp
L902 – Details – Paving Transitions and Drains
L903 – Details – Paving Transitions
L913 – Details – Tree Planting – 4
L931 – Details – Handrails and Guardrails
L939 – Details – Security Gate 2
L940 – Details – Allee Paving Rules

[NO FURTHER TEXT ON THIS PAGE]

- **<u>Landscape Specifications – Attachment #2B</u>:** The revised content, compared to the content included in the version of the below-listed Specifications included in the RFP's *Exhibit B-1 – Construction Documents (Project Drawings and Specifications)*, is yellow-highlighted:

  015369.2 – Temporary Tree and Plant Protection
  044300.2 – Landscape Stone Masonry
  311313.2 – Selective Tree Removal
  311316.2 – Selective Tree Pruning Fertilizing and Decompaction
  321400.2 – Unit Paving
  323300.2 – Site Furnishings

- **<u>Electrical Drawing – Attachment #3</u>:** Note that the changes to the below-listed drawing is indicated via a "bubble" that circles the area of the drawings that is revised.

  SE201 – Museum of Jewish Heritage Site Electrical Proposed Plan

- **<u>Irrigation Drawings – Attachment #4</u>:** Note that the changes to the below-listed drawings are indicated via a "bubble" that circles the area of the drawings that is revised.

  I120 – Pkg 2 Irrigation Plan 1
  I220 – Pkg 2 Irrigation Plan 2A (re-named from Pkg 2 WP Irrigation Plan 2A)
  I236 – Pkg 2 Irrigation Plan – South Cove

- **<u>Lighting Drawings – Attachment #5</u>:** Note that the changes to the below-listed drawings are indicated via a "bubble" that circles the area of the drawings that is revised.

  LC01 – Museum of Jewish Heritage Lighting Layout Part 01
  LC02 – Museum of Jewish Heritage Lighting Layout Part 02
  LC03 – Wagner Park Lighting Layout Part 03

- **<u>Civil Drawings – Attachment #6A</u>:** Note that the changes to the below-listed drawings – some of which are being re-issued following issuance of prior revised versions included as part of Addendum #10 – are indicated via a "bubble" that circles the area of the drawings that is revised.

  C002 – General Notes and Notes
  C401SW – Storm Drainage Plan 01
  C401SE – Storm Drainage Plan 02
  C403SE – Storm Drainage Plan 09
  C403SW – Storm Drainage Plan 10
  C503SE – Subdrainage Plan 09
  C601SW – Water and Sewer Plan 01
  C602NW – Water and Sewer Plan 03
  C602SE – Water and Sewer Plan 05
  C602SW – Water and Sewer Plan 06
  C603NW – Water and Sewer Plan 07
  C603NE – Water and Sewer Plan 08
  C603SE – Water and Sewer Plan 09
  C603SW – Water and Sewer Plan 10
  C822 – Sections and Details

- **<u>Civil Specification #331700 | Water Distribution – Attachment #6B</u>:** The revised content, compared to the content included in the version of Specification #321123 of the RFP's *Exhibit B-1 – Construction Documents (Project Drawings and Specifications)*, is yellow-highlighted in this corrected version of such Specification.

[NO FURTHER TEXT ON THIS PAGE]

- **<u>Site Water Specification #221453 | Rainwater Harvesting System – Attachment #7</u>**: The revised content, compared to the content included in the version of Specification #221453 of the RFP's *Exhibit B-1 – Construction Documents (Project Drawings and Specifications)*, is yellow-highlighted in this corrected version of such Specification.

2) The following new Wagner/MJH Project Drawings are hereby formally added to the RFP's *<u>Exhibit B-1</u> – Construction Documents (Project Drawings & Specifications)*:

- **<u>Landscape Drawings – Attachment #8</u>:**
  L132A – MJH Planting Plan – Herbaceous Schedule
  L916 – Details – Planting Soil Profiles 3
  L955 – Details – Movable Planters

- **<u>Irrigation Drawing – Attachment #9:</u>**
  I221 – Pkg 2 Irrigation Plan 2B

- **<u>Site Plumbing Demolition Reference Drawings – Attachment #10</u>:**
  REF001 – Plumbing Notes, Symbols and Abbreviations
  REF101 – Museum of Jewish Heritage Site Plumbing Demolition Plan
  REF102 – Museum of Jewish Heritage and Wagner Park Site Plumbing Demolition Plan
  REF103 –Wagner Park and Pier A Plaza Site Plumbing Demolition Plan

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By signing the line below, I am acknowledging that all pages of this Addendum #12 have been received, reviewed and understood, and will be incorporated into the Proposal submitted. This document must be attached to the Proposal for consideration.

_____	_____	_____
Print Name (Above)	Signature (Above)	Date (Above)

Number of pages received:_____ <fill in>

Distributed to: All prospective Proposers

[NO FURTHER TEXT ON THIS PAGE]

<u>ATTACHMENT #1</u>
REVISED DRAWINGS SHEET
INDEX PAGES G002, G003, G004

(ATTACHED)

EROSION AND SEDIMENT CONTROL		*
N100	EROSION AND SEDIMENT CONTROL KEY PLAN AND NOTES	*
N101	EROSION AND SEDIMENT CONTROL PLAN - 1	*
N102	EROSION AND SEDIMENT CONTROL PLAN - 2	*
N103	EROSION AND SEDIMENT CONTROL PLAN - 3	*
N104	EROSION AND SEDIMENT CONTROL PLAN - 4	*
N201	EROSION AND SEDIMENT CONTROL DETAILS	*
MAINTENANCE AND PROTECTION OF TRAFFIC		*
MT001	MAINTENANCE AND PROTECTION OF TRAFFIC NOTES 1 OF 2	*
MT002	MAINTENANCE AND PROTECTION OF TRAFFIC NOTES 2 OF 2	*
MT101	MPT PLANS BATTERY PLACE - 1 OF 5	*
MT102	MPT PLANS BATTERY PLACE - 2 OF 5	*
MT103	MPT PLANS BATTERY PLACE - 3 OF 5	*
MT104	MPT PLANS BATTERY PLACE - 4 OF 5	*
STRUCTURAL		*
SF001	FLOOD WALL GENERAL NOTES 1 OF 2	*
SF002	FLOOD WALL GENERAL NOTES 2 OF 2	*
SF003	STRUCTURAL TESTS AND SPECIAL INSPECTIONS	*
SF300	KEY PLAN	*
SF301	FLOOD WALL FOUNDATION PLAN 1 OF 5	*
SF302	FLOOD WALL FOUNDATION PLAN 2 OF 5	*
SF303	FLOOD WALL FOUNDATION PLAN 3 OF 5	*
SF306	FLOOD WALL PLAN 1 OF 5	*
SF307	FLOOD WALL PLAN 2 OF 5	*
SF308	FLOOD WALL PLAN 3 OF 5	*
SF311	GLASS FLOOD PANEL LAYOUT PLAN	*
SF312	CONCRETE POST ENLARGED PLANS 1 OF 2	*
SF316	UTILITY CROSSING PLANS	*
SF321	ENLARGED PLANS FIRST PLACE AND MJH	*
SF322	ENLARGED PLANS - WAGNER PARK	*
SF401	FLOODWALL PROFILE 1 OF 2	*
SF402	FLOODWALL PROFILE 2 OF 2	*
SF403	FLOODWALL SECTIONS 1 OF 4	*
SF404	FLOODWALL SECTIONS 2 OF 4	*
SF405	FLOODWALL SECTIONS 3 OF 4	*
SF410	UTILITY CROSSING SECTIONS 1 OF 2	*
SF412	FLOODWALL SECTIONS AT FIRST PLACE CONED VAULTS	*
SF413	FIXED FLOODWALL SECTION AND ELEVATION AT MJH	*
SF421	FLOODWALL POST SECTIONS AND ELEVATIONS 1 OF 4	*
SF423	FLOODWALL POST FOOTING PLANS 1 OF 2	*
SF601	FLIP UP GATE DETAILS	*
SF602	FLIP UP GATE DETAILS 2	*
SF603	GLASS TOPPED FLOOD WALL DETAILS	*
SF604	FLOOD WALL CONCRETE DETAILS	*
SF605	PILE DETAILS	*
SF606	SHEET PILE DETAILS	*
SF607	SHEET PILE PENETRATION DETAILS	*
SF610	JET GROUT AND FLOWABLE FILL SEEPAGE BARRIER DETAILS	*
SS001	SITE STRUCTURES GENERAL NOTES	*
SS300	SITE STURCTURES KEY PLAN	*
SS301	SITE STRUCTURES PLAN 1 OF 5	*
SS302	SITE STRUCTURES PLAN 2 OF 5	*
SS303	SITE STRUCTURES PLAN 3 OF 5	*
SS401	SITE STRUCTURES SECTIONS - MJH	*
SS402	SITE STRUCTURES SECTIONS - WAGNER PARK 1 OF 2	*
SS601	SITE STRUCTURE DETAILS - MUSEUM AND FIRST PLACE	*
SS602	LIGHT POLE DETAILS	*
SS606	SIGN POST DETAILS	*
SS803	54-INCH TIDE GATE IN 1ST DETAILS	*
SS804	54-INCH TIDE GATE IN 1ST DETAILS	*
SM001	MARINE STRUCTURES GENERAL NOTES	*
SM301	RELIEVING PLATFORM PLAN	*
SM401	WAGNER RELIEVING PLATFORM SECTIONS	*
SM601	WAGNER PARK RELIEVING PLATFORM DETAILS	*
LANDSCAPE		*
L000	COVER SHEET	*
L001	NOTES / LEGEND	*
L010	KEY PLAN - TILES	*
L011	KEY PLAN - CONTEXT PLANS	*
L100	MJH EXISTING ART, SIGNAGE, AND MONUMENTS PLAN	*
L101	MJH MATERIALS PLAN	*
L102	MJH FLOOD ALIGNMENT PLAN	*
L103	MJH PAVEMENT PLAN	*
L104	MJH SIGNAGE PLAN	*
L105	MJH LIGHTING KEY PLAN	*
L105A	MJH LIGHTING COORDINATES	*
L109	MJH SALVAGE STONE KEY PLAN	*
L109A	MJH SALVAGE STONE D.D INVENTORY	*
L110	MJH LAYOUT PLAN	*
L111	MJH BENCH & CURB LAYOUT	*
L112	MJH GRANITE PAVEMENT LAYOUT	*
L119	MATERIALS SCHEDULE - MJH	*
L120	MJH SOILS PLAN	*
L129	MJH - TREE PLANTING NOTES	*
L130	MJH PLANTING PLAN - TREES	*
L130A	MJH - TREE COORDINATE PLAN	*
L131	MJH PLANTING PLAN - UNDERSTORY	*
L132	MJH PLANTING PLAN - HERBACEOUS 1	*
L132A	MJH PLANTING PLAN - HERBACEOUS SCHEDULE	*
L133	MJH PLANTING PLAN - HERBACEOUS 2	*
L134	MJH PLANTING PLAN - HERBACEOUS 3	*
L135	MJH PLANTING PLAN - BULBS	*
L139	MJH MASTER PLANTING SCHEDULE	*
L139A	MJH MASTER PLANTING SCHEDULE 1	*
L140	MJH PLANTER ELEVATION KEY PLAN	*
L141	ELEVATIONS - MJH PLANTER B9	*
L142	ELEVATIONS - MJH PLANTER B12A	*
L143	ELEVATIONS - MJH PLANTER B12	*
L144	ELEVATIONS - MJH PLANTER B5	*
L145	ELEVATIONS - MJH PLANTER B4	*
L146	ELEVATIONS - MJH PLANTER B6A	*
L147	ELEVATIONS - MJH PLANTER B6	*
L148	ELEVATIONS - MJH PLANTER A11	*
L149	ELEVATIONS - MJH PLANTER A10	*
L150	ELEVATIONS - MJH PLANTER N1	*
L151	ELEVATIONS - MJH PLANTER N4	*
L152	ELEVATIONS - MJH PLANTER A2	*
L153	ELEVATIONS - MJH PLANTER A5	*
L154	ELEVATIONS - MJH PLANTER A3	*
L155	ELEVATIONS - MJH PLANTER A4	*
L156	ELEVATIONS - FLOOD WALL VENEERS 1	*
L157	ELEVATIONS - FLOOD WALL VENEERS 2	*
L158	ELEVATIONS - FLOOD WALL VENEERS 3	*
L159	ELEVATIONS - FLOOD WALL VENEERS 4	*
L160	ELEVATIONS - VENEER AT FLIP GATE - FIRST PLACE	*
L161	ELEVATIONS - VENEER AT FLIP GATES - MJH NORTH	*
L161A	ELEVATIONS - VENEER AT FLIP GATES - MJH NORTH	*
L162	ELEVATIONS - VENEER AT FLIP GATES - MJH NORTHWEST	*
L163	ELEVATIONS - VENEER AT FLIP GATES - MJH WEST	*
L165	FLIP GATE COPING STONE MODULAR	*
L166	AXON - MJH FLIP GATE 1	*
L167	AXON - MJH FLIP GATE 2	*
L170	ENLARGEMENT - MJH PAVING 2	*
L171	ENLARGEMENT - MJH PAVING 2	*
L172	ENLARGEMENT - SEAT WALL AT OVAL	*
L173	ENLARGEMENT - MJH IMPROVEMENTS	*
L174	ENLARGEMENT - MJH IMPROVEMENTS 1	*
L175	ENLARGEMENT - MJH IMPROVEMENTS 2	*
L180	MJH SECTION KEY PLAN	*
L181	SITE SECTIONS - MJH 1	*
L182	SITE SECTIONS - MJH 2	*
L200A	PACKAGE DELINEATION CONTEXT PLAN	*
L200B	PACKAGE DELINEATION CONTEXT PLAN B	*
L201	WP MATERIALS PLAN A	*
L202	WP MATERIALS PLAN B	*
L203	WP PAVING PLAN A	*
L204	WP PAVING PLAN B	*
L205	WP SIGNAGE PLAN A	*
L206	WP SIGNAGE PLAN B	*
L207	WP MATERIALS - STONE PLAN A	*
L208	WP MATERIALS - STONE PLAN B	*
L209	WP SALVAGE STONE KEY PLAN	*
L209A	WP / PAVILION SALVAGE STONE D.D. INVENTORY	*
L210	WP LAYOUT PLAN A	*
L211	WP LAYOUT PLAN B	*
L212	WP CURB JOINTING PLAN 1	*
L212A	WP CURB JOINTING PLAN 2	*
L212B	WP CURB JOINTING PLAN 3	*
L212C	WP CURB JOINTING PLAN 4	*
L212D	WP CURB JOINTING PLAN 5	*
L212E	WP CURB JOINTING PLAN 6	*
L213	WP CURB ENLARGEMENT KEY PLAN A	*
L213A	WP CURB ENLARGEMENT KEY PLAN B	*
L213B	WP CURB JOINTING PLAN 7	*
L213C	WP CURB JOINTING PLAN 8	*
L213D	WP CURB JOINTING PLAN 9	*
L213E	WP CURB JOINTING PLAN 10	*

AECOM

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KEY PLAN

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
R	JULY 2022	ADDENDUM 2
R	JUNE 2022	ADDENDUM
I	JAN 2022	BID SET

Designed By:	**F.LIZANO**
Drawn By:	**F.LIZANO**
Checked By:	**T.LACKOVIC**
Approved By:	**R.DENCKER**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

SHEET INDEX
2 OF 4

SHEET NUMBER

G002

L214	WP RAIL PLAN A	*
L215	WP RAIL PLAN B	*
L216	ENLARGEMENT - EVENT TERRACE SOIL CELLS	*
L217	ENLARGEMENT - ALLEES SOIL CELLS	*
L218	MATERIALS SCHEDULE A	*
L219	MATERIALS SCHEDULE - WAGNER	*
L220	WP SOILS PLAN A	*
L221	WP SOILS PLAN B	*
L222	WP LIGHTING PLAN A	*
L222A	WP LIGHTING PLAN A COORDINATES	*
L223	WP LIGHTING PLAN B	*
L223A	WP LIGHTING PLAN B COORDINATES	*
L225	WP PLANTING KEY PLAN	*
L230	WP PLANTING PLAN A - TREES	*
L230A	WP TREE LAYOUT PLAN A - TREE COORDINATES	*
L231	WP PLANTING PLAN B - TREES	*
L231A	WP PLANTING PLAN B - TREE COORDINATES	*
L232	WP PLANTING PLAN A - UNDERSTORY	*
L233	WP PLANTING PLAN B - UNDERSTORY	*
L234	WP PLANTING - UNDERSTORY ENLARGEMENT	*
L235	WP PLANTING PLAN A - HERBACEOUS	*
L236	WP PLANTING PLAN B - HERBACEOUS	*
L237	WP PLANTING PLAN C - HERBACEOUS	*
L238	WP PLANTING PLAN D - HERBACEOUS	*
L239	WP PLANTING PLAN E - HERBACEOUS	*
L240	WP PLANTING PLAN F - HERBACEOUS	*
L241	WP PLANTING PLAN G - HERBACEOUS	*
L242	WP PLANTING PLAN H - HERBACEOUS	*
L245	WP GARDENS PLANTING PLAN A - HERBACEOUS	*
L246	WP GARDENS ENLARGEMENT A - HERBACEOUS	*
L247	WP GARDENS PLANTING PLAN B - HERBACEOUS	*
L248	WP GARDENS ENLARGEMENT B - HERBACEOUS 1	*
L249	WP GARDENS ENLARGEMENT B - HERBACEOUS 2	*
L250	WP GARDENS PLANTING PLAN C - HERBACEOUS	*
L251	WP GARDENS ENLARGEMENT C - HERBACEOUS	*
L255	WP PLANTING PLAN A - BULBS	*
L256	WP PLANTING PLAN B - BULBS	*
L257	WP MASTER PLANTING SCHEDULE 1	*
L258	WP MASTER PLANTING SCHEDULE 2	*
L259	WP MASTER PLANTING SCHEDULE 3	*
L259A	WP MASTER PLANTING SCHEDULE 4	*
L263	ENLARGEMENT - WP SOUTH ESPLANADE SLOPE	*
L270A	ENLARGMENT - ALLEES NORTH LAYOUT	*
L270B	ENLARGMENT - ALLEES SOUTH LAYOUT	*
L271	ENLARGEMENT - ALLEE PAVING	*
L272	ENLARGEMENT - DISPLAY GARDEN 1	*
L273	ENLARGEMENT - DISPLAY GARDEN 2	*
L274	ENLARGEMENT - DISPLAY GARDEN 3	*
L275A	ENLARGEMENT - WAGNER PARK ESPLANADE	*
L275B	ENLARGEMENT - WAGNER PARK SOUTH	*
L276	ENLARGEMENT - DISPLAY GARDEN OVALS 1	*
L277	ENLARGEMENT - DISPLAY GARDEN OVALS 2	*

L279	ENLARGEMENT - EVENT TERRACE LAYOUT COORDINATES	*
L280	WP SECTION KEY PLAN A	*
L281	WP SECTION KEY PLAN B	*
L282	SITE SECTIONS - WAGNER PARK 1	*
L283	SITE SECTIONS - WAGNER PARK 2	*
L284	SITE SECTIONS - NORTHERN GARDEN	*
L285	SITE SECTIONS - PERFORMATIVE GARDEN 1	*
L286	SITE SECTIONS - PERFORMATIVE GARDEN 2	*
L287	SITE SECTIONS - WAGNER PARK STAIRS	*
L288	SITE SECTIONS - SOUTHERN ALLEE	*
L289	ELEVATIONS - BATTERY PLACE 1	*
L290	ELEVATIONS - BATTERY PLACE 2	*
L291	ELEVATIONS - BATTERY PLACE 3	*
L292	ELEVATIONS - WP FLOOD WALL 1	*
L293	ELEVATIONS - WP FLOOD WALL 2	*
L294	ELEVATIONS - BATTERY PLACE PLANTER WALLS	*
L295	ELEVATION - BATTERY PLACE WALL	*
L296	ELEVATION - O&M YARD 1	*
L297	ELEVATION - O&M YARD 2	*
L500	KEY PLAN - TREE PROTECTION PLANS	*
L501	MJH TREE PROTECTION PLAN	*
L502	WP TREE PROTECTION PLAN A	*
L503	WP TREE PROTECTION PLAN B	*
L506	TREE PROTECTION SCHEDULE AND NOTES	*
L507	TREE PROTECTION SCHEDULE AND NOTES	*
L509	TREE PROTECTION MATRIX AND NOTES 4	*
L510	TREE PROTECTION DETAILS	*
L900	DETAILS - PAVING AND CURBS	*
L901	DETAILS - PAVING AND ACCESSIBLE RAMP	*
L902	DETAILS - PAVING TRANSITIONS AND DRAINS	*
L903	DETAILS - PAVING TRANSITIONS	*
L904	DETAILS - WALLS THICK	*
L905	DETAILS - WALLS THICK AND THIN	*
L907	DETAILS - BIKEWAY PAVING AND WALLS	*
L908	DETAILS - PAVING - POUROUS AND AGGREGATE	*
L909	DETAILS - PAVING - FLOOD GATE INLAID PANELS	*
L910	DETAILS -TREE PLANTING 1	*
L911	DETAILS - TREE PLANTING 2	*
L912	DETAILS - TREE PLANTING 3	*
L913	DETAILS - TREE PLANTING 4	*
L914	DETAILS - PLANTING SOIL PROFILES 1	*
L915	DETAILS - PLANTING SOIL PROFILES 2	*
L916	DETAILS - PLANTING SOIL PROFILES 3	*
L918	DETAILS - SHRUB AND HERBACEOUS PLANTING	*
L921	DETAILS - STONE SEAT WALL PROFILES	*
L922	DETAILS - STONE AND WOOD SEAT WALL PROFILES AND STONE SEAT WALL TRANSITIONS	*
L923	DETAILS - WOOD SEAT WALL PROFILES WITH ARMRESTS AND BACK	*
L924	DETAILS - WOOD CLAD EVENT TERRACE SEATING	*
L925	DETAILS - STONE CLAD WALLS AND CURBS	*
L926	DETAILS - SEAT WALL TRANSITIONS 1	*
L927	DETAILS - SEAT WALL TRANSITIONS 2	*
L928	DETAILS - MJH BENCH	*
L929	DETAILS - BENCH 2	*

L931	DETAILS - HANDRAILS AND GUARDRAILS	*
L932	DETAILS - HANDRAILS, SEA RAIL, AND POLES	*
L933	DETAILS - HANDRAIL ELEVATIONS	*
L934	DETAILS - GUARDRAIL ELEVATIONS	*
L938	DETAILS - SECURITY GATE 1	*
L939	DETAILS - SECURITY GATE 2	*
L940	DETAILS - ALLEE PAVING RULES	*
L941	DETAILS - ALLEE PAVING TRANSITIONS	*
L942	DETAILS - ALLEE PAVING SECTIONS 1	*
L943	DETAILS - ALLEE PAVING SECTIONS 2	*
L953	DETAILS - PIER A SKATE STOPS	*
L955	DETAILS - MOVEABLE PLANTERS	*
L961A	DETAILS - FLOOD WALL VENEER	*
L965	DETAILS - BATTERY FURNISHINGS 1	*
L967	DETAILS - SITE FURNISHINGS 1	*
L968	DETAILS - SITE FURNISHINGS 2	*
L969	DETAILS - ESPLANADE AND PAVING	*
L970	DETAILS - TREE OPENINGS	*
L971	DETAILS - WAGNER PARK BENCH	*
L972	DETAILS - BATTERY PLACE BENCH	*
L973	DETAILS - SECURITY WALL	*
L974	DETAILS - ESPLANADE AND RAILS	*
L981	DETAILS - DISPLAY GARDEN OVALS	*
L982	DETAILS - SECTIONS AT WP EVENT TERRACE	*
L990	DETAILS - SIGNAGE	*
I120	IRRIGATION PLAN 1	*
I220	PKG2 IRRIGATION PLAN 2A	*
I221	PKG2 IRRIGATION PLAN B	*
I236	WP IRRIGATION PLAN - SOUTH COVE	*
I501	IRRIGATION DETAILS	*
I502	IRRIGATION DETAILS	*
I503	IRRIGATION DETAILS	*
I504	IRRIGATION DETAILS	*
I505	IRRIGATION DETAILS	*
I506	IRRIGATION DETAILS	*
	MECHANICAL	*
M201	MECHANICAL PIPING PART PLAN GROUND LEVEL NORTH	*
M301	GEOTHERMAL LOOP SITE PLAN	*
M406	GEOTHERMAL ROOM SECTION	*
M702	MECHANICAL DETAILS 2	*
M707	GEOTHERMAL PIPING DIAGRAM	*
	SITE ELECTRICAL	*
SE001	GENERAL SITE ELECTRICAL SYMBOLS, LEGENDS, NOTES & ABBREVIATIONS	*
SE101	MUSEUM OF JEWISH HERITAGE SITE ELECTRICAL DEMOLITION PLAN	*
SE102	MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE ELECTRICAL DEMOLITION PLAN	*
SE103	WAGNER PARK AND PIER A PLAZA SITE ELECTRICAL DEMOLITION PLAN	*
SE201	MUSEUM OF JEWISH HERITAGE SITE ELECTRICAL PROPOSED PLAN	*
SE202	MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE ELECTRICAL PROPOSED PLAN	*
SE203	WAGNER PARK AND PIER A PLAZA SITE ELECTRICAL PROPOSED PLAN	*
SE300	PROPOSED 6 RELAY CONTROL CABINET	*
REF601	ROADWAY TYPE CONCRETE BOX	*
REF602	PLAN LAYOUT ROADWAY TYPE CONCRETE BOX	*

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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KEY PLAN

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
R	JULY 2022	ADDENDUM
I	JAN 2022	BID SET

Designed By:	**F.LIZANO**
Drawn By:	**F.LIZANO**
Checked By:	**T.LACKOVIC**
Approved By:	**R.DENCKER**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

SHEET INDEX
3 OF 4

SHEET NUMBER

G003

REF603	CONED PROPERTY LINE BOX	*
REF604	6 RELAY CONTROL CABINET	*
REF605	3 RELAY CONTROL CABINET	*
REF606	MOUNTING 3 RELAY CONTROL CABINET ON POLE	*
REF607	MOUNTING DETAILS OF 3 PEC'S	*
REF608	CHIMNEY, COLLARS AND GRADING BLOCK FOR MANHOLES	*
LIGHTING		*
LC01	MUSEUM OF JEWISH HERITAGE LIGHTING LAYOUT PART 01	*
LC02	MUSEUM OF JEWISH HERITAGE LIGHTING LAYOUT PART 02	*
LC03	WAGNER PARK LIGHTING LAYOUT PART 03	*
LC09	LIGHTING POLE TYPE TB TH	*
LC10	LIGHTING POLE TYPE TL	*
SITE WATER SUPPLY		*
SPF001	PLUMBING NOTES, SYMBOLS AND ABBREVIATIONS	*
SPF201	MUSEUM OF JEWISH HERITAGE SITE PLUMBING PLAN	*
SPF202	MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE PLUMBING PLAN	*
SPF203	WAGNER PARK AND PIER A PLAZA SITE PLUMBING PLAN	*
SPF401	WAGNER PARK GEOTHERMAL PLAN	*
SPF601	SITE PLUMBING DETAILS 1	*
REF001	PLUMBING NOTES, SYMBOLS AND ABBREVIATIONS	*
REF101	MUSEUM OF JEWISH HERITAGE SITE PLUMBING DEMOLITION PLAN	*
REF102	MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE PLUMBING DEMOLITION PLAN	*
REF103	WAGNER PARK AND PIER A PLAZA SITE PLUMBING DEMOLITION PLAN	*

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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KEY PLAN

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
R	JUNE 2022	ADDENDUM
I	JAN 2022	BID SET

Designed By:	**F.LIZANO**
Drawn By:	**F.LIZANO**
Checked By:	**T.LACKOVIC**
Approved By:	**R.DENCKER**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

SHEET INDEX
4 OF 4

SHEET NUMBER

G004

<u>ATTACHMENT #2</u>
REVISED LANDSCAPE
DRAWINGS AND SPECIFICATIONS

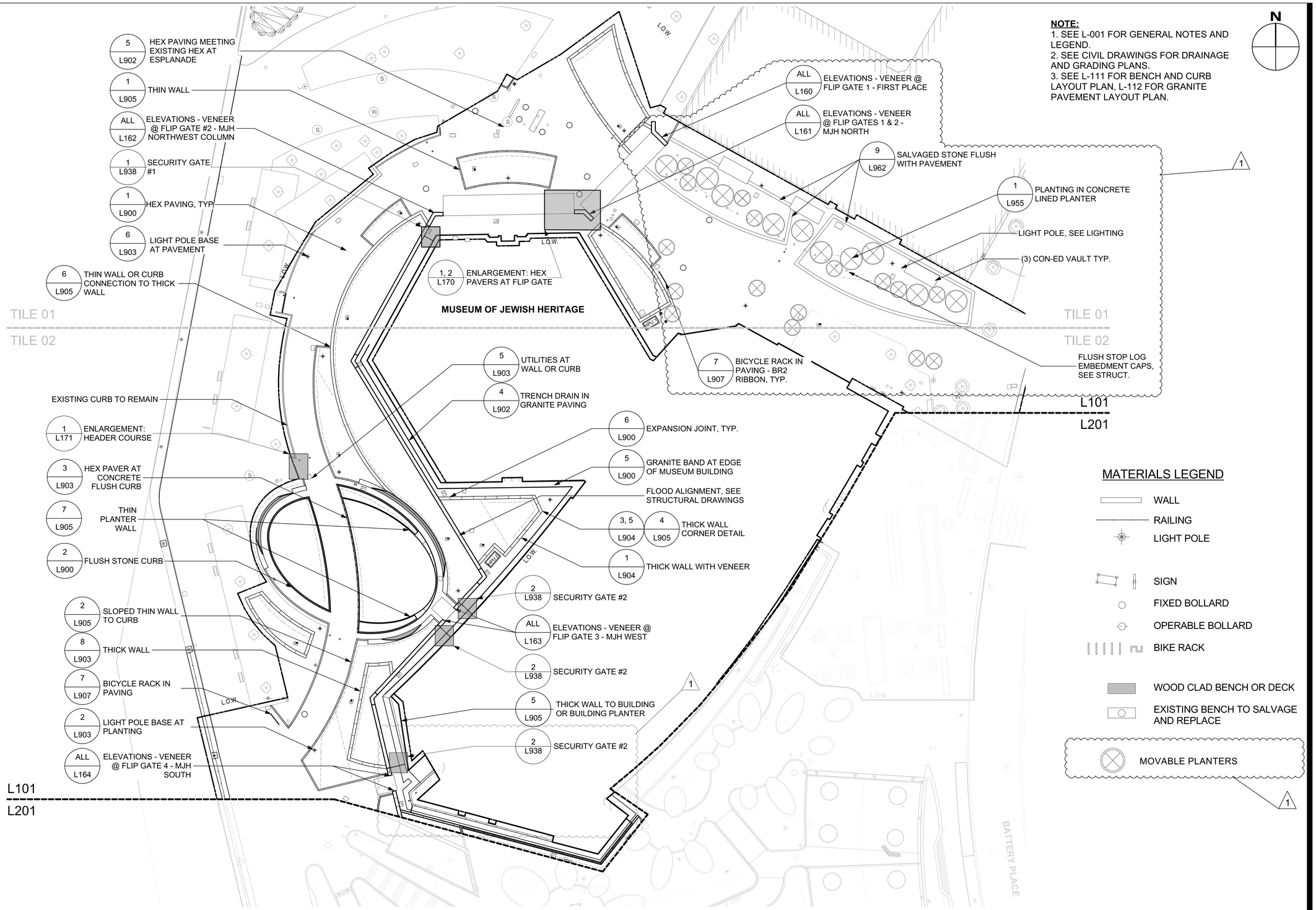
[NO FURTHER TEXT ON THIS PAGE]

<u>ATTACHMENT #2A</u>
REVISED LANDSCAPE DRAWINGS

L101 – MJH Materials Plan
L102 – MJH Flood Alignment Plan
L103 – MJH Pavement Plan
L105 – MJH Lighting Key Plan
L105A – MJH Lighting Coordinates
L109 – MJH Salvage Stone Key Plan
L109A – MJH Salvage Stone D.D. Inventory
L110 – MJH Layout Plan
L111 – MJH Bench & Curb Layout
L112 – MJH Granite Pavement Layout
L119 – Materials Schedule – MJH
L120 – MJH Soils Plan
L130 – MJH Planting Plan – Trees
L130A – MJH – Tree Coordinate Plan
L131 – MJH Planting Plan – Understory
L132 – MJH Planting Plan – Herbaceous 1
L139 – MJH Master Planting Schedule
L140 – MJH Planter Elevation Key Plan
L142 – Elevations – MJH Planter B12A
L143 – Elevations – MJH Planter B12
L201 – WP Materials Plan A
L202 – WP Materials Plan B
L203 – WP Paving Plan A
L206 – WP Signage Plan B
L207 – WP Materials – Stone Plan A
L212 – WP Curb Jointing Plan 1
L212A – WP Curb Jointing Plan 2
L212B – WP Curb Jointing Plan 3
L212C – WP Curb Jointing Plan 4
L212D – WP Curb Jointing Plan 5
L212E – WP Curb Jointing Plan 6
L213 – WP Curb Enlargement Key Plan A
L214 – WP Rail Plan A
L215 – WP Rail Plan B
L222 – WP Lighting Plan A
L222A – WP Lighting Plan A Coordinates
L223 – WP Lighting Plan B
L223A – WP Lighting Plan B Coordinates
L501 – MJH Tree Protection Plan
L509 – Tree Protection Schedule and Notes 4
L900 – Details – Paving and Curbs
L901 – Details – Paving and Accessible Ramp
L902 – Details – Paving Transitions and Drains
L903 – Details – Paving Transitions
L913 – Details – Tree Planting – 4
L931 – Details – Handrails and Guardrails
L939 – Details – Security Gate 2
L940 – Details – Allee Paving Rules

(ATTACHED)

ANSI D 22" x 34"



NOTE:
1. SEE L-001 FOR GENERAL NOTES AND LEGEND.
2. SEE CIVIL DRAWINGS FOR DRAINAGE AND GRADING PLANS.
3. SEE L-111 FOR BENCH AND CURB LAYOUT PLAN, L-112 FOR GRANITE PAVEMENT LAYOUT PLAN.

MATERIALS LEGEND

- WALL
- RAILING
- LIGHT POLE
- SIGN
- FIXED BOLLARD
- OPERABLE BOLLARD
- BIKE RACK
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE
- MOVABLE PLANTERS

1 L101 MJH MATERIALS PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

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PROJECT
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CLIENT
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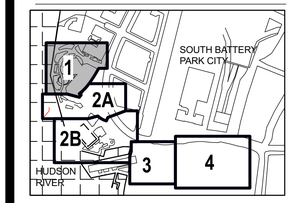
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ALBERT R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

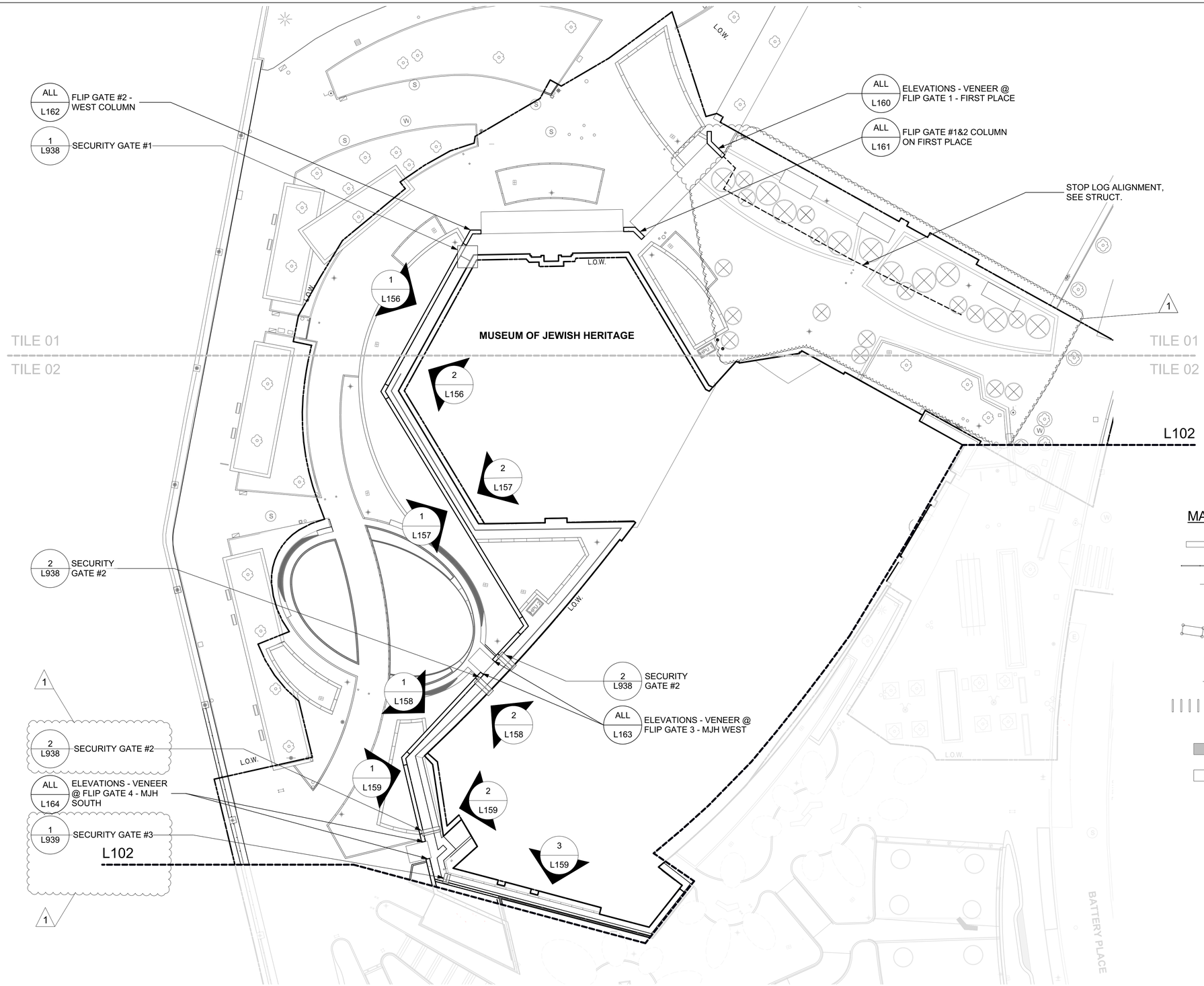
PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
MJH MATERIALS PLAN

SHEET NUMBER
L101

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



1 L102 MJH FLOOD ALIGNMENT PLAN
SCALE: 1" = 20'-0"

MATERIALS LEGEND

- WALL
- RAILING
- LIGHT POLE
- SIGN
- FIXED BOLLARD
- OPERABLE BOLLARD
- BIKE RACK
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE

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PROJECT

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CLIENT

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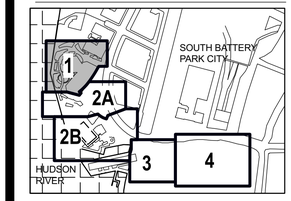
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ALEXANDER R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH FLOOD ALIGNMENT PLAN

SHEET NUMBER

L102

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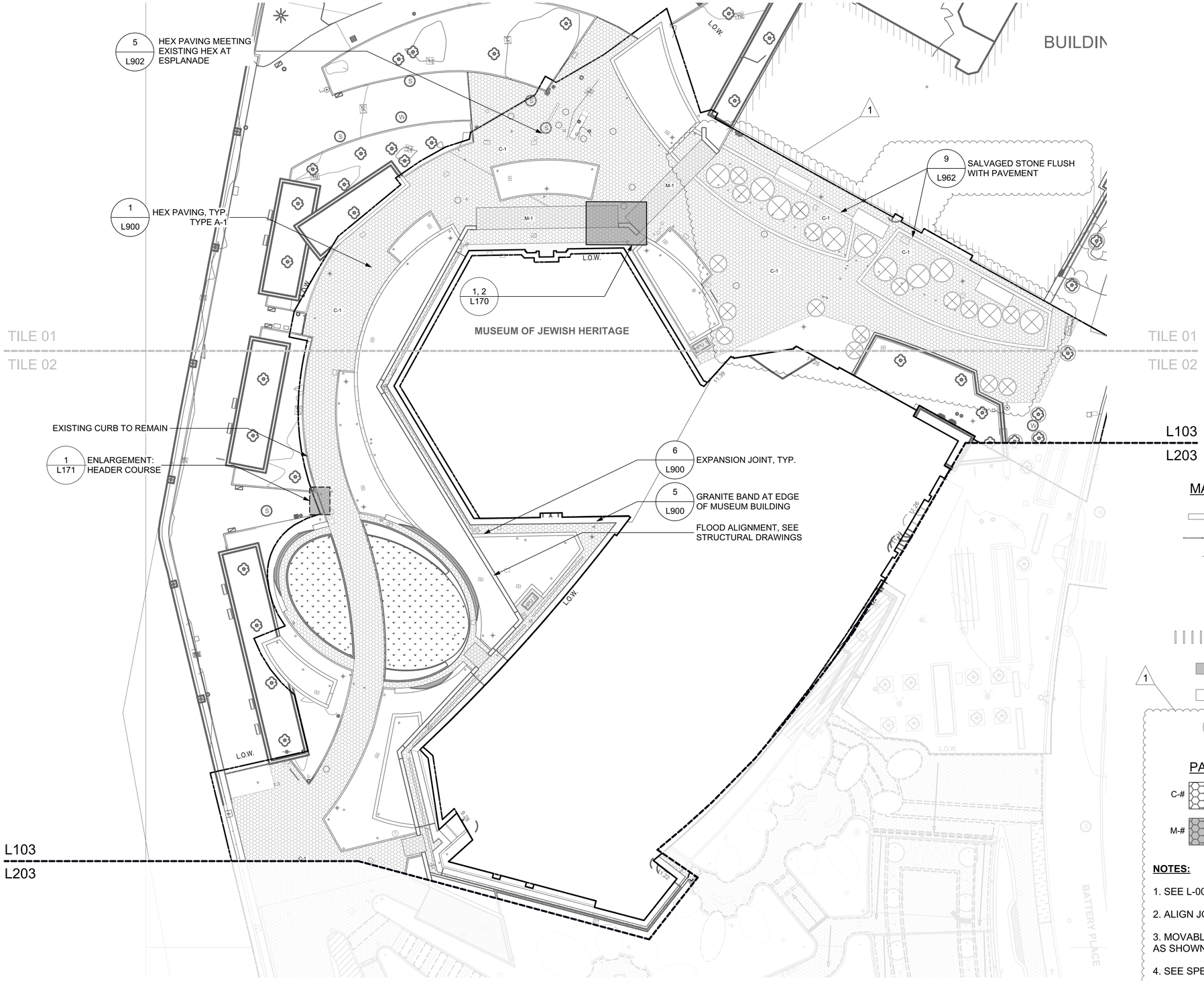
Filename: C:\MARINE\60579231-SBPC0910_CAD\20_SHEETS\FROM PWI_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



1
L103
MJH PAVEMENT PLAN
SCALE: 1" = 20'-0"

MATERIALS LEGEND

- WALL
- RAILING
- LIGHT POLE
- FIXED BOLLARD
- OPERABLE BOLLARD
- BIKE RACK
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE
- MOVABLE PLANTERS

PAVING LEGEND

- C-# HEX ASPHALT PAVEMENT
- M-# METAL PANEL WITH HEX PATTERN AT FLIP GATE

NOTES:

1. SEE L-001 FOR GENERAL NOTES AND LEGEND.
2. ALIGN JOINTS TO MATCH EXISTING BUILDING.
3. MOVABLE PLANTER LOCATE AND COORDINATE AS SHOWN IN DRAWINGS. SEE L955 FOR DETAILS
4. SEE SPECS

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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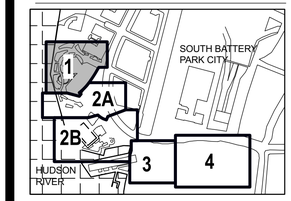
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH PAVEMENT PLAN

SHEET NUMBER

L103

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
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ANSI D 22" x 34"

NOTE:

1. CONTRACTOR TO COORDINATE LIGHTING QUANTITY AND PROFORMANCE INTENT WITH LIGHTING SPECIFICATIONS.

2. SEE STRUCTURAL DRAWINGS FOR LIGHT POLE FOUNDATIONS AND ANCHORING

3. COORDINATE ALL LOCATIONS AND ATTACHEMENTS FOR RAILINGS AND LINEAR FIXTURES ON FURNISHINGS WITH SHOP DRAWINGS AND ELECTRICAL ENGINEER.

4. COORDINATE THE LOCATION OF ELECTRICAL JUNCTION BOXES AND DRIVER BOXES WITH MEP DRAWINGS.

MATERIALS LEGEND

- WALL
- RAILING
- LIGHT POLE
- SIGN
- FIXED BOLLARD
- DRINKING FOUNTAIN
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE

2 / L105 MJH LIGHTING KEY PLAN
SCALE: 1" = 20'-0"

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SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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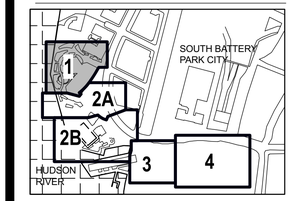
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALAN R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

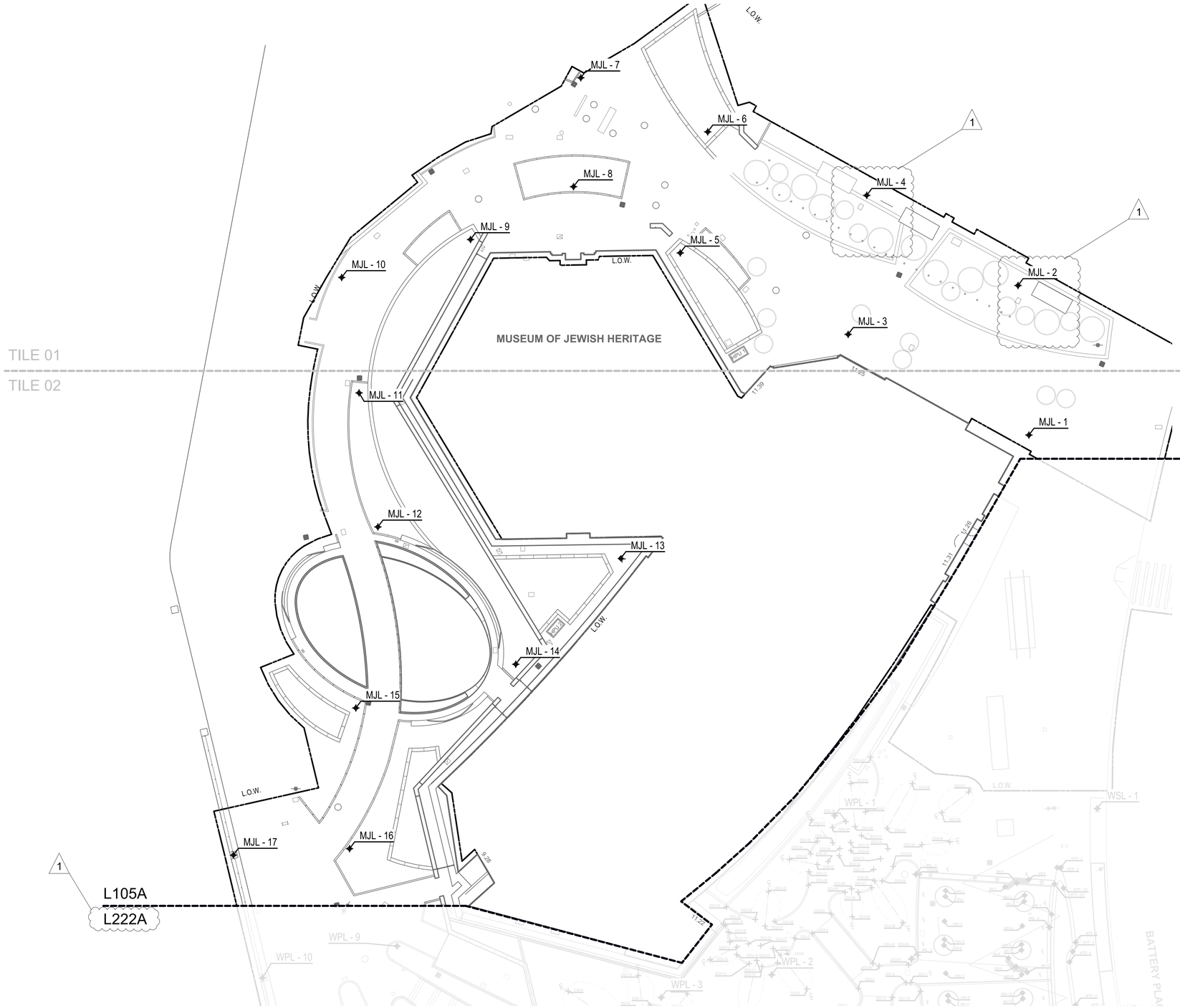
MJH LIGHTING KEY PLAN

SHEET NUMBER

L105

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60679231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



NOTE:

1. CONTRACTOR TO COORDINATE LIGHTING QUANTITY AND PROFORMANCE INTENT WITH LIGHTING SPECIFICATIONS.

2. SEE STRUCTURAL DRAWINGS FOR LIGHT POLE FOUNDATIONS AND ANCHORING

3. COORDINATE ALL LOCATIONS AND ATTACHEMENTS FOR RAILINGS AND LINEAR FIXTURES ON FURNISHINGS WITH SHOP DRAWINGS AND ELECTRICAL ENGINEER.

4. COORDINATE THE LOCATION OF ELECTRICAL JUNCTION BOXES AND DRIVER BOXES WITH MEP DRAWINGS.

TAG	NORTHING	EASTING
MJL - 1	196566'7.578"	979208'6.228"
MJL - 2	196621'8.836"	979204'5.993"
MJL - 3	196603'8.653"	979141'10.966"
MJL - 4	196654'11.486"	979148'9.147"
MJL - 5	196633'8.882"	979080'.666"
MJL - 6	196678'4.085"	979090'2.07"
MJL - 7	196698'3.161"	979043'4.931"
MJL - 8	196658'1.665"	979040'8.746"
MJL - 9	196638'8.088"	979002'9.137"
MJL - 10	196624'8.315"	978955'3.76"
MJL - 11	196582'1.906"	978961'8.485"
MJL - 12	196532'9.473"	978968'7.743"
MJL - 13	196521'2.208"	979058'1.826"
MJL - 14	196482'4.336"	979019'.28"
MJL - 15	196466'.908"	978960'6.301"
MJL - 16	196414'2.986"	978958'2.523"
MJL - 17	196411'10.494"	978915'4.896"

1 / L105A MJH LIGHTING COORDINATES
SCALE: 1" = 20'-0"

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PROJECT

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CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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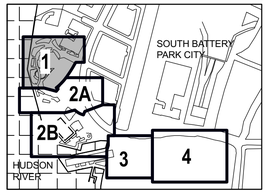
212.575.2701 naikgroup.com

OWEIS
100 East Hanover Ave., Suite 101, Cedar Knolls, NJ 07927
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALAN R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

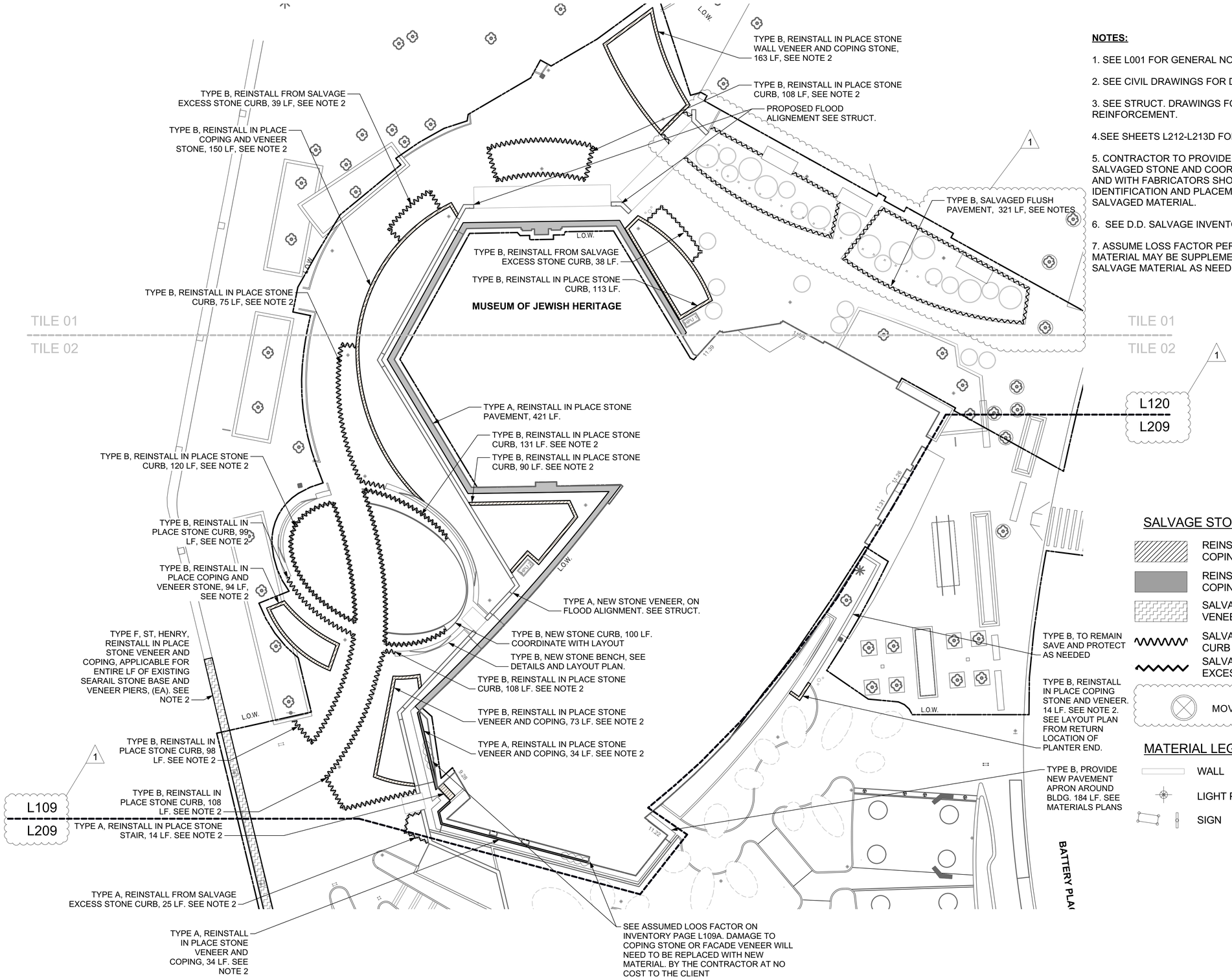
MJH LIGHTING COORDINATES

SHEET NUMBER

L105A

Last saved by: FERRERAJ(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60379231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



1 / L109 MJH SALVAGE STONE KEY PLAN
SCALE: 1" = 20'-0"

NOTES:

1. SEE L001 FOR GENERAL NOTES AND LEGEND.
2. SEE CIVIL DRAWINGS FOR DEMOLITION AND SALVAGE.
3. SEE STRUCT. DRAWINGS FOR FOOTINGS AND REINFORCEMENT.
4. SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN.
5. CONTRACTOR TO PROVIDE INVERNTORY OF ALL SALVAGED STONE AND COORDINATE STORAGE ON SITE AND WITH FABRICATORS SHOP DRAWINGS FOR IDENTIFICATION AND PLACEMENT OF REINSTALLED SALVAGED MATERIAL.
6. SEE D.D. SALVAGE INVENTORY ON L109A.
7. ASSUME LOSS FACTOR PER INVENTORY. TYPE B MATERIAL MAY BE SUPPLEMENTED WITH EXCESS ONSITE SALVAGE MATERIAL AS NEEDED AROUND THE MJH.

SALVAGE STONE LEGEND

- REINSTALL STONE TYPE B: VENEER COPING AND THICK STONES
- REINSTALLED TYPE A STONE, COPING, PAVMENT AND VENEER
- SALVAGE ST. HENRY STONE VENEER AND COPING STONE
- SALVAGE, REINSTALL STONE CURB IN PLACE TYPE B STONE
- SALVAGE, AVAILABLE FROM EXCESS MATERIAL, TYPE B STONE
- MOVABLE PLANTERS

MATERIAL LEGEND

- WALL
- LIGHT POLE
- SIGN

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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AECOM USA
605 3rd Ave, 2nd Floor, New York, NY 10158
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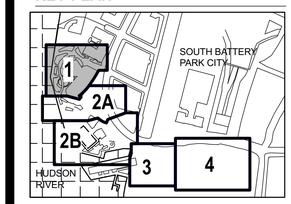
KEY PLAN



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Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH SALVAGE STONE KEY PLAN

SHEET NUMBER

L109

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60577231-SBPC0910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:

1. SEE L001 FOR GENERAL NOTES AND LEGEND.

2. SEE CIVIL DRAWINGS FOR DEMOLITION AND SALVAGE.

3. SEE STRUCT. DRAWINGS FOR FOOTINGS AND REINFORCEMENT.

4.SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN.

5. CONTRACTOR TO PROVIDE INVERNTORY OF ALL SALVAGED STONE AND COORDINATE STORAGE ON SITE AND WITH FABRICATORS SHOP DRAWINGS FOR IDENTIFICATION AND PLACEMENT OF REINSTALLED SALVAGED MATERIAL.

6. SEE D.D. SALVAGE INVENTORY ON L109A.

7. ASSUME LOSS FACTOR PER INVENTORY. TYPE B MATERIAL MAY BE SUPPLEMENTED WITH EXCESS ONSITE SALVAGE MATERIAL AS NEEDED AROUND THE MJH.

1

AREA	STONE ID	LOCATION	ITEM	DIMENSION (FT. / IN)	NOTES	UNITS	QUANTITY	ASSUMED LOSS	USABLE TOTAL
MJH	S-13	PLANTER CURBS	TAPESTRY - STONE TYPE B	5' L TYP. x 6" W	ASSUMED DEPTH IS 6",CURVED, SLOPED AND STRAIGHT CURBS SHOULD BE TAGGED SEPERATLY	LF	712	20%	570
MJH	S-13	PLANTER COPING STONE	TAPESTRY - STONE TYPE B	5' L TYP. x 6" H x 15" W	THERMAL FINISH	LF	650	20%	520
MJH	S-13	PLANTER WALL VENEER	TAPESTRY - STONE TYPE B	5' L TYP. x 2" W x 1.5' H	ASSUMED THICKNESS 3", HEIGHT VARIES	LF	200	30%	140
MJH	S-13	PLANTER WALL THICK STONE	TAPESTRY - STONE TYPE B	24" H x 15" W x 5' L TYP.	CURVED, SLOPED AND STRAIGHT PIECES SHOULD BE TAGGED SEPERATLY	EA	16	10%	14
MJH	S-15	BUILDING FAÇADE	JET MIST - STONE TYPE A	44" H x 38" L x 2" TH	INCLUDES COPING STONE, VENEER AND WINDOW LENTIL.	LF	135	30%	95
MJH	S-15	BUILDING FAÇADE PAVEMENT	JET MIST - STONE TYPE A	VARIES, 36" L x 24" W x 2" TH	MATCH JOINTS TO BUILDING FAÇADE, PROVIDE SHOP DRAWINGS AS REQUIRED FOR NEW MATERIAL. (APPROX. 590'-0" PROPOSED)	LF	420	20%	336

AECOM

PROJECT

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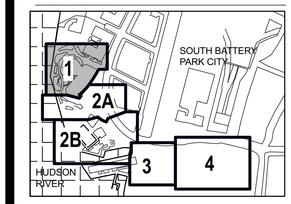
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALAN R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH SALVAGE STONE D.D. INVENTORY

SHEET NUMBER

L109A

Last saved by: FERRERA(2021-11-17) Last Plotted :2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

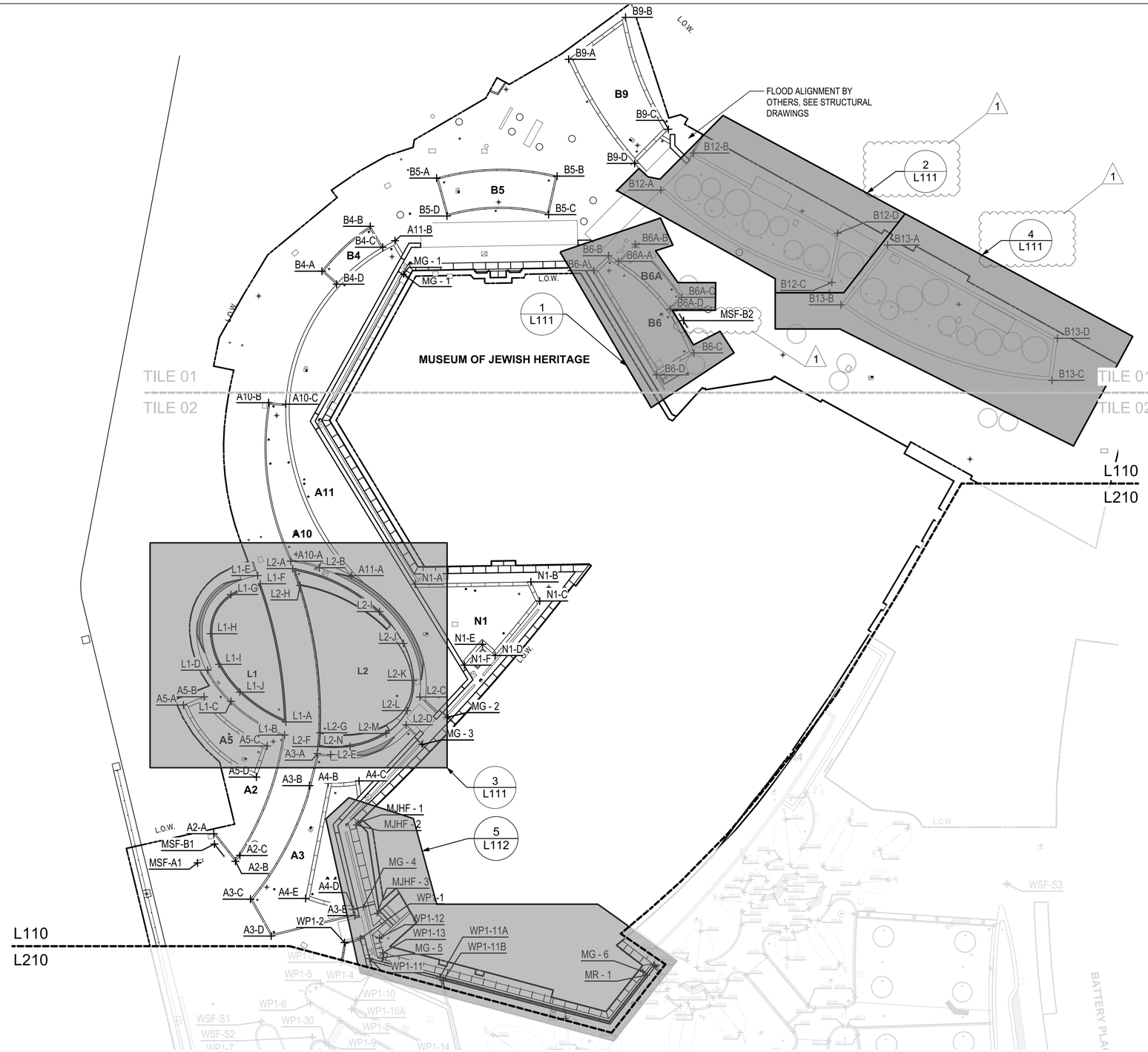
MJH - LAYOUT COORDINATES

STAKE	NORTHING	EASTING
A2-A	196433'3.19"	978939'4.117"
A2-B	196423'5.411"	978947'.612"
A2-C	196425'6.1"	978948'7.626"
A3-A	196461'9.56"	978976'2.172"
A3-B	196450'4.589"	978973'4.666"
A3-C	196409'11.587"	978952'4.783"
A3-D	196396'9.994"	978959'9.26"
A3-E	196404'1.385"	978989'6.416"
A4-B	196451'3.804"	978980'.82"
A4-C	196452'.758"	978991'.565"
A4-D	196406'3.889"	978989'.052"
A4-E	196410'2.704"	978972'.474"
A5-A	196479'.843"	978928'6.784"
A5-B	196481'11.968"	978935'10.502"
A5-C	196464'5.847"	978958'4.108"
A5-D	196453'5.077"	978954'5.962"

STAKE	NORTHING	EASTING
A10-A	196530'3.321"	978966'9.094"
A10-B	196586'8.477"	978958'10.304"
A10-C	196586'2.07"	978964'11.658"
A11-A	196525'2.033"	978988'4.904"
A11-B	196644'4.61"	979003'10.214"
B4-A	196633'6.464"	978977'10.028"
B4-B	196649'6.267"	978995'.474"
B4-C	196642'.854"	978999'5.791"
B4-D	196628'10.842"	978983'.606"
B5-A	196666'8.251"	979018'7.865"
B5-B	196667'4.633"	979061'6.729"
B5-C	196653'8.124"	979058'5.996"
B5-D	196653'2.154"	979022'4.066"

STAKE	NORTHING	EASTING
B9-A	196708'11.624"	979065'7.737"
B9-B	196723'10.939"	979085'10.989"
B9-C	196684'.789"	979101'1.998"
B9-D	196671'10.982"	979089'1.819"
MSF-A1	196422'10.486"	978933'6.956"
MSF-B1	196429'6.818"	978939'7.031"
MSF-B2	196615'11.198"	979106'6.977"
N1-A	196522'1.667"	979011'.158"
N1-B	196522'10.78'	979052'2.431"
N1-C	196516'1.472"	979055'4.477"
N1-D	196496'8.564"	979039'5.512"
N1-E	196500'8.294"	979034'11.784"
N1-F	196493'3.342"	979028'6.373"

TAG	NORTHING	EASTING
WP1-1	196395'11.031"	978991'6.618"
WP1-2	196394'6.103"	978985'10.438"
WP1-3	196387'6.068"	978984'7.777"
WP1-11	196388'9.948"	978994'9.422"
WP1-11A	196382'2.56"	979019'10.309"
WP1-11B	196381'.812"	979021'.104"
WP1-12	196396'1.511"	978998'3.431"
WP1-13	196390'10.19"	978999'6.678"



NOTES:
1. LANDSCAPE ARCHITECT REVIEW LAYOUT PRIOR TO PLACING STONE.
2. SEE L172 FOR LAYOUT OF SEAT WALL AT OVAL.

1 / L110 MJH LAYOUT PLAN
SCALE: 1" = 20'-0"

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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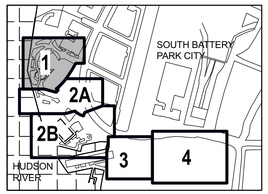
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ANDREW R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
MJH LAYOUT PLAN

SHEET NUMBER
L110

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

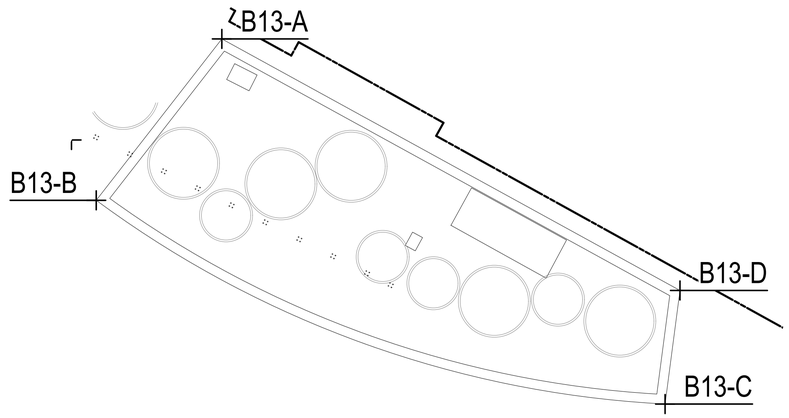
STAKE	NORTHING	EASTING
B6-A	196633'9.204"	979074'7.22"
B6A-A	196637'.517"	979083'4.22"
B6A-B	196643'1.889"	979089'4.47"
B6A-C	196624'2.621"	979105'11.628"
B6A-D	196620'.086"	979101'9.719"
B6-B	196639'.576"	979079'10.323"
B6-C	196604'5.326"	979110'2.891"
B6-D	196596'7.435"	979096'11.084"

STAKE	NORTHING	EASTING
B12-A	196662'4.821"	979098'5.189"
B12-B	196675'7.163"	979110'1.443"
B12-C	196629'6.296"	979159'4.137"
B12-D	196646'11.901"	979161'4.544"
B13-A	196642'10.346"	979179'2.279"
B13-B	196621'6.748"	979162'7.321"
B13-C	196594'8.117"	979237'8.297"
B13-D	196609'7.972"	979239'7.896"
MSF-B2	196615'11.198"	979106'6.977"
MG - 2	196474'9.197"	979022'7.739"
MG - 3	196465'.324"	979013'6.26"

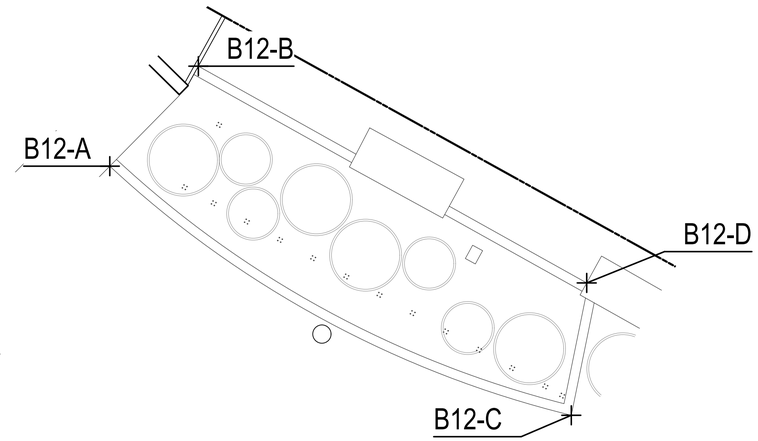
STAKE	NORTHING	EASTING
L1-A	196473'.598"	978964'11.926"
L1-B	196468'4.742"	978964'6.355"
L1-C	196480'4.859"	978945'6.006"
L1-D	196491'5.885"	978937'2.025"
L1-E	196525'1.838"	978954'11.646"
L1-F	196522'3.042"	978955'10.316"
L1-G	196518'5.025"	978945'4.9"
L1-H	196504'5.516"	978938'2.193"
L1-I	196493'6.805"	978941'1.931"
L1-J	196483'7.947'	978948'7.264"
L2-A	196527'7.948"	978967'5.219"
L2-B	196527'11.503"	978976'11.15"
L2-C	196481'11.391"	979012'8.395"
L2-D	196472'.33"	97007'9.767"
L2-E	196461'5.216"	978980'11.468"
L2-F	196464'3.449"	978976'4.967"
L2-H	196521'8.09"	978970'.497"
L2-I	196512'4.38"	978998'4.144"
L2-J	196501'.205"	979006'10.492"
L2-K	196487'10.606"	979010'5.582"
L2-L	196477'1.136"	979008'1.746"
L2-M	196468'11.658"	979000'8.107"
L2-N	196464'3.847"	978987'10.551"

NOTES:

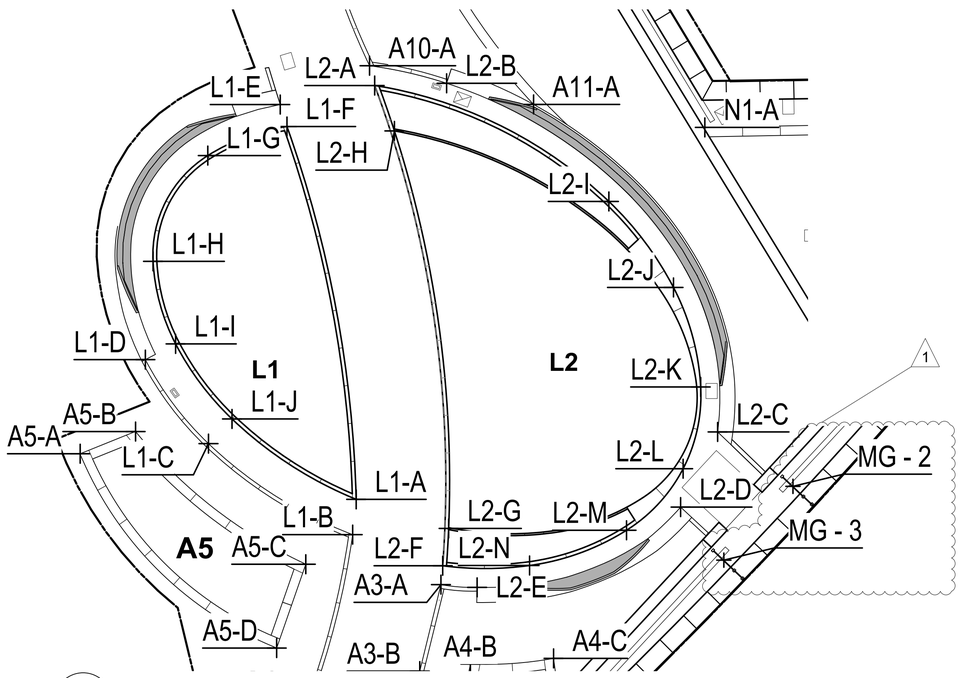
1. LANDSCAPE ARCHITECT TO REVIEW LAYOUT PRIOR TO PLACING STONE.
2. REFER TO L110 FOR COORDINATE TABLES AND RADII.
3. COORDINATE AND CUT STONE PAVEMENT TO MEET EXISTING AND PROPOSED MEP BOXES AS REQUIRED. PROVIDE SHOP DRAWINGS.



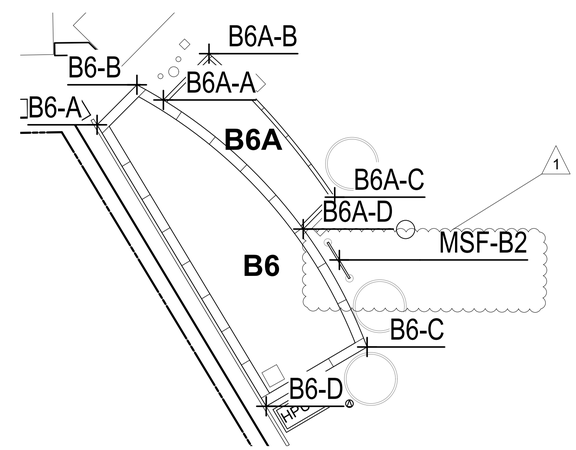
4 / L111 ENLARGEMENT: 1ST PLACE SALVAGED STONE FLUSH WITH PAVEMENT
SCALE: 1" = 10'-0"



2 / L111 ENLARGEMENT: 1ST PLACE SALVAGED STONE FLUSH WITH PAVEMENT
SCALE: 1" = 10'-0"



3 / L111 ENLARGEMENT: L1 AND L2
SCALE: 1" = 10'-0"



1 / L111 ENLARGEMENT: B6 AND B6A
SCALE: 1" = 10'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

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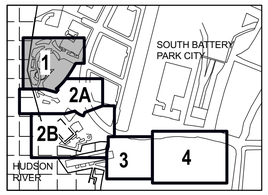
KEY PLAN



REGISTRATION

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
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Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH BENCH & CURB LAYOUT

SHEET NUMBER

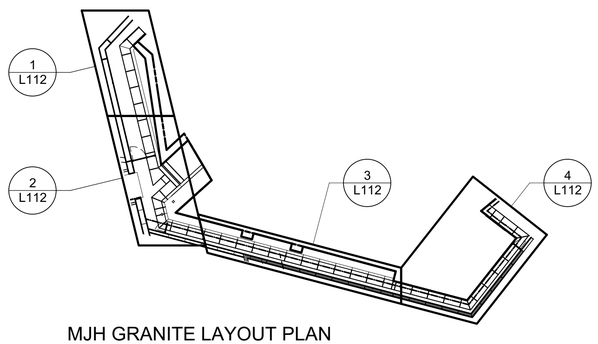
L111

Last saved by: FERRERAV2021-11-17 Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:

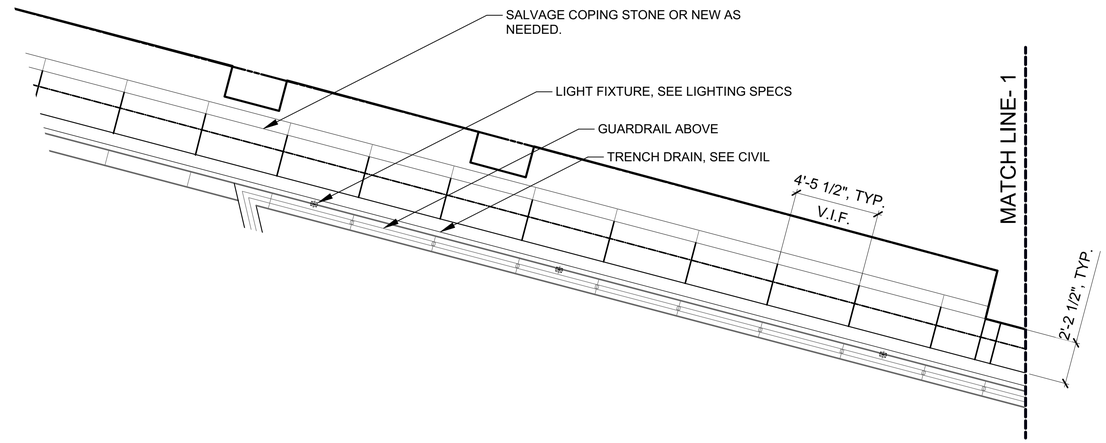
1. SEE ELEVATION FOR STONE LAYOUT ON L157, L158 & L159



MJH GRANITE LAYOUT PLAN

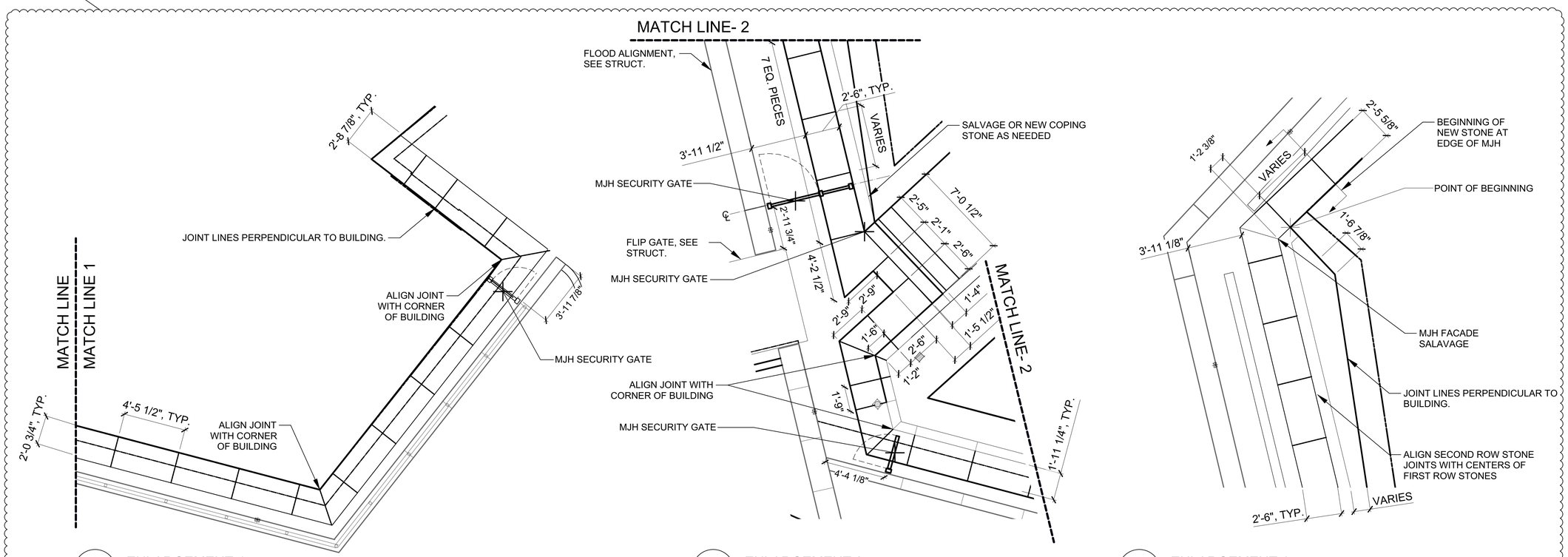
NOTES:

1. ALIGN ALL VERTICLE JOINTS TO MATCH EXISTING BUILDING FACADE AND ADJACENT PANELS.
2. PAVEMENT JOINTS PERPENDICULAR TO BUILDING. ALIGN GROUNDPLANE STONE JOINTS WITH BUILDING FASCADE JOINTS. CONTRACTOR TO VERIFY DIMENSIONS AND PROVIDE SHOP DRAWINGS LOCATED EACH STONE.



