Project:	Site-Specific Art (Belvedere Pylons and Glass Benches) – Restoration and LED Lighting Conversion Project (the "Project')	Date: August 1, 2018
Re:	Drawing and Specification Substitution	Addendum #2 (137 pages)

The following revision is hereby made to Exhibit I to the Request for Proposals for the Project (the "RFP"):

Document Substitutions:

- 1. Please note that the drawings dated April 2018, version dated 7.7.2018, which were attached to the RFP as part of Exhibit I, are being re-issued, as attached, to correct certain pages that were partially obscured in the original RFP version. The drawing date is unchanged.
- 2. The Technical Specifications attached hereto, dated June 2018, shall supersede and replace in their entirety the Technical Specifications, dated April 2018, attached to the RFP as part of Exhibit I. The replacement Specifications contain minor differences and reflect no substantive or technical changes to the Project or its Scope or Work as set forth in the RFP.

By signing the line below, I am acknowledging that all pages of Addendum #2 have been received reviewed and understood, and will be incorporated into the bid price submitted. This document must be attached to the proposal for consideration.

Print Name

Signature

Date

Number of pages received: _____<fill in>

Distributed to: All present and all prospective Proposers

PUBLIC ART RESTORATION AND LED LIGHTING CONVERSION BATTERY PARK CITY ESPLANADE

PREPARED BY:



131 West 35th Street, 4th Floor, New York, NY 10001 Tel. (212) 324-6300 Fax. (212) 324-6310 www.mgmclaren.com



ATTERY PARK CITY ESPLANADE NEW YORK, NEW YORK 10282 APRIL, 2018 BID SET

DRAWING LIST:

DRAWING NO.

SHEET TITLE

-000	TITLE SHEET
-001	GENERAL NOTES
-100	SITE PLAN
-100	EXISTING GLASS BENCH PART PLAN
-101	EXISTING BENCH PLANS AND ELEVATION I
-102	EXISTING BENCH PLANS AND ELEVATION II
-103	EXISTING BENCH SECTION I
-104	EXISTING BENCH SECTION II
-105	OPEN PYLON EXISTING ELEVATION
-106	OPEN PYLON EXISTING DETAILS
-107	OPEN PYLON SUPPLEMENTARY PHOTOS
-108	CLOSED PYLON EXISTING ELEVATION
-109	CLOSED PYLON EXISTING DETAILS
-200	BENCH REMOVAL DETAILS (A-H)
-201	BENCH REMOVAL DETAILS (I-J)
-202	OPEN PYLON REMOVAL PLAN
-203	CLOSED PYLON REMOVAL PLAN
-300	BENCH A-H REPAIR DETAILS
-301	BENCH I-J PROPOSED DETAILS
-302	BENCH KICK PLATE DETAILS
-303	OPEN PYLON INSTALLATION PLAN
-304	CLOSED PYLON INSTALLATION PLAN
-100	LIGHTING ELECTRICAL DETAILS FOR GLASS BENCHES
-200	EXISTING SITE ELECTRICAL PLAN FOR PYLON
-201	ELECTRICAL DETAILS FOR PYLON
-100	REFERENCE DRAWING



PREPARED FOR:

BATTERY PARK CITY AUTHORITY 200 LIBERTY STREET, 24TH FLOOR NEW YORK, NY 10281

LOCATION PLAN

BID SET NOT FOR CONSTRUCTION APR 11, 2018

	MCG	BY
	ISSUE FOR BID	REVISION
	4/11/18	DATE
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	131 West 35th Street 4th Floor. New York: NY 1000	T.(212) 324-6300 F.(212) 324-6310 www.mgmclaren.c
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TITLE PAGE		
PROJECT NO. 14(SCALE AS DATE 07/0 DRAWN BY CHECKED BY DRAWING NO. T AAAA	0950. NOT 7/20 CC M	08 ED 116 GW CG
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DESIGN CRITERIA

- BUILDING CODE: THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH 2014 NEW YORK CITY BUILDING CODE. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS CODE AND LOCAL REQUIREMENTS.
- 2. DESIGN LOADS
- A. WIND LOAD (ASCE 7-10)
- WIND SPEED 106 MPH = B. LIVE LOAD:
- DISTRIBUTED LIVE LOAD = 100 PSF
- CONTRACTOR SHALL REVIEW SPECIFICATIONS LOCATED IN THE CONTRACT DOCUMENTS. IF THERE ARE DISCREPANCIES, NOTIFY THE ENGINEER.
- CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.

GENERAL NOTES:

- 1. ALL WORK SHALL CONFORM WITH ALL FEDERAL, STATE, COUNTY, OR LOCAL CODES HAVING JURISDICTION OVER SUCH WORK. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
- 2. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS, METHODS, AND SAFETY OF WORK.
- 3. DIMENSIONS SHOWN ON THESE CONTRACT PLANS HAVE BEEN OBTAINED FROM EXISTING DRAWINGS AND MAY NOT ACCURATELY REFLECT PRESENT FIELD CONDITIONS. ACCORDINGLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURES IMPACTED BY THE PROJECT TO ASSURE CONSISTENCY WITH THE PROPOSED CONSTRUCTION PLANS; THAT IS, THE CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS, DIMENSIONS, CLEARANCES, ELEVATIONS, AND OTHER INFORMATION INDICATED IN THE DOCUMENTS PRIOR TO ORDERING ANY MATERIALS, COMMENCING ANY FABRICATIONS, OR PERFORMING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY FIELD CONDITIONS WHICH MAY DIFFER FROM THAT REPRESENTED PRIOR TO COMMENCING WORK.
- 4. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY ADDITIONAL UTILITIES, STRUCTURES, OR ANY OTHER ELEMENTS WHICH MAY IMPEDE WORK. UTILITY AND/OR STRUCTURE RELOCATIONS, IF NECESSARY, SHALL BE COORDINATED THROUGH THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
- 5. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL WORK THROUGH THE OWNER'S REPRESENTATIVE AND ANY OTHER OCCUPYING TENANT WHO WILL BE AFFECTED BY REPAIR OPERATIONS. THE CONTRACTOR SHALL COORDINATE THE WORK SO AS TO MINIMIZE INTERRUPTIONS IN FACILITY OPERATIONS.
- 6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS AND SAFETY PROCEDURES TO ENSURE PERSONNEL HEALTH AND SAFETY. THE CONTRACTOR MUST MAINTAIN A SAFE AND CLEAN WORKING ENVIRONMENT AND SHALL ASSURE PROPER PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES. PEDESTRIAN AND/OR PUBLIC SAFETY MAY BE AFFECTED BY THE WORK, THE CONTRACTOR SHALL CORDON OFF THE WORK AREA ACCORDINGLY.
- 7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE TERMS AND CONDITIONS OF ALL PERMITS ISSUED BY ANY REGULATING AGENCY HAVING JURISDICTION OVER THE WORK OF THIS PROJECT.
- 8. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PREVENT DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THEIR OPERATIONS. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
- 9. ALL DEBRIS AS A RESULT OF OR IN THE IMMEDIATE VICINITY OF THE WORK SHALL BE RECOVERED AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST.
- 10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ALL CONSTRUCTION DEBRIS OR WASTE FROM FALLING INTO THE WATER. ANY DEBRIS FALLING INTO THE WATER SHALL BE RECOVERED AND PROPERLY DISPOSED.

SUBMITTALS:

THE CONTRACTOR SHALL SUPPLY ALL SUBMITTALS STATED BELOW AND LISTED IN THE **PROJECT SPECIFICATIONS:**

- 1. DEMOLITION PLAN SHOWING ALL PROPOSED REMOVALS.
- 2. SHOP DRAWINGS/ERECTION DRAWINGS
- 3. PRODUCT DATA 4. MATERIAL CERTIFICATES
- CONSTRUCTION SCHEDULE
- 6. CUSTOM FIXTURE DRAWINGS
- 7. ONE-LINE/WIRING DIAGRAMS

SCOPE OF WORK:

THE SCOPE OF WORK OF THIS PACKAGE SHALL INCLUDE FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETELY FURNISH, FABRICATE, TRANSPORT, AND INSTALL THE ITEMS SHOWN ON THE CONTRACT DRAWINGS AND SPECIFIED HEREIN. THE BASIC SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

- 1. GLASS BENCHES SEE TECHNICAL SPECIFICATION "SUMMARY OF WORK" SECTION 1.09. 2. OPEN PYLON:
- A. REMOVE SELECT PORTIONS OF PYLON FOR LIGHT FIXTURE ACCESS. B. REMOVE AND DISPOSE OF ALL EXISTING 12/3 SJ CABLE AND FIXTURE HOUSINGS.
- C. FURNISH AND INSTALL NEW 12/3 SJ CABLE AND FUSE HOLDERS. D. FURNISH AND INSTALL NEW LIGHTING FIXTURES AND JUNCTION BOXES.
- E. FURNISH AND REPLACE ALL HARDWARE IN KIND WITH STAINLESS STEEL
- COMPONENTS. F. REPLACE EXISTING FROSTED LENS IN KIND.
- G. FURNISH AND INSTALL NEW COVER AND HARDWARE FOR REASSESSED JUNCTION BOX AT BASE.
- H. REINSTALL AND WELD PREVIOUSLY REMOVED STAINLESS STEEL COMPONENTS TO PYLON STRUCTURE. 2. CLOSED PYLON:
- A. REMOVE AND DISPOSE OF EXISTING CABLE COMPONENTS AND FIXTURE HOUSINGS. B. FURNISH AND INSTALL NEW 12/3 SJ CABLE AND FUSE HOLDERS.
- C. FURNISH AND INSTALL NEW LIGHTING FIXTURES.
- D. FURNISH AND INSTALL NEW JUNCTION BOXES.

ARNING - IT IS A VIOLATION OF NEW YORK STATE EDUCATIONAL LAW, SECTION

7209.2. FOR ANY PERSON. UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR. TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED. THE ALTERING PERSON SHALL COMPLY WITH

THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW. SECTION 7209.2

- E. FURNISH AND REPLACE ALL HARDWARE IN KIND WITH STAINLESS STEEL COMPONENTS.
- F. FURNISH AND INSTALL NEW COVER AND HARDWARE FOR RECESSED JUNCTION BOX AT BASE.
- ALL ADDITIONAL WORK REQUIRED TO COMPLETE THE BASIC SCOPE OF WORK IS INCLUDED IN THE SCOPE OF WORK OF THIS PACKAGE EVEN IF NOT MENTIONED EXPLICITLY.

REFERENCE STANDARDS:

ALL WORK WILL BE PERFORMED IN COMPLIANCE WITH THE FOLLOWING PUBLICATIONS OR STANDARDS:

- 1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- 2. AMERICAN WELDING SOCIETY (AWS) A. STRUCTURAL WELDING CODE - STAINLESS STEEL
- 3. NEW YORK CITY 2011 ELECTRICAL CODE

QUALITY ASSURANCE

- THE CONTRACTOR SHALL MAINTAIN A QUALITY CONTROL PROGRAM FOR BOTH REPLACEMENT OF LED FIXTURES AND REINSTALLATION OF DECORATIVE STEEL. TO ASSURE THAT ALL INSTALLATIONS CONFORM TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. THE QUALITY CONTROL PROGRAM SHALL CONFORM TO THE REQUIREMENTS IN THIS SECTION AND THE SPECIFICATIONS FOR BOTH SHOP AND FIELD INSPECTION.
- 2. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR COORDINATING THE WORK TO ASSURE THAT ALL TESTING AND INSPECTION PROCEDURES REQUIRED BY THE ENGINEER ARE PROPERLY PROVIDED.
- 3. THE OWNER MAY PERFORM QUALITY ASSURANCE AUDITS TO ENSURE QUALITY WORKMANSHIP. THESE AUDITS MAY INCLUDE BUT NOT BE LIMITED TO VISUAL INSPECTIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 15 DAYS PRIOR TO THE START OF FABRICATION.
- 4. MATERIALS WILL NOT BE ACCEPTED WHICH CANNOT BE IDENTIFIED WITH APPROPRIATE CERTIFICATES OF CONFORMANCE AND CERTIFIED TEST REPORTS. TEST REPORTS FOR MATERIAL TESTS AND ANALYSES SHALL BE IDENTIFIED WITH SPECIFIC LOTS AND ITEMS PRIOR TO INSTALLATION.

SHOP DRAWINGS:

- 1. THE SHOP DRAWINGS SHALL CONTAIN ALL DIMENSIONAL AND GEOMETRIC INFORMATION. MATERIALS SHALL NOT BE ORDERED, FABRICATED, OR DELIVERED TO THE SITE BEFORE THE SHOP DRAWINGS HAVE BEEN APPROVED.
- 2. PRIOR TO REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER, SUCH SHOP DRAWINGS SHALL HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACTOR AND SHALL BE STAMPED TO INDICATE THIS BY THE CONTRACTOR. SUCH APPROVAL BY THE CONTRACTOR SHALL CONSTITUTE THE CONTRACTOR'S REPRESENTATION THAT THE CONTRACTOR HAS VERIFIED ALL QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR DATA WITH RESPECT THERETO AND HAS REVIEWED OR COORDINATED EACH SHOP DRAWING WITH OTHER SHOP DRAWINGS AND SAMPLES AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- 3. SHOP DRAWINGS SHALL INCLUDE LAYOUTS AND DETAILS SHOWING THE NEW LED FIXTURES, ELECTRICAL CONNECTIONS AND LOCATIONS, WELDS, AND OTHER PERTINENT DATA.
- 5. SHOP DRAWINGS SHALL BE SUBMITTED IN COMPLETE PACKAGES SO THAT INDIVIDUAL PARTS AND THE ASSEMBLED UNIT MAY BE REVIEWED TOGETHER.
- 6. THE REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR THE ADEQUACY OF THE DESIGN OF THE CONNECTIONS AND ALL REQUIRED DETAILING, THE RESPONSIBILITY FOR THE PROPER FITTING OF THE WORK IN STRICT CONFORMANCE WITH THE CONTRACT REQUIREMENTS AND FROM THE NECESSITY OF FURNISHING MATERIAL AND WORKMANSHIP REQUIRED BY CONTRACT DRAWINGS AND SPECIFICATIONS IN ADDITION TO THAT INDICATED ON THE SHOP DRAWINGS.
- 7. THE CONTRACTOR SHALL KEEP A COMPLETE SET OF SHOP DRAWINGS BEARING THE ENGINEER'S ACCEPTANCE STAMP ON THE JOB SITE AT ALL TIMES SUBSEQUENT TO SUCH ACCEPTANCE.

DELIVERY, STORAGE & HANDLING:

- 1. DELIVER MATERIALS TO THE CONSTRUCTION SITE AT APPROPRIATE INTERVALS SO AS TO ENSURE UNINTERRUPTED PROGRESS OF WORK.
- 2. CONTRACTOR SHALL COORDINATE MATERIAL STORAGE WITH OWNER. ADEQUATE PROTECTION SHALL BE PROVIDED TO PREVENT DISTORTION AND OTHER DAMAGE. PROPOSED REPLACEMENT FIXTURES AND SUPPORTING COMPONENTS SHALL BE STORED AND HANDLED AS TO NOT DAMAGE THE PRODUCT. ALL SECTIONS WHICH ARE TO BE PLACED IN GROUND STORAGE SHALL BE READILY ACCESSIBLE FOR INSPECTION.
- 3. MATERIALS WHICH FAIL TO COMPLY WITH SPECIFIED REQUIREMENTS, EITHER AT THE SHOP OR CONSTRUCTION SITE, SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH ACCEPTABLE MATERIAL, WITHOUT ADDITIONAL COST TO THE OWNER, AND WITHOUT CAUSING DELAY IN WORK.

DEMOLITION:

- THE CONTRACTOR SHALL SUBMIT A REMOVAL SCHEDULE TO THE OWNERS REPRESENTATIVE. THE CONTRACTOR SHALL NOT COMMENCE WORK WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE OF THE DEMOLITION AND REMOVAL SCHEDULE.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, IDENTIFYING AND MARKOUT OF ALL UTILITIES PRIOR TO START OF DEMOLITION WORK.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND STAGING DEMOLITION WORK WITH OTHER CONSTRUCTION ACTIVITIES AT THE SITE.
- 4. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER OR TENANT, WILL NOT BE DAMAGED. IF CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER OR TENANT. DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO OWNER'S REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
- WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THAT AREA SHALL BE INCLUDED IN THE PRICE BID FOR THOSE ITEMS.
- 6. ALL DEBRIS AS A RESULT OF, OR IN THE IMMEDIATE VICINITY OF THE WORK SHALL BE RECOVERED AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

BENCH DEMOLITION:

- 1. ALL BENCHES SHALL BE PARTIALLY TAKEN APART TO ALLOW FOR CLEANING OF THE INTERIOR OF THE BENCHES AND GLASS PANELS. ALL GLASS PANELS, STAINLESS STEEL SKIRTS, AND LIGHTING FIXTURES AND DRIVERS SHALL BE REMOVED. GLASS PANELS SHALL BE REINSTALLED. SKIRTS AND LIGHTING FIXTURES AND DRIVERS SHALL BE DISPOSED OF.
- 2. THE TWO EASTERN-MOST BENCHES SHALL BE REMOVED AS INDICATED IN THE PLANS. ALL GLASS PANELS WILL BE SAVED AND REINSTALLED ELSEWHERE OR PLACED INTO STORAGE BY OWNER AS INDICATED IN THE PLANS.
- 3. GLASS BENCH COMPONENTS SHALL BE CLEANED OF DUST, DIRT, AND MISCELLANEOUS DEBRIS.
- 4. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE BENCH COMPONENTS AND OTHER FEATURES TO REMAIN. DAMAGED COMPONENTS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE BPCA.

COMMERCIAL/MANUFACTURED COMPONENTS:

- 1. THESE COMPONENTS SHALL BE INSTALLED AND LOCATED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS NOTED OTHERWISE.
- 2. CONTRACTOR MUST SUBMIT SHOP DRAWINGS, MANUFACTURER'S SPECIFICATIONS AND SIGNED AND SEALED CALCULATIONS, IF APPLICABLE, FOR APPROVAL BY ENGINEER FOR ALL COMMERCIAL/MANUFACTURER'S COMPONENTS.

LIGHTING:

- 1. PRIOR TO INSTALLATION OF LED DRIVERS, TEST ALL POWER LINES TO CONFIRM VOLTAGE OF POWER SOURCE, AND CONFIRM DRIVER IS COMPATIBLE.
- 2. CONTRACTOR SHALL ASSUME FOR BIDDING PURPOSES EACH BENCH SHALL UTILIZE FOUR (4) DRIVERS TO POWER THE NEW LED STRIPS.
- 3. DRIVERS MUST BE COMPATIBLE WITH LED LIGHTS, BASED ON LED LIGHT MANUFACTURER'S SPECIFICATIONS.
- 4. DRIVERS MUST BE RATED FOR OUTDOOR APPLICATION AND BE HOUSED APPROPRIATELY PER DRIVER MANUFACTURER'S SPECIFICATION FOR ALL WEATHER CONDITIONS.
- 5. SHORT CIRCUIT PROTECTION MUST BE PROVIDED FOR EACH DRIVER.
- 6. DRIVERS ARE TO BE MOUNTED DIRECTLY TO THE EXISTING CONCRETE SECURITY BOLLARD.

CONCRETE:

- 1. ALL CONCRETE WORK SHALL CONFORM TO REQUIREMENTS OF THE ACI BUILDING CODE REQUIREMENT FOR STRUCTURAL CONCRETE (318–08 ULTIMATE STRENGTH DESIGN).
- 2. ALL CONCRETE SHALL BE AIR ENTRAINED, $6\% \pm 1.5\%$ BY VOLUME, FOR 3/4" COARSE AGGREGATE.
- 3. ALL CONCRETE SHALL BE MIXED, TRANSPORTED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 301, 304, AND 318.
- 4. FOLLOW ACI STANDARD 211.1 FOR MIXING WATER REQUIREMENTS.
- 5. ALL CONCRETE SHALL HAVE COMPRESSIVE STRENGTH F'c = 5,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE ON SCHEDULES OR NOTES, AND A MAXIMUM W/C RATIO OF 0.40.
- 6. MAXIMUM CONCRETE SLUMP SHALL BE 4" PRIOR TO ADDITION OF WATER REDUCING ADMIXTURES.
- 7. TEST CYLINDERS SHALL BE TAKEN FROM THE MIXER IN ACCORDANCE WITH ASTM C172 AND THE PROJECT SPECIFICATIONS.
- 8. ALL EMBEDDED STEEL SHALL BE ASTM A36, A573 OR A992. ALLUMINUM INSERTS ARE NOT PERMITTED.
- 9. CORROSION INHIBITOR SHALL BE PROVIDED IN ALL CONCRETE USING DCI AT A RATE OF 4 GALLONS/YD³ (OR EQUAL).

REINFORCING:

- 1. CONCRETE COVER MEASURED TO THE FACE OF THE REINFORCING BAR (INCLUDING TIES AND STIRRUPS) SHALL BE 2" UNLESS OTHERWISE INDICATED IN THE PLANS.
- 2. ALL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615. GRADE 60. WELDING OF REINFORCEMENT IS PROHIBITED UNLESS OTHERWISE NOTED.
- 3. ALL REINFORCING BARS SHALL BE EPOXY COATED PER ASTM A775.
- 4. USE TENSION SPLICE FOR ALL SPLICES (U.O.N.).
- 5. THE CONTRACTOR MAY SUBMIT LESSER SPLICE LENGTHS FOR REVIEW AND APPROVAL TO THE ENGINEER OF RECORD AT THE SAME TIME PROVIDING THE FOLLOWING INFORMATION: A. DETAILS PREPARED AND SUBMITTED BY THE CONTRACTOR INDICATING LOCATION AND PROPOSED LAYOUT OF REBARS AND LENGTHS OF SPLICES.
- B. WHERE THE SIZE AND NUMBER OF TIES PERMIT THE REDUCTION OF LAP LENGTH.
- THOSE BARS SHALL BE INDICATED ON THE DETAILS. C. WHERE COMPUTED STRESS VALUES PERMIT THE REDUCTION OF LAP LENGTH,
- COMPUTATIONS SHALL BE SUBMITTED FOR REVIEW
- D. THE APPLICABLE SECTION OF THE ACI-318-08 CODE PERMITTING THE LESSER SPLICE LENGTH SHALL BE INDICATED ON THE SUBMITTED MATERIAL
- 6. WHERE BARS OF DIFFERENT SIZES ARE TO BE SPLICED, THE SPLICE LENGTH FOR ALL BARS SHALL BE THAT REQUIRED FOR THE LARGEST.
- 7. ALL WELDED WIRE MESH SHALL CONFORM TO ASTM A185.

STRUCTURAL STEEL:

- 1. STEEL CONSTRUCTION SHALL THIRTEENTH EDITION, AND S AISC "CODE OF STANDARD MARCH 18, 2005.
- SPECIFICATIONS: OTHER SHAPES AND PLATES

STEEL HARDWARE

F593 OR APPROVED EQUAL.

STRUCTURAL SEALANT

WELDING:

- (AWS) REQUIREMENTS AND GUIDELINES. 2. ALL WELDERS SHALL BE CERTIFIED BY AWS GUIDELINES.
- THE ENGINEER OF RECORD.
- LOW HYDROGEN. 5. ANY DEFECTS SHALL BE CORRECTED IN ACCORDANCE WITH AWS RULES AT NO
- ADDITIONAL COST TO THE OWNER.

POST INSTALLED ANCHORS:

APPROVED EQUAL: A. HILTI HIT-RE 500-SD

ABBREVIATIONS:

ADD'L.	ADDITIONAL
ALT.	ALTERNATE
ARCH.	ARCHITECTU
BOT.	BOTTOM
BPCA	BATTERY PA
CLR.	CLEAR
ແ	CENTERI INF
CONC.	CONCRETE
CONT.	CONTINUOUS
CONST.	CONSTRUCTI
DIA. OR Ø DWG. EA. E.F.	DRAWING EACH EACH FACE
EL. OR ELEV.	ELEVATION
EQ.	EQUAL
EW	EACH WAY
EXIST.	EXISTING
FIN.	FINISH
FT. OR '	FEET OR FC
Fy.	YIELD STRES
GALV.	GALVANIZED
GR.	GRADE
HOR.	HORIZONTAL
H.P.	HIGH POINT
HT	HEIGHT
IN. OR "	INCHES
KSI.	KIPS PER S
LED	LIGHT EMITT
LONG.	LONGITUDINA
L.P.	LOW POINT
MAX.	MAXIMUM
MIN.	MINIMUM
MISC. NAVD88 NGVD29 N T S	MISCELLANE NORTH AME NATIONAL G
O.C. O.D. OPNG.	ON CENTER OUTSIDE DIA OPENING OPPOSITE
PSI. PSF.	PLATE POUNDS PE POUNDS PE
R	RADIUS
REINF.	REINFORCING
REF.	REFERENCE
REOD	REQUIRED
SECT. SIM. SPEC. SST/ST_STI	SECTION SIMILAR SPECIFICATIO
STRUCT.	STRUCTURE
SYMM.	SYMMETRICA
THK. OR THKNS.	THICK OR T
TYP. U.O.N. VAR.	TYPICAL UNLESS OTH VARIES
V.I.F.	VERIFY IN F
W/	WITH
WP	WORK POIN

CONFORM TO	AISC "STEEL C	ONSTRUCTION M	ANUAL",
HALL BE FABRI	ICATED AND INS	TALLED IN ACC	ORDANCE WITH
PRACTICE FOR	STEEL BUILDING	S AND BRIDGES	S" AS ADOPTED

2. MATERIALS FOR STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM ROLLED SHAPES AND BAR STOCK ASTM A276 TYPE S316 OR APPROVED EQUAL ASTM A480 TYPE S316 OR APPROVED EQUAL

1. STEEL FASTENERS SHALL BE S316 STAINLESS STEEL, AND SHALL CONFORM TO ASTM

SEALANT SHALL BE HIGH STRENGTH CLEAR STRUCTURAL SILICONE SEALANT WITH MINIMUM TENSILE STRENGTH OF 300 PSI.

2. SEALANT MUST HAVE A MINIMUM ELONGATION OF 500%.

3. SEALANT SHALL BE APPLIED TO ALL JOINTS BETWEEN GLASS AND GLASS, GLASS AND SST RIBS, AND GLASS AND SST SKIRTS AS SHOWN IN PLANS.

1. ALL WELDING AND FABRICATION SHALL CONFORM WITH THE AMERICAN WELDING SOCIETY

3. ALL WELDS SHALL BE SUBJECT TO NON-DESTRUCTIVE TESTING AT THE DISCRETION OF

4. ALL ELECTRODES USED SHALL COMPLY WITH AWS SPECIFICATION AND SHALL BE E70XX

6. CONTRACTOR TO SUBMIT DESIRED JOINT SPECIFICATION PRIOR TO WELDING. 7. IF DESIRED WPS IS NOT PREQUALIFIED, CONTRACTOR TO SUBMIT PROCEDURE

QUALIFICATION RECORD TO ENGINEER.

POST INSTALLED ANCHORS SHALL BE INSTALLED WITH THE FOLLOWING SYSTEM OR

CTURAL

PARK CITY AUTHORITY

JOUS UCTION

FOOT TRESS ZED

)INT

SQUARE INCHES ITTING DIODE DINAL

ANEOUS AMERICAN VERTICAL DATUM GEODETIC VERTICAL DATUM SCALE TFR DIAMETER

PER SQUARE INCH PER SQUARE FOOT

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CATION SS STEEL RICAL

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OTHERWISE NOTED

IN FIELD OINT

BID SET NOT FOR CONSTRUCTION **APR 11, 2018**

					MCG	BY	
					ISSUE FOR BID	REVISION	
					- 4/11/18	NO. DATE	
PRO					131 West 35th Street 4th Floor New York NY 10001	T.(212) 324-6300 F.(212) 324-6310 www.mgmclaren.com	
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DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2

	MCG MCG
NOTES: 1. SECTIONS ARE OBTAINED FROM LIMITED FIELD SURVEY BY MCLAREN AND 100% CONSTRUCTION DRAWING TITLED "BATTERY PARK CITY STREETSCAPES VESEY STREET IMPROVEMENTS" DEVELOPED BY ROGER MARVEL ARCHITECTS, PLLC, DATED AUGUST 16, 2004.	
 CONTRACTOR SHALL VERIFY ALL SECTIONS AND DETAILS BEFORE STARTING WORK. ALL DIMENSIONS ARE EXISTING AND SHOWN FOR REFERENCE. WORK THESE DRAWINGS WITH SHEETS S-200, S-201, AND S-300 TO S-302. 	SSUE FOR BID REVISION
	- 4/11/18 NO. DATE
	N G G R O U P N G G R O U P AREN, P.C. York, NY 10001 W.mgmclaren.com
	E N G I N E E R I A D P I I e d - I M. G. McL eet, 4th Floor, New (212) 324-6310 ww
	131 West 35th Stre T.(212) 324-6300 F.(
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	PROJECT NO. 140950.08
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BID SET FOR CONSTRUCTION APR 11, 2018	DRAWING NO. S-104.00
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- STAINLESS STEEL TOP REFLECTOR - STAINLESS STEEL BOTTOM REFLECTOR

--- TYPE "D--1" LAMPHOLDER W/ SOO WATT, PAR 56 - STAINLESS STEEL TOP REFLECTOR - STAINLESS STEEL BOTTOM REFLECTOR ~ 7/8" × 7/8" STAINLESS STEEL STRANDS - TYPE "D-1" LAMPHOLDER W/ 500 WATT, PAR 56 - STAINLESS STEEL TOP REFLECTOR

- STAINLESS STEEL BOTTOM REFLECTOR - 1" × 1" STAINLESS STEEL STRANDS

- TYPE "D-1" LAMPHOLDER W/ 500 WATT, PAR 56

- STAINLESS STEEL TOP REFLECTOR

- STAINLESS STEEL BOTTOM REFLECTOR 1 1/4" x 1 1/4" STAINLESS STEEL

-- TYPE "D-1" LAMPHOLDER W/ 1000 WATT, PAR 64

- STAINLESS STEEL TOP REFLECTOR

- STAINLESS STEEL BOTTOM REFLECTOR

- 1 1/2" X 1 1/2" STAINLESS STEEL STRANDS

MATCHLINE A-A

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1.0. PUNTH EL. +11'-3 1/8'

1.0. PAVING

OPEN PYLON EXISTING ELEVATION N.T.S.

NOTES:

1. EXISTING OPEN PYLON INFORMATION PROVIDED BY MITCHELL/GIURGOLA ARCHITECTS DATED OCTOBER 30, 1992.

2. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING DRAWINGS.

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			ngenuity	REN, P.C.	v.mgmclaren.com
TYPE "D-1" LAMPHOLDER W/ 1000 WATT, PAR 64			plied i	M. G. McL/ Floor. New Y	24-6310 ww
TOP REFLECTOR				Street. 4th	F.(212) 3
				West 35th	324-6300
THERE ARE 24 SQUARE				131 \	T.(212)
PER TIER. 12 INNER STRANDS RUN IN A CLOCKWISE DIRECTION, 12 OUTER STRANDS RUN IN A COUNTERCLOCKWISE DIRECTION. EACH STRAND COMPLETES A 180° SWEEP FROM THE BOTTOM TO THE TOP OF AN INDIVIDUAL TIER. FIVE OF THE INNER STRANDS WILL HAVE ELECTRIC CABLE MOUNTED ON THE INSIDE FACE OF THE STRANDS	PROJECT	ATION AND	IVERSION	NEW YORK	
TYPE "D~1" LAMPHOLDER W/ 1000 WATT, PAR 64		ART RESTOR	IGHTING CON	Ý	
STAINLESS STEEL TOP REFLECTOR		PUBLIC	LED LI	NEW YORI	
TYPE C THERMAL FINISH PROVIDE AS A SINGLE PIECE W/ S" MIN. WALL THICKNESS					
,	SHEET T	ITLE			
GRANITE PLINTH SEE A7, A14		DN EXISTING	ATION		
		OPEN PYLC	ELEV		

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THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2

LEVEL 8 EL. +36'-3 1/8'

NOTES: 1. EXISTING OPEN PYLON INFORMATION PROVIDED BY MITCHELL/GIURGOLA ARCHITECTS DATED OCTOBER 30, 1992.

2. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING DRAWINGS.

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E PREVIOUSLY REWELDED LEVEL (LEVEL D)

PREVIOUSLY RETROFITTED FIXTURE (LEVEL A)

NOTE: PHOTOS ARE FOR CLARITY ONLY. FOR PYLON SCOPE OF WORK, REFER TO GENERAL NOTES ON G-001.

EXISTING RECESSED JUNTION BOX AT PYLON BASE

C ART RESTORATION AND LIGHTING CONVERSION

PUBLI

NEW YORK

NEW

WARNING - IT IS A VIOLATION OF NEW YORK STATE EDUCATIONAL LAW, SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2

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NOTES: 1. BIRD CONTROL NEEDLE STRIPS AND LIGHT FIXTURE NOT SHOWN FOR CLARITY.

UNLESS ÓTHERWISE NOTED. 3. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING DRAWINGS.

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PROJECT NO.

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NEW

ITEM	ISCHEDULE
ME	SCOPE OF WORK
IISH (SIDE AND TOP.)	REMOVE RIB, CLEAN, AND STORE
DDA LIME CAST GLASS	REMOVE GLASS, CLEAN OFF DUST AND DEBRIS, AND STORE IN SECURE LOCATION
ANELS ASSEMBLY	REMOVE AND DISPOSE
	CLEAN OFF DUST AND DEBRIS
ANEL	CLEAN
	REMOVE AND DISPOSE OF PER MANUFACTURER'S SPEC
	REMOVE, CLEAN, AND STORE

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NEW YORK

NEW

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DRAWING NO.

S-201.00

<u>15</u> of <u>26</u> shts

- NOTES:
- ARCHITECTS DATED OCTOBER 30, 1992.

- WELDS SHALL BE SMOOTH TO MATCH EXISTING FINISH. 6. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING
- DRAWINGS.

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UPPER ELEVATION LEVEL -

OPEN PYLON REMOVAL PLAN

N.T.S.

1. EXISTING OPEN PYLON INFORMATION PROVIDED BY MITCHELL/GIURGOLA 2. ADDITIONAL CUTS MAY BE REQUIRED TO GAIN ADEQUATE ACCESS TO FIXTURES FOR REMOVALS AND INSTALLATION OF NEW LED LIGHTS. 3. PRIOR TO MAKING ANY ADDITIONAL CUTS, THE CONTRACTOR SHALL SUBMIT A DRAWING SHOWING PROPOSED CUTS FOR APPROVAL BY THE ENGINEER. 4. ALL ADDITIONAL CUTS SHALL BE REWELDED PER DETAILS ON S-107 AND SHALL ADHERE TO THE GENERAL NOTES AND PROJECT SPECIFICATIONS.

NOTES:

1. EXISTING CLOSED PYLON INFORMATION PROVIDED BY MITCHELL/GIURGOLA

- ARCHITECTS DATED OCTOBER 30, 1992. 2. REVISION CLOUDS ARE A PART OF BASE MITCHELL/GIURGOLA DRAWINGS AND
- SHOULD BE IGNORED UNLESS OTHERWISE NOTED.
- 3. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING DRAWINGS.

ITEM SCHEDULE				
ITEM #	NAME	SCOPE OF WORK		
1	SST CLOSURE RIBS, #6 FINISH (SIDE AND TOP.)	REINSTALL STORED ITEMS		
2	RIBBED LOW EXPANSION SODA LIME CAST GLASS	REINSTALL STORED ITEMS		
3	RIBBED SST SKIRT PANELS	INSTALL NEW KICK PLATES, SEE S-302		
4	SST ARMATURE, MILL FINISH	USE AS MOUNTING FOR NEW SST SKIRT DETAILS		
5	RIBBED SST REFLECTIVE PANEL	REMAIN		
6	LED LINEAR LIGHT SYSTEM	INSTALL PER MANUFACTURER'S SPEC.		
7	SST BENCH	REINSTALL STORED ITEMS		

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3" = 1'-0"

GLASS BENCH WITHOUT B STAINLESS STEEL SECTION S-300

NOTES: 1. REPLACE LIGHTING SYSTEM WITH 24VDC COOL WHITE LED LIGHT STRIPS. 2. EXISTING DRIVERS SHALL BE REPLACED PER GENERAL NOTES. 3. SEE SCHEDULE S-302 FOR NEW SKIRT DETAILS.

1'-4"

- EXISTING SECURITY BOLLARD

3" = 1'-0"

	- 4/11/18 MCG NO. DATE REVISION BY
	- 4/11/18 NO. DATE
	- 4/11/18 NO. DATE
	M A A A A A A A A A A A A A
	BLIC ART RESTORATION AND ED LIGHTING CONVERSION EW YORK, NEW YORK
	BERCH A-H REPAIR DETAILS
BID SET OR CONSTRUCTION APR 11, 2018 COPYRIGHT © 2018, McLAREN ENGINEERING GROUP	PROJECT NO. SCALE AS NOTED DATE 07/07/2016 DRAWN BY CGW CHECKED BY MCG

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1.	SEAL EXIST
	WELDING.
2.	PRIOR TO
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	REVIEW.
3.	NEW KICK
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MATCHLINE A-A

1. EXISTING OPEN PYLON INFORMATION PROVIDED BY

MITCHELL/GIURGOLA ARCHITECTS DATED OCTOBER 30, 1992. 2. MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE

EXISTING DRAWINGS.

3. CONTRACTOR TO ENSURE THE RACEWAY OF THE REINSTALLED PYLON PORTION IS TO MATCH THE LOCATION OF THE RACEWAY PRIOR TO REMOVAL.

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- GRANITE VENEER THERMAL FINISH GRANITE TYPE A

S-109

CONCRETE FOUNDATION SEE STRUCT. DWGS.