3 L112 ENLARGEMENT 3
SCALE: 1/4" = 1'-0"

1



4 L112 ENLARGEMENT 4
SCALE: 1/4" = 1'-0"

2 L112 ENLARGEMENT 2
SCALE: 1/4" = 1'-0"

1 L112 ENLARGEMENT 1
SCALE: 1/4" = 1'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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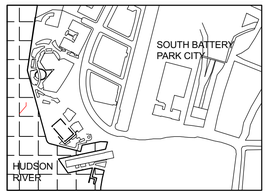
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH GRANITE PAVEMENT LAYOUT

SHEET NUMBER

L112

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

MUSEUM OF JEWISH HERITAGE MATERIALS SCHEDULE

STONE TYPE	STONE MATERIAL	SIZE	SHAPE	COLOR	FINISH	NOTES	SALVAGE AVAILABE*	SPEC SECTION
VC-1	CONCRETE			PINK		EXPOSED EAST SIDE OF ALLE WALL		
VC-2	CONCRETE			TBD	TBD	AT BATTERY PLACE LOW SECURITY WALL		
VS-1	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPEA: JETMIST		AT MJH FLOODWALL VENEER		044300.2-2.06
VS-2	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPE B: TAPESTRY	AS INDICATED ON THE DRAWINGS	PLANTERS NEAR MJH		044300.2-2.06
?	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPE D: POLYCOR STANSTEAD GRAY	AS INDICATED ON THE DRAWINGS	ALL CURBS		044300.2-2.06
VS-3	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPE F: POLYCOR NEWTON BROWN	AS INDICATED ON THE DRAWINGS	ESPLEDANE CAP FROM PIER A PLAZA TO END OF ESPLENADE NEAR MJH	NO	044300.2-2.06
VS-4	MARBLE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	PEARL GRAY	HONED	ALL WAGNER PARK CURNS & ON EXPOSED FLOODWALL		044300.2-2.06
VS-5	MARBLE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	PEARL GRAY	SANDBLASTED	ON EXPOSED FLOODWALL		044300.2-2.06
VW-1	WOOD			THERMALLY TREATED ASH	THERMALLY TREATED ASH			044300.2-2.06

*CONTRACTOR TO DETERMINE IF SALVAGE QUANTITIES OR NEW AS REQUIRED TO COMPLETE THE WORK

MUSEUM OF JEWISH HERITAGE PAVING SCHEDULE

STONE TYPE	STONE MATERIAL	SIZE	SHAPE	COLOR	FINISH	NOTES	SALVAGE AVAILABE*	SPEC SECTION
A-1	ASPHALT	8" X 3" TH.	HEX	A80010	GROUND	SQUARE EDGED PAVER		
B-1	BONDED AGGREGATE	VARIES	VARIES	95% WHITE 5% BLACK		TRASS & D1 BY ROMEX		
C-1	PRECAST CONCRETE	8" X 3"	HEX	HANOVER CHARCOAL	TUDOR	SQUARE EDGED PAVER		321400.4-2.04
C-2	PRECAST CONCRETE	8" X 3"	HEX	HANOVER MATRIX 1442	TUDOR	SQUARE EDGED PAVER		321400.4-2.04
C-3	PRECAST CONCRETE	8" X 3"	HEX	HANOVER MATRIX 1025	TUDOR	SQUARE EDGED PAVER		321400.4-2.04
C-4	PRECAST CONCRETE	8" X 3"	HEX	HANOVER GLACIER WHITE	TUDOR	SQUARE EDGED PAVER		321400.4-2.04
S-1	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPE A: JET MIST	THERMAL	SALVAGED STONE, VENEER & PAVER		044300.2-2.06
S-3	GRANITE	5" X 20.5" X 3" TH.		TYPE C: CANADIAN BLACK GRANITE				044300.2-2.06
S-5	GRANITE	2" X 8" X VARIES	RECTANGULAR	TYPE C: CANADIAN BLACK GRANITE	THERMAL	SALVAGED STONE, PAVER		044300.2-2.06
S-7	STONE COBBLE	AS SHOWN ON DWGS	MATCH EXISTING COBBLES	MATCH EXISTING COBBLES	MATCH EXISTING COBBLES			24200.4
S-8	STONE COBBLE	AS SHOWN ON DWGS	AS SHOWN ON DWGS	TYPE C: CANADIAN BLACK GRANITE		DETECTABLE WARNING PAVER		044300.2-2.06
S-9	GRANITE	1' X 1'		TYPE E: STONEY CREEK		INCISED WITH BIKEWAY SYMBOLS (SMALL)		
S-13	GRANITE	AS INDICATED ON THE DRAWINGS	AS INDICATED ON THE DRAWINGS	TYPE B: TAPESTRY	THERMAL	INLAY FABRICATED FROM SITE SALVAGED STONE, PAVER, COPING STONE, AND VENEER		044300.2-2.06
W-1	PRECAST CONCRETE	1' X 1' X 2"	SQUARE	CHARCOAL	TACTILE WARNING	DETECTABLE WARNING PAVER		321400.4-2.05

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MUSEUM OF JEWISH HERITAGE SIGNAGE SCHEDULE

MJH SIGNAGE		

SIGN TYPE	AGENCY	MOUNTING TYPE	NOTES
C-001	DOT	POLE	SEE CIVIL PAGE RD501
C-002	DOT	POLE	SEE CIVIL PAGE RD501
C10-415	BPCA	POLE	R&R
B2-422	BPCA	PLYOON	WAYFINDING
E10-4	BPCA	GATE	R&R
E10-5	BPCA	GATE	R&R
E10-6	BPCA	GATE	R&R
E10-7	BPCA	GATE	R&R

* DOES NOT INCLUDE BUILDING SIGNAGE, FDNY, OR EMERGANCY ACTION PLAN SIGNAGE

MUSEUM OF JEWISH HERITAGE FURNISHING SCHEDULE

ID	ITEM	QUANTITY	DIMENSION (WxL)	HEIGHT	NOTES
A	MOVABLE PLANTER - WITH TREE	10	SEE DETAIL 1 ON L955	VARIES	VARIFY HT. WITH SHOP DRAWINGS
B	MOVABLE PLANTER - WITHOUT TREE	16	SEE DETAIL 1 ON L955	VARIES	VARIFY HT. WITH SHOP DRAWINGS

1

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

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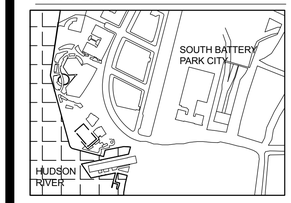
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MATERIALS SCHEDULE - MJH

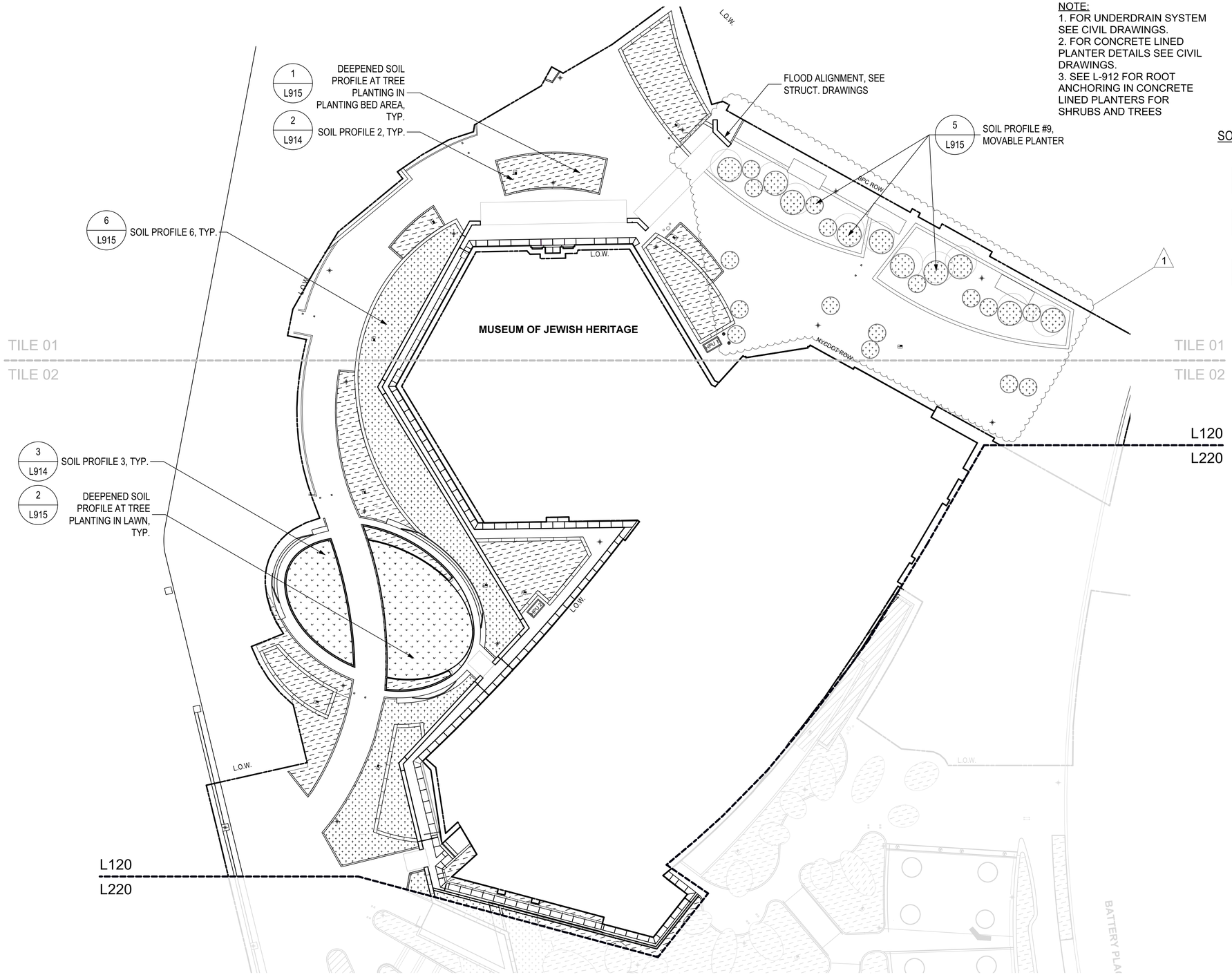
SHEET NUMBER

L119

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\605792\1-SBPC\910_CAD\20_SHEETS\FROM PWI_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTE:
1. FOR UNDERDRAIN SYSTEM SEE CIVIL DRAWINGS.
2. FOR CONCRETE LINED PLANTER DETAILS SEE CIVIL DRAWINGS.
3. SEE L-912 FOR ROOT ANCHORING IN CONCRETE LINED PLANTERS FOR SHRUBS AND TREES



1 L120 MJH SOILS PLAN
SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

N

SOIL PROFILE LEGEND

SOIL PROFILE 2 - INLAND PLANTING BED	2	L914
SOIL PROFILE 3 - LAWN AREA	3	L914
SOIL PROFILE 6 - CONCRETE LINED PLANTING BED	6	L915

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SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

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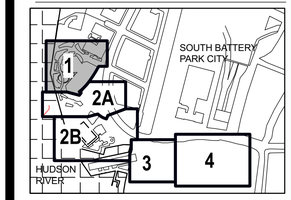

REGISTRATION

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ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
MJH SOILS PLAN

SHEET NUMBER
L120

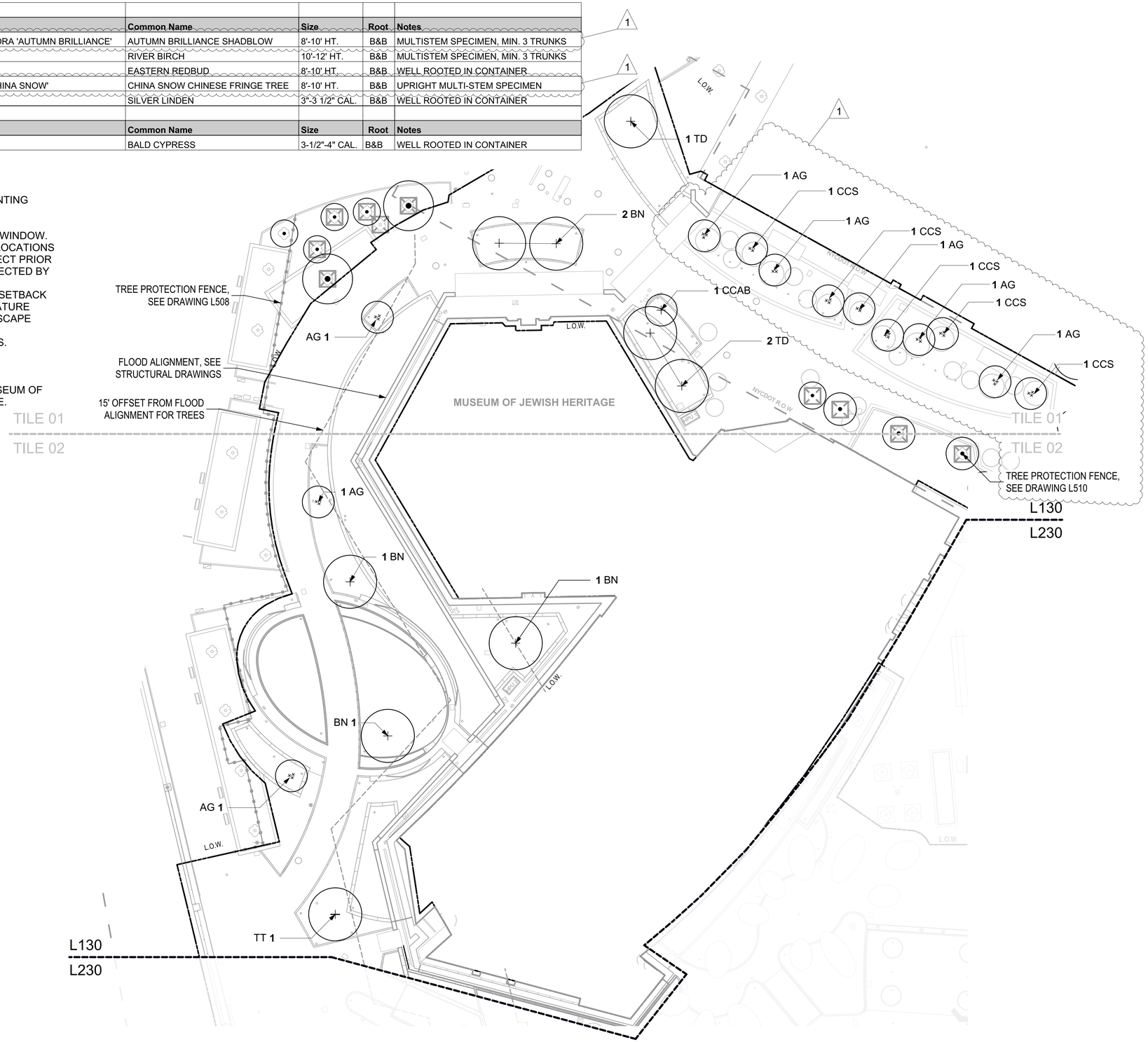
Last saved by: FERRERM(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\605\7231-SBPC\910_CAD\20_SHEETS\FROM PWI_AOM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

TREE SCHEDULE FOR SHEET L130						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
AG	8	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SHADBLOW	8'-10' HT.	B&B	MULTISTEM SPECIMEN, MIN. 3 TRUNKS
BN	5	BETULA NIGRA 'DURAHEAT'	RIVER BIRCH	10'-12' HT.	B&B	MULTISTEM SPECIMEN, MIN. 3 TRUNKS
CCAB	2	CERCIS CANADENSIS 'ALBA'	EASTERN REDBUD	8'-10' HT.	B&B	WELL ROOTED IN CONTAINER
CCS	5	CHIONANTHUS RETUSUS 'CHINA SNOW'	CHINA SNOW CHINESE FRINGE TREE	8'-10' HT.	B&B	UPRIGHT MULTI-STEM SPECIMEN
TT	1	TILLIA TOMENTOSA	SILVER LINDEN	3"-3 1/2" CAL.	B&B	WELL ROOTED IN CONTAINER
CONIFEROUS TREES						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
TD	8	TAXODIUM DISTICHUM	BALD CYPRESS	3-1/2"-4" CAL.	B&B	WELL ROOTED IN CONTAINER

NOTES:

1. PLANT TREES AND SHRUBS PRIOR TO PLANTING HERBACEOUS PLANTS. PLANT BULBS AFTER COMPLETION OF ALL OTHER PLANTS.
2. PLANT IN SPECIFIED SEASONAL PLANTING WINDOW.
3. STAKE OUT AND LABEL TREE AND SHRUB LOCATIONS FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF PLANTING. ADJUST AS DIRECTED BY THE LANDSCAPE ARCHITECT.
4. ALL TREE ROOTBALLS TO BE PLACED PER SETBACK FROM FLOOD ALIGNMENT ACCORDING TO MATURE HEIGHT. ADJUST AS DIRECTED BY THE LANDSCAPE ARCHITECT.
5. SEE DRAWING L131 FOR SHRUB PLANTINGS.
6. SEE DRAWINGS L132, L133 AND L134 FOR HERBACEOUS PLANTINGS.
7. SEE DRAWING L135 FOR BULB PLANTINGS.
8. SEE DRAWINGS L139 & L139A FOR THE MUSEUM OF JEWISH HERITAGE MASTER PLANT SCHEDULE.
9. SEE DRAWING L129 FOR PLANTING NOTES.
10. SEE L120 FOR SOILS PLAN



1 / L130 MJH PLANTING PLAN - TREES
SCALE: 1" = 20'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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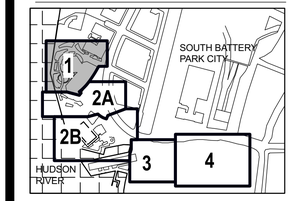
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ALBERT R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

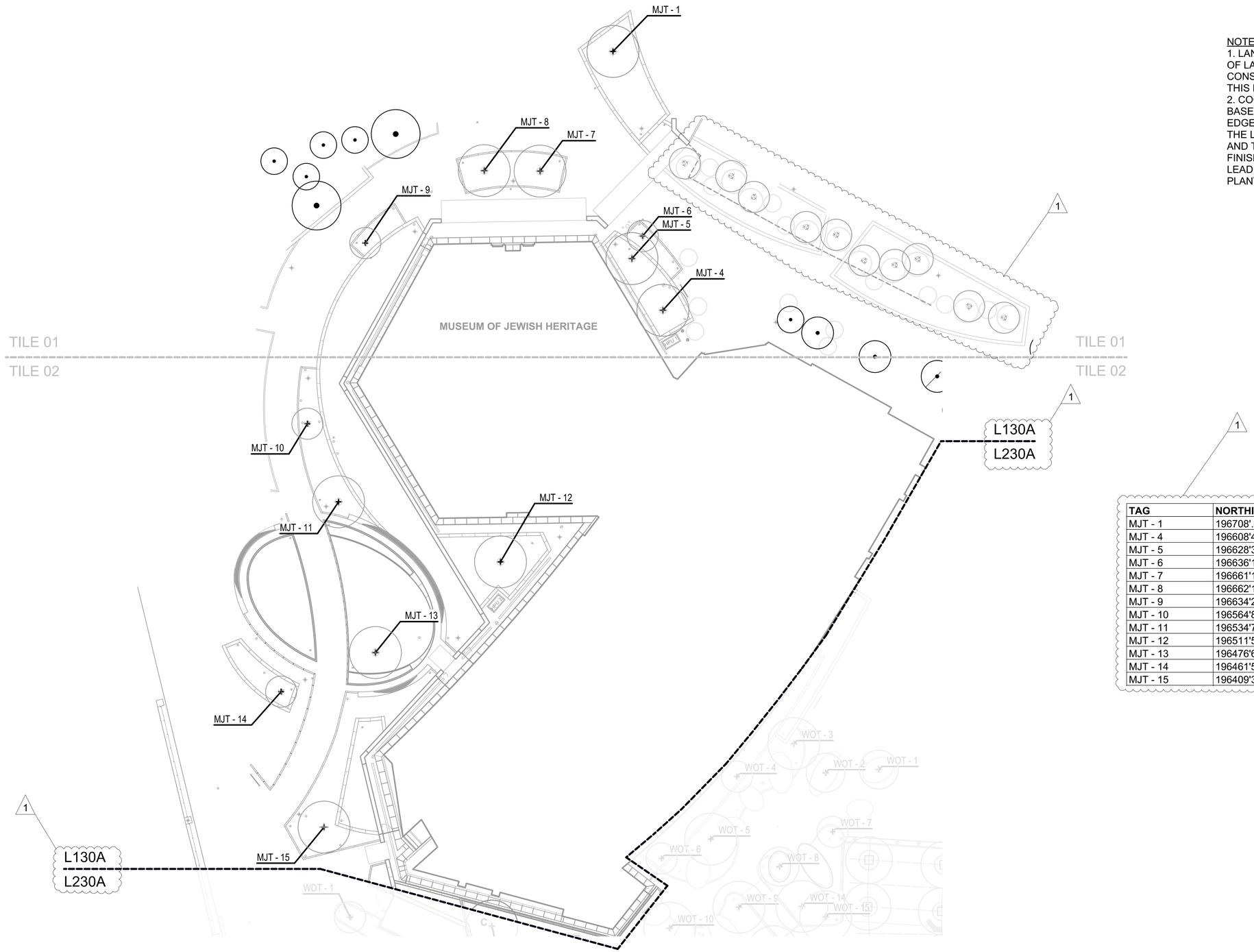
MJH PLANTING PLAN - TREES

SHEET NUMBER

L130

Last saved by: FERRERA72031-11-17 Last Plotted: 2019-08-15
Filename: C:\MARNE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



NOTE:
1. LANDSCAPE ARCHITECT TO APPROVE OF LAYOUT PRIOR TO BEGINNING CONSTRUCTION ELEMENTS SHOWN ON THIS PLAN.
2. COORDINATE LAYOUT OF THE PLANTER BASED ON THE LOCATION OF THE LEAD EDGE AT THE TOP OF THE PLANTER WITH THE LOCATION OF THE PLANTER BASE AND THE CONCRETE FOOTINGS AT THE FINISH GRADE THAT IS INSET FROM THE LEAD EDGE AT THE TOP OF THE PLANTER.

TAG	NORTHING	EASTING
MJT - 1	196708'.437"	979079'1.553"
MJT - 4	196608'4.235"	979098'4.297"
MJT - 5	196628'3.235"	979086'5.297"
MJT - 6	196636'11.214"	979090'6.769"
MJT - 7	196661'11.486"	979051'.647"
MJT - 8	196662'1.486"	979029'6.647"
MJT - 9	196634'2.986"	978983'8.647"
MJT - 10	196564'8.085"	978961'5.139"
MJT - 11	196534'7.178"	978973'5.05"
MJT - 12	196511'5.552"	979035'9.637"
MJT - 13	196476'6.472"	978987'7.549"
MJT - 14	196461'5.958"	978951'3.767"
MJT - 15	196409'3.806"	978967'10.029"

1
L130A
MJH PLANTING PLAN - TREE COORDINATES
SCALE: 1" = 20'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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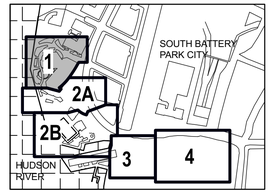
KEY PLAN



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Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH - TREE COORDINATE PLAN

SHEET NUMBER

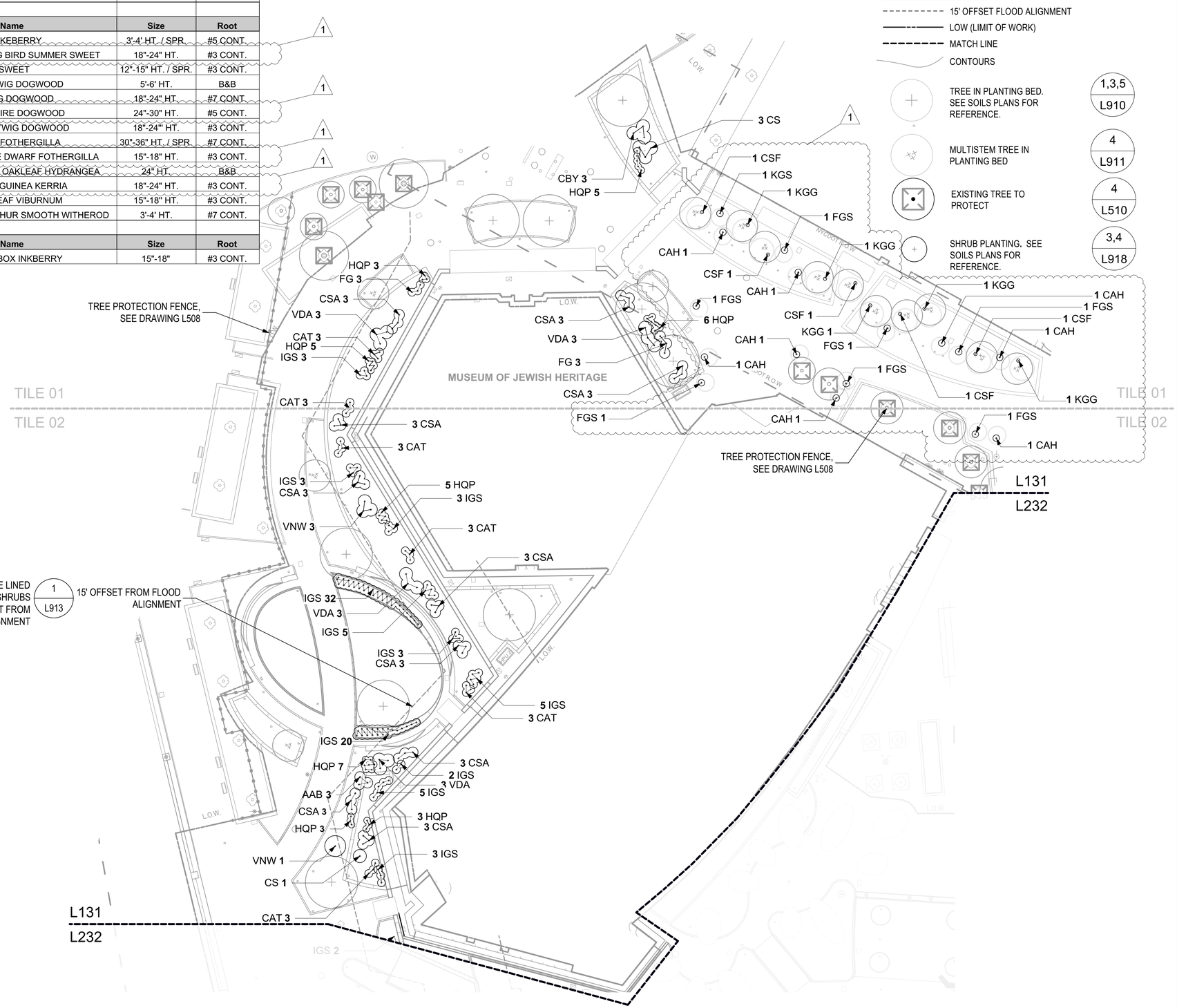
L130A

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60379231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

SHRUB SCHEDULE FOR SHEET L131					
DECIDUOUS SHRUBS					
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**
AAB	3	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	RED CHOKEBERRY	3'-4' HT. / SPR.	#5 CONT.
CAH	8	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMING BIRD SUMMER SWEET	18"-24" HT.	#3 CONT.
CAT	18	CLETHRA ALNIFOLIA 'TOM'S COMPACT'	SUMMERSWEET	12"-15" HT. / SPR.	#3 CONT.
CS	10	CORNUS SANGUINEA 'MIDWINTER FIRE'	BLOODTWIG DOGWOOD	5'-6' HT.	B&B
CSA	30	CORNUS SERICEA ARCTIC FIRE 'RED'	RED TWIG DOGWOOD	18"-24" HT.	#7 CONT.
CSF	5	CORNUS SERICEA 'FARROW'	ARCTIC FIRE DOGWOOD	24"-30" HT.	#5 CONT.
CBY	9	CORNUS SERICEA 'BUD'S YELLOW'	YELLOWTWIG DOGWOOD	18"-24"' HT.	#3 CONT.
FG	6	FOTHERGILLA GARDENII 'MT. AIRY'	MT. AIRY FOTHERGILLA	30"-36" HT. / SPR.	#7 CONT.
FGS	8	FOTHERGILLA GARDENII 'SUZANNE'	SUZANNE DWARF FOTHERGILLA	15"-18" HT.	#3 CONT.
HQP	50	HYDRANGEA QUERCIFOLIA 'PEE WEE'	PEE WEE OAKLEAF HYDRANGEA	24" HT.	B&B
KGG	5	KERRIA JAPONICA 'GOLDEN GUINEA	GOLDEN GUINEA KERRIA	18"-24" HT.	#3 CONT.
VDA	12	VIBURNUM ACERIFOLIUM	MAPLE LEAF VIBURNUM	15"-18" HT.	#3 CONT.
VNW	4	VIBURNUM NUDUM 'WINTERTHUR'	WINTERTHUR SMOOTH WITHEROD	3'-4' HT.	#7 CONT.
EVERGREEN SHRUBS					
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**
IGS	86	ILEX GLABRA 'STRONGBOX'	STRONGBOX INKBERRY	15"-18"	#3 CONT.

NOTES:

1. PLANT TREES AND SHRUBS PRIOR TO PLANTING HERBACEOUS PLANTS. PLANT BULBS AFTER COMPLETION OF ALL OTHER PLANTS.
2. PLANT IN SPECIFIED SEASONAL PLANTING WINDOW.
3. STAKE OUT AND LABEL TREE AND SHRUB LOCATIONS FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF PLANTING.
4. SHRUBS LOCATED WITHIN FLOOD ALIGNMENT SETBACK MAY REQUIRE TIE DOWN ANCHORAGE. SEE DETAILS.
5. SEE DRAWING L131 FOR TREE PLANTINGS.
6. SEE DRAWINGS L132, L133 AND L134 FOR HERBACEOUS PLANTINGS.
7. SEE DRAWING L135 FOR BULB PLANTINGS.
8. SEE DRAWING L139 & 139A FOR THE MUSEUM OF JEWISH HERITAGE MASTER PLANT SCHEDULE.
9. SEE DRAWING L130a FOR GENERAL PLANTING NOTES.



1 / L131 MJH PLANTING PLAN - UNDERSTORY
SCALE: 1" = 20'-0"

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PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

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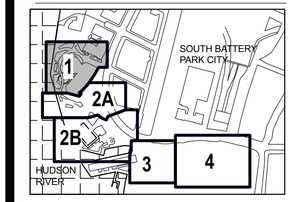
KEY PLAN


REGISTRATION
REGISTERED LANDSCAPE ARCHITECT ANDREW R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
MJH PLANTING PLAN - UNDERSTORY

SHEET NUMBER
L131

ANSI D 22" x 34"

Last saved by: FERRERAV2021-11-17 Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

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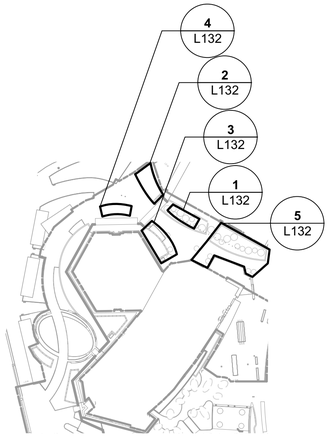
ANSI D 22" x 34"



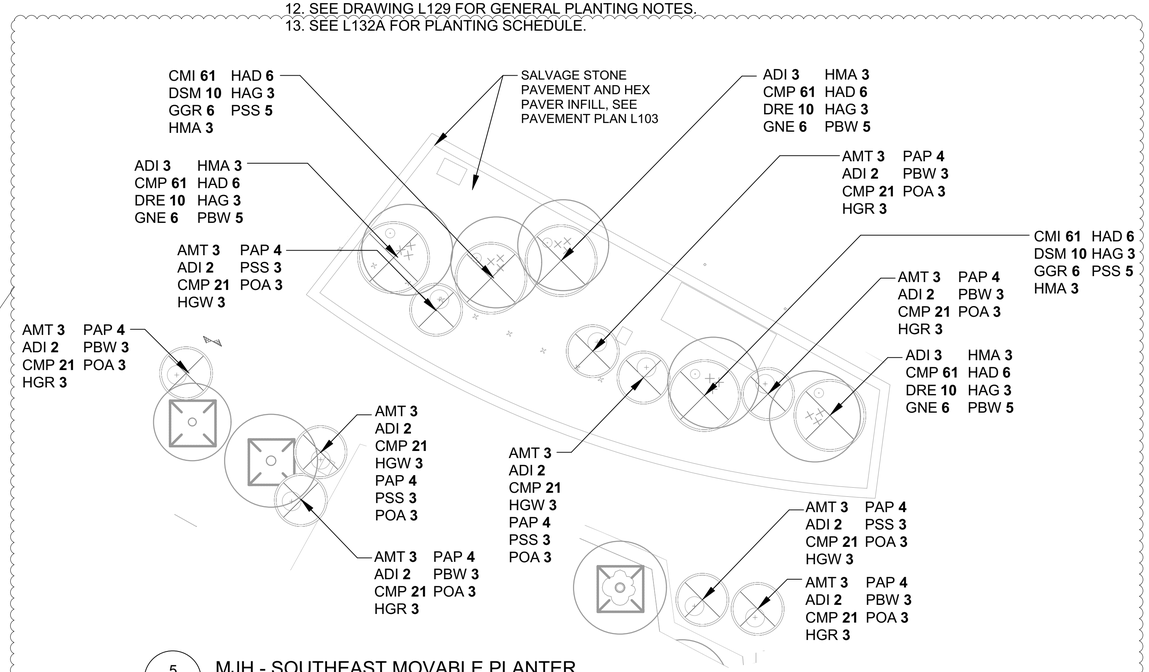
KEY PLAN
NTS

NOTES:

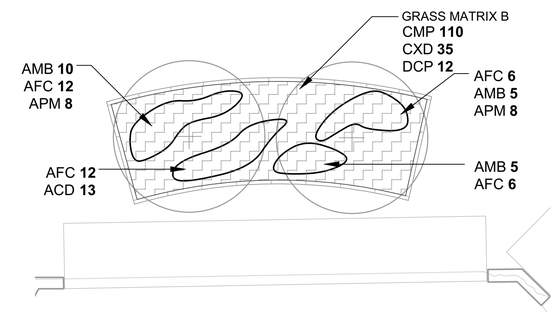
1. PLANT PERENNIALS AND GROUNDCOVERS AFTER THE COMPLETION OF TREE AND SHRUB PLANTING. PLANT BULBS AFTER COMPLETION OF ALL OTHER PLANTS.
2. PLANT IN SPECIFIED SEASONAL PLANTING WINDOW.
3. MARK-OUT PLANT GROUPING LOCATIONS INDICATED ON THE PLAN FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF PLANTING. ADJUST AS DIRECTED BY THE LANDSCAPE ARCHITECT.
4. PLANT GROUNDCOVER MATRIX MIX IN RANDOMIZED PATTERNS IN PLANTING BEDS AS DIRECTED BY THE LANDSCAPE ARCHITECT.
5. SEE DRAWING 130 FOR TREE PLANTINGS.
6. SEE DRAWING L131 FOR SHRUB PLANTINGS.
7. SEE DRAWINGS L132, L133 AND L134 FOR HERBACEOUS PLANTINGS.
8. SEE DRAWING L135 FOR BULB PLANTINGS.
9. SEE DRAWINGS L139 FOR THE MUSEUM OF JEWISH HERITAGE PLANT SCHEDULE.
10. ALL HERBACEOUS PLANTS AND GRASSES TO BE SPACED AT 12"
11. QUANTITIES AND AREAS FOR PLANTING CLUSTERS SHOWN HERE FOR BIDDING PURPOSES. LAYOUT BY PLANT IS AVAILABLE UPON AWARD OF CONTRACT.
12. SEE DRAWING L129 FOR GENERAL PLANTING NOTES.
13. SEE L132A FOR PLANTING SCHEDULE.

PLANTING LEGEND

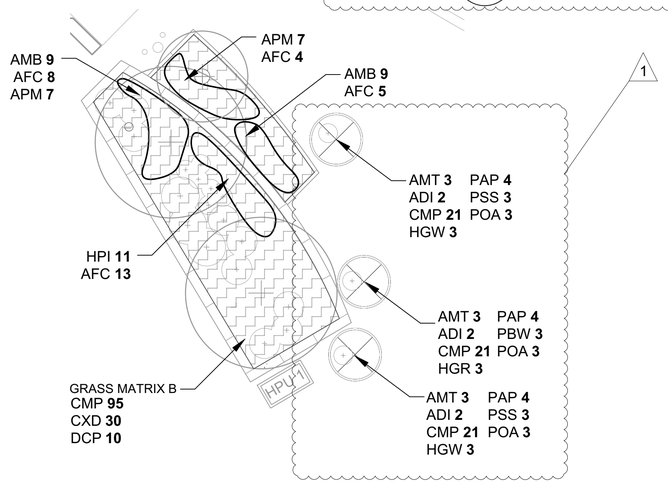
- 15' OFFSET FLOOD ALIGNMENT
- LOW (LIMIT OF WORK)
- MATCH LINE
- CONTOURS
- TREE IN PLANTING BED. SEE SOILS PLANS FOR REFERENCE. — 1,3,5 / L910
- MULTISTEM TREE IN PLANTING BED — 4 / L911
- SHRUB PLANTING. SEE SOILS PLANS FOR REFERENCE. — 3,4 / L918
- HERBACEOUS PLANTING / PERENNIAL PLANTING
- GRASS MATRIX B PLANTING — 1 / L918
- MOVABLE PLANTERS



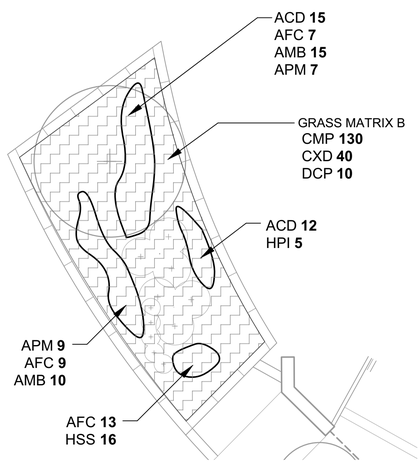
5 / L132 MJH - SOUTHEAST MOVABLE PLANTER
SCALE: 1" = 10'-0"



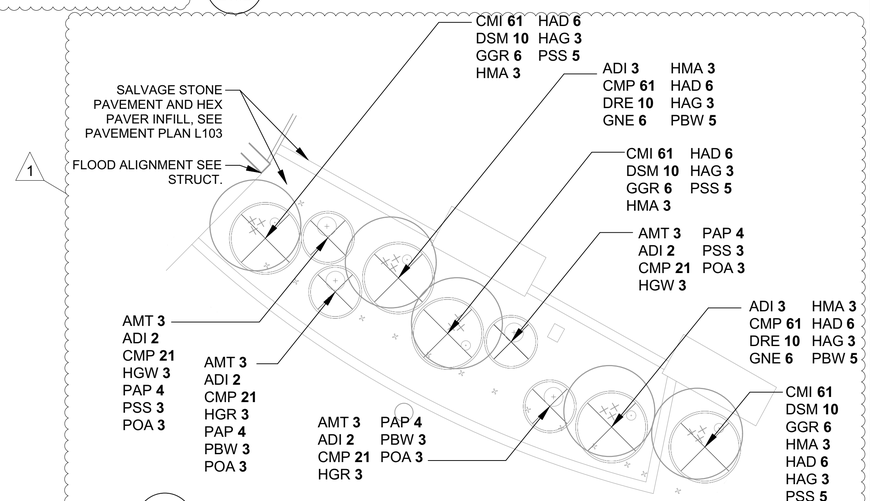
4 / L132 B5 PLANTERS - HERBACEOUS
SCALE: 1" = 10'-0"



3 / L132 PLANTERS (B6 AND B6A) - HERBACEOUS
SCALE: 1" = 10'-0"



2 / L132 B9 PLANTER - HERBACEOUS
SCALE: 1" = 10'-0"



1 / L132 MJH - NORTHWEST MOVABLE PLANTERS
SCALE: 1" = 10'-0"

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SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

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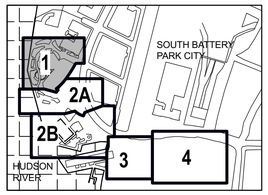
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
MJH PLANTING PLAN - HERBACEOUS 1

SHEET NUMBER
L132

Last saved by: FERRERA2022-11-17 Last Printed: 2019-09-15
Filename: C:\MARINE\60579231-SBPCo910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

1

MJH PLANTING SCHEDULE						
DECIDUOUS TREES						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
AG	8	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SHADBLOW	8'-10' HT.	B&B	MULTISTEM SPECIMEN, MIN. 3 TRUNKS
BN	5	BETULA NIGRA 'DURAHEAT'	RIVER BIRCH	10'-12' HT.	B&B	MULTISTEM SPECIMEN, MIN. 3 TRUNKS
CCAB	2	CERCIS CANADENSIS 'ALBA'	EASTERN REDBUD	8'-10' HT.	B&B	
CCS	5	CHIONANTHUS RETUSUS 'CHINA SNOW'	CHINA SNOW CHINESE FRINGE TREE	B&B	8'-10' HT.	UPRIGHT MULTI-STEM SPECIMEN
TT	1	TILLIA TOMENTOSA	SILVER LINDEN	3"-3 1/2" CAL.	B&B	
CONIFEROUS TREES						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
TD	8	TAXODIUM DISTICHUM	BALD CYPRESS	3-1/2"-4" CAL.	B&B	
DECIDUOUS SHRUBS						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
AAB	3	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	RED CHOKEBERRY	3'-4' HT. / SPR.	#5 CONT.	
CAH	8	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMING BIRD SUMMER SWEET	#3 CONT.	18"-24" HT.	FULL
CAT	18	CLETHRA ALNIFOLIA 'TOM'S COMPACT'	SUMMERSWEET	12"-15" HT. / SPR.	#3 CONT.	
CS	10	CORNUS SANGUINEA 'MIDWINTER FIRE'	BLOODTWIG DOGWOOD	5'-6' HT.	B&B	
CSF	5	CORNUS SERICIA 'FARROW'	ARCTIC FIRE DOGWOOD	#5 CONT.	24"-30" HT.	FULL
CSA	30	CORNUS SERICEA ARCTIC FIRE 'RED'	RED TWIG DOGWOOD	18"-24" HT.	#7 CONT.	
CBY	9	CORNUS SERICEA 'BUD'S YELLOW'	YELLOWTWIG DOGWOOD	18"-24"' HT.	#3 CONT.	
FG	6	FOTHERGILLA GARDENII 'MT. AIRY'	MT. AIRY FOTHERGILLA	30"-36" HT. / SPR.	#7 CONT.	
FGS	8	FOTHERGILLA GARDENII 'SUZANNE'	SUZANNE DWARF FOTHERGILLA	#3 CONT.	15"-18" HT.	FULL
HQP	50	HYDRANGEA QUERCIFOLIA 'PEE WEE'	PEE WEE OAKLEAF HYDRANGEA	24" HT.	B&B	
KGG	5	KERRIA JAPONICA 'GOLDEN GUINEA	GOLDEN GUINEA KERRIA	#3 CONT.	18"-24" HT.	FULL
VDA	12	VIBURNUM ACERIFOLIUM	MAPLE LEAF VIBURNUM	15"-18" HT.	#3 CONT.	
VNW	4	VIBURNUM NUDUM 'WINTERTHUR'	WINTERTHUR SMOOTH WITHEROD	3'-4' HT.	#7 CONT.	
EVERGREEN SHRUBS						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
IGS	86	ILEX GLABRA 'STRONGBOX'	STRONGBOX INKBERRY	15"-18"	#3 CONT.	FULL
VINES						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	
HEN	25	HEDERA HELIX 'NEEDLEPOINT'	NEEDLEPOINT ENGLISH IVY	3'0"	#1 CONT.	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
PERENNIALS						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	
ACD	106	ANEMONE CANADENSIS	WINDFLOWER	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
ACP	63	ACTAEA PACHYPODA	WHITE BANEBERRY	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
ADI	102	ASTER DIVARICATUS 'EASTERN STAR'	WHITE WOOD ASTER	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
AFC	266	ANEMONE FANTASY 'CINDERELLA'	WINDFLOWER	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
AFF	14	ATHYRIUM FILIX-FEMINA	LADY FERN	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
AMB	145	AMSONIA 'BLUE ICE'	BLUE STAR	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
AMT	48	ALCHEMILLA MOLLIS ' THRILLER'	THRILLER LADY'S MANTLE		#1 CONT.	WELL-ROOTED IN CONTAINER
APM	163	ACTAEA PACHYPODA 'MISTY BLUE'	BANEBERRY	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
ATJ	83	ASTER TARTARICA 'JINDAI'	JINDAI TARTARIAN ASTER	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
BA	53	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
CMI	305	CAREX MAROWII 'ICE DANCE'	ICE DANCE JAPANESE SEDGE		#1 CONT.	WELL-ROOTED IN CONTAINER
DPU	36	DENNSTAEDTIA PUNCTILOBULA	HAY SCENTED FERN	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
DRE	50	DRYOPTERIS ERYTHROSORA 'BRILLIANCE'	BRILLIANCE AUTUMN FERN		#1 CONT.	WELL-ROOTED IN CONTAINER
DSM	50	DRYOPTERIS MARGINALIS	EASTERN WOODFERN		#1 CONT.	WELL-ROOTED IN CONTAINER
GNE	30	GERANIUM MACULATUM 'ESPRESSO'	ESPRESSO WILD GERANIUM		#1 CONT.	WELL-ROOTED IN CONTAINER
GGR	30	GERANIUM 'ROZANNE'	ROZANNE GERANIUM		#1 CONT.	WELL-ROOTED IN CONTAINER
HAD	60	HEUCHERA AMERICANA 'DALES STRAIN'	DALE'S STRAIN ALUM ROOT		#1 CONT.	WELL-ROOTED IN CONTAINER
HAG	30	HOSTA GUACAMOLE	GUACAMOLE HOSTA		#1 CONT.	WELL-ROOTED IN CONTAINER
HGW	24	HELLEBORUS X GLANDORFENSIS 'ICE 'N ROSES WHITE'	ICE N' ROSES WHITE HYBRID HELLEBORE		1 QUART	WELL-ROOTED IN CONTAINER
HGR	24	HELLEBORUS X GLANDORFENSIS 'ICE 'N ROSES ROSE'	ICE N' ROSES ROSE HYBRID HELLEBORE		1 QUART	WELL-ROOTED IN CONTAINER
HMA	30	HAKONECHLOA MACRA 'AUREOLA'	GOLDEN VARIGATED JAPANESE FOREST GRASS		#1 CONT.	WELL-ROOTED IN CONTAINER
HPI	119	HELLEBORUS 'PARIS IN PINK'	LENTEN ROSE	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
HPP	10	HELLEBORE 'PARIS IN PINK'	LENTEN ROSE	1'0"	1 QT/SP#4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
HSS	123	HEUCHERA SANGUINEA SNOW ANGEL'	CORAL BELLS	1'0"	1 QUART/#SP4	SOIL VOL. 53 MIN - 61 MAX CUBIC INCH; WELL ROOTED IN CONTAINER
MAP	61	MONARDA DIDYMA 'PURPLE ROOSTER'	BEE BALM	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
PAP	64	PACHYSANDRA PROCUMBENS	ALLEGHENY SPURGE		LP 32	WELL-ROOTED IN CONTAINER
PBW	49	PHLOX STOLONIFERA 'BRUCE'S WHITE'	BRUCE'S WHITE CREEPING PHLOX		#1 CONT.	WELL-ROOTED IN CONTAINER
PND	62	PENSTEMON DIGITALIS 'HUSKER RED'	BEARDTONGUE	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
POA	48	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN		#1 CONT.	WELL-ROOTED IN CONTAINER
PSS	49	PHLOX STOLONIFERA 'SHERWOOD PURPLE'	SHERWOOD PURPLE CREEPING PHLOX		#1 CONT.	WELL-ROOTED IN CONTAINER
TSP	97	THELYPTERIS PALUSTRIS	MARSH FERN	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
GRASS MATRIX B						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	**Notes**
CMP	1356	CAREX AMPHIBOLA	CREEK SEDGE	1'-3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
CXD	235	CAREX DIVULSA	GRASSLAND SEDGE	1'-3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
DCP	66	DESCHAMPSIA CESPITOSA 'GOLD TAU'	GOLD DEW	2'-6"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
GRASS MATRIX B1						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	**Notes**
SAA	825	SESLERIA AUTUMNALIS	AUTUMN MOOR GRASS	1'-3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
DPF	555	DESCHAMPSIA CESPITOSA 'PIXIE FOUNTAIN'	TUFTED HAIR GRASS	1'-3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
TURF						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Root**	**Notes**
TURF	V.I.F		SOD LAWN			SEE SPECS FOR SEED MIX

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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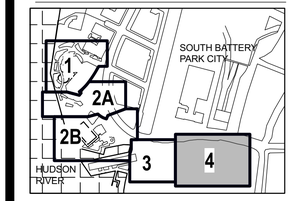
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH MASTER PLANTING SCHEDULE

SHEET NUMBER

L139

ANSI D 22" x 34"

Last saved by: FERRERA72021-11-17 Last Printed: 2019-08-15
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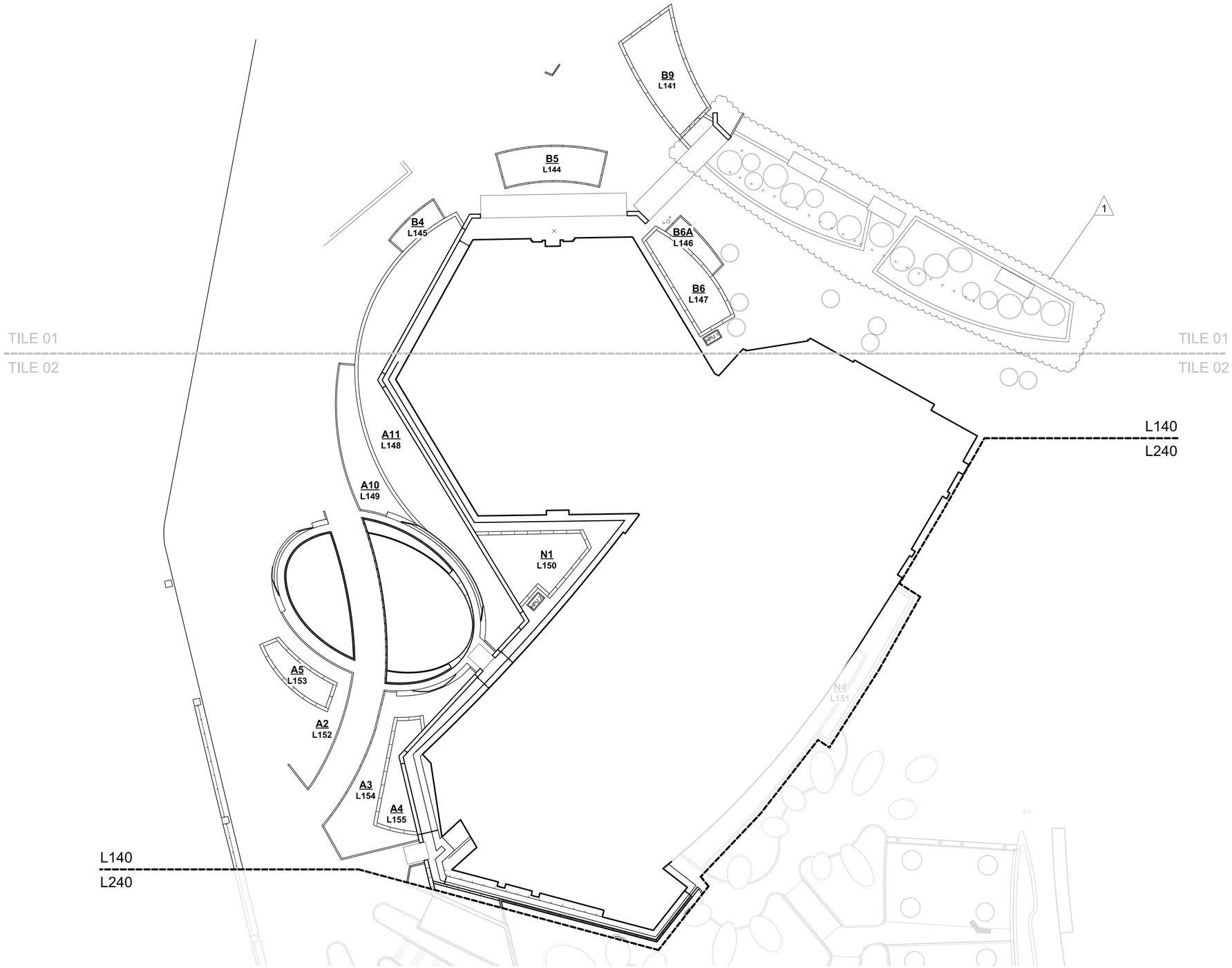
ANSI D 22" x 34"



1
L140

MJH PLANTER ELEVATION KEY PLAN
SCALE: 1" = 20'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY
BATTERY PARK CITY AUTHORITY

CONSULTANT

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AECOM USA
605 3rd Ave, 2nd Floor, New York, NY 10158
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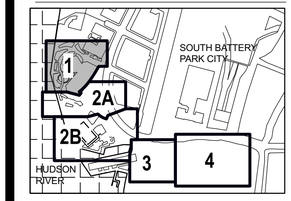
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH PLANTER ELEVATION KEY PLAN

SHEET NUMBER

L140

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ANSI D 22" x 34"

AECOM

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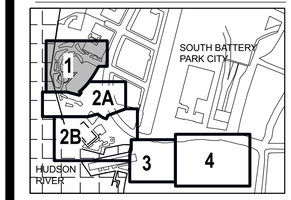
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALBERT R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

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Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

ELEVATIONS - MJH PLANTER B12A

SHEET NUMBER

1

L142

1

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ANSI D 22" x 34"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

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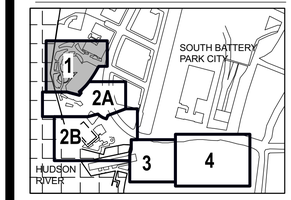
KEY PLAN



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001494
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Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

ELEVATIONS - MJH PLANTER B12

SHEET NUMBER

1

L143

1

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
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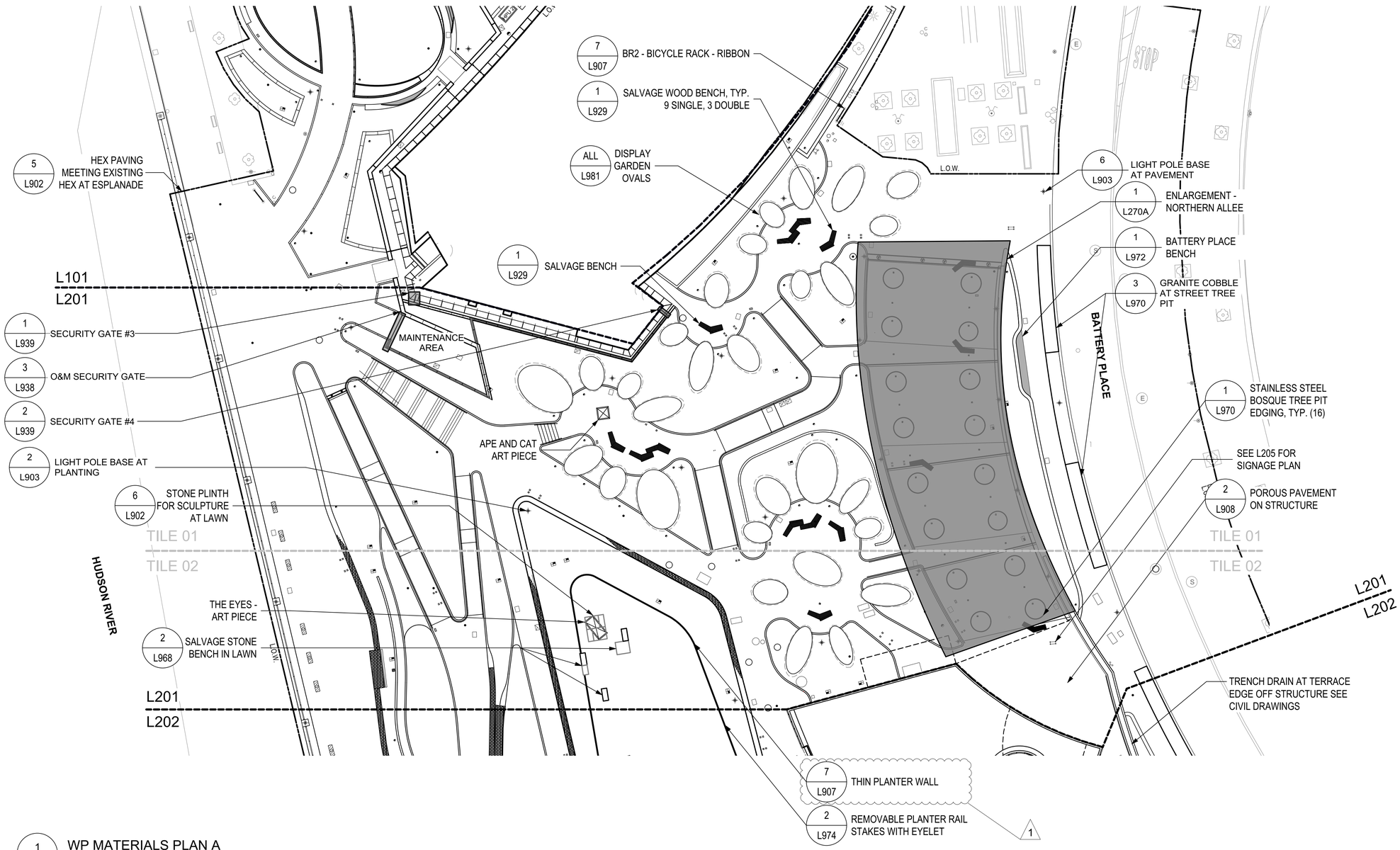
ANSI D 22" x 34"

LEGEND

- L.O.W. — LOW (LIMIT OF WORK)
- MATCH LINE
- PROPERTY LINE
- BUILDING BELOW
- EDGE OF RELEIVING PLATFORM
- CONTOURS, SEE CIVIL
- WALL
- RAILING
- LIGHT POLE, SEE LIGHTING
- IRRIGATION VAULT
- IRRIGATION QUICK COUPLER VALVE
- ELECTRIC JT. BOX OR GFI RECEPTACLE
- TRENCH DRAIN, SEE CIVIL
- AREA DRAIN, SEE CIVIL
- CLEANOUT, SEE CIVIL
- MANHOLE, SEE M.E.P DRAWINGS
- VAULT, SEE M.E.P DRAWINGS
- SCULPTURE OR MONUMENT
- PASSIVE AERATION GRATE
- GFI, SEE ELECTRICAL
- SIGN
- BOLLARD, SEE STRUCT.
- OPERABLE BOLLARD, SEE STRUCT.
- BIKE RACK
- PACKAGE 3 DELINEATION
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE
- FIRE HYDRANT, SEE CIVIL
- GROUND HYDRANT AND VALVE BOX, SEE CIVIL
- HPU — HYDRAULIC POWER UNIT - H.P.U.. SEE STRUCT.

NOTES:

1. SEE L001 FOR GENERAL NOTES AND LEGEND.
2. SEE CIVIL DRAWINGS FOR DRAINAGE AND GRADING PLANS.
3. SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN; SEE SHEETS L214-L215 FOR RAIL KEY PLAN; SEE L262 FOR GREEN ROOF; SEE L272-L278 AND L981 FOR OVAL DISPLAY GARDEN PLANTERS; SEE SHEETS L203-L204 FOR PAVING PLANS.
4. SEE PAGE L200 FOR PACAKGE DELINEATION



1 / L201 WP MATERIALS PLAN A
SCALE: 1" = 20'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

AECOM
AECOM USA
605 3rd Ave, 2nd Floor, New York, NY 10158
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SUB-CONSULTANT

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OWEIS
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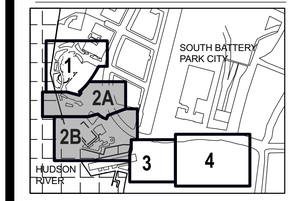
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALAN R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

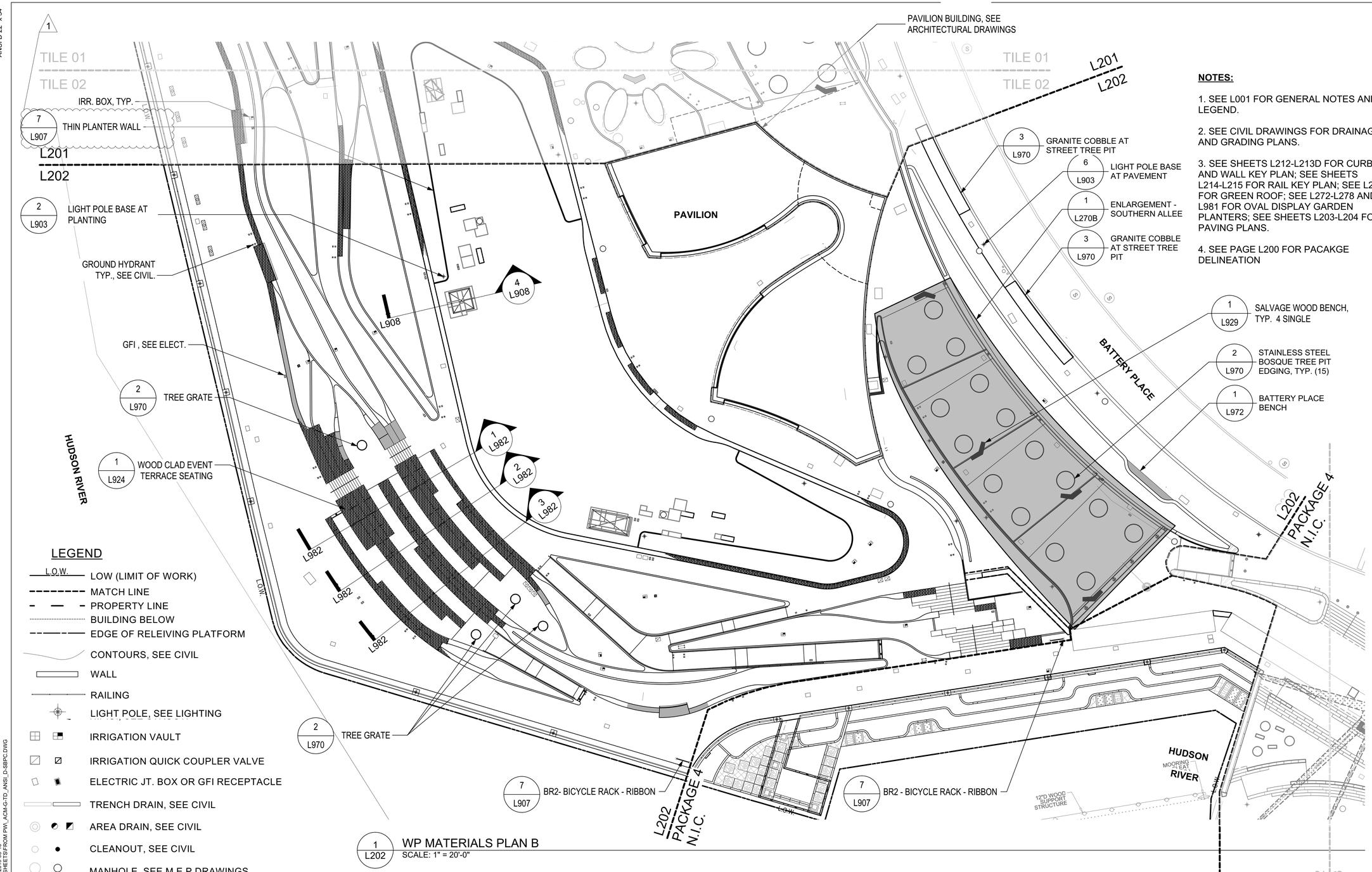
WP MATERIALS PLAN A

SHEET NUMBER

L201

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60679231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



1 L202 WP MATERIALS PLAN B
SCALE: 1" = 20'-0"

NOTES:

1. SEE L001 FOR GENERAL NOTES AND LEGEND.
2. SEE CIVIL DRAWINGS FOR DRAINAGE AND GRADING PLANS.
3. SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN; SEE SHEETS L214-L215 FOR RAIL KEY PLAN; SEE L262 FOR GREEN ROOF; SEE L272-L278 AND L981 FOR OVAL DISPLAY GARDEN PLANTERS; SEE SHEETS L203-L204 FOR PAVING PLANS.
4. SEE PAGE L200 FOR PACAKGE DELINEATION

LEGEND

- L.O.W. — LOW (LIMIT OF WORK)
- MATCH LINE
- PROPERTY LINE
- BUILDING BELOW
- EDGE OF RELEIVING PLATFORM
- CONTOURS, SEE CIVIL
- WALL
- RAILING
- LIGHT POLE, SEE LIGHTING
- IRRIGATION VAULT
- IRRIGATION QUICK COUPLER VALVE
- ELECTRIC JT. BOX OR GFI RECEPTACLE
- TRENCH DRAIN, SEE CIVIL
- AREA DRAIN, SEE CIVIL
- CLEANOUT, SEE CIVIL
- MANHOLE, SEE M.E.P DRAWINGS
- VAULT, SEE M.E.P DRAWINGS
- WOOD CLAD BENCH OR DECK
- EXISTING BENCH TO SALVAGE AND REPLACE
- FIRE HYDRANT, SEE CIVIL
- GROUND HYDRANT AND VALVE BOX, SEE CIVIL
- SCULPTURE OR MONUMENT
- PASSIVE AERATION GRATE
- GFI, SEE ELECTRICAL
- SIGN
- BOLLARD, SEE STRUCT.
- OPERABLE BOLLARD, SEE STRUCT.
- BIKE RACK
- HPU — HYDRAULIC POWER UNIT - H.P.U., SEE STRUCT.

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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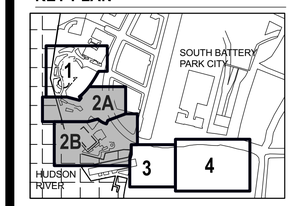
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WP MATERIALS PLAN B

SHEET NUMBER

L202

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
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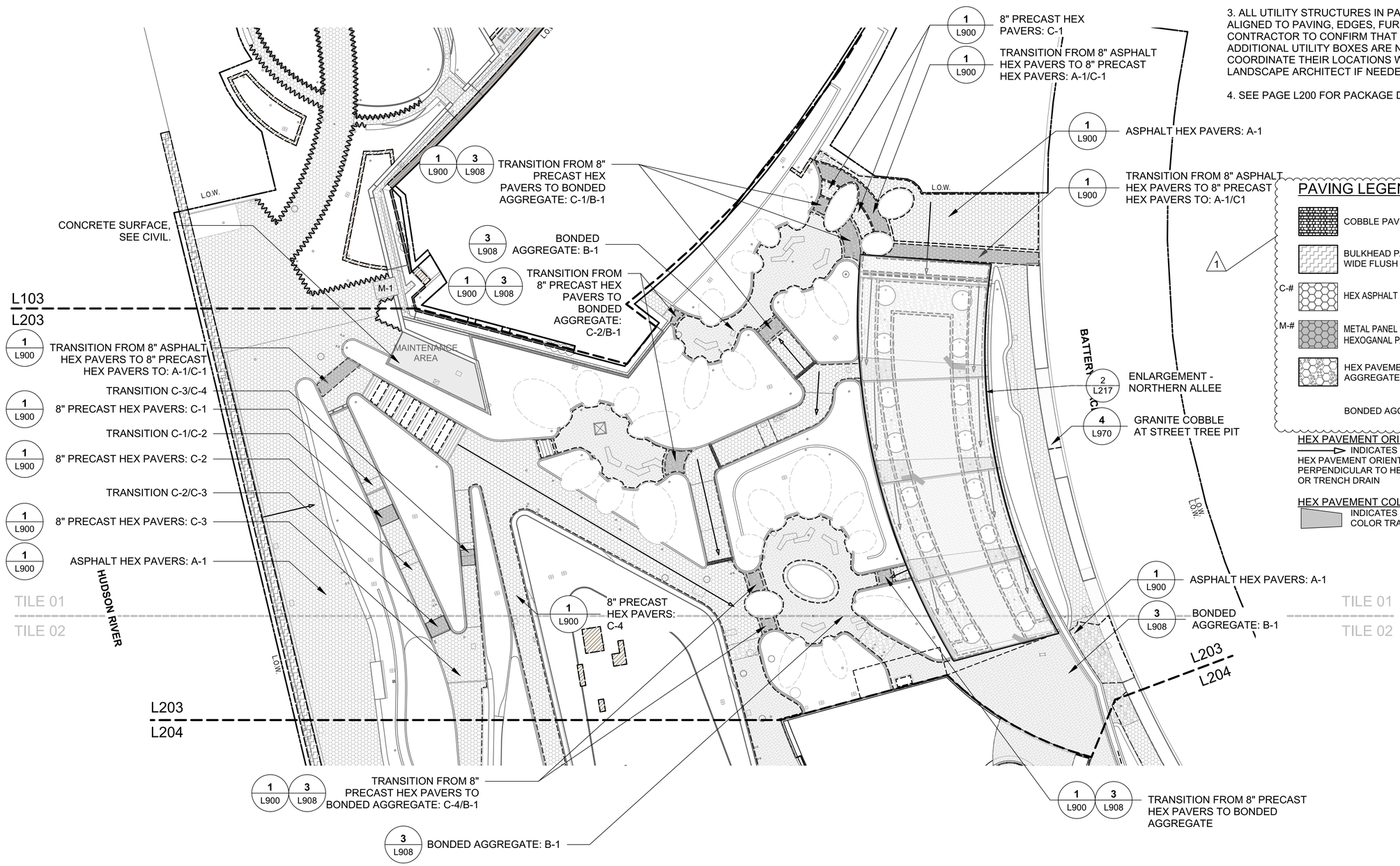
ANSI D 22" x 34"



1 L203 WP PAVER PLAN A
SCALE: 1" = 20'-0"

NOTES:

1. SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN, L214-215 FOR RAIL KEY PLAN.

2. SEE SHEET L219 FOR PAVER SCHEDULE.

3. ALL UTILITY STRUCTURES IN PAVEMENT TO BE ALIGNED TO PAVING, EDGES, FURNITURE, ETC. CONTRACTOR TO CONFIRM THAT NO ADDITIONAL UTILITY BOXES ARE NEEDED AND TO COORDINATE THEIR LOCATIONS WITH LANDSCAPE ARCHITECT IF NEEDED.

4. SEE PAGE L200 FOR PACKAGE DELINEATION.

PAVING LEGEND

1

	COBBLE PAVEMENT	3 / L970
	BULKHEAD PAVEMENT - WIDE FLUSH CURB ON SLAB	3 / L925
C-#	HEX ASPHALT PAVEMENT	1 / L900
M-#	METAL PANEL INCISED HEXOGANAL PAVEMENT	1, 3 / L909
	HEX PAVEMENT WITH BONDED AGGREGATE INFILL	3 / L970
	BONDED AGGREGATE	3 / L908

HEX PAVEMENT ORIENTATION
INDICATES DIRECTION OF HEX PAVEMENT ORIENTATION. ORIENT PERPENDICULAR TO HEADER COURSE OR TRENCH DRAIN

HEX PAVEMENT COLOR TRANSITIONS
INDICATES AREA OF PAVER COLOR TRANSITIONS

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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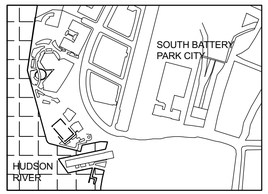

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PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP PAVING PLAN A

SHEET NUMBER
L203

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
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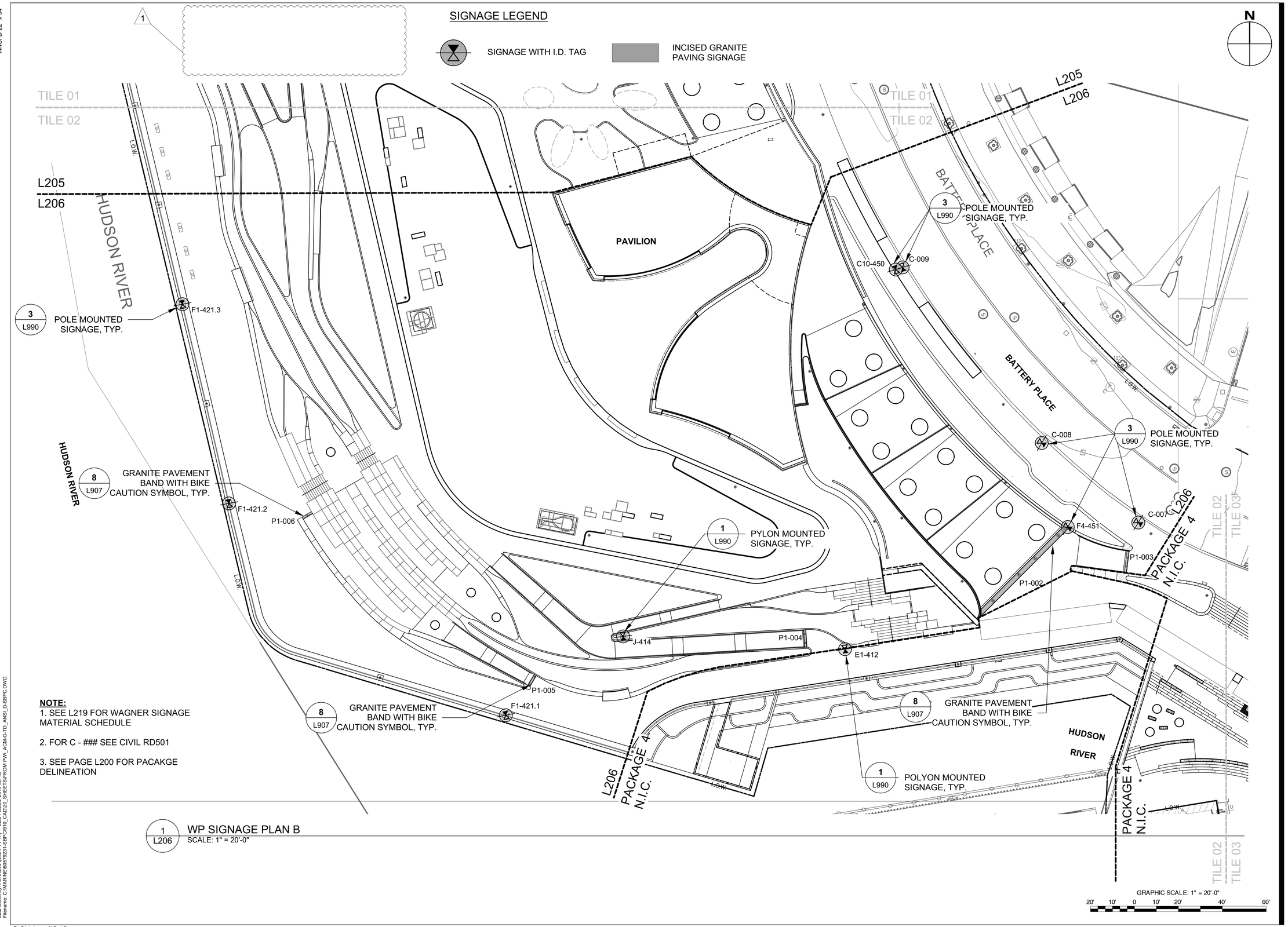
ANSI D 22" x 34"

SIGNAGE LEGEND

SIGNAGE WITH I.D. TAG

INCISED GRANITE PAVING SIGNAGE



NOTE:
1. SEE L219 FOR WAGNER SIGNAGE MATERIAL SCHEDULE

2. FOR C - ### SEE CIVIL RD501

3. SEE PAGE L200 FOR PACAKGE DELINEATION

1 / L206 WP SIGNAGE PLAN B
SCALE: 1" = 20'-0"

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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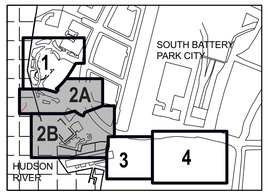

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PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP SIGNAGE PLAN B

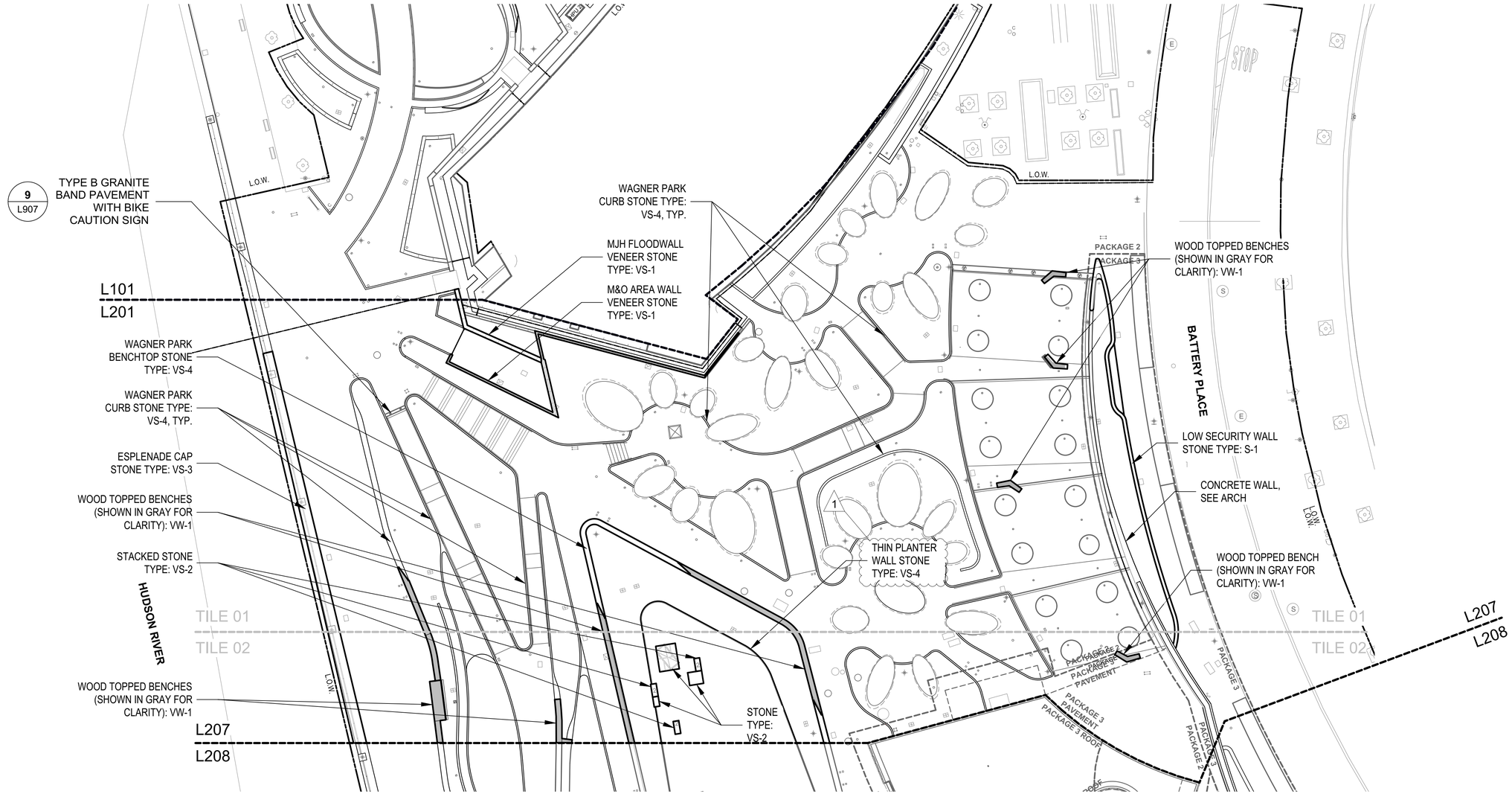
SHEET NUMBER
L206

Last saved by: FERRERA(2021-11-17) Last Plotted: 2016-08-15
Filename: C:\MARINE\6057\231-SBP-0916_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:

1. SEE L-001 FOR GENERAL NOTES AND LEGEND.
2. SEE CIVIL DRAWINGS FOR DRAINAGE AND GRADING PLANS.
3. SEE SHEETS L212-L213D FOR CURB AND WALL KEY PLAN; SEE SHEETS L214-215 FOR RAIL KEY PLAN; SEE L262 FOR GREEN ROOF;L272-278 AND L981 FOR OVAL DISPLAY GARDEN PLANTERS; SEE SHEETS L203-L204 FOR PAVING PLANS
4. SEE L200A &L200B FOR PACKAGE DELINEATION CONTEXT PLAN.



6
L207

WP MATERIALS PLAN A

SCALE: 1" = 20'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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212.575.2701 naikgroup.com

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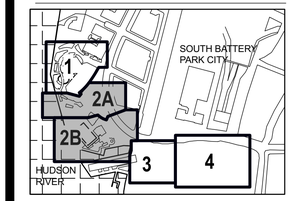
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WP MATERIALS-STONE PLAN A

SHEET NUMBER

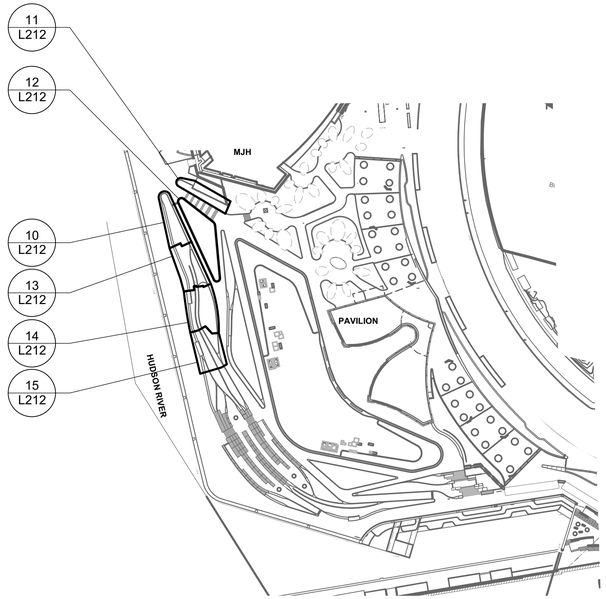
L207

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC0910_CAD\20_SHEETS\FROM PWI_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES

1. JOINT RUNS ARE MEASURED FROM POINT OF ARC TANGENCY TO POINT OF ARC TANGENCY. ALL JOINT MEASUREMENTS ARE TO CENTERLINES OF JOINTS.