---- FUSE BOX WITH GRANITE COVER PLATE, THERMAL FINISH FLUSH W/ GRANITE FACE, SEE DETAIL

B

S-304

MATCHLINE B-B

NOTES: 1. EXISTING CLOSED PYLON INFORMATION PROVIDED BY MITCHELL/GIURGOLA

- ARCHITECTS DATED OCTOBER 30, 1992.
- REVISION CLOUDS ARE A PART OF BASE MITCHELL/GIURGOLA DRAWINGS AND SHOULD BE IGNORED UNLESS OTHERWISE NOTED.
 MCLAREN IS NOT RESPONSIBLE FOR THE ACCURACY OF THE EXISTING
- DRAWINGS.

TYPICAL EXISTING CLIP SUPPORT ANGLE ELEVATION (\mathbf{A}) E-100 1'-0"=1'-0"

<u>NOTE:</u> END ANGLE SHOWN. INTERMEDIATE ANGLE SIMILAR.

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ADDITIONAL NOTES:

- TO EXISTING STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS.
- CLIP SHALL BE USED (SEE DETAIL D).
- CONTRACTOR TO ASSUME 4 DRIVERS PER BENCH.
- SHALL MATCH EXISTING.
- 6. REFER TO R-100 FOR EXISTING ELECTRICAL LIGHTING PLAN.

<u>NOTE:</u> FASTENER MUST BE EASILY REMOVABLE ONCE INSTALLED FOR MAINTENANCE PURPOSES.

1. NEW LIGHT FIXTURES SHALL BE PLEXINEON WHITE 1X SERIES L.E.D. LIGHTS BY ILIGHT TECHNOLOGIES (OR APPROVED EQUAL). ADDITIONAL WORK AS A RESULT OF AN APPROVED SUBSTITUTION SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE AUTHORITY.

2. NEW SST CLIPS SHALL BE COMPATIBLE WITH NEW LIGHTING FIXTURES. NUMBER OF CLIPS AND ATTACHMENT

3. When fixtures are connected in series they shall be spaced $3\!\!\!/$ from end to end and a joiner

4. ALL DRIVERS SHALL BE REPLACED. EXACT NUMBER OF DRIVERS IS UNKNOWN. FOR BIDDING PURPOSES,

5. DRIVERS SHALL BE APPROVED BY THE LIGHT MANUFACTURES. IF ADDITIONAL MOUNTS ARE REQUIRED, THEY

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LIGHTING ELECTRICAL DETAILS FOR GLASS BENCHES New YORK, NEW YORK, NEW YORK	Image: state stat		A appled ngenuity	131 West 35th Street 4th Floor New York NY 10001	T.(212) 324-6300 F.(212) 324-6310 www.mgmclaren.com
LIGHTING ELECTRICAL DETAILS FOR GLASS BENCHES BENCHES	BEET TITLE SHEET TITLE SHEET TITLE SHEET TITLE SHEET NO. SCALE AS NOTED DATE 07/07/2016 DRAWING NO.		LED LIGHTING CONVERSION	JEW YORK. NEW YORK	
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WORK AREA DOWN TO THE TOP OF THE EXISTING MAIN DRAIN PIPES THE LIMIT OF WORK SHALL REMAIN AND NEW CONDUIT TO CONNECTED TO IT. NEW CONDUCTORS SHALL BE INSTALLED IN ALL AREAS.

TO LIGHTS ON EACH LEVEL (5 LEVELS OF LIGHTS)

CLOSED PYLON EXISTING ELECTRICAL DETAIL

1" = 1'-0"

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	IC ART RESTORATION AND D LIGHTING CONVERSION YORK, NEW YORK
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	ELECTRICAL DETAILS FOR PYLON
	PROJECT NO. 140950.08 SCALE AS NOTED DATE 07/07/2016 DRAWN BY CGW CHECKED BY
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BID SET
NOT FOR CONSTRUCTION
APR 11, 2018

DWG D1.01 AND L1.0 QUANTITIES OF EXISTIN BEING REMOVED AND 2. THE CONTRACTOR IS T AND DISRUPTIONS TO PARK CITY.

4. PROVIDE 2#12+1#12G-PATH LIGHTS. CONNECT HAND. ALL NEW LIGHTI BY OTHERS.

5. PROVIDE NEW WIRING LIGHT, ALL CONDUIT & CONTRACTOR SHALL CO DWG D1.01 AND L1.01

6. PROVIDE 2#12+1#12G CROOK LIGHT. CONNEC HAND HOLE. ALL NEW PROVIDED BY OTHERS.

PROVIDE A 30A, 2POL HUNGER MEMORIAL BLC 36" BELOW GRADE. (

8. PROVIDE A 20A, 1POL HUNGER MEMORIAL BL 36" BELOW GRADE.

9. PROVIDE ONE (1) WEA OUTLETS, AND ONE (1 SIMPLEX OUTLET IN FLUSH MOUNTED OR

10. PROVIDE & 30A, 2PO MERILL LYNCH BLDG 36" BELOW GRADE. (

MERILL LYNCH BLDG 36" BELOW GRADE. (

- SYMBOL LIST TTERY PARK CITY LIGHTING FIXTURE.	-	ſ				ISSUE FOR BID MCG REVISION BY
TRIAN PATH LIGHT CROOK LIGHT BY OTHERS REE WIRE GROUND RECEPTACLE, 20A, 125V. (NEM GROUND FAULT INTERRUPTER. REE WIRE GROUND RECEPTACLE, 30A, 225V. (NEM GROUND FAULT INTERRUPTER. DOF	MA 5-20R) MA 6-30R)	HUGH BATTEN CITYAU GEORGE GOVERNOR, STATE JAMES F. CHAIRMAN CHARLES VIGE CHAIRMAN DAVID C BOARD MEMBER TIMOTHY PRESIDENT	L CAREY RY PARK JTHORITY E. PATAKI E OF NEW YORK GILL J. URSTADT CORNSTEIN S. CAREY			P.C. – 4/11/18 – Λ/11/18 – Λ/11/118 – Λ/11/18 – Λ/110/10 – Λ/10/10 – Λ/10/10 – Λ/10/10 – Λ/10/1
6 & CONDUIT TO NEW "B-POLE" DUIT & WIRING TO MATCH EXISTING. COORDINATE WITH ARCHITECTURAL D1 FOR EXACT LOCATIONS AND ING "B-POLE" LIGHTING FIXTURE REUSED. TO COORDINATE ALL SHUTDOWNS, NORMAL SERVICES WITH BATTERY -1 1/2"C. FOR THE NEW CAST INATED GLASS CAP CONNECT TO UTILITY HAND HOLE. ALL NEW E TO BE PROVIDED BY OTHERS.		CLIENT: HUGH L. BATTERY ONE WORLD FIE NEW YORK, NY 212 417-2000 PROJECT ARCHITECT: ROGERS 145 HUDSON STRE NEW YORK, NEW 212 941-6718 21 ART ELEMENTS: JAMES CARP 145 HUDSON STR NEW YORK, NY 100 212 431-4318, 2	CAREY PARK CITY AUTHORIT NANCIAL CENTER, 24TH FLOOR 10281 MARVEL ARCHITECTS, PI EET THIRD FLOOR 10013 12 941-7573 FAX PENTER DESIGN ASSOCIATES EET, 4TH FLOOR 013 12 4314425 FAX			``IIIIIII M. G. McLAREN, 131 West 35th Street, 4th Floor, New York, N T.(212) 324-6300 F.(212) 324-6310 www.mgn
2G-1"C. FOR THE NEW PEDESTRIAN CT TO EXISTING ELECTRICAL UTILITY ITING FIXTURE ARE TO BE PROVIDED 3 & CONDUIT TO RELOCATED STREET & WIRING TO MATCH EXISTING. COORDINATE WITH ARCHITECTURAL D1 FOR EXACT LOCATIONS. 2G-1"C. FOR THE NEW BISHOP ECT TO EXISTING ELECTRICAL UTILITY W LIGHTING FIXTURE ARE TO BE S. DLE CIRCUIT BREAKER AT EXISTING LDG WITH 2#8+1#G IN 1"RGS CONDUIT (TYP/CAL) DLE CIRCUIT BREAKER AT EXISTING LDG WITH 2#8+1#G IN 1"RGS CONDUIT (TYPICAL) EATHER PROOF AND GRI 110V. DUPLEX (1) WEATHER PROOF AND GRI 110V. DUPLEX (1) WEATHER PROOF AND GRI 220V. "QUATZITE" 18"x12"x18" HAND HOLE APPROVED EQUAL. DLE CIRCUIT BREAKER AT EXISTING WITH 2#8+1#G IN 1"RGS CONDUIT (TYPICAL)		LIGHTING DESIGN: FISCHER MAI 22 WEST 19TH STA NEW YORK, NY 100 212 691-3020, 212 SECURITY CONSULTANT: DUCIBELLA V STURBRIDGE COM 250 STATE STREET NORTH HAVEN, OT 203 288-6490, 20 STRUCTURAL ENGINEER: ROBERT SILJ 88 UNIVERSITY PLI NEW YORK, NY 100 212 620-7970, 21 TRAFFIC CONSULTANT: SAM SCHWAI 611 BROADWAY, SI NEW YORK, NY 100 212 598-9010, 21 BLAST AND SECURITY ENGINEER: WE IDLINGER 375 HUDSON STRIN NEW YORK, NY 100 212 367-3000, 21 CIVIL ENGINEER: LANGAN ENC ENVIRONMELI RIVER DRIVE CENT ELMWOOD PARK, I, 201 794-6900, 2K	RANTZ STONE IEET 011 2 633-1644 FAX /ENTER & SANTORE IMONS, FRANKLIN HOUSE 06473 32 288-6950 FAX MAN ASSOCIATES ACE 103 12 620-8157 FAX RTZ COMPANY UITE 415 12 598-9148 FAX ASSOCIATES EET, 12TH FLOOR 14 12 367-3030 FAX SINEERING AND NTAL SERVICES FER 1, FOURTH FLOOR NI 07407 81 794-0366 FAX	~	PUBLIC ART RESTORATION AND LED LIGHTING CONVERSION	NEW YORK, NEW YORK
OLE CIRCUIT BREAKER AT EXISTING WITH 2#8+1#G IN 1"RGS CONDUIT (TYPICAL)		ELECTRICAL & PLUMBING CONSULTAN DVL CONSUL 375 MAIN STREET HACKENSACK, NJ 201 678-2224 x210 IRRIGATION CONSULTANT: NORTHERN D 326 WEST MAIN ST MILFORD, CT 0646 203 878-2710 REVISION: DATE: ISSUE: DATE: ISSUE: DVL CONSUL 375 MAIN STREET HACKENSACK, NJ 201.678.2224 20 SEAL:	TING ENGINEERS		SHEET TITLE	
		PROJECT NO. 0220 BATTERY PARK O VESEY STREET IN BATTERY PAR DRAWING TITLE: ELECTRICAL LIGHTING PLA DATE: SCALE: 1/ DRAWIN BY:	JTY STREETSCAPE VPROVEMENTS RK CITY, NEW YORK, NY AN 07.29.04 (16" = 1'-0" MAR E1.0:	 L	PROJECT NO. 14 SCALE DATE 07/0	0950.08 NTS 07/2016
	BID S NOT FOR CON APR 1	© ROGERS MARVEL ARCHITECTS SET NSTRUCTION 1, 2018 GHT © 2018, McLA	s, pllc 2004 REN ENGINEERING	GROUP	drawn by checked by drawing no. R-100 , _26 of26	CGW MCG .00 .5SHTS

TECHNICAL SPECIFICATIONS

FOR

BATTERY PARK CITY AUTHORITY Glass Bench Repairs and Belvedere Pylons LED Replacement

NEW YORK, NEW YORK

Issued for Bid June 2018

MEG Project No. 140950.06 & .08

Submitted by: McLaren Engineering Group 131 West, 35th Street, New York, NY 10001

BATTERY PARK CITY AUTHORITY GLASS BENCH REPAIRS AND BELVEDERE PYLONS LED REPLACEMENTS TECHNICAL SPECIFICATIONS

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Glass Bench Repair

- A. Section 000005 General Conditions
- B. Section 011100 Summary of Work
- C. Section 011400 Work Restriction
- D. Section 013100 Project Management & Coordination
- E. Section 013200 Construction Progress Documentation
- F. Section 013300 Submittal Procedures
- G. Section 024119 Selective Demolition
- H. Section 033000 Cast in Place Concrete
- I. Section 055000 Miscellaneous Metals
- J. Section 079200 Joint Sealants
- K. Section 130001 Deconstruction of Glass Bench A-H
- L. Section 130002 Deconstruction of Glass Bench I-J
- M. Section 130003 Install New Led Light System
- N. Section 130004 Reconstruction of Glass Bench A-H
- O. Section 130005 Replacement of Bench I
- P. Section 130006 Replacement of Bench J
- Q. Section 265600 Exterior Lighting

Battery Park City Authority Glass Bench Repairs and Belvedere Pylons LED Replacements Belvedere Pylon LED Replacement

- A. Section 013516 Alteration Project Procedures
- B. Section 024119 Selective Demolition
- C. Section 050170.61 Decorative Metal Repair
- D. Section 050170.63 Decorative Metal Refinishing
- E. Section 130003 Install New LED Light System
- F. Section 260545 Pylon Upgrade
- G. Section 265600 Exterior Lighting

Glass Bench Repair

SECTION 000005

GENERAL CONDITIONS

Notwithstanding anything in these specifications and drawings to the contrary, all provisions in the Battery Park City Authority contract hereforth shall supersede any conflicting provisions in these documents. All other provisions of the Contract Documents shall remain in full force and effect. References to the "Authority" in these Conditions shall be deemed to mean "Owner/Owner's Representative" and vice versa.

1.01 INTRODUCTION

- A. If, during the performance of the Work, the Contractor finds a conflict, error, or discrepancy in the Contract Documents, the Contractor shall report to the Owner's Representative in writing immediately. Before proceeding with the Work affected thereby, the Contractor shall obtain a written interpretation or clarification from the Owner's Representative. Any work done before the Owner's Representative renders his/her decision is at the Contractor's sole risk. Contractor may be forced to remove / modify said work at no additional cost to the Owner.
- B. In the event of discrepancies in the Contract Documents, interpretations will be based upon the following priorities, in descending order of precedence:
 - 1. The Scope of Work, as defined in the Request for proposal.
 - 2. The Agreement including Regulatory Authorizations, and any properly executed Change-Orders thereto.
 - 3. The Drawings and Specifications.

The Agreement, the provisions in the Contract and other Contract documents are intended to supplement and complement each other and shall, where possible, be thus interpreted. If, however, any provision of the Agreement irreconcilably conflicts with a provision of the Contract and the other Contract Documents, the provision imposing the greater duty or obligation on the Contractor shall govern.

In case of inconsistency between Drawings and Specifications, or within either document not clarified by Addendum, the better quality or greater quantity of work shall be provided in accordance with the Owner's interpretation.

- C. The Specification covers the repairs of the glass benches at the Irish Hunger Memorial in Battery Park City, Manhattan, NY, also referred to herein as the "Project Site" and as shown in the Contract Drawings.
- D. The Contractor guarantees that in the performance of work, he and every person in his direct or indirect employment (i.e. subcontractors) shall abide by and comply with all federal, state, and local laws including the Occupational Safety and Health Act and governing environmental authorities.
- E. The term Owner, as used throughout the Contract Documents, designates Battery Park City Authority (BPCA) as the Owner, or its duly authorized representative.

- F. The term Owner's Representative, as used throughout these Specifications, indicates the Owner's authorized representative for a particular activity. The term includes Construction Manager, Engineer-Of-Record, and/or Special Inspector.
- G. It is the responsibility of the Owner's Representative to delegate responsibility for particular activities.
- H. The term Engineer-Of-Record or Engineer as used throughout the Contract Documents, designates McLaren Engineering Group (McLaren).
- I. All correspondence between the Contractor and Engineer of Record shall be directed through the Owner's Representative.
- J. The Work shall commence in accordance with the Contractor's accepted schedule. If, in the opinion of the Owner, the Contractor has not mobilized sufficient resources and/or if the Contractor does not demonstrate that sufficient work is underway according to the accepted schedule, the Owner reserves the right to terminate the Contract.
- K. In the event of termination of the Contract pursuant to the conditions set forth herein, such termination shall not act so as to relieve the Contractor from liability for any damages sustained by the Owner as a result of any breach by the Contractor of the terms of the Contract.
- L. At the completion of each work day the area around Pier A must be clear of all construction equipment, materials and debris. The Contractor shall coordinate with the Owner regarding equipment and material lay down area.
- M. Definitions
 - 1. Work: Material, equipment, labor, and services required for Contractor to fulfill his/her obligations of project or the part of the project considered.
 - 2. Project Site: between the Irish Hunger Memorial, and New York Mercantile Exchange Building New York, NY 10282.
 - 3. Provide: Furnish and install; provide in place.
 - 4. Furnish: Furnish only, not including installation.
 - 5. Install: Furnish and Install in place materials or structures. (Installation of materials furnished by others will be specifically identified).
 - 6. Shall: Mandatory requirement (understood to be applicable whether or not "shall" is used in the sentence structure): omission of "shall" does not make the Specification or Contract Drawing non-mandatory.

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- 7. Contract Sum: This shall be read as the Total Base Proposal amount and will be adjusted based on actual quantities of completed Work, including Owner-accepted Alternatives and Unit Price as included in the Form of Proposal.
- 8. Day: Contract "day" shall be as defined in the BPCA Agreement.

1.02 DESCRIPTION OF WORK

The Work shall include, but not be limited to:

This Agreement covers the complete scope for the type of work included herein, including all incidental work necessary to complete the work not necessarily indicated or described in the "scope" documents. This Agreement is let on the basis of such documents with the understanding that the Proposer is to furnish all items required for proper completion of the work without adjustment to the Contract Price. It is intended that the Work be of sound and quality installation and the Proposer shall be solely responsible for the inclusion of adequate amounts to cover installation of all items indicated, described or implied.

- A. Mobilization to and demobilization from the site.
- B. Furnish, installation and maintenance of temporary works.
- C. Cleaning, demolition and authorized disposal of components associated with repairs.
- D. All repairs shown in the Contract Drawings.
- E. Providing coordination with the Owner's Representative for securing testing services and test results confirming accordance with Contract Documents for Engineer of Record approval.
- F. Providing submittals.
- G. Attendance of authorized representative at project meetings.
- H. Coordination with Owner's Representative and/or Engineer of Record for review of Work.
- I. Providing bi-weekly schedule of anticipated work.
- J. Providing daily construction reports.
- K. Providing detailed outline of Proposer's QA/QC protocol.

1.03 GENERAL SCOPE OF WORK

Schedule

Unless otherwise stated in Section 013300, the following submittal schedule of all shop drawings, etc., for review by the Owner's Representative and Engineer of Record shall be as follows:

1. Contractor's Submittal

Proposer shall submit within two (2) weeks after receipt of Contract or Notice to Proceed a detailed schedule to the Owner's Representative conforming with the project milestone installation dates.

Contractor shall be responsible to meet all project milestone dates. If the contractor does not meet the milestone dates or is progressing behind schedule, the contractor will be directed by the Owner/Owner's Representative to work additional shifts, hours and weekends at no additional cost to the Owner, in order to ensure substantial completion no later than project closeout date.