KEY PLAN
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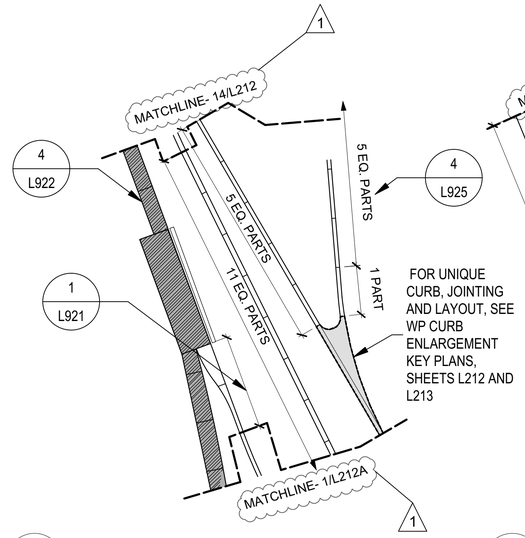
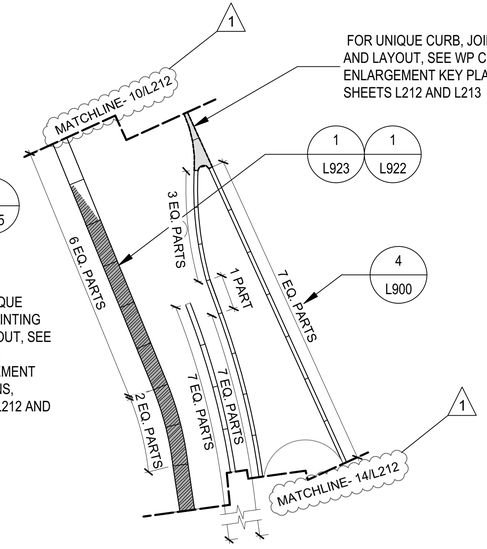
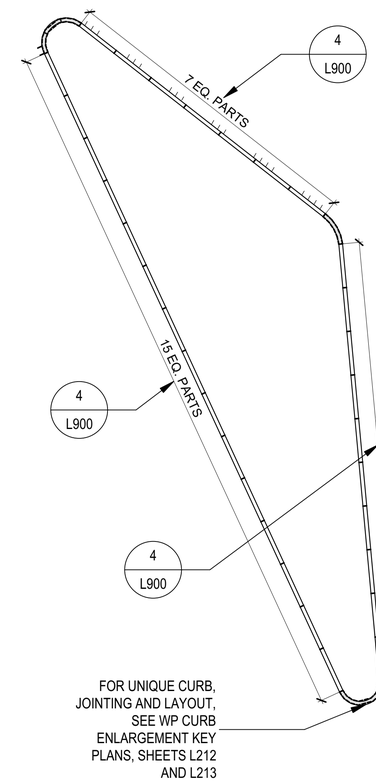


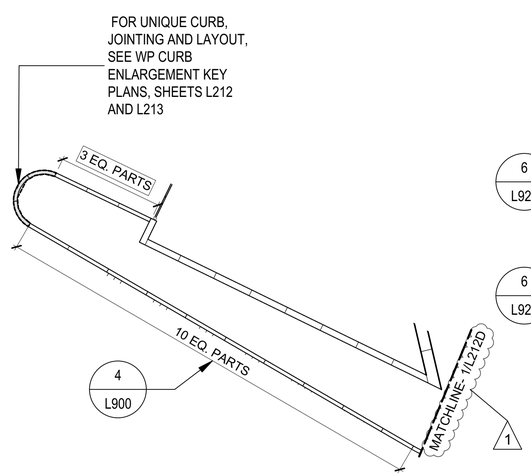
15 L212 CURB JOINT LAYOUT 5
SCALE: 1" = 10'-0"



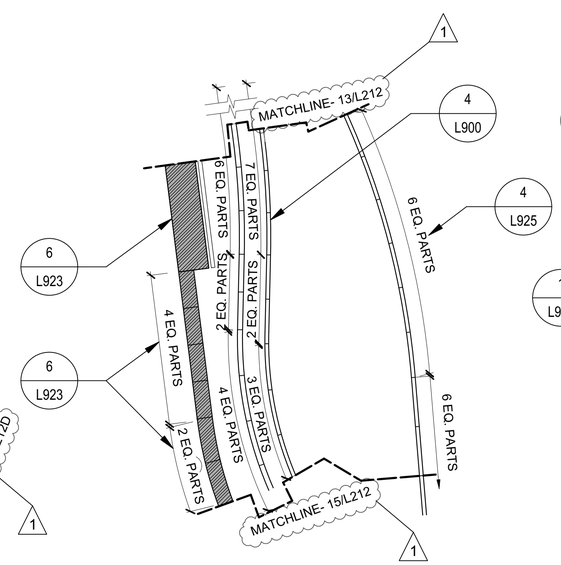
13 L212 CURB JOINT LAYOUT 3
SCALE: 1" = 10'-0"



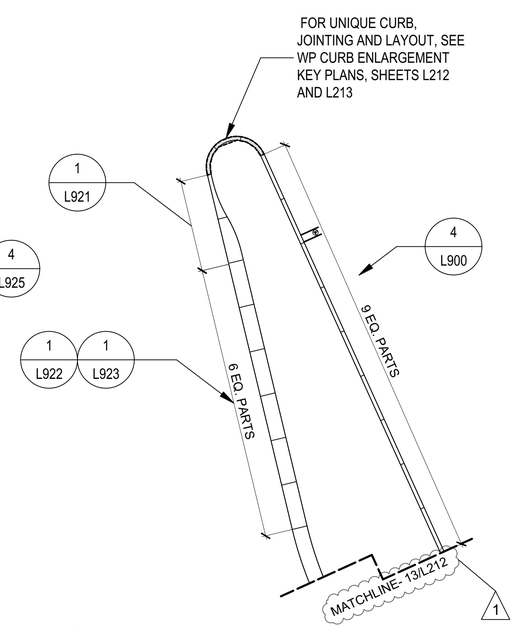
12 L212 CURB JOINT LAYOUT 1
SCALE: 1" = 10'-0"



11 L212 CURB JOINT LAYOUT 6
SCALE: 1" = 10'-0"



14 L212 CURB JOINT LAYOUT 4
SCALE: 1" = 10'-0"



10 L212 CURB JOINT LAYOUT 2
SCALE: 1" = 10'-0"

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
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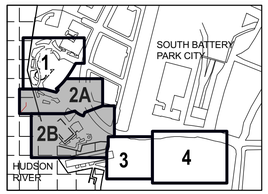
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALAN R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP CURB JOINTING PLAN 1

SHEET NUMBER
L212

Last saved by: FERREPA(2021-11-17) Last Printed: 2019-08-15
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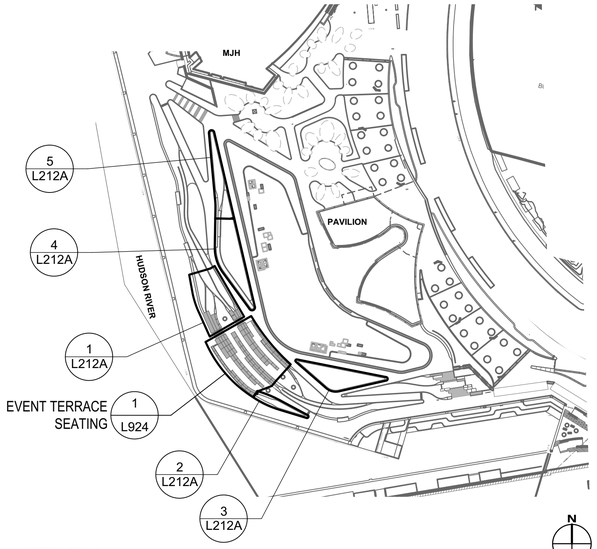
ANSI D 22" x 34"

NOTES:
1. JOINT RUNS ARE MEASURED FROM POINT OF ARC TANGENCY TO POINT OF ARC TANGENCY
2. SEE CIVIL FOR GRADING PLAN, TW/BW ELEVATION VARIES.



KEY PLAN
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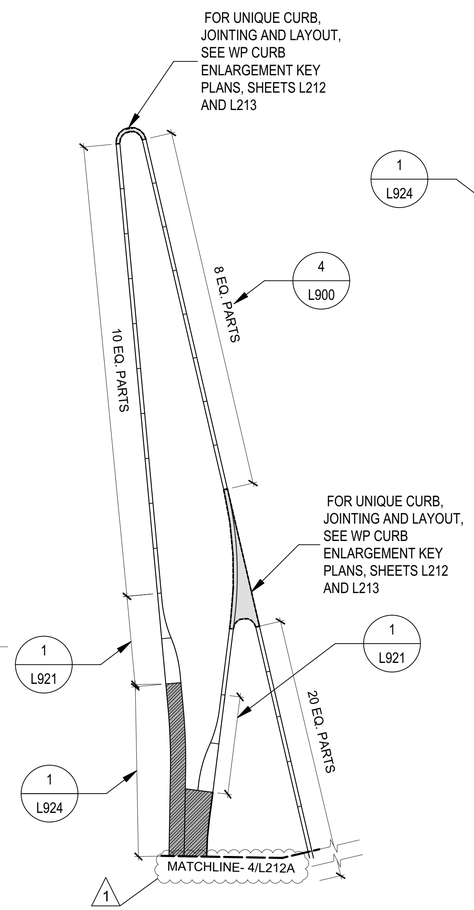
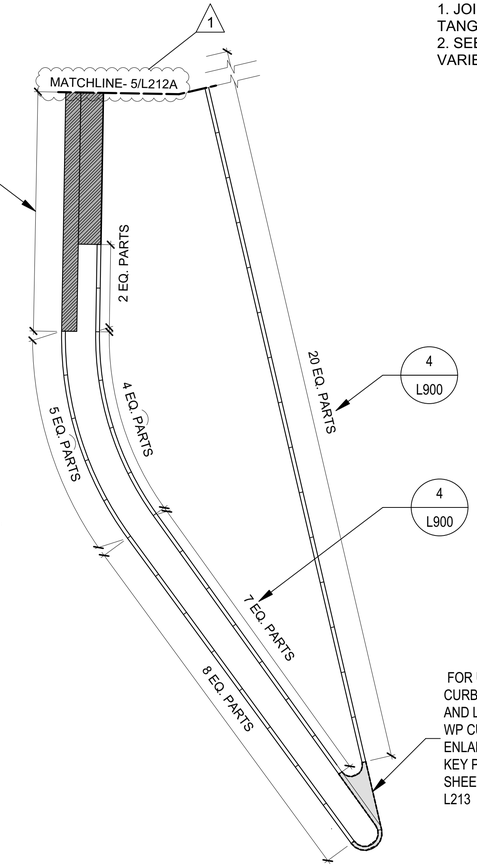
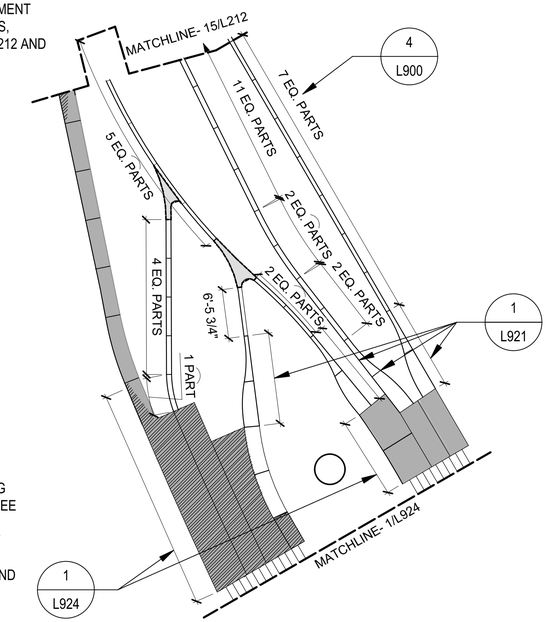


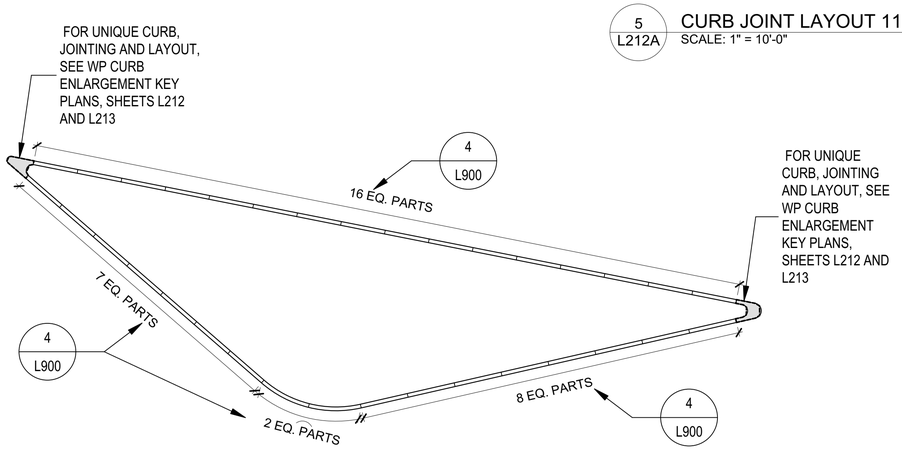
5 L212A CURB JOINT LAYOUT 11
SCALE: 1" = 10'-0"



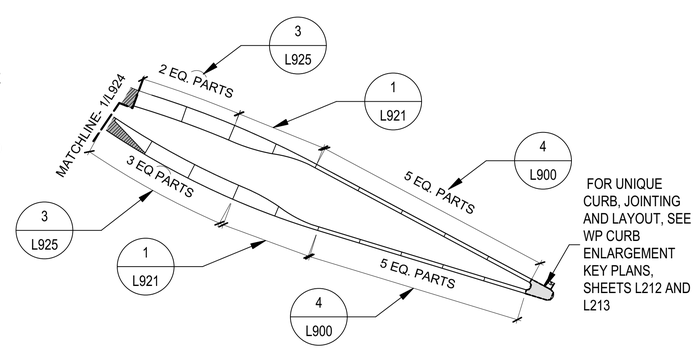
4 L212A CURB JOINT LAYOUT 10
SCALE: 1" = 10'-0"



1 L212A CURB JOINT LAYOUT 7
SCALE: 1" = 10'-0"



3 L212A CURB JOINT LAYOUT 9
SCALE: 1" = 10'-0"



2 L212A CURB JOINT LAYOUT 8
SCALE: 1" = 10'-0"

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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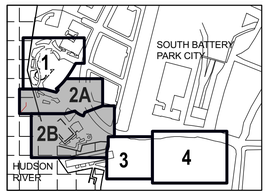
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALBERT R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

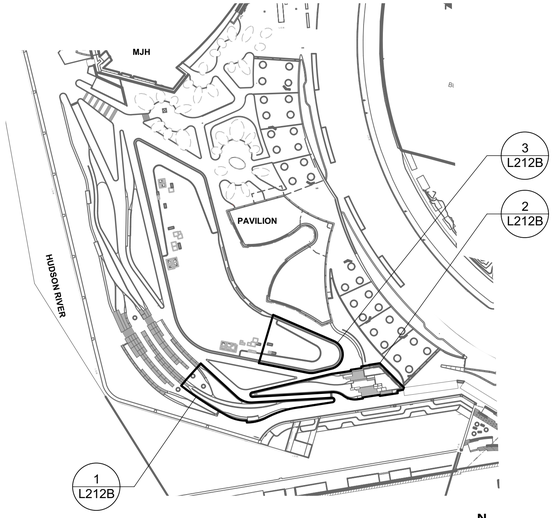
SHEET TITLE
WP CURB JOINTING PLAN 2

SHEET NUMBER
L212A

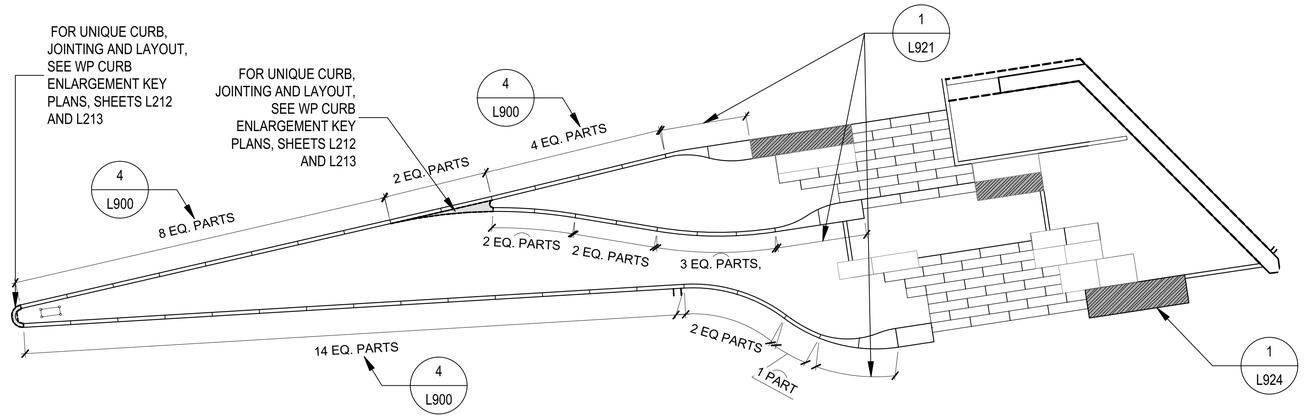
Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:
JOINT RUNS ARE MEASURED FROM POINT OF ARC TANGENCY TO POINT OF ARC TANGENCY



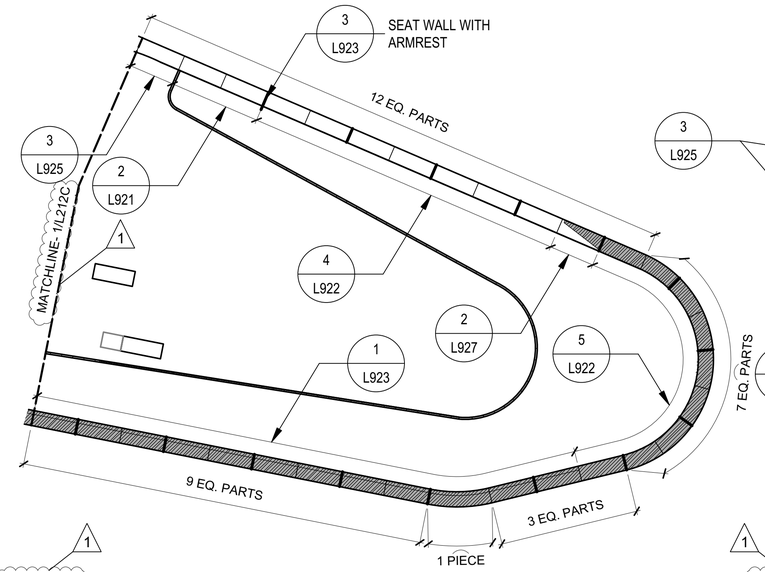
KEY PLAN
SCALE: 1:1000



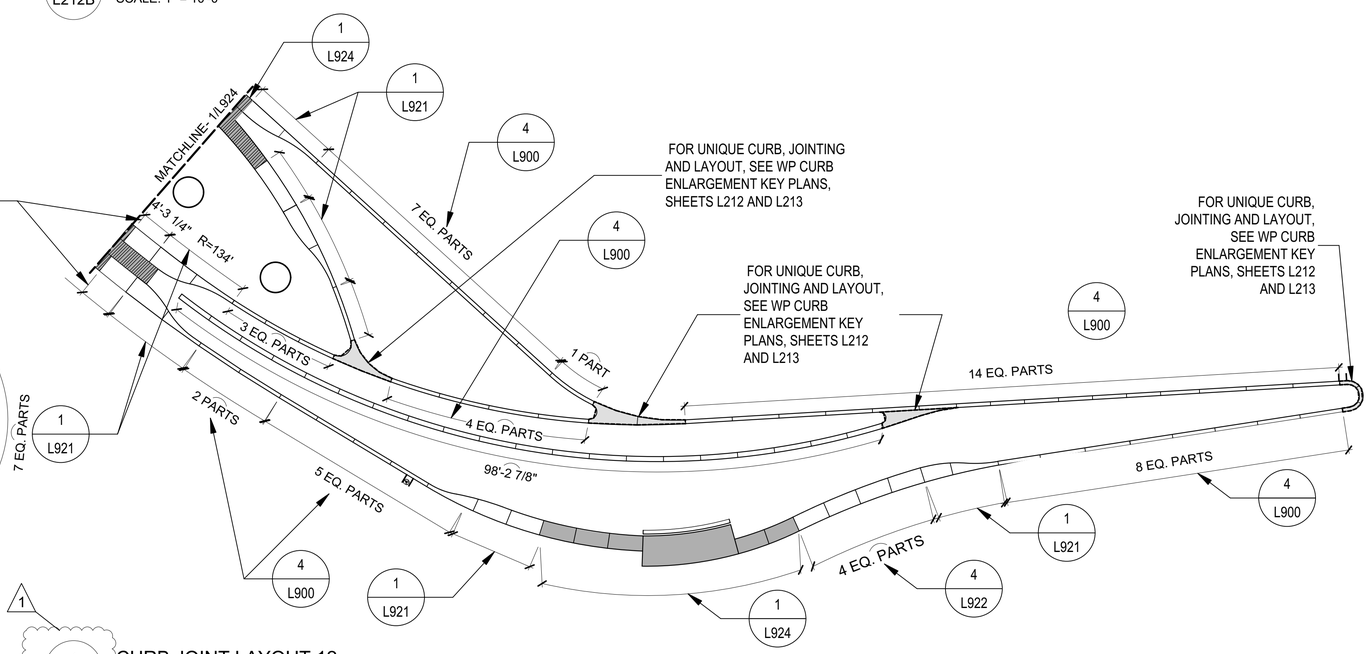
2 L212B CURB JOINT LAYOUT 13
SCALE: 1" = 10'-0"

NOTES:

1. ARMRESTS ARE LOCATED AT EVERY OTHER JOINT IN SEATWALL, TYP.



3 L212B CURB JOINT LAYOUT 14
SCALE: 1" = 10'-0"



1 L212B CURB JOINT LAYOUT 12
SCALE: 1" = 10'-0"

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

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PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
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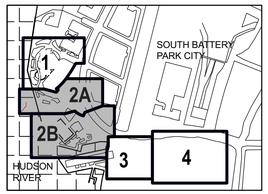
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP CURB JOINTING PLAN 3

SHEET NUMBER
L212B

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
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ANSI D 22" x 34"

NOTES:
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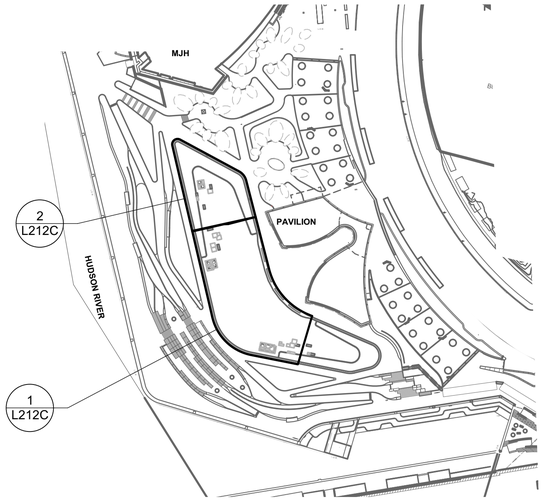
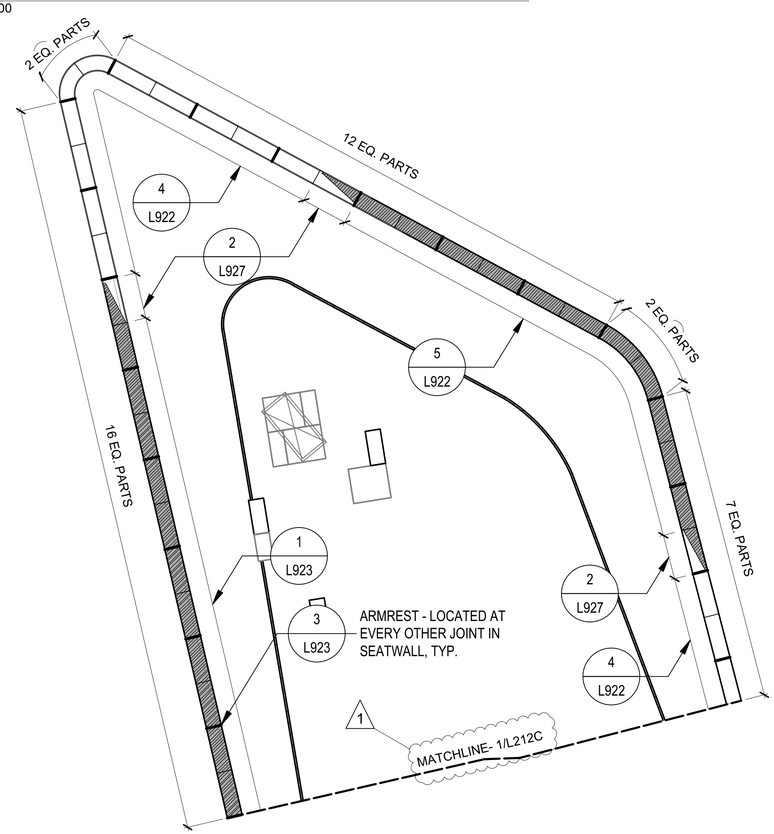
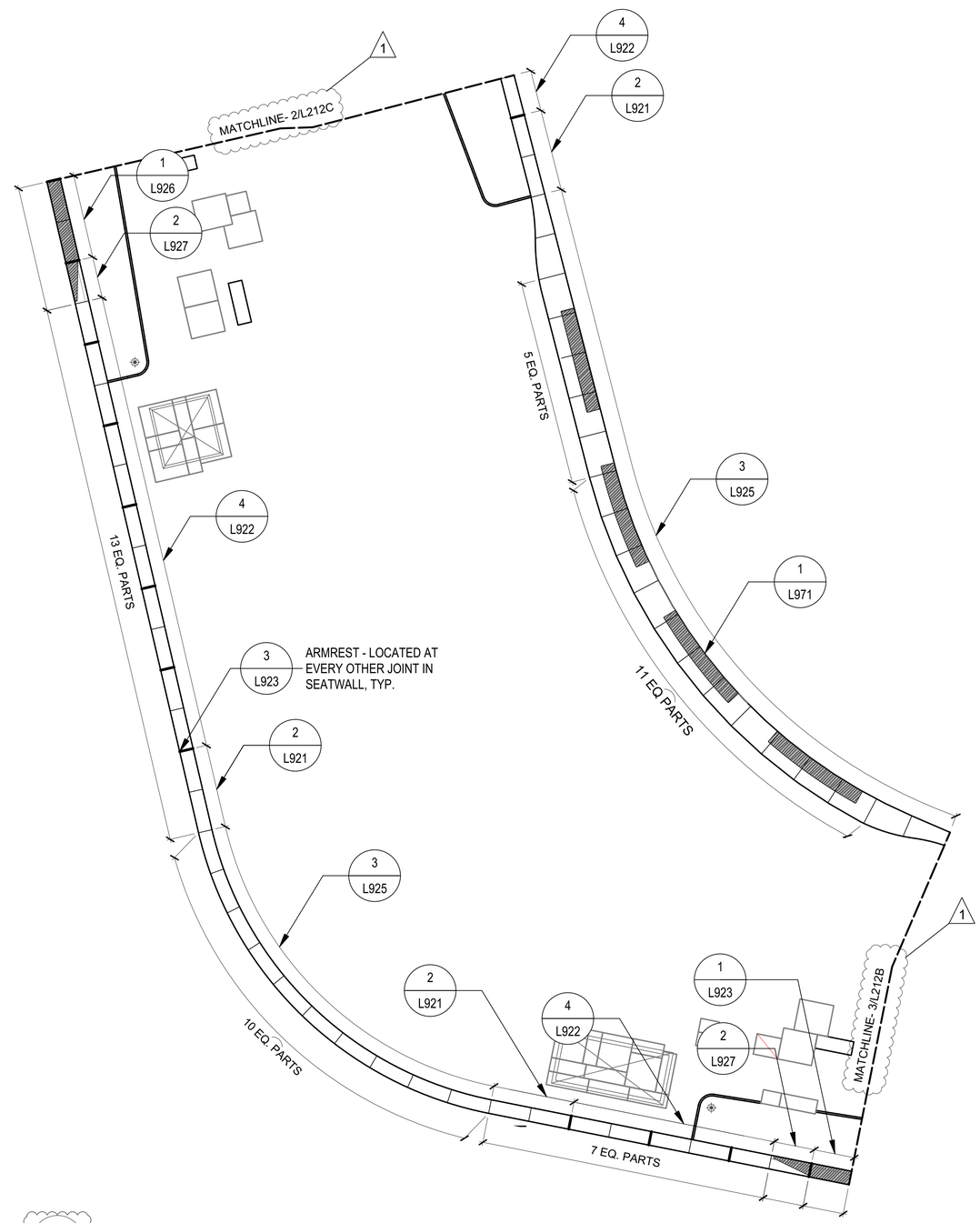


KEY PLAN
SCALE: 1:1000



2 L212C CURB JOINT LAYOUT 16
SCALE: 1" = 10'-0"



1 L212C CURB JOINT LAYOUT 15
SCALE: 1" = 10'-0"

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

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PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
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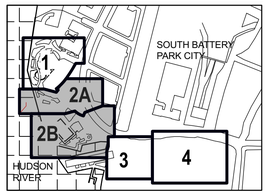
KEY PLAN



REGISTRATION

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ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

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I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

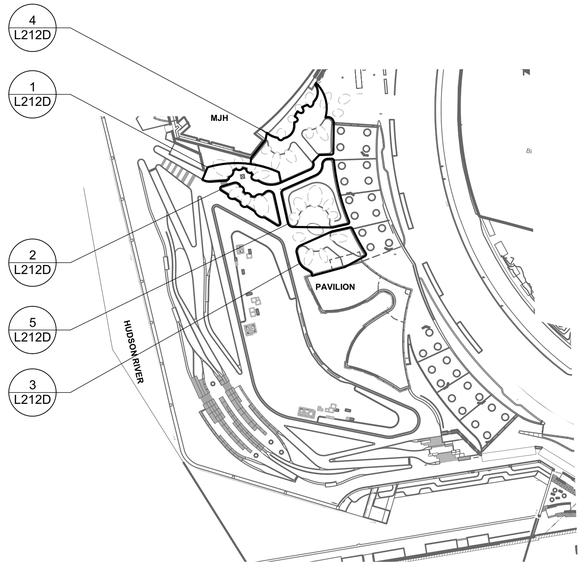
SHEET TITLE
WP CURB JOINTING PLAN 4

SHEET NUMBER
L212C

Last saved by: FERRERA2(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:
JOINT RUNS ARE MEASURED FROM POINT OF ARC TANGENCY TO POINT OF ARC TANGENCY



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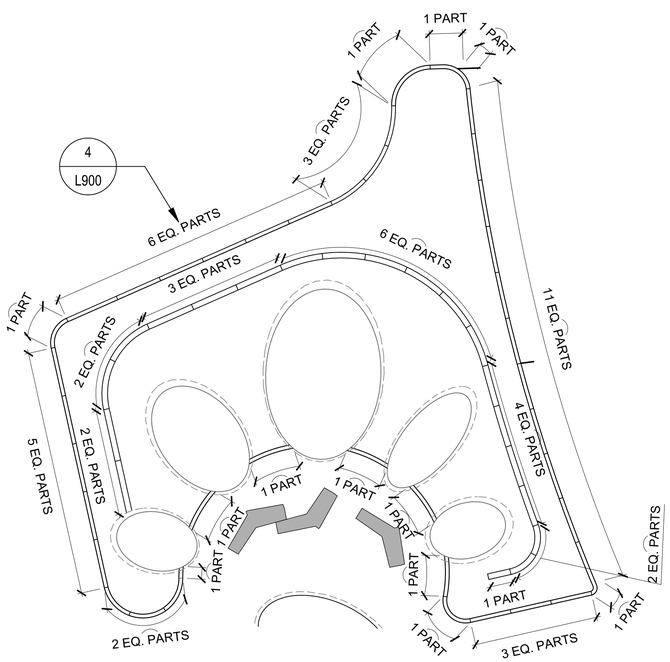
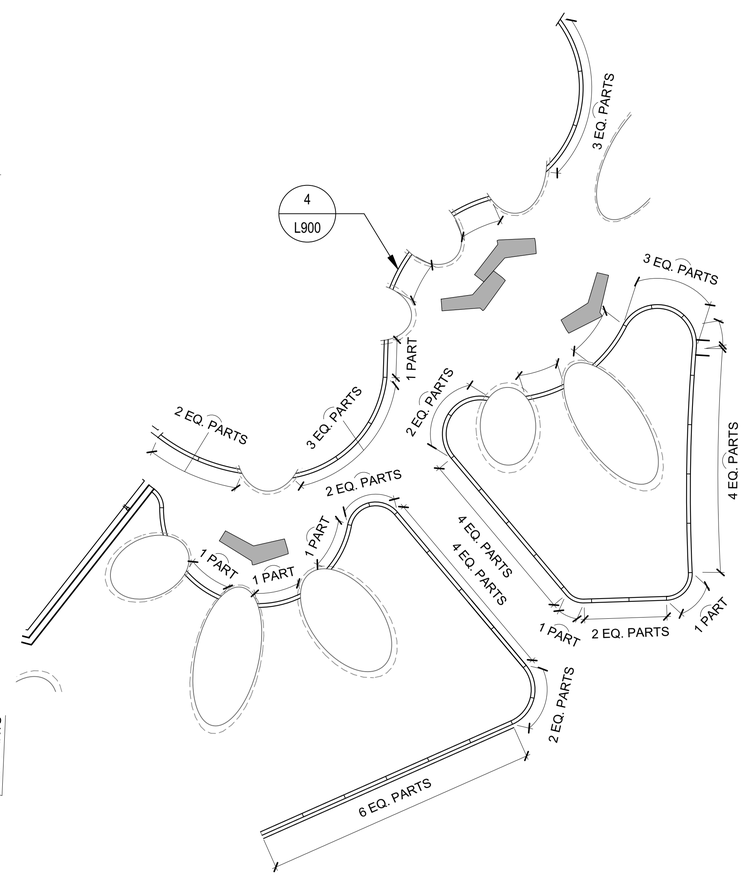
SCALE: 1:1000

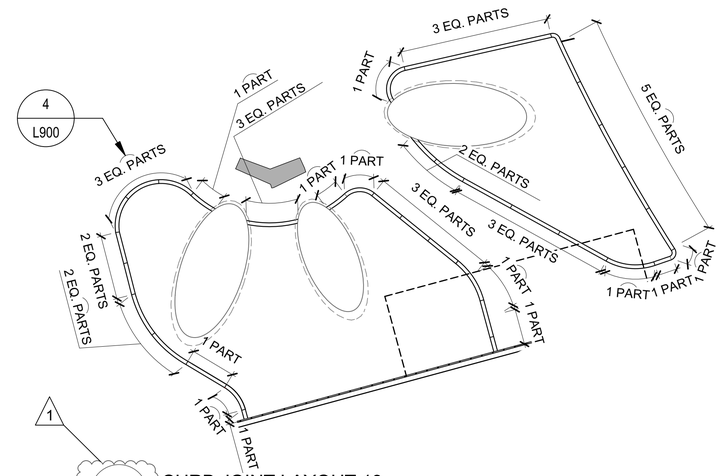


5 L212D CURB JOINT LAYOUT 21
SCALE: 1" = 10'-0"



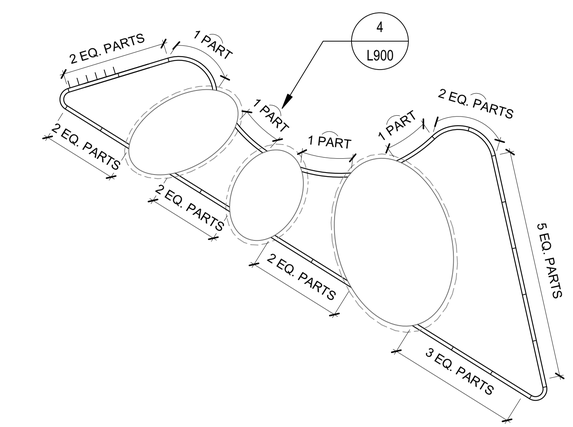
4 L212D CURB JOINT LAYOUT 20
SCALE: 1" = 10'-0"

1



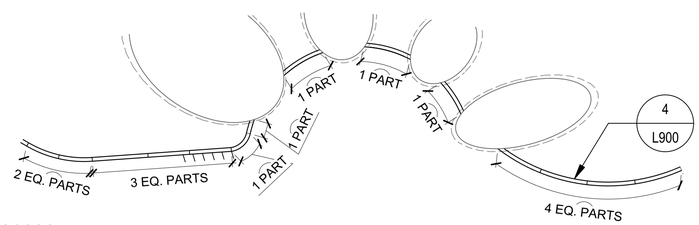
3 L212D CURB JOINT LAYOUT 19
SCALE: 1" = 10'-0"

1



2 L212D CURB JOINT LAYOUT 18
SCALE: 1" = 10'-0"

1



1 L212D CURB JOINT LAYOUT 17
SCALE: 1" = 10'-0"

1

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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212.575.2701 naikgroup.com

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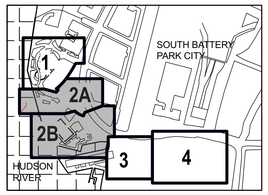
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
CHARLES R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP CURB JOINTING PLAN 5

SHEET NUMBER
L212D

Last saved by: FERRERA(2021-11-17) Last Plotted: 2016-06-15
Filename: C:\MARINE\6057\231-SBP-0910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

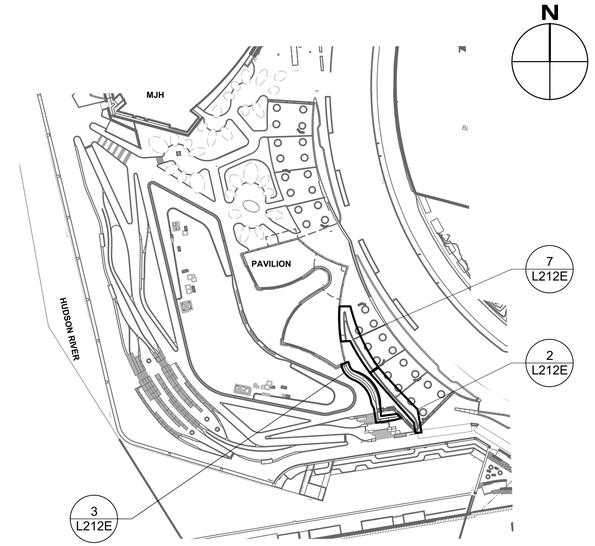
ANSI D 22" x 34"

NOTES:

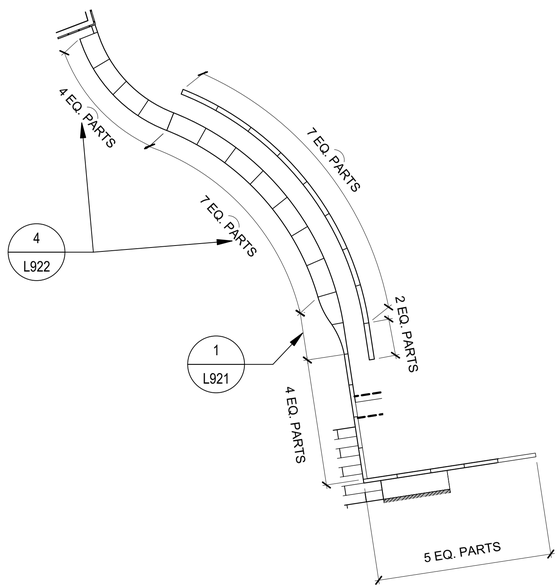
1. JOINT RUNS ARE MEASURED FROM POINT OF ARC TANGENCY TO POINT OF ARC TANGENCY

2. SEE MATERIALS PLANS L201 & L202, L207 & L208 AND MATERIAL SCHEDULE ON L219.

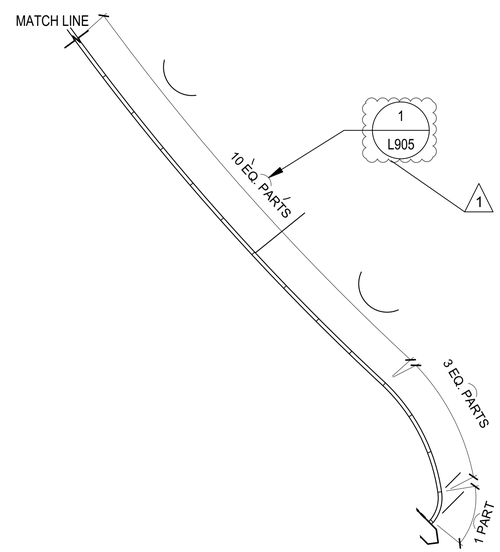
3. CONTRACTOR TO COORDINATE AND LOCATE ALL STONE WITH SHOWPDRAWINGS. ALL WALLS TO MEET FLUSH, LEVEL AND PLUM B



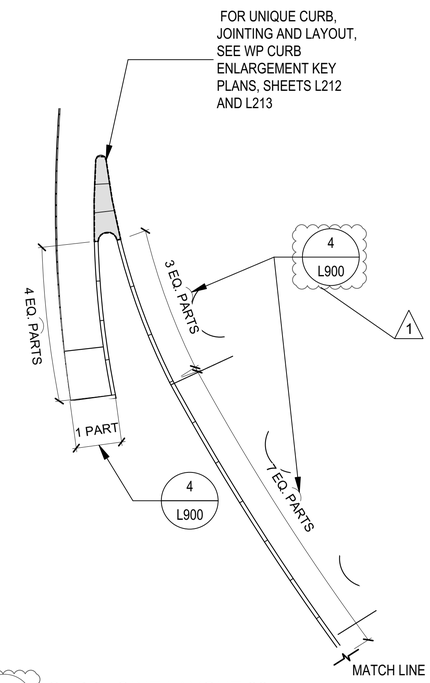
KEY PLAN
SCALE: 1:1000



3 L212E CURB JOINT LAYOUT 24
SCALE: 1" = 10'-0"



2 L212E CURB JOINT LAYOUT 23
SCALE: 1" = 10'-0"



1 L212E CURB JOINT LAYOUT 22
SCALE: 1" = 10'-0"

GRAPHIC SCALE: 1" = 10'-0"
10' 5' 0 5' 10' 20' 30'

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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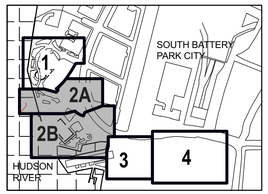
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALBERT R. LAVALLEE III
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WP CURB JOINTING PLAN 6

SHEET NUMBER

L212E

Last saved by: FERRERAA2023-11-17 Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

1 / L213 WP CURB KEY PLAN
SCALE: 1" = 20'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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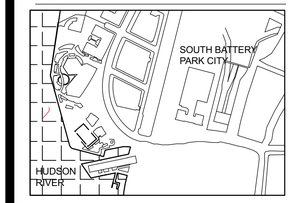
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALEXANDER R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WP CURB ENLARGEMENT KEY PLAN A

SHEET NUMBER

L213

Last saved by: FERREIRA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\605\7231-SBPC\910_CAD\20_SHEETS\FROM PW_AOM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTE:

1. SEE SHEETS L212-L213 FOR CURB AND WALL KEY PLAN.
2. SMOOTH ARC TRANSITIONS FOR RAILS TO AVOID KINKS

RAILING LEGEND

-HR1——HR1——HR1—	HANDRAIL ADJACENT TO CURB OR WALL	1 / L931
HR1L——HR1L——HR1L—	HANDRAIL ADJACENT TO CURB OR WALL WITH LIGHT	1 / L931
-HR2——HR2——HR2—	HANDRAIL AT ALLEES	2 / L931
-GR2——GR2——GR2—	GUARDRAIL WITH HANDRAIL	6 / L931
-SR1——SR1——SR1—	EXISTING SEA RAIL	1 / L932
-PR1——PR1——PR1—	REMOVABLE PLANTER RAIL STAKES WITH EYELET	2 / L974

1 / L214 WP RAILING PLAN A
SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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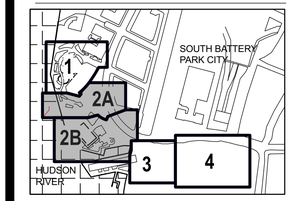
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

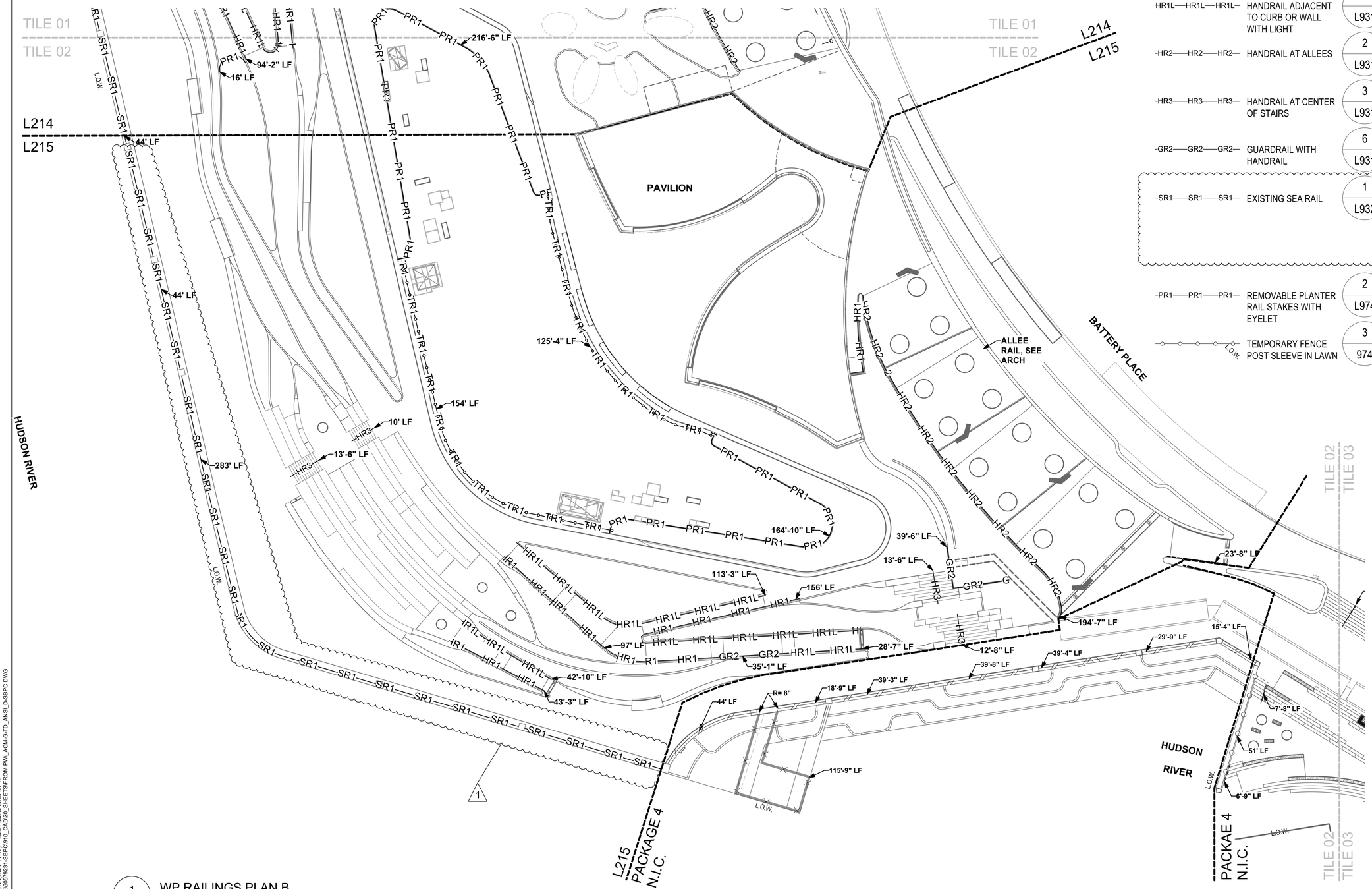
SHEET TITLE
WP RAIL PLAN A

SHEET NUMBER
L214

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PWI_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTE:
1. SMOOTH ARC TRANSITIONS FOR RAILS TO AVOID KINKS



1 / L215 WP RAILINGS PLAN B
SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

RAILING LEGEND

-HR1——HR1——HR1—	HANDRAIL ADJACENT TO CURB OR WALL	1 / L931
HR1L——HR1L——HR1L—	HANDRAIL ADJACENT TO CURB OR WALL WITH LIGHT	1 / L931
-HR2——HR2——HR2—	HANDRAIL AT ALLEES	2 / L931
-HR3——HR3——HR3—	HANDRAIL AT CENTER OF STAIRS	3 / L931
-GR2——GR2——GR2—	GUARDRAIL WITH HANDRAIL	6 / L931
-SR1——SR1——SR1—	EXISTING SEA RAIL	1 / L932
-PR1——PR1——PR1—	REMOVABLE PLANTER RAIL STAKES WITH EYELET	2 / L974
L.O.W.	TEMPORARY FENCE POST SLEEVE IN LAWN	3 / 974

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PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
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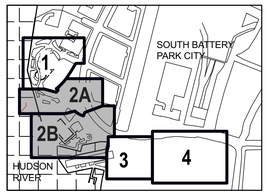
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
WP RAIL PLAN B

SHEET NUMBER
L215

Last saved by: FERRERM/2021-11-17 Last Plotted: 2019-08-15
Filename: C:\MARNE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

2 / L222 WP SIGNAGE PLAN A

SCALE: 1" = 20'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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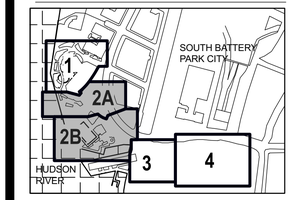
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
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001494
STATE OF NEW YORK

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Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

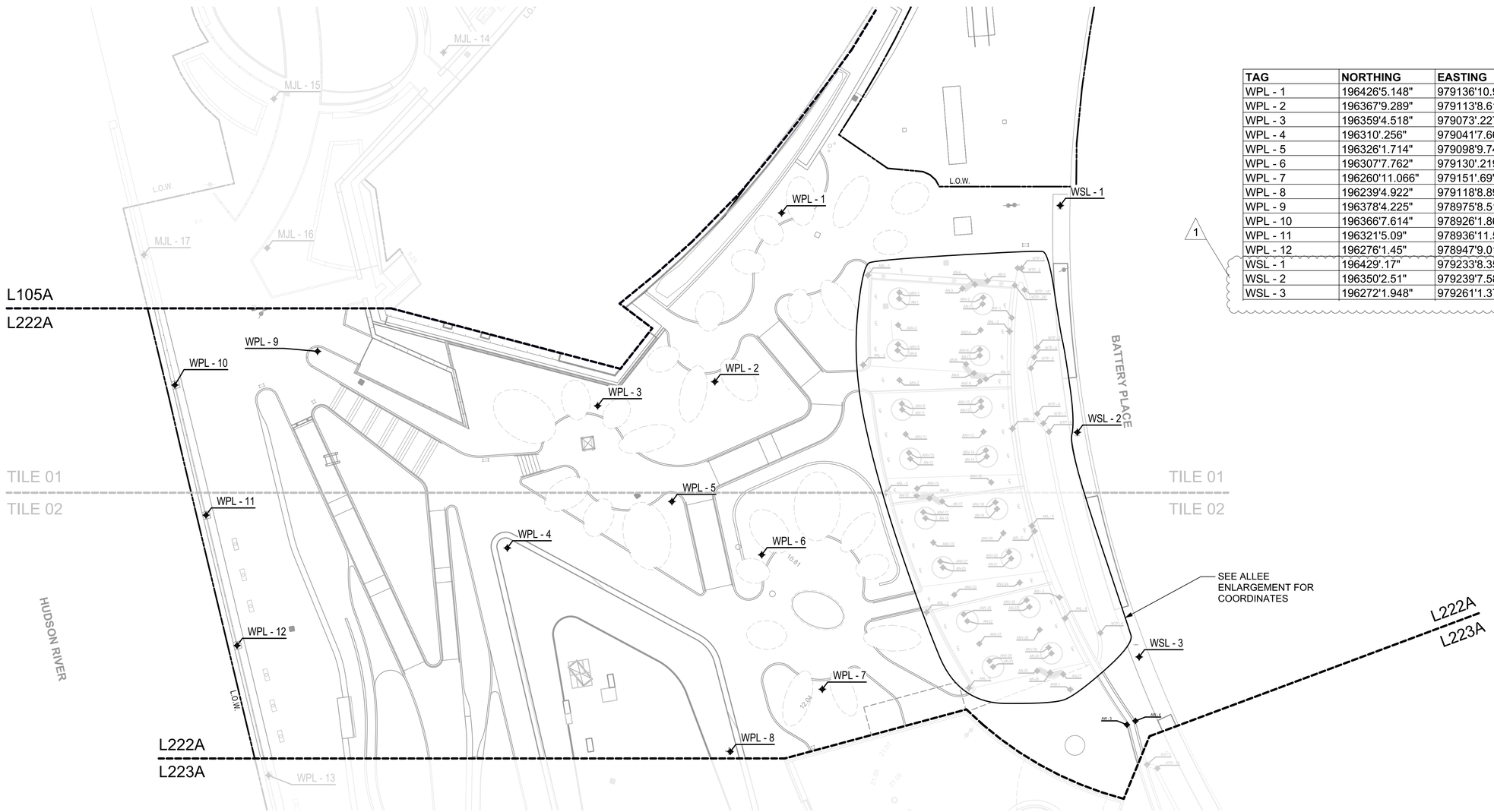
WP LIGHTNG PLAN A

SHEET NUMBER

L222

Last saved by: FERRERAN(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



TAG	NORTHING	EASTING
WPL - 1	196426'5.148"	979136'10.907"
WPL - 2	196367'9.289"	979113'8.619"
WPL - 3	196359'4.518"	979073'.227"
WPL - 4	196310'.256"	979041'7.667"
WPL - 5	196326'1.714"	979098'9.742"
WPL - 6	196307'7.762"	979130'.219"
WPL - 7	196260'11.066"	979151'.69"
WPL - 8	196239'4.922"	979118'8.891"
WPL - 9	196378'4.225"	978975'8.514"
WPL - 10	196366'7.614"	978926'1.866"
WPL - 11	196321'5.09"	978936'11.587"
WPL - 12	196276'1.45"	978947'9.016"
WSL - 1	196429'.17"	979233'8.357"
WSL - 2	196350'2.51"	979239'7.588"
WSL - 3	196272'1.948"	979261'1.373"

1 L222A

1 WP LIGHTING PLAN A COORDINATES

SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"

20' 10' 0 10' 20' 40' 60'

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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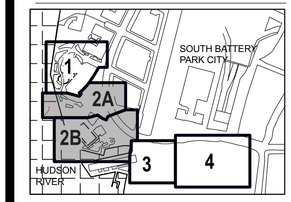
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

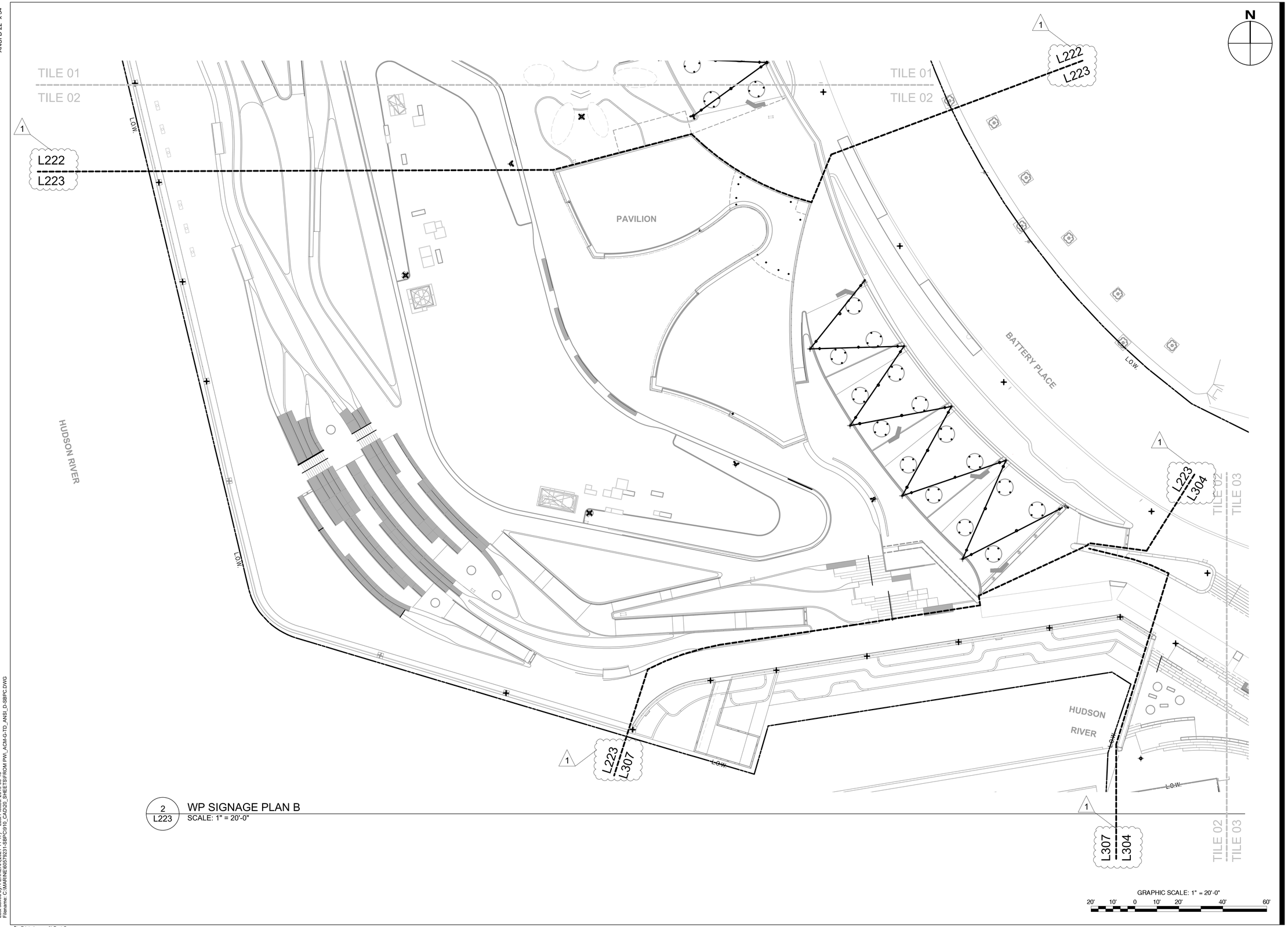
WP LIGHTING PLAN A COORDINATES

SHEET NUMBER

L222A

Last saved by: FERRERAV2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"



2 / L223 WP SIGNAGE PLAN B
SCALE: 1" = 20'-0"

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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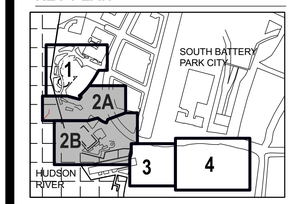
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALBERT R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
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Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WP LIGHTING PLAN B

SHEET NUMBER

L223

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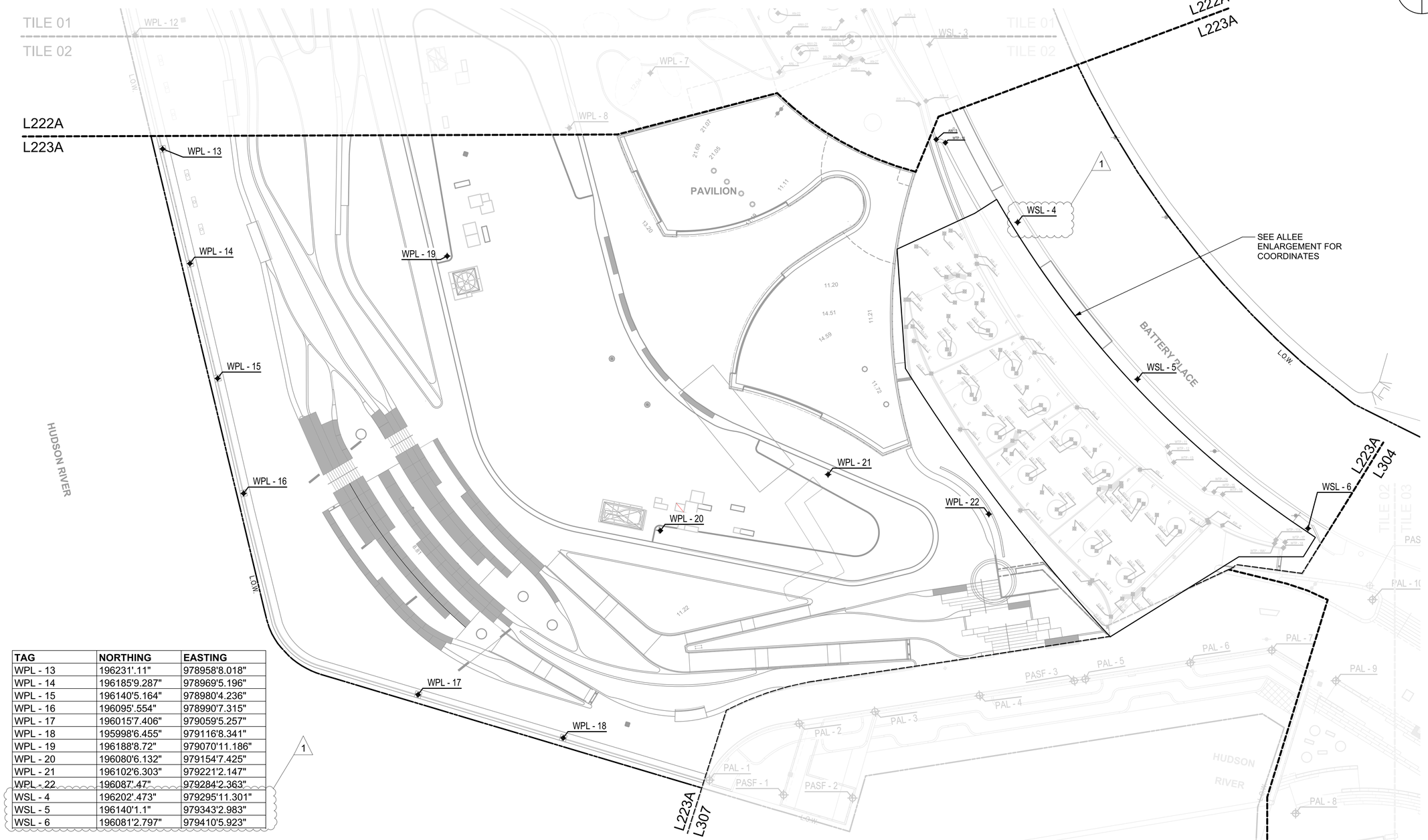
ANSI D 22" x 34"



TAG	NORTHING	EASTING
WPL - 13	196231'.11"	978958'8.018"
WPL - 14	196185'9.287"	978969'5.196"
WPL - 15	196140'5.164"	978980'4.236"
WPL - 16	196095'.554"	978990'7.315"
WPL - 17	196015'7.406"	979059'5.257"
WPL - 18	195998'6.455"	979116'8.341"
WPL - 19	196188'8.72"	979070'11.186"
WPL - 20	196080'6.132"	979154'7.425"
WPL - 21	196102'6.303"	979221'2.147"
WPL - 22	196087'.47"	979284'2.363"
WSL - 4	196202'.473"	979295'11.301"
WSL - 5	196140'1.1"	979343'2.983"
WSL - 6	196081'2.797"	979410'5.923"

1
L223A

WP LIGHTING PLAN B COORDINATES

SCALE: 1" = 20'-0"

GRAPHIC SCALE: 1" = 20'-0"

20' 10' 0 10' 20' 40' 60'

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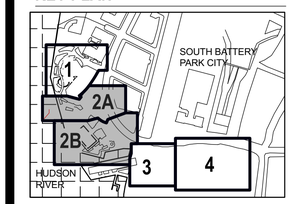
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

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Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

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SHEET TITLE

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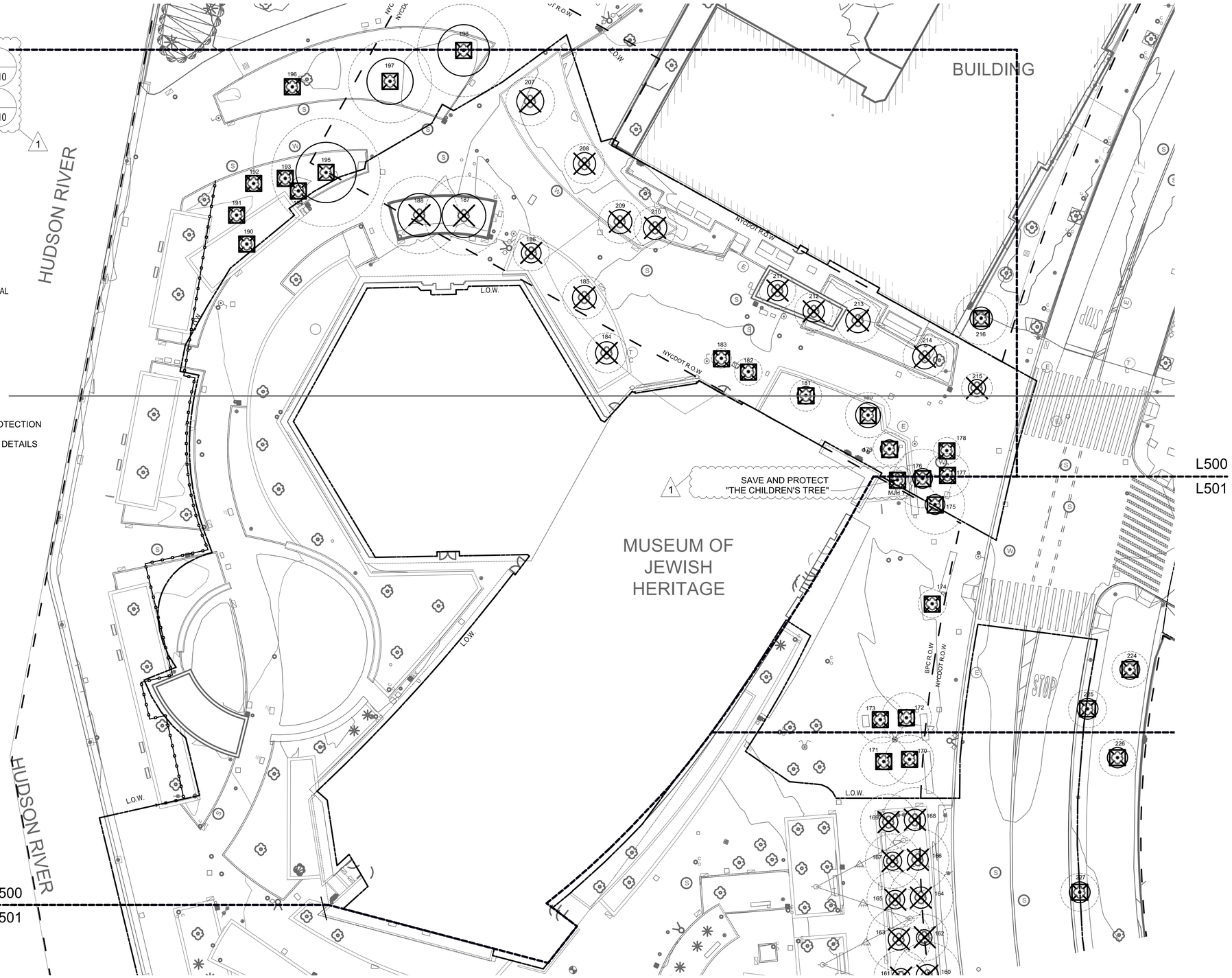
ANSI D 22" x 34"

TREE PROTECTION LEGEND

- LOW (LIMIT OF WORK)
- MATCH LINE
- PROPERTY LINE
- TREE PROTECTION FENCE, TYPE 1 (3 / L510; 1 / L510)
- TREE PROTECTION FENCE, TYPE 2
- REMOVE TREE
- TRANSPLANT EXISTING TREE
- EXISTING TREE CRITICAL ROOT ZONE
- TREE NUMBER (SEE TREE PROTECTION SCHEDULE)
- EXISTING TREE STRUCTURAL ROOT ZONE
- TREE BASE SYMBOL

NOTES:

1. SEE DRAWING L505 AND L506 FOR TREE PROTECTION SCHEDULE AND NOTES
2. SEE DRAWING L507 FOR TREE PROTECTION DETAILS



1 / L501 MJH TREE PROTECTION PLAN
SCALE: 1" = 20'-0"

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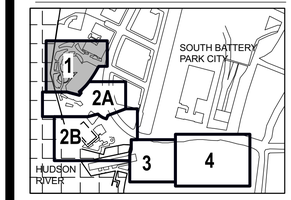

REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ANDREW R. LAVALLEE 001494 STATE OF NEW YORK

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Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH TREE PROTECTION PLAN

SHEET NUMBER

L501

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ANSI D 22" x 34"

NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND VERIFY ALL SITE CONDITIONS, BOTH ABOVE AND BELOW THE SURFACE, PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE AGENCY IN WRITING, PRIOR TO THE COMMENCEMENT OF WORK.
2. CONSTRUCTION ACCESS ROUTE IS DIAGRAMMATIC. FINAL ROUTE SHALL BE ESTABLISHED ON SITE AND APPROVED BY THE CONSTRUCTION MANAGER, IN CONSULTATION WITH THE DIRECTOR OF NYC PARKS OR THEIR REPRESENTATIVE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE BY ALL WORKERS AND SUBCONTRACTORS WITH THESE NOTES AND AND SPECIFICATIONS
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL EXISTING TREES NOT LISTED FOR REMOVAL THAT ARE LOCATED COMPLETELY OR PARTIALLY WITHIN THE CONTRACT LIMIT LINE.
5. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE CONSTRUCTION OFFICE BY EMAIL AT CAPITAL.ARB-HORT@PARKS.NYC.GOV A MINIMUM OF 48 HOURS IN ADVANCE OF ANY WORK ON OR IMPACTING EXISTING TREES, INCLUDING BY NOT LIMITED TO TREE PROTECTION, PRUNING, TREE REMOVAL, EXCAVATION WITHIN TREE PROTECTION ZONES, DECOMPACTION, TOPSOIL, AND PLANTING WORK.
6. THE TREE PROTECTION ZONE (TPZ) SHALL BE DEFINED AS THE AREA WITHIN THE DRIP LINE OF EXISTING TREES, UNLESS OTHERWISE SHOWN ON THE TREE PROTECTION PLAN.
7. THE CONTRACTOR SHALL TAKE EXTREME CARE TO PROTECT THE ROOT SYSTEMS OF EXISTING TREES. MATERIAL, EQUIPMENT, OR VEHICLES SHALL NOT BE STOCKPILED OR PARKED WITHIN THE TPZ OR ANY TREE COMPLETELY OR PARTIALLY WITHIN THE CONTRACT LIMIT LINE TO MINIMIZE SURFACE AND SUBSURFACE ROOT AND SOIL COMPACTION. IF STOCKPILING OCCURS WITHIN THE TPZ, A STOP WORK ORDER SHALL BE ISSUED IMMEDIATELY, AND WORK SHALL NOT RE-COMMENCE UNTIL ALL STOCKPILED MATERIAL IS REMOVED FROM THE TPZ AND MITIGATION MEASURES ARE PERFORMED TO THE SATISFACTION OF THE CONSTRUCTION MANAGER, IN CONSULTATION WITH THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE.
8. IF DIRECTED, THE TREE PROTECTION ZONE SHALL BE COVERED WITH WOOD CHIPS TO A DEPTH OF AT LEAST SIX (6) INCHES, WITH PLYWOOD OR GROUND PROTECTION MATS, OR A COMBINATION THEREOF. SUCH COVERING SHALL BE MAINTAINED FOR THE DURATION OF THE CONTRACT AND IS NOT TO BE REMOVED UNTIL DIRECTED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE (ITEM "PROTECT EXIST, TREE ROOTS W/WOODCHIPS 6"DEPTH" AND "PROTECT EXIST. TREE ROOTS W/PLYWOOD").
9. TEMPORARY WOODEN TREE GUARDS WITH WRAP FOR INDIVIDUAL TREES, TEMPORARY WOODEN TREE GUARD FOR GROVES, AND TEMPORARY SNOW FENCE BOUNDARY SHALL BE MAINTAINED FOR THE DURATION OF THE CONTRACT AND ARE NOT TO BE REMOVED UNTIL DIRECTED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE. (ITEM "TEMPORARY WOODEN TREE GUARDS WITH WRAP," "TEMPORARY WOODEN TREE GUARD FOR GROVES," AND "TEMPORARY SNOW FENCE BOUNDARY").
10. ALL TREES WITHIN THE CONTRACT LIMIT LINE ARE TO RECEIVE AT LEAST ONE (1) INCH (THE EQUIVALENT OF 750 GALLONS OF WATER PER 1,000 SQUARE FEET OF TREE PROTECTION ZONE) OF WATER PER WEEK BETWEEN THE MONTHS OF MARCH AND OCTOBER. IF RAINWATER IN ANY GIVEN WEEK IS BELOW THIS QUANTITY, THE CONTRACTOR MUST SUPPLEMENT THE AMOUNT RECEIVED BY A METHOD APPROVED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE (AS PER GENERAL CONDITIONS, SPECIAL PROVISIONS, SECTION C, ARTICLE 14 "TREE WORK").
11. ALL TREE PRUNING AND TREE REMOVAL IS TO BE PERFORMED IN ACCORDANCE WITH ANSI A300 STANDARDS BY AN ARBORIST HOLDING CERTIFICATION FROM THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) OR EQUIVALENT EDUCATION AND EXPERIENCE. ANSI PRUNING TYPES SPECIFIED ON TREE PROTECTION SCHEDULE AND TREE DIAMETERS AT BREAST HEIGHT ARE TO BE CONFIRMED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE BEFORE PRUNING WORK IS PERFORMED.
12. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN REMOVING PAVEMENTS WITHIN THE DIRPLINE OF EXISTING TREES - LIFTING RATHER THAN DRAGGING PIECES OF PAVING. TOOLS FOR THIS ACTIVITY SHALL BE APPROVED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF EXCAVATION.
13. ALL EXCAVATION AND PLANT INSTALLATION WITHIN THE TPZ SHALL BE PERFORMED BY HAND OR PNEUMATICALLY, WITH MINIMAL SOIL DISTRUBANCE, AND UNDER THE SUPERVISION OF THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE. PLANTS SHALL NOT BE PLACED WITHIN THREE (3) FEET OF THE TREE TRUNK UNLESS APPROVED.
14. NO ROOTS SHALL BE CUT WITHOUT THE WRITTEN AUTHORIZATION OF THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE.
15. EXCAVATED AREAS WITHIN THE TPZ SHALL BE BACKFILLED IMMEDIATELY OR ROOTS SHALL BE KEPT CONSTANTLY MOIST WITH BURLAP COVERED WITH WHITE PLASTIC AND CHECKED A MINIMUM OF TWO (2) TIMES A DAY, ONCE IN THE MORNING AND ONCE IN THE AFTERNOON, FOR A MAXIMUM OF FORTY-EIGHT (48) HOURS, UNTIL BACKFILL IS COMPLETE. IF DIRECTED, SOAKER HOSES SHALL BE INSTALLED TO FACILITATE PROPERLY MOIST CONDITIONS. NO POOLING OR OF CONTINUOUS RUNNING WATER SHALL OCCUR WIHIN THE TPZ OTHER THAN DURING THE IRRIGATION PROCESS. IF ROOTS ARE TO BE EXPOSED FOR A PERIOD GREATER THAN 48-HOURS, THE EXPOSED AREA SHALL BE COVERED WITH AT LEAST 6-INCHES MULCH AND MAINTAINED DURING THE COURSE OF CONSTURCTION UNTIL THE AREA CAN BE PROPERLY BACKFILLED (AS PER GENERAL CONDITIONS, SPECIAL PROVISIONS, SECTION C, ARTICLE 14 "TREE WORK).
16. WHEN A TREE PROTECTION DEFICIENCY, AS DETERMINED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE, IS IDENTIFIED, IT MUST BE REMEDIED WITHIN 24-HOURS OF NOTIFICATION BY THE AGENCY. FAILURE TO CORRECT THE DEFICIENCY WITHIN THIS TIMEFRAME WILL RESULT IN A STOP WORK ORDER, LIQUIDATED DAMAGES, OR BOTH.
17. ANY DAMAGE TO EXISTING TREES DURING CONSTURCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL MITIGATE SUCH DAMAGE AS DIRECTED BY THE DIRECTOR OF LANDSCAPE CONSTRUCTION OR THEIR REPRESENTATIVE, AT THE CONTRACTOR'S EXPENSE (AS PER GENERAL CONDITIONS, SPECIAL PROVISIONS, SECTION C, ARTICLE 14 "TREE WOR" - "REMEDIATION").
18. THE CONTRACTOR SHALL BE ASSESSED RESTITUTION FOR TREES THAT ARE INJURED, IRREPARABLY DESTROYED, OR REMOVED WITHOUT AUTHORIZATION AS DETERMINED BY SPECIFICATIONS AND NYC PARKS.
19. SEE L-402 FOR ART/MONUMENT PROTECTION AND REMOVALS REQUIREMENTS.
20. TREE PROTECTION, TREE REMOVAL, AND TREE TRANSPLANT WORK IN THIS AREA ARE SUBJECT TO REVIEW AND APPROVALS BY NYC PARKS.
21. TREE MJH-1, KNOWN AS "THE CHILDREN'S TREE" AS SHOWN ON L501 IS TO BE PROTECTED AND REMAIN IN PLACE. THIS TREE IS OF CULTURAL AND HISTORIC SIGNIFIGANCE AND ITS HEALTH IS PARAMOUNT THROUGH OUT THE CONSTUCTION PROCESS. SEE SPECIFICATIONS FOR ARBORIST REPORTS AND PROVIDE SPECIFIC INFORMATION REGARDING THIS TREE. 1

1

TREE PROTECTION SCHEDULE

TREE #	SPECIES (common name)	DBH (inches)	CTLA CONDITION RATING	ISA CRITICAL ROOTZONE (CRZ) RADIUS (ft.)	TREE REMOVAL	STUMP REMOVAL	TRANSPLANT TREE	PREPARATORY PRUNING ANSI A-300						TREE PROTECTION					DECOMPACT				PREPARATORY FERTILIZE	TREE GROWTH REGULATOR	COMMENTS
								Cleaning	Raising	Reducing	Restoring	Structural	Thinning	Limb Tying	Temporary Wooden Tree Guard	Temporary Wooden Tree Guard For Groves	Temporary Fence Boundary	Protect Existing Tree Roots w/ Woodchips	Protect Ex. Tree Roots w/ Plywood or Mats	Air-Tilling 3 Ft Radius	Air-Tilling 5 Ft Radius	Radial Trench	Vertical Mulch			
187	WILLOW SPECIES	20	88%	15.2	X			X							X										
188	WILLOW SPECIES	20	81%	14.9	X			X							X										canker in trunk
189	MAGNOLIA, OTHER	7	78%	8.8											X										healing scars "NOT IN SURVEY"
190	SERVICEBERRY, OTHER	4	84%	3.0				X							X										
191	SERVICEBERRY, OTHER	3	84%	3.0				X							X										
192	SERVICEBERRY, OTHER	4	84%	3.0				X							X										
193	SERVICEBERRY, OTHER	4	84%	3.0				X							X										
194	UNKNOWN LIVE TREES	1	91%	3.0				X							X										
195	WILLOW SPECIES	28	88%	20.9				X							X										
196	UNKNOWN LIVE TREES	2	91%	3.0				X							X										
197	WILLOW SPECIES	21	81%	16.0				X							X										scaffold heading cuts
198	WILLOW SPECIES	24	78%	17.8				X							X										scaffold heading cuts
199	UNKNOWN LIVE TREES	24	81%	3.0																					Cedrus sp.? "NOT IN SURVEY"
200	UNKNOWN LIVE TREES	24	84%	3.0																					Cedrus sp.?; woodpecker holes "NOT IN SURVEY"
201	UNKNOWN LIVE TREES	21	84%	3.0																					Cedrus sp.?; woodpecker holes "NOT IN SURVEY"
202	UNKNOWN LIVE TREES	18	88%	3.0																					Cedrus sp.?: crossing roots "NOT IN SURVEY"
203	UNKNOWN LIVE TREES	21	75%	3.0																					Cedrus sp.?; girdling roots, trunk gouges "NOT IN SURVEY"
204	UNKNOWN LIVE TREES	25	84%	3.0																					Cedrus sp.?; girdling roots "NOT IN SURVEY"
205	PINE, EASTERN WHITE	5	84%	5.0																					topped "NOT IN SURVEY"
206	OAK, OTHER	4	97%	3.0																					Visual estimate; fastigiate cultivar "NOT IN SURVEY"
207	BALDCYPRESS	13	91%	9.4	X																				
208	BALDCYPRESS	10	91%	7.7	X																				
209	BALDCYPRESS	11	91%	8.3	X																				
210	BALDCYPRESS	11	84%	8.2	X																				
211	BALDCYPRESS	9	91%	7.0	X										X										in raised planter
212	BALDCYPRESS	10	84%	7.4	X										X										in raised planter
213	BALDCYPRESS	11	88%	8.5	X										X										
214	BALDCYPRESS	11	88%	8.4	X										X										
215	BALDCYPRESS	8	84%	5.9	X										X										
216	OAK, WILLOW	10	78%	10.2																					Tree Pit, lopsided crown, patchy foliage
217	OAK, WILLOW	12	81%	11.7																					recently pruned for elevation "NOT IN SURVEY"
218	OAK, WILLOW	9	81%	8.9																					Tree Pit, lopsided crown "NOT IN SURVEY"
219	OAK, WILLOW	9	84%	8.6																					recently pruned for elevation, lopside crown "NOT IN SURVE
220	OAK, WILLOW	9	84%	9.2																					lopsided crown "NOT IN SURVEY"
221	OAK, WILLOW	7	78%	5.0																					Tree Pit, basal wounds "NOT IN SURVEY"
222	HONEYLOCUST	6	84%	3.0																					Tree Pit "NOT IN SURVEY"
223	OAK, WILLOW	7	78%	7.1																					Tree Pit, basal wound "NOT IN SURVEY"
224	HONEYLOCUST	9	88%	6.9				X							X										Tree Pit
225	HONEYLOCUST	10	84%	7.3				X							X										Tree Pit
226	HONEYLOCUST	9	84%	7.1				X							X										Tree Pit
227	HONEYLOCUST	10	84%	7.3				X							X										Tree Pit
228	HONEYLOCUST	10	84%	7.1																					Tree Pit "NOT IN SURVEY"
229	HONEYLOCUST	9	84%	6.5																					Tree Pit "NOT IN SURVEY"
230	HONEYLOCUST	9	84%	6.8				X							X										Tree Pit
231	HONEYLOCUST	9	84%	6.9																					Tree Pit "NOT IN SURVEY"
232	HONEYLOCUST	11	84%	8.5																					Tree Pit "NOT IN SURVEY"
233	HONEYLOCUST	10	84%	7.5				X							X										Tree Pit; pruned for elevation
234	HONEYLOCUST	12	84%	8.9																					Tree Pit "NOT IN SURVEY"
235	HONEYLOCUST	10	84%	7.4																					Tree Pit "NOT IN SURVEY"
236	HONEYLOCUST	11	84%	7.9				X							X										Tree Pit pruned for elevation
237	HONEYLOCUST	10	84%	7.4																					Tree Pit "NOT IN SURVEY"
238	HONEYLOCUST	14	84%	10.5																					Tree Pit, girdling roots "NOT IN SURVEY"
239	HONEYLOCUST	11	84%	8.0				X							X										Tree Pit
240	HONEYLOCUST	13	88%	9.4																					Tree Pit "NOT IN SURVEY"
241	PEAR, CALLERY	15	78%	15.0																					Tree Pit "NOT IN SURVEY"
242	OAK, WILLOW	9	88%	9.1																					NOT IN SURVEY

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212.337.0334 thomasphifer.com

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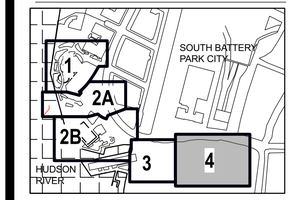
212.575.2701 naikgroup.com

OWEIS
100 East Hanover Ave., Suite 101, Cedar Knolls, NJ 07927
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

TREE PROTECTION SCHEDULE AND NOTES 4

SHEET NUMBER

L509

Last saved by: FERRERM(2021-11-17) Last Plotted: 2019-08-15
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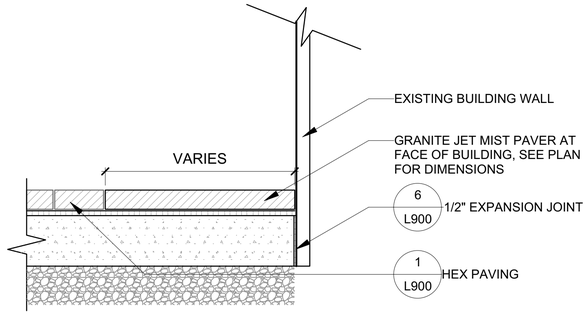
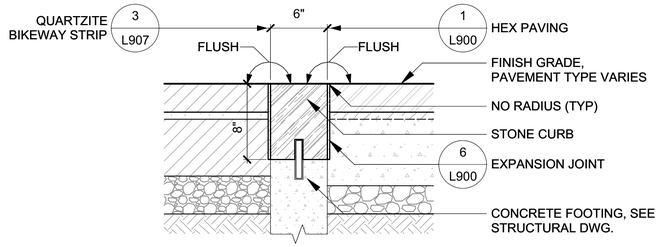
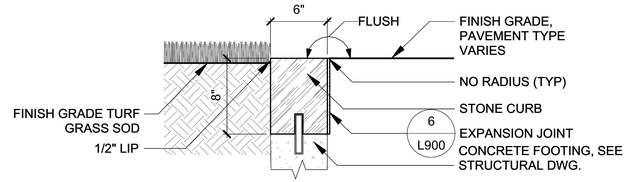


5 L900 GRANITE BAND AT EDGE OF MUSEUM BUILDING
SCALE: 1" = 1'-0"

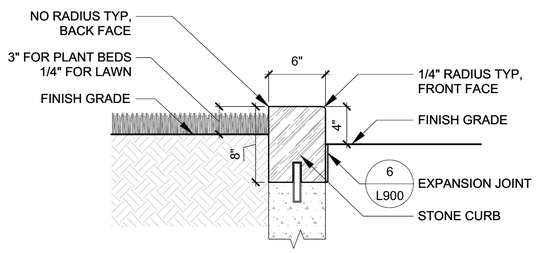




FLUSH STONE CURB AT TURF

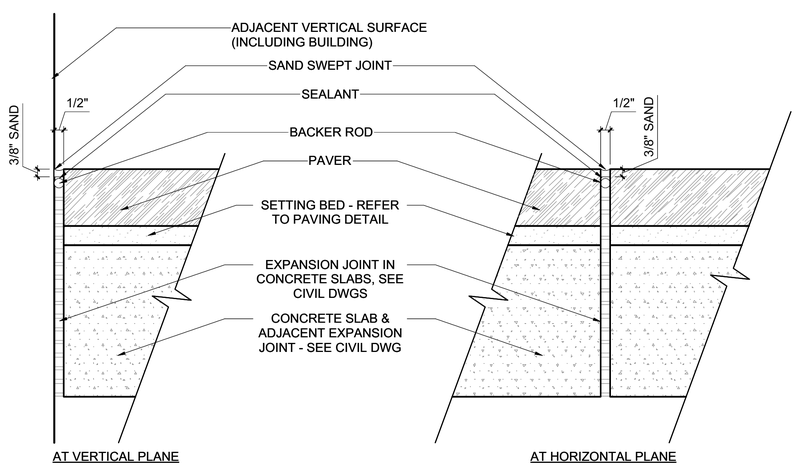
NOTE:
FOR CONCRETE FOOTING & SUBGRADE, SEE STRUCTURAL DRAWINGS.
TWO CONDITIONS SHOWN ON THE GRADING PLAN:
CONDITION A - FLUSH WITH NO PITCH
CONDITION B - FLUSH WITH 2% PITCH TOWARDS ADJACENT PAVEMENT; SEE GRADING PLAN

2 L900 FLUSH STONE CURB
SCALE: 1 1/2" = 1'-0"

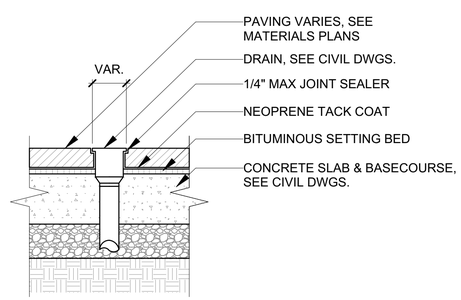


NOTE:
FOR CONCRETE FOOTING & SUBGRADE, SEE STRUCTURAL DWGS.

4 L900 6" WIDE STONE CURB
SCALE: 1 1/2" = 1'-0"

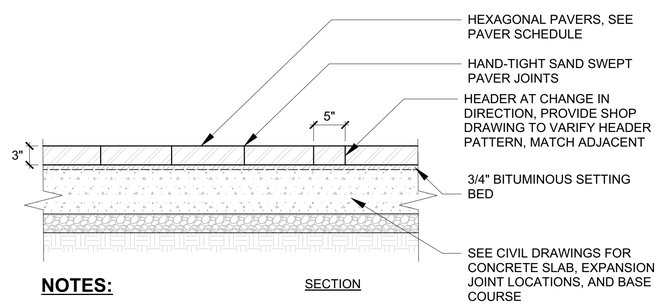


6 L900 EXPANSION JOINT
SCALE: 3" = 1'-0"



3 L900 PAVING WITH TRENCH DRAIN
SCALE: 1" = 1'-0"

1



SECTION

NOTES:

1. SEE SPECIFICATIONS.
2. SEE DETAILS 1 - 3, SHEET L969 FOR PAVER ORIENTATION AND ALIGNMENT.
3. SEE MATERIALS AND PAVING PLANS FOR LOCATION OF PRECAST OR ASPHALT HEX PAVERS.
4. PAVERS AT ALLEE TRANSITION FROM HEX TO AGGREGATE, SEE L941 FOR TRANSITION DETAILS. THIS NOTE APPLIES TO PACKAGE 2 ONLY.

1 L900 HEX PAVING
SCALE: 1" = 1'-0"

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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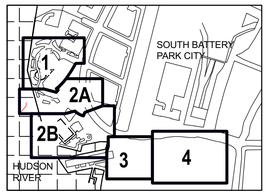


REGISTRATION

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

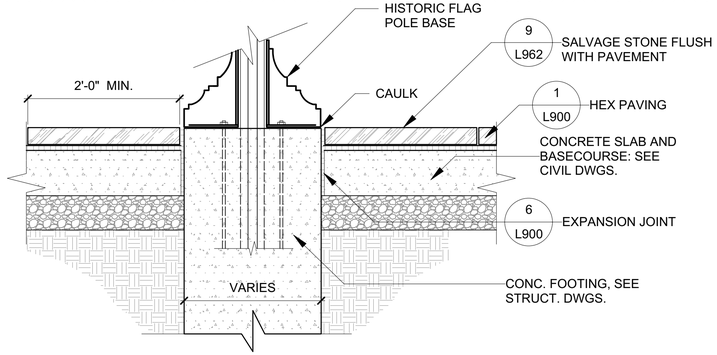
Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

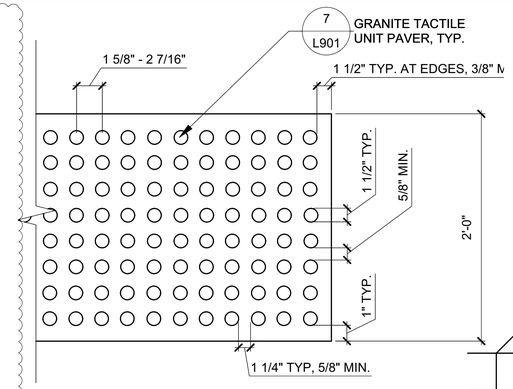
SHEET TITLE
DETAILS - PAVING AND CURBS

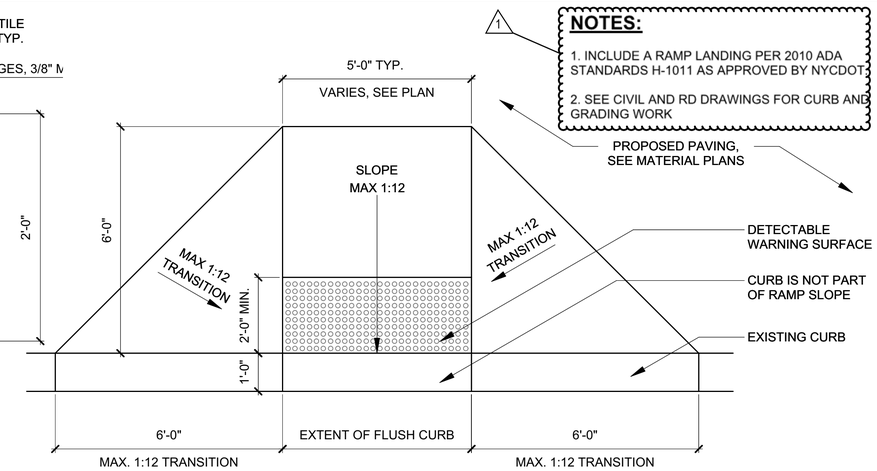
SHEET NUMBER
L900

ANSI D 22" x 34"



8 L901 HISTORIC FLAG POLE ON SALVAGED STONE PAVEMENT
SCALE: 1" = 1'-0"





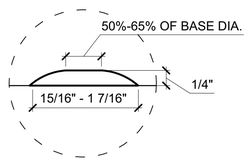
NOTES:

1. INCLUDE A RAMP LANDING PER 2010 ADA STANDARDS H-1011 AS APPROVED BY NYCDOT.
2. SEE CIVIL AND RD DRAWINGS FOR CURB AND GRADING WORK

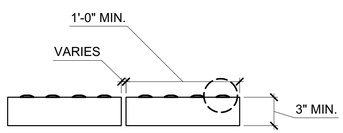
3 L901 ACCESSIBLE RAMP LAYOUT WITH DETECTABLE WARNING SURFACE
SCALE: 1/2" = 1'-0"

NOTES:

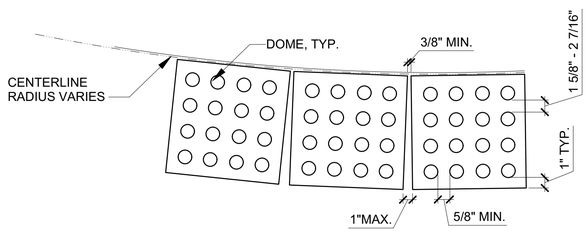
1. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING FIELD, THE DOMES AND THE ENTIRE 1' SQ. LEVEL SERFACE) ARE FOR ILLUSTRATIVE PURPOSES ONLY, SEE SPECIFICATION FOR PRODUCT INFORMATION.
2. DOME ALIGNMENT, DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL.
3. COLOR REQUIREMENTS: THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR SHALL VISSUALLY CONTRAST WITH THE ADJOINING CURB RAMP, OR OTHER ADJACENT WALKWAY SURFACE, AS DEFINED IN THE A.D.A.A.G.
4. JOINTS TO BE FILLED, LEVEL AND FLUSH WITH ADJACENT UNIT PAVING.
5. SEE RD DRAWINGS AND COMPLY WITH ALL DOT STANDARD DETAILS, PROVIDE SHOP DRAWNGS FOR REVIEW



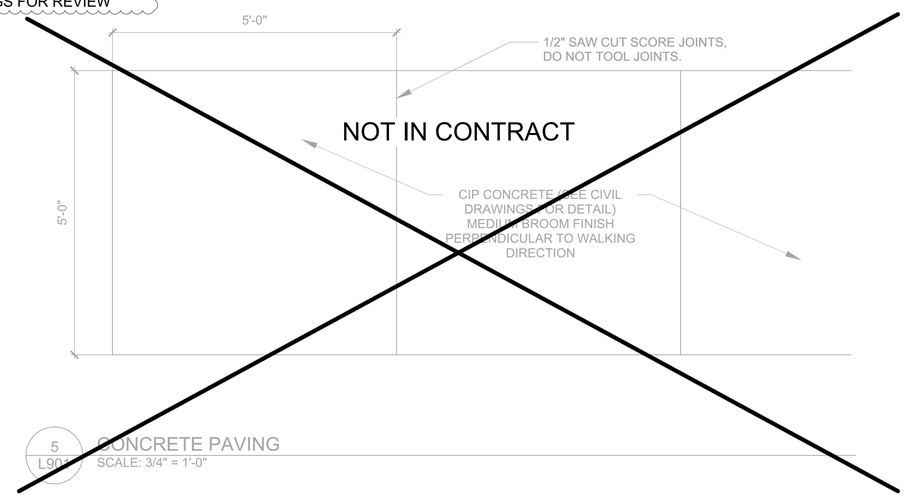
DOME SECTION ENLARGEMENT



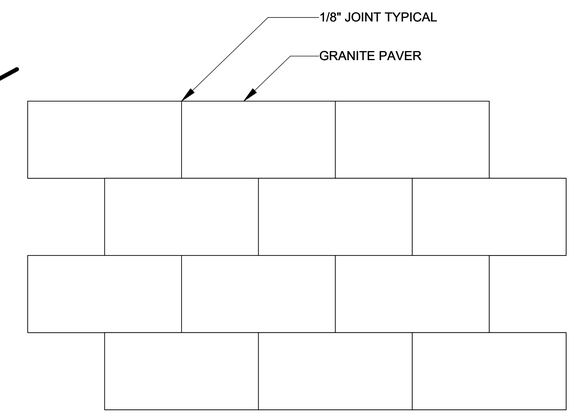
PAVER SECTION



7 L901 GRANITE TACTILE UNIT PAVER
SCALE: 1 1/2" = 1'-0"

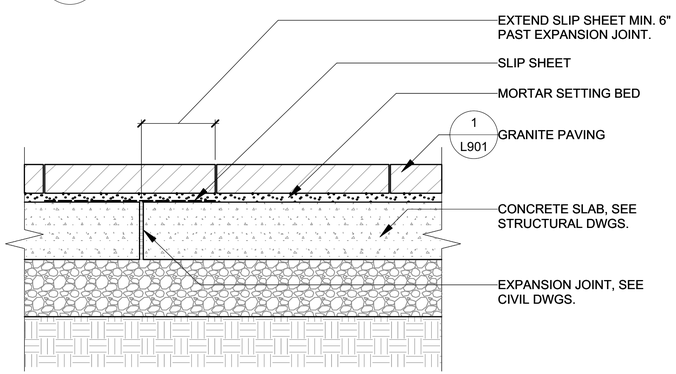


5 L901 CONCRETE PAVING
SCALE: 3/4" = 1'-0"

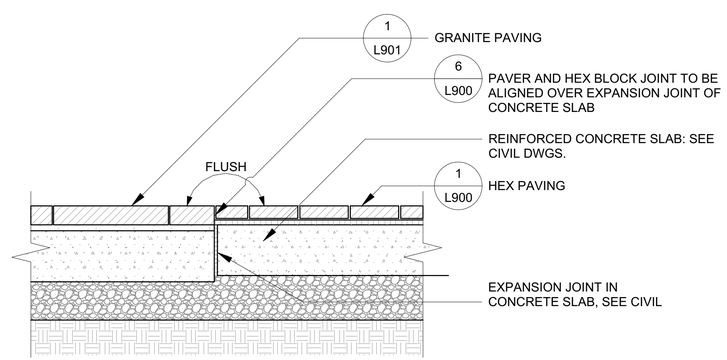


NOTE: SEE STONE SCHEDULE FOR STONE SIZES

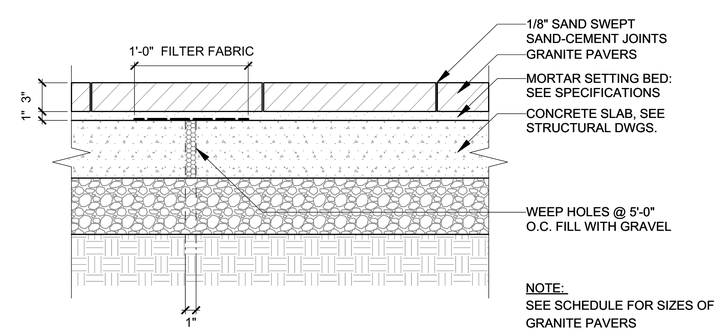
2 L901 GRANITE PAVING PATTERN
SCALE: 1 1/2" = 1'-0"



6 L901 GRANITE PAVING OVER EXPANSION JOINT
SCALE: 1 1/2" = 1'-0"



4 L901 GRANITE PAVING AT HEX PAVING
SCALE: 1" = 1'-0"



NOTE:
SEE SCHEDULE FOR SIZES OF GRANITE PAVERS

1 L901 GRANITE PAVING
SCALE: 1 1/2" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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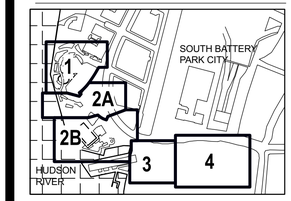
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT ANDREW R. LAVALLEE 001494 STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

DETAILS - PAVING AND ACCESSIBLE RAMP

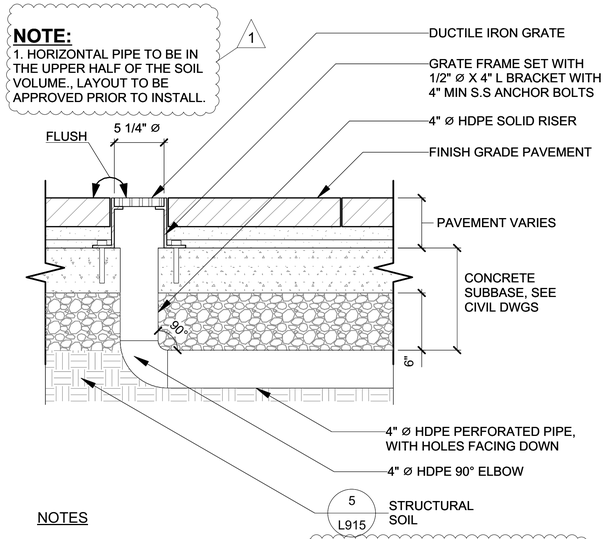
SHEET NUMBER

L901

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

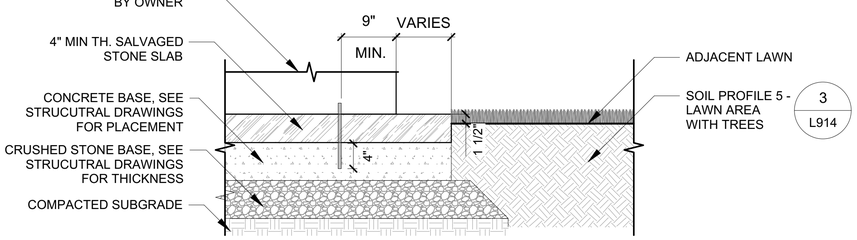
NOTE:
1. HORIZONTAL PIPE TO BE IN THE UPPER HALF OF THE SOIL VOLUME., LAYOUT TO BE APPROVED PRIOR TO INSTALL.



NOTES

1. SET UTILITY CASTING FLUSH AND LEVEL WITH ADJACENT PAVEMENT, SEE CIVIL FOR GRADING
2. COORDINATE PASSIVE AERATION GRATE BELOW WOODEN DECK WITH SHOP DRAWINGS PRIOR TO INSTALLATION

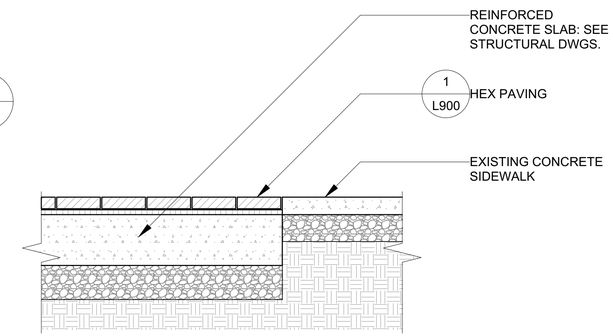
8 / L902 PASSIVE AERATION GRATE
SCALE: 1 1/2" = 1'-0"



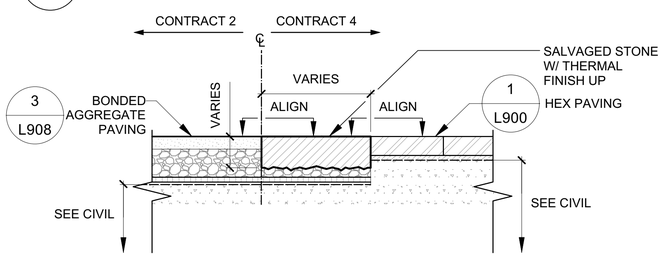
NOTES:

1. SHAPE AND DIMENSION OF STONE PLINTH TO ACCOMODATE THE FORM OF THE SCULPTURE. LANDSCAPE ARCHITECT TO BE NOTIFIED OF FINAL LAYOUT OF SALVAGED STONE FOR SCULPTURE AND STONE PLINTHS PRIOR TO INSTALLATION.
2. STONE THICKNESS VARIES, CONTRACTOR TO PROVIDE SALVAGED INVENTORY; CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT AND SUBMIT SHOP DRAWINGS TO LANDSCAPE ARCHITECT PRIOR TO APPROVAL.

6 / L902 STONE PLINTH FOR SCULPTURE AT LAWN
SCALE: 1" = 1'-0"



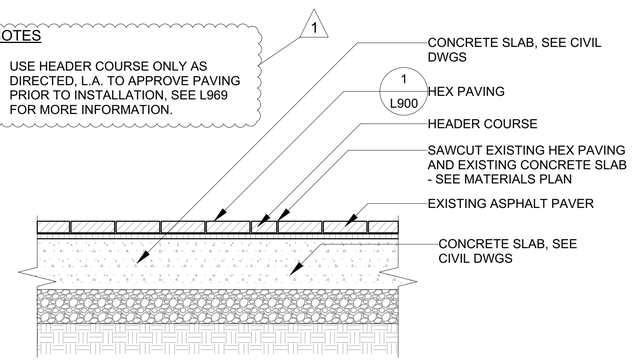
3 / L902 HEX PAVING AT EXISTING SIDEWALK PAVING
SCALE: 1" = 1'-0"



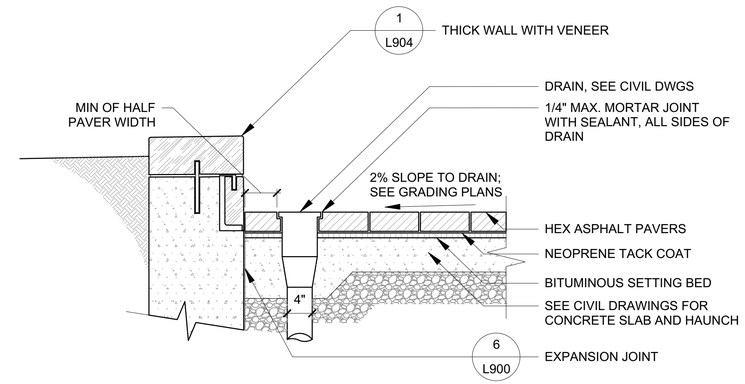
7 / L902 SALVAGED STONE MEETING HEX BLOCK AND BONDED AGGREGATE PAVING
SCALE: 1" = 1'-0"

NOTES

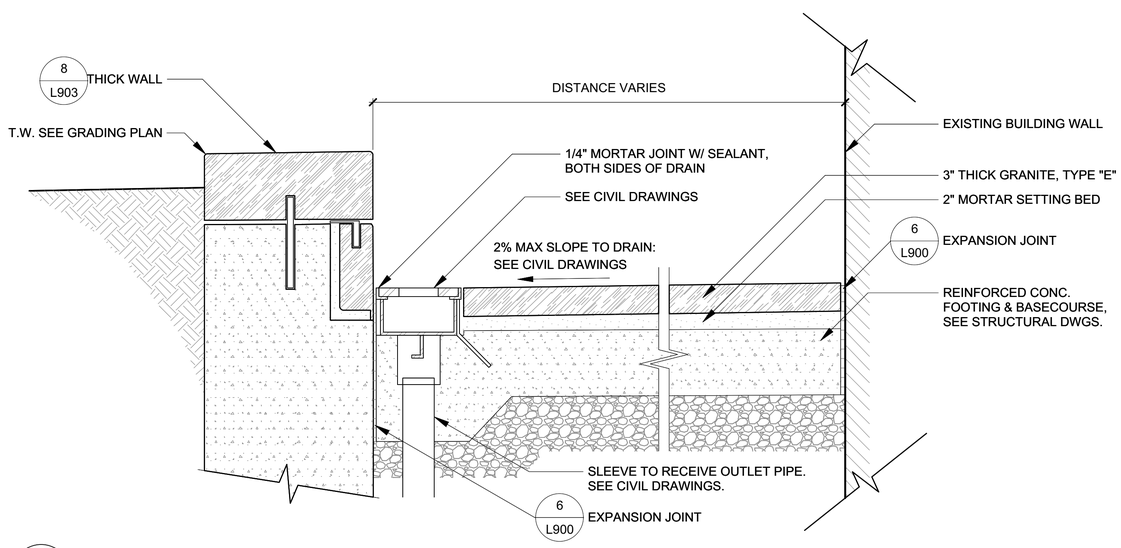
1. USE HEADER COURSE ONLY AS DIRECTED, L.A. TO APPROVE PAVING PRIOR TO INSTALLATION, SEE L969 FOR MORE INFORMATION.



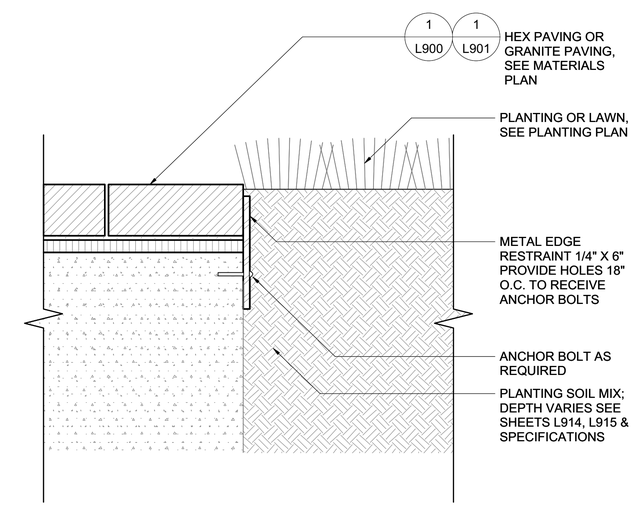
5 / L902 HEX PAVING MEETING EXISTING HEX AT ESPLANADE
SCALE: 1" = 1'-0"



2 / L902 AREA DRAIN AT WALLS
SCALE: 1" = 1'-0"



4 / L902 TRENCH DRAIN IN GRANITE PAVING
SCALE: 1 1/2" = 1'-0"



1 / L902 METAL EDGE AT PLANTING OR LAWN
SCALE: 3" = 1'-0"

AECOM

PROJECT
SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT
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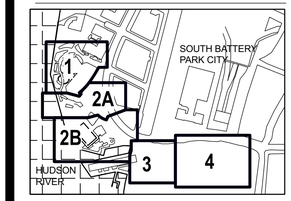

REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
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I/R	DATE	DESCRIPTION

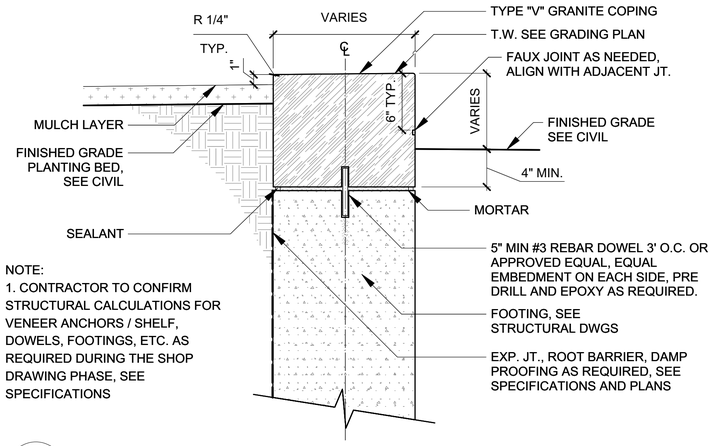
Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
DETAILS - PAVING TRANSITIONS AND DRAINS

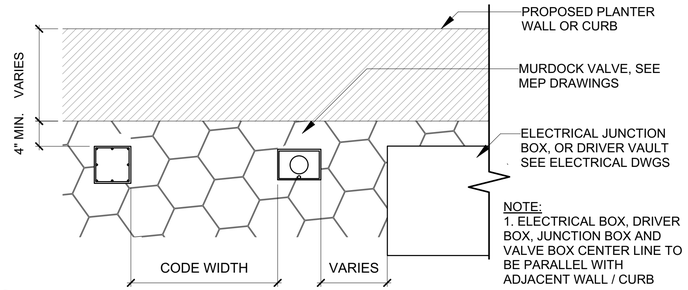
SHEET NUMBER
L902

Last saved by: FERRERA(2023-11-17) Last Printed: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG



NOTE:
1. CONTRACTOR TO CONFIRM STRUCTURAL CALCULATIONS FOR VENEER ANCHORS / SHELF, DOWELS, FOOTINGS, ETC. AS REQUIRED DURING THE SHOP DRAWING PHASE, SEE SPECIFICATIONS

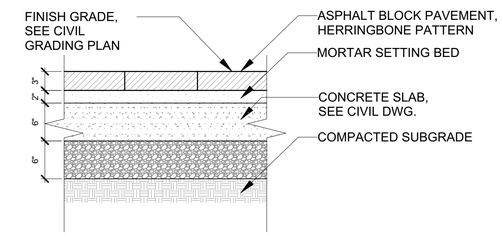
8 / L903 THICK WALL
SCALE: 1 1/2" = 1'-0"



NOTE:
1. ELECTRICAL BOX, DRIVER BOX, JUNCTION BOX AND VALVE BOX CENTER LINE TO BE PARALLEL WITH ADJACENT WALL / CURB

5 / L903 UTILITIES AT WALL OR CURB
SCALE: 1" = 1'-0"

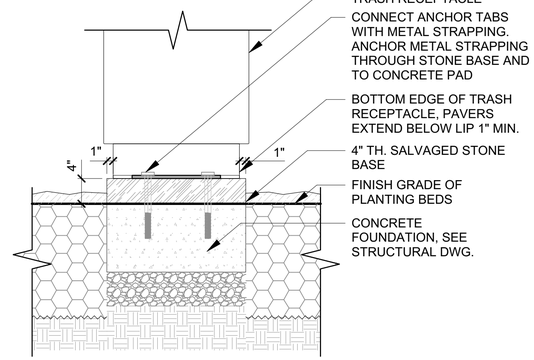
1



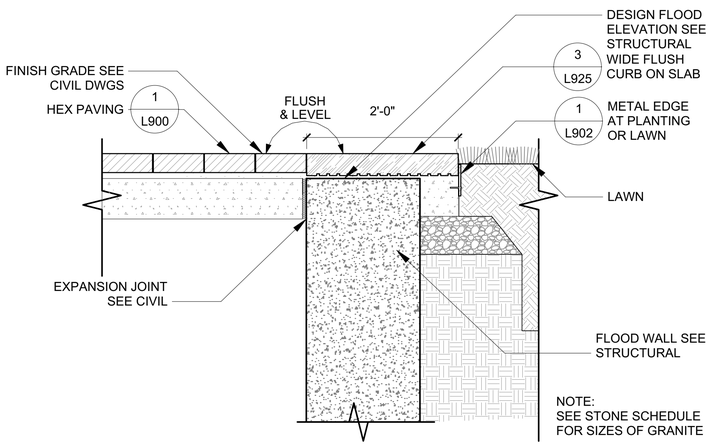
NOTES:

1. SEE CIVIL SITE PAVING SECTION PLANS FOR BASE. USE THIS FOR ASPHALT BLOCK PAVING BETWEEN GRANITE BAND PAVING ON REINFORCED CONCRETE AT BIKEWAY, AND HISTORIC PIER A PLAZA INCISED GRANITE BAND.

3 / L903 ASPHALT PAVER ON CONCRETE BASE
SCALE: 1" = 1'-0"

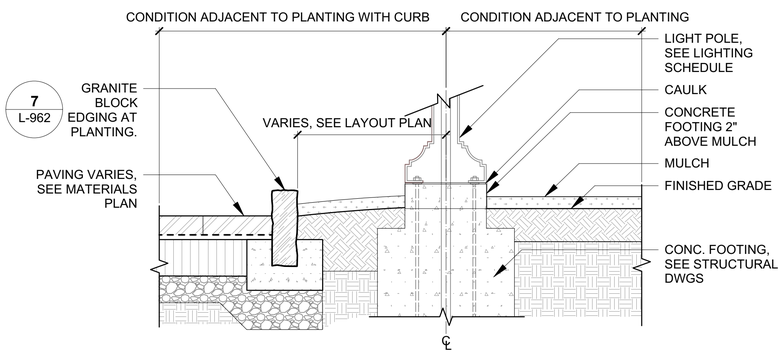


ELEVATION - SHRUB PLANTING CONDITION

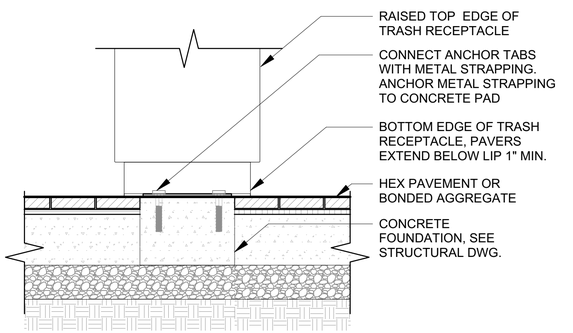


NOTE:
SEE STONE SCHEDULE FOR SIZES OF GRANITE

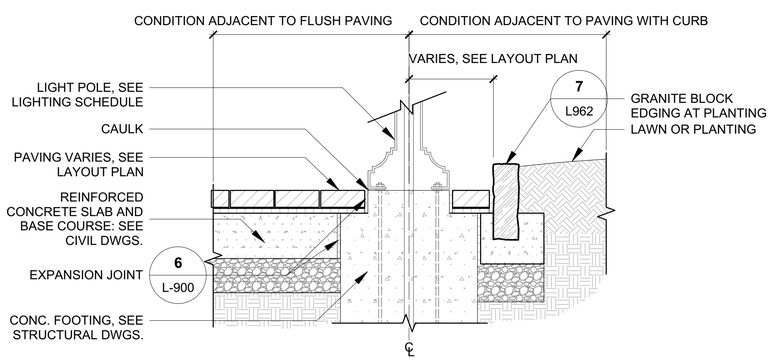
7 / L903 GRANITE PAVING AT LAWN
SCALE: 1" = 1'-0"



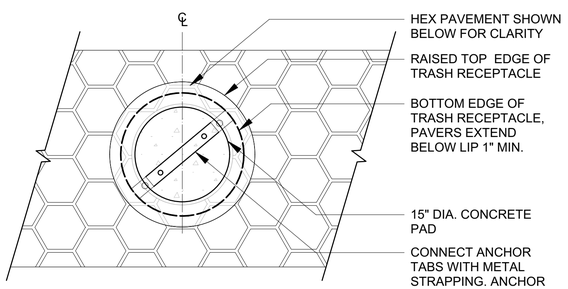
2 / L903 LIGHT POLE BASE AT PLANTING
SCALE: 1" = 1'-0"



ELEVATION - HEX PAVEMENT OR BONDED AGGREGATE

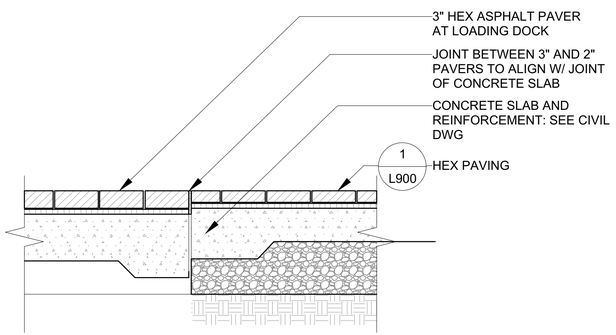


6 / L903 LIGHT POLE BASE AT PAVEMENT
SCALE: 1" = 1'-0"



PLAN - PAVEMENT ADJACENT CONDITION

4 / L903 TRASH RECEPTACLE SURFACE MOUNTIING
SCALE: 1" = 1'-0"



1 / L903 HEX PAVING MEETING ASPHALT PAVING AT SERVICE ENTRANCE
SCALE: 1" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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100 East Hanover Ave., Suite 101, Cedar Knolls, NJ 07927
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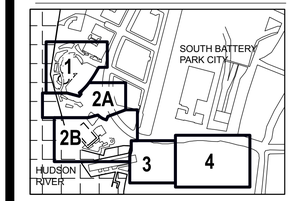
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
CHRISTOPHER R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

DETAILS - PAVING TRANSITIONS

SHEET NUMBER

L903

ANSI D 22" x 34"

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60579231-SBPC\9-10_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

ANSI D 22" x 34"

NOTES:

1. CONTRACTOR TO LOCATE WITH PIN THE ROOT FLARE OF EACH TREE PRIOR TO DIGGING THE PLANTING PIT. (THE FLARE IS WHERE THE FIRST HORIZONTAL ROOT COMES OUT FROM THE TREE.)

2. REMOVE SOIL FROM TOP OF ROOTBALL TO EXPOSE TOP OF FLARE. TREES WITH MORE THAN 3" OF EXCESS SOIL ABOVE THE FLARE SHALL BE REJECTED. MEASURE DISTANCE BETWEEN FLARE AND BOTTOM OF ROOTBALL. SUBTRACT 10% TO DETERMINE DEPTH OF PLANTING PIT.

3. DURING EXCAVATION FOR TREE PIT AND TREE ROOT GROWTH ZONE, LANDSCAPE ARCHITECT IS TO BE NOTIFIED IMMEDIATELY OF ANY CONDITION(S) DETRIMENTAL TO PROPER DRAINAGE. DETRIMENTAL CONDITION(S) SHALL BE CORRECTED PER LANDSCAPE ARCHITECT'S INSTRUCTION TO ACHIEVE ACCEPTABLE DRAINAGE. THIS OPERATION SHALL OCCUR AT NO ADDITIONAL COST TO THE OWNER.

4. AFTER EXCAVATION FOR TREE PIT AND TREE ROOT GROWTH ZONE, LANDSCAPE ARCHITECT IS TO BE NOTIFIED OF AND EVALUATE EXISTING DRAINAGE CONDITIONS ON SITE PRIOR TO PLANTING TREE. TREE SHALL NOT BE PLANTED UNTIL DRAINAGE IS DEEMED ACCEPTABLE BY LANDSCAPE ARCHITECT.

5. CONTRACTOR TO FIRMLY TAMP SOIL AROUND ROOT BALL TO ELIMINATE ANY AIR POCKETS. FOOT COMPACTION IS ACCEPTABLE.

6. THE PLANTING DEPTH OF EACH TREE WILL BE INSPECTED. ANY TREE PLANTED TOO DEEPLY OR WITH FLARE BURIED WILL BE REJECTED.

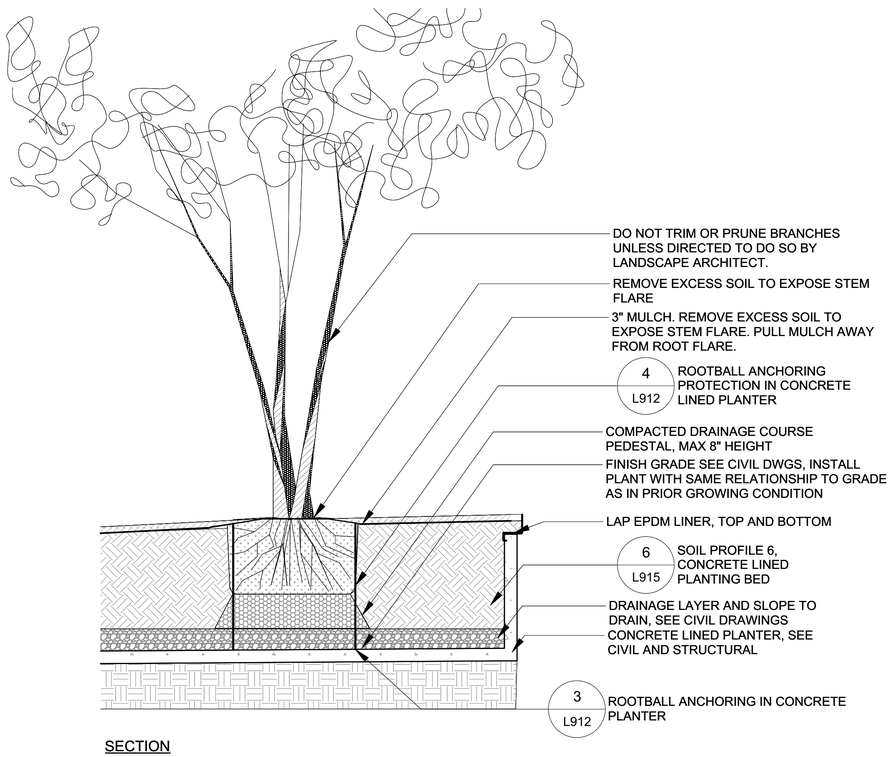
7. AFTER INSTALLATION, BUT PRIOR TO STAKING, TRIM OUT DEADWOOD AND LIMB UP AT DIRECTION OF LANDSCAPE ARCHITECT, TO 7' TYPICAL.

8. REMOVE TREE TAG AT END OF WARRANTY PERIOD.

9. CONTRACTOR SHALL STAKE ALL TREES FOR REVIEW BY AND ACCEPTANCE BY LANDSCAPE ARCHITECT.

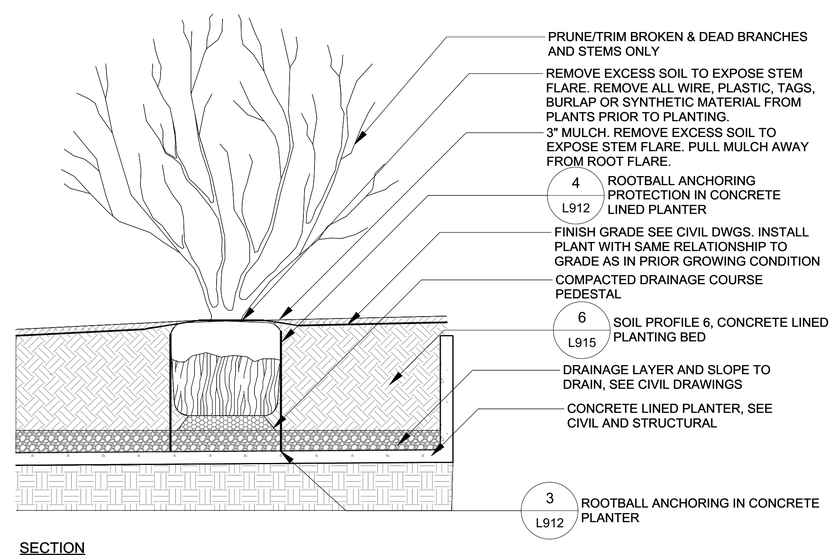
10. SEE SOILS PLANS TO LOCATE CONCRETE LINED PLANTER LOCATIONS.

11. SEE PLANTING PLANTS TO LOCATE SHRUB, MULTISTEM, CONIFEROUS AND DECIDUOUS TREES THAT REQUIRE ANCHORING IN CONCRETE LINED PLANTERS. LANDSCAPE ARCHITECT AND CIVIL ENGINEER TO LOCATE REQUIRED OFFSETS FROM FLOOD ALIGNMENT ACCORDING TO MATURE HEIGHT OF SPECIES.



SECTION

2 L913 MULTISTEM TREE IN CONCRETE LINED PLANTER
SCALE: 1/2" = 1'-0"



SECTION

1 L913 SHRUB IN CONCRETE LINED PLANTER
SCALE: 1/2" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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212.575.2701 naikgroup.com

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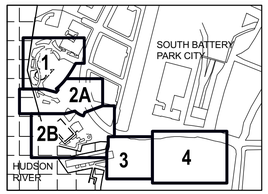
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

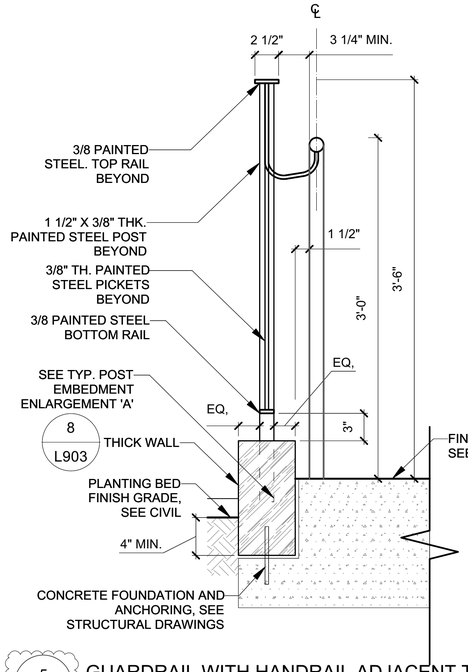
SHEET TITLE

DETAILS - TREE PLANTING - 4

SHEET NUMBER

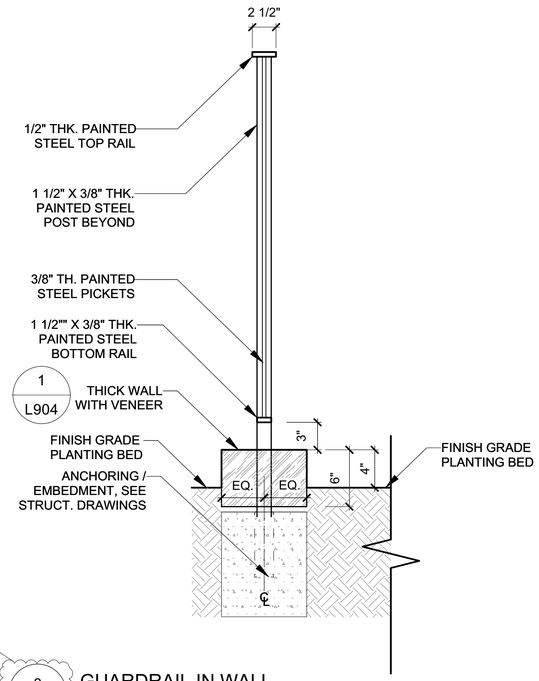
L913

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-08-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG



5 / L931 GUARDRAIL WITH HANDRAIL ADJACENT TO CURB OR WALL
SCALE: 1 1/2" = 1'-0"

1

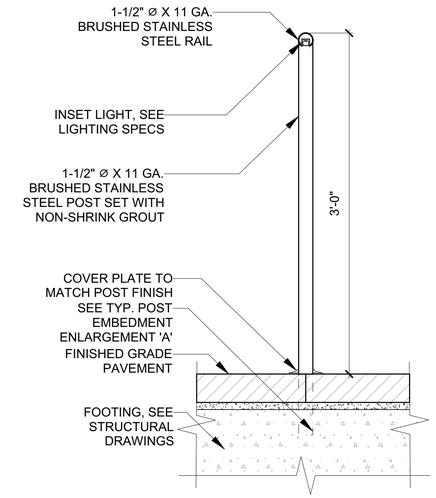


1

3 / L931 GUARDRAIL IN WALL
SCALE: 1 1/2" = 1'-0"

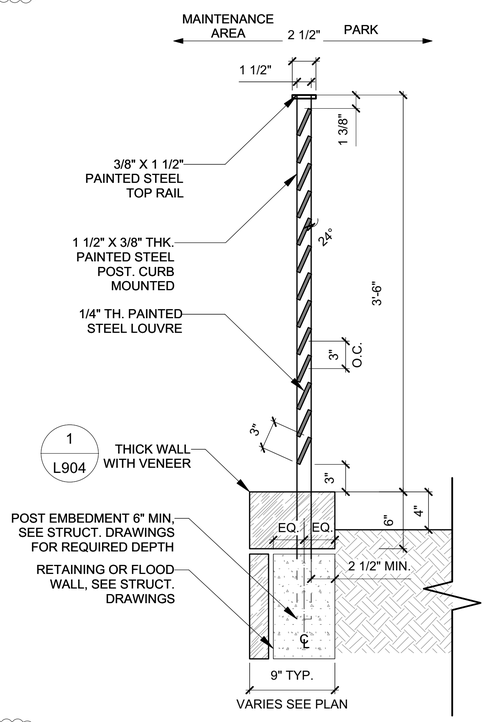
NOTES:

1. COORDINATE FINISH GRADE WITH CIVIL DRAWINGS AND FIELD VARIFIED SURVEY.



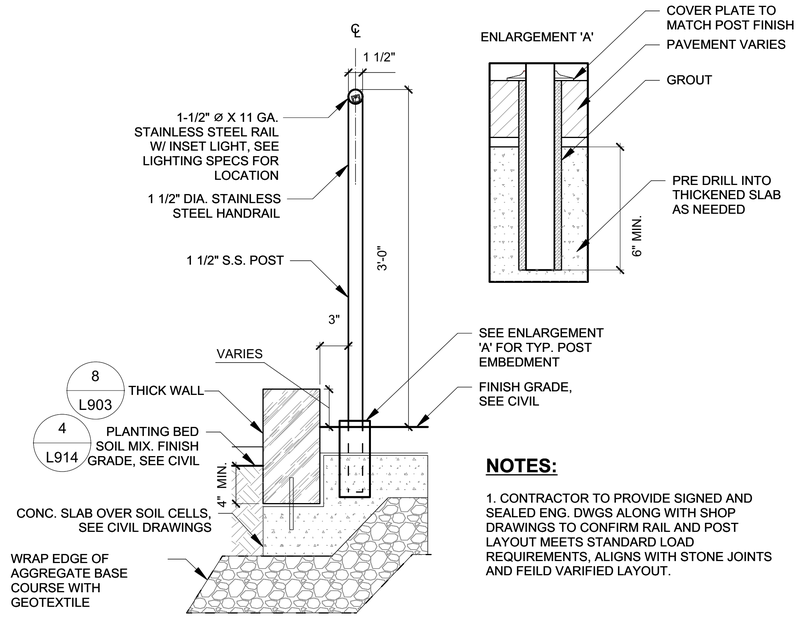
1

2 / L931 HANDRAIL AT CENTER AT STAIRS
SCALE: 1 1/2" = 1'-0"



1

4 / L931 GUARDRAIL IN WALL AT MAINTENANCE AREA
SCALE: 1 1/2" = 1'-0"



NOTES:

1. CONTRACTOR TO PROVIDE SIGNED AND SEALED ENG. DWGS ALONG WITH SHOP DRAWINGS TO CONFIRM RAIL AND POST LAYOUT MEETS STANDARD LOAD REQUIREMENTS, ALIGNS WITH STONE JOINTS AND FEILD VARIFIED LAYOUT.

1

1 / L931 HANDRAIL ADJACENT TO CURB OR WALL
SCALE: 1 1/2" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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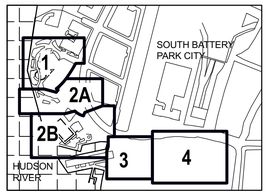
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ANDREW R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

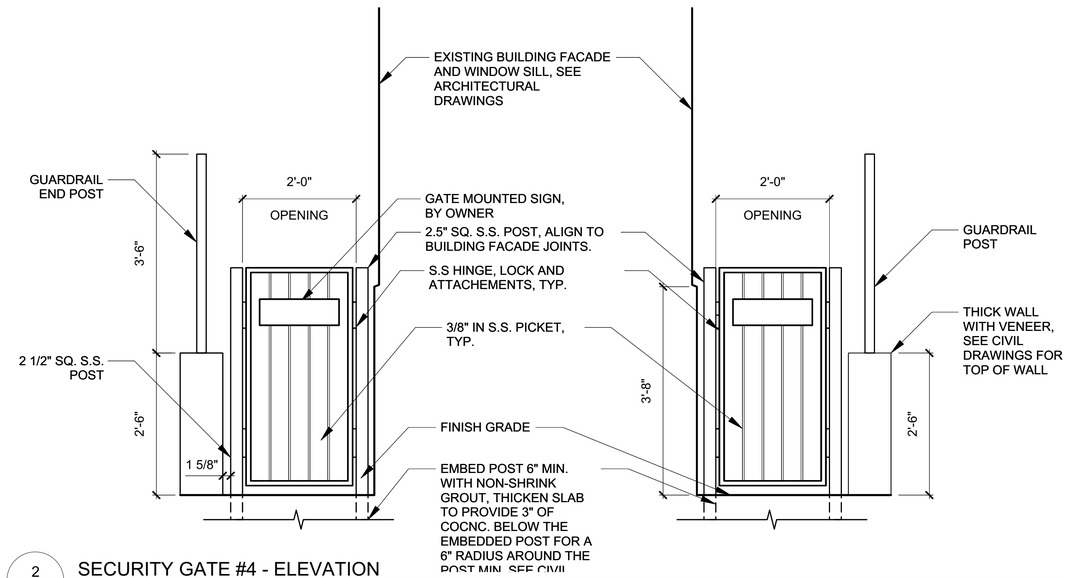
Contract No. 18-2586

SHEET TITLE

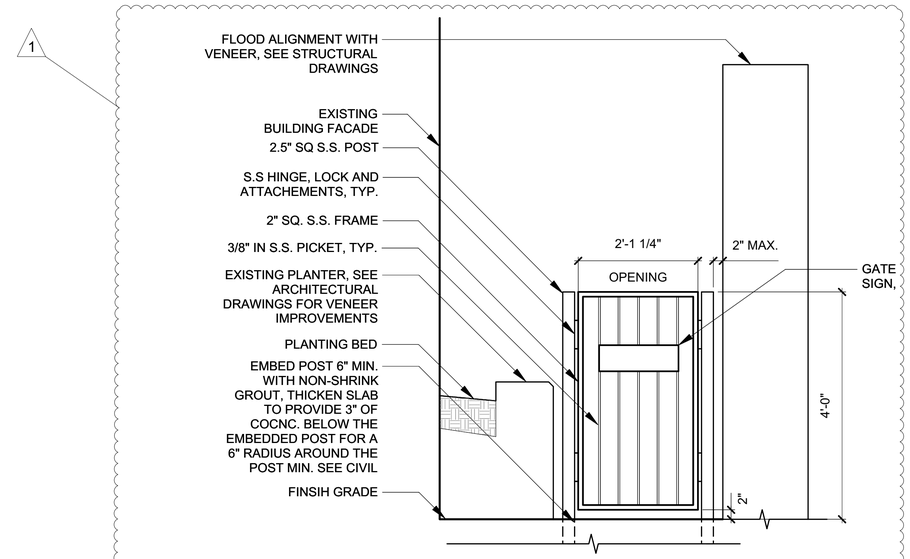
DETAILS - HANDRAILS AND GUARDRAILS

SHEET NUMBER

L931



2 / L939 SECURITY GATE #4 - ELEVATION
SCALE: 3/4" = 1'-0"



1 / L939 SECURITY GATE #3 - ELEVATION
SCALE: 3/4" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

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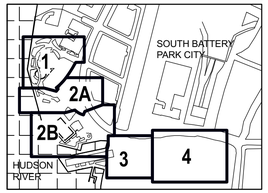
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
ALEXANDER R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

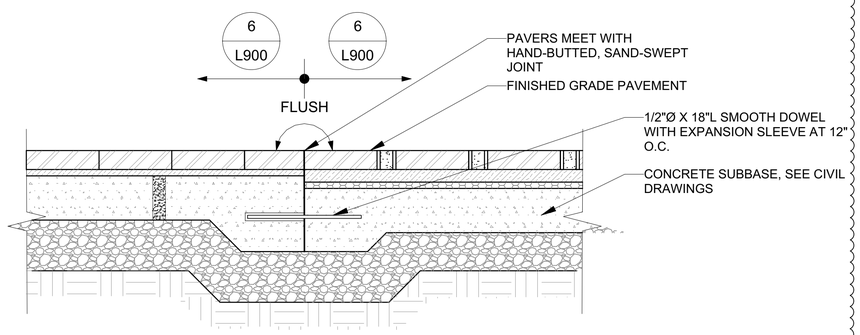
DETAILS - SECURITY GATE 2

SHEET NUMBER

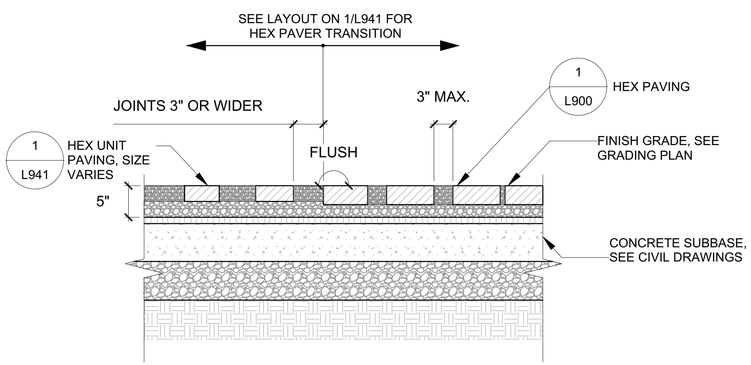
L939

ANSI D 22" x 34"

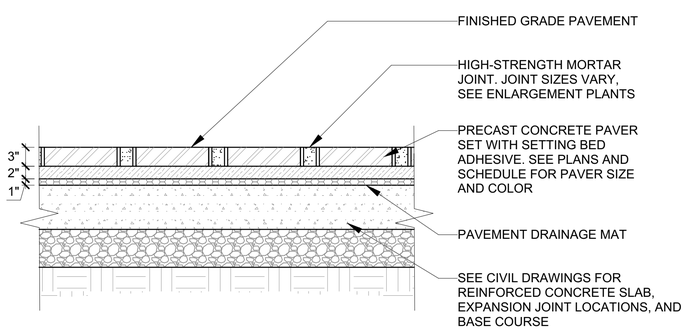
Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC0910_CAD\20_SHEETS\FROM PWI_ACM-G-TD_ANSI_D-SBPC.DWG



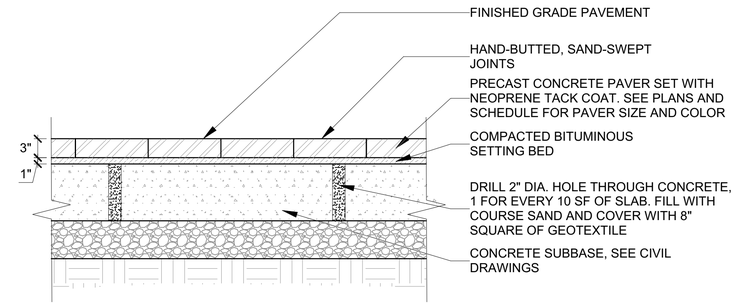
5 / L940 TRANSITION BETWEEN PRECAST CONCRETE PAVER SETTING BEDS
SCALE: 1" = 1'-0"



4 / L940 PRECAST CONCRETE PAVER TRANSITION ON FROST RESISTANT MORTAR
SCALE: 1" = 1'-0"



3 / L940 PRECAST CONCRETE PAVER ON FROST RESISTANT MORTAR
SCALE: 1" = 1'-0"



2 / L940 PRECAST CONCRETE PAVER ON BITUMINOUS SETTING BED
SCALE: 1" = 1'-0"

1 / L940 NOT USED
SCALE: 1/2" = 1'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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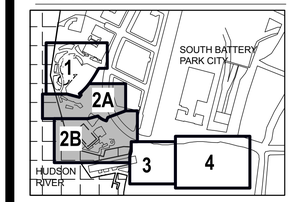
KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
CHARLES R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

DETAILS - ALLEE PAVING RULES

SHEET NUMBER

L940

<u>ATTACHMENT #2B</u>
REVISED LANDSCAPE SPECIFICATIONS –

015369.2 – Temporary Tree and Plant Protection
044300.2 – Landscape Stone Masonry
311313.2 – Selective Tree Removal
311316.2 – Selective Tree Pruning Fertilizing and Decompaction
321400.2 – Unit Paving
323300.2 – Site Furnishings

(ATTACHED)

SECTION 015639.2 - TEMPORARY TREE AND PLANT PROTECTION

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes
1. General protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
2. Hand and pneumatic excavation within the Critical root Zone around existing trees and shrubs to remain,
3. Arborist requirements when working within the Critical root Zone around existing trees and shrubs to remain including during removals, excavation, trenching, paving and turf grass work.
4. Obtaining permits from and coordination with NYC Parks.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for temporary site fencing.
2. Section 024113 "Selective Demolition" for selective demolition of pavements, walls, curbs, and surface features adjacent to trees and plants to remain.
3. Section 310000 "Earthwork" for excavation and filling requirements.
4. Section 311000 "Clearing and Grubbing" for removing existing trees and shrubs.
5. Section 329100 "Planting Soil" for soil amendments to be blended into existing soil using an pneumatic soil excavation.
6. Section 329300 "Plants" for planting of replacement plants including warranty requirement.
7. Section 329600 "Transplanting" for transplanting existing trees and plants.

1.03 REFERENCES

A. American National Standards Institute (ANSI): Z133.1 Safety Requirements for Pruning, Trimming, Repairing, Maintaining and Removing Trees, and for Cutting Brush. A300 Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance - Standard Practices (Parts 2, 5, 6 and 8).

B. Council of Tree and Landscape Appraisers: Guide for Plant Appraisal - 9th Edition

C. TCIA – Tree Care Industry Association, Inc. (TCIA)

1.04 DEFINITIONS

A. General: See definitions in ANSI A300 (Part 6) and in ANSI Z60.1 pertaining to field-grown trees, except as otherwise defined in this Section.

B. Arborist: An arborist certified by the International Society of Arboriculture (ISA).

C. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches (150 mm) above the ground for trees up to and including 4-inch (100-mm) size at this height and as measured at a height of 12 inches (300 mm) above the ground for trees larger than 4-inch (100-mm) size.

D. Certified Arborist: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody ornamentals. Arborist shall be Certified by International Society of Arboriculture (ISA).

E. Dripline: Outermost circumference of the tree's branch spread.

F. Critical root zone (CRZ): The minimum volume of roots necessary for the maintenance of tree health and stability, typically determined by measuring the tree diameter 4.5 ft. above grade and multiplying by 1.5, a minimum radius of 10' from the trunk, or at the tree's dripline, whichever is farthest from the trunk, or as otherwise indicated on the drawings, or established in the field. CRZ will be determined/established on an individual, tree-by-tree basis by the certified arborist with approval by NYC Parks. Refer to areas identified as Critical Root Zone on the Drawings.

G. Hand-digging: Careful soil excavation using hand-tools to expose roots for inspection and pruning without causing significant root damage or loss.

H. NYC Parks: New York City Department of Parks and Recreation.

I. Pneumatic digging: Careful soil excavation using pneumatic tools to expose roots for inspection and pruning without causing damage or root loss

J. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

K. Tree-Protection Zone: Area of protection surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings

L. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.05 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:

    a. Tree-service firm's personnel, and equipment needed to make progress and avoid delays.
    b. Certified Arborist's responsibilities.
    c. Quality-control program.
    d. Coordination of Work and equipment movement with the locations of protection zones.
    e. Trenching by hand or with pneumatic methods within protection zones and critical root zones
    f. Field quality control.

2. Attendance:

    a. Notify seven days in advance and arrange for attendance of representatives from New York City Parks representatives to discuss protections and activities around existing trees and plants within NYC roadway rights of way and the Battery.

1.06 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.
2. Detail fabrication and assembly of protection-zone fencing and signage.
3. Indicate extent of trenching by hand or with air spade within protection zones.

C. Samples: For each type of the following:

1. Organic Mulch: 1-quart (1-L) volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
2. Protection-Zone Signage: Full-size Samples of each size and text, ready for installation.

D. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1. Species and size of tree.
2. Location on site plan. Include unique identifier for each.
3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

1.07 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Certified arborist and tree service firm.

B. Certification: From certified arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

D. Permits:
1. Provide a copy of the NYC Parks building permit fully executed by NYC Parks for work within the Battery.
2. Provide copy of tree removal permit fully executed by NYC Parks for tree protection and work around trees located with NYCDOT roadway rights of way and within the Battery.

E. Quality-control program:

1. Prepare and submit a “Specialized Root Zone and Soil Excavation Plan,” indicating the extent of soils to be pneumatically excavated. Show all areas of proposed staging, vehicle or equipment access, existing tree protection, protection of pavements, building, fencing and public right-of-way areas, trenching, excavating, or other disturbance to soils.
   a. Proposed plan will be reviewed and approved by NYC Parks. No work of this Section shall commence prior to approval.
2. Proposed methods, materials, and schedule for effecting soils and root zones, in accordance with ANSI A300 (all parts), shall be submitted by Certified Arborist for approval.
3. Submit schedule of existing trees to be pneumatically excavated.
4. Description of each type of proposed specialized root zone and soil excavation operation and the reason for and location of each type described. Specialized root zone and soil excavation operations shall include, but not be limited to:

   a. Soil aeration and decompaction.
   b. Root collar excavation.
   c. Root pruning.
   d. Soil replacement.
   e. Root training.
   f. Root trenching.
   g. Excavation or trenching required for construction or utility work.

h. Turfgrass repair and turfgrass seeding and soding work.

F. Certified Arborist Daily Inspection Reports, submit monthly.

G. Maintenance Recommendations: From certified arborist, for care and protection of trees affected by construction during and after completing the Work. Recommendations shall be submitted in writing, on the Certified Arborist's Letterhead.

1.08 QUALITY ASSURANCE

A. Arborist Qualifications: Certified Arborist as certified by ISA and as approved by NYC Parks.
1. Certified arborist shall be an independent, third party contractor not engaged in tree service or construction work for the project.
2. Minimum requirements for the Certified Arborist:

a. Certification from the International Society of Arboriculture (ISA) and:

1) Associate degree in forestry, arboriculture, horticulture, or related plant science field, and five years of full-time professional experience in landscape design and the field supervision of techniques to mitigate damage to existing trees from the negative impacts of construction; or
2) B.S. in forestry, arboriculture, horticulture, or related plant science field, and three years of full-time professional experience in landscape design and the field supervision of techniques to mitigate damage to existing trees from the negative impacts of construction; or
3) M.S. in forestry, arboriculture, horticulture, or related plant science field, and one year of full-time professional experience in landscape design and the field supervision of techniques to mitigate damage to existing trees from the negative impacts of construction.
4) Demonstrated experience working on NYC Parks related projects.

B. Arborist Responsibility: Contractor shall have a certified arborist present at all times during all operations related to existing tree and plant protection and when working around or within the drip line of existing trees to remain including during removals, excavation, trenching, paving and turf grass work.

C. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to work required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

D. Quality-Control Program, as described in Article "Informational Submittals."

E. Pneumatic Excavation:
1. AirSpade® or similar equipment utilized to complete the work of this Section shall be operated by experienced technicians, trained by equipment manufacturer in the

safe and proper operation of the compressed air-powered tool and in accordance with manufacturer's written instructions.

2. Pneumatic soil excavation operations shall not be performed in heavy rain or when soil is deemed too wet or too dry by Certified Arborist.
3. Tree trunks shall be suitably protected from damage by Pneumatic soil excavation operations during all activities specified.

F. Inspections and Inspection Reports: Engage a qualified and approved certified arborist on a full-time basis during operations to direct plant-protection measures and oversee excavation work in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare daily inspection reports.

G. Site Monitoring when excavating within the Critical Root Zone

1. While use of Pneumatic or hand soil excavation can significantly reduce trauma to the tree, it is important to monitor the tree's health and care before, during, and after the procedure. Supplemental watering is typically necessary and should be provided with the direction and continued monitoring of a Certified Arborist.
2. Site monitoring shall be the responsibility of the Certified Arborist. Any damage to existing trees shall be immediately reported to the Construction Manager and, New York City Parks. If any tree has been damaged, work shall be halted and reasons for damage assessed. No work shall commence until Contractor has submitted a plan for prevention of further tree damage and plan has been approved in writing by the Construction Manager and New York City Parks.

1.09 FIELD CONDITIONS

A. The following practices are prohibited within Tree Protection and Critical Root Zones:

1. Storage of construction materials, debris, or excavated material.
2. Moving vehicles, unless protections have been previously approved to accommodate vehicular traffic.
3. Parking vehicles or equipment.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.
8. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

D. Prevent damage to and movement, settlement, or collapse of adjacent services, utilities, structures, and trees. Promptly repair damage at no cost to the owner.

1.10 COORDINATION

A. Coordinate work of this section with work of Section 329600 "Transplanting".

1.11 TREE DAMAGE PENALTIES

A. Damages to trees, shrubs, and other vegetation will be assessed by the Landscape Architect and New York City Parks. New York City Parks shall determine restitution and replacement planting requirements and, if additionally required, restitution costs which shall be paid for by the Contractor.

B. If any trees or shrubs designated to be saved are damaged and replacement is required, the number, species and size of replacement plants shall be furnished and planted by the contractor, including warranty, as specified in Section.

1.12 EXISTING SERVICES

A. Protect existing structures and utilities from damage.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Backfill Soil: Stockpiled existing soil or approved new soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

B. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs: As specified in section 329300 “Plants”.

C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements: Previously used materials may be used when approved by NYC Parks.

1. Wood Protection-Zone Fencing: As shown on the drawings.

a. Lumber:

1) Dimension Lumber: Construction or No. 2 grade and any of the following species:

a) Hem-fir or hem-fir; NLGA, WCLIB, or WWPA.
b) Douglas fir-larch, Douglas fir-larch, or Douglas fir-south; NLGA, WCLIB, or WWPA.
c) Mixed southern pine; SPIB.
d) Western red cedar, Grade B; NLGA, WCLIB, or WWPA.

2) Boards: Any of the following species and grades:

a) Eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine; Standard or No. 3 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

2. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart.

a. Height: 48 inches.
b. Color: High-visibility orange, nonfading.

2.02 PNEUMATIC EXCAVATION EQUIPMENT

A. Pnemuatic Excavation Equipment: Specialized root zone and soil excavation operations shall be performed using a an AirSpade® or similar compressed air-powered tool, also referred to as a Pneumatic soil excavation. High-pressure air will come from a compressor that is matched to the design flow of the tool, producing a focused jet air stream capable of penetrating and fracturing existing soil for a fast, efficient method of excavating.

1. The compressor shall be in good working condition and exhibit no signs of excessive discharge of oil in the air stream.
2. Tool shall be equipped with a “dead-man trigger.”
3. Products:

a. Air Spade as manufactured by Guardair Corporation, 47 Veterans Drive, Chicopee, MA (800) 482-7324.
b. Soil Pick as manufactured by MBW Inc., 250 Hartford Road, Slinger, WI (800) 678-5237.
c. Supersonic Air Knife as available from Comstar Supply, 105 Kestrel Drive, Collegeville, PA (866) 326-6782.
d. Approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. Prepare written report, endorsed by certified arborist, listing conditions detrimental to tree and plant protection.

3.02 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Tie a 1-inch (blue vinyl tape around each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.

1. Apply 4-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.
2. Install temporary root protection matting over mulch to the extent indicated.

D. Trunk Protection: Protect the trunk of each tree to remain as follows:

1. Install tree grove and individual tree trunk protection as indicated on the Drawings.

3.03 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

1. Adjust protection zone fencing as requested by the Landscape Architect or representatives from the NYC Parks.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Landscape Architect and NYC Parks. Install one sign spaced approximately every 20 feet (6 m) on protection-zone fencing, but no fewer than four signs with each facing a different direction.

C. Maintain protection zones free of weeds and trash.

D. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.04 EXCAVATION OUTSIDE OF CRITICAL ROOTZONE AREAS

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 310000 "Earthwork" unless otherwise indicated.

B. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning. Use sharpened tools, cut cleanly and perpendicular to root growth. Sanitize cutting tools between each cut.

C. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.05 ROOT PRUNING OUTSIDE OF THE CRITICAL ROOT ZONE

A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as shown on Drawings and as follows:
   1. Once existing roots have been safely exposed, the Certified Arborist shall determine the best places to make clean cuts using a hand pruner. Smaller roots shall be lowered down into soil horizon to help train them to follow a future path of growth.
   2. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
   3. Cut Ends: Do not paint cut root ends
   4. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
   5. Cover exposed roots with burlap and water regularly until backfilled.
   6. Backfill as soon as possible according to requirements in Section 310000 "Earthwork."

B. Root Pruning at Edge of Protection Zone: Prune tree roots flush with the edge of the protection zone by cleanly cutting all roots perpendicular to root growth to the depth of the required excavation.

3.06 PNEUMATIC AND HAND EXCAVATION WITHIN THE CRITICAL ROOT ZONE

A. General:

1. Remove pavement and aggregate base by using hand tools.
   a. Do not drive wheeled equipment within Critical Root Zone Areas.
2. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots.
3. The site where pneumatic soil excavation is to be performed shall have access restricted. Only personnel that are involved in the operation shall be permitted within 25 feet of the operation. A temporary screen barrier shall be set up to prevent flying rocks and debris from leaving the immediate work area during the operation.
4. Personnel using the air tool or working in close proximity to the operation shall wear appropriate personal protective equipment, which includes at a minimum:
   a. Hard hat with plastic face shield
   b. Goggle-type eye protection
   c. Ear plugs
   d. Ear muffs
   e. Long sleeved shirt and long pants
   f. Work boots and socks
5. If the area has active fire ant activity, personnel shall take precautions including sealing of cuffs and the use of insect repellents to avoid fire ant attack.
6. Air hoses used in the operation shall have safety pins and whip guards installed at each hose junction.
7. The air flow heating valve (if present on the compressor) shall be turned off when working near trees so as not to damage bark.

B. Soil Preparation:

1. Trees proposed to undergo specialized root zone and soil excavation operations shall be adequately watered before start of operations. Amount and frequency of watering shall be determined by Certified Arborist. No operations shall commence prior to preparation approval in writing by Certified Arborist.
2. Soil shall be moist to the point of field capacity prior to and during the operation. If dust is generated during the operation, work shall be stopped and the soil should be wetted. If turf, large rock, or mulch is present in the area to be included in the excavation, it shall be removed prior to the start of the operation.

C. Air Tilling/Spading:

1. Contractor shall utilize the pneumatic soil excavation tool to aerate and de-compact to the specified depth (typically 4” in.) of the topsoil layer. If modification to soil content and aeration is necessary to a greater depth, then this application can be combined with others such as radial trenching.
   a. Place plywood sheets over adjacent trenches to prevent refilling.
   b. Position the Pneumatic soil excavation at an angle of 30° to 45° (depending on target depth) and about 1 inch from the surface.
   c. Move the nozzle from side to side to define the desired trench width.

d. Do not dwell on the same spot.
e. Width, depth, and length of trench, and soil augmentation to be determined based on tree needs and project goals.
f. The adjustable dirt shield should be positioned close to the ground to deflect airborne material away from the operator.
g. Refer to manufacturer's updated safety and operational guidelines.

D. Soil Augmentation

1. Soil augmentation: Fertilizers, composts, or other soil components shall be applied evenly and at rates determined by soil test results in accordance with Section 329100 "Planting Soil" Soil amendments shall be blended into existing soil using pneumatic soil excavation.

E. Tree Root Zone Investigation:

1. At a minimum, Tree Root Zone Investigation shall include the following:

a. Establishing the objective of the inspection, such as detecting cut or damaged roots, particularly where trees are located near to recent excavation works on building sites or where trenches for underground utilities have been dug, root disease or decay, drilling for decay, or collecting samples for submission to a lab.
b. The location of tree roots may also need to be determined, for example during an assessment to trees in relation to building subsidence or when planning construction works near to a tree.
c. Defining the area to be excavated – mark the soil surface of the area to be inspected and define the depth of inspection/soil removal.
d. After inspection, define how the space is treated; i.e., fill it in with the same soil, new soil, or leave open; mulch, sod, or seed on surface.
e. Define aftercare, e.g., soil moisture sensors, irrigation level, or frequency.

2. The assessment should also provide any recommendations for tree protection, health care before, during, and after the completion of site work, and any additional issues or constraints that should guide project goals and/or implementation strategies based on tree and field conditions.
3. Utilize pneumatic soil excavation or hand dig to carry out subterranean investigations to ascertain the condition of structural roots to assess tree stability. Pneumatic soil excavation shall be used to investigate suspected tree root decay or damage.

F. Root Collar Excavation:

1. When grade is set too high against tree root flare or root collar, it shall be corrected through root collar excavation with a pneumatic soil excavation tool. Pneumatic soil excavation tool must be kept moving back and forth. Do not dwell on same spot.
2. Fine roots should be cut and removed if they interfere with the excavation. The excavation shall be concluded when the upper portion of a majority of buttress roots are exposed. Once uncovered, Certified Arborist shall identify roots that need to be

removed. Roots less than ¼ in. diameter may be lowered into the soil using pneumatic soil excavation tool. If the excavation depth exceeds one foot, consult with the Certified Arborist. If signs or symptoms of decay or disease are noticed, notify the Certified Arborist. If stem girdling roots less than 1/3 the diameter of the trunk are discovered during the operation, or if several small stem girdling roots are discovered, they should be removed. If stem girdling roots greater than 1/3 the diameter of the trunk or many smaller stem girdling roots are discovered, the Certified Arborist shall be notified.

3. Replace topsoil or augmented soil to cover roots to proper elevation. Refer to Section 329100 "Planting Soil."

G. Root Pruning within the Critical Root Zone:

1. Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.
2. Once existing roots have been safely exposed, a Certified Arborist shall determine the best places to make clean cuts using a hand pruner. Smaller roots shall be lowered down into soil horizon to help train them to follow a future path of growth.
3. When the tree's excavated root zone will remain exposed for several days or more, protect and cover roots (for example with soil, mulch, or burlap cloth) and provide supplemental water to ensure excavation and covered roots are kept moist.

H. After the excess soil is removed, the excavated area shall be filled with mulch or wood chips as directed by the arborist. The mulch or wood chips shall not be in contact with the tree trunk and shall not hide the buttress roots from inspection. Mulch or wood chip depth should be between 2 and 4 inches, based on the coarseness of the material and approved by the Certified Arborist.

3.07 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction. Prune branches as shown on Drawings, under direction of arborist and as directed by the certified arborist representatives of the NYC Parks.

1. Prune to remove only injured**,** broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
3. Pruning Standards: Prune trees according to ANSI A300 (Part 1) and as indicated on Drawings.

a. Type of Pruning: Cleaning, raising, reducing, and, thinning as indicated on the Drawings and where directed by the Landscape Architect, Certified Arborist or representatives of NYC Parks.

B. Unless otherwise directed by Certified Arborist and acceptable to Landscape Architect, do not cut tree leaders.

C. Cut branches with sharp pruning instruments; do not break or chop.

D. Do not paint or apply sealants to wounds.

E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.

F. Chip removed branches and dispose of off-sit**e**, unless otherwise directed.

3.08 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the Critical Root Zone.