Contractor shall be required to submit an original certificate of insurance to the Owner's Representative one week prior to commencement of contracted work in accordance with the Owner's contract.

2. Owner's Representative Review and Comments

Within five (5) days after receipt of Contractor's submittal or, upon due notice to the Contractor, within such other reasonable period of time as the Owner may require.

The Work shall be performed in a general sequence developed by the Contractor and submitted to the Owner's Representative for review, in accordance with the requirements of the Contract. The Contractor is solely responsible for the means and methods of construction and for the sequences and procedures to be used.

The Contractor shall furnish and coordinate all plant, labor, supervision, materials, equipment and appliances for all demolition and/or construction work in connection with the demolition and/or construction of the facilities.

The Contractor acknowledges and is aware that the area is occupied by others and that the site will not be fully closed from public access. All material delivery and operations associated with the Work shall be coordinated with other activities at the site in such a manner as to minimize the impedance on the site's tenants and the public, while maximizing the cost effectiveness and time of the Work. Coordination of equipment mobilization, construction, deliveries, etc. must be made with the Owner's Representative.

1.04 EXAMINATION OF EXISTING CONDITIONS

Before submitting a proposal, it is a requirement of this Contract that each proposer visit the site to determine the conditions under which the Work is to be done. Such examination shall include, but not be limited to:

- A. Structural detail of the existing structures and related facilities.
- B. Various on-site utilities and structures not within the Scope of this Contract, but that may impact the execution of the Work. These will remain fully operational throughout the construction period.

Bid Documents – Technical Specifications

- C. The layout and structural and finish condition of the existing structures.
- D. Access space, possible work areas, and load restrictions.

1.05 CONTRACTOR-FURNISHED MATERIALS

- A. The Contractor shall furnish all materials for installation in the completed Work as specified hereinafter.
- B. The Contractor shall handle these materials as they are delivered to the site or off-site work areas, and shall store them in a storage area designated by the Owner. If sufficient room is not available, the Contractor shall store materials at his own cost.
- C. The Contractor-furnished material is subject to review by the Owner or Owner's Representative at the plant of manufacture at the Owner's option. Review by the Owner or Owner's Representative is not to be construed as technical in nature and in no way shall be deemed to relieve the Contractor from his/her obligation herein to insure the quality and integrity of the materials supplied by the Contractor for this project.
- D. Project material furnished by the Contractor shall conform to the requirements of the Specifications stated hereinafter. The Contractor shall, as part of the Contract fee, also furnish all consumable materials necessary to complete the Work, such as, but not limited to, welding electrodes, safety equipment, etc.

1.06 LAYOUT

- A. The Contractor shall be solely responsible for the accuracy of all locations, dimensions, and levels and no plea as to instructions or order received from any other sources other than information contained on Contract Drawings, Specifications or in written orders of the Owner or Owner's Representative shall justify departure from the dimensions and elevations required by the Contract Drawings.
- B. The Contractor shall take his own measurements at the site, verifying same with the Contract Drawings and existing facilities, and will be held responsible for the proper fit and alignment of completed work in position.

1.07 GUARANTEE

- A. The Contractor shall guarantee to the Owner all materials and workmanship against original defects, or against injury from proper and usual wear when used for the purpose intended, for twelve (12) months after date of final payment certifications, and shall maintain all items in perfect condition during the period of guarantee.
- B. Defects appearing during the period of guarantee shall be made good by the Contractor at Contractor's expense upon written demand of the Owner, it being required that all work shall be in perfect condition when the period of guarantee shall have elapsed. In the event of default by the Contractor, the Company shall have the right to make good any and all defects and bill the Contractor as per the contract for administration fees. The Owner shall provide notice of correction along with time frame for correction prior to taking action regarding
guarantee bonds or penalties.

C. The Proposer shall follow any and all anti-terrorism security procedures, guidelines, instructions, and regulations with respect to ingress into and egress from the work site, transportation and disposition of material that might be considered contraband as well as any emergency procedures. It is the Proposer's responsibility to make contingencies for the effect upon the scheduling and performance of their work of any and all such regulations and procedures. The cost of such contingencies shall be included in the Contract Price.

1.08 PARKING, STORAGE AND ACCESS TO WORK AREA

- A. The Contractor shall coordinate with the Owner available parking, storage and access to the work area. In no event shall these areas interrupt or disturb the Owner's operations. The Contractor shall protect the stored equipment and material from the elements in such a manner as to be satisfactory to the manufacturer of the equipment or material and the Owner.
- B. Should questions of labor jurisdiction arise, this Proposer will immediately take steps to settle such disputes and will use such labor as may be determined to have jurisdiction, at no additional cost to the Owner. Should it fail to take expeditious action, it will be responsible for any time lost because of delays arising from such disputes.
- C. The Contract includes the cost of all standby trades, Owner Representative fees, and additional cost for inspections by the engineer should Proposer work prior to or later than normal working hours and on Saturdays, Sundays and Holidays, if Proposer desires to work outside of normal working hours.
- D. BPCA is a State Agency. Proposer shall be aware that all BPCA projects require the employment of labor at prevailing wage rates. Outside State and Federal Agencies will closely monitor all projects.
- E. Contractor shall be responsible for providing all equipment required for unloading, installation, clean-up and hauling of debris. Contractor is to be aware that due to the spacing limitations of the surrounding area of work there is to be no staging of equipment on site, unless approved in the Contractor's Staging Plan.
- F. Contractor shall not use the site for staging of construction materials or equipment, unless approved in the Contractor's Staging Plan.
- G. Proposer shall not store any material or equipment on site unless directed by the Owner/Owner's Representative.
- H. Proposer shall not use the site for staging of installation materials or equipment except as approved by the Owner.

1.09 SUBCONTRACTORS

A. A list of Subcontractors, pre-qualified by the Contractor, shall be submitted to the Owner by the Contractor with his proposal. The Owner has the ultimate right to accept or reject any one or more of the subcontractors, and must do so in writing after receipt of said list from the Contractor. No deviations shall be allowed from this list without written approval of the Owner. Valid insurance certificates for subcontractors shall be submitted by the Contractor to the Owner with Contractor's proposal. B. The Owner shall receive, upon completion of this Contract in full from the Contractor, any reduction in the Subcontractor's price, which may result from a reduced scope of the Contractor's work.

1.10 SITE CONDITIONS

- A. At the Contractor's expense, the Contractor's working areas shall be cleaned by the Contractor on a day-to-day basis, with all rubbish removed from the site and all work areas cleaned at the end of each day. At final completion of all work, the Contractor shall leave the entire premises, within the site of operations, clean and free from the rubbish resulting from Contractor's construction operations.
- B. Each Proposer is responsible for progress cleaning of its own areas on a daily basis. All Proposers are responsible for consolidating any debris caused by their work. The proposer for General Construction (G) shall be responsible for cleanup of the entire site which includes removal of debris for ALL proposers on site on a daily basis. The proposer for General Construction (G) shall legally dispose consolidated debris off-site. Each Proposer is advised that failure to comply with cleaning requirements will result in backcharges and /or reductions in payments.
- C. Contractor shall perform site cleanup and removal of debris on a daily basis and broom clean all installation areas at completion of the day. Surplus equipment, parts & installation materials are to be removed by contractor upon completion of installation unless it is mutually agreed, in writing, from Owner that this material can remain on site.
- D. Contractor shall be responsible for ice, snow and frost removal at site during construction in order to accommodate performance of work.
- E. The Proposer shall take special care to provide temporary damage protection for any and all existing conditions to remain in proximity to the work area. The protection shall remain in place while performing the work shown or described herein or elsewhere in the Contract Documents. Any damage to existing conditions to remain as a result of work by the Proposer shall be repaired or replaced to the satisfaction of the Owner and at no cost to the Owner.

1.11 COMPENSATION

- A. Compensation shall be based upon the Owner-accepted Schedule of Values and authorized Change Orders thereto.
- B. Contractor shall provide interim As-Built documents in PDF format and a hard copy with each application for payment. These will be incorporated into the final As-Built documentation.
- C. Requisitions for this project shall be due to the Owner's Representative by the 5th of every month as a "pencil copy". The final signed and sealed requisition is then due to the owner by the 15th of every month in the format specified in the Owner's contract.

1.12 UTILITIES

The Contractor is responsible to provide and maintain any and all utilities he deems necessary to affect the Work. Should existing site utilities be made available for the Contractor's use by the Owner, it is the responsibility of the Proposer to verify the suitability of existing site utilities for their needs. The Contractor may use such provided utilities at his own risk.

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Damages shall be the sole responsibility of the Contractor and repairs shall be made immediately at no additional cost to the Owner.

1.13 FIRE PROTECTION

The Contractor shall provide and maintain at his expense all required fire protection systems and devices as necessary to safely perform the Work in accord with the applicable regulations. They shall be operational throughout the period of construction. The Contractor shall also maintain sufficient means for fire and emergency rescue vehicles to access the site.

1.14 COMPLIANCE WITH CONTRACT

The Owner shall have the right to withhold without penalty any payment described above, or sections referenced herein, for completed work should the Contractor fail to meet any obligations or requirements of the Contract, cause damage to the existing site, structures or facilities, or violate a condition of the Permits. Any withheld payment shall be promptly made upon the Contractor's full compliance with the Contract, or resolution of impending fines or damage claims.

1.15 ENVIRONMENTAL PROTECTION

The Contractor shall comply with all local, state, and federal requirements for protection of:

- A. The environment during the Work. No later than fifteen (15) days following award of contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit a comprehensive plan describing the means and methods to be employed for protection, containment, and clean up. Contractor shall ensure that personnel are properly trained and that sufficient equipment and materials are readily available for use if required. Contractor shall abide by state and federal spill-reporting requirements. Clean-up required as a result of Contractor negligence shall be the sole responsibility of the Contractor at no additional cost to the Owner.
- B. The work by the Contractor shall conform to the applicable section of the New York City Noise Code regarding the sound level standards and the time and duration of construction activities.

1.16 TEMPORARY WORK

Labor, equipment, materials, and services required to perform the Work that, upon completion, are not a part of the Work, shall be furnished, installed, and subsequently removed from the site by the Contractor.

1.17 SAFETY PLAN

No later than ten (10) days following award of Contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit two (2) copies of his project-specific Safety Plan by the Owner.

1.18 MATERIAL SAFETY DATA SHEETS

No later than ten (10) days following award of contract and at least ten (10) days prior to mobilization to the site, Contractor shall submit two (2) three-ring bound sets of all Material Safety

Bid Documents – Technical Specifications

Data Sheets (MSDS) for materials anticipated for use in execution of the Work. As the Work progresses and new materials are used on the project, Contractor shall submit two (2) copies of the corresponding MSDS's for these new materials no later than the time of arrival of the materials on site. ALL MSDS sheets regarding materials used in the execution of the Work shall be up-to-date and stored in the Contractor's onsite job trailer or office.

1.19 WORK SCHEDULE REQUIREMENTS

Access to the site and acceptable working hours are to be determined by the Owner, specified prior to the commencement of Work, and strictly adhered to throughout contract Work. Work shall be in compliance with local noise restriction ordinances.

1.20 ENGINEERING SERVICES CHARGEABLE TO THE CONTRACTOR

The Owner reserves the right to charge the Contractor for additional engineering and inspection services if required, including, but not limited to, Contractor's actions or inactions, delays, quality assurance failures, re-work, etc.

1.21 CONTRACTOR'S REPRESENTATIVE

The Contractor shall assign an individual to be the single point of contact for all job-related correspondence and issues. This individual shall be assigned to the project from start to finish, and shall not be replaced without permission from the Owner whose permission should not be unreasonably withheld. This individual shall be responsible to disseminate information to other members of the Contractor's staff and to applicable subcontractors as necessary. This individual shall be the Contractor's designated representative at the site, and shall be authorized to conclude all matters, financial and otherwise, on the Contractor's behalf. The Contractor's Representative shall attend all project meetings and shall be on site at all times while the Contractor or his Subcontractors are present on site.

1.22 MEANS AND METHODS

The furnishing of this work is solely the responsibility of the Contractor. Review of construction by the Engineer of Record is for general conformance with the Contract Documents only. Lack of comment by the Owner and Owner's Representative with regard to construction procedures shall not be interpreted as approval or acceptance of any such procedures.

1.23 PRECEDENCE

It is expressly understood and agreed that failure by the Owner or Owner's Representative to exercise his authority or prerogative to order the Contractor for any duly authorized purpose shall not be considered to set a precedent for any other activities.

1.24 SAFETY OF PERSONS AND PROPERTY

The Contractor is solely responsible for the safety of his operations. The Contractor shall take precautions for the safety of, and shall provide protection to prevent damage, injury or loss to:

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- A. Persons employed by the Contractor in performance of the Work, and persons nearby that may be affected by the Contractor's operations or the Work;
- B. The Work, including all equipment and materials which will be incorporated in the Work;
- C. Other properties and structures at the site, or on adjacent properties.

1.25 UNCOVERING WORK

The Contractor shall notify the Owner's Representative prior to covering any Work. The Contractor shall not proceed to cover the Work until formal approval from the Owner's Representative is provided in writing. If any Work is covered prior to acceptance by the Owner or Owner's Representative, the Work shall, if requested by the Owner, be uncovered for the Owner's observation and then be re-covered at the Contractor's sole cost and expense.

1.26 DAILY CONSTRUCTION REPORTS

For each day that Work is performed at the site, the Contractor shall prepare and submit a Daily Construction Report to the Owner's Representative. Contractor shall include the following information in the report, as a minimum:

- A. Project name
- B. Contractor name
- C. Date
- D. Hours worked
- E. Weather conditions
- F. Subcontractors working on site
- G. Material deliveries (material, quantity, and vendor)
- H. Trades working on site (trade and number of workers per trade)
- I. Equipment on site (manufacturer and model number, with notation of whether the equipment was idle or was used in the Work)
- J. Specific work performed, location and type of work
- K. Visitors to the site
- L. Materials or equipment leaving the site (including debris removal)
- M. Incident descriptions

N. Contractor shall submit reports no later than 24 hours for the previous day's work.

1.27 MONITORING OF EXISTING STRUCTURES DURING CONSTRUCTION

The Owner reserves the right to establish an independent monitoring program in order to evaluate the effect of the Work on the existing structures to remain on site. Such monitoring may include, but is not necessarily limited to, settlement gauges, tilt plates, and crack gauges.

The Owner reserves the right to suspend the Contractor's operations at any time based upon the monitoring data.

1.28 ENGINEERING REVIEW AND SPECIAL INSPECTION

At key stages throughout the Work, engineering inspections are required to ensure the Work is being performed in accordance with the Contract Documents. These inspections will be performed by a Special Inspector, as selected by the Owner's Representative at the discretion of the Owner. The final acceptance of the Work will be performed by the Engineer of Record. The key stages are specific to each repair type. Additional pre and post inspection criteria may be required at the discretion of the Owner's Representative.

1.29 EQUIPMENT

Proposers shall use ultra-low sulfur diesel fuel or compressed natural gas (CNG) for all construction vehicles with a carrying capacity in excess of 5 tons and for all portable generators, consistent with Local Law 77 for Lower Manhattan. All diesel engines of greater than 50 horsepower must use ultra-low sulfur diesel fuel with a sulfur content no greater than 15 ppm. Equip the above vehicles with high performance engines and diesel oxidation catalyst (DOC) filters or another previously demonstrated advanced retrofit technology, consistent with NYC Local Law 77 for Lower Manhattan. On-road vehicles used in construction may not idle for more than five consecutive minutes except under practical considerations such as during vehicle maintenance, while stopped in traffic, and in cold weather conditions below 25 degrees F.

END OF SECTION 000005

SECTION 011100

SUMMARY OF WORK

PART I - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. Work as described herein, and shown on the Construction Drawings.

1.02 EXAMINATION OF DOCUMENTS AND SITE OF WORK

The Proposer acknowledges the following:

- A. The Proposer has reviewed and examined the Proposal Documents to the degree which he is satisfied that the Proposal submitted includes the cost to perform the Work as set forth in the proposed Contract Documents.
- B. The Proposer has informed himself of the existing conditions and limitations under which the Work is to be performed and that the Proposal submitted includes the cost to account for these existing conditions and limitations.
- C. The Proposer acknowledges that any substructure and subsurface condition information provided with the Proposal Documents is for information only.
- D. The Proposer is permitted to perform his own investigation solely for purposes of development of a Proposal. Any site investigation that the Proposer performs, including subsurface, hydrographic, above or below water, or any other non- destructive or destructive testing, shall be documented by the Proposer at the time of the investigation. Results of any investigation performed by the Proposer, which is not representative in the Proposal Documents, and which impact the Proposal, shall be submitted with the Proposal. This information shall be kept confidential during the Contractor selection process.
- E. Proposers are permitted to perform investigations at the site by appointment prior to submitting a proposal. Appointment requests shall be in writing and shall be made through the Owner's Representative at least seventy-two hours prior to the intended time of visit. The Proposer shall provide all required insurance and forms to the Owner's Representative and receive authorization prior to performing any investigation.

1.03 PROOF OF COMPETENCY OF PROPOSER

A Proposer may be required to furnish evidence satisfactory to the Owner that he and his proposed subcontractors have sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner. Such evidence includes representative project information, similar to the scope and magnitude of this project, consisting of references, contract value, and other pertinent information.

1.04 EXECUTION OF AGREEMENT

- A. Certificates of Insurance shall be approved by the Owner before the successful Proposer may proceed with the Work. Failure or refusal to provide Certificates of Insurance in a form satisfactory to the Owner shall subject the successful Proposer to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.
- B. Certificates of Insurance shall name, at a minimum, the Owner, Owner's Representative and Consulting Engineer as additional insured parties.

1.05 INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO PROPOSING

- A. If any person contemplating submitting a Proposal for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he must submit to the Owner's Representative, with copy to the Owner, a written request for interpretation thereof by not later than seven (7) days prior to the Proposal due date. The person submitting the request shall be responsible for its prompt delivery.
- B. Interpretation or correction of Contract Documents will be made only by Addendum and will be mailed or delivered to each Proposer of Record. The Owner and Owner's Representative will not be responsible for any other explanations or interpretations of the Contract Documents.

1.06 PRE-PROPOSAL CONFERENCE AND JOB SITE WALKTHROUGH

A Pre-Proposal Conference will be held at the site for the purpose of considering questions posed by Proposers and for the purpose of holding a walkthrough of the project site.

Proposers are expected to provide written confirmation of attendance to the Owner's Representative at least two (2) days prior to the Pre-Proposal Conference.

Clarifications, corrections, and changes, made as a result of the Pre-Proposal Conference, shall be made by Addendum only. The Proposer shall not construe statements made during the Pre-Proposal Conference, by the Owner or the Owner's Representative (Engineer), as a change of terms or conditions of the Proposal Documents.

1.07 CONSTRUCTION TIME

The Contractor shall commence and perform the Work expeditiously in accordance with the Contractor's construction schedule with adequate, trained crews and shall achieve substantial completion and final completion within the times stated within the schedule.

Within the Form of Proposal, provide the total number of days which the Proposer proposes to complete the Work. The schedule is to commence with issuance of the Owner's Executed Contract.

1.08 BASE BID

Base Bid provided shall be complete, including all mark-up, and shall include all appropriate overheads, profit, and cost of labor, materials, equipment, required permits to perform the Work and costs associated with services necessary to complete the substructure rehabilitation work in accordance with the Contract Documents.

For Work to be performed on a unit price based on linear footage, or as specifically directed by the Owner, the estimated quantities are not guaranteed and are solely for the purpose of comparison of proposals and determining an initial Contract price.

1.09 SCOPE OF WORK

- A. The scope of work for **Deconstruction of Glass Benches A-H** shall consist of the following:
 - 1. Remove and clean all stainless steel closure ribs. Store ribs in order in secure location to be reinstalled at the same location the rib was taken from.
 - 2. Remove and clean all ribbed low expansion soda lime cast glass panels. Store panels in order in secure location to be reinstalled at the same location the panel was taken from.
 - 3. Remove and clean all stainless steel benches. Store benches in order in secure location to be reinstalled at the same location the bench was taken from.
 - 4. Remove kick plates.
 - 5. Clean interior of benches of dust and debris. Miscellaneous steel shall be removed and disposed of.
 - 6. Remove all electrical equipment.

Deconstruction of Glass Benches A-H shall be bid on a per linear foot (LF) basis, and shall include all three sections (top and two sides) of each glass bench seat and end caps (where applicable). Bench sections are typically approximately 2ft 6in.

- B. The scope of work for **Deconstruction of Glass Benches I and J** shall consist of the following:
 - 1. Remove and clean all stainless steel closure ribs. Deliver ribs to Owner's off-site storage facility (please note: one section worth of Bench J shall be used in the repair of Bench E).
 - 2. Remove and clean all ribbed low expansion soda lime cast glass panels. Deliver ribs to Owner's off-site storage facility (please note: one section worth of Bench J shall be used in the repair of Bench E).
 - 3. Remove kick plates.
 - 4. Remove all electrical equipment.
 - 5. Cap all electrical wiring.
 - 6. Remove steel armature and reflective panels (please note: one section of Bench J shall be used in the repair of Bench E).

Deconstruction of Glass Benches I and J be bid on a per linear foot basis, and include the top and side sections (Bench J may be 3 sided) of each glass bench seat and the end caps (where applicable). Bench sections are typically approximately 2ft 6in.

- C. The scope of work for Install New LED Light System shall consist of the following:
 - 1. Installation of new LED light strip system, including all luminaires and drivers as specified by

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the manufacturer of the system.

2. Install new stainless steel kick plates.

Install New LED Light System shall be bid on a per linear foot basis, and shall only apply to benches A-H. Assume 4 drivers per bench for bidding purposes.

- D. The scope of work for **Reconstruct Glass Benches A-H** shall consist of the following:
 - 1. Reinstall all ribbed low expansion soda lime cast glass panels in original location. At broken sections at Bench E, install glass panels from Bench J to replace.
 - 2. Reinstall all stainless steel closure ribs and benches in original location. At location of broken glass panels at Bench E, install closure ribs from Bench J to replace.
 - 3. Apply structural sealant to all joints including, but not limited to glass to glass joints, glass to rib joints, and glass to kick plate joints.

Reconstruct Glass Benches A-H shall be bid on a per linear foot basis, and shall apply to benches A-H.

- E. The scope of work for Replacement of Bench I shall consist of the following:
 - 1. Install post-installation anchors and rebar as shown on the Contract Drawings.
 - 2. Form and pour concrete as shown on the Contract Drawings.
 - 3. Install new cast stone cladding panels to match panels of the existing remaining structure.
 - 4. Extend green roof system over new construction.

Replacement of Bench I shall be bid on an each (EA) basis.

- F. The scope of work for **Replacement of Bench J** shall consist of the following:
 - 1. Install post-installation anchors and rebar as shown on the Contract Drawings.
 - 2. Form and pour concrete as shown on the Contract Drawings

Replacement of Bench J shall be bid on an each (EA) basis.

1.10 GENERAL CONDITIONS

The Contractor shall commence and perform the Work expeditiously in accordance with the Contractor's construction schedule with adequate, trained forces and shall achieve substantial completion and final completion within the times stated within the schedule.

Within the Form of Proposal, provide the total number of days which the Proposer proposes to complete the Work. The schedule is to commence with issuance of the Owner's Executed Contract.

1.11 EXISTING WORK

- A. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work that remains.
- B. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Owner. At the completion of operations, existing work shall be in a condition equal to or better than that which existed

before new work started.

1.12 QUALITY ASSURANCE

- A. Use adequate number of skilled work personnel who are thoroughly trained and experienced in the necessary trades, and familiar with the specified requirements and methods required for proper performance of the work outlined in this specification.
- B. The Contractor shall coordinate the work to ensure no conflicts occur to compromise the timely completion of all work specified.

1.13 WORKING CONDITIONS

- A. The Contractor is responsible for any precautions and scheduling necessary in order to maintain this status. Work may begin only after a schedule representing an acceptable plan is approved by the Owner.
- B. The Contractor shall coordinate day-to-day activities with the Owner. All conflicts will be resolved by the Owner's representative.

1.14 WORKING HOURS

The Contractor is permitted to perform construction work between the hours of 7:00 AM and 4:30 PM Mondays through Fridays, excluding Saturdays, Sundays, and Federal Holidays. Work performed at any other time other than these periods will only be allowed pending approval of the Owner, following a 48 hour advanced request (72 hour for Sundays and Holidays) a DOB after hours work permit, and approval from BPCA.

1.15 AVAILABILITY OF UTILITIES

- A. Electrical: The Contractor shall provide its own electrical power and equipment. OSHA requirements will govern the use of such utility.
- B. Water: The Contractor will be responsible for supplying its own water and equipment, including all hoses, adapters and backflow preventer as required.
- C. Sanitary Facilities: The Contractor shall be responsible for furnishing and maintaining temporary toilet facilities for their employees, and for the Owner's Engineer.
- D. The Contractor is responsible for the cost of all utilities.

1.16 EQUIPMENT

The Contractor shall supply all equipment necessary to perform all work, including but not limited to Dive set up, small tools, ladders, etc.

1.17 RECEIPT OF MATERIALS

Shipments of equipment, materials, and supplies shall be addressed to the Contractor, not the Owner. The Contractor shall provide all equipment, materials and labor for off-loading. The Owner will not accept shipments for the Contractor.

1.18 STORAGE OF MATERIALS

Contractor's materials may be stored on site at a location that is approved by the Owner.

1.19 EXISTING MATERIALS

The Owner shall have the opportunity to salvage all materials removed prior to disposal by Contractor.

1.20 FINAL INSPECTION

Final Inspection will not be made until all work under the contract is complete. The Contractor shall notify the Owner in writing 48 hours prior to the date on which the project will be ready for final inspection.

1.21 DUMPING AREA

- A. All discarded material shall be removed from the Owner's property and disposed of in an approved site complying with Local, State, and Federal regulations. Certified weight tickets shall be supplied to the Owner within 15 days of the date of the weight ticket for all trash and construction debris disposed. All dumpsters/containers shall be supplied by the Contractor. The contractor shall provide appropriate signs or covers to prevent use by Tenants.
- B. No material shall be washed or swept out of equipment or vehicles (including concrete from chutes of trucks, loose debris, etc.) onto Owner property or in the water. Any material spilled from Contractor furnished dumpsters/containers shall be immediately cleaned up by the Contractor.

1.22 RECYCLABLES

The Contractor shall recycle or reuse all material designated as recyclable or prohibited from landfilling. Definitions for recyclables and landfill prohibited material can be obtained from the contracted trash hauler. Certified weight tickets shall be supplied to the Owner within 15 days of the date of removal from the facility for all material recycled or reused, and for landfill prohibited materials.

1.23 AS-BUILT DRAWINGS

A. The Owner will furnish one complete set of black and white prints of all drawings which shall be used to indicate any changes from the contract set. Each sheet shall be marked "AS-BUILT

DRAWINGS" in red pencil, and all changes or modifications shall be noted thereon by the Contractor.

- B. Changes shall be noted during the construction process for all trades.
- C. Keep "AS-BUILT DRAWINGS" current. Do not permanently conceal any work until the required information has been accurately recorded.
- D. Use colored pencils or pens for graphic work conforming to the following color code:
 - Red Architectural and Structural Work

Green - Electrical Work

Use blue pen for written work

E. Submit a complete set of "AS-BUILT DRAWINGS" to the Owner when all work has been completed, or as directed.

PART II - PRODUCTS

Not used.

PART III - EXECUTION

Not used.

END OF SECTION 011100

SECTION 011400

WORK RESTRICTIONS

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.02 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to those areas delineated as included in the Construction Documents.
 - 2. Owner Occupancy: Allow for Owner occupancy of portions of the site and for use by the public at any and all times during the life of the contract. The Owner reserves the right to maintain and provide full public access to the Site within the contract limits at any time during the entire life of the contract. Contractor will be responsible for securing and maintaining temporary construction fencing as necessary to achieve and maintain this access.
 - 3. Contractor shall, throughout the life of the contract, maintain clear access to all areas of the pier to personnel of Battery Park City Authority (Owner) for maintenance and repair operations. Specifically, the Owner and/or its agents shall be unencumbered from performing all required maintenance operations for all areas adjacent to and within the contract limits.
 - 4. Construction Gates / Entrances: Keep all construction gates / entrances, if required, serving the premises clean, clear and available to the Owner, Owner's employees, emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of construction gates and entrances.
 - b. Schedule deliveries to coordinate with other contractor's gaining access to the site.
 - c. Provide flag-person services for all deliveries into and out of the site so as to protect the public.
 - d. Secure all construction entrances and gates to the site at all times.
 - e. Provide durable signage limiting public access to the construction site at all construction gate / entrances as directed by the Construction Manager.
 - f. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Use of Existing Site: Maintain existing site throughout the construction period. Repair damage caused by construction operations.

1.03 OCCUPANCY REQUIREMENTS

A. Partial Owner Occupancy: Owner may occupy portions of the site during the construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

PART II – PRODUCTS

Not used.

PART III – EXECUTION

Not used.

END OF SECTION 011400

SECTION 013100

PROJECT MANAGEMENT & COORDINATION

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.02 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Conservation.
 - 3. Coordination Drawings.
 - 4. Administrative and supervisory personnel.
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Construction Progress Documentation" for preparing and submitting the Contractor's Construction Schedule.
 - 2. Division 1 Section "Submittal Procedures" for means and methods of submitting product data, shop drawings, and construction operations to perform the Contract Work.

1.03 COORDINATION

- A. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where performance of one part of the Work depends on performance of other components, before or after its own completion.
 - 2. Coordinate performance of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later Contract Work.
 - 4. Provide detailed written construction work plans within 5 days of award in a format and containing information as requested by the Construction Manager.

- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values for payment of completed work.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Pre-installation conferences.
 - 7. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

1.04 SUBMITTALS

- A. Coordination Drawings / Work Plans: Prepare Coordination Drawings and/or detailed work plans where careful coordination is needed for performance of repair by separate entities and/or as requested by the Owner. Prepare coordination drawings and/or work plans where limited space availability necessitates utilization of space for efficient installation of different components.
 - 1. Indicate relationship of components shown on separate Shop Drawings and/or work plans.
 - 2. Indicate required installation sequences.
- B. Staff Names: Within 5 days of award, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.05 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide the resumes of other administrative and supervisory personnel as required for proper performance of the Work, including but not limited to.
 - 1. Project Manager
 - 2. Project superintendent
 - 3. Site Safety Representative

4. Staff Engineer

1.06 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and the Engineer, within 5 days of the meeting.
- B. Pre-construction Conference: Schedule a pre-construction conference before starting construction, at a time convenient to Owner but no later than 5 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendents; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Designation of responsible personnel.
 - c. Procedures for processing field decisions and Change Orders.
 - d. Procedures for processing Applications for Payment.
 - e. Distribution of the Contract Documents.
 - f. Submittal procedures.
 - g. Preparation of Record Documents.
 - h. Use of the premises.
 - i. Responsibility for temporary facilities and controls.
 - j. Parking availability.
 - k. Office, work, and storage areas.
 - I. Equipment deliveries and priorities.
 - m. Testing and inspection requirements.
 - n. Required performance results.
 - o. Protection of construction personnel.
 - p. First aid.
 - q. Security.
 - r. Progress cleaning.
 - s. Working hours.
 - 3. Record significant conference discussions, agreements, and disagreements.

- 4. Do not proceed with performance of Contract Work if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- C. Progress Meetings: Conduct progress meetings as necessary, but bi-weekly at a minimum. Coordinate dates of meetings with preparation of payment requests.
 - 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1. Interface requirements.
 - 2. Sequence of operations.
 - 3. Status of submittals.
 - 4. Deliveries.
 - 5. Off-site fabrication.
 - 6. Access.
 - 7. Site utilization.
 - 8. Temporary facilities and controls.
 - 9. Work hours.
 - 10. Hazards and risks.
 - 11. Quality and work standards.
 - 12. Change Orders.
 - 13. Documentation of information for payment requests.
 - 3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

- D. Coordination Meetings: Conduct Project coordination meetings as needed. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
 - 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract time.
 - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report for each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 - 1. Interface requirements.
 - 2. Sequence of operations.
 - 3. Status of submittals.
 - 4. Deliveries.
 - 5. Off-site fabrication.
 - 6. Access.
 - 7. Site utilization.
 - 8. Temporary facilities and controls.
 - 9. Work hours.
 - 10. Hazards and risks.
 - 11. Quality and work standards.
 - 12. Change Orders.
 - 3. Reporting: Record meeting results and distribute copies within two (2) days to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART II – PRODUCTS

Not used.

PART III – EXECUTION

Not used.

END OF SECTION 013100

SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Specification section 013300, submittal procedures.

1.02 SUBMITTALS

The Contractor shall submit the following to the Approving Authority in accordance with Section entitled "Submittal Procedures, Section 013300."

- A. Schedules
 - 1. Construction schedule
 - 2. Material delivery schedule

1.03 CONSTRUCTION SCHEDULE

Within 5 days after receipt of the Notice of Award, prepare and submit to the Owner's representative for approval a Critical Path Method (CPM) Schedule.

1.04 MATERIAL DELIVERY SCHEDULE

A. Initial Schedule

Within 10 calendar days after approval of the proposed construction schedule, submit for Owner's representative approval a schedule showing procurement plans for materials and equipment. Submit in the format and content as prescribed by the Owner's representative, and include as a minimum the following information:

- 1. Description.
- 2. Date of the purchase order.
- 3. Promised shipping date.
- 4. Name of the manufacturer or supplier.
- 5. Date delivery is expected.
- 6. Date the material or equipment is required, according to the current construction schedule.

1.05 NETWORK ANALYSIS SYSTEM (NAS)

- A. As an alternative to the critical path method (CPM) schedule, the Contractor may use, subject to the approval of the Owner's Representative, some other computer generated network analysis system affording similar and equal information and control to that provided by the CPM.
- B. The schedule shall have a minimum of 15 activities and a maximum of 200 activities. The schedule shall identify as a minimum:
 - 1. Construction time for all major systems and components;
 - 2. Manpower requirements for each activity;
 - 3. Major submittals and submittal processing time; and
 - 4. Major material and equipment lead time.
 - 5. Cleaning, blasting, priming, and painting sequence for inspection purposes.
- C. CPM Submittals and Procedures

Submit all network analysis and updates electronically via e-mail. The network analysis system shall be submitted in Microsoft Project 2010. The network analysis system shall be kept current, with changes made to reflect the actual progress and status of the construction.

1.06 UPDATED SCHEDULES

Update the construction schedule and material delivery schedule at monthly intervals to correspond to payment applications or when schedule has been revised. Reflect any changes occurring since the last update. Submit copies of the purchase orders and confirmation of the delivery dates as directed by the Owner's representative.

PART II – PRODUCTS

Not used.

PART III – EXECUTION

Not used.

END OF SECTION 013200

SECTION 013300

SUBMITTAL PROCEDURES

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.02 DEFINITIONS

- A. Submittal: Submittal requirements are specified in the respective specification sections.
- B. Types of Submittals (SD)
 - 1. SD-01 Preconstruction Submittals

Certificates of Insurance, List of Proposed Subcontractors, List of Proposed Products, Construction Progress Schedule, Submittal Register, Schedule of Prices, Health and Safety Plan, Work Plan, Quality Control Plan, Environmental Protection Plan, Site Utilization Plan.

- 2. SD-02 Shop Drawings
 - a. Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.
 - b. Diagrams and instructions from a manufacturer or fabricator for use in producing the product and acts as aids to the Contractor for integrating the product or system into the project.
 - c. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated. An attachment shall be provided with the Shop Drawings which clearly define the methodology for each repair type.
 - d. Approval of shop drawings shall not relieve the Contractor of the responsibility for any errors or for furnishing materials of the proper size.
- 3. SD-03 Product Data.

Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate a portion of the work, but not prepared exclusively for this Contract. Product data includes but is not limited to the following:

- a. LED Lights
- b. LED Drivers
- c. Structural Sealant
- d. Steel Fasteners
- e. Structural Shapes
- f. Concrete mix

- 4. SD-04 Test Reports
 - a. Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements (Testing must have been within three (3) years of date of contract award for the project).
 - b. Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.
 - c. Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.
- 5. SD-05 Certificates
 - a. Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of this project contract and clearly name the project and list the specific requirements which it is intended to address.
 - b. Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to prove quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.
- 6. SD-06 Manufacturer's Instructions
 - a. Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.
- 7. SD-07 Schedules
 - a. A tabular list of data or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.
- 8. SD-08 Closeout Submittals
 - a. The Owner's Representative is responsible for providing the following to the Engineer of Record for review prior to the project close out:
 - i. Field Reports
 - Upon completion of the work, and prior to the final project closeout, the Owner's Representative shall submit to the Engineer of Record all Field Reports from the engineering review site visits. These include, but are not limited to:
 - a. Certification by the Special Inspector that all test results have met or exceeded the minimum requirements laid out in the Contract Documents.

- ii. As-Built Drawings:
 - Contractor shall submit six (6) sets of drawings, marked "As-Built" within four (4) weeks upon Contractor demobilization. These drawings shall be submitted to the Owner's Representative, who shall forward to the Engineer of Record. Approval from the Engineer of Record is required for the final project closeout.
- iii. Test Reports:
 - Upon completion of the work, and prior to the final project closeout, the Owner's Representative shall submit to the Engineer of Record all Test Reports from the required materials and products testing as laid in the Contract Documents. Test reports must confirm that all materials and products placed during the Work have met or exceeded the minimum requirements of the Contract Documents in order for the Engineer of Record's approval. All Test Reports must be approved by the Engineer of Record for the final project closeout.
- iv. Photographs
 - 1. The Owner's Representative shall submit to the Engineer of Record a typical photograph illustrating each type of repair in its Pre-Inspection and Post-Inspection completeness.
- v. The items required for final review by the Engineer of Record are not limited to those listed above.
- C. Approving Authority: Person authorized to approve submittal. The Engineer of Record shall review submittals in regard to materials, methodology, shop drawings and other components involved in the quality assurance of the work. The Owner's Representative shall review submittals in regard to but not limited to site utilization, disposal, coordination, environmental controls, schedule, safety and health requirements, etc.
- D. Work: As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

PART II – PRODUCTS

NOT USED.