B. Lowering Grade within the Critical Root Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by certified arborist unless otherwise indicated.

1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning. As per article 3.06 of this Section.

C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

D. Minor Fill within Critical Root Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.09 FIELD QUALITY CONTROL

A. Inspections: Engage a qualified and approved certified arborist on a full-time basis during operations to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.10 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Landscape Architect.

1. Refer to Tree Damage Penalties Article for further requirements.
2. Submit details of proposed pruning and repairs.
3. Perform repairs of damaged trunks, branches, and roots within 24 hours according to certified arborist's written instructions.
4. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by the Landscape Architect and NYC Parks.

B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition, as solely determined by the Landscape Architect, or when within NYCDOT Rights of Way by New York City Parks, before the end of the corrections period or are damaged during construction operations that Landscape Architect determines are incapable of restoring to normal growth pattern.

1. Trees within NYCDOT Rights of Way:

a. Replace trees as directed by NYC Parks, inclusive of quantities for new, off-site compensatory tree planting and payments for tree restitution based on calculations of restitution for tree removal as required by New York City Parks.
b. Plant and maintain new and replacement trees as specified in Section 329300 "Plants."

C. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 4-inch uniform thickness to remain.

D. Soil Aeration: Soil Aeration: Where directed by the Landscape Architect or New York City Parks, aerate surface soil compacted during construction. Aerate 6 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 1 inch diameter holes a minimum of 12 inches deep at 24 inches on center Backfill holes with an equal mix of augered soil and coarse sand.

3.11 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 015639.2

SECTION 044300.2 – LANDSACPE STONE MASONRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes the following applications of stone masonry:

1. Solid Stone block walls.
2. Solid stone and stone veneer walls and cap stones anchored and/or adhered to concrete.
3. Stone veneer and capstones anchored and/or adhered to concrete bulkhead areas.
4. Site salvaged stone paving, curbs and landscape wall veneer and capstones adjacent to the Museum of Jewish Heritage (MJH) and First Place locations
5. Stone step treads anchored and/or adhered to concrete.
6. Solid stone seating units.
7. Installation of site-salvaged stone at Museum of Jewish Heritage (MJH) facade.
8. Delegated design for stone attachment systems.
9. Slip resistance testing in laboratory and on site.

B. Related Requirements:

1. Section 017419 "Construction Waste and Demolition Management
2. 014000 "Quality Requirements" for delegated design.
3. Section 024200.2 "Site Material Salvaging" for salvaged stone block wall units installed as part of the wok of this section.
4. Section 032100 "Reinforcement Bars" for reinforcement in concrete substrate.
5. Section 033000 "Cast-in-Place Concrete" for concrete substrate for stone-clad walls, curbs and pavements.
6. Section 055241 "Railings and Guardrails for Park Areas" for handrails and guardrails embedded in stone steps, walls, and curbs.
7. Section 061501 "Wood at Park Areas" for wood seat slats, backs and arm rests installed on stone clad seatwalls.
8. Section 321373 "Landscape Joint Sealants" for joint sealants in expansion and contraction joints.

9. Section 321400 "Unit Paving" for stone pavers and curbs, including site salvaged materials.
10. Section 323300.2 "Site Furnishing" for skate stops installed in stone seat wall, solid stone seating units, and step units.
11. Section 352016 "Flood Gates" for gates abutting and closing against structure set in stone clad piers.
12. 323300.2 "Glass Floodwalls" for glass floodwalls, framing and attachments adjacent to stone cladding.

1.03 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving ILFI Zero Carbon and WEDG Certification. Refer to Section 018113 - SUSTAINABLE DESIGN REQUIREMENTS for the Project's targets and specific requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the Project's sustainability goals and ILFI Zero Carbon or WEDG certification.

1.04 DELEGATED DESIGN

A. Stone Attachment System Design: Design, fabricate any necessary kerfing, fixing, anchoring or attachment system including a structural engineering analysis by a qualified Professional Engineer, using the following performance requirements and design criteria.

1. Stone size, joint size, pattern and location as shown on the Drawings.

B. Withstand movements or forces as a result of the structure, or internal or external forces and conditions acting on the structure including thermal movements.

1. Mechanical fix enabling the removal and replacement, or post fixing installation, of any panel individually.
2. Mechanically secure all structural and non-structural components in place for all applied directions of force, including upwards. Gravity and friction shall not be relied upon.
3. Hidden, non-staining and non-corrosive stone attachments.
4. Comply with ASTM C1242.

1.05 REFERENCE STANDARDS

A. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

B. The latest edition, as of the date of the executed construction contract, of referenced standards listed below applies to this contract.

1. American Concrete Institute (ACI)
   a. ACI 530 – Building Code Requirements and Specification for Masonry Structures and Companion Commentaries.
2. American National Standard Institute (ANSI)
   a. ANSI A326.3 American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials.
3. American Society for Testing Materials (ASTM)
   a. ASTM C 97 – Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
   b. ASTM C99 – Standard Specification for Marble Dimension Stone
   c. ASTM C 119– Terminology Relating to Dimension Stone.
   d. ASTM C 170 – Test Method for Compressive Strength of Dimension Stone.
   e. ASTM C270 – Standard Specification for Mortar for Unit Masonry.
   f. ASTM C503 – Standard Specification for Marble Dimension Stone
   g. ASTM C615 – Specification for Granite Dimension Stone.
   h. ASTM C880 – Test Method for Flexural Strength of Dimensional Stone.
   i. ASTM C615 – Standard Specification for Granite Dimension Stone.
   j. ASTM C-979 – Standard Specification for Pigments for Integrally Colored Concrete.
   k. ASTM C1242 – Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems.
   l. ASTM D1056 – Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber.
   m. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
4. Marble Institute of America (MIA)
   a. Dimension Stone Design Manual, Latest Version.
5. National Building Granite Quarries Association (NBGQA)
   a. Specifications for Architectural Granite.

1.06 ACTION SUBMITTALS

A. Product Data: For each variety of stone, stone accessory, and other manufactured product specified including but not limited to setting materials and sealants.

1. Dry mortar mix
2. Mortar pigment
   a. submit manufacturer's full range of custom and standard colors for selection by the Engineer and Landscape Architect
3. Latex modified Portland cement
4. Anchors
5. Anchor adhesives
6. Miscellaneous masonry accessories
7. Masonry cleaners
8. Damproofing
   a. For damproofing, submit manufacturer's detailed installation guidelines.

B. Samples for Verification:

1. Submit three sets for each color, grade, finish, and variety of stone required. Include 2 or more samples in each set showing the full range of variations expected in these characteristics. Each sample shall be not less than 18"x18". Include test reports for slip resistance for stone types used at step units.
2. Submit three colored mortar samples for each color selected by the Engineer and Landscape Architect.
3. Provide full size sample of incised text in stone showing at least two letters from text indicated on the drawings.
4. Approved sample set shall establish the standard by which stonework finish shall be judged.

C. Sustainability Submittals: For all permanently installed products and materials related to the work of this Section, submit product and material documentation to comply with and contribute to the Project's sustainability requirements, as outlined in the Submittals article of Section 018113 – Sustainable Design Requirements.

1. For Site Salvaged Stone Used for Walls and Curbing: Provide detailed summary of linear foot and square foot quantities and locations of site salvaged stone installed, inclusive of salvaged stone from Construction Contract 3.

D. Shop Drawings: Show fabrication and installation methods, including plans at not less than 1/4" = 1'-0" scale, elevations at 1/2" = 1'-0" scale and details at not less than 3" = 1'0" scale. Indicate required dimensions, materials, joint sizes, finishes, substructure, all fastening devices and accessory items. Include coordination details for related and adjoining work.

1. Dimensions of each stone type, size and finish of exposed faces coordinated with site salvaged stone to be re-installed, including site salvaged stone material on- or off-site shaping or fabrication required. Identify each stone piece on shop drawings including salvaged stone to allow for ease of field installation.
2. Provide detailed summary of linear foot and square foot quantities and locations of site salvaged stone included.
3. Provide detailed stonework layout and jointing showing each stone unit position and identifying number of each stone type & size with calculations verifying that stone and joints will fit within tolerances. Show all unique stone sizes at expansion joints or meeting of adjacent work.
4. Provide layout and detailing of incised text showing full text and letter spacing.
5. Show cutting, drilling detail and recesses fully coordinated with shop drawing for adjacent work including wood slats and arm rests, electrical, lighting, plumbing, steps, corners, handrails and guardrails, and skate stops.
    a. See Section 323300.2 “Site Furnishings”. For skate stops installed into stonework.
6. Show fixing and fastening details showing the method of stone unit attachment, support and restraint with calculations to verify the structural adequacy of the attachment signed and sealed by the qualified Professional Engineer.
7. The Landscape Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the design, certification or approvals performed by the qualified Professional Engineer.
8. Shop Drawings for stone replacement at MJH Building facade:
    a. Submit installation drawings showing complete installation to the extent possible matching original proposed installation as shown on original construction drawings. Show required installation hardware and materials as required.
    b. Submit large-scale plan, elevation and sectional view drawings showing installation.
    c. Indicated where salvaged or new stone shall be used.

E. Delegated-Design Submittal: In addition to signed and sealed shop drawings for floodwall masonry attachments, provide analysis data and calculations signed and sealed by the qualified professional engineer responsible for their preparation. indicating that the railing and guardrail installation complies with design loads.

F. Method for repairing damage to stone for approval by Landscape Architect.

1.07 INFORMATIONAL SUBMITTALS

A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, sources of supply, and other information as required to identify materials used. Include mix proportions for mortar and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockups constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Landscape Architect and approved in writing.

B. Qualification Data:

1. For Stone Fabricator.
2. For qualified Installer.
3. For qualified Professional Engineer.
4. For qualified Testing Laboratory

C. Material Test Reports:

1. Stone Test Reports: For each stone variety proposed for use on Project, by a qualified testing agency, indicating compliance with required physical properties, other than abrasion resistance, according to referenced ASTM standards. Base reports on testing done within previous three years.
2. Sealant Compatibility and Adhesion Test Report: From sealant manufacturer indicating that sealants will not stain or damage stone. Include interpretation of test results and recommendations for primers and substrate preparation needed for adhesion.
3. Slip Resistance Evaluation: Test Reports completed in a laboratory prior to fabrication and test reports completed on site after completion of mock up and installation.

1.08 CLOSEOUT SUBMITTALS

A. Maintenance Data: For stonework to include in maintenance manuals. Include product data for stone-care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.09 QUALITY ASSURANCE

A. Installer Qualifications: Engage who employs stonemasons and stone fitters with at least 5 years of experience and who have successfully completed stone installations similar in material, design, and extent to that indicated for Project.

1. Qualifications shall include evidence and experience of skilled craftsmen or individuals who specialize in the handling, placement, assembling and finishing the materials and products required for stone installation.

B. Fabricator Qualifications: Use a fabricator that employs skilled workers who fabricate stone masonry and has production facilities capable of producing stone shapes, sizes and finishes similar to those indicated for this Project and whose products have a record of successful in-service performance.

C. Testing Laboratory Qualifications: A third-party, independent ASTM certified testing laboratory not owned or operated by the stone material supplier, contractor or installing contractor.

D. Delegated Design Professional: A qualified Professional Engineer licensed in the state of New York.

E. Source Limitations for Stone: Obtain each variety of stone, regardless of finish, from one quarry with resources to provide materials of consistent quality in appearance and physical properties.

F. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component or system and from single source or producer for each aggregate.

G. Slip Resistance Evaluation: Stone surfaces expected to be walked on when wet shall be tested in accordance with ASTM E303 to meet a minimum British Pendulum Number (BPN) of 45.

1. Testing shall be performed on contractor supplied samples of the approved finished walking surface of each type of stone used for step units in the following locations:
   a. Laboratory:
      1) Test results shall be submitted during the sample submittal process for material approval.
      2) Testing shall be performed by testing laboratory. Reports shall Include identification of the finished samples and test results. Product literature will not be accepted. The cost of testing and reporting shall be paid for by the Contractor.

b. Field (1):
   1) Mockup areas.
   2) Test reports for surface evaluation of at least three step units of each stone type shall be performed by a testing laboratory. Include identification of the materials, areas tested with photographs and results.

c. Field (2):
   1) At completion of the work on at least three step units of each stone type that were not tested as part of the mock up areas. Reporting as above.
   2) The cost of testing for Field (1 and 2) testing and any necessary retesting and reporting shall be paid for by the Contractor.

H. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Stone Repair Mock-Ups: For both salvaged and new stone, demonstrate repairs of chipped edges and filled holes. Show anticipated range of repair variation.
   a. Engineer reserves the right to reject repaired units that do not comply with requirements.
   b. Develop appropriate repair mixtures and techniques during production sample approval process.
   c. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 10 feet.
2. Flood wall adjacent to MJH Building: Build a 5-foot wide by full height of the flood wall veneer as shown on the approved shop drawings for review and approval showing full size and thickness of masonry including anchoring, mortar backup, and jointing. Include cap stone over full width of mockup showing interface with glass element.
3. Type A Stone Clad Flood Protection Wall at MJH: Build full height wall, 10-foot minimum length immediately adjacent to concrete wall installed under construction contract 3, as shown on the Drawings and approved Shop drawings for review and approval showing full size and thickness of masonry veneer including anchoring, mortar backup, jointing and interface with railing post installation
4. Flood Wall at South Allee: Build full height wall, 10-foot minimum length, as shown on the Drawings and approved Shop drawings for review and approval showing end condition with full size and thickness of masonry veneer and capstone including anchoring, mortar backup, jointing and interface with integrated flip gate metal panel.
5. Stone clad seat walls with wood:
   a. Stone Seatwall without back at Museum Oval Lawn Area:

1) Minimum length of 10 feet, including solid end units and full width of horizontal wood seat slats and integrated lighting, showing full jointing and skatestop installations.

b. Stone Seatwall With Wooden Slats at Wagner Park:

1) Minimum length of 10 feet, full width of wood seat slats and integrated lighting and tapering seat back and horizontal seat slat transition showing full jointing and skatestop installations.

6. Salvaged Stone Plinths at Lawn and Stair Areas: show actual stone layout and stacking order without infill or pinning joints. Location of the mockup shall be determined by the Engineer and the Landscape Architect prior to the start of the mock-up.

7. Build a mockup of three full size stair stone units within the area showing setting bed, jointing, and skateboard deterrent elements. Location of the mockup shall be determined by the Engineer and the Landscape Architect prior to the start of the mockup. Complete slip resistance testing in this location as indicated in Quality Assurance Article of this specification. Submit test results.

8. Replacement of Stone at MJH Building Facade: Provide full size, in-place mock-up of stone installation including wall veneer in two units along the building face including cap stone, jointing, sealant, waterproofing and other incidental repairs as required for a complete installation. Acceptable mock-up may remain in-place as part of completed work as approved by the Engineer.

9. Protect accepted mockups from the elements with weather-resistant membrane.

10. Approval of mockups is for color, texture, and blending of stone; relationship of mortar and sealant colors to stone colors; tooling of joints; and aesthetic qualities of workmanship.

a. Approval of mockups is also for other material and construction qualities the Engineer and Landscape Architect specifically approves in writing.

b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer and the Landscape Architect specifically approves such deviations in writing.

11. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

I. Pre-installation Conference: Conduct conference at Project site.

1.10 DELIVERY STORAGE AND HANDLING

A. Coordinate with Construction Manager for location of material storage and staging.

B. Deliver materials to Project site in undamaged condition.

C. Store and handle stone and related materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, or other causes.

D. Store aggregates where gradation and other required characteristics can be maintained and contamination avoided.

E. Deliver pre-blended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store pre-blended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

F. Do not use cementitious materials that have become damp.

G. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.11 PROJECT CONDITIONS

A. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed stone masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place to prevent weather from displacing cover.

B. Stain Prevention: Immediately remove mortar and soil to prevent them from staining the face of stone masonry.

1. Provide cover secured in place to protect base of walls from rain-splashed mud and mortar splatter by coverings spread on the ground and over the wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at end of each day to prevent rain from splashing mortar and dirt on completed stone masonry.

C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace stone masonry

damaged by frost or freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, for a minimum of 7 days after completing cleaning.

D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1.12 COORDINATION

A. Coordinate construction of and field measurement of completed concrete substrates to receive stonework.

B. Coordinate the installation of available site salvaged stone masonry with the installation of stone masonry as indicated on the drawings and approved shop drawings, including on- or off-site modification of site salvaged stone masonry.

C. Coordinate the labeling of stone units shipped to the site with the unit labels shown on the approved shop drawings.

D. Coordinate the production and shipping of stone to the site in in a manner that allows for progressive completion of work areas without gaps in completion or delays that will impact the completion of work by other trades.

E. Coordinate installation of stonework with work by other trades including skate stops, light pole foundations and anchor bolts, conduits railing and guardrail work, including necessary detailing of attachments into or through stone units or or anchorages through stone into or onto concrete substrates.

PART 2 - PRODUCTS

2.01 DESIGN INTENT

A. Maximize the use of site salvaged stone in the installation of work of this section.

1. Modify site salvaged stone as required on- or off-site as necessary at no additional cost to the owner.

2. Supplement site salvaged stone with new stone to match adjacent site salvaged materials of the same type same type as specified herein if site salvage quantities are insufficient or cannot be modified to achieve the available the indicated shape of size masonry indicated on the drawings.

B. Design Intent MJH Building Facade:

1. Match grain, pattern and directionality of existing stone and stone jointing at building face. Salvaged stone may be re-used if un-damaged during removals, as approved by the Engineer.
2. Review building construction documents as required to become familiar with original proposed installation. Match, to the extent possible, proposed installation to original proposed installation and as approved by the engineer.
3. Mortar: provide color selection from manufacturer's full range of standard and custom colors for selection by the Engineer.

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design masonry attachments to concrete floodwall sufficient to support the weight and position of the stone veneer and capstones under anticipated storm surge conditions as outlined in the Engineering Basis of Design.

2.03 MANUFACTURERS

A. Source Limitations for Stone: Obtain each variety of stone, regardless of finish, from single quarry, whether specified in this Section or in another Section of the Specifications, with resources to provide materials of consistent quality in appearance and physical properties.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of uniform quality for each cementitious component from single manufacturer and each aggregate from single source or producer.

2.04 APPLICATIONS/SCOPE

A. The Drawings and Specifications establish requirements for aesthetics and performance of cut stone assemblies. Aesthetics are indicated by dimensions, color range, arrangement, alignment and profiles of components and assemblies as they relate to sight

lines and relationships to one another and to adjoining work. Performance is indicated by requirements specified.

B. Aesthetics, are subject to the Engineer's and Landscape Architect's approval and only to the extent exclusively needed to comply with performance requirements. Where modifications are proposed, submit data to the Engineer and Landscape Architect for review and approval.

2.05 STONE, GENERAL

A. Stone Materials: Standard grade, free of crack or seam which may impair its structural integrity or function and shall comply with industry standards and practices specified.

2.06 GRANITE

A. Granite: Comply with ASTM C615/C615M and NBGQA "Specifications for Architectural Granite Part 2 Materials".

1. Stone Type A:
   a. Size and Shape: As indicated on the Drawings.
   b. Color and Grain: Polycor Jet Mist, color and pattering to match existing Jet Mist paver color at the Museum of Jewish Heritage for Contract Area 2 and Battery Place Wall for Contract Area 3 as approved by the Landscape Architect.
   c. Quarry Source Location: Subject to meeting the requirements, Elverson, PA.
   d. Finish:
      1) Exposed Faces: As indicated on the Drawings.
      2) Concealed Faces: Sawn.
2. Stone Type B:
   a. Size and Shape: As indicated on the Drawings.
   b. Color and Grain: color and pattering to match existing Fletcher Granite Tapestry along the esplanade and within Wagner Park
   c. Quarry Source Location: Subject to meeting the requirements, Milford, NH.
   d. Finish:
      1) Exposed Faces: As indicated on the Drawings.
      2) Concealed Faces: Sawn.
3. Stone Type C: see article 2.07 Marble
4. Stone Type D:
   a. Size and Shape: As indicated on the Drawings.
   b. Color and Grain: Polycor Stanstead Gray
   c. Quarry Source Location: Stanstead, Quebec, Canada.

d. Finish:
1) Exposed Faces: As indicated on the Drawings.
2) Concealed Faces: Sawn.

5. Stone Type E:
a. Not Used.

6. Stone Type F
a. Size and Shape as indicated on the Drawings.
b. Color and Grain: St. Henry Black.
c. Quarry Source Location: Saint-Henri-de-Taillon, Quebec, CA.
d. Finish:
1) Exposed Faces: As indicated on the Drawings.
2) Concealed Faces: Sawn.

2.07 MARBLE

A. Marble: Comply with Marble: ASTM C503/C503M
1. Stone Type C:
a. Size and Shape: As indicated on the Drawings.
b. Color and Grain: Polycor Pearl Gray.
c. Quarry Source Location: Tate, GA.
d. Finish:
1) Exposed Faces: As indicated on the Drawings.
2) Concealed Faces: Sawn.

2.08 MORTAR MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride.
2. Limit cementitious materials in mortar to Portland cement and lime.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Comply with referenced standards and with manufacturers' written instructions for mix proportions, mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortar of uniform quality and with optimum performance characteristics.

C. Mixing: Combine and thoroughly mix cementitious materials, water, and aggregates in a mechanical batch mixer, unless otherwise indicated. Discard mortar when it has reached initial set.

D. Mortar Setting Bed - Non-staining sand mixed with liquid latex additive in quantity recommended by manufacturer.

E. Performance Requirements: Compressive Strength 4,000 psi min.

F. Pre-blended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a pre-blended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

G. Mortar Pigment: Comply with ASTM C-979, inert, stable to atmospheric conditions, sunfast, weather resistant, alkali resistant, water insoluble, lime proof, nonbleeding natural and synthetic iron oxides, free of deleterious fillers and extenders.

H. Mortar for Stone Masonry: Comply with ASTM C 270, Proportion Specification.

1. Mortar for Setting Stone: Type S below grade, Type N above grade.
2. Mortar for Pointing Stone: Type N.

I. Latex-Modified Portland Cement Setting Mortar: Flexible polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007. Proportion and mix Portland cement, aggregate, and latex additive to comply with latex-additive manufacturer's written instructions.

1. Manufacturers: Subject to compliance with requirements, provide products by:

a. Quikrete; Deck Mud with Concrete Acrylic Fortifier.
b. Latircrete International, 3701 Fortified Mortar Bed.
c. MAPEI Corp, Kerabond/Keralastic System.

J. Cement-Paste Bond Coat: Mix either neat cement and water or cement, sand, and water to a consistency similar to that of thick cream.

1. For latex-modified Portland cement setting-bed mortar, substitute latex admixture for part or all of water, according to latex-additive manufacturer's written instructions.

K. Water: Potable.

2.09 ANCHORS

A. Shapes and plates including anchors, dowels, lips, bolts, washers and shims:

1. Stainless Steel, Type 316, ASTM A240 and ASTM A276.

2.10 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene urethane or PVC.

B. Cementitious Dampproofing: Cementitious formulations that are non-staining to stone, compatible with joint sealants, and noncorrosive to veneer anchors and attachments.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Xypex Concentrate, as manufactured by Xypex Chemical Corporation 13731 Mayfield Place, Richmond, B.C., Canada. (800) 961-4477
   b. Approved Equal.

C. Weep Hole Products: Use one of the following unless otherwise indicated:

1. Wicking Material: Absorbent rope, made from UV-resistant synthetic fiber, 1/4 to 3/8 inch (6 to 10 mm) in diameter, in length required to produce 2-inch (50-mm) exposure on exterior and 18 inches (450 mm) in cavity behind stone masonry. Use only for weep holes.
2. Round Plastic Tubing: Medium-density polyethylene, 3/8-inch (10-mm) OD by thickness of stone masonry.
3. Rectangular Plastic Tubing: Clear butyrate, 3/8 by 1-1/2 inches (10 by 38 mm) by thickness of stone masonry.

D. Tread Warning Strip Infill: Black color epoxy resin base with black carborundum grit rated for exterior use.

E. Skate Stops: As specified in Section 323300.2 “Site Furnishings”.

2.11 MASONRY CLEANERS

A. Use cleaners as recommend by stone producer/manufacturer.

1. standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces

without discoloring or damaging masonry surfaces; expressly approved for intended use by both cleaner manufacturer and stone producer.

2.12 SALVAGED STONE FABRICATION

A. Cleaning: Clean dirty or stained stone surfaces by removing soil, stains, scuff marks, sealants, mortar and foreign materials.

1. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water.
2. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives. Test cleaning compounds on site salvaged stone that will not be reused to confirm cleaning methods will not stain or mar the surface finish.
3. Restore stone surface to match new or unblemished on-site stone of the same type to the extent possible.

B. Repairs: Fill holes, repair broken, chipped, stained, or otherwise damaged stone using methods approved by Landscape Architect as demonstrated in the stone repair mock-up.

C. Fabrication Requirements: Fabricate salvaged stone in accordance with requirements for new stone fabrication.

1. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and approved shop drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated.
2. Use power saws to cut stones; for exposed edges, produce edges which are cut straight and true with edges eased slightly to prevent snipping.
3. Mallet and chisel cutting will be permitted provided craftsmen are skilled in their use.
4. Match new exposed edge color and finish with the finish of original exposed edges. Conceal sawn edges.

D. Modification of Site Salvaged Stone: On-site modification of site salvaged stone is limited to straight cuts or perpendicular drilling using appropriate power-driven tools and jigs that will produce clean, squared-off edges or controlled holes for attachments. For all other types of modification, use off-site, shop-completed modification using appropriate power tools that will produce clean, shapes, edges, profiles and finishes as indicated.

2.13 NEW STONE FABRICATION

A. Fabricate stone to comply with sizes, shapes, and tolerances recommended by applicable stone association.

1. For granite, comply with recommendations in NBGQA's "Specifications for Architectural Granite Part 3."

B. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and approved shop drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated. Water jet cut curved stone.

C. Create incised text in stone with uniform depth, uniform texture, and cleanly cut edges.

D. Cut and drill sinkages and holes in stone for anchors and supports, skate stops, railing and guardrail posts, light poles, conduits, and wood slat attachments.

E. Carefully inspect stone at quarry or fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units before shipment.

1. Clean sawed backs of stone to remove rust stains and iron particles.

F. Stone Sizes and Shapes: Refer to Drawings.

G. Finish exposed faces and edges of stone to comply with requirements indicated on the Drawings for finish and to match approved samples, shop drawings and mockups.

2.14 FABRICATION TOLERANCES

A. Thickness less than 1 5/8 inch: Plus or minus 1/8 inch.

B. Thickness greater than 1 5/8 inch: Plus or minus 1/8 inch.

C. Panel face dimension: Plus or minus 1/16 inch.

D. Panel face variation from rectangular (maximum out of square): Plus or minus 1/16 inch.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine surfaces indicated to receive stone masonry, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine substrate to verify that dovetail slots, inserts, reinforcement, veneer anchors, flashing, and other items installed in substrates and required for or extending into stone masonry are correctly installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coat concrete and unit masonry backup with cementitious dampproofing in accordance with the manufacturer's written instructions, including wet curing of dampproofing material.

B. Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.03 SETTING OF STONE MASONRY, GENERAL

A. Furnish as if called for on the Drawings and approved Shop Drawings at no additional cost any item of labor or equipment not specified in detail by the specifications or indicated on the Drawings or which is incidental to or necessary to complete the scope of work indicated or reasonably implied.

B. During installation, protect adjacent planting soil areas and plants from damage. Shield plants and planting soils from dust, debris or liquid contamination related to masonry trimming, cutting, or installation.

C. Erect stone in accordance with industry standards and approved shop drawings. Setting and handling shall be done by competent setter, riggers, and handlers, thoroughly experienced in work of this type and scope.

D. Set stone in accordance with approved setting drawings. Provide anchors, supports, fasteners and other attachments shown or necessary to secure stonework in place and keep stone in level, plumb and square position with uniform joints.

E. Sort stone before it is placed to find and remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.

F. Arrange stones with color and size variations as indicated on approved shop drawings or, where multiple units of the same size and shape occur, uniformly dispersed for an evenly blended appearance.

G. Completely fill holes, slots and other sinkages for anchors with mortar or caulking during setting of stone.

H. Use skilled mechanics and skilled stone fitters at the site to do necessary field cutting as stones are set.

1. Use power saws to cut stones; for exposed edges, produce edges which are cut straight and true with edges eased slightly to prevent snipping.
2. Mallet and chisel cutting will be permitted provided craftsmen are skilled in their use.

I. Provide chases, reveals, reglets, openings and other spaces as indicated for accommodating contiguous work. Close up openings in stonework after other work is in place with stonework which matches that already set.

J. Set stones to comply with requirements indicated on drawings and shop drawings. Install anchors, supports, fasteners and other attachments indicated or necessary to secure stonework in place to comply with requirements indicated on Drawings and approved shop drawings. Adjust anchors, supports shims and accessories to set stone accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances. Set stone with the minimum number of shims.

K. For stones supported on clip or continuous angles, set stones on non-corrosive and non-staining shim material in sufficient area to support the load. Mortar may be used in lieu of shims provided that setting pads are provided to maintain joint sizes if stone weight squeezes out mortar.

L. Place setting buttons of adequate size, in sufficient quantity, and of same thickness as indicated joint width, to prevent mortar from squeezing out and to maintain uniform joint widths. Hold buttons back from face of stone to provide space for backer rope and sealant.

M. The joint between bottom of relieving angles and top surface of stones below angles shall be free of mortar or shims to avoid load transfer.

N. Keep cavities open where unfilled space is indicated between back of stone veneer and backup wall; do not fill cavities with mortar or grout.

O. Provide expansion and contraction joints, control joints and pressure-relieving joints of widths and at locations indicated or required. Expansion joints shall not be covered with mortar or other rigid material. Expansion joint are to be located prior to cutting and setting anchors.

P. Maintain uniform joint width of 3/8 inch.

Q. Provide sealant joints of widths and at locations indicated.

1. Keep sealant joints free of mortar and other rigid materials.
2. Sealing joints is specified in Section 321373 "Landscape Joint Sealants."

R. Install embedded metal work and weep holes at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

S. Place weep holes and vents in joints where moisture may accumulate, including at base of cavity walls, above shelf angles, and at flashing.

1. Form weep holes.
2. Use wicking material to form weep holes above flashing in stone sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
3. Space weep holes 24 inches on center.
4. Trim wicking material used in weep holes flush with outside face of wall after mortar has set.
5. Place pea gravel in cavities as soon as practical to a height of not less than 2 inches above top of flashing, to maintain drainage.
6. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.

T. Install skate stops as indicated in Section 323300.2 “Site Furnishings”.

3.04 INSTALLATION OF SALVAGED OR NEW STONESTONE AT MJH BUILDING

A. Clean stone surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

B. Replace stone, where possible, with salvaged or with new stone matching existing stone, including size, grain, and grain directionality. Do not use broken stone units unless they can be cleanly cut to usable size.

C. Install replacement stone in the pattern and module of existing stone. If cutting is required, use a motor-driven saw designed to cut stone with clean, sharp, unchipped edges.

1. Maintain joint width for replacement units to match existing joints. Use setting buttons or shims to set units accurately spaced with uniform joints.

D. Install replacement stone in a manner that matches existing stone installation and detailing.

1. Install stone attachments with fasteners, weeps and other miscellaneous hardware as required.
2. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
3. When mortar is sufficiently hard to support units, remove shims and other devices interfering with pointing of joints.

3.05 INSTALLATION OF NON-CAVITY WALLS

A. Anchor stone masonry with the type, number of anchors, to depths and at spacings shown on the approved delegated design shop drawings.

B. Set stone in full bed of mortar with full head joints unless otherwise indicated. Fill cavity with mortar as stone is set and allow each course to dry before filling the next. Build anchors into mortar joints as stone is set. Between stones held initially by shims, force mortar into joints completely filling voids. Use sufficient setting mortar so a slight excess will be forced out the edges of stone units as they are set.

C. Rake out joints for pointing with mortar to depth of not less than 3/4 inch (19 mm) before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

3.06 POINTING

A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch (10 mm) deep until a uniform depth is formed.

B. Point stone joints by placing and compacting pointing mortar in layers not more than 3/8 inch (10 mm) deep. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.

C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:

1. Joint Profile: Concave, or smooth, flat face slightly below edges of stone or smooth, flat face recessed 1/4 inch (6 mm) below edges of stone.

3.07 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet) or more.

B. Variation from Level: Do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet or more.

C. Variation of Line: For position shown in plan, do not exceed 1/2 inch in 20 feet or 3/4 inch in 40 feet or more.

D. Measure variation from level, plumb, and position shown in plan as variation of the average plane of the face of each stone from level, plumb, or dimensioned plane.

E. Variation in Stone Joint Thickness: Not less than 1/4 inch at narrowest points or more than 1/2 inch at widest points.

3.08 POST-INSTALLATION TESTING

A. Complete post-installation slip resistance testing in this location as indicated in Quality Assurance Article of this specification in locations as directed by the Engineer and Landscape Architect.

B. Submit testing results.

3.09 REPAIRING

A. Remove and replace stone masonry of the following description:

1. Broken, chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Landscape Architect.
2. Defective joints.
3. Stone masonry not matching approved samples and mockups.
4. Stone masonry not complying with other requirements indicated.

B. Replace in a manner that results in stone masonry matching approved samples and mockups, complying with other requirements, and showing no evidence of replacement.

3.10 PROTECTING

A. Protect during construction with non-staining kraft paper. Where masonry work is adjacent construction vehicle access, cover stone work faces with a minimum of 3/4- inch (20-mm) untreated plywood over non-staining kraft paper.

B. Protect and maintain installed stone work through construction period.

C. Remove protection for Substantial Completion inspection.

3.11 CLEANING

A. Dispose of masonry packaging, protection, support, wrapping and other miscellaneous materials.
   1. Comply with Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.

B. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.

C. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:

D. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   1. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes. Obtain Landscape Architect's approval of sample cleaning before cleaning stone masonry.
   2. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
   3. Clean stone masonry by bucket and stainless steel brush hand-cleaning method described in BIA Technical Note No. 20 Revised II, using job-mixed detergent solution.
   4. Only clean stone masonry with proprietary acidic cleaner if approved by manufacturer's written instructions.

3.12 REMOVING EXCESS MATERIALS AND WASTE

A. Removal: Remove excess material off site and legally recycle or dispose.

1. Comply with Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.

END OF SECTION 044300.2

SECTION 311313.2 – SELECTIVE TREE REMOVAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Removal of existing trees owned by NYC Parks within the NYCDOT right of way and on NYC Parks land as indicated on the Drawings, including the stump and roots to a depth of three (3) feet below the surface.
2. Obtaining a Tree Work Permit
3. Notification about and coordination of work with NYC Parks representatives.

B. Related Requirements:

1. Section 015639.4 "Temporary Tree and Plant Protection" for protection of trees and plants to remain.
2. Section 311100 "Clearing and Grubbing" for removal of trees not owned by NYC Parks.
3. Section 311316.4 "Selective Tree Pruning, Fertilizing and Decompaction" for work performed on or around temporarily protected trees and plants to remain.

1.03 INFORMATIONAL SUBMITTALS

A. Submit Tree Work Permit prior to the start of work.

B. Submit Pre-Construction Meeting Record.

1.04 QUALITY ASSURANCE

A. Work of this section shall be subject to review and adjustment as directed by the Engineer and New York City Parks.

1. Obtain a Tree Work Permit.
2. Contractor shall provide notice to NYC Parks prior to the start of work of this section.

3. Contractor shall immediately correct, repair, or replace damage caused by work of this section upon notification by the Engineer or a NYC Parks representative.

B. Removal of trees shall be done by competent workmen only and in workmanlike manner.

1.05 PRE-CONSTRUCTION MEETING

A. Prior to the start of tree and plant protection work, conduct an on-site meeting with the Construction Manager, Engineer, Contractor, sub-contractor and representatives of NYC Parks to discuss tree work within the park including:

1. Confirm Tree Work Permits have been issued.
2. Review and discuss the tree mitigation drawings and specifications
   a. Tree and plant protection
   b. Tree removals
   c. Tree Pruning, Fertilizing and Decompaction
3. Walk the site and observe existing conditions and proposed work.
4. Note adjustments requested by NYC Parks
5. Discuss dates of proposed work and notification procedures to ensure NYC Parks representatives are scheduled to be on site as required.
6. Prepare a record of the meeting including:
   a. Meeting time and date
   b. List of attendees
   c. Items discussed including:
      1) Requested adjustments to tree mitigation plans, including sketches if required.
      2) Dates for proposed work
      3) Work notification procedures.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to the start of work:

1. Obtain tree work permits from NYC Parks.
2. Notify in advance the Construction Manager, the Engineer and NYC Parks of the anticipated date of removal operations.
3. Walk the site with the Engineer and a NYC Parks representative, identifying and confirming each tree indicated for removal.

3.02 PREPARATION

A. Carefully protect against damage existing trees, plants and other features to remain.

B. Tie up out of harm's way branches of trees, shrubs and plants that may be damaged by tree removal operations

C. Contractor is liable for any damage to such trees, plants, park features and other property caused by Tree Removal operations. Damaged property shall be replaced or restored to its original condition to the satisfaction of the Engineer.

3.03 TREE REMOVAL

A. Cut and remove all trees designated for removal.

B. Remove stumps and roots of trees to a depth of three (3) feet below the ground surface.

C. "Top" and "Limb" trees prior to felling unless otherwise directed by the Engineer.

D. Remove all branches, limbs, trunks, stumps, roots and other debris from the site and legally disposed.

   1. Chipping of branches, limbs and trunks, stumps and roots for use as tree protection only at the discretion of the Engineer.

E. Backfill voids and excavations left after removal of the tree and roots with clean earth fill. Chips generated by root removal operations shall be removed prior to backfilling.

F. Place and compact fill by acceptable methods to the satisfaction of the Engineer.

G. Untie branches and remove ties from branches that no longer require protection from subsequent construction activities.

3.04 CLEANING

A. Clean the site of tree removal debris and legally dispose.

B. Clean the site of loose soil and sweep pavements clean.

END OF SECTION 311313.2

SECTION 311316.2 - SELECTIVE TREE PRUNING, FERTILIZING & DECOMPACTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Preparatory tree pruning as shown on the drawings.
2. Supplemental tree pruning, fertilizing and decompaction as may be directed by NYC Parks representatives during work.
3. Obtaining Tree Work Permit.
4. Notification about and coordination of work with NYC Parks representatives.

B. Related Requirements:

1. Section 015639.4 "Tree and Plant Protection".
2. Section 311313.4 "Tree Removal".

1.03 ACTION SUBMITTALS

A. If fertilizer or compost is required provide fertilization methods & materials:

1. Submit proposed materials and methods for each individual tree scheduled to be fertilized under this item for approval by the NYC Parks Arboriculture and Horticulture Unit.

a. For material substitutions, a written request must be submitted to NYC Parks Arboriculture and Horticulture Unit, copy to the Engineer.

b. Submit this request, along with manufacturer’s data sheets for approval, a minimum of two weeks prior to the intended date of application.

c. Do not start work or utilize materials without written approval.

B. If required, compost sample: Submit one (1) pound sample of compost, labeled with company name and test results.

1. Furnish a certified report of an approved analytical chemist showing the mechanical and chemical analysis of representative samples of the compost they propose to use.

2. All samples are to be taken by the Engineer and delivered to the Contractor's Soil Testing Laboratory. Contractor shall pay for compost testing as required to obtain approvals.

3. No compost shall be delivered until the approval of samples by the Engineer, but such approval does not constitute final acceptance. The Engineer reserves the right to reject, on or after delivery, any material which does not, in their opinion, meet these specifications. When compost is stored on the job, it shall be done as directed by the Engineer.

1.04 INFORMATIONAL SUBMITTALS

A. Arborist Qualifications: Submit prior to the start of work.

1. Submit for approval, name, and qualifications of the proposed tree care sub-contractor. The Contractor shall submit the following:

a. Proof of three (3) years of non-utility pruning experience or I.S.A. certification with documented non-utility pruning experience.
b. Documentation of eight (8) hours of required education or I.S.A. certification.
c. Name, address, and phone numbers for three (3) professional references associated with non- utility pruning work performed within the past three (3) years.
d. State Certification: Submit a copy of a valid Compliance Agreement issued by the State of New York Department of Agriculture and Markets, Division of Plant Industry. The arborist shall meet the qualifications listed on the first page of this item under QUALITY ASSURANCE herein.

1) Verification of certification, qualifications, and references must be submitted to the NYC Parks Arboriculture and Horticulture Supervisor for approval prior to performing any work.

B. Tree Work Permit: Submit prior to the start of work.

C. Submit Pre-Construction Meeting Record prior to the start of work.

1.05 QUALITY ASSURANCE

A. Perform Work of this section under the direct, full-time, on-site supervision of an approved Arborist.

B. Arborist Qualifications:

1. All pruning of limbs and roots must be performed by a qualified arborist, trained in proper pruning techniques, tree biology, diagnosis and treatment of plant diseases, and cabling and bracing. The tree care sub/Contractor shall have a minimum of three (3) years' experience performing non-utility pruning as well as documentation of eight (8) hours of education in any combination of the specialties listed above. Certification by the International Society of Arboriculture (I.S.A.), Champaign, IL shall be considered proof of the requisite experience and educational requirements, provided that experience is in non-utility pruning.

C. Work of this section shall be subject to review and adjustment subject to the approval and direction of the NYC Parks Director of The Arboriculture and Horticulture Unit and as directed by the Engineer.

1. Obtain a Tree Work Permit.
2. Provide notice to NYC Parks prior to the start of work of this section.
3. Immediately correct, repair, or replace work of this section upon notification by the Engineer or a NYC Parks representative.

D. Pruning Standards: All work shall be performed in a professional manner and in accordance with the most current revision of the American National Standards for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance and Standard Practices, A-300-(Part 1) Pruning, published by the American National Standards Institute (ANSI).

1.06 PRE-CONSTRUCTION MEETING

A. Prior to the start of tree and plant protection work, conduct an on-site meeting with the Construction Manager, Engineer, Contractor, Sub-contractor, approved proposed Arborist and representatives of NYC Parks to discuss tree work within the park including:

1. Confirm Tree Work Permits have been issued.
2. Review and discuss the tree mitigation drawings and specifications
   a. Tree and plant protection
   b. Tree removals
   c. Tree Pruning, Fertilizing and Decompaction
3. Walk the site and observe existing conditions and proposed work.
4. Note adjustments requested by NYC Parks
5. Discuss dates of proposed work and notification procedures to ensure NYC Parks representatives are scheduled to be on site as required.
6. Prepare a record of the meeting including:
   a. Meeting time and date
   b. List of attendees
   c. Items discussed including:

1) Requested adjustments to tree mitigation plans, including sketches if required.
2) Dates for proposed work
3) Work notification procedures.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Fertilizer: Dry, water-soluble micronutrient treatment that includes beneficial rhizosphere bacteria such as, BioPak Plus, as manufactured by Plant Health Care, Inc., Pittsburgh, PA, or approved equal, with the following composition by weight:

1. Nitrogen-three (3%), percent
2. Phosphate-zero (0%) percent
3. Potassium-twenty (20%) percent,
4. Magnesium-one and one-half (1.5%) percent
5. Sulfur — four (4%) percent
6. Boron-two one-hundredth (0.02%) percent
7. Iron — seven (7%) percent,
8. Manganese — two tenths (0.2%) percent
9. Zinc — two tenths (0.2%) percent.

B. Mycorrhizal Fungi Inoculant: A combination inoculant containing mycorrhizal fungi (both ecto- and VAM) and beneficial rhizosphere bacteria such as “Injectable for Trees” as manufactured by Plant Health Care, Inc., Pittsburgh, PA, or approved equal, with the following guaranteed analysis of soil amending ingredients:

1. Ectomycorrhizal fungi: one hundred and seventy-eight billion (1,780,000,000) spores per one pound
2. Vesicular Arbuscular Endomycorrhizal (VAM) Fungi: eighty thousand (80,000) spores per one pound
3. Microbial Content: twenty-four billion (24,000,000,000) colony forming units (cfu) per one pound
4. Humic acids: fifteen and eight-tenths percent (15.8%)
5. Microbial Nutrients: sixty-eight and nine-tenths percent (68.9%)

C. Wetting agent and Soil penetrant: 90% derived from *Yucca schidigera* such as Yuccah, as manufactured by Plant Health Care, Inc., Pittsburgh, PA, or approved equal, with the following guaranteed analysis percent by weight: Yucca schidigera plant extract — ninety percent (90%) and Copolymerized alkane oxides (non-ionic surfactant) — ten percent (10%).

D. Compost: shall contain organic matter, or material of generally humus nature capable of sustaining the growth of vegetation, with no admixture of refuse or material toxic to

plant growth. The Compost shall be free of pathogens and stones, lumps, or similar objects larger than two inches (2") in greatest diameter, as well as roots, brush, and weeds.

1. Composts that have been derived from organic wastes such as food and agriculture residues, animal manures, and sewage sludge that meet the above requirements, and are approved by the New York State DEC, are acceptable compost sources. Compost shall have an approximate N-P- K analysis of at least 1-1-0 as delivered, with a pH between 5.5 and 8.0 and a solids content of at least fifty percent (50%). Compost shall have a minimum of twenty-five (25%) to a maximum of fifty percent (50%) organic material.

2. Compost shall be from Long Island Compost, Islip, NY or "Nature's Choice Compost" by Nature's Choice Corp., Union, NJ, or Agresoil compost by Agresource, Inc. Amesbury, MA or approved equal.

3. Organic biosolids are not acceptable. Compost available from NYC Department of Sanitation may be acceptable for purposes of this specification. See www.nyc.gov/sanitation or www.nyccompost.org for pick-up sites.

PART 3 - EXECUTION

3.01 NOTIFCATION PRIOR TO THE START OF WORK

A. The Contractor shall notify the NYC Parks Arboriculture and Horticulture Unit by email at Capital.Arb-Hort@parks.nyc.gov a minimum of 48 hours in advance of any work on, or impacting, existing trees.

3.02 PREPARATORY TREE PRUNING

A. No trees shall be pruned except as directed by the NYC Parks Director of The Landscape Construction Unit or his designated representative. Before pruning an arborist or arborist trainee shall visually inspect each tree before beginning work. If a condition requiring attention beyond the original scope of the work is observed, the condition shall be reported to the Director of The Landscape Construction Unit or his designated representative.

B. All work shall be performed by skilled persons directly employed and supervised by the approved sub-contractor.

C. The approved Arborist and the Contractor or their authorized representative must be present at the work site at all times while work is being performed to receive and promptly execute all orders and/or directions of the Director of Landscape Construction Unit or his designated representative. The aforementioned provision shall be obeyed

irrespective of whether the work is being performed by the Contractor or a Subcontractor.

D. Equipment, tools, and work practices that damage living tissue and bark beyond the scope of normal work shall be avoided. Pruning tools shall be sharp to avoid unnecessarily damaging tissue. Climbing spurs shall not be used when entering and climbing trees for the purpose of pruning, except when branches are more than throw-line distance apart and there is no other means of climbing.

E. Pruning of the crown shall be performed in such a manner as to maintain the shape of the particular species and the balance and symmetry of the tree in general while retaining as much fine growth as possible. Live branches or limbs 4-inches in diameter and larger shall not be removed without the written permission of the NYC Parks Director of The Landscape Construction Unit or his designated representative. On trees known to be diseased or where there is known danger of transmitting disease, tools are to be disinfected with wood alcohol after each cut and after completion of each tree.

F. A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch without cutting into the branch bark ridge or branch collar or leaving a stub. A pruning cut that reduces the length of a branch or parent stem shall be made at a slight downward angle relative to the remaining stem and not damage the remaining stem. Smaller cuts shall be preferred. When pruning to a lateral, the remaining lateral branch shall be large enough to assume the terminal role. A cut that removes a branch with a narrow angle of attachment shall be made from the outside of the branch to prevent damage to the parent branch. The final cut shall result in a flat surface with adjacent bark firmly attached. When removing a dead branch, the final cut shall be made just outside the collar of living tissue. Wound treatment shall not be used to cover wounds or pruning cuts, except when necessary for disease, insect, mistletoe, or sprout control, or for cosmetic reasons. Wound treatments that are damaging to tree tissue shall not be used. When tracing wounds, only loose, damaged tissue shall be removed.

G. Perform pruning to avoid damage to other parts of the tree or other vegetation within proximity of the tree being pruned. Pre-cut branches too large to support with one hand to avoid splitting of the wood or tearing of the bark. Where necessary, use ropes or other equipment to lower large branches or portions of branches to the ground. Carefully protect from damage existing vegetation, site features, and all other property which is to remain. The Contractor shall be liable for any and all damage resulting from tree pruning operations and shall be responsible for the replacement or restoration of same where damaged, at the direction of and to the satisfaction of the Engineer.

H. Pruning shall occur for, but not be limited to, the following situations:

1. Interference with new fences, lights, or utilities,
2. To achieve the required clearance for pedestrian or vehicular passage.

I. Pruning objectives shall be defined as, but are not limited to; Structural, Restoration, Cleaning, Raising, Reducing, and Thinning. Defined as the following and as directed by the NYC Parks Director of Landscape Construction Unit:

1. Structural Pruning: Shall consist of selective pruning to improve tree and branch architecture primarily on young-and medium-aged trees by selecting a dominant leader and removing or reducing competing leaders, removing intertwining branches, interfering, overextended, defective, weak, and poorly attached branches shall be removed or reduced

2. Restoration Pruning: Shall consist of selective pruning to redevelop structure, form, and appearance of severely pruned, vandalized, or damaged trees.

3. Cleaning: Shall consist of pruning to remove branches that are dead, diseased, insect infested, and/or broken 1.5-inches in diameter and larger throughout the entire tree canopy, as well as vines and other invasive vegetation.

4. Raising: Shall consist of pruning to provide vertical clearance. All branches shall be removed to a height sufficient to permit free passage of both pedestrian and vehicular traffic, approximately eight-foot (8') clearance for paths and fourteen feet (14') for roadways, as directed by the Director of the Landscape Construction Unit. In lifting the bottom branches of trees for under clearance, care shall be given to maintain symmetrical appearance.

5. Reducing: Shall consist of pruning to decrease the canopy height and/or spread as directed by the Director of Landscape Construction or his representative.

6. Thinning: Shall consist of selective pruning to reduce the density of live branches in an attempt to permit establishment of grass, ground cover, and other plant material, or for aesthetic considerations.

J. At no time shall more than 20% of a tree's live canopy be removed.

K. Remove and legally dispose of pruning debris.

1. If directed by the NYC Parks Director of The Landscape Construction Unit, pruned material may be chipped and spread as mulch to supplement “Protect existing tree roots with wood chips” item.
2. All other pruned material and debris shall be removed from the site of the contract within twenty-four (24) hours and legally disposed.

3.03 PREPARATORY TREE FERTILIZING

A. Fertilization shall be implemented after completion of construction operations and after removal of all ground protection and wood chips unless otherwise directed by the NYC Parks Landscape Construction Unit.

B. Rates of application shall follow manufacturers' recommendations based on tree DBH and fertilization area. Fertilizer safety precautions shall be followed for all products and used in accordance with the manufacturers' recommendations. Fertilizer ratios should be adjusted based on local knowledge, site conditions, species, age, and health of the tree. The fertilization area shall be defined prior to the application with consideration given to the root accessibility, root location, plant species, and site considerations.

C. In open lawn areas and areas where there is no root restricting infrastructure:

1. The fertilization area should be from near the trunk, no closer than 3 feet, to near or just beyond the drip line.

D. In areas where infrastructure has restricted or limited root growth and development:

1. The fertilization area shall be determined by either of two ways, which ever is greatest — Either the fertilization area should be the area of exposed soil within the dripline, or the fertilization area radius shall be determined by multiplying the DBH measured in inches, by 1 foot. For example, a 15-inch tree would have a fertilization area radius of 15 feet.

E. Surface Applications: Shall be used in instances where there is NO existing turf or ground cover and surface run off is NOT likely to occur. Fertilizer shall be uniformly distributed within the defined fertilization area and watered into the soil appropriately.

1. Sub-surface Fertilization applications shall be used in instances where turf or ground covers exist and surface runoff is likely to occur and performed with standard soil injection equipment. Damage to buttress should be avoided. Holes shall be evenly spaced within the the defined fertilization area. Liquid injection sites shall be spaced 12 — 36-inches apart and 4 — 8-inches deep, not to exceed 12-inches. The fertilizer shall be evenly distributed among the holes or injection sites and no closer than 2-inches to the soil surface.

3.04 DECOMPACTION

A. Where directed by NYC Parks representative, decompact existing trees to remain after completion of construction operations including excavation, paving, pruning, and backfilling. Decompaction shall be performed utilizing one of the three methods listed below as shown on the contract tree protection plan or as determined by the NYC Parks Landscape Construction Unit. All tree root protection shall be removed prior to starting decompaction and decompaction shall not be performed in frozen ground conditions.

1. Air-Tillinging of the Critical Root Zone Method: Using a pneumatic device, the area within a 3 to 5 foot radius of the tree stem, and specified on the Tree Protection Plan, is to be tilled to a depth of 6 to 8-inches using a compressed air gun. Compost backfill shall be applied to the area at a depth of 1-inch and tilled into the soil using a compressed air gun. The area shall be top dressed with four-

inches (4”) of shredded bark mulch and thoroughly watered (paid under a separate item).

2. Radial Trenching Method: Using a pneumatic device, narrow trenches, 18 to 24-inches wide, shall be cut in a radial pattern throughout the root zone. These trenches appear similar to the spokes of a wagon wheel. The trenches shall begin two (2’) feet from the trunk of the tree and between buttress roots to avoid cutting any major support roots. The trenches should extend at least as far as the dripline of the tree. The trenches shall be 8-12 inches in depth. Compost backfill shall be used to fill the trenches. Where required, fertilizer may be mixed with the compost and applied. The area shall be thoroughly watered after completion.

3. Vertical Mulching Method: Three inch (3") diameter holes shall be excavated 12” deep, spaced 30” on center in a grid pattern throughout the root zone of the tree. Proposed tools and methodology for this work must be submitted and approved by the NYC Parks Director of Landscape Construction or his or her designated representative. Compost backfill shall be used to fill the holes and the area shall be thoroughly watered after completion.

Tree DBH	Number of 3” Dia. Holes
0-6”	40
6-12”	60
12-18”	80
18-24”	100
24-30”	120
30-36”	160
36-42”	180
42-48”	200
Over 48”	220

B. Where a pneumatic device is required, work shall be performed with a device such as an Air-Spade CGP System, as manufactured by Concept Engineering Group, Inc. Verona, PA, or approved equal.

1. Provide a compressor unit for operating the pneumatic excavator rated at one hundred fifty standard cubic feet per minute (150 scfm) at ninety pounds per square foot gauge (90 psfg). Different nozzles may be used on the air spade to expedite the work or minimize the amount of airborne material.
2. Where a pneumatic device is used, care shall be taken to avoid rocks being scattered and inadvertently damaging private or public property.
3. Operators must be equipped with adequate protective clothing and gear, in accordance with manufacturer’s recommendations.
4. Tree roots exposed by the pneumatic or hand excavation operation must be kept constantly moist with burlap covered with white plastic and checked a minimum

of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the NYC Director of Landscape Construction Unit, or his designated representative.

C. Watering: Watering shall take place at one-week intervals for a period of three weeks following decompaction at a rate of 759 gallons per 1,00 square feet of decompacted area.

1. Engineer may order less watering based on weather conditions, resulting soil water content or other factors. If drought conditions warrant, the Engineer may order more frequent watering than scheduled or during non-scheduled periods. A watering schedule shall be submitted to the Engineer each week.
2. Watering for trees shall be conducted by dispersing water to plants individually. Water shall be delivered to each plant under low pressure through the end of an appropriate sized hose or watering wand, or soaker hose anchored by pins where appropriate. The rate of watering should allow maximum penetration of water into the soil and at a rate that does not displace mulch or soil, cause uprooting or exposure of plant root to the air or break saucers around plants that were created to hold water.
3. Water shall not be applied in a manner which damages plants, stakes or adjacent areas. Watering shall not cause uprooting or exposure of plant‘s roots to the air. Damages resulting from these operations shall be immediately repaired at the Contractor’s expense.
4. Where water is supplied from City hydrants, the Contractor shall obtain a hydrant permit from the NYC Department of Environmental Protection. The Contractor is responsible for keeping the permits current. To obtain a permit, the Contractor should bring a copy of their project contract with a general description of the hydrant location(s) they propose to access. The addresses of borough offices are: Manhattan: 1250 Broadway, 8th floor

D. If water is not available from NYC sources, the Contractor is responsible for supplying water from their own source at Contractor’s expense.

END OF SECTION 311316.2

PART 1 - SECTION 321400.2 - UNIT PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Asphalt-block pavers.
2. Precast concrete pavers.
3. Precast concrete detectable warning pavers, custom fabricated.
4. Granite detectable warning pavers.
5. Granite roadway curbs.
6. Installation of site salvaged stone paving units.
7. Edge restraints.
8. Slip resistance testing in laboratory and on site.

B. Related Requirements:

1. Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.
2. Section 018113 "Sustainability Requirements" for documentation of recycled material content for pavers.
3. Section 024200.2 "Site Material Salvaging" for salvaged stone paving and curbing units installed as part of the work of this section.
4. Section 044300 "Landscape Stone Masonry" for granite steps, planter area curbs and walls.
5. Section 321216 "Asphalt Paving" for asphalt base under unit pavers.
6. Section 321313 "Concrete Paving" for concrete base under unit pavers and for cast-in-place concrete substrate for unit pavers.
7. Section 321560 "Bonded Crushed Stone Surfacing" for mockups and installation of precast concrete and stone pavers within bonded crush stone surfacing.
8. Section 321373 "Landscape Joint Sealants" for landscape pavement, curb and

wall joint sealants.

1 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving ILFI Zero Carbon and WEDG Certification. Refer to Section 018113 - SUSTAINABLE DESIGN REQUIREMENTS for the Project's targets and specific requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the Project's sustainability goals and ILFI Zero Carbon or WEDG certification.

1.03 REFERENCE STANDARDS

A. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

B. The latest edition, as of the date of the executed construction contract, of referenced standards listed below applies to this contract.

1. American Concrete Institute (ACI)
   a. ACI 530 – Building Code Requirements and Specification for Masonry Structures and Companion Commentaries.
2. American Society for Testing Materials (ASTM)
   a. ASTM A185 – Welded Steel Wire Fabric for Concrete Reinforcement
   b. Mortars
   c. ASTM A606 – Standard Specification for Steel, Sheet and Strip, HighStrength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance
   d. ASTM C33 – Standard Specification for Concrete Aggregates
   e. ASTM C67ASTM C97 – Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
   f. ASTM C119 – Terminology Relating to Dimension Stone.
   g. ASTM C131 – Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
   h. ASTM C140 – Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.

i. ASTM C143 – Standard Test Method For Slump of Hydraulic Cement Concrete
j. ASTM C150 – Standard Specification for Portland Cement
k. ASTM C170 – Test Method for Compressive Strength of Dimension Stone.
l. ASTM C270 – Standard Specification for Mortar for Unit Masonry.
m. ASTM C615 – Specification for Granite Dimension Stone.
n. ASTM C616 – Standard Specification for Quartz-Based Dimension Stone.
o. ASTM C880 – Test Method for Flexural Strength of Dimensional Stone.
p. ASTM C936 – Standard Specification for Solid Concrete Interlocking Paving Units.
q. ASTM C989, Ground Granulated Blast-Furnace Slag for Use in Concrete.
r. ASTM D448 – Standard Classification for Sizes of Aggregate for Road and Bridge Construction
s. ANSI/ASTM D1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10 lb (4.54 Kg) Hammer and 18 inch (457 mm) Drop.
t. ASTM D2028 – Standard Specification for Cutback Asphalt (Rapid-Curing Type).
u. ASTM D3381 – Standard Specification for Viscosity-Graded Asphalt Binder for Use in Pavement Construction.
v. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus.
w. ASTM D4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
x. ASTM D4751 – Standard Test Methods for Determining Apparent Opening Size of a Geotextile.
y. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

1.04 PRE-INSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site at the start of unit paving operations as determined by the Owner's Representative.

1. This meeting shall include review and coordination of equipment movement adjacent to existing trees and existing or proposed planting areas to avoid soil compaction, incorporation of site salvaged paver and curbing materials, an overview of proposed methods of installation, review of the performance criteria and an overview of underground utility location maps and plans. This meeting shall

be coordinated by the Construction Manager and comply with requirements in Division 01.

2. Attendance shall include:
   a. Construction Manager.
   b. General Contractor.
   c. Unit paving installer, including field supervisor
   d. Landscape Architect.

1.05 ACTION SUBMITTALS

A. Product Data:
   1. For new materials other than water and aggregates.
   2. For the following:
      a. Pavers.
      b. Bituminous setting materials.
      c. Mortar materials.
      d. Porous joint and bedding materials.
      e. Edge restraints.
      f. Stone roadway curbs.

B. Sustainability Submittals: For all permanently installed products and materials related to the work of this Section, submit product and material documentation to comply with and contribute to the Project's sustainability requirements, as outlined in the Submittals article of Section 018113 – Sustainable Design Requirements.

C. Sustainable Design Submittals:
   1. Certificate indicating recycled content for each type of asphalt paver
   2. Provide 3rd Party Verification of the Solar Reflectance Index (SRI) for each type of asphalt paver indicated.
   3. Certificate indicating recycled content for each type of precast concrete paver.
   4. Provide 3rd Party Verification of the Solar Reflectance Index (SRI) for each type of precast paver indicated.
   5. For Site Salvaged Stone Used for Paving: Provide detailed summary of linear foot and square foot quantities and locations of site salvaged stone installed.

D. Sieve Analyses: For aggregate setting-bed materials, according to ASTM C136.

E. Samples for Verification:

1. Submit three sets for each color, grade, finish, and variety of asphalt block, precast paver, and stone required. Include 2 or more samples in each set showing the full range of variations expected in these characteristics. Each sample shall be not less than 18”x18”. Include test reports for slip resistance for materials used as pavers.
2. Samples of each type of unit showing the full range of color and texture variation on suitable backing and joint treatments.
   a. Where new materials are proposed to be installed next to site-salvaged materials, demonstrate close match to site salvaged materials.
3. Joint materials involving color selection.
4. Exposed edge restraints involving color and finish selection.

F. Shop Drawings:

1. For location and orientation of pavers with incised text: Provide a scaled drawings showing the size and type of stone, indication if the stone is salvaged or new, orientation of incised symbol or lines or orientation and content of incised text, installation detailing including relationship to substrates and adjacent materials.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and Testing Laboratory

B. Adhesion and Compatibility Test Reports: From latex-additive manufacturer for mortar and grout containing latex additives.

C. Material Certificates: For unit pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for unit pavers, indicating compliance with requirements.

1. For solid interlocking paving units, include test data for freezing and thawing according to ASTM C67.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: A qualified unit paving installer with five years' experience in the type of unit paving installation specified herein and as shown on the Drawings in addition to requirements in Section 014000 "Quality Requirements."

B. Testing Laboratory Qualifications: A third-party, independent ASTM certified testing laboratory not owned or operated by the stone material supplier, contractor or installing contractor.

C. Source Limitations for Unit Paving Materials: Obtain each variety of asphalt block, precast paver or paver stone, regardless of finish, from one manufacturer source with resources to provide materials of consistent quality in appearance and physical properties.

D. Slip Resistance Evaluation: Asphalt block, precast paver and stone paver surfaces expected to be walked on when wet shall be tested in accordance with ASTM E303 to meet a minimum British Pendulum Number (BPN) of 45.

1. Testing shall be performed on contactor supplied samples of the approved specified finished walking surface of each type of paver units in the following locations:
   a. Laboratory:
      1) Test results shall be submitted during the sample submittal process for material approval.
      2) Testing shall be performed by testing laboratory. Reports shall Include identification of the finished samples and test results. Product literature will not be accepted. The cost of testing and reporting shall be paid for by the Contractor.
   b. Field (1):
      1) Mockup areas.
      2) Test reports for surface evaluation of at least three step units of each stone type shall be performed by a testing laboratory. Include identification of the materials, areas tested with photographs and results.
   c. Field (2):
      1) At completion of the work on at least three step units of each stone type that were not tested as part of the mockup areas. Reporting as above.
      2) The cost of testing for Field (1 and 2) testing and any necessary retesting and reporting shall be paid for by the Contractor.

E. Mockups: Mockups: Build mockups of each type of unit paving specified and patterns indicated on the Drawings to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Unit paving mock-ups shall be a minimum size of 100 square feet showing patterning, jointing, edging conditions and interface with adjacent paving areas of a differing type or patterning as indicated on the Drawings.
   a. Where new materials are being installed next to site-salvaged materials of the same type, mock-up both materials to show continuity of color, finish and size.

2. Granite roadway curb, cobble curbs and swales and edging mock-ups shall be a minimum of 10 feet in length and full width showing jointing and adjacent paving finishes as indicated on the Drawings.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.08 PRE-CONSTRUCTION TESTING

A. Pre-construction Adhesion and Compatibility Testing: Submit to latex-additive manufacturer, for testing as indicated below, Samples of base course materials that will contact or affect mortar and grout that contain latex additives.
   1. Use manufacturer's standard test methods to determine whether mortar and grout materials will obtain optimal adhesion with, and will be non-staining to, installed brick and other materials constituting brick flooring installation.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store liquids in tightly closed containers protected from freezing.

E. Store asphalt cement and other bituminous materials in tightly closed containers.

1.10 FIELD CONDITIONS

A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

B. Weather Limitations for Bituminous Setting Bed:
   1. Install bituminous setting bed only when ambient temperature is above 40 deg F and when base is dry.

2. Apply asphalt adhesive only when ambient temperature is above 50 deg F and when temperature has not been below 35 deg F for 12 hours immediately before application. Do not apply when setting bed is wet or contains excess moisture.

C. Weather Limitations for Mortar and Grout:

1. Cold-Weather Requirements: Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.

   When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set pavers within 1 minute of spreading setting-bed mortar.

PART 2 - PRODUCTS

2.01 DESIGN INTENT

A. Maximize the use of site salvaged stone in the installation of work of this section.

1. Modify site salvaged stone as required on- or off-site as necessary at no additional cost to the owner.
2. Supplement site salvaged stone with new stone to match adjacent materials of the same type as specified herein if site salvage quantities are insufficient or cannot be modified to achieve the available the indicated shape of size masonry indicated on the drawings.

2.02 MANUFACTURERS

A. Source Limitations: Obtain each type of unit paver, curb or cobble, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.03 ASPHALT BLOCK PAVERS

A. Asphalt-Block Pavers: Solid units made from asphalt cement complying with ASTM D312, Type III; inorganic stone dust or cement filler; and coarse aggregate, consisting of clean, hard, unweathered stone crushed into angular particles varying in size up to 3/8 inch (9.5 mm).

B. Recycled content: Post-consumer recycled content plus one-half of pre-consumer recycled content not less than 10 percent.

C. Basis of Design: Meet color, finish, size and material fabrication standards of asphalt block pavers as indicated on the Drawings and as manufactured by Hanover Architectural Products, Hanover, PA (717) 637-0500.

D. Shapes, colors, and finishes as indicated on the Drawings.

2.04 PRECAST CONCRETE PAVERS

A. Precast Concrete Pavers, Solid Interlocking Paving Units: minimum 8,000 PSI compressive strength, and complying with ASTM C936/C936M, water absorption not more than 5 percent according to ASTM C140, resistant to freezing and thawing when tested according to ASTM C67, made from normal-weight aggregates.

B. Recycled content: Post-consumer recycled content plus one-half of pre-consumer recycled content not less than 20 percent.

C. Basis of Design:

1. Meet color, finish and material fabrication standards of custom fabricated precast Appian Pressed Brick pavers as indicated on the Drawings and as manufactured by Hanover Architectural Products, Hanover, PA (717) 637-0500. D. Shapes, colors and finishes as indicated on the Drawings.

2.05 PRECAST DETECTABLE WARNING PAVERS

A. Detectable Warning Pavers, General: Precast Concrete Pavers with truncated dome pattern warning surface meeting the accessibility guidelines of the Americans with Disabilities Act (ADA) for Detectable Warnings.

1. Comply with Department of Justice, Code of Federal Regulations, ADA Standards for Accessible Design, Section 4.29 of 28 CFR Part.

B. Detectable Warning Paver Units at Crosswalk Areas: minimum 8,000 PSI compressive strength, and complying with ASTM C936/C936M, water absorption not more than 5 percent according to ASTM C140, resistant to freezing and thawing when tested according to ASTM C67, made from normal-weight aggregates.

C. Basis of Design:

1. Meet color, finish and material fabrication standards of custom fabricated precast concrete detectable warning pavers pavers as indicated on the Drawings and as manufactured by Hanover Architectural Products, Hanover, PA (717) 637-0500.

D. Recycled content: Post-consumer recycled content plus one-half of pre-consumer recycled content not less than 20 percent.

E. Shapes, colors and finishes as indicated on the Drawings.

2.06 GRANITE DETECTABLE WARNING PAVERS

A. Detectable Warning Pavers, General: Granite Pavers with truncated dome pattern warning surface meeting the accessibility guidelines of the Americans with Disabilities Act (ADA) for Detectable Warnings.

1. Comply with Department of Justice, Code of Federal Regulations, ADA Standards for Accessible Design, Section 4.29 of 28 CFR Part.

B. Granite Detectable Warning Paver Units:

1. Stone Type D:

a. Size and Shape: As indicated on the Drawings.

b. Color and Grain: Polycor Stanstead Gray, quarry location Stanstead, Quebec, Canada

2.07 TUMBLED COBBLE PAVERS AND CURBS

A. Granite: Comply with ASTM C615/C615M and NBGQA "Specifications for Architectural Granite Part 2 Materials".

1. Size and Shape: As indicated on the Drawings.

2. Color and Grain and Finish: Match existing cobble curbs on site

2.08 GRANITE ROADWAY CURBS

A. Granite curbing, with face battered, produced in lengths not less than 36 inches (900 mm) or otherwise as indicted on the Drawings from granite complying with ASTM C615/C615M.

B. Granite Color and Grain: Match color and grain of existing roadway curb, as approved by the Engineer and the Landscape Architect, at areas where curb removal and adjustment is required.

1. Top Width: as shown on the Drawings.

2. Face Height: as shown on the Drawings.

3. Total Height: as shown on the Drawings.

4. Top Finish: as shown on the Drawings.

5. Face Finish: as shown on the Drawings.

2.09 CURBS AND EDGE RESTRAINTS

A. Steel Edge Restraints: Manufacturer's standard black painted steel edging 1/4 inch thick by 5 inches high with loops pressed from or welded to face to receive stakes at 36 inches o.c. and steel stakes 15 inches long for each loop.

1. Anchor bolts: 1/2" diameter x 4 1/2" length carbon steel expansion bolt, Kwik Bolt 3 by Hilti.

B. Corten (Weathering Steel) Edge Restraints: ASTM A606-4 weathering steel edging 1/4 inch thick by 5 inches high with loops pressed from or welded to face to receive stakes at 36 inches (900 mm) o.c. and steel stakes 15 inches long for each loop.

1. GEOTEXTILE

a. Geotextile: 4 oz., nonwoven needle punched geotextile composed of 100% polypropylene staple fibers that are inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

1) Grab Tensile Strength: ASTM D 4632: 115 lbs.

2) Grab Tensile Elongation: ASTM D 4632: 50%

3) Trapezoidal Tear: ASTM D 4533: 50 lbs.

4) Puncture: ASTM D 4833: 65 lbs.

5) Apparent Opening Size: ASTM D 4751: 0.212 mm, 70 U.S. Sieve

6) Permittivity: ASTM D 4491: 2.0 sec -1

7) Flow Rate: ASTM D 4491: 140 gal/min/s.f.

1. Subject to meeting the requirements, acceptable manufacturers include:

a. BORCON King as manufactured by Border Concepts, Charlotte, NC, (800) 845-3343 or approved equal.

2.13 ACCESSORIES

A. Compressible Foam Filler: Preformed strips complying with ASTM D1056, Grade 2A1.

2.14 AGGREGATE SETTING-BED MATERIALS

A. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with coarse gradation requirements in ASTM C33/C33M for fine aggregate.

B. Stone Screenings for Leveling Course: Sound stone screenings complying with ASTM D448 for Size No. 10.

C. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.

1. Provide sand of color needed to produce required joint color.

D. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications; made from polyolefins or polyesters, with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2, AASHTO M 288.
2. Apparent Opening Size: No. 60 sieve, maximum; ASTM D4751.
3. Permittivity: 0.02 per second, minimum; ASTM D4491.
4. UV Stability: 50 percent after 500 hours' exposure, ASTM D4355.

E. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

2.15 BITUMINOUS SETTING-BED MATERIALS

A. Primer for Base: ASTM D2028/D2028M, cutback asphalt, grade as recommended by unit paver manufacturer.

B. Fine Aggregate for Setting Bed: ASTM D1073, No. 2 or No. 3.

C. Asphalt Cement: ASTM D3381/D3381M, Viscosity Grade AC-10 or Grade AC-20.

D. Neoprene-Modified Asphalt Adhesive: Paving manufacturer's standard adhesive consisting of oxidized asphalt combined with 2 percent neoprene and 10 percent longfibered mineral fibers containing no asbestos.

E. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.

1. Provide sand of color needed to produce required joint color.

2.16 MORTAR SETTING-BED MATERIALS

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride.
2. Limit cementitious materials in mortar to Portland cement and lime.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Pre-blended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Stone Masonry: Comply with ASTM C 270, Proportion Specification.

1. Mortar: Type S below grade, Type N above grade.

D. Latex-Modified Portland Cement Setting Mortar: Flexible polymer-modified Portland cement mortar, complying with ANSI A118.4 and ISO 13007. Proportion and mix Portland cement, aggregate, and latex additive to comply with latex-additive manufacturer's written instructions.

1. Manufacturers: Subject to compliance with requirements, provide products by one of
   a. Quikrete; Deck Mud with Concrete Acrylic Fortifier.
   b. Latircrete International, 3701 Fortified Mortar Bed.
   c. MAPEI Corp, Kerabond/Keralastic System.

E. Cement-Paste Bond Coat: Mix either neat cement and water or cement, sand, and water to a consistency similar to that of thick cream.

1. For latex-modified Portland cement setting-bed mortar, substitute latex admixture for part or all of water, according to latex-additive manufacturer's written instructions.

F. Portland Cement: ASTM C150/C150M, Type I or Type II.

G. Sand: Sound, sharp, washed, natural sand complying with gradation requirements in ASTM C33/C33M.

H. Latex Additive: Manufacturer's standard acrylic resin or styrene-butadiene-rubber water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed, and not containing a retarder.

I. Thin-Set Mortar for Bond Coat: Latex-portland cement mortar complying with ANSI A118.4.

1. Provide prepackaged, dry-mortar mix combined with acrylic resin or styrenebutadiene-rubber liquid-latex additive at Project site.
2. Provide product that is approved by manufacturer for application thickness of 5/8 inch.

J. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 by 2 inches by 0.062 inch in diameter; comply with ASTM A185/A185M and ASTM A82/A82M except for minimum wire size. K. Water: Potable.

2.17 BITUMINOUS SETTING-BED MIX

A. Mix bituminous setting-bed materials at an asphalt plant in approximate proportion, by weight, of 7 percent asphalt cement to 93 percent fine aggregate unless otherwise indicated. Heat mixture to 300 deg F.

2.18 STONE PAVER FABRICATION

A. Fabricate stone to comply with sizes, shapes, and tolerances recommended by applicable stone association.

For granite, comply with recommendations in NBGQA's "Specifications for Architectural Granite Part 3."

B. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and approved shop drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated. Water jet cut curved stone.

C. Create incised lines and text in stone with uniform depth, uniform texture, and cleanly cut edges.

D. Carefully inspect stone at quarry or fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units before shipment.

1. Clean sawed backs of stone to remove rust stains and iron particles.

2.19 SITE SALVGED STONE FABRICATION

A. Modify site salvaged stone on- or off-site.

B. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings and approved shop drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated.

1. Use power saws to cut stones; for exposed edges, produce edges which are cut straight and true with edges eased slightly to prevent snipping.
2. Mallet and chisel cutting will be permitted provided craftsmen are skilled in their use.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine surfaces indicated to receive unit paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Where unit paving is to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or flashed against vertical surfaces.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.

B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.

C. Proof-roll prepared subgrade according to requirements in Section 312000 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.

3.03 INSTALLATION, GENERAL

A. During installation, protect adjacent planting soil areas and plants from damage. Shield plants and planting soils from dust, debris or liquid contamination related to paver or curb unit trimming, cutting, or installation.

B. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

C. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

1. Where site-salvaged materials are used next to new materials of the same type, mix units to produce a uniform blend of colors and textures without noticeable demarcation between site-salvaged and new materials.

D. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

1. For concrete pavers, a block splitter may be used.

E. Handle protective-coated brick pavers to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick. F. Joint Pattern: As indicated.

G. Tolerances:

1. Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) or 1/8 inch in 10 feet from level, or indicated slope, for finished surface of paving.

H. Expansion and Control Joints:

1. Provide for sealant-filled joints at locations and of widths indicated. Provide compressible foam filler as backing for sealant-filled joints unless otherwise indicated; where unfilled joints are indicated, provide temporary filler until paver installation is complete. Install joint filler before setting pavers. Sealant materials and installation are specified in Section 321373 "Landscape Joint Sealants."

I. Provide edge restraints as indicated. Install edge restraints before placing unit pavers. 1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after unit paver installation.

2. For metal edge restraints with top edge exposed, drive stakes at least 1 inch (25 mm) below top edge.

3. Where cobble stone pavers set in mortar bed are indicated as edge restraints for pavers set in aggregate setting bed, install pavers set in mortar and allow mortar to cure before placing aggregate setting bed and remainder of pavers. Cut off mortar bed at a steep angle so it will not interfere with aggregate setting bed.
4. Where pavers embedded in concrete are indicated as edge restraints for pavers set in aggregate setting bed, install pavers embedded in concrete and allow concrete to cure before placing aggregate setting bed and remainder of pavers. Hold top of concrete below aggregate setting bed.

3.04 BITUMINOUS SETTING-BED APPLICATIONS

A. Apply primer to concrete slab or binder course immediately before placing setting bed.

B. Prepare for setting-bed placement by locating 3/4-inch- deep control bars approximately 11 feet apart and parallel to one another, to serve as guides for striking board. Adjust bars to subgrades required for accurate setting of paving units to finished grades indicated.

C. Place bituminous setting bed where indicated, in panels, by spreading bituminous material between control bars. Spread mix at a minimum temperature of 250 deg F. Strike setting bed smooth, firm, even, and not less than 3/4 inch thick. Add fresh bituminous material to low, porous spots after each pass of striking board. After each panel is completed, advance first control bar to next position in readiness for striking adjacent panels. Carefully fill depressions that remain after removing depth-control bars.

1. Roll setting bed with power roller to a nominal depth of 3/4 in. Adjust thickness as necessary to allow accurate setting of unit pavers to finished grades indicated. Complete rolling before mix temperature cools to 185 deg F.

D. Apply neoprene-modified asphalt adhesive to cold setting bed by squeegeeing or troweling to a uniform thickness of 1/16 inch. Proceed with setting of paving units only after adhesive is tacky and surface is dry to touch.

E. Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses, but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints, roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.

F. Joint Treatment: Place unit pavers with hand-tight joints. Fill joints by sweeping sand over paved surface until joints are filled. Remove excess sand after joints are filled.

3.05 MORTAR SETTING-BED APPLICATIONS

A. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

B. Apply mortar-bed bond coat over surface of concrete subbase about 15 minutes before placing mortar bed. Do not exceed 1/16-inch thickness for bond coat. Limit area of bond coat to avoid its drying out before placing setting bed.

C. Apply mortar bed over bond coat; spread and screed mortar bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.

D. Mix and place only that amount of mortar bed that can be covered with pavers before initial set. Before placing pavers, cut back, bevel edge, and remove and discard settingbed material that has reached initial set. E. Pre-wet pavers prior to installation.

F. Place pavers before initial set of cement occurs. Immediately before placing pavers on mortar bed, apply uniform 1/16-inch-thick bond coat to mortar bed or to back of each paver with a flat trowel.

G. Tamp or beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation before initial set of mortar; do not return to areas already set or disturb pavers for purposes of realigning finished surfaces or adjusting joints.

H. Spaced Joint Widths: Provide nominal joint width with as indicated on the drawings variations not exceeding plus or minus 1/16 inch.

I. Grouted Joints: Grout paver joints complying with ANSI A108.10.

J. Grout joints as soon as possible after initial set of setting bed.
   1. Force grout into joints, taking care not to smear grout on adjoining surfaces.
   2. Clean pavers as grouting progresses by dry brushing or rubbing with dry burlap to remove smears before tooling joints.
   3. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

4. If tooling squeezes grout from joints, remove excess grout and smears by dry brushing or rubbing with dry burlap and tool joints again to produce a uniform appearance.

K. Cure grout by maintaining in a damp condition for seven days unless otherwise recommended by grout or liquid-latex manufacturer.

3.06 POST-INSTALLATION TESTING

A. Complete post-installation slip resistance testing in this location as indicated in Quality Assurance Article of this specification in locations as directed by the Engineer and Landscape Architect.

B. Submit testing results.

3.07 REPAIRING, POINTING, AND CLEANING

A. Remove and replace unit pavers and curbs that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

B. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.

C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.
   1. Remove temporary protective coating as recommended by coating manufacturer and as acceptable to paver and grout manufacturers.
   2. Do not allow protective coating to enter floor drains. Trap, collect, and remove coating material.