PART III – EXECUTION

- 3.01 SUBMITTAL REGISTER
 - A. Within 5 calendar days after receipt of Notice to Proceed, provide submittal register listing all submittals required by the contract. Contractor shall maintain at the site, an up-to-date submittal register showing the status of all submittals as the work progresses. The submittal register format is subject to review and approval by the Owner's Representative and Engineer of Record. The Contractor shall indicate critical submittals and critical dates for

approval. The register shall also include the following at a minimum:

- 1. Activity Number: Activity number from the project schedule.
- 2. Transmittal Number: Contractor assigned list of consecutive numbers.
- 3. Contractor Submittal Date: Scheduled date for approving authority to receive submittals.
- 4. Contractor Approval Date: Date Contractor needs approval of submittal.
- 5. Contractor Material Date: Date that Contractor needs material delivered to Contractor control.
- B. The Owner's Representative or Engineer of Record will not review submittals until the register has been submitted in accordance with the previous paragraph and approved. Should a submittal register be generated by the Engineer of Record, it can be used as a guideline by the Contractor but does not relieve him of submissions required by the Contract Documents that may have been omitted.
- C. Items may be added or removed from the Submittal Register throughout the duration of the Work, as desired by the Owner's Representative or Engineer of Record. Additional submittals that are not listed in the Submittal Register may be required as per the Owner's Representative's contract.

3.02 PROCEDURES FOR SUBMITTALS

- A. Contractor shall make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements. Submittals that are not required will not be reviewed by the Owner's Representative.
 - 1. Constraints
 - a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
 - b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.
 - c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.
 - d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.
 - 2. Scheduling
 - a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
 - b. Except as specified otherwise, allow for review period, beginning with receipt by

approving authority, which includes at least 5 working days for submittals. Period of review for each re-submittal is the same as for initial submittal.

3.03 VARIATIONS

- A. Variations from contract requirements require the Engineer of Record's approval. Do not substitute materials, equipment, or methods unless such substitution has been specifically accepted in writing by the Owner's Representative.
 - 1. Considering Variations: Discussion with the Owner's Representative prior to submission will help ensure functional and quality requirements are met and minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).
 - 2. Proposing Variations: When proposing a variation, deliver written request to the Owner's Representative, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Owner. If lower cost is a benefit, also include an estimate of the cost-savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation, identify variations from the contract requirements and changes in other work or products.
 - 3. Warranting That Variations Are Compatible: When delivering a variation for approval, Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work. In submitting a substitution or variation, the Contractor represents that he will coordinate the installation of accepted substitutions or variation, and additional costs or delays caused by the substitution or variation will not constitute grounds for adjustments to the contract.
 - 4. Review Schedule Is Modified: In addition to normal submittal review period, a minimum period of five (5) and maximum period of 14 working days will be allowed for consideration by the Owner of submittals with variations.

3.04 CONTRACTOR'S RESPONSIBILTIES

- A. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.
- B. Transmit submittals to Owner's Representative in accordance with schedule on approved Submittal Register, and to prevent delays in the work, delays to the Owner, or delays to separate Contractors.
- C. Advise Owner's Representative as required by paragraph entitled: "Variations."
- D. Correct and resubmit submittal as directed by approving authority. When resubmitting disapproved transmittals or transmittals noted for re-submittal, the Contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing or on resubmitted submittal to revisions not requested by approving authority on previous submissions.
- E. Submittals are to be done electronically, via email to the team determined by the owner, in

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PDF format.

- F. Furnish hard copies of submittal when requested by the Owner's Representative, to a limit of 6 copies per submittal.
- G. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- H. Ensure no work has begun until submittals for that work have been reviewed and returned stamped by the Engineer of Record, as explained in Paragraph 3.8 D or this Section, except to the extent that a portion of work must be accomplished as basis of submittal.
- 3.05 DELIVERY OF SUBMITTALS
 - A. Transmittal Form: Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals electronically with transmittal form prescribed by Owner's Representative and standard for project. The transmittal form shall identify Contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations. All submittals must be sent to the Owner's Representative, who shall forward submittals as necessary, for approval.
 - B. Identifying Submittals: Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:
 - 1. Construction contract number.
 - 2. Section number of the specification section by which submittal is required.
 - 3. Submittal description (SD) number of each component of submittal.
 - 4. When resubmiting, add suffix on submittal description, for example, SD-10R1, to indicate resubmission.
 - 5. Name, address, and telephone number of subcontractor, supplier, manufacturer, and any other second tier Contractor associated with submittal.
 - 6. Product identification and location in project.

3.06 FORMAT OF SUBMITTALS

- A. Format for SD-02 Shop Drawings
 - 1. Shop drawings shall not be less than 8½ by 11 inches nor more than 22 by 34 inches. Submit in the form of blueline or blackline prints of each sheet. Blue prints will not be accepted.
 - 2. Present 8¹/₂ by 11 inch sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.

- Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
- 4. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.
- B. Format of SD-03 Product Data and SD-06 Manufacturer's Instruction's
 - 1. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page and catalog item numbers for product data.
 - 2. Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains
 - 3. Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.
- C. Format of SD-03 Design Data and SD-05 Certificates
 - 1. Provide design data and certificates on 8½ by 11 inches paper. Provide a bound volume for submittals containing numerous pages.
- D. Format of SD-04 Test Reports
 - 1. Provide reports on 8½ by 11 inch paper in a complete bound volume.
 - 2. Indicate by prominent notation, each report in the submittal. Indicate specification number and paragraph number to which it pertains.
- E. Format of SD-01 Preconstruction Submittals and SD-08 Closeout Submittals
 - 1. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply Contractor's approval stamp to document, but to a separate sheet accompanying document.
 - 2. As-Built drawings sets shall be full sized (22" x 34") and represent the installed condition of the Work. The drawings shall clearly mark out where the installed condition differs from the Contract Documents. In addition to the hard copies, the As-Built drawings shall be submitted electronically in both AutoCAD format (.dwg) version 2007 or newer and Portable Document Format (.pdf).
 - 3. Photographs shall be submitted electronically in JPEG-format (.jpg) as well as Portable Document Format (.pdf). Photographs shall be in color and shall be a minimum of 3 megapixels in size. The location, photo directions, elevation, and date/time taken shall be submitted in conjunction with the PDF submission.

3.07 QUANTITY OF SUBMITTALS

- A. Unless otherwise noted, all submittals should be in PDF format and transmitted electronically. If hard copies are requested:
 - 1. Number of copies of SD-02 Shop Drawings
 - a. The Owner and/or Owner's Representative may designate that all submittals shall be "paperless" and the contractor may transmit submittals via electronic file.
 - b. Submit four (4) copies of submittals of Shop Drawings. One (1) print with the Owner's Representative's review comments will be returned to the Contractor. The Contractor may make and distribute such copies as desired.
 - 2. Number of Copies of SD-03 Product Data and SD-06 Manufacturer's Instructions
 - a. Submit in compliance with quantity requirements specified for shop drawings.
 - 3. Number of Copies SD-05 Certificates
 - a. Submit in compliance with quantity requirements specified for shop drawings.
 - 4. Number of Copies SD-04 Test Reports
 - a. Submit in compliance with quantity requirements specified for shop drawings.
 - 5. Number of Copies of SD-01 Preconstruction Submittals and SD-08 Closeout Submittals.
 - a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for shop drawings. Submit six (6) copies of all Closeout Submittals.

3.08 REVIEW BY OWNER'S REPRESENTATIVE

- A. Review by the Owner's Representative and Engineer of Record does not relieve the Contractor from responsibility for errors or omissions which may exist in the submitted data.
- B. Revisions:
 - 1. Make revisions required by the Owner's Representative and Engineer of Record.
 - 2. If the Contractor considers any required revision to be a change, he shall so notify the Owner's Representative in accordance with the specifications.
 - 3. Make only those revisions directed or accepted by the Owner's Representative and Engineer of Record.
- C. Reimbursement of Owner's Representative's Costs:
 - 1. In the event substitutions are proposed to the Owner's Representative after the Contract has been awarded, the Owner's Representative will record all time used by him

and by his consultants in evaluation of each such proposed substitution.

- 2. Whether or not the Owner's Representative and/or Engineer of Record accepts a proposed substitution, the Contractor may be responsible for the costs of the Owner's Representative and/or Engineer of Record and consultants for all time spent by them in evaluating the proposed substitution, plus administrative fees. The costs will be deducted from outstanding pay requests due to the Contractor by way of a Change Order.
- D. Engineer of Record Review Stamp:
 - 1. The Engineer of Record will use the following approval statement when returning submittals to the Contractor as "Fabrication May Proceed" or "Do Not Fabricate":
 - a. "Submission has been checked for general conformance with design concept of the project. Comments made on [type of submittal] do not relieve the Contractor from compliance with requirements of the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades."

Fabrication May Proceed:	Do Not Fabricate:
Ву:	Date:
Note:	

- 2. Actions Possible
 - a. The Engineer of Record review stamp will indicate the status of the submittal, and corresponding action to be taken by the Contractor as follows:
 - i. Submission is in general conformance with design concept: When the Engineer of Record marks the submittal "Submission is in general conformance with design concept", the Work covered by the submittal may proceed, provided it complies with the requirements of the Contract Documents. Final payment depends on that compliance.
 - ii. Submission is in general conformance with design concept, except as noted: When the Engineer of Record marks the submittal "Submission is in general conformance with design concept, except as noted", the Work covered by the submittal may proceed provided it complies with the notations on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - iii. Revise and Resubmit: When the Engineer of Record marks the submittal "Revise and Resubmit", the Work covered by the submittal may proceed provided it complies with the notations on the submittal and requirements of the Contract Documents. The submittal must be revised to comply with the notations on the submittal and requirements of the Contract Documents, and must then resubmit to the Engineer of Record. Final payment depends on that compliance.

iv. Submission is rejected for non-conformance with design concept: When the Engineer of Record marks the submittal "Submission is rejected for non-conformance with design concept", do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise and prepare a new submittal according to the notations, resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not use, or allow others to use submittals marked "Submission is rejected for nonconformance with design concept" at the Project Site or elsewhere where Work is in progress.

PART IV – MEASUREMENT AND PAYMENT

Include within the Contract prices the amount sufficient to cover all costs for work of this section. No separate payment will be made for work completed under this section. A Schedule of Values shall be submitted to and approved by the Owner's Representative.

END OF SECTION 013300

SECTION 024119

SELECTIVE DEMOLITION

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. Demolition and removal of selected portions of glass benches.
 - 2. Salvage of existing bench items to be reused or recycled.
- B. Related Requirements:
 - 1. Section 011000 "Summary of Work" for restrictions on the use of the premises, Owneroccupancy requirements, and phasing requirements.

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

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Bid Documents - Technical Specifications

1.05 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project Site, or location of Battery Park City Authority's choosing.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.06 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Predemolition Photographs or Video: Submit before Work begins.
- E. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.07 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept construction and demolition.

1.08 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

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Bid Documents - Technical Specifications

- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

2.01 PEFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
 - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain all services/systems, and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary of Work".
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.

3.03 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied areas.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect existing construction that is to remain or that is exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.

3.04 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials.
 - 4. Maintain adequate ventilation when using cutting torches.
 - 5. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area
 - 5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 - 3. Protect items from damage during transport and storage.
 - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.05 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.06 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.07 SELECTIVE DEMOLITION SCHEDULE

- A. Existing Items to Be Removed:
 - 1. Interior framing of benches I and J.
 - 2. All existing lights and drivers.
 - 3. All miscellaneous steel located within benches that is not structural.
- B. Existing Items to Be Removed and Salvaged:
 - 1. Glass panels and stainless steel ribs from benches I and J.
- C. Existing Items to Be Removed and Reinstalled:1. All Glass panels and stainless steel ribs from benches.
- D. Existing Items to Remain:
 - 1. All items as not indicated above.

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Concrete Benches.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
 - 1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Bonding agents.
 - 6. Adhesives.
- C. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACIcertified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician Grade II.
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures

1.7 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

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PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. High-density overlay, Class 1 or better.
 - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.

2.2 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 60 percent. Retain first paragraph below for galvanized-steel reinforcement. Retain type of reinforcement from first set of options and zinc coating class from second set. Class I has at least 50 percent more zinc weight than Class II.
- B. Epoxy-Coated Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) ASTM A 706/A 706M, deformed bars, ASTM A 767/A 767M, epoxy coated with less than 2 percent damaged coating in each 12 inch bar length.
- C. Stainless-Steel Reinforcing Bars: ASTM A 955/A 955M, Grade 60 (Grade 420), Type 304 deformed.

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

- 1. Portland Cement: ASTM C 150, Type I/II gray Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F or C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120. Silica fume in first paragraph below is most often used in high-strength concrete and in special applications such as bridge decks to enhance durability by lowering permeability of concrete. ACI 301 identifies silica fume as a cementitious material.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33, Class 3S or Class 3M coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch (19 mm) nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Water: ASTM C 94/C 94M and potable.

2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.

2.5 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than 5000 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

2.6 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

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- 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 25 percent.
 - 2. Combined Fly Ash and Pozzolan: 25 percent.
 - 3. Ground Granulated Blast-Furnace Slag: 50 percent.
 - 4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
 - 5. Silica Fume: 10 percent.
 - 6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
 - 7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a watercementitious materials ratio below 0.50.
 - 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
- E. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.7 CONCRETE MIXTURES

- A. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 5000 psi (34.5 MPa at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 - 3. Slump Limit: 5 inches (125 mm), plus or minus 1 inch (25 mm).
 - 4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.

2.8 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."
- 2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 - 1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 - 2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
 - 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- F. Chamfer exterior corners and edges of permanently exposed concrete.
- G. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

- I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
 - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its required 28-day design compressive strength.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.3 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.
- B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder according to manufacturer's written instructions.
- C. Granular Course: Cover vapor retarder with granular fill, moisten, and compact with mechanical equipment to elevation tolerances of plus 0 inch (0 mm) or minus 3/4 inch (19 mm).
 - 1. Place and compact a 1/2-inch- (13-mm-) thick layer of fine-graded granular material over granular fill.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M. Use epoxy coated steel wire ties to fasten epoxy coated steel reinforcement.

3.5 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- C. Deposit and consolidate concrete for benches in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed surfaces with a straightedge and strike off to correct elevations.
- D. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- E. Hot-Weather Placement: Comply with ACI 301 and as follows:
 - 1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.6 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces exposed to public view.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.7 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.8 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

- 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven (7) days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
- 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
- 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.9 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 - 2. Repair defects on surfaces exposed to view by blending white Portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 - 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 - 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 - 2. After concrete has cured at least 14 days, correct high areas by grinding.
 - 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 - 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 - 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 - 6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 - 7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Contractor will engage a special inspector to perform field tests and inspections and prepare test reports.
- B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- C. Inspections:
 - 1. Steel reinforcement placement.
 - 2. Steel reinforcement welding.
 - 3. Headed bolts and studs.
 - 4. Verification of use of required design mixture.
 - 5. Concrete placement, including conveying and depositing.
 - 6. Curing procedures and maintenance of curing temperature.
 - 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
 - 2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - 3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - 4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
 - 6. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 7. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure three sets of two standard cylinder specimens for each composite sample.

- 8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at seven (7) days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at seven (7) days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
- 9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- 10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
- 11. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- 12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- 13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
- 14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- 15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Construction Documents and approved submittals.

SECTION 05 50 00

MISCELLANEOUS METALS

PART I - GENERAL

1.1 SUMMARY

- A. The work covered by this section consists of furnishing all supervision, labor, materials, testing, and equipment necessary for the completion of the following Work, as hereinafter specified and detailed on the contract drawings.
- 1. Furnish, transport, and install miscellaneous steel and hardware.
- 2. Furnish all submittals required by this Section.

1.2 REFERENCES

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.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC S303	Steel Buildings and Bridges
AISC S335	Structural Steel Buildings, Allowable Stress Design and Plastic Design
AISC S342L	Load and Resistance Factor Design, Specification for Structural Steel
	Buildings

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B18.2.1 Square and Hex Bolts and Screws Inch Series

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36 ASTM A 47 ASTM A 48 ASTM A 53	Carbon Structural Steel Ferritic Malleable Iron Castings Gray Iron Castings Pipe Steel Black and Hot-Dipped Zinc-Coated Welded and
A31017(33	Seamless
ASTM A 123 ASTM A 153	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A 325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 480	Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM A 500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A 569	Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality
ASTM A 653	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A 687	High-Strength Nonheaded Steel Bolts and Studs
ASTM A 780	Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

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ASTM D 1187 Asphalt-Base Emulsions for Use as Protective Coatings for Metal ASTM F 593 Standard Specification for Stainless Steel Bolts, Hex cap Screws, and Studs

AMERICAN WELDING SOCIETY, INC. (AWS)

AWS D1.1 Structural Welding Code Steel

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SSPC SP 3Power Tool CleaningSSPC SP 6Commercial Blast Cleaning

1.3 SUBMITTALS

Submit the following in accordance with section entitled "Submittal Procedures."

- A. Refer to and comply with Division 1 Section "Submittal Procedures", for procedures and other submittal criteria.
- B. Manufacturer's Catalog and Product Data
 - 1. Each type of structural steel.
 - 2. Each type of connecting hardware.
 - 3. Each type of coating.
- C. Drawings
 - 1. Shop drawings of fabricated parts.
- D. Samples
 - 1. One sample of each fabricated part.

Samples may be installed in the work, provided each sample is clearly identified and its location recorded.

1.4 QUALIFICATION OF WELDERS

Qualify welders in accordance with AWS D1.1. Use procedures, materials, and equipment of the type required for the work.

1.5 DELIVERY, STORAGE, AND PROTECTION

Protect from corrosion, deformation, and other types of damage. Store items in an enclosed area free from contact with soil and weather. Remove and replace damaged items with new items.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Stainless Steel – Conform to ASTM A276 and ASTM A480 type S316 or approved equal, unless

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otherwise noted on the Contract Drawings.

- B. Fasteners Conform to ASTM F593, unless otherwise noted on the Contract Drawings
- C. Reinforcement:
 - 1. Reinforcing Bars: Comply with ASTM A615/A615M Grade 60. Unless otherwise indicated, bars shall be epoxy coated in conformance with ASTM 775. Splices shall conform to the requirements of ACI 318 and ACI 315.

2.2 FINISHES

- C. Shop Cleaning and Painting
 - 1. Surface Preparation

Blast clean surfaces in accordance with SSPC SP 6. Wash cleaned surfaces which become contaminated with rust, dirt, oil, grease, or other contaminants with solvents until thoroughly clean. Steel to be embedded in concrete shall be free of dirt and grease.

2. Pretreatment, Priming and Painting

Apply pretreatment, primer, and paint in accordance with manufacturer's printed instructions.

PART 3 – EXECUTION

- 3.1 INSTALLATION, GENERAL
 - A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
 - B. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
 - C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors

3.2 ADJUSTING AND CLEANING

A. Immediately after erection, clean field welds, bolted connections, and abraded areas, and provide a finished surface that will match the original surface.

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JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
 - A. Section Includes:
 - 1. Silicone joint sealants.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
 - 1. Locate test joints where indicated on Project or, if not indicated, as directed by Engineer.
 - 2. Conduct field tests for each application indicated below:
 - a. Each kind of sealant and joint substrate indicated.
 - 3. Notify Engineer seven days in advance of dates and times when test joints will be erected.
 - 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 - 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

- 1.4 ACTION SUBMITTALS
 - A. Product Data: For each joint-sealant product indicated.
 - B. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- C. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
- E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- F. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- G. Field-Adhesion Test Reports: For each sealant application tested.
- H. Warranties: Sample of special warranties.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

- 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.
- D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.7 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by jointsealant manufacturer.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: to match Manufacturer's Warranty.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: As indicated by Manufacturer, and Standard for approved product.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 - 1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- C. Colors of Exposed Joint Sealants: Clear, Gray, or White.

2.2 SILICONE JOINT SEALANTS

- A. Single-Component, Non-sag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. <u>Products</u>: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. <u>Dow Corning Corporation</u>; 790.
 - b. <u>Momentive</u>; SilPruf LM SCS2700.
 - c. <u>May National Associates, Inc.</u>; Bondaflex Sil 728 NS.
 - d. Sika Corporation, Construction Products Division; SikaSil WS-290.
 - e. Or approved Equal.
- B. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- C. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- D. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

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3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Remove laitance and form-release agents from concrete.
 - 3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the manufacturer's specifications.

- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 1 test for each 1000 feet (300 m) of joint length.
 - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 - 4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

DECONSTRUCTION OF GLASS BENCHES A-H

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100 Specification 024119 SUMMARY OF WORK SELECTIVE DEMOLITION

1.02 SUMMARY

This specification includes the deconstruction of glass benches A-H, the storage of parts after the benches have been deconstructed, and disposal of items to be replaced in the benches

1.03 DESCRIPTION OF WORK

- A. Removal of steel closure ribs: ribs are to be removed from the glass benches, cleaned, and stored to be reinstalled. Ribs are held to the bench framing by spanner fasteners. Closure ribs secure the glass panels into the framing. Ribs should be cleaned of all dust, debris, and existing sealant from initial construction.
- B. Removal of ribbed low expansion soda lime cast glass panels: glass panels are to be removed from the benches, cleaned, and stored to be reinstalled. Glass panels are to be removed carefully so as not to scratch or damage panels. Glass panels are to be cleaned of all dust, debris, and existing sealant from initial construction.
- C. Removal of stainless steel benches: stainless steel bench seats are to be removed from the bench frames, cleaned, and stored to be reinstalled. Stainless steel benches are mechanically fastened to the bench frames.
- D. Removal of kick plates: existing kick plates are to be removed and disposed of by the contractor. Kick plates are not present at all locations.
- E. Removal of electrical equipment: existing electrical equipment (existing light strips, drivers) are to be removed and disposed of by the contractor. Electrical wiring at benches that are to be left for any period of time, shall be capped or electrical current shall be temporarily cut off at these locations so as to prevent harm to members of the public or cause damage to the areas around the benches.
- F. Interior framing and reflecting panels: interior framing and reflective panels are to be cleaned of all dust and debris. Miscellaneous, and unattached stainless steel within the frame of the benches shall be removed and disposed of by the contractor.

1.04 STORAGE OF MATERIALS

- A. Contractor shall coordinate with BPCA for storage areas. For bidding purposes, assume no onsite storage will be provided, and materials removed from benches shall be transported from the job site daily.
- B. If on-site storage is made available to the contractor by BPCA, the Contractor shall only store materials removed from the benches, and equipment approved by BPCA for storage on site. It will be the contractor's responsibility to provide security for the storage area, and ensure materials within the storage area are not damaged or stolen.

1.05 SUBMITTALS

A. Materials and equipment to be stored on site shall be submitted to BPCA for approval.

PART 2 – PAYMENT

Payment for **Deconstruction of Glass Benches A-H** shall be made on a per linear foot (LF) basis. Each linear foot shall include the top and both side panels of each bench section and all materials within that section of framework. Typical bench sections are 2 feet 6 inches long. Sections adjacent to ends shall include the ends of each bench.

DECONSTRUCTION OF GLASS BENCHES I and J

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100	SUMMARY OF WORK
Specification 024119	SELECTIVE DEMOLITION

1.02 SUMMARY

This specification includes the deconstruction of glass benches A-H, the storage of parts after the benches have been deconstructed, and disposal of items to be replaced in the benches

1.03 DESCRIPTION OF WORK

- A. Removal of steel closure ribs: ribs are to be removed from the glass benches, cleaned, and stored to be reinstalled or stored at BPCA's offsite storage facility. Ribs are held to the bench framing by spanner fasteners. Closure ribs secure the glass panels into the framing. Ribs should be cleaned of all dust, debris, and existing sealant from initial construction.
- B. Removal of ribbed low expansion soda lime cast glass panels: glass panels are to be removed from the benches, cleaned, and stored to be reinstalled or stored at BPCA's offsite storage facility. Glass panels are to be removed carefully so as not to scratch or damage panels. Glass panels are to be cleaned of all dust, debris, and existing sealant from initial construction.
- C. Removal of kick plates: existing kick plates are to be removed and disposed of by the contractor. Kick plates are not present at all locations.
- D. Removal of electrical equipment: existing electrical equipment (existing light strips, drivers) are to be removed and disposed of by the contractor. Electrical wiring at benches shall be permanently capped.
- E. Interior framing and reflecting panels: interior framing and reflective panels shall be removed and disposed of by the contractor.

1.04 STORAGE OF MATERIALS

- A. Contractor shall coordinate with BPCA for storage areas. For bidding purposes, assume no onsite storage will be provided, and materials removed from benches shall be transported from the job site daily.
- B. If on-site storage is made available to the contractor by BPCA the contractor shall only store materials removed from the benches, and equipment approved by BPCA for storage on site. It will be the contractor's responsibility to provide security for the storage area, and ensure materials within the storage area are not damaged or stolen.

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C. The western most end panel, the western most section of top panels, and the first two western section panels and corresponding stainless steel ribs of Bench J shall be cleaned and prepared/stored to be reinstalled in place of the broken glass panel sections on Bench E.

1.05 SUBMITTALS

A. Materials and equipment to be stored on site shall be submitted to BPCA for approval.

PART 2 – PAYMENT

Payment for **Deconstruction of Glass Benches I and J** shall be made on a per linear foot (LF) basis. Each linear foot shall include the top and the side panels of each bench section and all materials within that section of framework. Typical bench sections are 2 feet 6 inches long. Sections adjacent to ends shall include the ends of each bench.

INSTALL NEW LED LIGHT SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100	SUMMARY OF WORK
Specification 055000	MISCELLANEOUS METALS
Specification 265600	EXTERIOR LIGHTING

1.02 SUMMARY

This specification includes the installation of LED light systems at benches A-H. Power sources have previously been directed to the benches.

1.03 DESCRIPTION OF WORK:

- A. Install new LED light strips per manufacturer's recommendations. Installation shall include manufacturer's recommended clips, spaced per manufacturer's instructions, and placed per manufacturer's recommendations. Contractor will provide drivers for each bench which shall be mounted in the existing housing cases.
- B. Install new stainless steel kick plates per the Contract Drawings.

1.04 QUALITY ASSURANCE

A. Installation procedures of electrical components shall be approved by LED light strip manufacturer, and when the Engineer deems necessary shall be present on site during installation.

1.05 SUBMITTALS

- A. Product Data:
 - 1. Prior to the start of any work, the Contractor shall submit to the Engineer for approval a list of all materials and equipment specified or otherwise required to complete the Work of this Section.
 - 2. Submit manufacturer's technical product data, including specifications and installation instructions, on the jacketing forms to be used, to show compliance with the Contract Documents, including a drawing which shows method of support, spacing and stabilization of formwork.
- B. Shop Drawings, detailing at a minimum locations, dimensions, and installation order of lights, corresponding clips, and drivers.

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- C. All submittals as required in Specification 055000 Miscellaneous Metals.
- D. All submittals as required in Specification 265600 Exterior Lighting.
- 1.06 DELIVERY, STORAGE AND HANDLING
 - A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at Contractor's expense.
- PART 2 PRODUCTS
- 2.01 PRODCUTS
 - A Products under this section will be subject to the parameters detailed in Specifications 055000 – Miscellaneous Metals and 265600 – Exterior Lighting.

PART 3 – PAYMENT

Payment for **Install New LED Light System** shall be made on a per linear foot (LF) basis, and shall only apply to benches A-H. Assume 4 drivers per bench for bidding purposes.

RECONSTRUCT GLASS BENCHES A-H

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100	SUMMARY OF WORK
Specification 079200	JOINT SEALANTS
Specification 130001	DECONSTRUCTION OF BENCHES A-H
Specification 130002	DECONSTRUCTION OF BENCHES I AND J

1.02 SUMMARY

This section includes the reconstruction of benches A-H.

1.03 DESCRIPTION OF WORK:

- A. Reinstall all ribbed low expansion soda lime cast glass panels. All glass panels shall be placed in their original position prior to being removed. The broken panels and armature from glass Bench E shall be replaced with materials from Bench J as described in Specification 130002 Deconstruction of Benches I and J.
- B. Reinstall all stainless steel closure ribs. All closure ribs shall be placed in their original position prior to being removed. The replaced glass panels at Bench E shall have their corresponding closure ribs from Bench J as described in Specification 1300022 Deconstruction of Benches I and J.
- C. Reinstall stainless steel bench seats in their original positions prior to being removed.
- D. Apply structural sealant to all joints between glass panels, including but not limited to: glass to glass joints; glass to closure rib joints; and glass to kick plate joints.

1.04 SUBMITTALS

- A. Refer to and comply with Division 1 Section "Submittal Procedures", for procedures and other submittal criteria.
- B. Product Data: Per Specification 079200 Joint Sealants.

PART 2 – PAYMENT

Payment for **Reconstruct Glass Benches A-H** shall be on a per linear foot (LF) basis, and each linear foot shall include top and both side panels of each bench section. Typical bench sections are 2 feet 6 inches long. Sections adjacent to ends shall include the ends of each bench.

REPLACEMENT OF BENCH I

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100	SUMMARY OF WORK
Specification 033000	CAST IN PLACE CONCRETE
Specification 130002	DECONSTRUCTION OF BENCHES I AND J

1.02 SUMMARY

This section includes the replacement of Bench I to match existing stone cladding system.

1.03 DESCRIPTION OF WORK:

- A. Install post-installation anchors and rebar as shown on the Contract Drawings.
- B. Form and pour new concrete in place of the removed glass bench.
- C. Install new cast stone cladding panels to match existing panels of the remaining structure. Panels shall be precast, and shall match existing in color and texture.
- D. Extend green roof system over new construction, to match the existing green roof system.

1.04 QUALITY ASSURANCE

- A. General:
 - 1. Insofar as possible, all materials and equipment used in the installation of this work shall be of the same brand or manufacturer throughout for each class of material and/or equipment.
 - 2. Use numbers of skilled workers equal to work requirement or occasion. The skilled workers shall be thoroughly trained and experienced in the necessary crafts and shall be completely familiar with the specified requirements and methods needed for proper performance of the Work in this Section.
- B. Installer's Qualifications: A firm with at least five years of successful installation experience on projects with work of installing pile protection systems similar to that required for this Work.

1.05 SUBMITTALS

A. Refer to and comply with Division 1 – Section "Submittal Procedures", for procedures and other submittal criteria.

- B. Product Data:
 - 1. Prior to the start of any work, the Contractor shall submit to the Engineer for approval a list of all materials and equipment specified or otherwise required to complete the Work of this Section.
 - 2. Submit manufacturer's technical product data, including specifications and installation instructions, on the jacketing forms to be used, to show compliance with the Contract Documents, including a drawing which shows method of support, spacing and stabilization of formwork.
- C. Shop Drawings, detailing at a minimum location of rebar, and stone cladding.
- D. Provide samples of the stone cladding for the engineer's and owner's approval. Cladding shall be an exact match, if possible by the same manufacturer of the original stone cladding.
- E. Additional submittals as detailed in Specification 033000 Cast In Place Concrete.
- 1.06 DELIVERY, STORAGE AND HANDLING
 - A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at Contractor's expense.

PART 4 – EXECUTION

Payment for **Replacement of Bench I** shall be done on an each (EA) basis. Payment will be provided upon completion of the Bench I replacement.

REPLACEMENT OF BENCH J

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Specification 011100	SUMMARY OF WORK
Specification 033000	CAST IN PLACE CONCRETE
Specification 130002	DECONSTRUCTION OF BENCHES I AND J

1.02 SUMMARY

This section includes the replacement of Bench J with a cast in place concrete bench.

1.03 DESCRIPTION OF WORK:

- A. Install post-installation anchors and rebar as shown on the Contract Drawings.
- B. Form and pour new concrete in place of the removed glass bench as shown on the Contract Drawings.

1.04 QUALITY ASSURANCE

- A. General:
 - 1. Insofar as possible, all materials and equipment used in the installation of this work shall be of the same brand or manufacturer throughout for each class of material and/or equipment.
 - 2. Use numbers of skilled workers equal to work requirement or occasion. The skilled workers shall be thoroughly trained and experienced in the necessary crafts and shall be completely familiar with the specified requirements and methods needed for proper performance of the Work in this Section.
- B. Installer's Qualifications: A firm with at least five years of successful installation experience on projects with work of installing pile protection systems similar to that required for this Work.

1.05 SUBMITTALS

- A. Refer to and comply with Division 1 Section "Submittal Procedures", for procedures and other submittal criteria.
- B. Product Data:
 - 1. Prior to the start of any work, the Contractor shall submit to the Engineer for approval a list of all materials and equipment specified or otherwise required to complete the Work of this Section.
- 2. Submit manufacturer's technical product data, including specifications and installation instructions, on the jacketing forms to be used, to show compliance with the Contract Documents, including a drawing which shows method of support, spacing and stabilization of formwork.
- C. Additional submittals as detailed in Specification 033000 Cast In Place Concrete.
- 1.06 DELIVERY, STORAGE AND HANDLING
 - A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at Contractor's expense.
- PART 4 EXECUTION

Payment for **Replacement of Bench J** shall be done on an each (EA) basis. Payment will be provided upon completion of the Bench J replacement.

END OF SECTION 130006

SECTION 265600

EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
 - A. Section Includes:
 - 1. Exterior luminaires with drivers.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color-rendering index.
- C. HID: High-intensity discharge.
- D. LER: Luminaire efficacy rating.
- E. LED: Light-emitting diode.
- F. Luminaire: Complete lighting fixture, including driver housing if provided.
- G. Pole: Luminaire support structure, including tower used for large area illumination.
- H. Standard: Same definition as "Pole" above.

1.4 ACTION SUBMITTALS

- A. Product Data: For each luminaire and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 - 2. Details of attaching luminaires and accessories.
 - 3. Details of installation and construction.
 - 4. Luminaire materials.
 - 5. Drivers, including energy-efficiency data.
 - 6. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.

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- 7. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
- 8. Anchor bolts for attachment accessories.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection. Retain subparagraph below if equipment includes wiring.
 - 2. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples: For products designated for sample submission in the Exterior Lighting Device Schedule. Each Sample shall include lamps and ballasts.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified agencies providing photometric data for lighting fixtures.
- B. Field quality-control reports.
- C. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires to include in emergency, operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps: 100 linear feet of LED fixtures installed. Furnish at least one of each type.
 - 2. Plastic Lenses, Covers, and Other Optical Parts: 100 linear feet of each type and rating installed. Furnish at least one of each type.
 - 3. Drivers: 50 linear feet of each type and rating installed. Furnish at least one of each type.

1.8 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with IEEE C2, "National Electrical Safety Code."
- D. Comply with NFPA 70.

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1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, improper installation or unauthorized repairs or alterations from special warranty coverage.
 - 1. Warranty Period for Luminaires: Three years from date of Substantial Completion.
 - 2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
 - 3. Warranty Period for Color Retention: Three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide iLight-Tech Plexineon White 1X or approved equal.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

- A. Metal Parts: Free of burrs and sharp corners and edges.
- B. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- C. Exposed Hardware Material: Stainless steel.
- D. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- E. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- F. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and drivers. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

PART 3 - EXECUTION

- 3.1 LUMINAIRE INSTALLATION
 - A. Install LED lights in each luminaire per manufacturer's recommendations.
 - B. Fasten luminaire to stainless steel bent plate or concrete block.

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C. Adjust luminaires that require field adjustment or aiming. Align units for optimum directional alignment of light distribution.

3.2 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - 1. Verify operation of photoelectric controls.
- C. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.
- D. Employ a manufacturer representative to ensure proper installation of luminaires.

3.3 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain luminaires.

END OF SECTION 265600

Belvedere Pylon LED Replacement

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ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes special procedures for alteration work.

1.3 DEFINITIONS

- A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.
- B. Consolidate: To strengthen loose or deteriorated materials in place.
- C. Design Reference Sample: A sample that represents the Engineer's Prebid selection of work to be matched; it may be existing work or work specially produced for the Project.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Engineer.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- K. Retain: To keep existing items that are not to be removed or dismantled.
- L. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 COORDINATION

- A. Alteration Work Sub-schedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.
 - 1. Schedule construction operations in sequence required to obtain best Work results.
 - 2. Coordinate sequence of alteration work activities to accommodate the following:
 - a. Owner's continuing occupancy of portions of existing building.
 - b. Owner's partial occupancy of completed Work.
 - c. Other known work in progress.
 - d. Tests and inspections.
 - 3. Detail sequence of alteration work, with start and end dates.
 - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
 - 5. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use in existing structure. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.
- B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.5 PROJECT MEETINGS FOR ALTERATION WORK

- A. Preliminary Conference for Alteration Work: Before starting alteration work, McLaren will host a conference at Project site.
 - 1. Attendees: In addition to representatives of Owner, Contractor, testing service representative, and specialists shall be represented at the meeting.
 - 2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:
 - a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Fire-prevention plan.
 - c. Governing regulations.
 - d. Areas where existing construction is to remain and the required protection.
 - e. Hauling routes.
 - f. Sequence of alteration work operations.
 - g. Storage, protection, and accounting for salvaged and specially fabricated items.
 - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
 - i. Qualifications of personnel assigned to alteration work and assigned duties.
 - j. Requirements for extent and quality of work, tolerances, and required clearances.

- k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.
- 3. Reporting: McLaren will record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

1.6 MATERIALS OWNERSHIP

- A. Historic items, relics, sculptures, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
 - 1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed at Project site.

1.7 INFORMATIONAL SUBMITTALS

- A. Alteration Work Subschedule:
 - 1. Submit alteration work subschedule within seven days of date established for commencement of alteration work.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.
- C. Alteration Work Program: Submit five days before work begins.
- D. Fire-Prevention Plan: Submit five days before work begins.

1.8 QUALITY ASSURANCE

- A. Field Supervisor Qualifications: Full-time supervisors experienced in specialty work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on-site when specialty work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
- B. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project alteration work program with specific requirements of programs required in other alteration work Sections.
 - 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.

- 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
- D. Safety and Health Standard: Comply with ANSI/ASSE A10.6 and any relevant OSHA guidelines.