D. Dispose of unit packaging, wrapping and other miscellaneous materials.

   1. Comply with Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.

3.08 UNIT PAVING SCHEDULE

A. See Drawings.

END OF SECTION 321400.2

SECTION 323300.2 – SITE FURNISHINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Bicycle racks.
2. Trash receptacles.
3. Stake stops.
4. Tree Grates.
5. Bike Racks.
6. trash receptacles.
7. Wood and steel benches to receive site salvaged wood, including delegated design,
8. Wayfinding Signs.
9. Stainless Steel Oval Planters, including delegated design.
10. Chairs.
11. Tables.

B. Related Requirements:

1. Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.
2. Section 018113 "Sustainability Requirements" for documentation of recycled material content of stainless steel for new bicycle racks, new trash and recycling receptacles, and bollard covers as well as recycled material content for ductile (gray) iron tree grates; documentation of site salvaged wood reuse.
3. Section 024200.2 "Site Material Salvaging" for salvaged bike racks, trash receptacles, wood and steel benches, and signs to be reinstalled on stainless steel bench frames under this section.
4. Section 033000 "Cast-in-Place Concrete" for installing pipe sleeves, installing anchor bolts and cast formed voids in concrete footings.
5. Section 061501.2 "Wood at Park Areas" for new and site salvaged wood and skate stops installed at wood bench slats and wood decking.
6. Section 312000 "Earth Moving" for excavation for installing concrete footings.

1.03 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving ILFI Zero Carbon and WEDG Certification. Refer to Section 018113 - SUSTAINABLE DESIGN REQUIREMENTS for the Project's targets and specific requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the Project's sustainability goals and ILFI Zero Carbon or WEDG certification.

1. Section 321724 "Bikeway Pavement Markings and Signage" for re-installation of site salvaged bikeway signage.
2. Section 341713.10 "Fixed and Operable Bollards" for fixed bollards and operable bollards and stainless steel bollard covers.
3. Section 352016 "Flood Gates" for stainless steel Hydraulic Power Unit (HPU) enclosures.

1.04 ACTION SUBMITTALS

A. Product Data: For each product used.

B. Sustainability Submittals: For all permanently installed products and materials related to the work of this Section, submit product and material documentation to comply with and contribute to the Project's sustainability requirements, as outlined in the Submittals article of Section 018113 – Sustainable Design Requirements.

C. Sustainable Design Submittals:

1. Certificates indicating recycled material content for stainless steel and ductile (gray) iron materials.

D. Samples: For each exposed product and for each color and texture specified.

E. Samples for Initial Selection: For units with factory-applied finishes.

F. Samples for Verification: For each type of exposed finish, not less than 6-inch- long linear components and 4-inch- square sheet components and tree grate.

1. Bike Rack
2. Trash Receptacles
3. Tree Grate
4. Stainless Steel Bosque Tree Pit Edging
5. Wood and Stainless Steel Bench Framing

6. Stainless Steel Oval Planter
7. Skate Stops: two Include full-size samples of chair, table, each type

G. Full-size Samples for Verification:
1. Chair

2. Table

3. Each type of skate stop and bollard cover. Approved samples may be incorporated into the Work.

H. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

I. NYC DOT Authorization Letter: Submit authorization letter from NYCDOT to order bicycle racks to be installed with the New York City Right of Way.

J. Shop Drawings: Installation drawings indicating attachments, anchorages and assemblies required.

1. Bicycle racks.
2. Trash receptacles.
3. Skate Stops.
   a. Show installation details for attachments to stone and wood.
4. Tree grates and frames.
5. Stainless steel bosque tree pit edging
   a. Provide detailed fabrication drawings showing large scale plans, elevations, sections, jointing and anchorages.
6. Wood and Stainless-Steel benches.
   a. Provide detailed fabrication drawings showing large scale plans, elevations, sections, wood detailing and attachments, and anchorages.
   b. Indicate new and site salvaged wood members
   c. Provide summary of linear footage of site salvaged wood used.
7. Stainless steel oval planters
   a. Provide detailed fabrication drawings showing large scale plans, elevations, sections, jointing and anchorages.

K. Delegated-Design Submittal: For stainless steel bosque tree pit edging, wood and stainless steel benches and planters, and stainless steel oval planters including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For professional engineer's experience with providing delegated-design engineering services of the kind indicated, including documentation that engineer is licensed in the New York State.

B. Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.

C. Welding certificates.
   1. Site Salvaged Bicycle racks.
   2. Site Salvaged Trash Receptacles.
   3. Site Salvaged Wayfinding Signs.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: For site furnishings to include in maintenance manuals.

1.07 QUALITY ASSURANCE

A. Fabrication Mock-Ups for confirmation by Landscape Architect of full unit in compliance with the requirements before the start of production of subsequent units required:

   1. Stainless Steel Bosque Tree Pit Edging: One full sized unit section showing edging finish, alignments, fasteners, interior support framing with complete installation of four lighting units.

   2. Wood and Stainless Steel Bench: One full sized unit showing incorporation of site salvaged and, if required, new wood, attachments, arm rests, supporting framework and ground anchorage.

   3. Stainless Steel Oval Planter: One full sized unit section showing planter wall finish, alignments, sweep of planter arc, jointing and interior support framing.

B. Installation Mock-Ups:

   1. Stainless steel bosque tree pit edging: Install one unit
   2. Wood and stainless steel bench: Install one bench.
   3. Oval Planter: Install one planter with adjacent curbing and pavers.
   4. Skate Stop Layout and Mock-Ups at Stonework:
      a. Using Drawings, layout and mark the location of each type 1 skate stop for approval.
      b. Adjust locations as requested.
      c. Install three skate stops for approval of installation method.
   5. Stake Stop Mock-Ups at Wood:
      a. Install three type 2 skate stops at wood slats.
      b. Install three type 3 skate stops between wood slats.
   6. Approved mockups may become part of the completed Work as determined by the Landscape Architect.

C. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver fabricated units in compliance with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

1. Deliver fabricated units in such quantities and at such times to limit unloading units temporarily on the ground.
2. Support units during shipment on non-staining shock-absorbing material.
3. Store units with adequate dunnage and bracing and protect units to prevent contact with each other, and to prevent distortion, warping or other physical damage.
4. Place stored units so identification marks are clearly visible, and units can be inspected.
5. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses which would cause damage.

1.09 SITE CONDITIONS

A. Field Measurements

1. Field measure all connections paving slabs, and foundations.

1.10 COORDINATION

A. Plan, coordinate and sequence approvals from NYCDOT to order bicycle racks to be installed within the NYCDOT Public Right of Way.

B. Coordinate and sequence installation of site furnishings, including embedded anchorages with adjacent construction.

C. Coordinate shop drawings for skate stops and wood and steel benches to show detailing and interface with wood elements.

1.11 ATTIC STOCK

A. Furnish extra materials that match products installed and that are packaged with protective covering for Owner attic stock, identified with labels describing contents.

1. Trash Receptacles: Three full-size units.

PART 2 - PRODUCTS

2.01 BICYCLE RACK (WITHIN NYC RIGHT OF WAY)

A. Bike rack (within NYC Right of Way): Large Hoop Rack as supplied by NYCDOT CityRacks program.

1. NYCDOT —NYCityRack, is a trademarked design of the City of New York. The bicycle rack is constructed of cast ductile iron ASTM grade A536. NYCDOT owns the intellectual property rights to the CityRack design. The NYCDOT contractually authorized manufacturer is Campbell Foundry Company, Harrison, NJ or the latest authorized manufacturer/supplier, as applicable, who is obligated and solely authorized by NYCDOT's contract to sell the bicycle rack for use on any NYC owned property, including those properties under the jurisdiction of Department of Parks & Recreation.

2. No order can take place without authorization from NYCDOT Director of CityRacks. The Director of the CityRacks Unit will issue an authorization letter so the Contractor may purchase CityRacks.

3. Upon approval from NYCDOT, place bike rack order with NYCDOT's authorized manufacturer/supplier only.

B. Ordering procedure: Contact the NYCDOT Director of City Racks for bid prices and to receive a purchase authorization letter. Supply the following information to the Director of City Racks a minimum of two months but no earlier than six months prior to desired delivery date:

1. E-mail the number of CityRack units to be purchased for installation on the Public Right of Way sidewalk, and
2. Submit layout plan, marking exact location on sidewalk where bike rack(s) are shown using a thick pencil or marker and
3. Provide the name of the Contractor, name of the Project, Project location and Owner contract number, and
4. Copy Construction Manager in such e-mail.
5. NYCDOT Contact information:

NYC-Department of Transportation
Director of City Racks, Bike Parking / Public Space Unit
Transportation Planning & Management
55 Water Street, 6th Floor, New York, NY 10041
Kenneth Lewis, Director
Klewis@dot.nyc.gov
(212) 839.7241 Office phone

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design wood and steel benches and planters.

B. Structural Performance: For bosque tree pit edging, wood and stainless steel benches, and stainless steel oval planters including attachments to foundations or pavement slabs, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
2. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
3. Uniform and concentrated loads need not be assumed to act concurrently.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.03 SUSTAINABILITY PERFORMANCE REQUIREMENTS

A. For wet-applied, field-installed adhesives, sealants, paints, and coatings, provide products that meet Volatile Organic Compound (VOC) content limits -and- meet either VOC emissions testing requirements (VOC Emissions Evaluation) -or- have an acceptable third-party certification, as outlined in Section 018113 - Sustainable Design Requirements.

B. Provide stainless steel products with product-specific or industry-wide Environmental Product Declarations (or alternative environmental declaration accepted by LEED), as outlined in Section 018113 – Sustainable Design Requirements.

2.04 BICYCLE RACKS

A. Bicycle Rack: Stainless steel Bola® Hardware:1/2” diameter, typ 304 stainless steel wedge anchors by Confast or equal, length required to embed anchors a minimum of 3.75” into concrete pavement base slab.

2.05 BIKE RACK (ON BATTERY PARK CITY PROPERTY)

A. Bike Rack on Battery Park City Property: Model Ribbon 07, in ground anchor mount, type 304 stainless steel, as manufactured by Brandir International, Inc., New York, NY, (800) 430-6209849-3488, or approved equal.

1. Recycled material content:
   a. Post-consumer recycled content: minimum 50%.
   b. Pre-consumer recycled content: minimum 15%.

2.06 TRASH RECEPTACLES

A. Trash Receptacle: Standard Perforated Stainless Steel 35 gallon unit with Leveling feet, anchor kit, lid kit, and black dome top as manufactured by Witt Industries, Mason, OH (513) 923-5800 or approved equal
   1. Receptacle Material: Type 304 Stainless Steel.
   2. Recycled material content: minimum 50% pre- and post-consumer content.

B. Recycling Receptacle: Standard Perforated Stainless Steel 35 gallon unit with solid finial as shown on the Drawings, as manufactured by Allen Architectural Metals, Talladega, AL, (646) 400-0707 or approved equal.

   1. Receptacle Material: Type 304 Stainless Steel.
   2. Recycled material content: minimum 50% pre- and post-consumer content.

2.07 SKATE STOPS

A. Type 1: Stone mounted Skate Stop: Basis of Design “Hemi Grinderminder”, Brushed Stainless Steel Finish as manufactured by Grind To A Halt, Elburn, IL (630) 365-2375 or approved equal.

B. Type 2: Wood Mounted Skate Stop: Basis of Design “Threaded Grinderminder”, Brushed Stainless Steel Finish as manufactured by Grind To A Halt, Elburn, IL (630) 365-2375 or approved equal.

C. Type 3: Custom Fabricated type 316 Stainless steel plate, ASTM ASTM A 666 plate, brushed stainless steel finish, recycled material content: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 20 percent.

   1. Size and Shape: As shown on Drawings.

2.08 TREE GRATES

A. Grates: Basis of Design “Flat Rainbow” model, as manufactured by Urban Accessories, Tacoma, WA (877) 487-0488, or approved equal.

   1. Grates: Ductile Iron, ASTM A536 class 65-45-12., 100% recycled content.

2. Frame: H20 Load compatible, Mild Steel, ASTM A36.
3. Grate Shape and Size: four- or six-foot diameter grate as indicated.
4. Grate Frame: Four or Six foot diameter as indicated, Type PA.
5. Finish: Rust Conditioner Finish.

B. Grate Frame Anchor Bolts: 1/2” diameter x 5 1/2” length stainless steel expansion bolt, Kwik Bolt 3 by Hilti or equal.

2.09 METALS FOR BENCH FRAMING, BOSQUE TREE PIT EDGING AND OVAL PLANTERS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

1. Recycled material content: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 20 percent.

2.10 SITE SALVAGED FURNISHINGS

A. Trash Receptacles: Site salvaged from and reinstalled in the project work area as shown on the drawings.
1. For replacement, parts, and repairs: Match existing.
2. Finish and color to match existing.

B. Bike Racks: Site salvaged from and reinstalled in the DPR and BPCA area as shown on the drawings.
1. For replacement, parts, and repairs: Stainless Steel Flo® Bike Rack, embedded model with 6” long customized extended threaded rods, as manufactured by Landscape forms, Kalamazoo, MI (800) 430-6209 or approved equal.
2. Finish and color to match existing.

C. Wayfinding Signs: Site salvaged from the MJH and the Wagner Park area.
1. See signage schedule on the Drawings.
2. For replacement, parts, and repairs: match existing.
3. Finish and color to match existing.

2.11 MISCELLANEOUS MATERIALS

A. Non shrink, Nonmetallic Grout: Factory-packaged, non-staining, noncorrosive, nongaseous grout, complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for exterior applications.

B. Epoxy Adhesive: Rigid set, rated for exterior use and prolonged exposure to water.

C. Anchor Bolts: Type 304, Stainless steel expansion or wedge type bolt, size and length as specified or as indicated on Drawings, length required to achieve 4” depth embedment into concrete substrate.

D. Concrete: As specified in Section033000 "Cast-in-Place Concrete."

2.12 BENCH FRAMING, BOSQUE TREE PIT EDGING AND OVAL PLANTER FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.

F. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended, so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.

G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

H. Fabricate seams and other connections that are exposed Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

I. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.

J. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly if require. Clearly mark units for assembly in the field.

K. Coordinate with Section "Site Lighting" for incorporation of approved lights at the stainless steel bosque tree pit edging.

2.13 SALVAGED WOOD SLAT INSTALLATION

A. See Section "Wood at Park Areas".

2.14 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.15 ALUMINUM FINISHES

A. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.16 STEEL AND GALVANIZED-STEEL FINISHES

A. Post and Chain Materials: Shop Painted.
   1. Prior to installation, clean and paint post and chain barrier pieces.
   2. Cleaning: Immediately prior to painting, all surfaces shall be thoroughly cleaned. All surfaces that are rust free shall be cleaned in accordance with SP-1, Solvent Cleaning. Cleaning shall be performed with a solvent such as mineral spirits, xylol or turpentine to remove all dirt, grease, rust and fabricating oils.
   3. After cleaning bollards and chains, paint as follows:
      a. 1. First Coat: Sherwin Williams Galvite HS (B50WZ30), Low VOC, solvent based acrylic, off white, or approved equal. Galvitc HS has a flat finish with a dry film thickness of 3-5 mils. Paint requires 24 hours drying time @ 40° F; 4/ hours @ 77° F.
      b. 2. Second & Third Coat: Sherwin Williams Silicone Alkyd, Los VOC, # B56Z Black, or approved equal. Topcoat is a silicon alkyd, high gloss coating having a dry film thickness of 2 - 4 mils. Paint requires 16 hours drying time @ 45° F; 8 hours @ 77° F.

4. Apply paints when ambient air temperature is 50 degrees F. and rising and surfaces to be painted are moisture free. No printing will be allowed below the minimum ambient air temperature.
5. In addition, no painting will be allowed below the temperature at which moisture will condense on surfaces.
6. Application of Paint: Complete painting a neat and workmanlike manner. Apply paint by brush, and thoroughly work into the surface and into all cracks and fissures without leaving furs or urns.

B. Powder-Coat Finish: Manufacturer's standard polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

C. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.

2.17 IRON FINISHES

A. Powder-Coat Finish: Manufacturer's standard polyester powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.18 STAINLESS STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
   1. Run directional finishes with long dimension of each piece.
   2. Directional Satin Finish: ASTM A480/A480M, No. 4, unless otherwise indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION: GENERAL

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

1. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.
2. Pipe Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

3.03 BICYCLE RACK (INSTALLED WITHIN NYC RIGHT OF WAY)

A. Install bicycle racks in locations as shown on the Drawings. For installations on the Public Right of Way only, NYCDOT will conduct post construction inspections to confirm that rack was installed per NYCDOT approved layout as shown on the contract drawings.

B. Surface Mount: Bicycle rack shall be installed in their final location and properly secured in place. Holes shall be drilled into the pavement base concrete, in accordance with the drawings. Secure base plate shall be with four (4) mushroom head spikes driven into the pre-drilled hole.

3.04 BICYCLE RACK (INSTALLED ON BATTERY PARK CITY PROPERTY)

A. Install bicycle racks in accordance with the manufacturer’s written instructions and approved Shop Drawings.

B. Coordinate in ground anchor mount installation of bike rack with the construction of the concrete pavement base and surface pavement treatments.

3.05 SKATE STOPS

A. Install skate stops into wood members and stone units as indicated on Drawings and in accordance with manufacturers written instructions.

B. Set skate stops in wood with threaded attachments.
   1. Provide number and type of skate stops indicated on the Drawings approved Shop Drawings.

C. Set skate stops in stone with epoxy adhesive.
   1. Provide skate stops as indicated on the Drawings and as established during the skate stop layout and mock-up process.

3.06 INSTALLATION OF TREE GRATES

A. Tree Grates: Install according to manufacturer's written instructions.

B. Set grate segments flush with adjoining surfaces. Shim as required from supporting substrate with soil-resistant plastic. Maintain a 3-inch- (75-mm-) minimum growth radius around base of tree; break away portions of casting, if necessary, according to manufacturer's written instructions.

3.07 SITE SALVAGED FURNISHINGS

A. Reinstall trash receptacles, bike racks, wood and steel benches, and wayfinding signs salvaged from MJH and Wagner Park in locations as indicated on the drawings.

B. Touch up and repair site salvaged furnishings.
   1. Touch up paint to match existing.
   2. Repairs shall not be visible from a distance of 5 feet or greater.
   3. If furnishings are not repairable, as determined by the Engineer, replace in kind.
   4. Touch-up, repair or replace site salvage furnishings at no additional cost.

3.08 CLEANING

A. Clean furnishings promptly after installation in accordance with manufacturer’s instructions.

B. Do not use harsh cleaning materials or methods that could damage finishes.

C. Dispose of packaging, wrapping and other miscellaneous materials.
   1. Comply with Section 017419 "Construction Waste and Demolition Management" for recycling construction waste.

3.09 PROTECTION

A. Protect all installed furnishings to ensure that, except for normal weathering, no damage or deterioration is visible at time of Substantial Completion.

3.10 REPAIR/REPLACEMENT

A. Repair bent, broken or damaged site furnishings. If furnishings cannot be repaired to satisfaction of the engineer, remove from jobsite and replace with new furnishings as specified at no additional cost to the Owner.

B. Touch-up, repair or replace damaged site furnishings before Substantial Completion.

C. Replace defective or damaged site furnishings as directed by Landscape Architect.

3.11 SITE FURNISHING SCHEDULE

A. Provide the following site furnishings:
   1. Chairs: Provide 80. Deliver to the Owner at a location determined by Construction Manager.
   2. Tables Provide 20. Deliver to the Owner at a location determined by the Construction Manager
   3. Trash Receptacles: Provide 27, plus 3 for attic stock. Deliver to the Owner at location determined by Construction Manager.
   4. Recycling Receptacles: Provide 3, plus 1 for attic stock. Deliver to the Owner at location determined by Construction Manager.
   5. Bike Racks as indicated on the Drawings.
   6. Stainless Steel Oval Planters: as indicated on the Drawings.
   7. Stainless Steel Bosque Planter Edging Units: as indicated on the Drawings.
   8. Wood and Stainless Steel Benches: as indicated on the Drawings.
   9. Skate Stops as indicated on the Drawings.
      a. For the purposes of the bidding, assume skate stops at thirty inches on center at stone seat walls and stone transition pieces from curb to seat walls. Final number and location of skate stops within stonework shall be established as indicated in the Quality Assurance section of this specification.
   10. Tree Grates as indicated on the Drawings.

END OF SECTION 323300.2

<u>ATTACHMENT #3</u>
REVISED ELECTRICAL DRAWING –

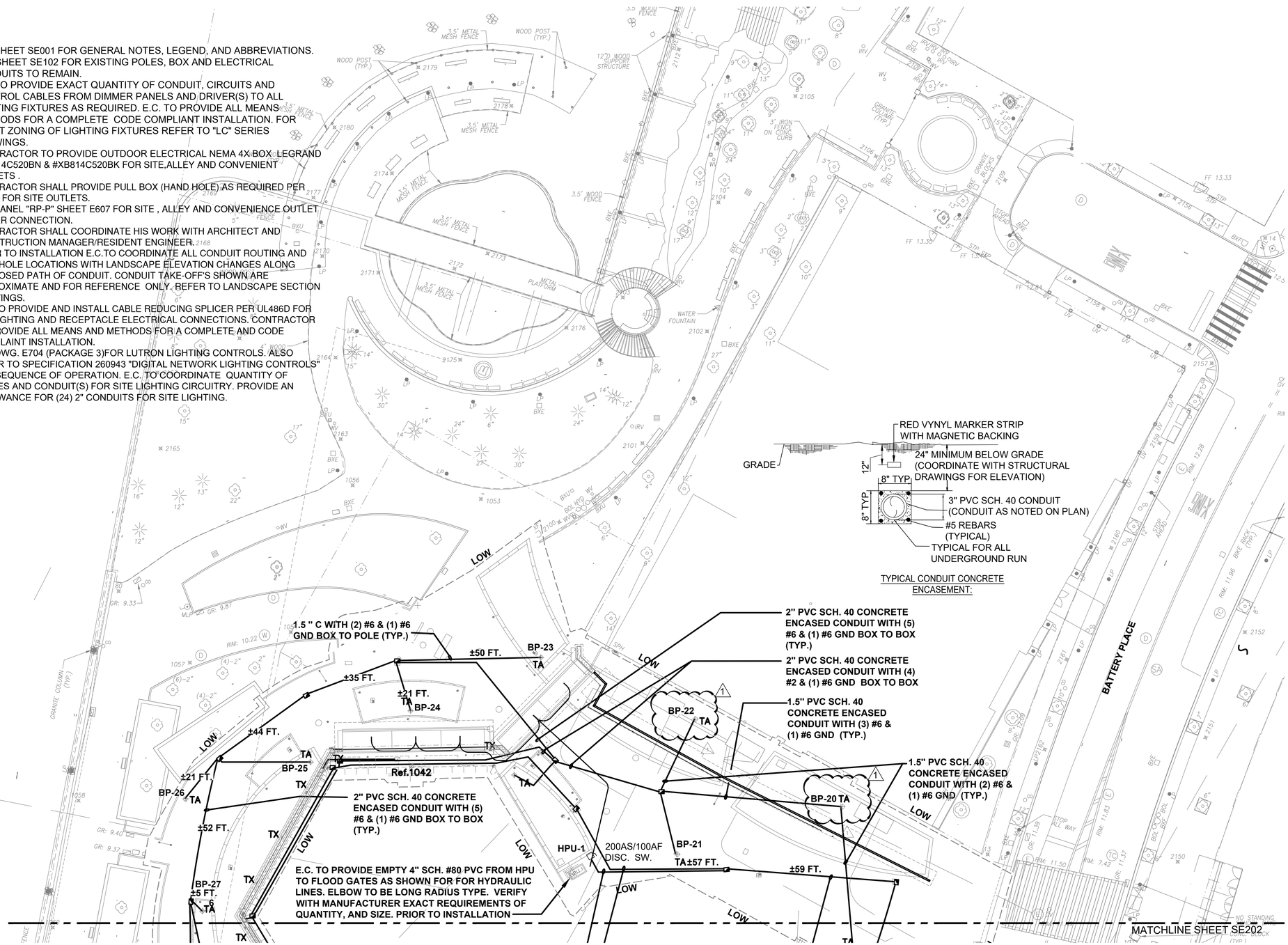
SE201 – Museum of Jewish Heritage Site Electrical Proposed Plan

(ATTACHED)

ANSI D 22" x 34"

NOTES:

1. SEE SHEET SE001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.
2. SEE SHEET SE102 FOR EXISTING POLES, BOX AND ELECTRICAL CONDUITS TO REMAIN.
3. E.C. TO PROVIDE EXACT QUANTITY OF CONDUIT, CIRCUITS AND CONTROL CABLES FROM DIMMER PANELS AND DRIVER(S) TO ALL LIGHTING FIXTURES AS REQUIRED. E.C. TO PROVIDE ALL MEANS METHODS FOR A COMPLETE CODE COMPLIANT INSTALLATION. FOR EXACT ZONING OF LIGHTING FIXTURES REFER TO "LC" SERIES DRAWINGS.
4. CONTRACTOR TO PROVIDE OUTDOOR ELECTRICAL NEMA 4X BOX LEGRAND #XB814C520BN & #XB814C520BK FOR SITE,ALLEY AND CONVENIENT OUTLETS .
5. CONTRACTOR SHALL PROVIDE PULL BOX (HAND HOLE) AS REQUIRED PER CODE FOR SITE OUTLETS.
6. SEE PANEL "RP-P" SHEET E607 FOR SITE , ALLEY AND CONVENIENCE OUTLET POWER CONNECTION.
7. CONTRACTOR SHALL COORDINATE HIS WORK WITH ARCHITECT AND CONSTRUCTION MANAGER/RESIDENT ENGINEER.
8. PRIOR TO INSTALLATION E.C.TO COORDINATE ALL CONDUIT ROUTING AND HANDHOLE LOCATIONS WITH LANDSCAPE ELEVATION CHANGES ALONG PROPOSED PATH OF CONDUIT. CONDUIT TAKE-OFF'S SHOWN ARE APPROXIMATE AND FOR REFERENCE ONLY. REFER TO LANDSCAPE SECTION DRAWINGS.
9. E.C. TO PROVIDE AND INSTALL CABLE REDUCING SPLICER PER UL486D FOR ALL LIGHTING AND RECEPTACLE ELECTRICAL CONNECTIONS. CONTRACTOR TO PROVIDE ALL MEANS AND METHODS FOR A COMPLETE AND CODE COMPLAINT INSTALLATION.
10. SEE DWG. E704 (PACKAGE 3)FOR LUTRON LIGHTING CONTROLS. ALSO REFER TO SPECIFICATION 260943 "DIGITAL NETWORK LIGHTING CONTROLS" FOR SEQUENCE OF OPERATION. E.C. TO COORDINATE QUANTITY OF CABLES AND CONDUIT(S) FOR SITE LIGHTING CIRCUITRY. PROVIDE AN ALLOWANCE FOR (24) 2" CONDUITS FOR SITE LIGHTING.



1 SE201 MUSEUM OF JEWISH HERITAGE SITE ELECTRICAL PROPOSED PLAN
SCALE: 1"=20'-0"

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

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CLIENT

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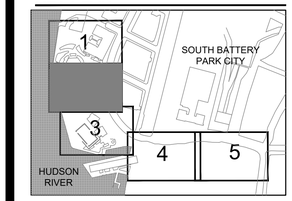
KEY PLAN



REGISTRATION

STATE OF NEW YORK · JOSEPH T. ZUPKO · 099667 · LICENSED PROFESSIONAL ENGINEER
EXPIRES 4/30/24

ISSUE/REVISION

I/R	DATE	DESCRIPTION
R	JULY 2022	ADDENDUM
I	JAN 2022	BID SET

Designed By:	CD
Drawn By:	CD
Checked By:	PK
Approved By:	JZ

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MUSEUM OF JEWISH HERITAGE SITE ELECTRICAL PROPOSED PLAN

SHEET NUMBER

SE201

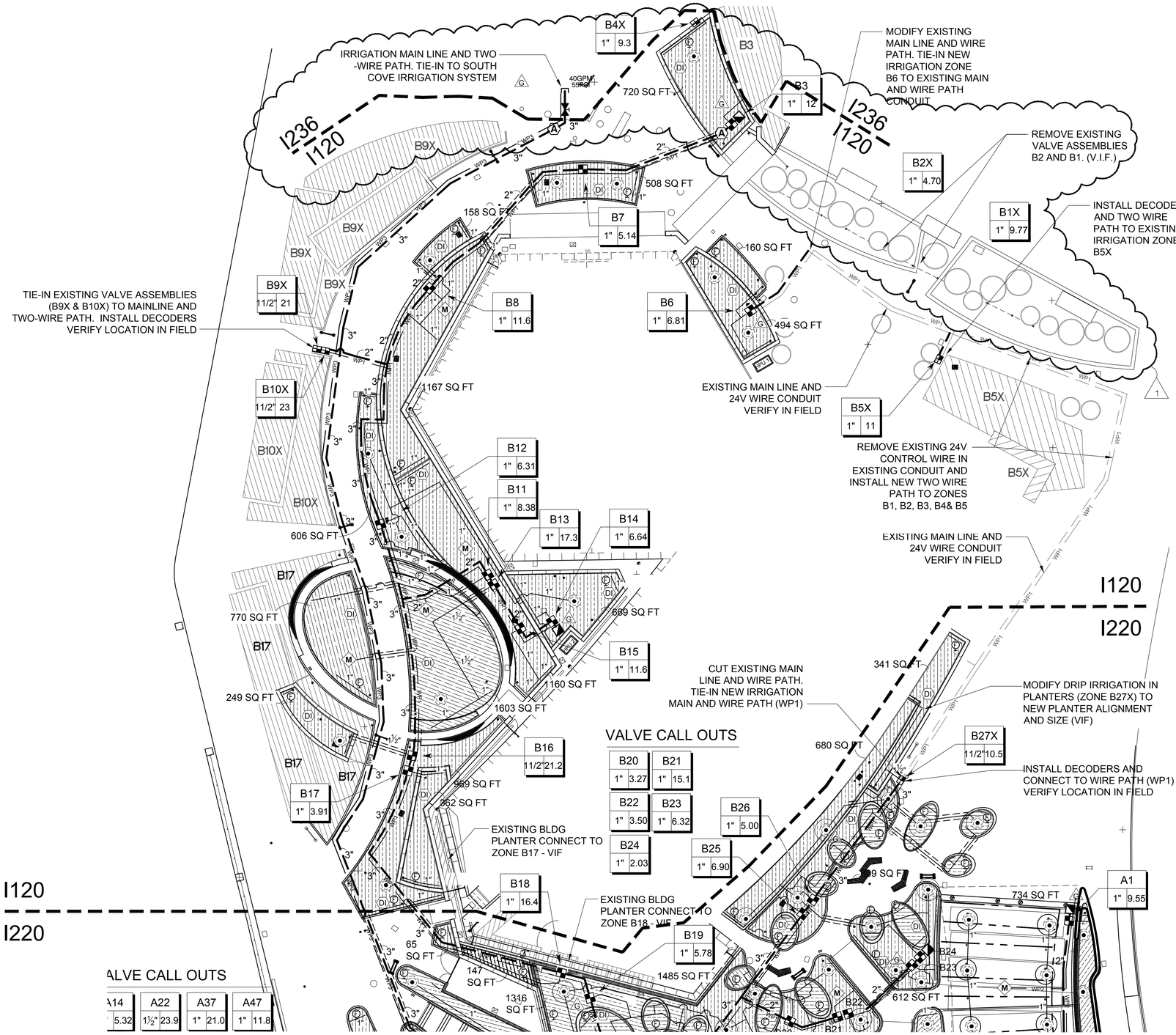
Last saved by: CDIAZ(2022-04-05) Last Plotted: 2022-07-11
Filename: C:\PWWORKING\AECOM_DS16_NAD0284677\BPCSE201R00.DWG

<u>ATTACHMENT #4</u>
REVISED IRRIGATION DRAWINGS –

I120 – Pkg 2 Irrigation Plan 1
I220 – Pkg 2 Irrigation Plan 2A
I236 – Pkg 2 Irrigation Plan – South Cove

(ATTACHED)

ANSI D 22" X 34"



1 I120 IRRIGATION PLAN 1 - MUSEUM OF JEWISH HERITAGE
SCALE: 1" = 20'-0"

IRRIGATION LEGEND

- EXISTING DRIP VALVE ASSEMBLY TO REMAIN
- PRE-ASSEMBLED CONTROL ZONE KITS WITH 1-1/2" CONTROL VALVE, 1-1/2" DISC FILTER AND 1-1/2" HIGH FLOW PRESSURE REGULATOR. FLOW RANGE: 11 GPM - 35 GPM. — 1/I501
- PRE-ASSEMBLED CONTROL ZONE KIT, WITH 1" CONTROL VALVE, 3/4" DISC FILTER, AND HIGH FLOW PRESSURE REGULATOR 4.5GPM TO 17.6GPM. — 7/I502
- MANUAL DRIP FLUSH VALVE ASSEMBLY — 5/I502
- DI POP UP DRIP SYSTEM OPERATION INDICATOR, STEM RISES 6" FOR CLEAR VISIBILITY WHEN DRIP SYSTEM IS CHARGED TO A MINIMUM OF 20PSI. — 6/I501
- TREE DRIP RINGS .9GPH X 12" EMITTER SPACING — 2/I504 4/I504 6/I504
- AREA TO RECEIVE DRIPLINE HUNTER ECO-MAT 17 MM 0.6 GPH FLEECE WRAPPED INLINE EMITTER TUBING, WITH THE BLANKET ECO-MAT. EVENLY DISPERSES WATER FROM UNDER THE SURFACE. EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART. — 1/I506 2/I506
- AREA TO RECEIVE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH COPPER STRIPE, CHECK VALVE AND ANTI-SIPHON FEATURE. 0.53 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. — 1/I503 3/I503 5/I503
- EXISTING DRIP IRRIGATION (VERIFY IN FIELD)
- QUICK COUPLER VALVE, PURPLE RUBBER LOCKING COVER FOR RECLAIMED WATER USE. RED BRASS AND STAINLESS STEEL, WITH 1" NPT INLET, 2-PIECE BODY. ACME KEY. — 3/I501
- DUCTILE IRON VALVE WITH DR-11 HDPE END CONNECTIONS SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 2" - 3" — 5/I501
- M SOIL MOISTURE SENSOR — 3/I506
- G GROUNDING LOCATION — 1/I504 3/I504 5/I504
- A COMBINATION AIR RELIEF VALVE — 2/I501
- 40 GPM 55 PSI CAP FOR FUTURE USE - SOUTH COVE CAP AT THE MAINLINE OR LATERAL LINE FOR FUTURE USE. THE PRESSURE AND FLOW PROVIDED TO THAT LOCATION ARE INDICATED NEXT TO THE CAP SYMBOL.
- POC1 POINT OF CONNECTION - WAGNER PARK
- POC2 POINT OF CONNECTION - MUSEUM OF JEWISH HERITAGE — 8/I505
- POC3 POINT OF CONNECTION - SOUTH COVE
- POC4 POINT OF CONNECTION - PIER A & THE BATTERY
- IRRIGATION LATERAL PIPE: SDR21 PVC (1 1/2" AND LARGER)
- IRRIGATION LATERAL PIPE: NON-NSF-PE-IDR15 (100 PSI) (1 1/4" AND SMALLER)
- IRRIGATION MAIN LINE: HDPE PE4710 DR 11 (200 PSI) — 4/I503 5/I503
- WP1 WIRE PATH #1 IN CONDUIT - WAGNER PARK
- WP2 WIRE PATH #2 IN CONDUIT - MUSEUM OF JEWISH HERITAGE — 4/I503 5/I503
- WP3 WIRE PATH #3 IN CONDUIT - SOUTH COVE
- WP4 WIRE PATH #4 IN CONDUIT - PIER A & THE BATTERY
- DRIP IRRIGATION BELOW PAVEMENT IN PVC SLEEVE — 1/I505 2/I505 3/I505 4/I505 5/I505 7/I505 8/I505
- PIPE SLEEVE - SCHEDULE 40 — 4/I501

Valve Callout
- # Valve Number
- #" #+ Valve Flow / Valve Size

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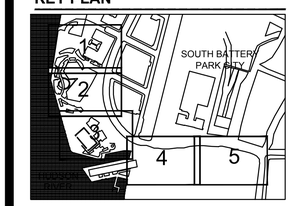
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	06/22/22	ADDENDUM #1

Designed By:	MJA
Drawn By:	MA / KB
Checked By:	MJA
Approved By:	MJA

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
PKG2 IRRIGATION PLAN 1

SHEET NUMBER
I120

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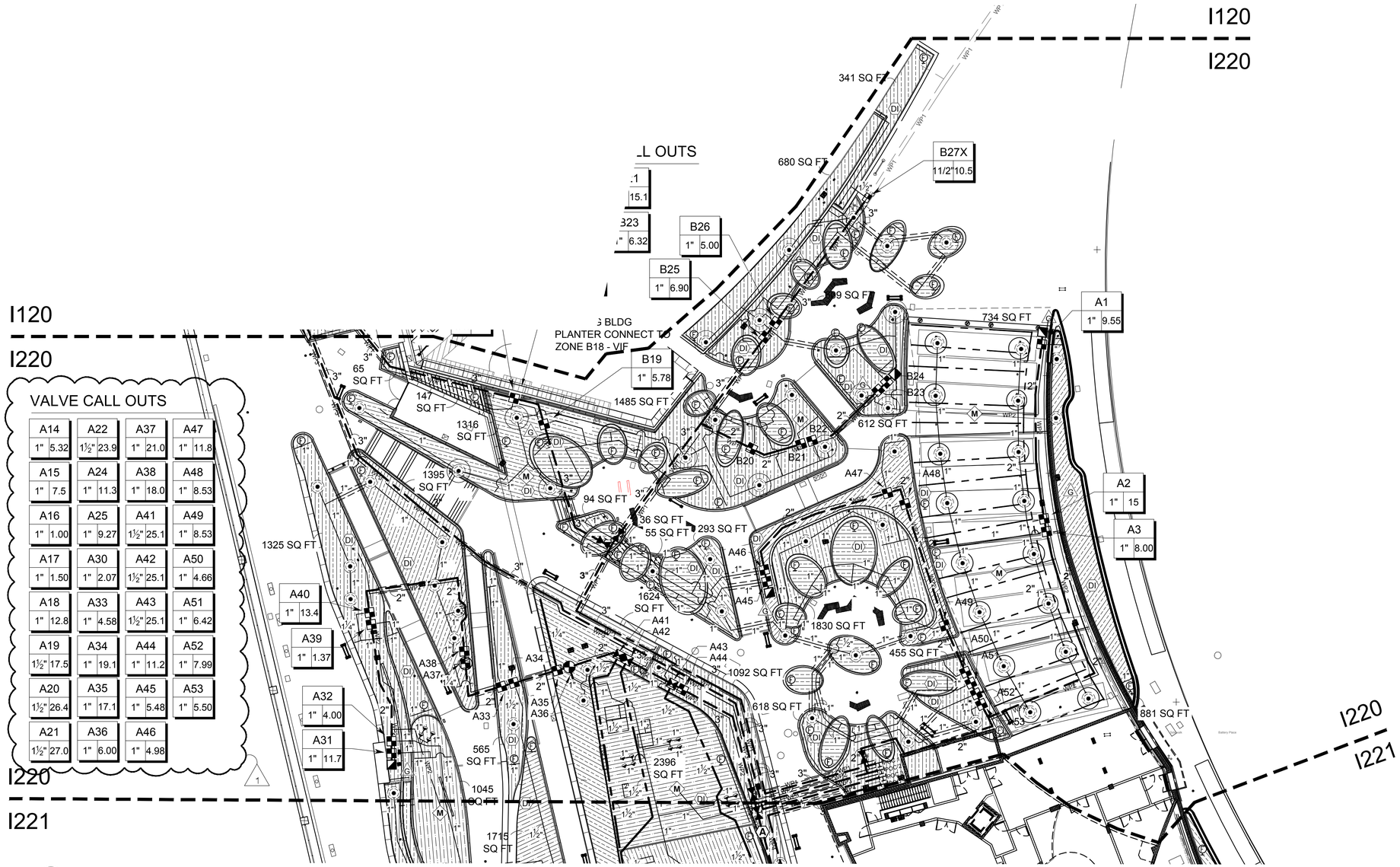
ANSI D 22" x 34"



1 I220 IRRIGATION PLAN 2A - NORTHERN GARDENS
SCALE: 1" = 20'-0"

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	
	EXISTING DRIP VALVE ASSEMBLY TO REMAIN	
	PRE-ASSEMBLED CONTROL ZONE KITS WITH 1-1/2" CONTROL VALVE, 1-1/2" DISC FILTER AND 1-1/2" HIGH FLOW PRESSURE REGULATOR. FLOW RANGE: 11 GPM - 35 GPM.	1 / 1501
	PRE-ASSEMBLED CONTROL ZONE KIT, WITH 1" CONTROL VALVE, 3/4" DISC FILTER, AND HIGH FLOW PRESSURE REGULATOR 4.5GPM TO 17.6GPM.	7 / 1502
P	MANUAL DRIP FLUSH VALVE ASSEMBLY	5 / 1502
DI	POP UP DRIP SYSTEM OPERATION INDICATOR, STEM RISES 6" FOR CLEAR VISIBILITY WHEN DRIP SYSTEM IS CHARGED TO A MINIMUM OF 20PSI.	6 / 1501
	TREE DRIP RINGS .9GPH X 12" EMITTER SPACING	2 / 1504, 4 / 1504, 6 / 1504
	AREA TO RECEIVE DRIPLINE HUNTER ECO-MAT 17 MM 0.6 GPH FLEECE WRAPPED INLINE EMITTER TUBING, WITH THE BLANKET ECO-MAT. EVENLY DISPERSES WATER FROM UNDER THE SURFACE. EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART.	1 / 1506, 2 / 1506
	AREA TO RECEIVE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH COPPER STRIPE, CHECK VALVE AND ANTI-SIPHON FEATURE. 0.53 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN.	1 / 1503, 3 / 1503, 5 / 1503
	EXISTING DRIP IRRIGATION (VERIFY IN FIELD)	
	QUICK COUPLER VALVE, PURPLE RUBBER LOCKING COVER FOR RECLAIMED WATER USE. RED BRASS AND STAINLESS STEEL, WITH 1" NPT INLET, 2-PIECE BODY. ACME KEY.	3 / 1501
	DUCTILE IRON VALVE WITH DR-11 HDPE END CONNECTIONS SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 2" - 3"	5 / 1501
M	SOIL MOISTURE SENSOR	3 / 1506
G	GROUNDING LOCATION	1 / 1504, 3 / 1504, 5 / 1504
A	COMBINATION AIR RELIEF VALVE	2 / 1501
40 GPM 55 PSI	CAP FOR FUTURE USE - SOUTH COVE CAP AT THE MAINLINE OR LATERAL LINE FOR FUTURE USE. THE PRESSURE AND FLOW PROVIDED TO THAT LOCATION ARE INDICATED NEXT TO THE CAP SYMBOL.	
POC1	POINT OF CONNECTION - WAGNER PARK	8 / 1505
POC2	POINT OF CONNECTION - MUSEUM OF JEWISH HERITAGE	8 / 1505
POC3	POINT OF CONNECTION - SOUTH COVE	8 / 1505
POC4	POINT OF CONNECTION - PIER A & THE BATTERY	8 / 1505
	IRRIGATION LATERAL PIPE: SDR21 PVC (1 1/2" AND LARGER)	
	IRRIGATION LATERAL PIPE: NON-NSF-PE-IDR15 (100 PSI) (1 1/4" AND SMALLER)	4 / 1503, 5 / 1503
	IRRIGATION MAIN LINE: HDPE PE4710 DR 11 (200 PSI)	4 / 1503, 5 / 1503
WP1	WIRE PATH #1 IN CONDUIT - WAGNER PARK	4 / 1503, 5 / 1503
WP2	WIRE PATH #2 IN CONDUIT - MUSEUM OF JEWISH HERITAGE	4 / 1503, 5 / 1503
WP3	WIRE PATH #3 IN CONDUIT - SOUTH COVE	4 / 1503, 5 / 1503
WP4	WIRE PATH #4 IN CONDUIT - PIER A & THE BATTERY	4 / 1503, 5 / 1503
	DRIP IRRIGATION BELOW PAVEMENT IN PVC SLEEVE	1 / 1505, 2 / 1505, 3 / 1505, 4 / 1505, 6 / 1505, 7 / 1505, 8 / 1505
	PIPE SLEEVE - SCHEDULE 40	4 / 1501

Valve Callout
Valve Number
Valve Flow
Valve Size

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HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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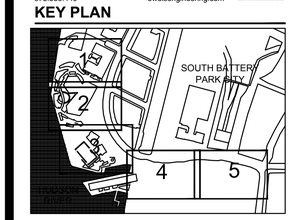
KEY PLAN



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ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	06/22/22	ADDENDUM #1

Designed By:	MJA
Drawn By:	MA / KB
Checked By:	MJA
Approved By:	MJA

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
PKG2 IRRIGATION PLAN 2A

SHEET NUMBER
I220

Last saved by: MICHAEL-ASTRAM(2022-06-16) Last Printed: 2022-06-16
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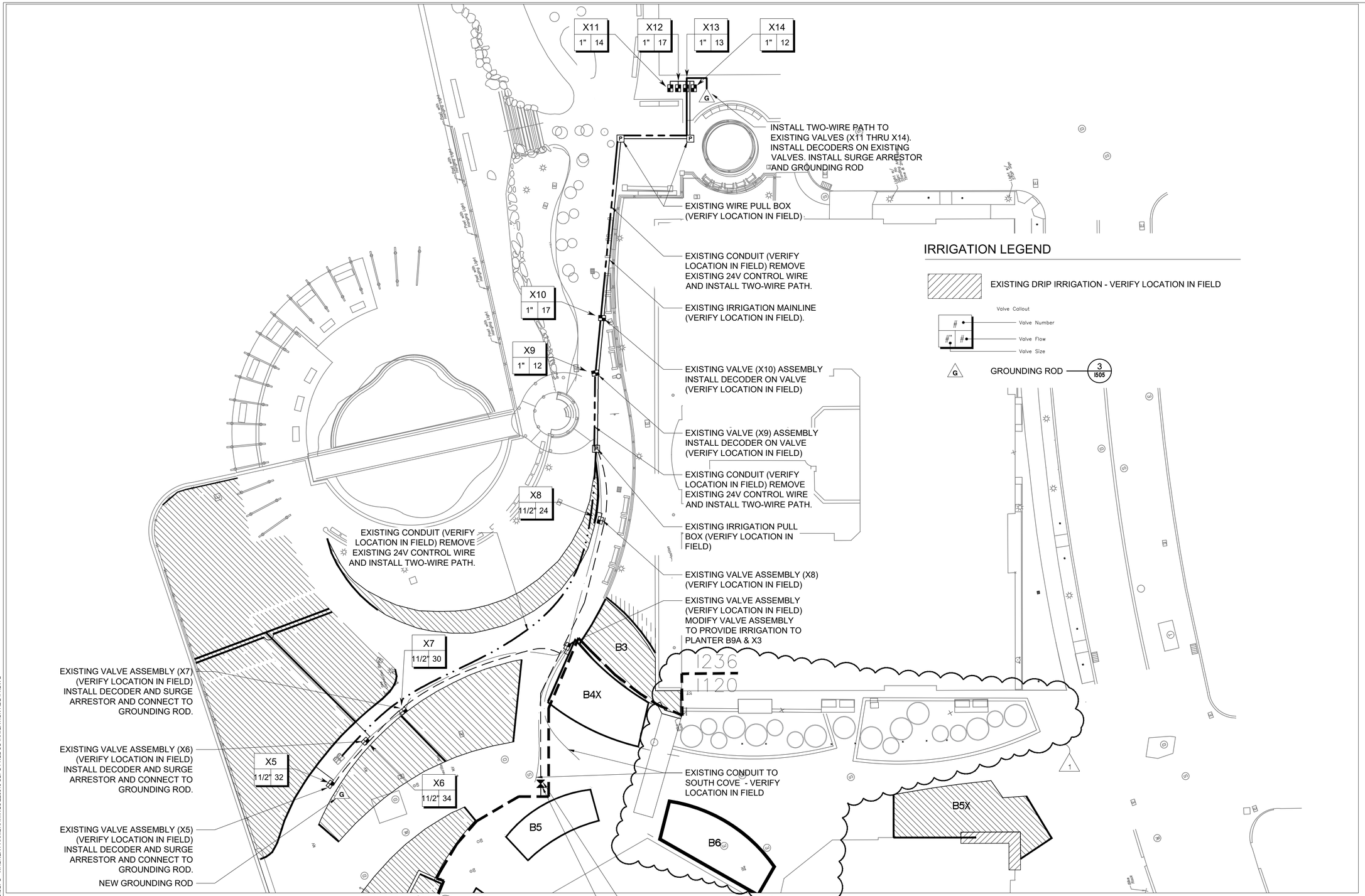
ANSI D 22" X 34"



IRRIGATION LEGEND

EXISTING DRIP IRRIGATION - VERIFY LOCATION IN FIELD

Valve Callout
- # — Valve Number
- #" # — Valve Flow / Valve Size

GROUNDING ROD — 3 / I505

1 IRRIGATION PLAN – SOUTH COVE
1235 SCALE: 1" = 20'-0"

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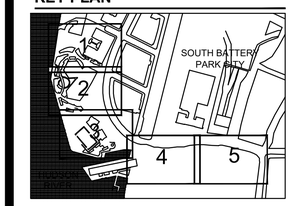
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	06/22/22	ADDENDUM #1

Designed By:	MJA
Drawn By:	MA / KB
Checked By:	MJA
Approved By:	MJA

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

PKG2 IRRIGATION PLAN - SOUTH COVE

SHEET NUMBER

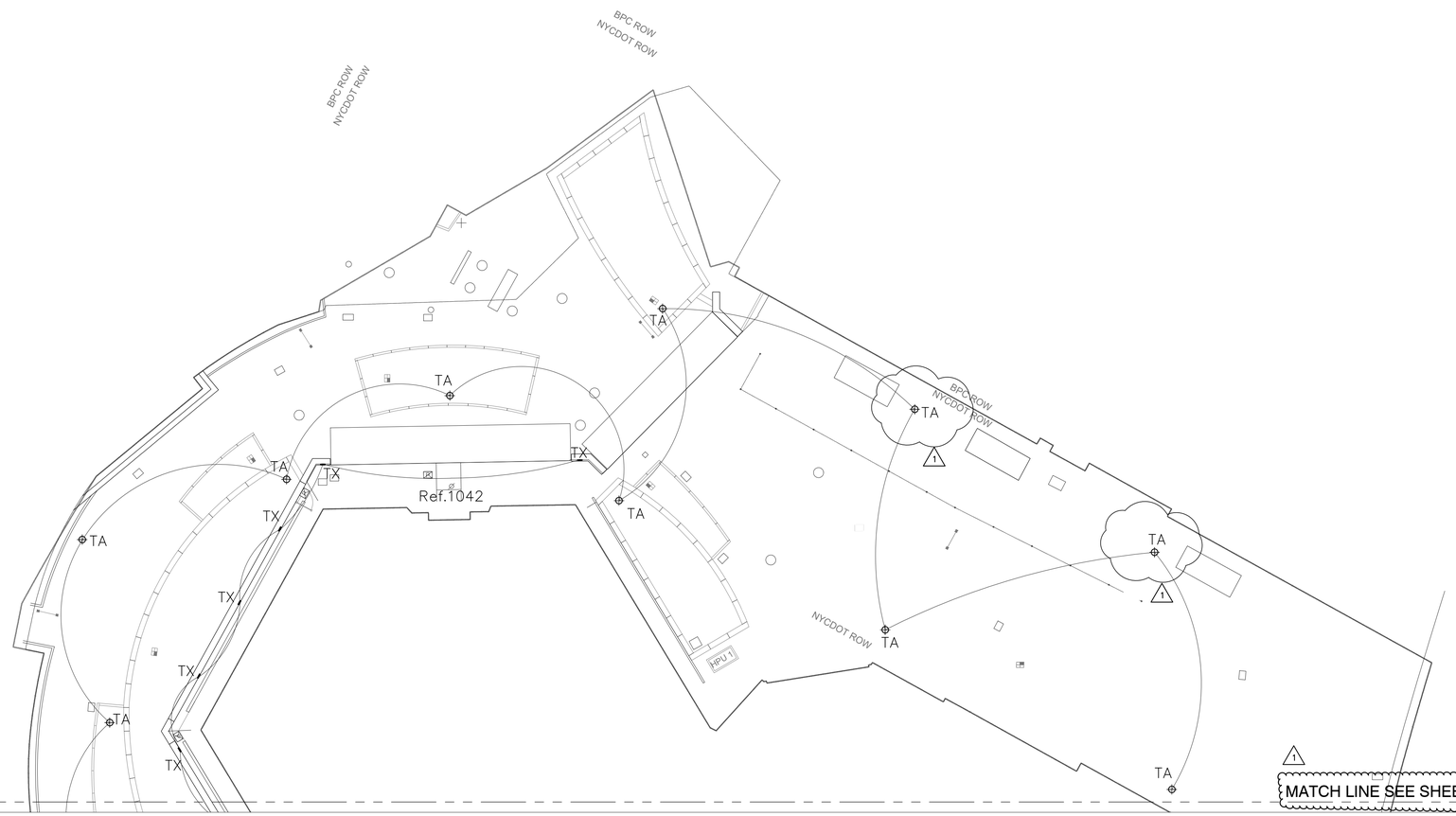
I236

<u>ATTACHMENT #5</u>
REVISED LIGHTING DRAWINGS –

LC01 – Museum of Jewish Heritage Lighting Layout Part 01
LC02 – Museum of Jewish Heritage Lighting Layout Part 02
LC03 – Wagner Park Lighting Layout Part 03

(ATTACHED)

FIXTURE TYPE	DESCRIPTION
TA	NEW HISTORICAL POLE LUMINAIRE
TA-1	HISTORICAL POLE LUMINAIRE W/ HOUSESIDE SHIELD
TA-2	NEW HISTORIC POLE LUMINAIRE - ESPLANADE
TB	38' POLE WITH (6) LIGHT HEADS
TC	INGRADE TREE UPLIGHT
TD	CATENARY CYLINDER DOWNLIGHT
TD-1	ADJUSTABLE CATENARY CYLINDER DOWNLIGHT
TF	BENCH LIGHTING
TF-1	BENCH LIGHTING
TF-2	BENCH LIGHTING
TH-1	16' POLE WITH (1) LIGHT HEADS
TH-2	16' POLE WITH (2) LIGHT HEADS
TH-3	16' POLE WITH (3) LIGHT HEADS
TH-4	16' POLE WITH (4) LIGHT HEADS
TJ	HANDRAIL LIGHTING ASYM. OPTIC
TJ-1	HANDRAIL LIGHTING SYM. OPTIC
TK	INGRADE ADJUSTABLE UPLIGHT
TL	16' CATENARY POLE
TL-1	16' CATENARY POLE WITH (1) FIXTURE HEADS
TN	POLE MOUNTED FLOOD LIGHT
TQ	PERIMETER LINEAR LENS FIXTURE
TS	DOWNLIGHT
TS-1	DOWNLIGHT
TT	WALL MOUNTED STEP LIGHT
TU	PENDANT SPOT LIGHT
TW	SURFACE MOUNTED FLOOD LIGHT
TX	WALL MOUNTED STEP LIGHT
P	POWER SUPPLY UNIT
B	BATTERY PIT FOR SOLAR POLES
P	PSU BURIAL VAULT (10X100W DRIVER EACH)
XX	LIGHTING CONTROL ZONE



SCALE 1"=20'-0"

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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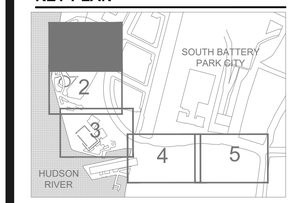
KEY PLAN



REGISTRATION

ISSUE/REVISION

R	JULY2022	ADDENDUM
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	SUZAN TILLOTSON
Drawn By:	CHANDNI AZEEZ
Checked By:	SHAN JIANG
Approved By:	MARK KUBICKI

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MUSEUM OF JEWISH HERITAGE LIGHTING LAYOUT PART 01

SHEET NUMBER

LC01

Last saved by: SJIANG(2022-07-26) Last Plotted: 2022-07-26
Filename: Q:\JobS\SOUTH BATTERY PARK CITY (216520)\AUTO CAD DRAWINGS\XREF AND TDA LAYOUTS\SBPC-MOD-LIGHT-PLAN.DWG

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B	BATTERY PIT FOR SOLAR POLES
P	PSU BURIAL VAULT (10X10OW DRIVER EACH)
CZ	LIGHTING CONTROL ZONE

AECOM

PROJECT

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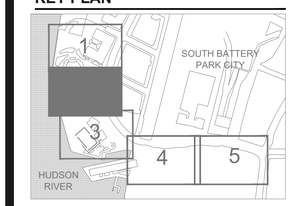
KEY PLAN



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I/R	DATE	DESCRIPTION
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Designed By:	SUZAN TILLOTSON
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Checked By:	SHAN JIANG
Approved By:	MARK KUBICKI

PROJECT/TERM CONTRACT NUMBER

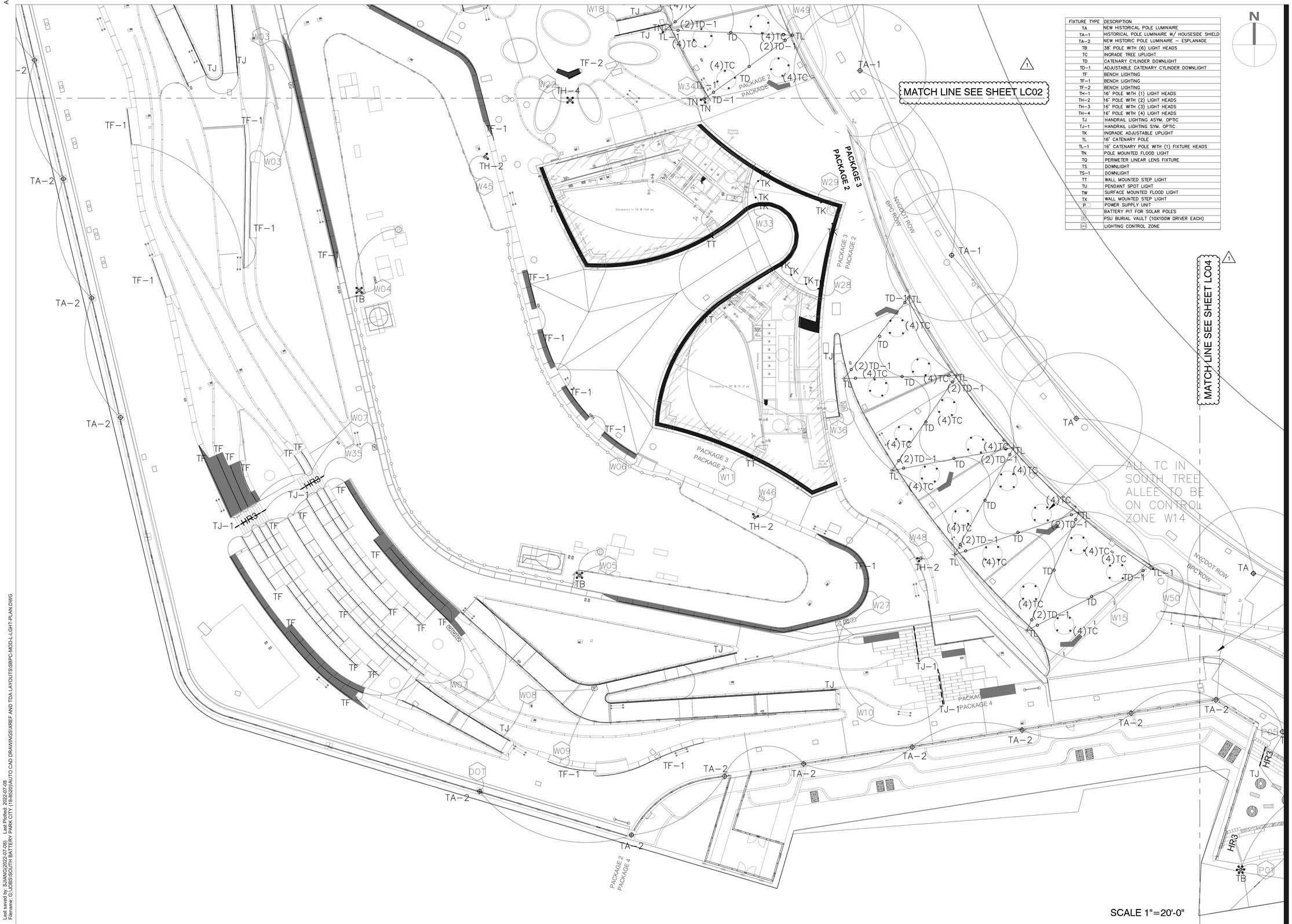
Contract No. 18-2586

SHEET TITLE

MUSEUM OF JEWISH HERITAGE LIGHTING LAYOUT PART 02

SHEET NUMBER

LC02



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6-15	LIGHTING CONTROL ZONE

AECOM

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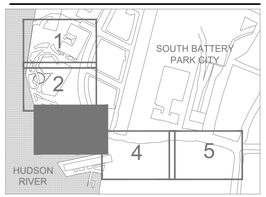

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Drawn By:	CHANDNI AZEEZ
Checked By:	SHAN JIANG
Approved By:	MARK KUBICKI

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WAGNER PARK LIGHTING LAYOUT PART 03

SHEET NUMBER

LC03

<u>ATTACHMENT #6</u>
REVISED CIVIL
DRAWINGS AND SPECIFICATION

[NO FURTHER TEXT ON THIS PAGE]

<u>ATTACHMENT #6A</u>
REVISED CIVIL DRAWINGS –

C002 – General Notes and Notes
C401SW – Storm Drainage Plan 01
C401SE – Storm Drainage Plan 02
C403SE – Storm Drainage Plan 09
C403SW – Storm Drainage Plan 10
C503SE – Subdrainage Plan 09
C601SW – Water and Sewer Plan 01
C602NW – Water and Sewer Plan 03
C602SE – Water and Sewer Plan 05
C602SW – Water and Sewer Plan 06
C603NW – Water and Sewer Plan 07
C603NE – Water and Sewer Plan 08
C603SE – Water and Sewer Plan 09
C603SW – Water and Sewer Plan 10
C822 – Sections and Details

(ATTACHED)

ANSI D 22" x 34"

GENERAL NOTES:

1. SEE SHEETS G004 THROUGH G007 FOR PROJECT SPECIFIC GENERAL NOTES. NOTES CONTAINED HEREIN APPLY TO C SERIES SHEETS. SEE G SERIES SHEETS FOR INFORMATION PERTAINING TO NON-C SERIES SHEETS.
2. WORK SHALL CONFORM TO THE NYC BUILDING CODE, THE NYC DRAFT STORMWATER MANAGEMENT PROGRAM PLAN (2018), NYC DEP SEWER DESIGN STANDARDS, NYC DEP WATER MAIN DESIGN STANDARDS, AND THE NYC PLUMBING CODE STANDARDS. CONTRACTOR SHALL MAINTAIN A COPY OF THESE DOCUMENTS ON-SITE DURING CONSTRUCTION. 2
3. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL CONTACT DIG SAFELY NEW YORK 811(1-800-272-4480) A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE SERVICES OF A PROFESSIONAL UNDERGROUND UTILITY LOCATION SERVICE TO LOCATE AND MAINTAIN MARKINGS THAT INDICATE LOCATIONS OF UNDERGROUND UTILITIES IN THE CONSTRUCTION AREA.
5. SANITARY, CSO, AND STORM SEWER OUTFALLS AND DEP PIPES WITHIN THE PROJECT LIMITS SHALL BE CLEANED AND TELEVISED (CCTV INSPECTIONS) BOTH PRIOR TO AND AFTER CONSTRUCTION IN ACCORDANCE WITH DEP CSI (COLLECTION SYSTEM INVESTIGATION) STANDARDS. CONTRACTOR SHALL COORDINATE WITH DEP CSI BEFORE PERFORMING CCTV OF THE SEWERS. PLEASE CONTACT TERRANCE BROCK (TBROCK@DEP.NYC.GOV). REPORTS OF INSPECTION SHALL BE SUBMITTED TO DEP FOR REVIEW. DEP INFRASTRUCTURE IMPACTED BY CONTRACTOR SHALL BE REPLACED/RELOCATED IN ACCORDANCE WITH DEP REQUIREMENTS.
6. FLOOD ALIGNMENT PROVIDED HEREIN FOR REFERENCE ONLY. NOTE THAT PORTIONS OF THE ALIGNMENT ARE ON THE SURFACE AND OTHERS ARE UNDERGROUND. SEE STRUCTURAL PLANS FOR DETAILS.
7. WALL PENETRATION FOR STORM DRAIN, WATER, AND SANITARY SEWER PIPING SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DOCUMENTS, UNLESS NOTED OTHERWISE. 2 1
8. PROJECT DATUM:
   A. COORDINATES SHOWN HEREON ARE REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM NYLI NAD 83 AS ESTABLISHED BY GPS METHODS. THESE VALUES HAVE BEEN SCALED TO GROUND AND SUBJECT TO TRAVERSE ADJUSTMENT.
   B. ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED BY GPS METHODS.

SITE DEMOLITION NOTES:

1. SEE DRY UTILITY DEMOLITION PLANS, SE SHEETS, FOR DEMOLITION OF DRY UTILITIES ACROSS THE PROJECT.
2. SEE SITE MEP PLANS, SPF SHEETS, FOR DEMOLITION OF EXISTING IRRIGATION UTILITIES AND APPURTENANCES.
3. SEE PAVILION DEMOLITION PLANS, DM SHEETS, FOR DETAILS ON REMOVAL AND DEMOLITION OF EXISTING PAVILION ELEMENTS.
4. SEE RIGHT-OF-WAY DEMOLITION PLANS, MT SHEETS, FOR DEMOLITION WITHIN THE RIGHT OF WAY, AND FOR TESC DRAWINGS.
5. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL TEMPORARY BARRIERS AND SECURITY DEVICES AS NECESSARY FOR THE PROTECTION OF THE ADJACENT PUBLIC IMPROVEMENTS WITHIN THE STREET RIGHT-OF-WAYS.
6. SEE IRRIGATION PLANS, I SHEETS, AND SPECIFICATIONS FOR IRRIGATION DEMOLITION AND TEMPORARY IRRIGATION.
7. SEE TREE PROTECTION PLANS, L SHEETS, AND SPECIFICATIONS FOR CARE, TRANSPLANTING AND PROTECTION OF EXISTING PLANTS TO REMAIN.
8. THE CONTRACTOR SHALL COORDINATE THE REMOVAL, ABANDONMENT AND/OR CAPPING OF EXISTING UTILITIES WITH THE APPLICABLE UTILITY AGENCY, INCLUDING BUT NOT LIMITED TO:
   A. EXISTING WATER CONNECTIONS, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
   B. EXISTING SANITARY SEWER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
   C. EXISTING STORM DRAINAGE, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION. 1
9. EXCAVATION FOR REMOVAL OF UTILITIES SHALL BE IN ACCORDANCE WITH THE PROJECT'S GEOTECHNICAL ENGINEERING REPORT PREPARED BY OWEIS ENGINEERING. A DRAFT GEOTECHNICAL REPORT WAS PROVIDED ON 05/12/2020.
10. THE CONTRACTOR SHALL COMPLY WITH THE REPORT RECOMMENDATIONS FOR TEMPORARY CONSTRUCTION SLOPES AND SHALL NOT EXCEED THOSE SLOPES WITHOUT PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER.
11. CAP OR PLUG UTILITY SERVICES AT THE LIMITS OF EXCAVATION OR AT THE LIMITS OF DEMOLITION, UNLESS NOTED OTHERWISE.
12. ABANDON PIPES AND STRUCTURES SHOWN HEREON ACCORDING TO NYC DEP STANDARD SPECIFICATION SECTION 72.11.

SITE DEMOLITION NOTES CONT.:

13. ABANDONMENT OF UTILITY PIPELINES SMALLER THAN 12 INCHES IN DIAMETER SHALL REQUIRE CAPPING OR PLUGGING OF THE PIPE ENDS ONLY, UNLESS NOTED OTHERWISE.
14. REMOVE EXISTING PAVEMENTS AND WALKS, BASE COURSE, AND SUBBASE MATERIAL TO FULL DEPTH.
15. REMOVE EXISTING PAVERS AND CRUSHED ROCK SURFACING, BASE COURSE, AND SUBBASE MATERIAL TO FULL DEPTH.
16. PROTECT ALL EXISTING STRUCTURES AND FOUNDATIONS TO REMAIN WITHIN THE LIMITS OF WORK DURING CONSTRUCTION UNLESS NOTED OTHERWISE. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED IN ORDER TO AVOID IMPACTS TO EXISTING STRUCTURES, FOUNDATIONS AND RETAINING WALLS.
17. PROTECT ALL EXISTING UTILITIES INDICATED TO REMAIN FROM DAMAGE AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED TO ENSURE ADEQUATE PROTECTION OF UTILITIES AND APPURTENANCES TO REMAIN. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.
18. THE CONTRACTOR SHALL REPLACE PAVEMENT MARKINGS AND/OR SIGNAGE THAT HAS BEEN REMOVED OR DAMAGED FROM CONSTRUCTION ACTIVITIES.
19. MONITORING WELLS, IF ENCOUNTERED, SHALL BE DECOMMISSIONED IN ACCORDANCE WITH THE CITY OF NEW YORK REQUIREMENTS.
20. ITEMS SPECIFIED FOR SALVAGE ARE FOR REUSE WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL COORDINATE WITH THE OWNER REGARDING ADDITIONAL SALVAGE REQUIREMENTS. 1
21. SALVAGE AND PROTECT THE FOLLOWING FOR REUSE ON SITE:
    A. BLUE STONE AND TAPESTRY STONE, INCLUDING BUT NOT LIMITED TO PAVEMENTS, CURBS, WALLS, CLADDING, AND STEPS.
    B. WOOD AS NOTED ON DRAWINGS (SEE DEMOLITION NOTE 3 FOR WOOD ON EXISTING BUILDING).
    C. BENCHES AS NOTED ON DRAWINGS.
    D. FLAG POLES AND BASES.
22. SEE LANDSCAPING PLANS FOR REUSE OF SITE SALVAGE ITEMS WITHIN THE PROJECT LIMITS. 1
23. SEE STRUCTURAL PLANS FOR ADDITIONAL INFORMATION ON EXISTING BULKHEAD, RELIEVING PLATFORM, AND RAILING REMOVAL.
24. SEE LANDSCAPING PLANS FOR RESTORATION AND REPLACEMENT OF EXISTING HISTORICAL BULKHEAD DEMARCATIONS.
25. RELOCATED FIRE HYDRANTS SHALL BE OPERATIONAL PRIOR TO DISCONNECTION OF EXISTING FIRE HYDRANTS.

SITE PAVING SECTION NOTES:

1. DIMENSIONS AND COORDINATES ARE TO FACE OF CURB, FACE OF BUILDING, FACE OF WALL, OR LIMIT OF PAVEMENT SECTION, UNLESS NOTED OTHERWISE.
2. APPLY A BITUMINOUS TACK COAT AT LOCATIONS WHERE ASPHALT PAVEMENT ABUTS ANY BUILDING STRUCTURE, UTILITY APPURTENANCE OR OTHER PAVEMENT TYPE.
3. CONCRETE FOR EXTERIOR SITE FACILITIES, INCLUDING BUT NOT LIMITED TO CURBS, SIDEWALKS, PAVING PADS, THRUST BLOCKING, FENCE POST AND BOLLARD FOUNDATIONS, RAMPS, AND UTILITY STRUCTURES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 033000, "CAST-IN-PLACE CONCRETE" AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45 AND CONCRETE SHALL HAVE 5 PLUS OR MINUS 0.5 PERCENT AIR ENTRAINMENT. CONCRETE BASE FOR PAVEMENT AND CONCRETE FOR PAVING SHALL CONFORM TO CLASS A-40, TYPE 1A CONCRETE IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS SECTION 3.05, "CONCRETE." CONCRETE BASE FOR PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS SECTION 4.04, "CONCRETE BASE FOR PAVEMENT." CONCRETE FOR PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS SECTION 4.05, "CONCRETE PAVEMENT."
4. PROVIDE AN EXPANSION JOINT AT LOCATIONS WHERE CONCRETE WALK OR CONCRETE PAVEMENT ABUT STRUCTURAL FOUNDATION, COLUMN OR WALL, AND FIXED OBJECTS.
5. EXTERIOR CONCRETE PAVEMENT JOINTS SHALL BE WEAKENED PLANE JOINTS WITH A MAXIMUM SPACING OF X (SPACING SHALL BE THICKNESS OF CONCRETE IN FEET X 24) FEET ON CENTER. PAVEMENT PANEL LENGTH TO WIDTH RATIO SHALL NOT EXCEED 1.25. AT THE CONTRACTOR'S OPTION, CONTRACTOR MAY SUBSTITUTE CONSTRUCTION JOINTS FOR WEAKENED PLANE [CONTROL] JOINTS. JOINTS SHALL BE COORDINATED WITH LANDSCAPE PLANS.
6. SEE LANDSCAPE PLANS FOR PAVEMENT MATERIALS, COLOR, AND FINISH.
7. SEE CIVIL MAINTENANCE AND TRAFFIC PROTECTION DRAWINGS FOR DETAILS ON SITE ELEMENTS LOCATED WITH THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION RIGHT OF WAY.

GRADING NOTES:

1. SPOT ELEVATIONS ARE TO TOP OF PAVEMENT, GUTTER ELEVATION, BOTTOM OF WALL, OR FINISHED GRADE UNLESS NOTED OTHERWISE.
2. CURB AND/OR WALL REVEAL WHERE ADJACENT TO PLANTING ZONES AND/OR WALKING SURFACES SHALL BE 4 INCHES UNLESS NOTED OTHERWISE. REFER TO (10/C811) FOR A SCHEMATIC DETAIL. 1 1
3. FOR UTILITIES TO REMAIN, ADJUST UTILITY ACCESS COVERS TO FINISH GRADE.
4. TOP ELEVATION FOR VAULTS SHALL MATCH FINISH GRADE. SLOPE VAULT LIDS AS REQUIRED.
5. SLOPES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. CONSTRUCTION SHALL BE BASED ON SPOT ELEVATIONS.

STORM DRAINAGE NOTES:

1. LENGTHS OF PIPING SHOWN ON STORM DRAIN ARE FROM CENTER OF STRUCTURE, FITTING OR POINT OF INTERSECTION AND ARE SHOWN FOR INFORMATION ONLY. ALL PIPING SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE PLANS AND LOCATED BY COORDINATES OR DIMENSIONS.VERIFY LOCATIONS OF LATERAL BUILDING CONNECTIONS WITH THE PLUMBING DRAWINGS PRIOR TO INSTALLATION.
2. TRENCH DRAIN GRATES SHALL BE LOCKING QUE CAST BRONZE BY IRON AGE DESIGNS, UNLESS NOTED OTHERWISE.
3. STORM DRAINAGE DETAILS ARE FOR A PRIVATE DRAIN SYSTEM. FOR NYC DEP OWNED STORM DRAINAGE AND MANHOLE DETAILS SEE NYC DEP STANDARD DETAILS OF CONSTRUCTION. 1
4. HYDRODYNAMIC SEPARATORS SHALL BE SIZED ACCORDING TO THE FOLLOWING REQUIREMENTS: 3
   A. HDS1-1-1:TREATMENT FLOW RATE = 1.07 CFS, 100-YEAR FLOW RATE = 2.87 CFS, SQUARE STRUCTURE
   B. HDS3-1-1:TREATMENT FLOW RATE = 0.44 CFS, 100-YEAR FLOW RATE = 1.18 CFS, ROUND STRUCTURE
   C. HDS6-1-1:TREATMENT FLOW RATE = 0.38 CFS, 100-YEAR FLOW RATE = 1.01 CFS, ROUND STRUCTURE 1
   D. HDS7-1-1:TREATMENT FLOW RATE = 0.42 CFS, 100-YEAR FLOW RATE = 1.11 CFS, ROUND STRUCTURE
   E. HDS8-1-1:TREATMENT FLOW RATE = 0.87 CFS, 100-YEAR FLOW RATE = 2.32 CFS, ROUND STRUCTURE
   F. HDS9-1-1:TREATMENT FLOW RATE = 1.20 CFS, 100-YEAR FLOW RATE = 3.20 CFS, ROUND STRUCTURE
   G. HDS10-1-1:TREATMENT FLOW RATE = 0.26 CFS, 100-YEAR FLOW RATE = 0.70 CFS, ROUND STRUCTURE
   H. HDS11-1-1:TREATMENT FLOW RATE = 1.03 CFS, 100-YEAR FLOW RATE = 2.76 CFS, ROUND STRUCTURE
5. METAL DRAINAGE HARDWARE IDENTIFIED IN SECTIONS AND DETAILS SHALL BE SS316, UNLESS NOTED OTHERWISE. 2
6. PIPE LOCATED WITHIN MAPPED STREETS SHALL BE IN ACCORDANCE WITH NYC DEP SEWER DESIGN STANDARDS. PIPE LOCATED WITHIN THE BATTERY PROPERTY SHALL BE IN ACCORDANCE WITH NYC DPR STANDARDS. PIPE LOCATED IN OTHER AREAS THAN NOTED ABOVE SHALL BE A MATERIAL IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS.

SUBDRAINAGE NOTES:

1. LENGTHS OF PIPING SHOWN ON SUBDRAINAGE ARE FROM CENTER OF STRUCTURE, FITTING OR POINT OF INTERSECTION AND ARE SHOWN FOR INFORMATION ONLY. ALL PIPING SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE PLANS AND LOCATED BY COORDINATES OR DIMENSIONS.
2. SUBDRAINAGE DETAILS ARE FOR A PRIVATE DRAIN SYSTEM. FOR NYC DEP OWNED STORM DRAINAGE AND MANHOLE DETAILS SEE NYC DEP STANDARD DETAILS OF CONSTRUCTION. 1

WATER NOTES:

1. WATER AND REUSE WATER MATERIALS AND CONSTRUCTION SHALL CONFORM TO NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS FOR WATER LINES INSTALLED WITHIN THE PUBLIC RIGHT OF WAY. FOR WATER AND REUSE WATER MATERIALS AND CONSTRUCTION WITHIN PRIVATE PROPERTY, REFER TO THE PROJECT SPECIFICATIONS AND PLAN DOCUMENTATION.
2. SEE NOTE 9 FOR TYPICAL COVER OVER WATER AND REUSE WATER LINES. MAINTAIN A MINIMUM OF 12 INCHES CLEAR AT CROSSINGS WITH UTILITIES OTHER THAN SANITARY SEWER LINES. WATER AND REUSE WATER LINES SHALL PASS UNDER THE OTHER UTILITY IF THE MINIMUM SPECIFIED COVER CANNOT BE OBTAINED.
3. MAINTAIN A MINIMUM OF 18 INCHES CLEAR BETWEEN CROSSINGS OF WATER AND REUSE WATER LINES AND SANITARY SEWER LINES. WATER AND REUSE WATER LINES SHALL CROSS ABOVE SANITARY SEWER LINES. PROVIDE HORIZONTAL AND VERTICAL BENDS WHERE INDICATED. WHERE A POINT OF INTERSECTION (HORIZONTAL OR VERTICAL) IS SHOWN AND THE DEFLECTION ANGLE IS MORE OR LESS THAN A STANDARD BEND, USE A COMBINATION OF THE STANDARD BEND AND JOINT DEFLECTION OF THE PIPE TO MEET THE ALIGNMENT SHOWN. MAXIMUM JOINT DEFLECTION IS 3 DEGREES OR THE MAXIMUM THAT IS RECOMMENDED BY THE PIPE MANUFACTURER, WHICHEVER IS SMALLER.

WATER NOTES CONT:

4. PROVIDE RESTRAINED JOINTS AT ALL HORIZONTAL AND VERTICAL BENDS IN ACCORDANCE WITH NYC DEP STANDARD SEWER AND WATER MAIN DETAILS AND SPECIFICATIONS FOR WATER LINES INSTALLED WITHIN THE PUBLIC RIGHT OF WAY AND WITHIN PRIVATE PROPERTY. FOR WATER AND REUSE WATER MATERIALS AND CONSTRUCTION WITHIN PRIVATE PROPERTY, REFER TO THE PROJECT SPECIFICATIONS AND PLAN DOCUMENTATION FOR ADDITIONAL THRUST BLOCKING RESTRAINT. THE CONTRACTOR MAY ELIMINATE HORIZONTAL AND/OR VERTICAL THRUST BLOCKING AT LOCATIONS WHERE INSTALLATION OF THE THRUST BLOCKING WILL INTERFERE WITH OTHER CONSTRUCTION. SEE SPECIFICATION FOR REQUIREMENTS.
5. CAPPED WATER LINES OR TEES SHALL HAVE RESTRAINED JOINTS. COORDINATE POINTS AND ELEVATIONS SHOWN FOR ALL MANHOLES ARE TO THE CENTER OF THE MANHOLE, UNLESS NOTED OTHERWISE.
6. THE CONTRACTOR SHALL VERIFY EXISTING AND NEW UTILITY CROSSINGS PRIOR TO WATER AND SANITARY SEWER SYSTEM INSTALLATION. TRENCHING FOR WATER AND REUSE WATER LINES SHALL CONFORM TO NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS AND PIPE BEDDING SHALL CONFORM TO NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS.
7. UTILITY CROSSINGS SHOWN ON THE UTILITY PROFILES ARE FOR THE CONTRACTOR'S INFORMATION AND REFERENCE. THE CONTRACTOR SHALL VERIFY EXISTING AND NEW UTILITY CROSSINGS PRIOR TO UTILITY SYSTEM INSTALLATION.
8. WATER AND REUSE WATER LINES SHALL BE DUCTILE IRON FOR PIPES GREATER THAN OR EQUAL TO 3 INCHES, AND TYPE K COPPER FOR PIPES SMALLER THAN 3 INCHES.
9. WATER AND REUSE WATER LINES SHALL BE LAID WITH THE FOLLOWING MINIMUM COVERS:

   <8 INCH PIPE - MINIMUM 4'-0" OF COVER
   8-INCH PIPE - MINIMUM 3'-9" OF COVER
   10-INCH PIPE - MINIMUM 3'-7" OF COVER
   12-INCH PIPE - MINIMUM 3'-5" OF COVER
10. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED.
11. BOTH REUSE AND DOMESTIC WATER DISTRIBUTION LINES ARE SHOWN, IN PARALLEL, WITH A 2' CENTERLINE OFFSET. PIPE DIMENSIONS SHOWN APPLY TO BOTH LINES, WHILE N/E DIMENSIONS APPLY TO THE DOMESTIC LINE. HORIZONTAL LOCATION FOR THE REUSE WATER LINE CAN BE OBTAINED BY APPLYING A 2' OFFSET FROM SHOWN DOMESTIC LINE N/E, UNLESS NOTED OTHERWISE.
12. WHERE A NON-STANDARD FITTING ANGLE IS REFERENCED IN THE PLAN, PROVIDE A COMBINATION OF STANDARD FITTINGS (11 1/4°, 22 1/2°, AND 45°), PLUS ALLOWABLE PIPE DEFLECTION, IN ORDER TO MEET INDICATED FITTING ANGLE.
13. HYDRANTS ORDERED INSTALLED OR REQUIRED TO REPLACE EXISTING HYDRANTS; AND, EXISTING HYDRANTS ORDERED RETAINED AND ADJUSTED TO NEW GRADE, REMOVED AND RESET, OR RECONNECTED TO NEW OR EXISTING WATER MAINS SHALL BE TWO-PIECE "BREAKAWAY" HYDRANTS, TYPES S-2-LP OR D-2-LP, AS SHOWN ON THE LATEST REVISIONS OF BWSO STANDARD DRAWING NOS. 43250-Z OR 43142-Z, RESPECTIVELY, AND AS SPECIFIED IN ACCORDANCE WITH SECTION 2.08 – STANDARD SPECIFICATIONS FOR DRY BARREL FIRE HYDRANTS AND EXTENSION KITS

SANITARY SEWER NOTES:

1. SANITARY SEWER MATERIALS AND CONSTRUCTION SHALL CONFORM NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS.
2. SANITARY SEWER PIPING SHALL BE REINFORCED CONCRETE PIPING UNLESS NOTED OTHERWISE.
3. TRENCHING FOR SANITARY SEWERS SHALL CONFORM TO NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS AND PIPE BEDDING SHALL CONFORM TO NYC DEP STANDARD SEWER AND WATER MAIN SPECIFICATIONS. SANITARY SEWER MANHOLES SHALL BE 48 INCHES IN DIAMETER, UNLESS NOTED OTHERWISE.

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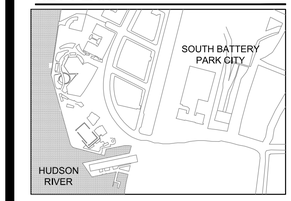
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
3	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

GENERAL NOTES AND NOTES

SHEET NUMBER

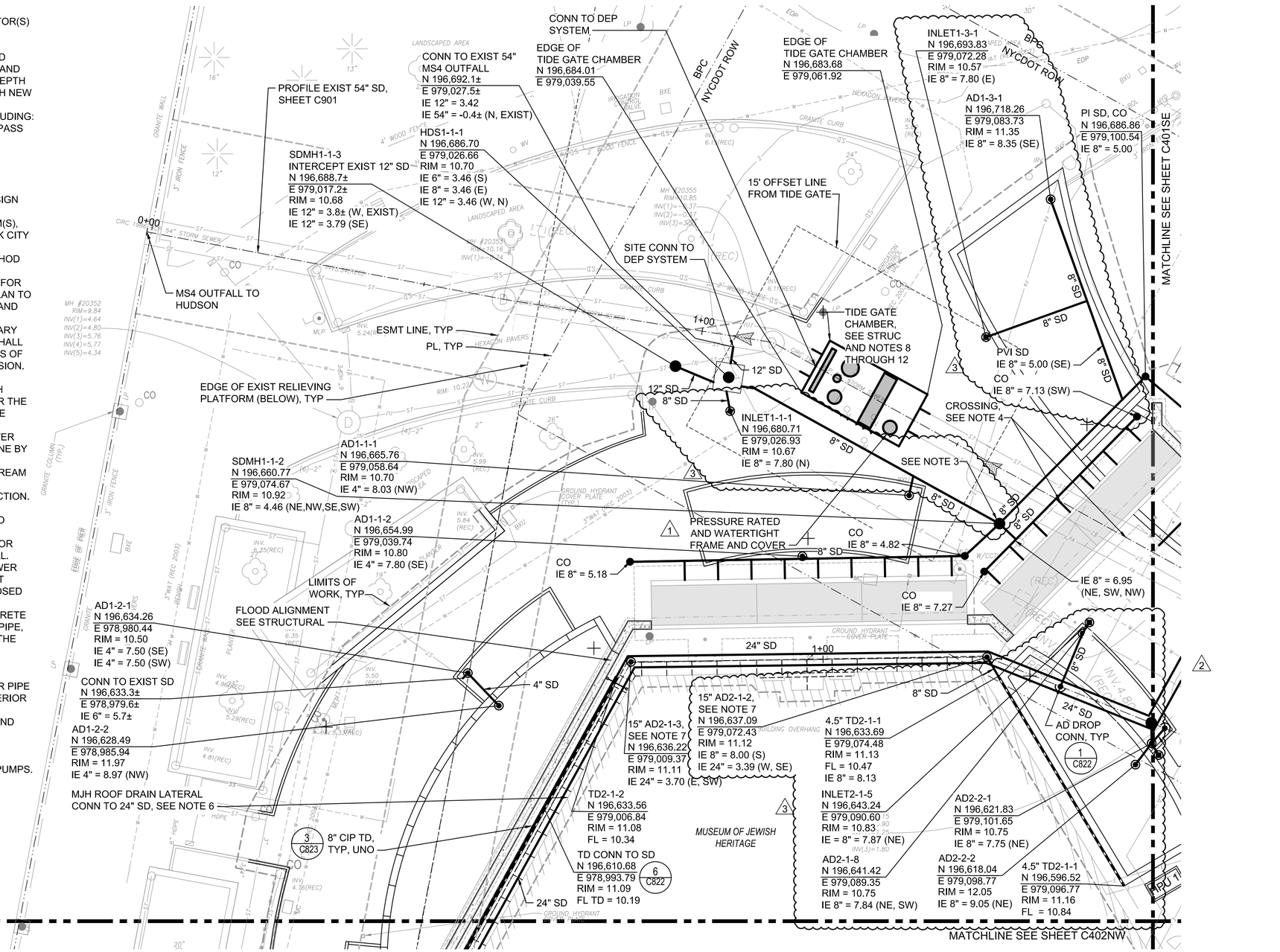
C002

Last saved by: BLC1(2022-06-29) Last Plotted: 2022-06-30
Filename: C:\PWWORKING\AECOM_DS16_NA\CLA16635\D0284672\SBPCC002R00.DWG

ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.
2. SEE SHEET C002 FOR GENERAL NOTES AND STORM DRAINAGE NOTES.
3. INSTALL INLINE BACKFLOW PREVENTION DEVICE ON OUTLET PIPE IN STORM DRAIN MANHOLE.
4. SEE STRUCTURAL PLANS FOR DETAILS ON EXISTING 54" MS4 OUTFALL CROSSING THE FLOOD ALIGNMENT.
5. SEE C501SW FOR DETAILS ON SUBDRAINAGE.
6. INTERCEPT EXISTING ROOF DRAINAGE LATERAL FROM MUSEUM OF JEWISH HERITAGE. TIE INTO 24" SD VIA TEE. PROVIDE BACKFLOW PREVENTION DEVICE ON ROOF DRAIN LATERAL.
7. INSTALL 30" BASIN WITH 15" BRONZE SOLID GRATE.
8. DURING CONSTRUCTION OF THE TIDE GATE, THE CONTRACTOR(S) SHALL PREVENT STORMWATER AND RIVER WATER FROM ENTERING THE CONSTRUCTION ZONE OF THE TIDE GATE STRUCTURE, MANAGE BYPASS FLOWS, DESIGN, INSTALL AND MAINTAIN TEMPORARY COFFERDAM/WATERIGHT SHEETING AND BRACING SYSTEM(S), AND MAINTAIN GROUNDWATER TO A DEPTH BELOW THE BOTTOM OF EXCAVATION, IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, INCLUDING:
   A. PARAGRAPHS 10.13 AND 50.71.2(H) FOR MANAGING BYPASS FLOWS,
   B. PARAGRAPHS 40.05 FOR TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S),
   C. PARAGRAPHS 40.02.15 FOR DISPOSAL OF WATER.
9. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF A SUITABLE TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S), SUBJECT TO THE REVIEW AND APPROVAL BY THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION ENGINEER.
10. THE CONTRACTOR(S) SHALL SUBMIT THEIR PROPOSED METHOD FOR MAINTAINING BYPASS FLOWS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION ENGINEER FOR APPROVAL A MINIMUM OF 30 DAYS PRIOR TO WHEN THEY PLAN TO BEGIN WORK ON THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S).
11. IF THE CONTRACTOR(S) ELECTS TO CONSTRUCT A TEMPORARY DIVERSION SEWER FOR MANAGING BYPASS FLOWS, THEY SHALL BE RESPONSIBLE FOR REPAIRING/REPLACING THE PORTIONS OF THE SEWER AT THE POINTS OF CONNECTION TO THE DIVERSION.
12. THE FOLLOWING POTENTIAL SEQUENCE OF CONSTRUCTION RELATED TO THE TIDE GATE IS IDENTIFIED AS AN APPROACH OPTION. THE CONTRACTOR(S) IS SOLELY RESPONSIBLE FOR THE CONSTRUCTION APPROACH AND CONSTRUCTION SEQUENCE RELATED TO TIDE GATE.
   A. BLOCK AND PREVENT STORMWATER AND RIVER WATER FROM ENTERING THE TIDE GATE CONSTRUCTION ZONE BY INSTALLING AIR BLADDERS OR OTHER EQUIVALENT MEASURES IN THE PIPE AT DOWNSTREAM AND UPSTREAM MAINTENANCE HOLES TO PREVENT WATER FROM ENTERING THE PIPE WITHIN THE ZONE OF CONSTRUCTION.
   B. CONSTRUCT TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) AS REQUIRED TO CONSTRUCT THE TIDE GATE STRUCTURE.
   C. CONSTRUCT A TEMPORARY DIVERSION SEWER AND/OR PUMPS TO BYPASS WATER TO THE EXISTING OUTFALL.
   D. DEMOLISH AND REMOVE THE EXISTING OUTFALL SEWER WITHIN THE LIMITS OF THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) FOR THE PROPOSED TIDE GATE STRUCTURE. NOTE THAT THE EXISTING SEWERS ARE SUPPORTED ON PILES AND ON A CONCRETE CRADLE. THE CONTRACTOR(S) SHALL REMOVE ANY PIPE, STRUCTURE, OR PILES DOWN TO 18 INCHES BELOW THE PROPOSED BOTTOM OF THE NEW SDMH2-1-1.
   E. INSTALL PILES FOR THE TIDE GATE STRUCTURE (SEE STRUCTURAL).
   F. CONSTRUCT THE TIDE GATE STRUCTURE AND SEWER PIPE CONNECTIONS (SEE STRUCTURAL) AND INSTALL INTERIOR COMPONENTS.
   G. REMOVE THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) AND BACKFILL WITH SELECT GRANULAR FILL.
   H. REMOVE THE TEMPORARY DIVERSION SEWER (AND REPAIR/REPLACE SEWER AT CONNECTION) AND/OR PUMPS.
   I. REMOVE THE AIR BLADDERS OR OTHER EQUIVALENT MEASURES.



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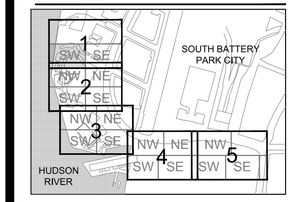
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
3	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

STORM DRAINAGE PLAN 01

SHEET NUMBER

C401SW

Last saved by: JJP(2022-06-30) Last Plotted: 2022-06-30
Filename: C:\PWWORKING\AECOM_DS18_NA\CLA18639\D0284673\SBPCC400\COMPR00.DWG

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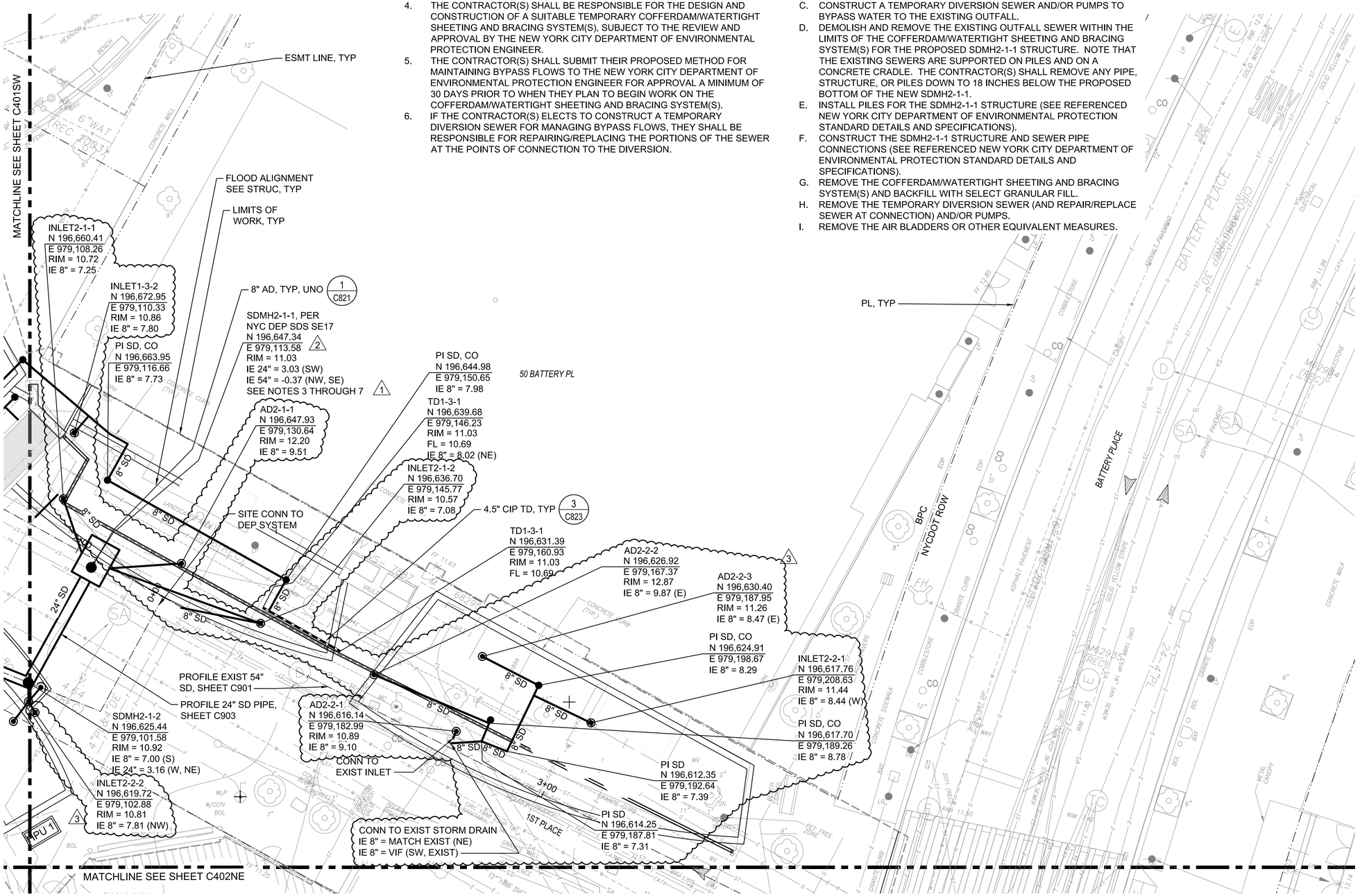
NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.
2. SEE SHEET C002 FOR GENERAL NOTES AND STORM DRAINAGE NOTES.
3. DURING CONSTRUCTION OF SDMH2-1-1, THE CONTRACTOR(S) SHALL PREVENT STORMWATER AND RIVER WATER FROM ENTERING THE CONSTRUCTION ZONE OF SDMH2-1-1, MANAGE BYPASS FLOWS, DESIGN, INSTALL AND MAINTAIN TEMPORARY COFFERDAM/WATERIGHT SHEETING AND BRACING SYSTEM(S), AND MAINTAIN GROUNDWATER TO A DEPTH BELOW THE BOTTOM OF EXCAVATION, IN ACCORDANCE WITH NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD SEWER AND WATER MAIN SPECIFICATIONS, INCLUDING:
   A. PARAGRAPHS 10.13 AND 50.71.2(H) FOR MANAGING BYPASS FLOWS,
   B. PARAGRAPHS 40.05 FOR TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S),
   C. PARAGRAPHS 40.02.15 FOR DISPOSAL OF WATER.
4. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF A SUITABLE TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S), SUBJECT TO THE REVIEW AND APPROVAL BY THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION ENGINEER.
5. THE CONTRACTOR(S) SHALL SUBMIT THEIR PROPOSED METHOD FOR MAINTAINING BYPASS FLOWS TO THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION ENGINEER FOR APPROVAL A MINIMUM OF 30 DAYS PRIOR TO WHEN THEY PLAN TO BEGIN WORK ON THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S).
6. IF THE CONTRACTOR(S) ELECTS TO CONSTRUCT A TEMPORARY DIVERSION SEWER FOR MANAGING BYPASS FLOWS, THEY SHALL BE RESPONSIBLE FOR REPAIRING/REPLACING THE PORTIONS OF THE SEWER AT THE POINTS OF CONNECTION TO THE DIVERSION.
7. THE FOLLOWING POTENTIAL SEQUENCE OF CONSTRUCTION RELATED TO SDMH2-1-1 IS IDENTIFIED AS AN APPROACH OPTION. THE CONTRACTOR(S) IS SOLELY RESPONSIBLE FOR THE CONSTRUCTION APPROACH AND CONSTRUCTION SEQUENCE RELATED TO SDMH2-1-1.
   A. BLOCK AND PREVENT STORMWATER AND RIVER WATER FROM ENTERING THE SDMH2-1-1 CONSTRUCTION ZONE BY INSTALLING AIR BLADDERS OR OTHER EQUIVALENT MEASURES IN THE PIPE AT DOWNSTREAM AND UPSTREAM MAINTENANCE HOLES TO PREVENT WATER FROM ENTERING THE PIPE WITHIN THE ZONE OF CONSTRUCTION.
   B. CONSTRUCT TEMPORARY COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) AS REQUIRED TO CONSTRUCT SDMH2-1-1.
   C. CONSTRUCT A TEMPORARY DIVERSION SEWER AND/OR PUMPS TO BYPASS WATER TO THE EXISTING OUTFALL.
   D. DEMOLISH AND REMOVE THE EXISTING OUTFALL SEWER WITHIN THE LIMITS OF THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) FOR THE PROPOSED SDMH2-1-1 STRUCTURE. NOTE THAT THE EXISTING SEWERS ARE SUPPORTED ON PILES AND ON A CONCRETE CRADLE. THE CONTRACTOR(S) SHALL REMOVE ANY PIPE, STRUCTURE, OR PILES DOWN TO 18 INCHES BELOW THE PROPOSED BOTTOM OF THE NEW SDMH2-1-1.
   E. INSTALL PILES FOR THE SDMH2-1-1 STRUCTURE (SEE REFERENCED NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD DETAILS AND SPECIFICATIONS).
   F. CONSTRUCT THE SDMH2-1-1 STRUCTURE AND SEWER PIPE CONNECTIONS (SEE REFERENCED NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARD DETAILS AND SPECIFICATIONS).
   G. REMOVE THE COFFERDAM/WATERTIGHT SHEETING AND BRACING SYSTEM(S) AND BACKFILL WITH SELECT GRANULAR FILL.
   H. REMOVE THE TEMPORARY DIVERSION SEWER (AND REPAIR/REPLACE SEWER AT CONNECTION) AND/OR PUMPS.
   I. REMOVE THE AIR BLADDERS OR OTHER EQUIVALENT MEASURES.



GRAPHIC SCALE: 1" = 10'
10 5 0 5 10 20 30

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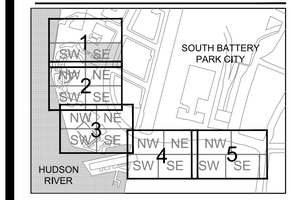
KEY PLAN



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ISSUE/REVISION

I/R	DATE	DESCRIPTION
3	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

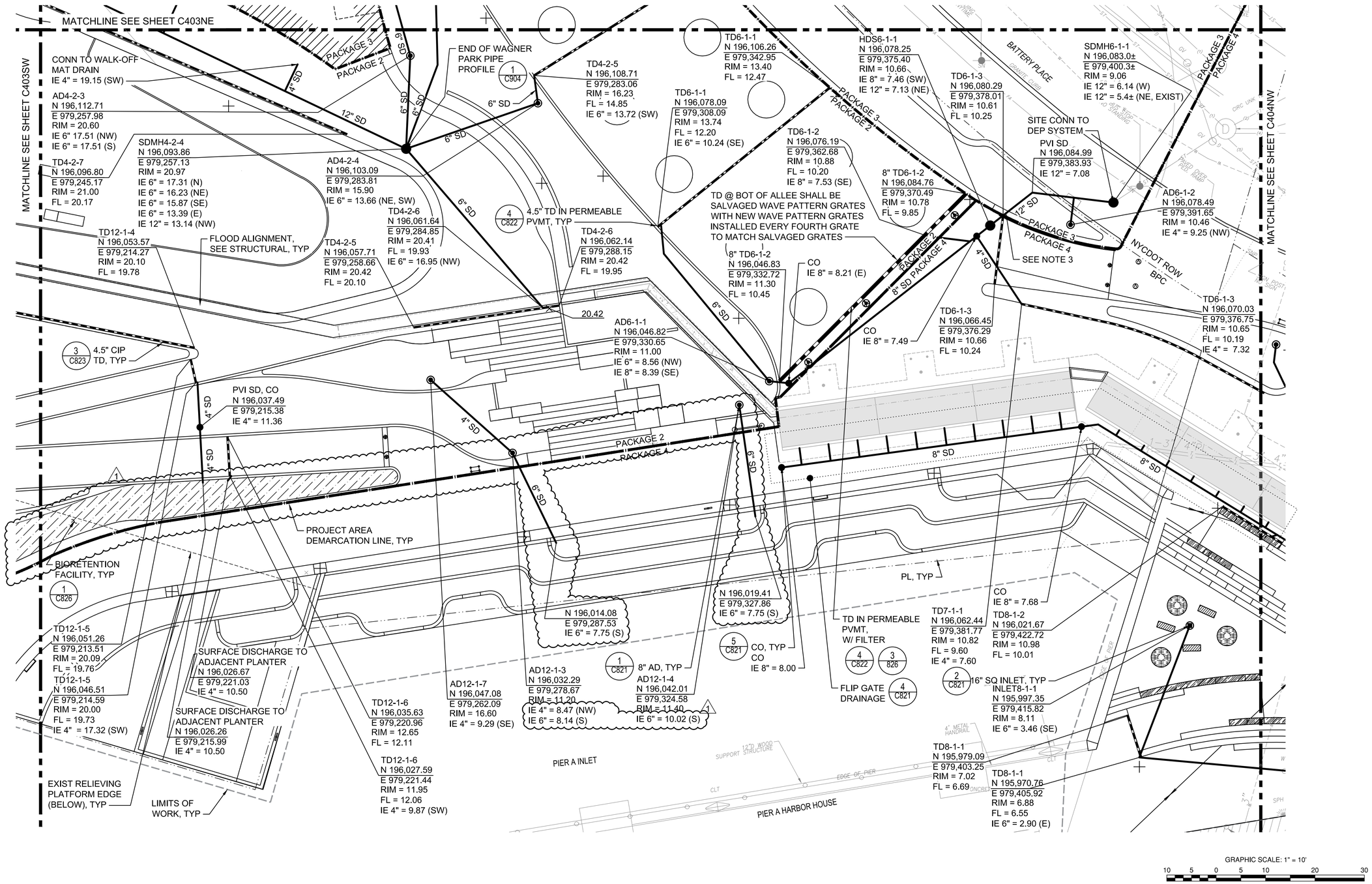
STORM DRAINAGE PLAN 02

SHEET NUMBER

C401SE

NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.
2. SEE SHEET C002 FOR GENERAL NOTES AND STORM DRAINAGE NOTES.
3. PACKAGE 3 CONTRACTOR SHALL PROVIDE SLEEVES FOR STORM DRAIN PIPING WALL PENETRATIONS IN ALLEE RETAINING WALLS IN ACCORDANCE WITH MECHANICAL/ELECTRICAL/PLUMBING AND STRUCTURAL DOCUMENTS.



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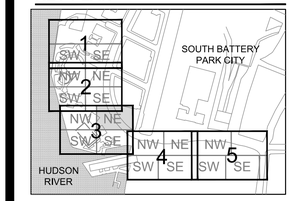

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Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

STORM DRAINAGE PLAN 09

SHEET NUMBER

C403SE

ANSI D 22" x 34"

NOTES:

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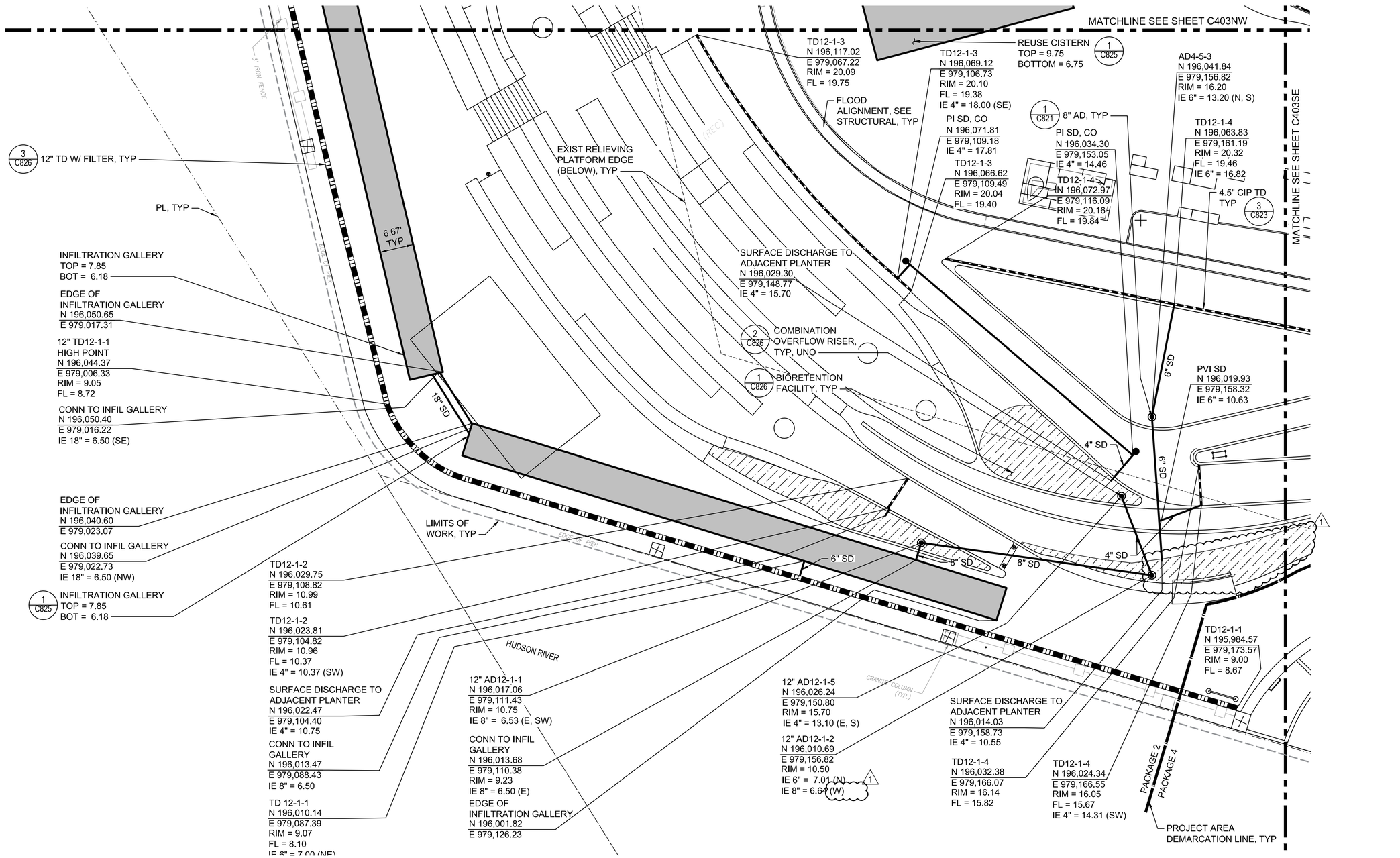
2. SEE SHEET C002 FOR GENERAL NOTES AND STORM DRAINAGE NOTES.



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212.575.2701 naikgroup.com

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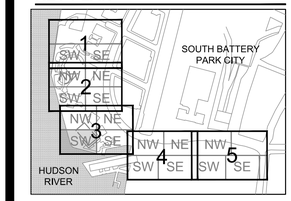
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

STORM DRAINAGE PLAN 10

SHEET NUMBER

C403SW

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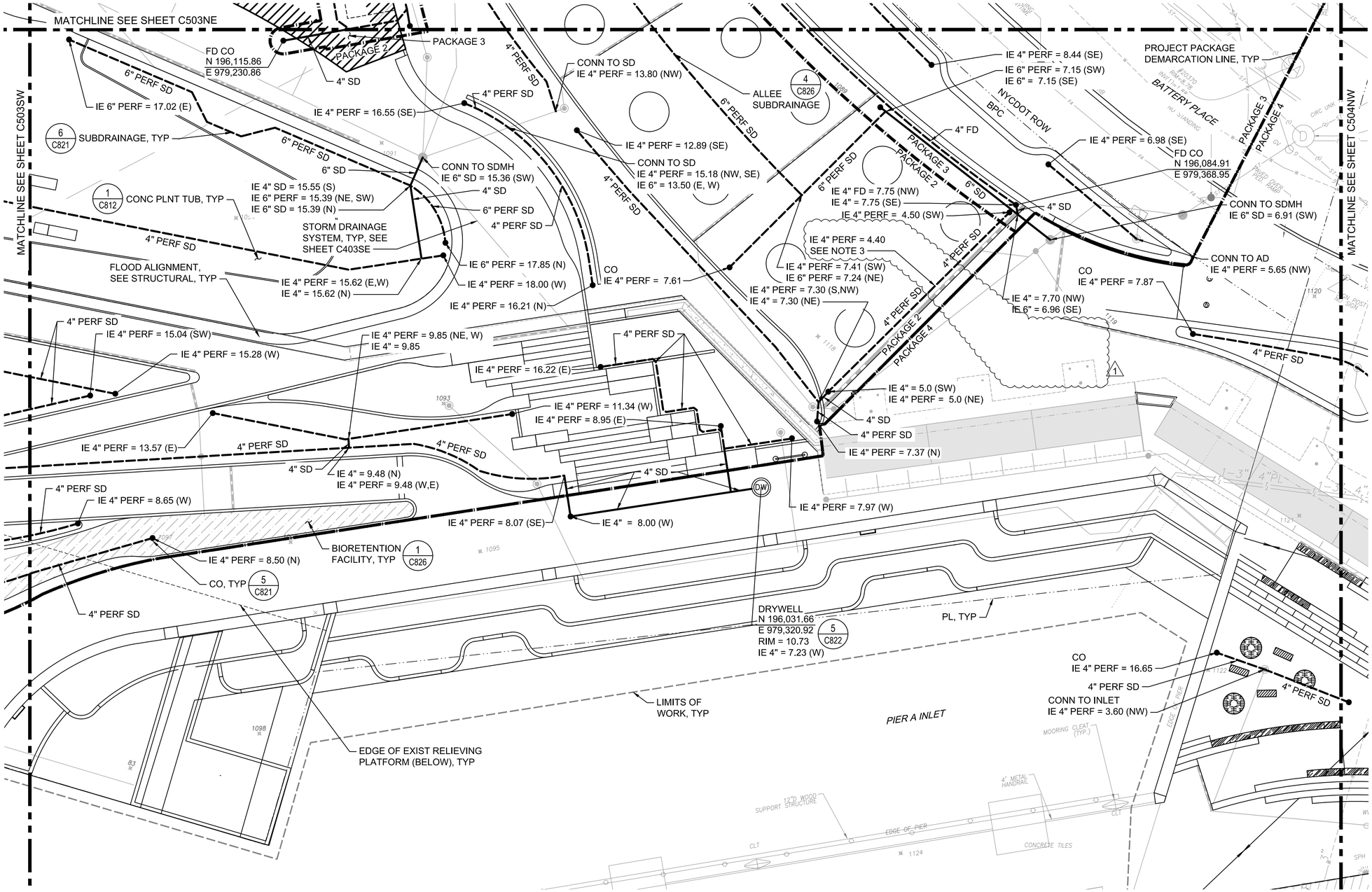
ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.
2. SEE SHEET C002 FOR GENERAL NOTES AND SUBDRAINAGE NOTES.
3. INFILTRATION TRENCH UNCONNECTED TO STORM DRAIN. (1)



N

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PROJECT

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CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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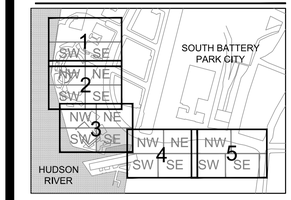
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	RESPONSES TO RFI

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

SUBDRAINAGE PLAN 09

SHEET NUMBER

C503SE

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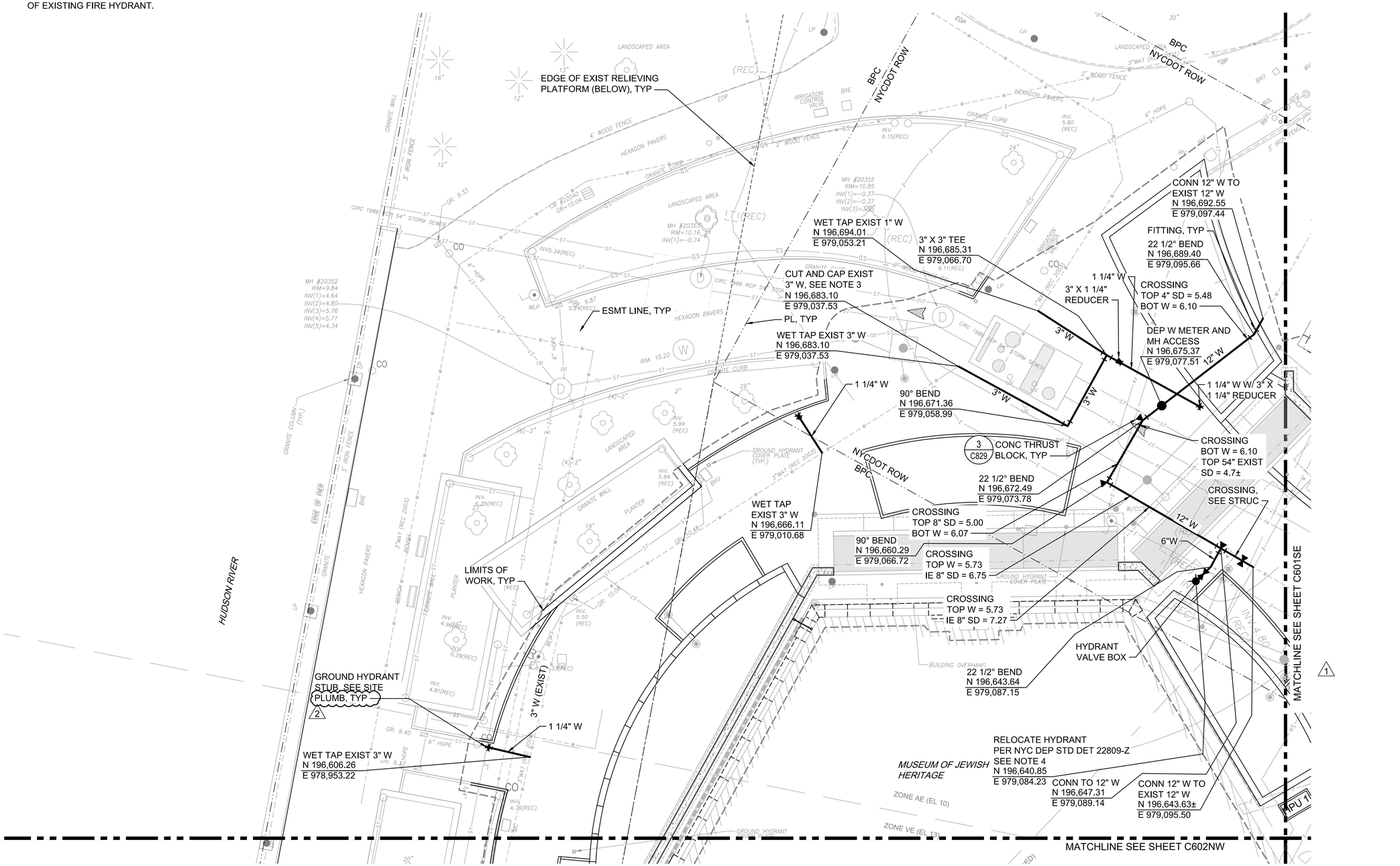
ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.
2. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED.
3. CUT AND CAP EXISTING 3" WATER LINE SERVING GROUND HYDRANTS. REFER TO C101SW FOR ADDITIONAL DETAILS.
4. RELOCATED FIRE HYDRANT SHALL BE OPERATIONAL PRIOR TO DISCONNECTION OF EXISTING FIRE HYDRANT.



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PROJECT

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CLIENT

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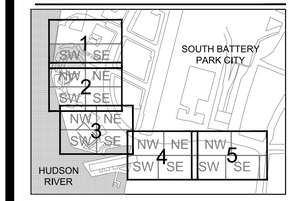
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
2	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 01

SHEET NUMBER

C601SW

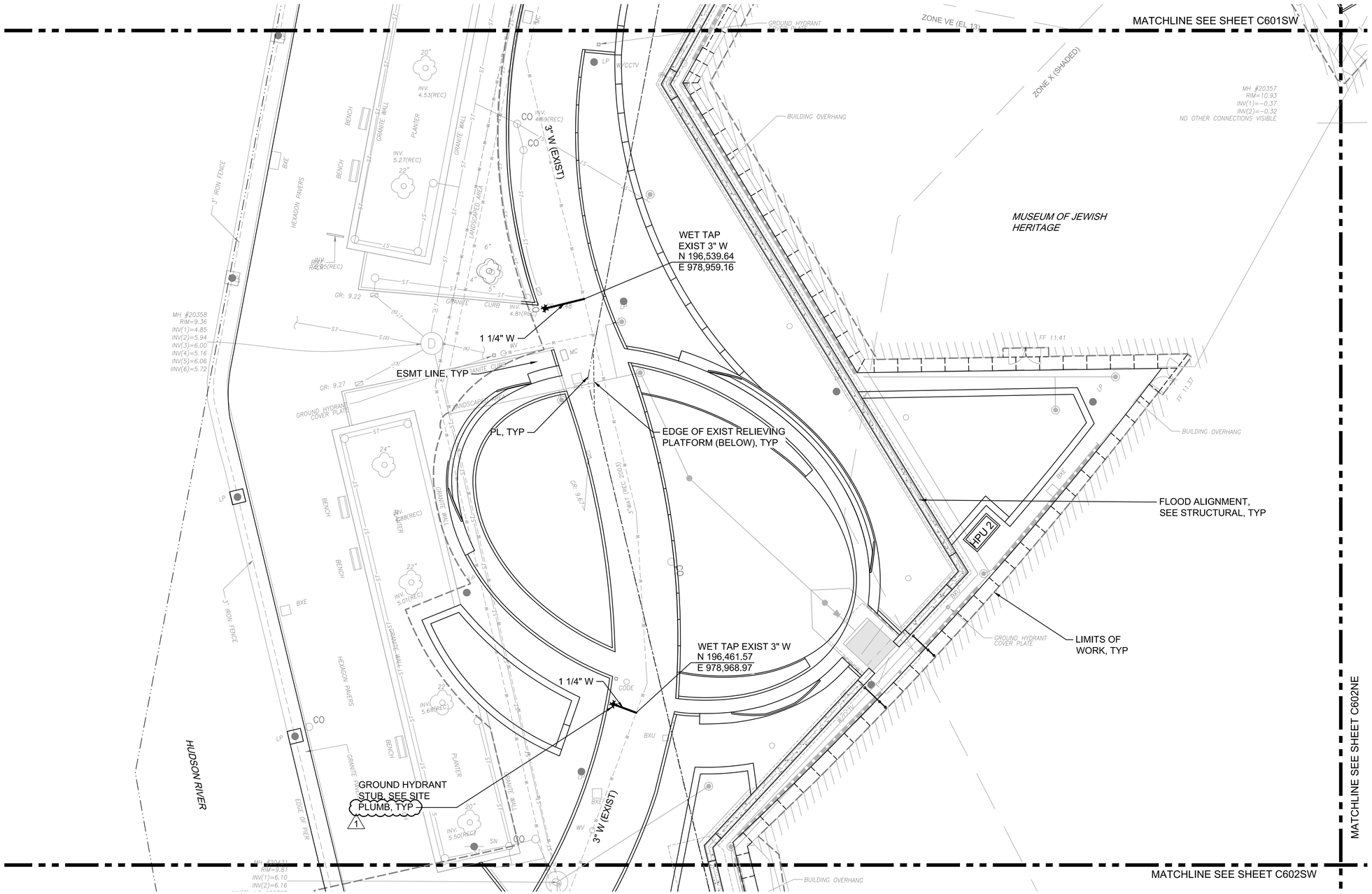
Last saved by: BLC1(2022-06-30) Last Plotted: 2022-06-30
Filename: C:\PWWORKING\AECOM_DS16_NAICLA16639\D0284672\SBPCC600COMPR00.DWG

ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

2. SEE SHEET C002 FOR SANITARY SEWER AND WATER SERVICE NOTES.



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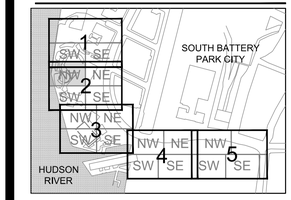
KEY PLAN



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I/R	DATE	DESCRIPTION
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Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 03

SHEET NUMBER

C602NW

Last saved by: BLC1(2022-06-29) Last Plotted: 2022-06-30
Filename: C:\PWWORKING\AECOM_DS16_NAICLA16635\D0284672\SBPCC60\COMPR00.DWG

ANSI D 22" x 34"

NOTES:

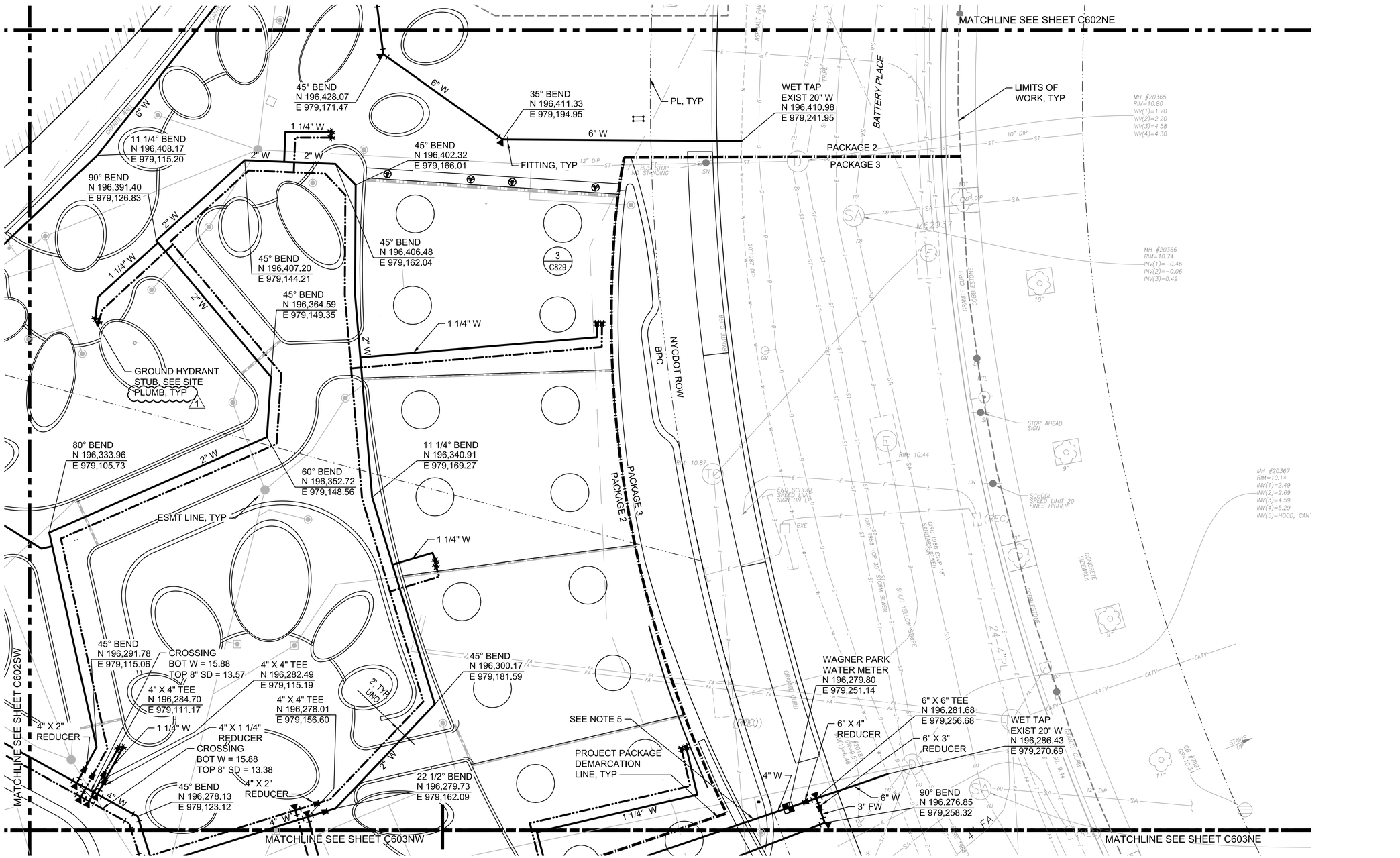
1. SEE SHEET C001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

2. SEE SHEET C002 FOR SANITARY SEWER AND WATER SERVICE NOTES.

3. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED.

4. BOTH REUSE AND DOMESTIC WATER DISTRIBUTION LINES ARE SHOWN, IN PARALLEL, WITH A 2' CENTERLINE OFFSET. PIPE DIMENSIONS SHOWN APPLY TO BOTH LINES, WHILE N/E DIMENSIONS APPLY TO THE DOMESTIC LINE. HORIZONTAL LOCATION FOR THE REUSE WATER LINE CAN BE OBTAINED BY APPLYING A 2' OFFSET FROM SHOWN DOMESTIC LINE N/E.

5. PACKAGE 3 CONTRACTOR SHALL PROVIDE SLEEVES FOR WATER AND SANITARY SEWER PIPING WALL PENETRATIONS IN ALLEE RETAINING WALLS IN ACCORDANCE WITH MECHANICAL / ELECTRICAL / PLUMBING AND STRUCTURAL DOCUMENTS.



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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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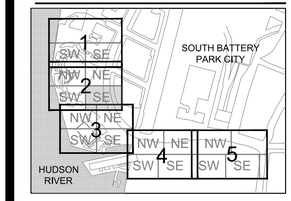
KEY PLAN



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ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 05

SHEET NUMBER

C602SE

Last saved by: BLCH (2022-06-30) Last Plotted: 2022-06-30
Filename: C:\PWWORKING\AECOM_DS\B_NA\CLA166350\D0284672\SBPCC600COMPR00.DWG

ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

2. SEE SHEET C002 FOR SANITARY SEWER AND WATER SERVICE NOTES.

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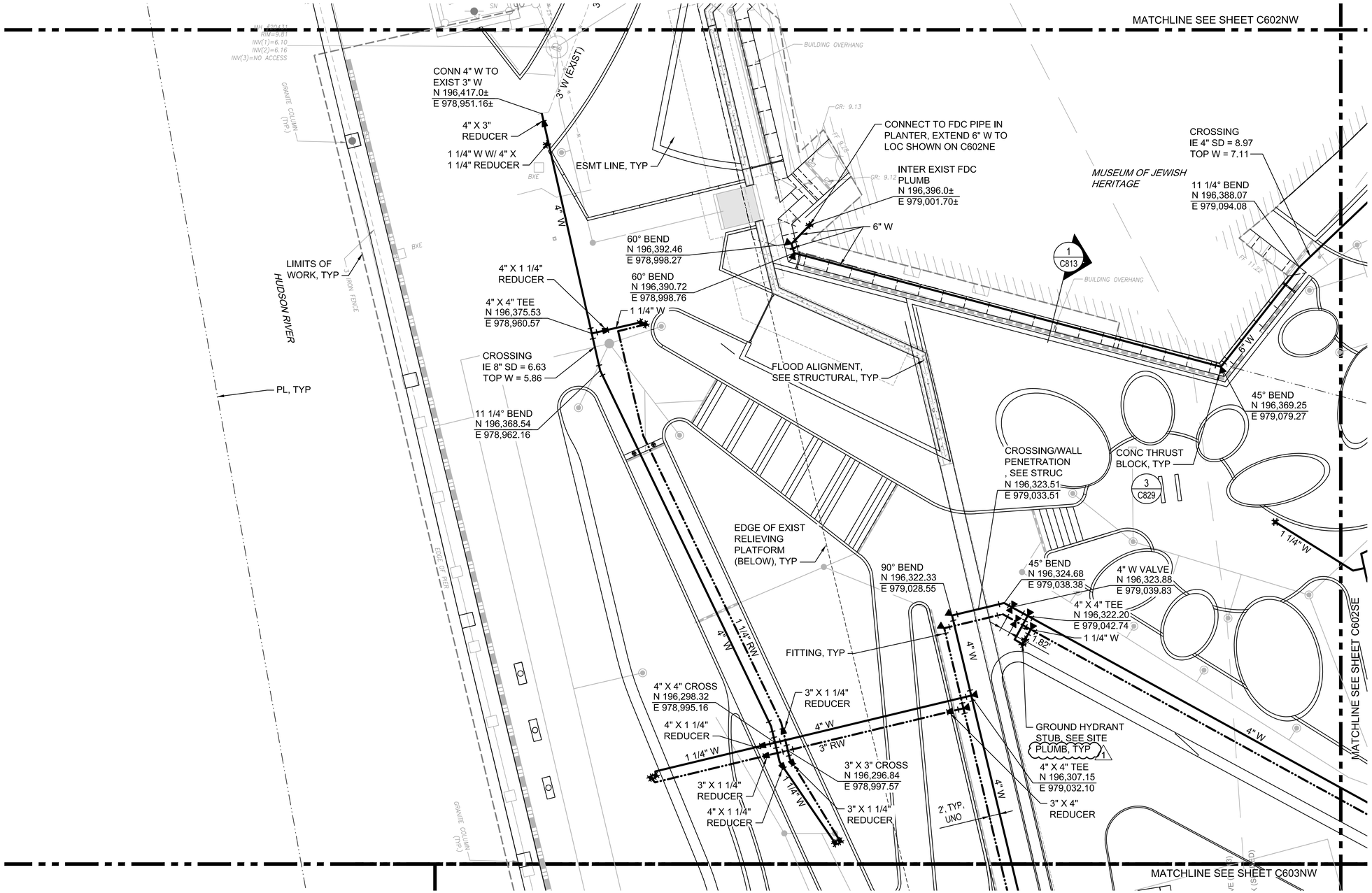

N

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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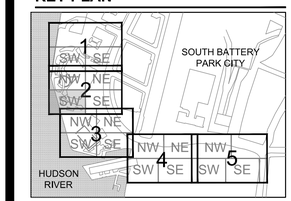
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 06

SHEET NUMBER

C602SW

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ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS.

2. SEE SHEET C002 FOR SANITARY SEWER AND WATER SERVICE NOTES.

3. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED.

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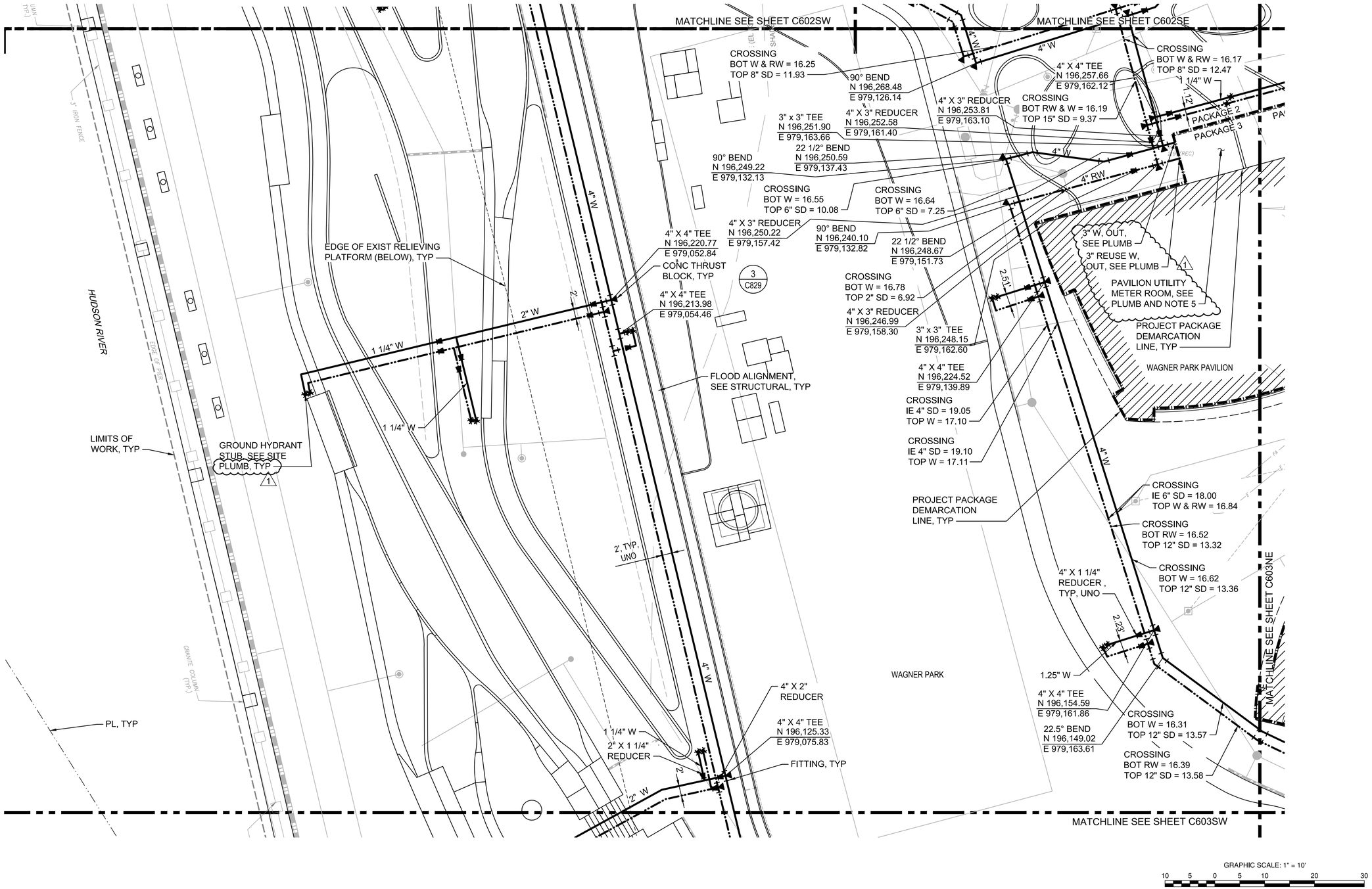
5. SEE DETAIL 1 ON SHEET C831 FOR SCHEMATIC INFORMATION FROM MANUFACTURER ON WATER REUSE SYSTEM AND COMPONENTS.



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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

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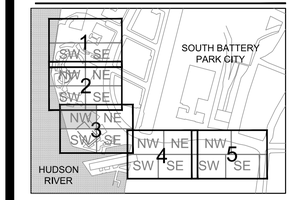
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 07

SHEET NUMBER

C603NW

Last saved by: BLC1(2022-06-30) Last Plotted: 2022-06-30
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NOTES:

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6. RELOCATED FIRE HYDRANT SHALL BE OPERATIONAL PRIOR TO DISCONNECTION OF EXISTING FIRE HYDRANT.

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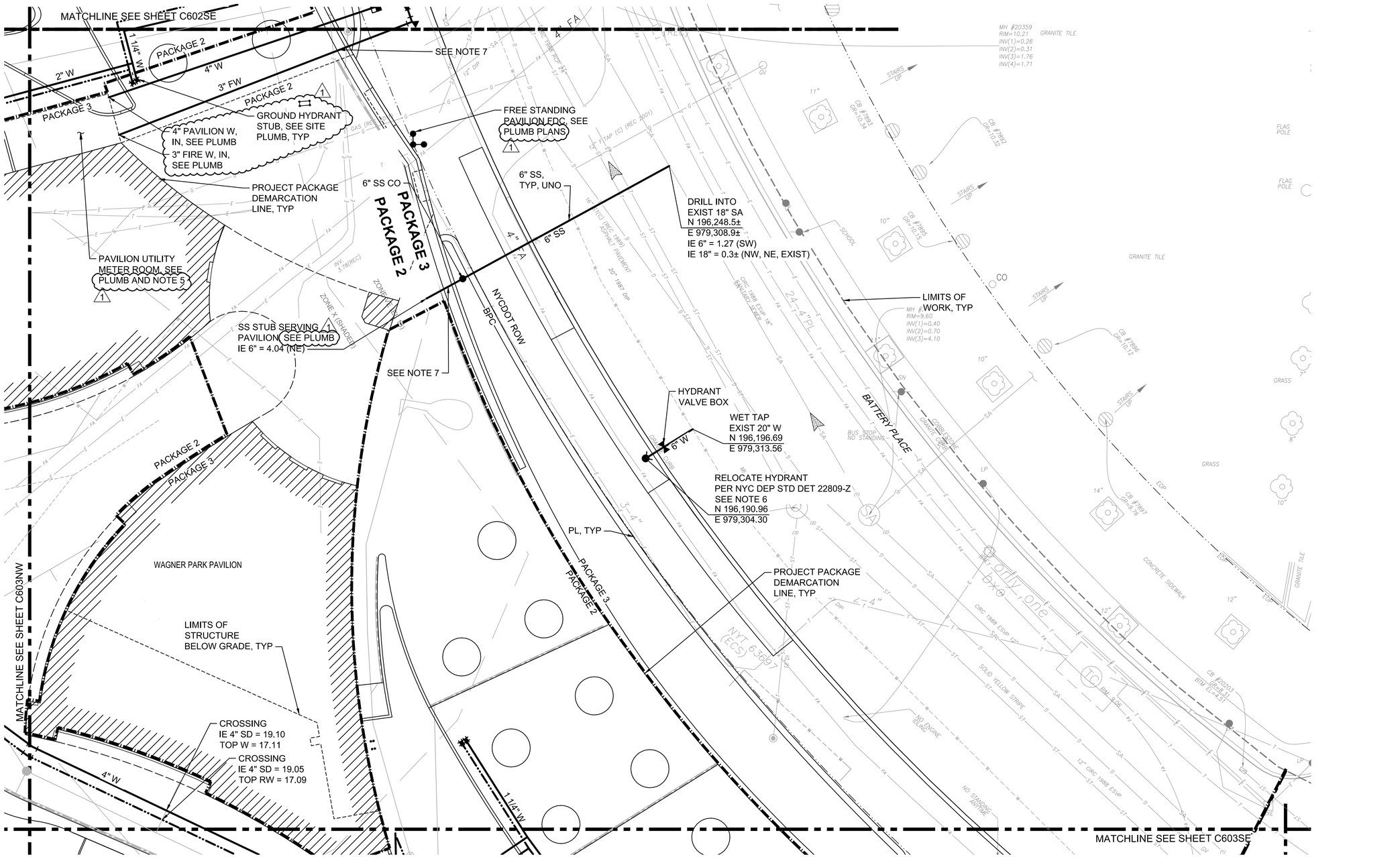

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

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CONSULTANT

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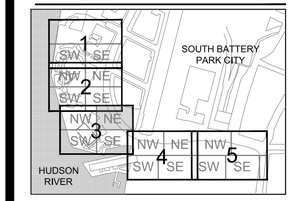
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 08

SHEET NUMBER

C603NE

ANSI D 22" x 34"
Last saved by: BLC1(2022-06-30) Last Plotted: 2022-06-30
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ANSI D 22" x 34"

NOTES:

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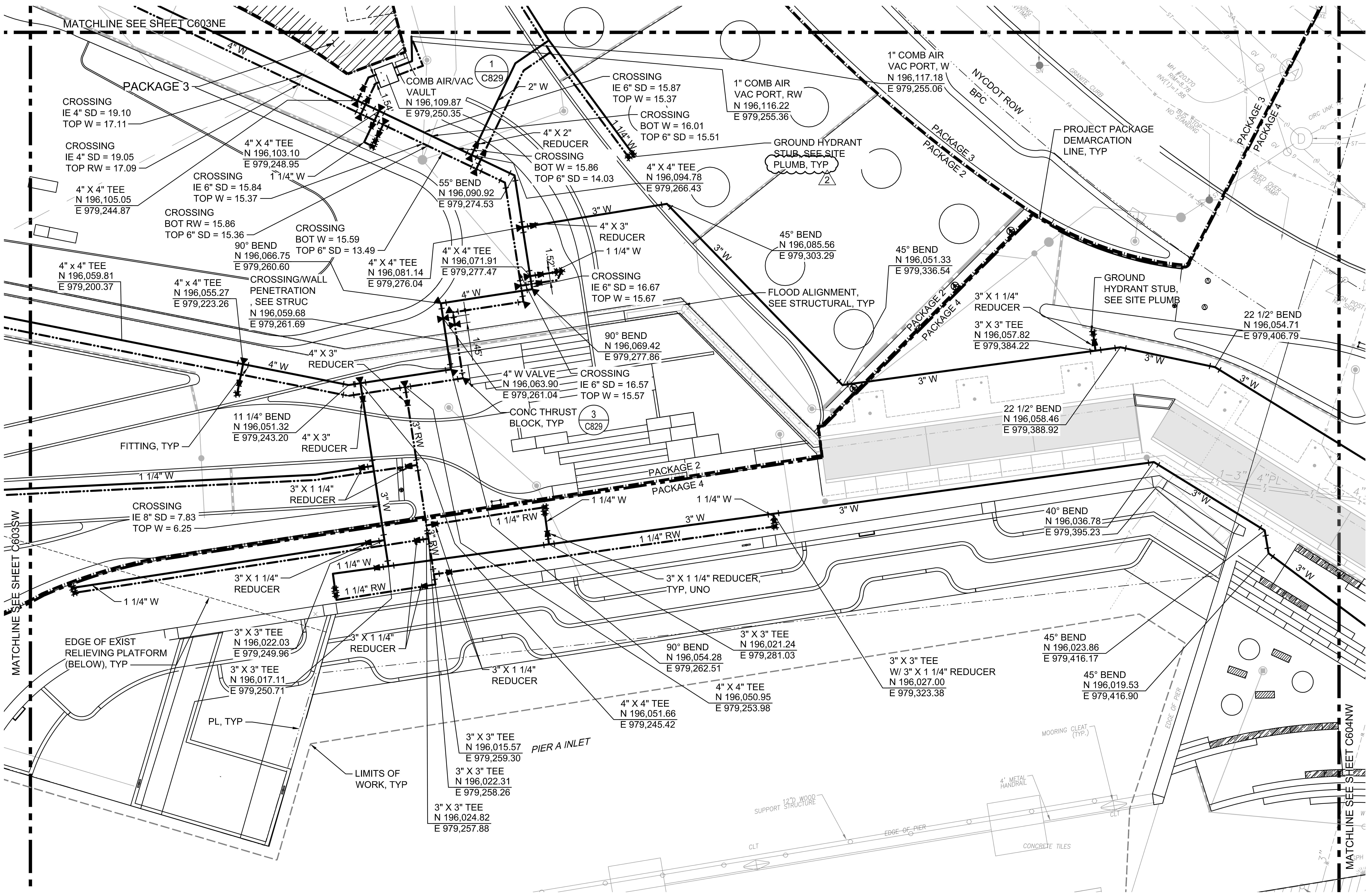
2. SEE SHEET C002 FOR GENERAL NOTES, WATER NOTES, AND SANITARY SEWER .
3. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED. 1



GRAPHIC SCALE: 1" = 10'

10 5 0 5 10 20 30

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY
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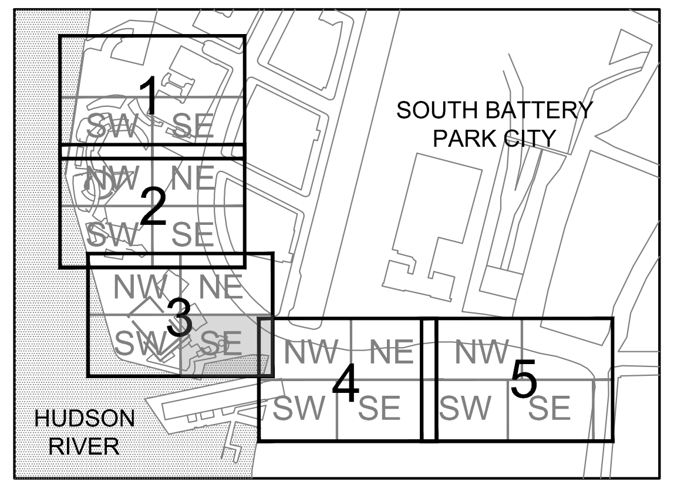
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
2	JUNE 2022	RESPONSES TO QUESTIONS

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 09

SHEET NUMBER

C603SE

Last saved by: BLC1(2022-06-28) Last Plotted: 2022-06-29
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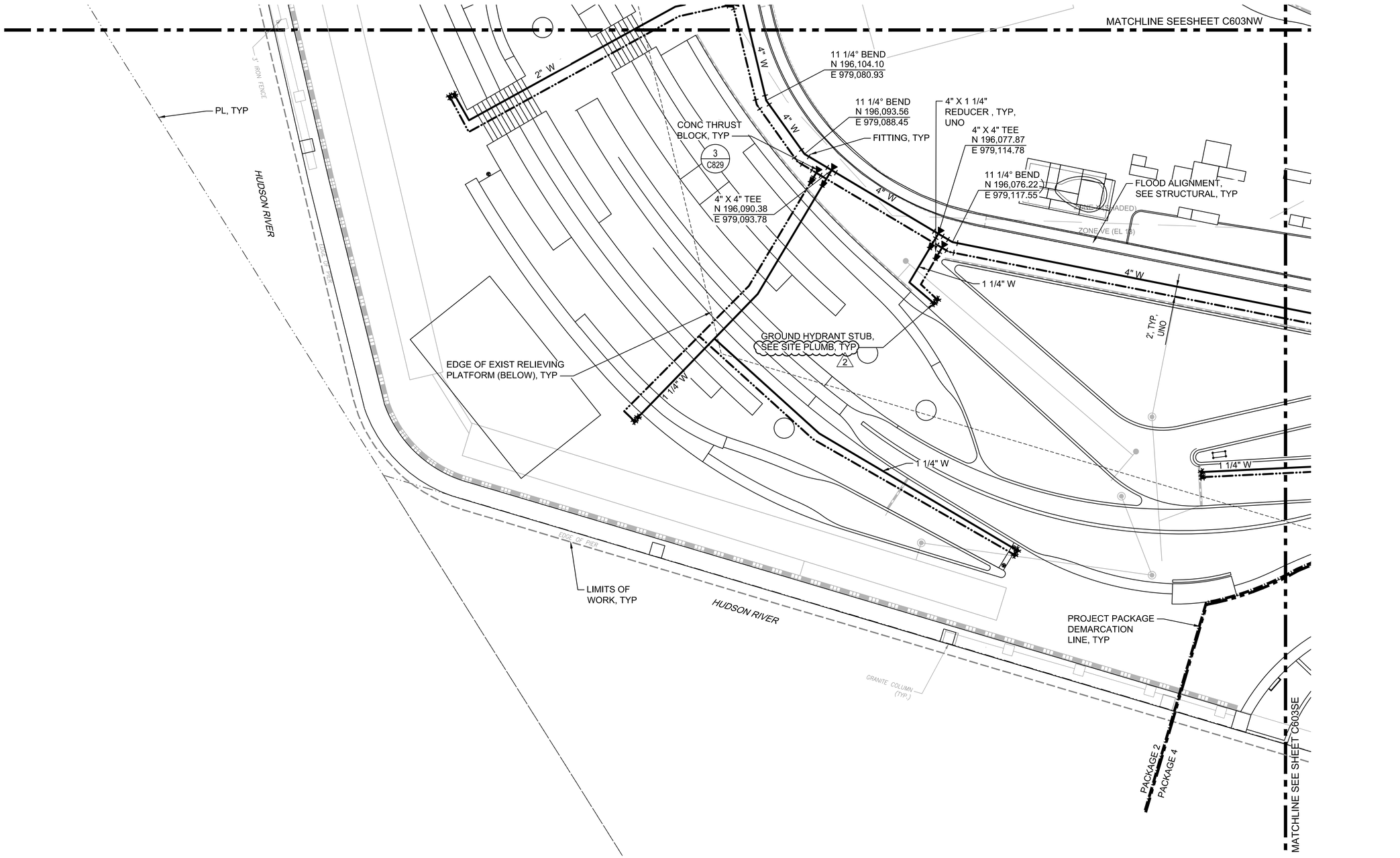
ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.

2. SEE SHEET C002 FOR GENERAL NOTES, WATER NOTES, AND SANITARY SEWER .

3. PIPES AND FITTINGS FOR PROPOSED WATER LINES TO BE EQUIPPED WITH RESTRAINED JOINTS WHERE LOCATED IN/OR NEAR GEOFOAM AND/OR WHERE THRUST BLOCKS CANNOT BE USED. 1



GRAPHIC SCALE: 1" = 10'
10 5 0 5 10 20 30

N

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PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

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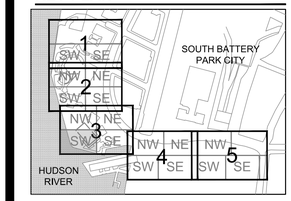
KEY PLAN



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Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 10

SHEET NUMBER

C603SW

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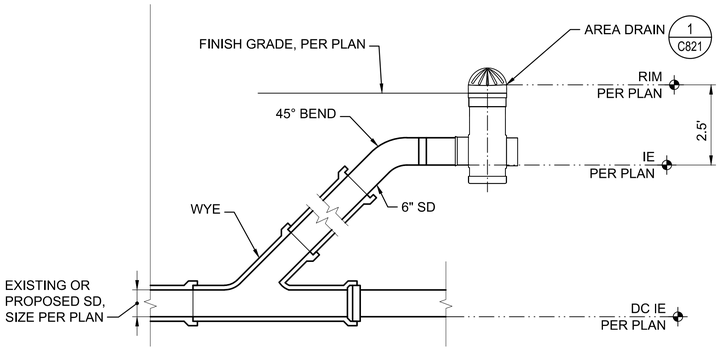

1 AREA DRAIN DROP CONNECTION (PACKAGES 2, 3, 4)
SCALE: NTS

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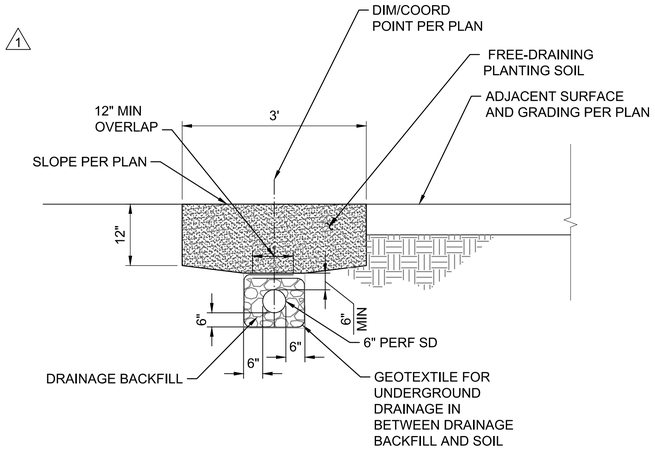
C402SE, C402SW, C403NW, C403NE,
C403SE, C403SW, C503NW, C903



2 LAWN FRENCH DRAIN (PACKAGE 2)
SCALE: NTS

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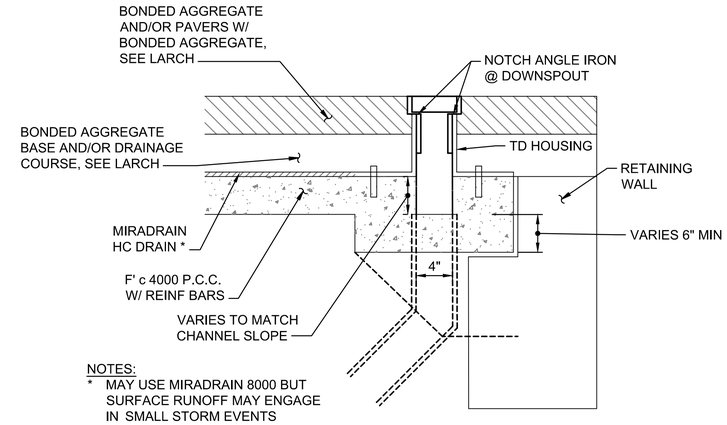
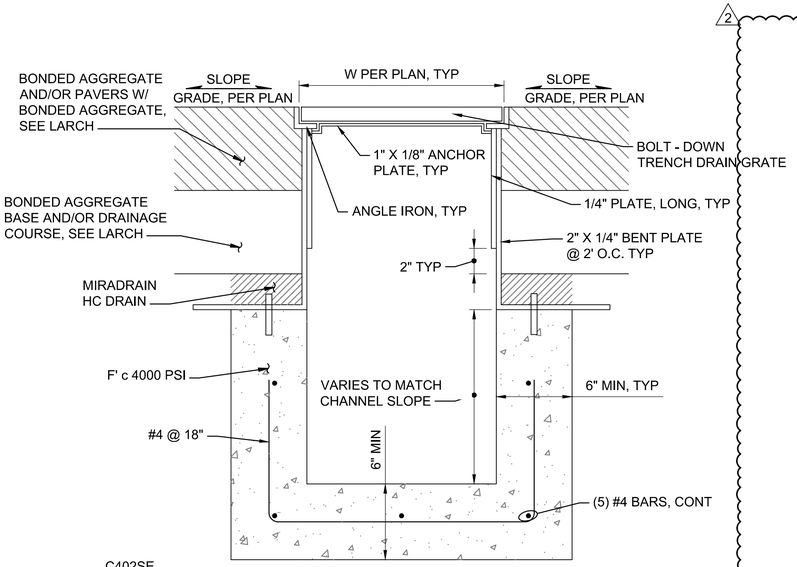
C403SW, C403SE,
C801



NOTES:
* MAY USE MIRADRAIN 8000 BUT SURFACE RUNOFF MAY ENGAGE IN SMALL STORM EVENTS

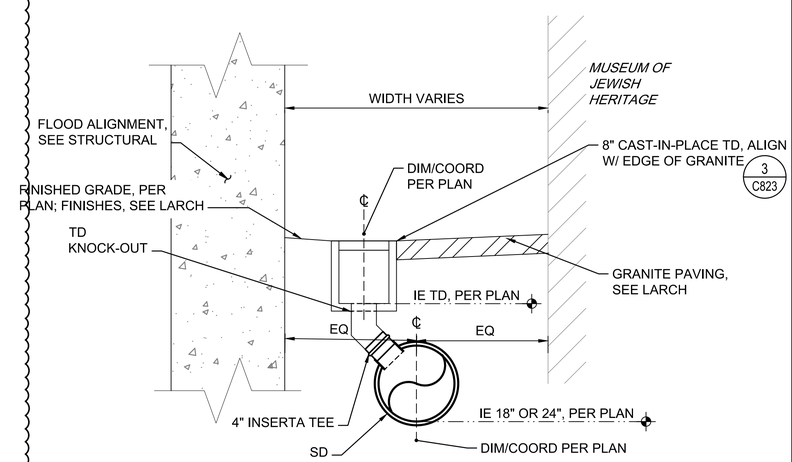
3 TRENCH DRAIN CONNECTION TO RETAINING WALL (PACKAGE 2, 3)
SCALE: NTS

C403NE



C402SE,
C402NE,
C403NW,
C403SE

4 TRENCH DRAIN IN PERMEABLE PAVEMENT (PACKAGE 2, 3)
SCALE: NTS



6 TRENCH DRAIN CONNECTION TO 18" OR 24" SD AT MJH (PACKAGE 2)
SCALE: NTS

C401SW,
C402NW, C402SW

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PROJECT

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RESILIENCY DESIGN
SERVICES

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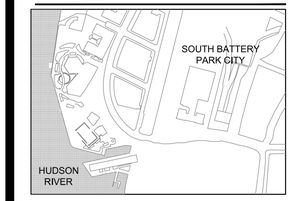
KEY PLAN



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ISSUE/REVISION

I/R	DATE	DESCRIPTION
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Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

SECTIONS AND DETAILS

SHEET NUMBER

C822

<u>ATTACHMENT #6B</u>
REVISED CIVIL SPECIFICATION #331700 –
WATER DISTRIBUTION

(ATTACHED)

SECTION 331700 – WATER DISTRIBUTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Requirements for piping materials and appurtenances, installation and testing for water distribution.

1.02 RELATED SECTIONS

A. Section 013300, “Submittal Procedures”

B. Section 017419, “Construction and Demolition Waste Management and Disposal”

C. Section 018113, “Sustainable Design Requirements”

D. Section 310000, “Earthwork”

1.03 REFERENCES

A. The latest version, unless noted otherwise, of the publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. American National Standards Institute (ANSI):

1. ASME/ANSI B18.2.2: Square and Hex Nuts (Inch Series)
2. ANSI/ASME B18.5.2.2M: Metric Round Head Square Neck Bolts

C. American Society of Mechanical Engineers (ASME):

1. ASME/ANSI B16.1: Cast Iron Pipe Flanges and Flanged Fittings

D. American Society for Testing and Materials (ASTM):

1. ASTM A 48: Gray Iron Castings
2. ASTM A 307: Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
3. ASTM A 536: Ductile Iron Castings
4. ASTM C 94: Ready-Mixed Concrete

E. American Water Works Association (AWWA):

1. AWWA C104/A21.4: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
2. AWWA C110/A21.10: Ductile-Iron and Gray-Iron Fittings, 3 in. Through 48 in. (75 mm Through 1200 mm), for Water and Other Liquids
3. AWWA C111/A21.11: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
4. AWWA C115/A21.15: Flanged Ductile-Iron Pipe with Threaded Flanges
5. ANSI/AWWA C151/A21.51: Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids
6. AWWA C153/A21.53: Ductile-Iron Compact Fittings, 3 in. Through 16 in., for Water and Other Liquids
7. AWWA C509: Resilient-Seated Gate Valves for Water and Sewerage Systems

8. AWWA C600: Installation of Ductile-Iron Water Mains and Their Appurtenances

F. Ductile Iron Pipe Research Association (DIPRA):

1. DIPRA-1: Thrust restraint design for ductile iron pipe

G. National Fire Protection Association (NFPA):

1. NFPA 24: Installation of Private Fire Service Mains and Their Appurtenances

H. New York City Department of Environmental Protection (NYCDEP):

1. NYCDEP-W: (2014) Standard Water Specifications

1.04 SUBMITTALS

A. Submit the following in accordance with Section 013300, "Submittal Procedures".

1. Submit manufacturer's standard drawings or catalog cuts for water distribution main and service lines piping, fittings, joints and valves, fire hydrants, meter, meter vault, and valve boxes, except submit both drawings and cuts for push-on joints. Include information concerning gaskets with submittal for joints and couplings.
2. Submit certificates attesting that tests set forth in each applicable referenced publication have been performed, whether specified in that publication to be mandatory or otherwise and that production control tests have been performed at the intervals or frequency specified in the publication. Other tests shall have been performed within 3 years of the date of submittal of certificates on the same type, class, grade, and size of material as is being provided for the project.
3. Submit copy of the Certificate of Compliance with material tests for each delivery to the project site with delivery inspection report.
4. Sustainability Submittals: For permanently installed products and materials related to the work of this Section, submit product and material documentation to comply with and contribute to the Project's sustainability requirements, as outlined in the Submittals article of Section 018113, "Sustainable Design Requirements."
5. Environmental Product Declarations: To quantify the embodied carbon of the building's materials, ILFI ZC requires that Environmental Product Declarations (EPDs) with Life Cycle Analyses (LCAs) be provided. Include product-specific non-expired EPDs for applicable products. When product-specific EPDs are not available, provide industry-wide EPDs or product LCAs.
6. Product Data Sheets: Provide product data sheets that describe the material make up of products (e.g., material ingredient lists, CAS RN#s, description of product's material sourcing).

1.05 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage: Inspect materials delivered to site for damage. Unload and store with minimum handling. Store materials on site in enclosures or under protective covering. Store plastic piping, jointing materials, and rubber gaskets under cover out of

direct sunlight. Do not store materials directly on the ground. Keep inside of pipes, fittings, free of dirt and debris.