1.9 STORAGE AND HANDLING OF SALVAGED MATERIALS

- A. Salvaged Materials:
 - 1. Clean loose dirt and debris from salvaged items unless more extensive cleaning is indicated.
 - 2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's designated storage area.
 - 5. Protect items from damage during transport and storage.
- B. Salvaged Materials for Reinstallation:
 - 1. Repair and clean items for reuse as indicated.
 - 2. Protect items from damage during transport and storage.
 - 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.
- C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Owner, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.
- D. Storage: Catalog and store items where they are protected
 - 1. Secure stored materials to protect from theft.

1.10 FIELD CONDITIONS

- A. Survey of Existing Conditions: Record existing conditions that affect the Work by use of preconstruction photographs and drawings.
- B. Discrepancies: Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Size Limitations in Existing Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within existing spaces, including temporary protection.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 **PROTECTION**

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.
 - 1. Use only proven protection methods, appropriate to each area and surface being protected.
 - 2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
 - 3. Erect temporary barriers to form and maintain fire-egress routes.
 - 4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
 - 5. Contain dust and debris generated by alteration work, and prevent it from reaching the public or adjacent surfaces.
 - 6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
 - 7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
 - 8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building.
- B. Temporary Protection of Materials to Remain:
 - 1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
 - 2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.
- C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- D. Utility and Communications Services:
 - 1. Notify Owner, Engineer, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
 - 2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
 - 3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

3.2 PROTECTION FROM FIRE

- A. General: Follow fire-prevention plan and the following:
 - 1. Comply with NFPA 241 requirements unless otherwise indicated.

- 2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
 - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
 - 1. Obtain Owner's approval for operations involving use of welding or other high-heat equipment. Notify Owner at least 24 hours before each occurrence, indicating location of such work.
 - 2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
 - 3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
 - 4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
 - 5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
 - 6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
 - a. Train each fire watch in the proper operation of fire-control equipment and alarms.
 - b. Prohibit fire-watch personnel from other work that would be a distraction from firewatch duties.
 - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
 - d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 20 minutes after conclusion of relevant work to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 GENERAL ALTERATION WORK

- A. Have specialty work performed only by qualified specialists.
- B. Ensure that supervisory personnel are present when work begins and during its progress.
- C. Notify Engineer of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Engineer.

END OF SECTION 013516

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 **RELATED DOCUMENTS**

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

1.2 SUMMARY

- Α. Section Includes:
 - 1. Demolition and removal of selected portions of structure.
 - 2. Salvage of existing items to be reused.

DEFINITIONS 1.3

Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, Α. prepare for reuse, and reinstall where indicated.

1.4 **PREINSTALLATION MEETINGS**

- A. Predemolition Conference: Conduct conference at Project site
 - Inspect and discuss condition of construction to be selectively demolished. 1.
 - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 4. Review areas where existing construction is to remain and requires protection.

1.5 SUBMITTALS

- Proposed Protection Measures: Submit report, including Drawings, that indicates the measures A. proposed for protecting individuals and property, for environmental protection, and for dust control. Indicate proposed locations and construction of barriers.
- Schedule of Selective Demolition Activities: Indicate the following: Β.
 - Detailed sequence of selective demolition and removal work, with starting and ending dates 1. for each activity.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
- C. Predemolition Photographs: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations.

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D. Inventory: Submit a list of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Storage or sale of removed items or materials on-site is not permitted.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs.
 - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.
 - 2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.3 **PROTECTION**

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of the park.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furnishings, and equipment that have not been removed.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain fire watch during and for at least 20 minutes after flame-cutting operations.
 - 6. Maintain adequate ventilation when using cutting torches.
 - 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

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- 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Protect items from damage during transport and storage.
 - 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 05 01 70.61

DECORATIVE METAL REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes decorative metal repairs as follows:
 1. Removing metal for shop repair and replacement of components; reinstalling repaired metal.
- B. Related Requirements:
 - 1. Section 013516 "Alteration Project Procedures" for general remodeling, renovation, repair, and maintenance requirements.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at the Project Site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include recommendations for product application and use.
 - 2. Include test data substantiating that products comply with requirements.
- B. Shop Drawings:
 - 1. Include plans, elevations, and sections showing locations and extent of repair and replacement work, with enlarged details of replacement parts indicating materials, profiles, methods of attachment, accessory items, and finishes.
 - 2. Include field-verified dimensions and the following:
 - a. Identification of each new metal item and component and its location on the structure in annotated plans and elevations.
 - b. Provisions for expansion, weep holes, and conduits as required for each location and exposure.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For record.

1.6 QUALITY ASSURANCE

- A. Decorative Metal Repair Specialist Qualifications: A qualified decorative metal fabrication and repair specialist. Experience installing and finishing new decorative metalwork is insufficient experience for repairing decorative metal.
 - 1. Single Specialist: Subject to compliance with requirements, engage the same specialist firm to perform the work of Section 050170.51 "Decorative Metal Cleaning" Section 050170.63 "Decorative Metal Refinishing" and the work of this Section.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Pack, deliver, and store decorative metal items to ensure that products are not deformed, cracked, or otherwise damaged.

1.8 FIELD CONDITIONS

A. Weather Limitations: Proceed with decorative metal repairs only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

A. General: Provide decorative metal materials made of the alloys, forms, and types that match existing metals and have the ability to receive finishes matching existing finishes unless otherwise indicated. Exposed-to-view surfaces exhibiting imperfections inconsistent with existing materials are unacceptable.

2.2 MISCELLANEOUS MATERIALS

- A. Welding Electrodes and Filler Metal: Select according to AWS specifications for metal alloy welded; use metal type and alloy as recommended in writing by producer of metal to be welded or filled and as required for color match, strength, and compatibility in fabricated items.
- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 - 1. Previous effectiveness in performing the work involved.
 - 2. Little possibility of damaging exposed surfaces.
 - 3. Consistency of each application.
 - 4. Uniformity of the resulting overall appearance.

DECORATIVE METAL REPAIR MARCH 2018

- 5. Do not use products or tools that could do the following:
 - a. Remove, alter, or in any way harm the present or future condition of existing surfaces, including surrounding surfaces not in the Contract.
 - b. Leave an unintended residue on surfaces.

2.3 METAL FABRICATION

- A. Fabricate repairs of decorative metal items and components in sizes and profiles to match existing decorative metal, with accurate curves, lines, and angles. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
- B. Provide uniform, neat seams with minimum exposure of welds, brazing, solder, and sealant.
- C. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed joints of flux, and dress exposed and contact surfaces.
 - 1. Use materials and methods that match color of base metal, minimize distortion, and develop maximum strength and corrosion resistance.
 - 2. Remove flux immediately.
 - 3. At exposed connections, match contours of adjoining surfaces, and finish exposed surfaces smooth and blended so no roughness shows after finishing.

2.4 FINISHES, GENERAL

A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. 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.

2.5 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines from new replacement stainless steel, or blend into finish.

PART 3 - EXECUTION

3.1 **PROTECTION**

- A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
 - 1. Cover adjacent surfaces with materials that are proved to resist chemical solutions being used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents to comply with manufacturer's

DECORATIVE METAL REPAIR MARCH 2018 written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

- 2. Do not apply chemical solutions during winds of enough force to spread them to unprotected surfaces.
- 3. Neutralize alkaline and acid wastes before disposal.
- 4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.2 DECORATIVE METAL REPAIR, GENERAL

- A. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 40 feet away by Engineer and/or Owner.
- B. Execution of the Work: In repairing items, disturb remaining existing work as minimally as possible and as follows:
 - 1. Stabilize decorative metal to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
 - 2. Remove deteriorated coatings and corrosion.
 - 3. Sequence work to minimize time before protective coatings are reapplied.
 - 4. Repair items where stabilization is insufficient to stop progress of deterioration.
 - 5. Repair items in place where possible.
 - 6. Replace or reproduce items where indicated or scheduled.
 - 7. Install temporary protective measures to stabilize decorative metal that is indicated to be repaired later.
- C. Mechanical Coating Removal: Use gentle methods, such as scraping and wire brushing, that will not abrade metal substrate.
- D. Repair Decorative Metal Item: Match existing materials and features.

3.3 PREPARATORY CLEANING

- A. General: Use those methods indicated for each type of decorative metal and its location.
 - 1. Brushes: If using wire brushes, use brushes of same base metal composition as metal being cleaned. Use brushes that are resistant to chemicals being used.
 - 2. Uniformity: Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, contours, and interstices, and that produces an even effect without streaks or damaging surfaces.
 - 3. Protection: After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.
- B. Mechanical Rust Removal:
 - 1. Remove rust with approved abrasives for ferrous metal cleaning.
 - 2. Wipe off residue with mineral spirits and either steel wool or soft rags.
 - 3. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
 - 4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

DECORATIVE METAL REPAIR MARCH 2018

3.4 REMOVAL, REPAIR, AND REINSTALLATION

A. General: Perform removal work as required in Section 024119 "Selective Demolition" for specific requirements relating to selectively demolishing construction, including decorative metal removal for repair or reinstallation elsewhere.

END OF SECTION 050170.61

SECTION 13 00 03

INSTALL NEW LED LIGHT SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- B. Specification 265600 EXTERIOR LIGHTING

1.2 SUMMARY

A. This specification includes the installation of LED light systems within the pylons located at Belvedere Park. Power sources have previously been directed to the pylons.

1.3 DESCRIPTION OF WORK

- A. Install new LED light fixtures per manufacturer's recommendations. Installation shall include all manufacturer's recommendations. Contractor will provide drivers for each bench which shall be mounted in the existing housing cases. Revise "Alteration Work" Paragraph below to clarify the type(s) of work covered by this Section.
- B. Install new stainless-steel hardware and other components per the Contract Drawings.

1.4 QUALITY ASSURANCE

A. Installation procedures of electrical components shall be approved by LED light fixture manufacturer, and when the Engineer deems necessary shall be present on site during installation.

1.5 SUBMITTALS

- A. Product Data:
 - 1. Prior to the start of any work, the Contractor shall submit to the Engineer for approval a list of all materials and equipment specified or otherwise required to complete the Work of this Section.
 - 2. Submit manufacturer's technical product data, including specifications and installation instructions, on the jacketing forms to be used, to show compliance with the Contract Documents.
- B. Shop Drawings, detailing at a minimum locations, dimensions, and installation order of lights and the installed 12/3 SJ Cable.
- C. All submittals as required in Specification 265600 Exterior Lighting.

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1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver the specified products in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged or contaminated materials shall be removed from the site immediately, at Contractor's expense.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Products under this section will be subject to the parameters detailed in Specification 265600 – Exterior Lighting.

PART 3 - PAYMENT

A. Payment for **Installation of New LED Light Fixtures** shall be made on a per fixture (EA) basis. Please refer to the Scope of Work and Specification 265600 – Exterior Lighting.

END OF SECTION 130003

SECTION 26 05 45

BATTERY PARK CITY NORTH COVE LINK LIGHTING UPGRADE FOR OPEN & CLOSED PYLONS

1.1 **PROJECT DESCRIPTION:**

Existing Pylon lighting and associated wiring was damaged due to Hurricane Sandy. The following represents procedure and replacement for upgrade/repair.

1.2 INITIAL INVESTIGATION/OBSERVATIONS:

At the base of each pylon [one "open" style, north bound & one "closed" style, south bound] exists a recessed stainless-steel junction box measuring 17 ¼" wide x 17 ¼" high x 11 ½" deep. Each junction box is fed via a 2" RGS conduit with five, 2/0 AWG conductors, three phases, neutral and ground. The feeder conduit and associated junction boxes were traced to the electric closet which houses an ASCO contractor triggered by a photo eye for controlling the lighting. The adjacent in the ground junction boxes which are tapped to feed the pylons were opened and inspected. Wire insulation and splice kits appeared in good condition. Power was applied and conductors were tested for voltage. Although no circuits tripped, it should be noted that wiring for existing walkway lighting adjacent to pylons was replaced after hurricane Sandy. Pylon feeders were not.

2.1 **OPEN PYLON (NORTH TOWER)**

The open pylon consists of six fixtures. One fixtures at each segmented level. Three 1000W and three 500W incandescent PAR 64 mogul base. There are no ballasts. [The lower three are 1000W, one per level, and upper three are 500W, one per level] the fixtures are housed in a circular housing 10" in diameter and 14" deep secured by four 10 x 32 x1" hex head screws. Each fixture is fed via 12/3 SJ cord with one gang weatherproof box connected to the fixture. The junction box at the base of the pylon has wiring fed via one 5" conduit with 12/3 SJ cord. The total number of circuits are five with in line fuse holders and one circuits appears to run straight thru without a fuse. [Since the lower level has already been replaced this contract requires upgrade of five fixtures]

2.2 **OPEN PYLON REPLACEMENT PROCEDURE:**

- 1. The existing fixtures are to be removed and retro fitted with Global Tech LED 135 Watt Screw in Yoke LED Retrofit Kit, Catalog No. GTR-AR-5498-HO-SV-BR-NL=SOLY-MGL. 135 Watt LED, Rated Lumens 13,164, Input Voltage, 120-277 Volt, -40 Degree C to 55 Degree Nominal, L70 150,000 Hours. Warranty on Driver is 5 Years, Light Engine 10 Years. Product is manufactured in the USA and is UL Approved.
- 2. All existing circuit wiring is to be replaced with new 12/3 SJ.
- 3. In line fuse holders are to be replaced with new AGC Waterproof Fuse Holder-18-12 Gauge part number #79005 including identification of circuit / fixture. [add additional fuse protection for the one circuit not currently fused]
- 4. All hardware is to be replaced with stainless steel.
- 5. Splicing of all circuit wiring utilize ideal underground wire connectors or approved equal.

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- 6. Replace existing frosted lenses with new.
- 7. Install Burndy Power Block Distribution Cat No. BDCSCHC 142/01 or equal at base mounted junction box. Use Penetrox or similar protection compound on all Terminations.
- 8. Install new stainless steel tamperproof mounting hardware for base junction box cover.

2.3 **NOTE:**

There is an access issue with the upper elevations of the open pylon. The spacing of the stainless steel stranding gets smaller making accessibility difficult for installing a new fixture installation and for maintenance. Suggestion is to cut and weld hinges onto stranding to allow for "door" access. APPROVAL REQUIRED PRIOR TO STARTING WORK.

3.1 CLOSED PYLON (SOUTH TOWER)

There is a total of forty-eight metal halide 70W fixtures powered by high intensity diffusion core and coil ballast. They are housed in a square opening $13" \times 13" \times 20 \frac{1}{2}"$ deep. There is a grill above the fixture with bird needle strips and a 9" in diameter opening for the fixture lens. These fixtures are fed via 12/3 # 12 SJ cord which daisy chains from one fixture to the next. The fixtures are mounted via a cross bar spanning the driver compartment secured by two $9/16" \times 1 \frac{1}{2}"$ hex head bolts. Each phase feeding the lights serves two circuits utilizing in line fuses. A total of six circuits for 48 lights equal eight lights per circuit. The junction box at the base of the pylon, wiring is run thru six $\frac{3}{4}"$ conduits extending up thru pylon; two conduits have 3 conductor SJ cord, two conduits have 5 Individual # 12 conductors and two conduits are empty.

3.2 CLOSED PYLON REPLACEMENT PROCEDURE:

- 1. The existing fixtures are to be removed and retro fitted with RAB compact 5 watt LED Floodlight Catalog No. LFLED5NA [Neutral Light 4000k] and Accessory Reflector Kit Catalog Number RAB-LNSLFLED8A Narrow Spot kit.
- 2. Existing drivers, ballast and wiring to be removed and properly disposed of.
- 3. Splicing of all Circuit wiring utilize ideal underground wire connectors or approved equal.
- 4. All hardware is to be replaced with stainless steel.
- 5. Install Burndy Power Block Distribution Cat no. BDCSCHC142/010 or equal at base mounted junction box. Use Penetrox or similar protection compound on all terminations.
- 6. Install new stainless steel tamperproof mounting hardware for base junction box cover.
- 7. In line fuse holders are to be replaced with new AGC waterproof Fuse Holder 18-12 Gauge Part Number #79005 including identification of circuit /fixture.

SECTION 26 56 00

EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Exterior Light Fixture Systems for both the Open and Closed Pylon at Belvedere Park.

1.3 ACTION SUBMITTALS

- A. Product Data: For each fixture and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 - 2. Details of attaching luminaires and accessories.
 - 3. Details of installation and construction.
 - 4. Luminaire materials.
 - 5. Drivers, including energy-efficiency data.
 - 6. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.
 - 7. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
 - 8. Anchor bolts for attachment accessories.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection. Retain subparagraph below if equipment includes wiring.
 - 2. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples: For products designated for sample submission in the Exterior Lighting Device Schedule.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified agencies providing photometric data for lighting fixtures.
- B. Field quality-control reports.
- C. Warranty: Sample of special warranty.

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1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a gualified testing agency, and marked for intended location and application.
- C. Comply with IEEE C2, "National Electrical Safety Code."
- D. Comply with NFPA 70.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, improper installation or unauthorized repairs or alterations from special warranty coverage.
 - 1. Warranty Period for Luminaires: Three years from date of Substantial Completion.
 - 2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
 - 3. Warranty Period for Color Retention: Three years from date of Substantial Completion.

PART 2 - PRODUCTS

- 2.1 Manufacturers
 - A. Products:
 - 1. Open Pylon
 - a. Global Tech LED 135-Watt Screw in LED Retrofit Kit
 - 1) Catalog No. GTR-AR-5498-HO-SV-BR-NL-SOLY-MGL
 - Burndy Power Block Distribution or approved equal base mounted junction box
 Catalog No. BDCSCHC142/01
 - c. Penetrox or similar protection compound on all terminations
 - AGC Waterproof Fuse Holder 18-12 Gauge or approved equal fuse holder
 Part #79005
 - e. Ideal Underground Wire Connectors for all splicing or approved equal wire connectors
 - 2. Closed Pylon
 - a. RAB compact 5-Watt LED Floodlights with Accessory Reflector Kit
 - 1) Catalog No. LFLED5NA [Neutral Light 4000K]
 - 2) Catalog No. RAB-LNSLFLED8A [Narrow Spot Kit]
 - b. Burndy Power Block Distribution or approved equal base mounted junction box

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- 1) Catalog No. BDCSCHC142/01
- c. Penetrox or similar protection compound on all terminations
- AGC Waterproof Fuse Holder 18-12 Gauge or approved equal fuse holder
 Part #79005
- e. Ideal Underground Wire Connectors for all splicing or approved equal wire connectors

2.2 GENERAL REQUIREMENTS

A. All replaced hardware is to be stainless-steel and replaced in kind.

PART 3 - EXECUTION

3.1 FIXTURE INSTALLATION

- A. Install LED light fixtures in each pylon per manufacturer's recommendations.
- B. Fasten LED fixtures to stainless steel bent plate or concrete block.
- C. Adjust LED fixtures that require field adjustment or aiming. Align units for optimum directional alignment of light distribution.

3.2 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
- C. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.
- D. Employ a manufacturer representative to ensure proper installation of LED light fixtures.

3.3 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain luminaires.

END OF SECTION 265600

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