B. Handling: Handle pipe, fittings, valves, hydrants, and other accessories in a manner to ensure delivery to the trench in sound undamaged condition. Take special care to avoid injury to coatings and linings on pipe and fittings; make satisfactory repairs if coatings or linings are damaged. Carry, do not drag pipe to the trench. Store jointing materials and rubber gaskets that are not to be installed immediately, under cover out of direct sunlight.

1.06 SUSTAINABLE DESIGN REQUIREMENTS

A. The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving ILFI Zero Carbon and WEDG Certification. Refer to Section 018113, "Sustainable Design Requirements," for the Project's targets and specific requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are met. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the Project's sustainability goals and ILFI Zero Carbon or WEDG certification.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. For permanently installed products and materials related to the work of this Section, provide products and materials that meet the Project's sustainability performance criteria as outlined in PART 2 – PRODUCTS of Section 018113, "Sustainable Design Requirements."

B. Provide products and materials with product-specific or industry-wide Environmental Product Declarations (or alternative environmental declaration accepted by LEED), as outlined in Section 018113, "Sustainable Design Requirements."

C. Provide products and materials with manufacturer's product-specific Health Product Declaration (HPD), Declare label, or Cradle to Cradle certificate (or alternative health-related declaration accepted by LEED), as outlined in Section 018113, "Sustainable Design Requirements."

2.02 WATER DISTRIBUTION MAIN MATERIALS

A. Piping Materials:

1. Ductile-Iron Piping (Piping 3 Inches and Larger):

a. Pipe and Fittings: Pipe, except flanged pipe, ANSI/AWWA C151/A21.51, Thickness Class 56. Fittings, AWWA C110/A21.10 or AWWA C153/A21.53; fittings with push-on joint ends conforming to the same requirements as fittings with mechanical-joint ends, except that the bell design shall be modified, as approved, for push-on joint. Fittings shall have pressure rating at least equivalent to that of the pipe. Ends of pipe and

fittings shall be suitable for the specified joints. Pipe and fittings shall have cement-mortar lining, AWWA C104/A21.4, standard thickness.

b. Joints and Jointing Material:
   (1) Joints: Joints for pipe and fittings shall be push-on joints or mechanical joints unless otherwise indicated. Provide mechanical joints where indicated. Provide flanged joints where indicated. Provide mechanically coupled joints using a sleeve-type mechanical coupling where indicated.
   (2) Push-On Joints: Shape of pipe ends and fitting ends, gaskets, and lubricant for joint assembly, AWWA C111/A21.11.
   (3) Mechanical Joints: Dimensional and material requirements for pipe ends, glands, bolts and nuts, and gaskets, AWWA C111/A21.11
   (4) Flanged Joints: Bolts, nuts, and gaskets for flanged connections as recommended in the Appendix to AWWA C115/A21.15. Flange for set screwed flanges shall be of ductile iron, ASTM A 536, Grade 65-45-12, and conform to the applicable requirements of ASME/ANSI B16.1, Class 250. Setscrews for set screwed flanges shall be 190,000 psi tensile strength, heat treated and zinc-coated steel. Gasket for set screwed flanges, in accordance with applicable requirements for mechanical-joint gaskets specified in AWWA C111/A21.11. Design of set screwed gasket shall provide for confinement and compression of gasket when joint to adjoining flange is made.

2. Copper Tubing and Associated Fittings (for piping 3 inches and smaller): Tubing, ASTM B 88, Type K. Fittings for solder-type joint, ASME B16.18 or ASME B16.22; fittings for compression-type joint, ASME B16.26, flared tube type.
3. Insulating Joints: Designed to effectively prevent metal-to-metal contact at the joint between adjacent sections of piping. Joint shall be of the flanged type with insulating gasket, insulating bolt sleeves, and insulating washers. Gasket shall be of the dielectric type, full face, and in other respects as recommended in the Appendix to AWWA C115/A21.15. Bolts and nuts, as recommended in the Appendix to AWWA C115/A21.15.
4. Sleeve-Type Mechanical Coupled Joints: As specified in paragraph entitled "Sleeve-Type Mechanical Couplings."
5. Reuse Water Pipe and Appurtenances: Reuse water pipe shall be painted purple in color or covered in a purple jacket in accordance with the New York City Plumbing Code (NYC PC) section C101.5.

   a. Reuse water pipe and appurtenances shall be identifies as containing non-potable water (NYC PC C101.6).
   b. Pipe identification shall be in accordance with Section 608.8 of the NYC PC (NYC PC 101.6).
   c. Spigots and hose bibs dispensing reused water shall be secured from unauthorized use by a locking mechanism. Signage reading "Caution: Non-Potable Water, Do Not Drink" shall be placed above or adjacent to the location of the spigots and hose bibs (NYC PC C101.6.1).

6. Provide pipeline products with product-specific or industry-wide Environmental Product Declarations (or alternative environmental declaration accepted by LEED), as outlined in Section 018113 – Sustainable Design Requirements.
7. Provide pipeline products with manufacturer's product-specific Health Product Declaration (HPD), Declare label, or Cradle to Cradle certificate (or alternative health-related declaration accepted by LEED), as outlined in Section 018113 – Sustainable Design Requirements.

B. Valves and Other Water Main Accessories:

1. Gate Valves: AWWA C509. Unless otherwise specified, valves conforming to AWWA C509 shall be non-rising stem type with mechanical-joint ends. Valves shall open by counterclockwise rotation of the valve stem. Stuffing boxes shall have 0-ring stem seals. Stuffing boxes shall be bolted and constructed so as to permit easy removal of parts for repair. Valves shall be of one manufacturer.
2. Valve Boxes: Provide a valve box for each existing gate valve and butterfly valve. Valve boxes shall be of cast iron or precast concrete of a size suitable for the valve on which it is to be used and shall be adjustable. Provide a round head. Cast the word "WATER" on the lid. The least diameter of the shaft of the box shall be 5-1/4 inches. Cast-iron box shall have a heavy coat of bituminous paint.
3. Sleeve-Type Mechanical Couplings: Couplings shall be designed to couple plain-end piping by compression of a ring gasket at each end of the adjoining pipe sections. The coupling shall consist of one middle ring flared or beveled at each end to provide a gasket seat; two follower rings; two resilient tapered rubber gaskets; and bolts and nuts to draw the follower rings toward each other to compress the gaskets. The middle ring and the follower rings shall be true circular sections free from irregularities, flat spots, and surface defects; the design shall provide for confinement and compression of the gaskets. For ductile iron and PVC plastic pipe, the middle ring shall be of cast iron or steel; and the follower rings shall be of malleable or ductile iron. Cast iron, ASTM A 48, not less than Class 25. Malleable and ductile iron shall meet the applicable requirements specified for gaskets for mechanical joint in AWWA C111/A21.11. Bolts shall be track-head type, ASTM A 307, Grade A, with nuts ASTM A 563, Grade A or round-head, square-neck type bolts ANSI, B18.5.2.1M and ANSI/ASME B18.5.2.2M with hex nuts, ASME/ANSI B18.2.2. Bolts shall be 5/8" in diameter; minimum number of bolts for each pipe size shall be 3 for 3-inch, 4 for 4-inch, 5 for 6-inch, 6 for 8-inch, 7 for 10-inch, 8 for 12-inch and 9 for 16-inch. Bolt holes in follower rings shall be of a shape to hold fast the necks of the bolts used. Mechanically coupled joints using a sleeve-type mechanical coupling shall not be used as an optional method of jointing except where indicated.
4. Restrained Joints: EBAA Megalug, Romac Industries, Star Pipe Products joint restraint systems, or approved equal.
5. Combination Air/Vacuum release valves: DeZURIK APCO, Val-Matic Combination Water Valve, Cla-Val 36 Series Combination Air Valve, or approved equal.

6. Provide valve products with product-specific or industry-wide Environmental Product Declarations (or alternative environmental declaration accepted by LEED), as outlined in Section 018113 – Sustainable Design Requirements.
7. Provide valve products with manufacturer's product-specific Health Product Declaration (HPD), Declare label, or Cradle to Cradle certificate (or alternative health-related declaration accepted by LEED), as outlined in Section 018113 – Sustainable Design Requirements.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Waste Management: Construction waste shall be removed and managed in accordance with Section 017419, "Construction and Demolition Waste Management and Disposal."

3.02 INSTALLATION OF PIPELINES

A. General Requirements for Installation of Pipelines: These requirements shall apply to all pipeline installation except where specific exception is made in the "Special Requirements." paragraphs.

1. Earthwork: Perform earthwork operations in accordance with Section 310000, "Earthwork."
2. Pipe Laying and Jointing: Remove fins and burrs from pipe and fittings. Before placing in position, clean pipe, fittings, valves, and accessories, and maintain in a clean condition. Provide proper facilities for lowering sections of pipe into trenches. Do not under any circumstances drop or dump pipe, fittings, valves, or any other water line material into trenches. Cut pipe accurately to length established at the site and work into place without springing or forcing. Replace with one of the proper length any pipe or fitting that does not allow sufficient space for proper installation of jointing material. Blocking or wedging between bells and spigots will not be permitted. Lay bell-and-spigot pipe with the bell end pointing in the direction of laying. Grade the pipeline in straight lines; avoid the formation of dips and low points. Support pipe at proper elevation and grade. Secure firm, uniform support. Wood support blocking will not be permitted. Lay pipe so that the full length of each section of pipe and each fitting will rest solidly on the pipe bedding; excavate recesses to accommodate bells, joints, and couplings. Provide anchors and supports where indicated and where necessary for fastening work into place. Make proper provision for expansion and contraction of pipelines. Keep trenches free of water until joints have been properly made. At the end of each workday, close open ends of pipe temporarily with wood blocks or bulkheads. Do not lay pipe when conditions of trench or weather prevent installation. Depth of cover over top of pipe shall not be less than 3 feet.

B. Special Requirements for Installation of Water Mains:

1. Installation of Ductile-Iron Piping: Unless otherwise specified, install pipe and fittings in accordance with paragraph entitled "General Requirements for

Installation of Pipelines" and with the requirements of AWWA C600 for pipe installation, joint assembly, valve-and-fitting installation, and thrust restraint.

a. Jointing: Make push-on joints with the gaskets and lubricant specified for this type of joint; assemble in accordance with the applicable requirements of AWWA C600 for joint assembly. Make mechanical joints with the gaskets, glands, bolts, and nuts specified for this type of joint; assemble in accordance with the applicable requirements of AWWA C600 for joint assembly and the recommendations of Appendix A to AWWA C111/A21.11. Make flanged joints with the gaskets, bolts, and nuts specified for this type of joint. Make flanged joints up tight; avoid undue strain on flanges, fittings, valves, and other accessories. Align bolt holes for each flanged joint. Use full size bolts for the bolt holes; use of undersized bolts to make up for misalignment of bolt holes or for any other purpose will not be permitted. Do not allow adjoining flange faces to be out of parallel to such degree that the flanged joint cannot be made watertight without over straining the flange. When flanged pipe or fitting has dimensions that do not allow the making of a proper flanged joint as specified, replace it by one of proper dimensions. Use set screwed flanges to make flanged joints where conditions prevent the use of full-length flanged pipe and assemble in accordance with the recommendations of the set screwed flange manufacturer. Make insulating joints with the gaskets, sleeves, washers, bolts, and nuts previously specified for this type of joint. Assemble insulating joints as specified for flanged joints, except that bolts with insulating sleeves shall be full size for the bolt holes. Ensure that there is no metal-to-metal contact between dissimilar metals after the joint has been assembled.

b. Pipe Anchorage: Provide concrete thrust blocks (reaction blocking) for pipe anchorage, except where Restrained Joints are indicated. Thrust blocks shall be in accordance with the requirements of AWWA C600 and NFPA 24 for thrust restraint, except that size and positioning of thrust blocks shall be as indicated. Use concrete, ASTM C 94, having a minimum compressive strength of 3,000 psi at 28 days. Metal harness shall be in accordance with the requirements of AWWA C600 and NFPA 24 for thrust restraint, using tie rods and clamps as shown in NFPA 24, except as otherwise indicated. In lieu of horizontal and/or vertical concrete thrust blocking, the Contractor may provide longitudinal restraint utilizing restrained joints in accordance with DIPRA-1 and the pipe, fitting and restrained joints manufacturer’s recommendations and design parameters for rigid piping. The Contractor shall submit locations, pressure distributions, and design calculations for the longitudinal restraint at the joints and fittings required to restrain the resulting horizontal and/or vertical bend forces. All horizontal and vertical bend resulting forces shall be based upon internal working pressure of 225 psi.

2. Installation of Valves: Install gate valves, AWWA C509, in accordance with the requirements of AWWA C600 for valve-and-fitting installation and with the

recommendations of the Appendix ("Installation, Operation, and Maintenance of Gate Valves") to AWWA C509. Make and assemble joints to gate valves as specified for making and assembling the same type joints between pipe and fittings.

C. Disinfection: Disinfect new water piping and existing water piping affected by Contractor's operations in accordance with AWWA C651-14. Obtain at least two consecutive satisfactory bacteriological samples from new water piping, analyze by a certified laboratory, and submit the results prior to the new water piping being placed into service.

3.03 FIELD QUALITY CONTROL

A. Field Tests and Inspections: The Contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing. The Contractor shall produce evidence, when required, that any item of work has been constructed in accordance with the drawings and specifications. Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete.

B. All fire mains shall be flushed and tested per NFPA 24 and witnessed by the Fire Department of New York Fire Marshal. All piping, rodding, and blocking shall be exposed for inspection during testing.

C. Testing Procedure: Test water mains and water service lines in accordance with AWWA 600 and NYC Plumbing Code C101.8.

D. Special Testing Requirements: Use a hydrostatic pressure 50 psi greater than the maximum working pressure of the system, except that for those portions of the system having pipe size larger than 2 inches in diameter, hydrostatic test pressure shall be not less than 150 psi. Hold this pressure for not less than 2 hours. Prior to the pressure test, fill that portion of the pipeline being tested with water for a soaking period of not less than 24 hours.

END OF SECTION 331700

<u>ATTACHMENT #7</u>
REVISED SITE WATER SPECIFICATION #221453 –
RAINWATER HARVESTING SYSTEM

(ATTACHED)

RAINWATER HARVESTING SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: Furnish and install a complete rainwater harvesting system. The system shall be designed to automatically collect rainwater roof runoff and stormwater. The water shall be treated and used for toilet flushing, irrigation and property washdown.

B. System shall contain all components necessary to process, store and pressurize the harvested water including, but not limited to:

1. Pre-Treatment Filter
2. Main Storage Tank (By Civil)
3. Wet Well (By Civil)
4. Transfer Pumps
5. Final Filtration
6. UV Sanitation
7. Processing Skid
8. Day Tank
9. Municipal Make-Up (Toilet Flushing)
10. Municipal Make-Up (Irrigation)
11. Repressurization Pumps
12. Chlorine Injection System
13. Bladder Tank
14. Other Components
15. Rainwater Control System

1.02 PROCESS DESCRIPTION

A. General: Rainwater and stormwater are collected from 64,955 square feet of rooftop, hardscapes, and softscapes and pre-treated through a filter before entering a 112,300gallon cistern (by civil). When there is a demand for water, duplex transfer pumps convey water to the processing skid for final filtration and sanitation. The water is then sent either to the irrigation system or to a processed water holding tank to await pressurization. Duplex booster pumps mounted to the processing skid pressurize the water for toilet flushing and irrigation. Should there be a demand for water when the tanks are empty, the system will automatically add municipal supply. The WCS 100 controls will monitor and manage the system and is capable of interfacing with the BAS through BACnet or Modbus. B. Storage:

1. Harvested water shall be stored in a below-grade 112,300-gallon concrete cistern (by civil). Water will flow into an adjacent wet well (by civil).
2. Water level in the cistern and wet well shall be monitored by a pressure transmitter providing continuous level information to the control system. If water

in the tank reaches a high level, water shall pass out an overflow to drain. If a preset low-level alarm point is reached, the Control System shall automatically revert to domestic water supply.

3. Transfer pumps shall be included with each system to convey harvested water to the processing equipment as controlled by the rainwater control system.
4. A Processed Water Holding Tank shall hold treated water and facilitate automated municipal water make-up via air gap at top of tank.

C. Processing: Skid-mounted processing equipment shall include final filtration and UV sanitation system. Chlorine will be injected into the toilet flushing line downstream of the booster pumps. The processing equipment will be on an HDPE skid located inside. The Control System shall monitor the life of the UV bulbs and level of available chlorine. In the event of UV or low-level chlorine alarm, system will shut down and automatically revert to domestic water supply with alert to BAS System. D. Pressurization:

1. Transfer pumps shall convey harvested water through the processing equipment and to either the irrigation system or the day tank. The Control System shall monitor pump operating parameters and alternating pump operation.
2. Well-mounted duplex transfer pumps shall pressurize collected water thru treatment to storage or irrigation, producing 50 GPM @ 85 PSI.
3. Skid-mounted duplex booster pumps shall pressurize treated, collected water for toilet flushing, producing 80 GPM @ 40 PSI. E. Monitoring and Control:

1. A master control system shall be included to monitor and data log system operational parameters. The control system shall control tank levels and equipment operation per custom software and shall provide alarms to the Building Automation System.
2. All control panels shall be NEMA and UL Listed.

1.03 SUBMITTALS

A. Provide all submittals, including the following, as specified in Division 1.

B. Contractor's Drawings: Submit shop drawings, including arrangement and erection drawings of the water harvesting equipment and control equipment; installation templates; schematic control diagrams, electrical connection diagrams, and complete description of the control system.

C. Quality Control Submittals: Submit the following:

1.
2. Manufacturer's certified performance and material records as specified.
3. Manufacturer's certified copies of Field Test Reports.

D. Operation and Maintenance Manuals: Submit Operation and Maintenance (O&M) instructions for the water harvesting equipment.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle all water harvesting equipment as specified in Division 1 and as follows:

1.
2. Protect all electrical equipment from the weather during transit and storage by suitable means, including shrink wrapping or hand wrapping and taping.
3. Equipment Skids shall be suitably packaged in crates for safe transit and storage on site in advance of installation.
4. Installation Manual shall be provided with equipment and separate from O & M manuals.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. All water harvesting equipment shall be provided by the Contractor through a single vendor with a minimum of five years of experience in building similar systems; Water Harvesting Solutions (WAHASO) or approved equal. The Contractor, through the vendor, shall have the responsibility of matching all components and providing a fully functional system.

2.02 PRE-TREATMENT FILTER

A. General: Provide a hydraulic jump cascade filter. Filter to be suitable for in tank or external applications. Body to be injection molded with a 16-inch inlet, 12-inch filtered outlet and 16-inch bypass for high flows. The self-cleaning action from the turbulent hydraulic jump reduces maintenance requirements. Average efficiency to be 98%.

B. Filter(s) must be designed to meet the flow rate that will allow debris and sediment to be captured in order to keep the cistern clean. This is imperative for the proper function of the downstream equipment. C. Capacity and Characteristics:

1. Filtered Flow Rate: 511 GPM
2. High Flow Bypass Rate (Max): 3,600 GPM
3. Filtration: 800 microns
4. Inlet/Bypass: 16 inches
5. Filtered Outlet: 12 inches
6. Quantity: one

D. Approved Manufacturer: PURAIN or approved equal.

2.03 MAIN STORAGE TANK (BY CIVIL)

A. Harvested water shall be stored below-grade in a concrete cistern with a retention capacity of at least 112,300 gallons (by civil).

2.04 WET WELL (BY CIVIL)

A. Water from the cistern will flow into an adjacent wet well by others.

2.05 SUBMERSIBLE TRANSFER PUMPS

A. General Description: Duplex submersible transfer pumps shall be provided and located in the wet well. The pump shall be capable of providing 50 GPM flow rate at 85 PSI. B. Capacity and Characteristics:

1. Capacity: 50 GPM @ 85 PSI
2. Number of Pumps: One
3. Discharge Pipe Size: 2-inch FNPT.
4. Motor Horsepower: 3
5. Electrical Characteristics:
   a. Volts: 208
   b. Phases: 3
   c. Hertz: 60

C. Provide a pump rail or guide equal to the depth of the wet well to provide access to the pumps.

D. Approved Manufacturer: Grundfos SP Series, Goulds GS Series or approved equal.

2.06 FINAL FILTRATION

A. General: Provide a two-step filtration system containing a mechanical self-cleaning filter and a carbon filter mounted on the processing skid.

B. Mechanical Filter: Filter to include 20 second backflush cycle that is activated by differential pressure or time-based duration. Filter to screen to 50 microns. Requires 2" drain line to sewer system for effluent (by civil).

   1. Approved Manufacturer: Tekleen or approved equal.

C. Carbon Filter: Provide activated carbon filter with automated regeneration (backwashing).

   1. Approved Manufacturer: Marlo or approved equal. D.

All filters mounted to Wahaso processing skid.

2.07 UV SANITATION

A. General Description: Provide a UV sanitation system mounted on a common skid with all plumbing and electrical connections prefabricated prior to delivery. Includes alarms for UV malfunction and automatic changeover to domestic water in the event of such malfunction.

B. Detail Description: The Wahaso UV Sanitation System, shall be in compliance with the following design criteria:

1. System shall be capable of sanitizing 50 GPM of water at 40 mJ/cm^2 (NSF/EPA) exposure.
2. Operating Pressure: 15 psi to 125 psi, tested to 300 psi.
3. UVT: 75% minimum.
4. Electrical Requirements: 120V single phase, 60 Hz
5. Maximum power consumption: 230 watts

C. Other Features

1. All materials shall be non-corrosive.
2. Quick change replacement bulb feature.
3. UV Transmittance detector providing real time dose monitoring and low UVT alarm.

D. Mounted to Wahaso processing skid.

E. Approved Manufacturer: Viqua or approved equal.

2.08 PROCESSING SKID

A. General Description: Final filtration, UV sanitation and pumps all to be pre-assembled, pre-plumbed and pre-wired to separate processing skids.

B. Skids to include supports for Greywater Control System panel. Skids shall be constructed of ¾” HDPE with internal rib supports and side skirts with forklift access on all 4 sides.

C. All piping and fittings are Schedule 80 PVC.

D. Approved Manufacturer: Wahaso.

2.09 DAY TANK

A. Provide skid-mounted day tank as described below.

B. Provide a 550 Gallon, 48” diameter x 75”, high flat bottom closed top High Density Polyethylene Tank. Tank designed for water with a specific gravity of 1.9. Include an 18” manway with a screw-on lid and the following nozzles:

1. 2-inch threaded half-coupling for level sensor
2. 2-inch threaded half-coupling for rainwater inlet
3. 2-inch threaded half-coupling for vent
4. 2-inch flanged outlet for water out to re-pressurization pumps 5. 1-1/2-inch threaded half-coupling for service drain.

C. All fittings shall be thermal plastic welded to tank with triple bead welds.

D. Mounted to Wahaso processing skid.

2.10 MUNICIPAL MAKE-UP (TOILET FLUSHING)

A. General: System shall include a method to automatically add water from the municipal water supply to the Processed Water Holding Tank (PWHT) when the cistern is empty, or a critical function of the treatment system fails. The Rainwater Control System shall monitor water levels in the cistern and PWHT and critical functions and add municipal make-up as needed to maintain a minimum level in the PWHT.

B. Detail Description: Municipal water from a 2" line addition shall be regulated by a solenoid valve through an air gap funnel at the top of the PWHT.

C. Valve to be 2" brass body 115VAC normally closed solenoid valve rated for 100% duty cycle.

D. Approved Manufacturer: Burkert or approved equal.

2.11 MUNICIPAL MAKE-UP (IRRIGATION)

A. A remote valve shall provide municipal water and pressure in the event that harvested water is unavailable due to the cistern being empty, a failure of the pressurization pump, UV sanitation system or a power outage.

B. Municipal water supply shall be protected by an RPZ backflow preventer installed by a licensed plumber and inspected annually.

C. Rainwater Control System shall monitor system activity and control valve position. Valve shall be normally open to municipal water such that the Rainwater System must be operating properly to bypass municipal supply with non-potable water. D. Approved Manufacturer: Burkert or approved equal.

2.12 REPRESSURIZATION PUMPS

A. General Description: Repressurization Duplex Pumps for Day Tank shall convey water through the processing equipment and to the end use. Duplex booster pumps mounted to an HDPE skid. Each pump includes two (2) 304SS construction pumps with Variable speed pressure booster pumping system controls and ANSI 150 Flanged Suction and Discharge Fittings. Pumps shall be multistage design. Supply voltage shall be 460 VAC 3 phase.

1.
2. Each pump for the Day Tank shall be capable of producing 80 GPM @ 40 PSI.
3. Control Panel shall include Alarm Package, Run/Fault lights, Fault Horn with Silence and reset. System to run on lead-lag configuration.
4. Other controls shall include: Suction Pressure Switch, High Temperature Relief Assembly, High Pressure Discharge, Variable Speed Drives with controls and interface to WCS Main Panel and BAS System. Hydro-pneumatic diaphragm surge tank shall be included.
5. All pumps shall be pre-plumbed, pre-wired and tested prior to shipment. B. Capacity and Characteristics:

1. System Capacity: 80 GPM @ 40 PSI
2. Pump Type: Flooded Suction
3. Variable Speed Drive: Yes
4. Number of Pumps: Two
5. Suction, Discharge Pipe Size: 2”-300# Flange.
6. Motor Horsepower: Five
7. Electrical Characteristics:
    a. Volts: 460
    b. Phases: 3
    c. Hertz: 60

C. Duplex pumps will be mounted to the HDPE processing skid.

D. Approved Manufacturer: Wahaso/Grundfos or approved equal.

2.13 CHLORINE INJECTION SYSTEM

A. A small amount of liquid chlorine shall be injected into the pressurized non-potable outlet to maintain a low-level residual at the toilet fixtures.

B. System shall pump liquid chlorine from a 50-gallon container (supplied locally) at an adjustable, metered rate. At the point of injection, a Venturi mixer shall thoroughly mix the chlorine with the pressurized stream.

2.14 BLADDER TANK

A. General Description: Provide a diaphragm-type expansion tank to each repressurization system to accept and hold pressurized water from the repressurization pumps. The tank shall maintain minimum operating pressure necessary to provide harvested water to the building’s water harvesting system.

B. Furnish and install a 52-gallon pre-charged vertical steel expansion tank with integral, heavy duty butyl blend diaphragm and lined dome as part of the repressurization system serving Staging Tank A. The tank shall have a 1” NPTF system connection, and a 0.302”-32 charging valve connection to facilitate on-site charging of the tank to meet system requirements.

C. Air and water connections shall be brazed to the tank and each tank shall be equipped with an outlet pressure gauge. D. Capacity and Characteristics:

1. Toilet Flushing
    a. Capacity: 52 gallons
    b. System Connection: 1-inch NPTF
    c. Charging Valve: 0.302”-32
    d. ASME Rated: No

E. Approved Manufacturer: AA Tanks or approved equal.

2.15 OTHER COMPONENTS

A. Processed Water Holding Tank Level Sensor: Provide stainless steel pressure transmitter, range to suit tank depth. Sensor installed in tank fitting or drain piping. NEMA 4X housing, 4-20 mA output, 0.25% full scale accuracy. Dwyer 626 or approved equal.

B. Cistern Level Sensors: Provide stainless-steel submersible pressure transmitter length and range to suit cistern depth. Sensor installed by lowering to rest at bottom of cistern. 4-20 mA output, 0.25% full scale accuracy. Dylix GSX3 or approved equal.

C. Flow Meters: Provide paddlewheel flow meter for harvested water used and municipal water used. Meter to have digital mA output, low flow capability, polypropylene body. Signet or approved equal.

2.16 RAINWATER CONTROL SYSTEM

A. General: Provide Wahaso Series 100 Rainwater Control system with monitor to control Supply Tank levels, Pumps and Valves. System to include Wahaso Series 20 Control Logic Software as described below.

1. Specific Operating Data and alarm conditions as required by the Building Automatic System (BAS) shall be provided through Mod-bus or other communication protocols as specified by the Engineer.
2. A Touch Screen Display shall allow pages of system information to be displayed and levels of security by specific security code access will allow operators and management to change system operating parameters. Touch Screen Display shall be capable of remote viewing through network connection.
3. All Controls to be housed in a NEMA 4 UL Listed Enclosure. B. Data Input

Points shall include:

1. Main Storage Tank Levels for Above and Below Grade Tanks.
2. Discharge Pressure - Transfer Pumps
3. Day Tank Level
4. Municipal Water Valve Position – Day Tank
5. UV Sterilizer Alarms
6. Discharge Pressure - Booster Pumps
7. Motor fault alarms – all drive motors
8. Hours run monitor – all drive motors and filters
9. Manual-Off-Auto Control Switches for all drives and automatic valves
10. Emergency Stop

C. Control Output Points shall include:

1. Municipal Valve – Open/Close
2. Transfer Pumps - Run
3. UV Recirculation – Run
4. Chlorine Pump – Run - Optional

5. Repressurization Pumps - Run
6. BAS Mod-Bus or BACNET Interface Communication

D. Data Log: Process Controller shall function as a datalogger to log the following parameters:

1. Year to Date Rainwater Harvested
2. Tank Volumes in Gallon Units for Main Storage Tank and Day Tanks
3. Volume of Harvested Water sent to Toilets & Irrigation Systems.
4. Volume of Municipal Make Up required
5. Hours run for all pump motors
6. Automatic pump alternation
7. Flow rates, pressure outputs and alarms on pumps

E. Touch Screen: The Process Controller shall communicate with the Touch Screen. The Touch Screen shall be security level protected and programmed to display overall system operations, alarm states, maintenance instructions and logged data. The Touch Screen shall include graphics to show the following:

1. Water Levels in each tank
2. Pump Discharge Pressure for each pump
3. Green/Red indicator for Valve Open or Valve Closed Position for all automatic valves
4. Green/Grey/Red indicator for pump run status
5. UV On
6. Alarm Condition Alerts
7. Separate Pages for information on each major component accessed by pressing the touch screen on that item
8. Separate Page for Alarms History
9. Separate Page for Data Logged for required parameters.
10. Security accessed pages for maintenance information
11. Security accessed pages for changing critical set points F. Approved

Manufacturer: Wahaso or approved equal.

2.17 BUILDING-AUTOMATION-SYSTEM INTERFACE

A. The following data information shall be available to the Building Automation System through the RWCS.

1. Main Storage Tanks Volume in Gallons for above and below grade tanks
2. Condition - Alarms
3. Volume of Day Tank
4. Discharge Pressure of Repressurization Pump 5. Status of UV Sterilization System, normal or alarm 6. Other information that shall be available includes:

a. Hours Run for all motors
b. Volume of Municipal Water required for make up

c. Data logging for daily water harvested
d. Maintenance Alerts for filters.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install all rainwater harvesting equipment in accordance with manufacturer's recommendations and approved shop drawings as specified in Division 1.

B. Piping and Accessories: Install all piping connections and accessories, as specified or shown on Contract Drawings, in accordance with respective manufacturer's recommendations.

C. Manufacturer's Service Representative: Provide services of qualified representative or vendor to inspect installation, make any necessary adjustments, test equipment, and instruct operating personnel in operation and maintenance of water harvesting equipment.

3.02 TRAINING

A. Training shall be provided as described in Division 1.

3.03 WARRANTY

A. Manufacturer shall provide a warranty on the entire system for a period of one year from the commission date or 90 days after system delivery, whichever comes first. Warranty shall cover all components and controls provided by the Manufacturer and include time and travel necessary for system repair.

END OF SECTION

<u>ATTACHMENT #8</u>
NEW LANDSCAPE DRAWINGS –

L132A – MJH Planting Plan – Herbaceous Schedule
L916 – Details – Planting Soil Profiles 3
L955 – Details – Movable Planters

(ATTACHED)

ANSI D 22" x 34"

1

PERENNIAL SCHEDULE FOR SHEET L132						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	**Notes**
APM	56	ACTAEA PACHYPODA 'MISTY BLUE'	BANEBERRY	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
AMT	48	ALCHEMILLA MOLLIS ' THRILLER'	THRILLER LADY'S MANTLE		#1 CONT.	WELL-ROOTED IN CONTAINER
AMB	72	AMSONIA 'BLUE ICE'	BLUE STAR	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
ACD	53	ANEMONE CANADENSIS	WINDFLOWER	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
AFC	158	ANEMONE FANTASY 'CINDERELLA'	WINDFLOWER	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
ADI	47	ASTER DIVARICATUS 'EASTERN STAR'	EASTERN STAR WHITE WOOD ASTER		#1 CONT.	WELL-ROOTED IN CONTAINER
AFF	14	ATHYRIUM FILIX-FEMINA	LADY FERN	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
CMI	305	CAREX MAROWII 'ICE DANCE'	ICE DANCE JAPANESE SEDGE		#1 CONT.	WELL-ROOTED IN CONTAINER
DRE	50	DRYOPTERIS ERYTHROSORA 'BRILLIANCE'	BRILLIANCE AUTUMN FERN		#1 CONT.	WELL-ROOTED IN CONTAINER
DSM	50	DRYOPTERIS MARGINALIS	EASTERN WOODFERN		#1 CONT.	WELL-ROOTED IN CONTAINER
GNE	30	GERANIUM MACULATUM 'ESPRESSO'	ESPRESSO WILD GERANIUM		#1 CONT.	WELL-ROOTED IN CONTAINER
GGR	30	GERANIUM 'ROZANNE'	ROZANNE GERANIUM		#1 CONT.	WELL-ROOTED IN CONTAINER
HMA	30	HAKONECHLOA MACRA 'AUREOLA'	GOLDEN VARIGATED JAPANESE FOREST GRASS		#1 CONT.	WELL-ROOTED IN CONTAINER
HPI	41	HELLEBORUS 'PARIS IN PINK'	LENTEN ROSE	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
HGR	24	HELLEBORUS X GLANDORFENSIS 'ICE 'N ROSES ROSE'	ICE N' ROSES ROSE HYBRID HELLEBORE		1 QUART	WELL-ROOTED IN CONTAINER
HGW	24	HELLEBORUS X GLANDORFENSIS 'ICE 'N ROSES WHITE'	ICE N' ROSES WHITE HYBRID HELLEBORE		1 QUART	WELL-ROOTED IN CONTAINER
HAD	60	HEUCHERA AMERICANA 'DALES STRAIN'	DALE'S STRAIN ALUM ROOT		#1 CONT.	WELL-ROOTED IN CONTAINER
HSS	35	HEUCHERA SANGUINEA SNOW ANGEL'	CORAL BELLS	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
HAG	30	HOSTA GUACAMOLE	GUACAMOLE HOSTA		#1 CONT.	WELL-ROOTED IN CONTAINER
PAP	64	PACHYSANDRA PROCUMBENS	ALLEGHENY SPURGE		LP 32	WELL-ROOTED IN CONTAINER
PBW	49	PHLOX STOLONIFERA 'BRUCE'S WHITE'	BRUCE'S WHITE CREEPING PHLOX		#1 CONT.	WELL-ROOTED IN CONTAINER
PSS	49	PHLOX STOLONIFERA 'SHERWOOD PURPLE'	SHERWOOD PURPLE CREEPING PHLOX		#1 CONT.	WELL-ROOTED IN CONTAINER
POA	48	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN		#1 CONT.	WELL-ROOTED IN CONTAINER
HPP	10	SESLERIA AUTUMNALIS	AUTUMN MOOR GRASS	1'0"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
GRASS MATRIX B SCHEDULE FOR SHEET L132						
ID	**Quantity**	**Botanical Name**	**Common Name**	**Spacing**	**Size**	**Notes**
CMP	1211	CAREX AMPHIBOLA	CREEK SEDGE	1'3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
CXD	185	CAREX DIVULSA	GRASSLAND SEDGE	1'3"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER
DCP	52	DESCHAMPSIA CESPITOSA 'GOLD TAU'	GOLD DEW	2'6"	1 QT/#SP4	SOIL VOL. 53 MIN - 61 MAX CU. IN.; WELL ROOTED IN CONTAINER

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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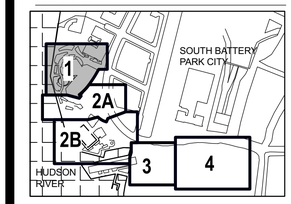
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

MJH PLANTING PLAN - HERBACEOUS SCHEDULE

SHEET NUMBER

1

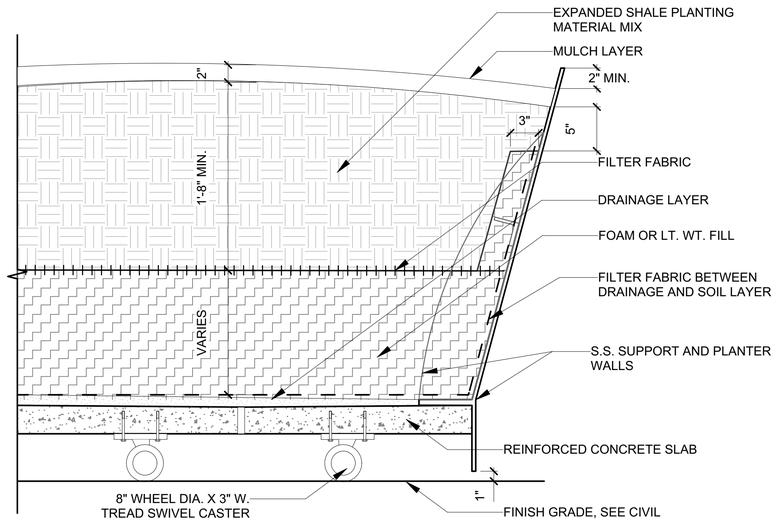
L132A

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

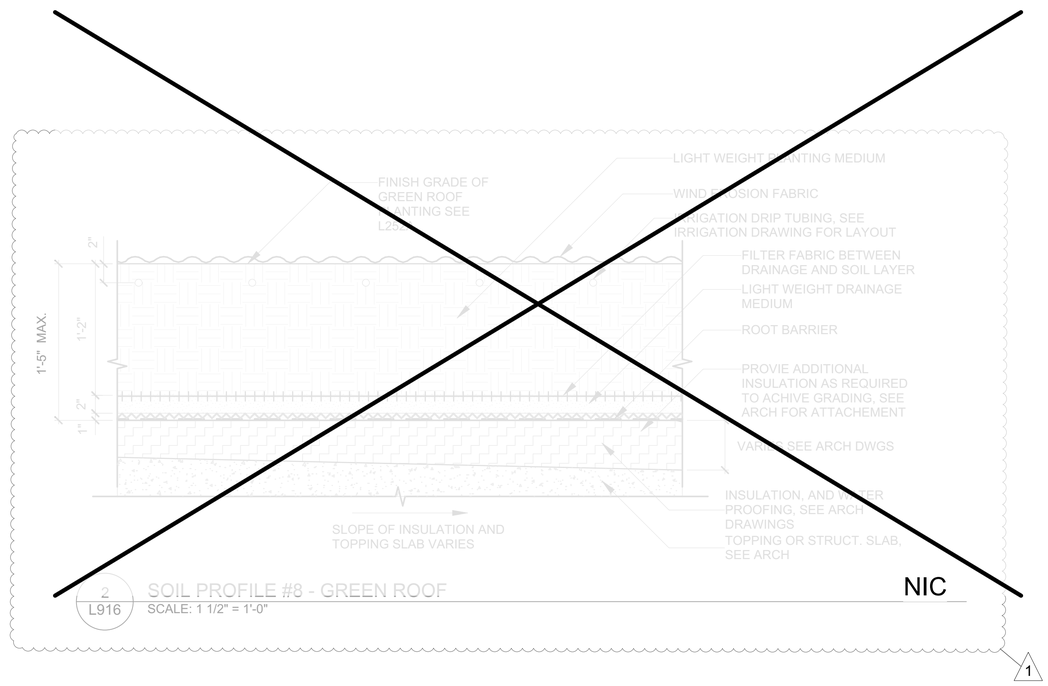
ANSI D 22" x 34"

NOTES:

1. COORDINATE SOIL VOLUME AND WEIGHT WITH STAMPED AND SEALED SHOP DRAWINGS FOR THE MOVABLE PLANTERS.
2. PROVIDE MIN. 1'-8" SOIL VOLUME, PROVIDE MORE DEPTHER AS REQUIRED AT TREE PLANTINGS, SEE PLANTING PLAN.
3. INCLUDE S.S. ATTACHMENTS AND FINISHES. PROVIDE ACCESS TO CASTER WHEEL LOCKING MECHANISM AS REQUIRED.

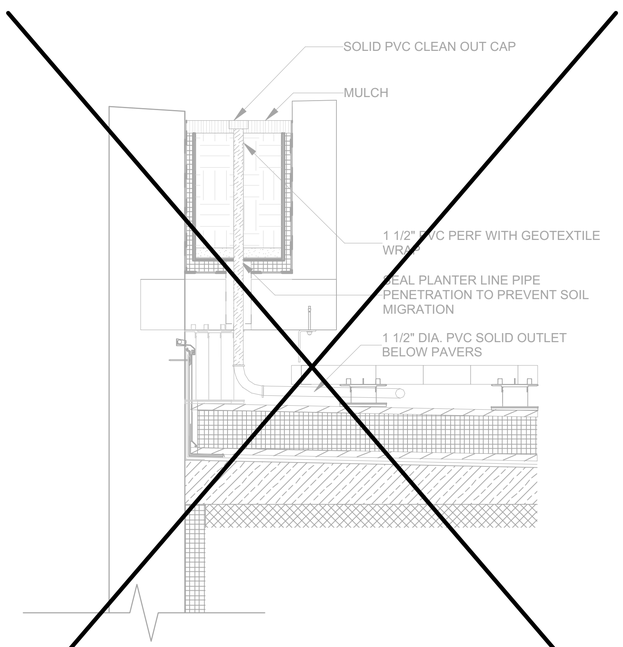


5 / L916 SOIL PROFILE #9 - MOVABLE PLANTER
SCALE: 1 1/2" = 1'-0"



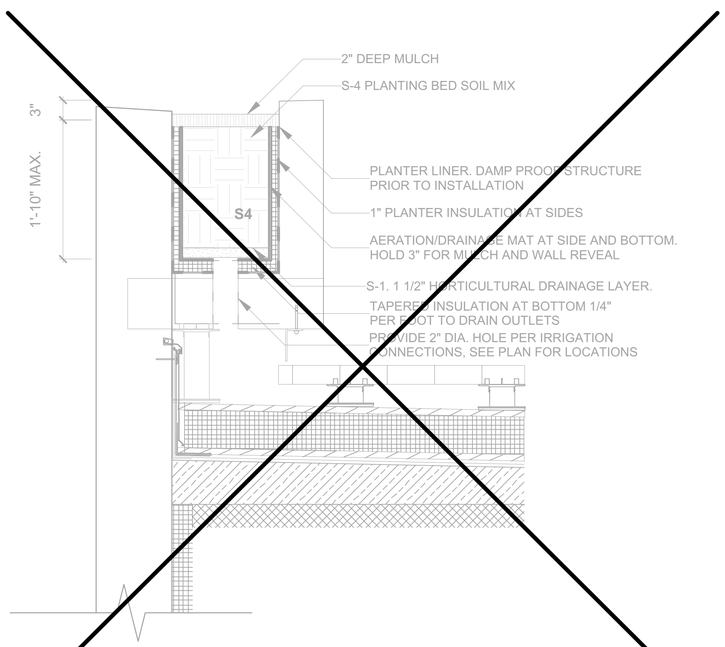
2 / L916 SOIL PROFILE #8 - GREEN ROOF
SCALE: 1 1/2" = 1'-0"

NIC



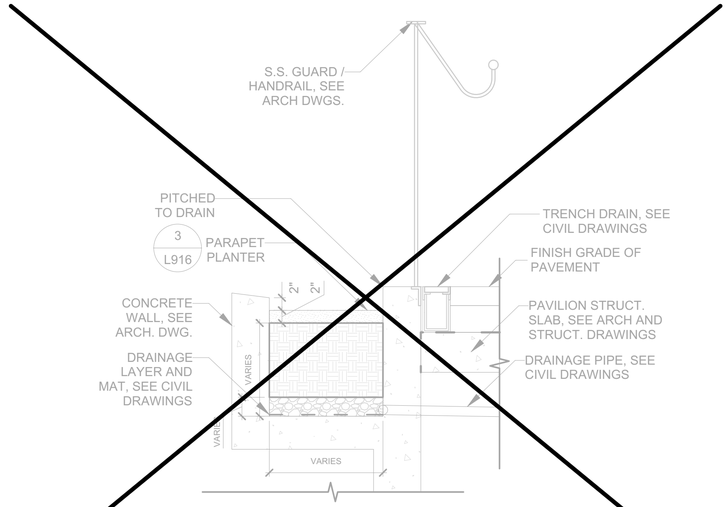
7 / L916 PARAPET PLANTER AT DRAIN
SCALE: 1" = 1'-0"

NIC



3 / L916 PARAPET PLANTER
SCALE: 1" = 1'-0"

NIC



1 / L916 PARAPET PLANTER AT GUARDRAIL
SCALE: 1" = 1'-0"

NIC

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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AECOM USA
605 3rd Ave, 2nd Floor, New York, NY 10158
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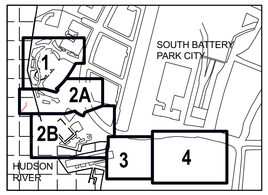
212.575.2701 naikgroup.com

OWEIS
100 East Hanover Ave., Suite 101, Cedar Knolls, NJ 07927
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

ISSUE/REVISION

1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET
I/R	DATE	DESCRIPTION

Designed By:	**H. EDELBURG**
Drawn By:	**M. MINCHIN**
Checked By:	**A. WILKUS**
Approved By:	**A. LAVALLEE**

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

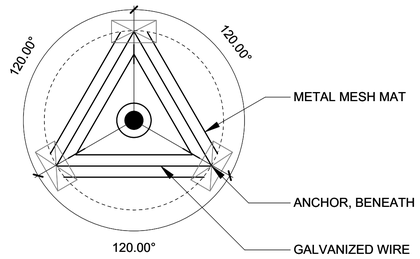
DETAILS - PLANTING SOIL PROFILES 3

SHEET NUMBER

L916

Last saved by: FERRERAV2021-11-17 Last Plotted: 2019-09-15
Filename: C:\MARINE\60579231-SBPC\910_CAD\20_SHEETS\FROM PW_ACM-G-TD_ANSI_D-SBPC.DWG

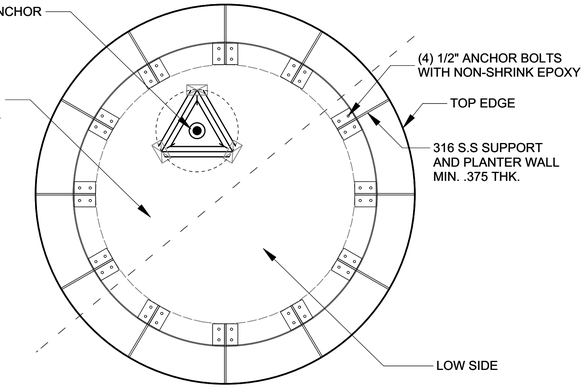
ANSI D 22" x 34"

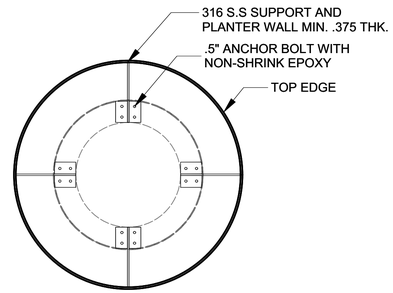


PLAN

NOTES:

1. ANCHORS SHALL BE SPACED AT EQUAL DISTANCE FROM THE CENTRAL LEADER ON ALL TREES OF THE SAME SIZE AND AREA.

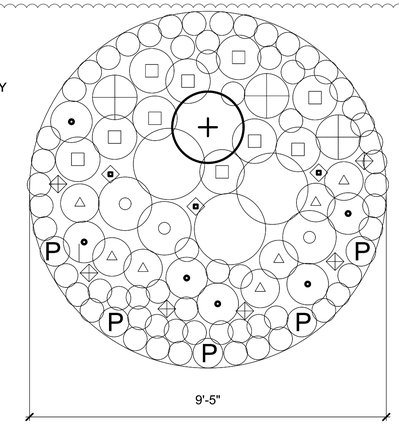




NOTES:

1. PROVIDE STAMPED AND SEALED SHOP DRAWINGS.

2. COORDINATE CASTER LOCATION AS REQUIRED.

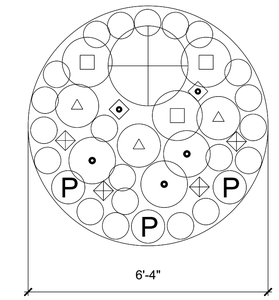


MOVABLE PLANTER A

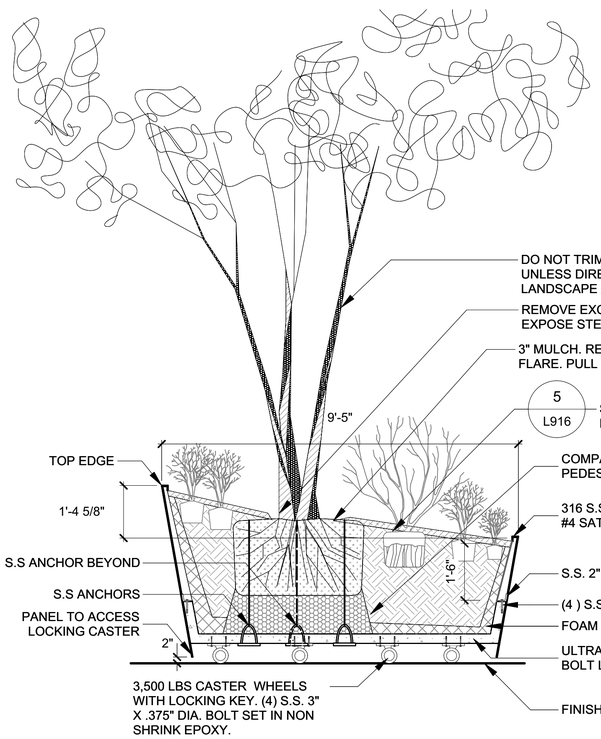
NOTES:

1. MIN / MAX PLANTER HEIGHT VARIES. PROVIDE SHOP DRAWINGS.

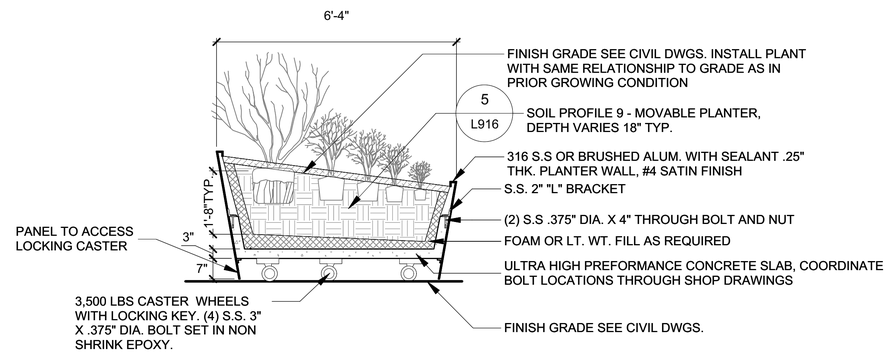
2. DESIGN INTENT IS FOR TREE AND SHRUB TO BE PLACED ON THE TOP SIDE OF THE PLANTER WHERE SOIL DEPTH IS GREATER.

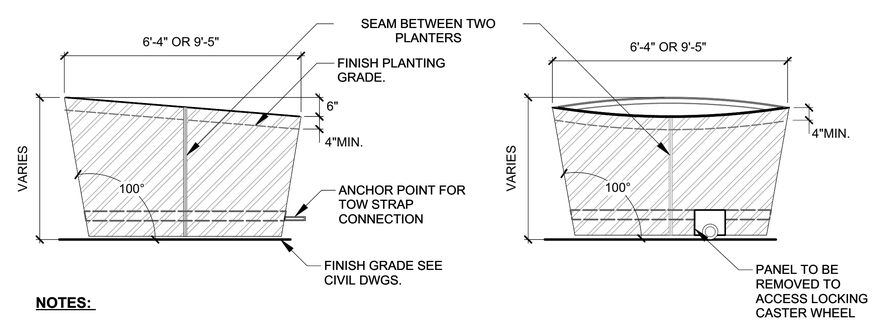


MOVABLE PLANTER B



1
L955
PLANTING IN CONCRETE LINED PLANTER
SCALE: ACTUAL SIZE





NOTES:

1. MIN / MAX PLANTER HEIGHT VARIES. PROVIDE SHOP DRAWINGS.

2. DESIGN INTENT IS FOR PLANTER TO BE TOWED/PUSHED AS NEEDED IN REPSONSE TO AN EMERGENCY. PROVIDE TOW STRAP CONNECTION POINT AND ACCESS TO LOCKING CASTER WHEEL AS NEEDED.

3. PROVIDE STAMPED AND SEALED SHOP DRAWINGS.

GRAPHIC SCALE: 1/2" = 1'-0"
1' 6" 0 1' 2' 3' 4' 5' 6'

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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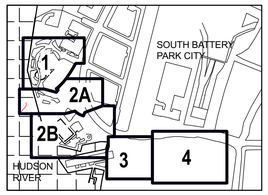
973.539.440 oweisengineering.com

KEY PLAN



REGISTRATION

REGISTERED LANDSCAPE ARCHITECT
DONALD R. LAVALLEE
001494
STATE OF NEW YORK

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JUNE 2022	REVISION: FIRST PLACE
I	JAN 2022	BID SET

Designed By:	H. EDELBURG
Drawn By:	M. MINCHIN
Checked By:	A. WILKUS
Approved By:	A. LAVALLEE

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

DETAILS - MOVABLE PLANTERS

SHEET NUMBER

L955

Last saved by: FERRERA(2021-11-17) Last Plotted: 2019-09-15
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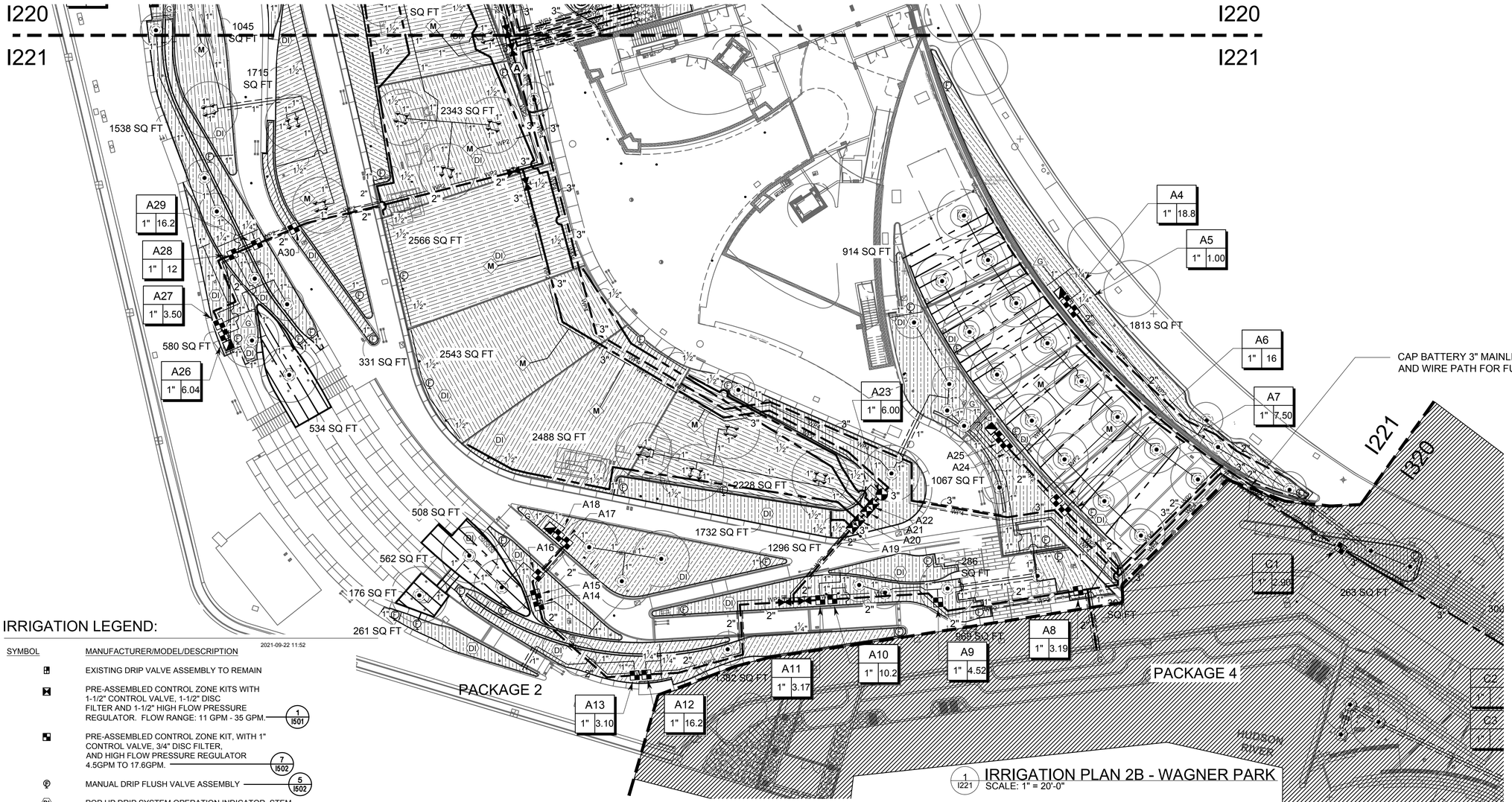
<u>ATTACHMENT #9</u>
NEW IRRIGATION DRAWING –

I221 – Pkg 2 Irrigation Plan 2B

(ATTACHED)

ANSI D 22" x 34"



1 I221 IRRIGATION PLAN 2B - WAGNER PARK
SCALE: 1" = 20'-0"

IRRIGATION LEGEND:

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	
	EXISTING DRIP VALVE ASSEMBLY TO REMAIN	
	PRE-ASSEMBLED CONTROL ZONE KITS WITH 1-1/2" CONTROL VALVE, 1-1/2" DISC FILTER AND 1-1/2" HIGH FLOW PRESSURE REGULATOR. FLOW RANGE: 11 GPM - 35 GPM.	1 I501
	PRE-ASSEMBLED CONTROL ZONE KIT, WITH 1" CONTROL VALVE, 3/4" DISC FILTER, AND HIGH FLOW PRESSURE REGULATOR 4.5GPM TO 17.6GPM.	7 I502
P	MANUAL DRIP FLUSH VALVE ASSEMBLY	5 I502
DI	POP UP DRIP SYSTEM OPERATION INDICATOR, STEM RISES 6" FOR CLEAR VISIBILITY WHEN DRIP SYSTEM IS CHARGED TO A MINIMUM OF 20PSI.	6 I501
	TREE DRIP RINGS .9GPH X 12" EMITTER SPACING	2 I504, 4 I504, 6 I504
	AREA TO RECEIVE DRIPLINE HUNTER ECO-MAT 17 MM 0.6 GPH FLEECE WRAPPED INLINE EMITTER TUBING, WITH THE BLANKET ECO-MAT. EVENLY DISPERSES WATER FROM UNDER THE SURFACE. EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART.	1 I506, 2 I506
	AREA TO RECEIVE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH COPPER STRIPE, CHECK VALVE AND ANTI-SIPHON FEATURE. 0.53 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN.	1 I503, 3 I503, 5 I503
	EXISTING DRIP IRRIGATION (VERIFY IN FIELD)	
	QUICK COUPLER VALVE, PURPLE RUBBER LOCKING COVER FOR RECLAIMED WATER USE. RED BRASS AND STAINLESS STEEL, WITH 1" NPT INLET, 2-PIECE BODY. ACME KEY.	3 I501
	DUCTILE IRON VALVE WITH DR-11 HDPE END CONNECTIONS SAME SIZE AS MAINLINE PIPE DIAMETER AT VALVE LOCATION. SIZE RANGE - 2" - 3"	5 I501
M	SOIL MOISTURE SENSOR	3 I506
G	GROUNDING LOCATION	1 I504, 3 I504, 5 I504
A	COMBINATION AIR RELIEF VALVE	2 I501
40 GPM 55 PSI	CAP FOR FUTURE USE - SOUTH COVE CAP AT THE MAINLINE OR LATERAL LINE FOR FUTURE USE. THE PRESSURE AND FLOW PROVIDED TO THAT LOCATION ARE INDICATED NEXT TO THE CAP SYMBOL.	
POC1	POINT OF CONNECTION - WAGNER PARK	8 I505
POC2	POINT OF CONNECTION - MUSEUM OF JEWISH HERITAGE	8 I505
POC3	POINT OF CONNECTION - SOUTH COVE	8 I505
POC4	POINT OF CONNECTION - PIER A & THE BATTERY	8 I505
	IRRIGATION LATERAL PIPE: SDR21 PVC (1 1/2" AND LARGER)	
	IRRIGATION LATERAL PIPE: NON-NSF-PE-IDR15 (100 PSI) (1 1/4" AND SMALLER)	4 I503, 5 I503
	IRRIGATION MAIN LINE: HDPE PE4710 DR 11 (200 PSI)	4 I503, 5 I503
WP1	WIRE PATH #1 IN CONDUIT - WAGNER PARK	4 I503, 5 I503
WP2	WIRE PATH #2 IN CONDUIT - MUSEUM OF JEWISH HERITAGE	4 I503, 5 I503
WP3	WIRE PATH #3 IN CONDUIT - SOUTH COVE	4 I503, 5 I503
WP4	WIRE PATH #4 IN CONDUIT - PIER A & THE BATTERY	1 I505, 2 I505, 3 I505, 4 I505, 5 I505, 7 I505, 8 I505
	DRIP IRRIGATION BELOW PAVEMENT IN PVC SLEEVE	
	PIPE SLEEVE - SCHEDULE 40	4 I501

Valve Callout: # Valve Number; # Valve Flow; # Valve Size

Last saved by: MICHAELASTRAM(2022-06-16) Last Plotted: 2022-06-16
Filename: G:\MY DRIVE\PROJECTS\2020\SBPC - WAGNER\ARKCDRAWING\S\220615 SBPC PKG2 VIS IRRIGATION ADD #1.DWG

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CLIENT
HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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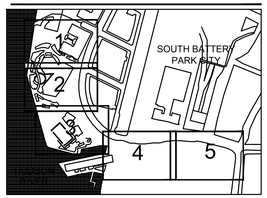
KEY PLAN



REGISTRATION

IRRIGATION CONSULTANTS ASSOCIATION OF NORTH AMERICA
ASIC
MICHAEL J. ASTRAM

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	06/22/22	ADDENDUM #1

Designed By:	MJA
Drawn By:	MA / KB
Checked By:	MJA
Approved By:	MJA

PROJECT/TERM CONTRACT NUMBER
Contract No. 18-2586

SHEET TITLE
PKG2 IRRIGATION PLAN 2B

SHEET NUMBER
I221 / 1

<u>ATTACHMENT #10</u>
NEW SITE PLUMBING DEMOLITION REFERENCE DRAWINGS –
REF001, REF101, REF102, REF103

(ATTACHED)

ANSI D 22" X 34"

GENERAL NOTES

A. THIS CONTRACTOR SHALL PROVIDE A TURNKEY COMPLETE DESIGN BUILD DEMOLITION AND TEMPORARY PACKAGES RELATED TO THE UNDERGROUND GROUND HYDRANT WATER AND IRRIGATION SYSTEMS BASED ON THE BRIDGING DOCUMENTS DATED XXXX AND THE FOLLOWING BASIS OF DESIGN.

B. BASIS OF DESIGN

a. GENERAL

i. PROVIDE ALL LABOR AND MATERIAL INCLUDING REQUIRED TO EXECUTE THE WORK. PROVIDE QUALIFICATIONS AND PROFESSIONAL CERTIFICATES AS REQUIRED.

ii. COORDINATE ALL DEMOLITION WORK WITH THE ENTIRE PROJECT INCLUDING NEW, EXISTING TO REMAIN AND DEMOLITION SCOPE OF WORK ACROSS ALL PACKAGES.

iii. THE EXTENT OF DEMOLITION AND EXISTING TO REMAIN WORK SHALL BE COORDINATED WITH THE OVERALL PROJECT REQUIREMENTS AND INCLUDED IN THIS DESIGN BUILD PACKAGE COST.

iv. BRIDGING DRAWINGS ARE SCHEMATIC IN NATURE AND INTENDED TO CONVEY THE GENERAL SCOPE OF WORK. THE ASSOCIATED REQUIRED DETAILS RELATED EXECUTION, INTERCONNECTIONS, COORDINATION AND FINAL SITE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

v. ALL BASE CONTRACT SPECIFICATIONS AND DRAWINGS APPLY. COORDINATE WITH CIVIL DEMOLITION FOR SITE AND ROADWAY INFORMATION.

vi. PERFORM ALL WORK SUCH THAT THE EXISTING SYSTEMS TO REMAIN ARE NOT DISRUPTED AND RECONNECTED TO REMAIN OPERATIONAL AS REQUIRED. IF IT IS NECESSARY TO TEMPORARILY DISRUPT SYSTEMS INCLUDE ALL COSTS TO MAINTAIN DISRUPTED SYSTEMS IN OPERATION. COORDINATE WITH LA AND IRR. SET AS REQUIRED.

vii. IF TEMPORARY CONNECTIONS AND INTERCONNECTIONS ARE REQUIRED THAT WORK SHALL BE PERFORMED BY THIS CONTRACTOR AND DEMOLISH OF TEMPORARY WORK SHALL BE INCLUDED. COORDINATE PROPOSED TIE INS TO EXISTING SYSTEM WITH INSTALLATION CONTRACTOR AS REQUIRED, TEST SYSTEM TO ENSURE FUNCTIONALITY BEYOND L.O.W. AS REQUIRED.

viii. ONSITE STORAGE OF DEMOLITION DEBRIS INCLUDING SPOILS IS NOT PERMITTED UNLESS SPECIFICALLY AUTHORIZED.

ix. INCLUDE ALL REQUIRED PREMIUM TIME E WORK.

b. GENERAL SITE WORK

i. EARTHWORK FOR TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH CIVIL SHEETS AND EARTHWORK SPECIFICATIONS

ii. GRADE SITE IN ACCORDANCE WITH C300 SERIES SHEETS

c. IRRIGATION SYSTEM

i. DEMOLISH PORTIONS OF THE IRRIGATION SYSTEMS AND CONNECT TO THE TEMPORARY SUPPLY WATER SYSTEMS. TEMPORARY SUPPLY WATER PUMPING ARRANGEMENT AND CONTROLS ARE THE RESPONSIBILITY OF THIS CONTRACTOR.

ii. INTENT IS TO REUSE THE EXISTING PORTIONS OF THE SYSTEMS AS NOTED OR AGREED UPON UNLESS IT INTERFERES WITH THE NEW OR DEMOLISH WORK. CONTRACTOR TO INCLUDE ALL ASSOCIATED WORK TO MAINTAIN A FUNCTIONAL SYSTEMS.

iii. MAINTAIN A TEMPORARY AUTOMATIC FUNCTIONAL IRRIGATION SYSTEMS THROUGHOUT THE DURATION OF THE PROJECT AND/OR UNTIL THE PERMANENT SYSTEM IS FUNCTIONAL. IF DURING CONSTRUCTION THE SYSTEMS IS DAMAGED REPAIR ANY DAMAGESSYSTEMS TO MAINTAIN THE SYSTEM FUNCTIONAL. SYSTEMS SHALL BE PIPED SUCH THAT PORTIONS CAN REMOVED WITHOUT DISRUPTING THE OPERATION OF IRRIGATION.

iv. COORDINATE ROUTING WITH ALL SITE WORK INCLUDING EXCAVATION OF NEW AND DEMOLISH WORK.

d. UNDERGROUND WATER SYSTEM

i. DEMOLISH PORTIONS OF THE UNDERGROUND GROUND HYDRANT WATER SYSTEMS AS INDICATED AND AS REQUIRED FOR THE NEW WORK TO BE IMPLEMENTED.

ii. DO NOT INTERRUPT SERVICES TO SURROUNDING FACILITIES. IF INTERRUPTIONS ARE REQUIRED ALL WORK MUST BE CLOSELY COORDINATED WITH ALL TRADES AND THE CITY.

iii. DO NOT LEAVE BEHIND ANY DEAD LEG CONDITIONS.

iv. CONNECT GROUND HYDRANTS TO WATER AND RECYCLED WATER SYSTEMS

WATER SUPPLY SYMBOLS

	NEW PIPE
—— - - - - - w ——	EXISTING WATER TO REMAIN
— — — —	EXISTING IRRIGATION HDPE MAINLINE TO BE REMOVED
. . . . .	EXISTING IRRIGATION CONTROL WIRING TO BE REMOVED
	PROPOSED GROUND HYDRANT WITH INTEGRAL VACUUM BREAKER AND A SHUTOFF VALVE
	GROUND HYDRANT TO BE REMOVED
	VALVE IN BOX (SAME SIZE AS ASSOCIATED PIPE. PIPE SIZE NOTED ON PLANS)
DW	BROKEN STONE DRY WELL SIZE AS INDICATED ON PLANS
PITCH	SLOPE OF PIPE
	IRRIGATION VALVE ASSEMBLY
	TREE IRRIGATION TO REMAIN
	QUICK COUPLER TO BE REMOVED
	VALVE
	PLANTER IRRIGATION TO REMAIN
	PLANTER IRRIGATION TO BE REMOVED

ABBREVIATIONS

A	AMPERES
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASSE	AMERICAN SOCIETY OF SANITARY ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BLDG	BUILDING
CFH	CUBIC FEET PER HOUR
CLG.	CEILING
C.O.	CLEAN OUT
CODP	CLEAN OUT DECK PLATE
COWP	CLEAN OUT WALL PLATE
CP	CONDENSATE PUMP
CW	COLD WATER
DIP	DUCTILE IRON PIPE
DN	DOWN
DR	DRAIN
DWG	DRAWING
(E)	EXISTING
EL.	ELEVATION
EWC	ELECTRIC WATER COOLER
EXIST.	EXISTING
FAI	FRESH AIR INTAKE
FD	FLOOR DRAIN
FS	FLOOR SINK
G	NATURAL GAS
GV	GATE VALVE
GI	GREASE INTERCEPTOR
HSK	HAND SINK
HT	HIGH TEMP WATER 140° F
HW	HOT WATER
HWR	HOT WATER RETURN
IW	INDIRECT WASTE
LAV	LAVATORY
MAX	MAXIMUM
MFG.	MANUFACTURING
MFR.	MANUFACTURER
MIN	MINIMUM
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
PRV	PRESSURE REDUCING VALVE
REF	REFRIGERATOR
S	SOIL, SANITARY
SAN	SANITARY
ST	STORM
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TYP	TYPICAL
UG	UNDERGROUND
V	VENT
VB	VACUUM BREAKER
W	WASTE
WC	WATER CLOSET

FOR REFERENCE ONLY.

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

CONSULTANT

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605 3rd Ave, 2nd Floor, New York, NY 10158
212.973.2900 tel www.aecom.com

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212.575.2701 naikgroup.com

OWEIS
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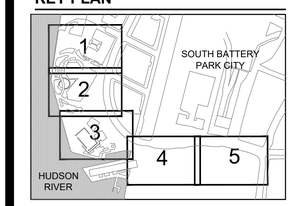
KEY PLAN



REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
R	JUNE 2022	ADDENDUM

Designed By:	
Drawn By:	
Checked By:	
Approved By:	

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

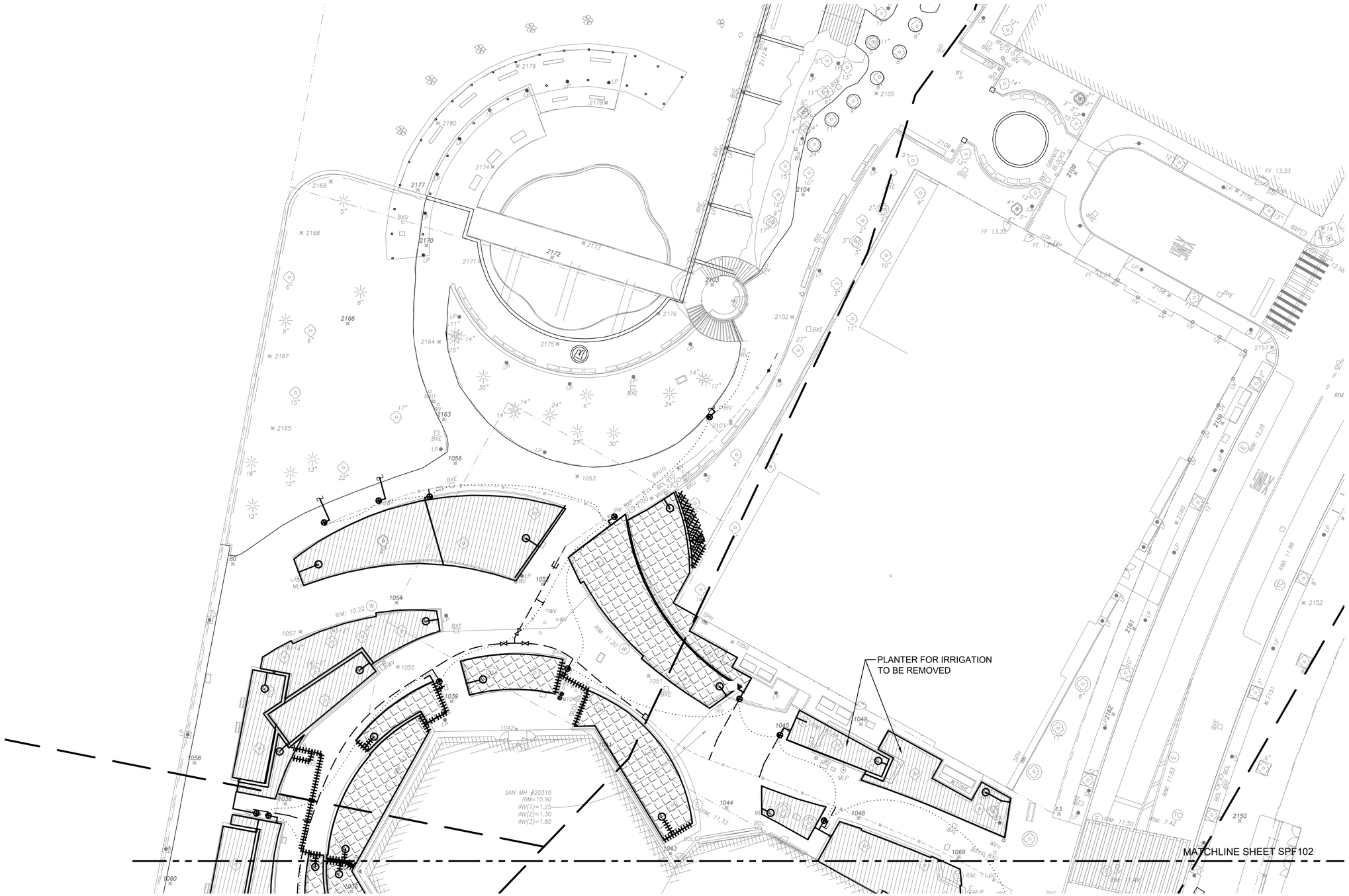
SHEET TITLE

PLUMBING NOTES, SYMBOLS AND ABBREVIATIONS

SHEET NUMBER

REF001

ANSI D 22" x 34"



1 SPF101 MUSEUM OF JEWISH HERITAGE SITE PLUMBING DEMOLITION PLAN
SCALE: 1"=20'-0"

GENERAL DEMOLITION NOTES:

1. REMOVE ALL IRRIGATION PIPING, CONTROL WIRING, GROUND HYDRANTS, VALVE ASSEMBLIES FOR ALL PLANTERS LAWNS AND AREAS TO BE DEMOLISHED. REFER TO LANDSCAPE ARCHITECTURAL REMOVAL PLAN FOR ADDITIONAL DETAILS .
2. MAINTAIN ALL PIPING SECTIONS, VALVES, WIRING OF SECTIONS THAT ARE TO REMAIN AND CAP SECTIONS OF PIPE AS SHOWN ON THE PLANS FOR FUTURE RECONNECTION.

LEGEND:

PLANTER IRRIGATION TO REMAIN

PLANTER IRRIGATION TO BE REMOVED

FOR REFERENCE ONLY.

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

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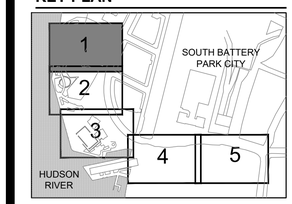

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SHEET TITLE

MUSEUM OF JEWISH HERITAGE SITE PLUMBING DEMOLITION PLAN

SHEET NUMBER

REF101

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ANSI D 22" x 34"

N

1 SPF102 MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE PLUMBING DEMOLITION PLAN
SCALE: 1"=20'-0"

LEGEND:

PLANTER IRRIGATION TO REMAIN

PLANTER IRRIGATION TO BE REMOVED

FOR REFERENCE ONLY.

GRAPHIC SCALE: 1" = 20'-0"
20' 10' 0 10' 20' 40' 60'

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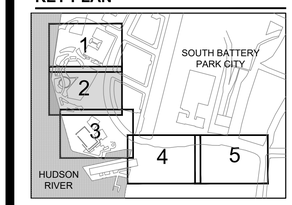

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SHEET TITLE

MUSEUM OF JEWISH HERITAGE AND WAGNER PARK SITE PLUMBING DEMOLITION PLAN

SHEET NUMBER

REF102

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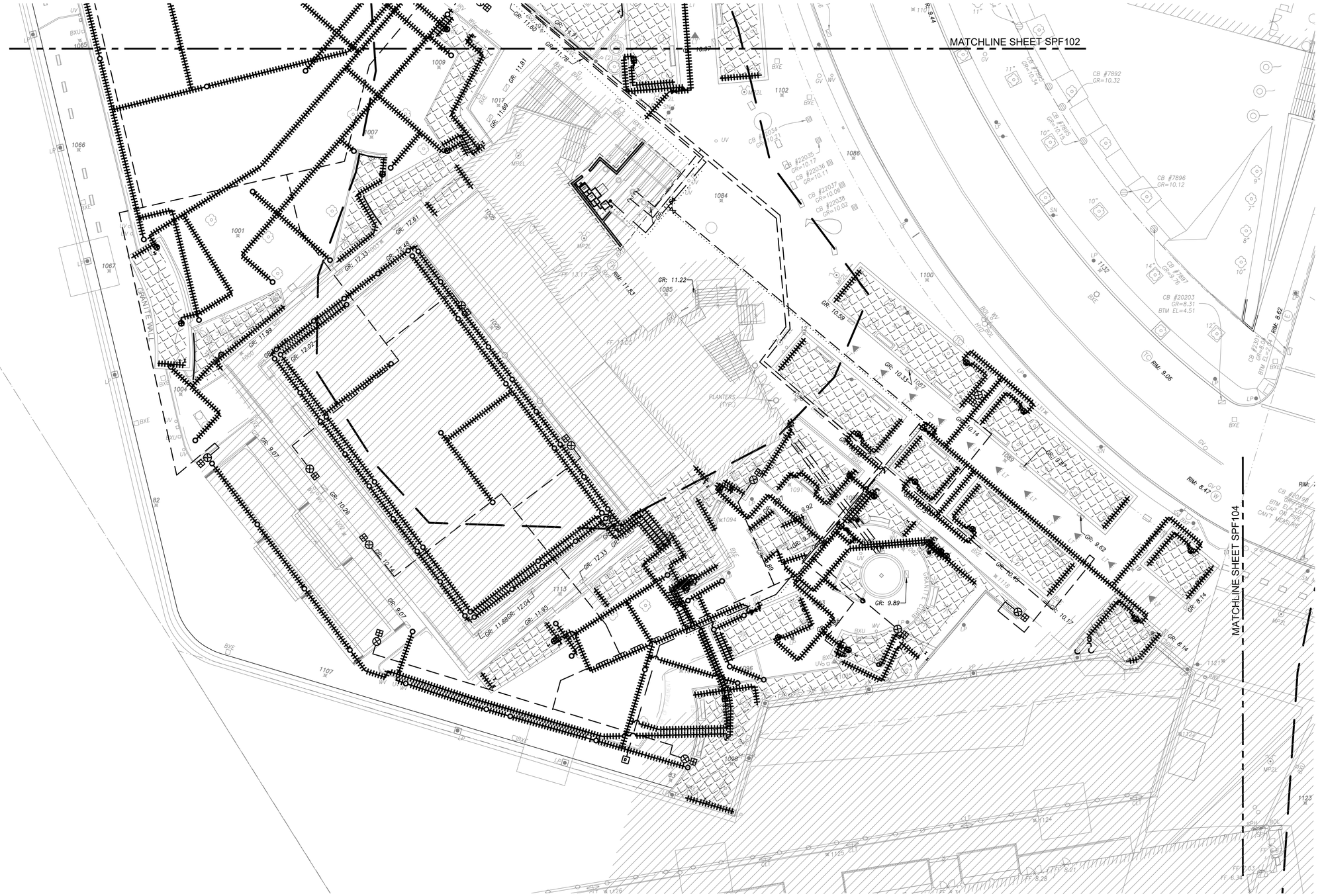

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1 SPF103 WAGNER PARK AND PIER A PLAZA SITE PLUMBING DEMOLITION PLAN

SCALE: 1"=20'-0"

LEGEND:

- PLANTER IRRIGATION TO REMAIN
- PLANTER IRRIGATION TO BE REMOVED

FOR REFERENCE ONLY.

GRAPHIC SCALE: 1" = 20'-0"

20' 10' 0 10' 20' 40' 60'

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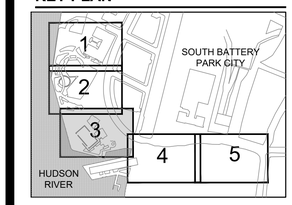

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WAGNER PARK AND PIER A PLAZA SITE PLUMBING DEMOLITION PLAN

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