Project: **South Battery Park City Resiliency Project: Wagner Park Pavilion Construction Services Project (the "Project") Request for Proposals ("RFP")**

Date: April 7, 2022

RE: Addendum #8
# of Pages: 37

A) REVISIONS TO RFP:
The following sections of the RFP are revised accordingly:

1. Section 2.4 RFP Minimum Experience Requirements
   The minimum experience requirements set forth below apply to the Proposer (the "Experience Requirements"). Compliance with the Experience Requirements will be determined solely by BPCA. Failure to comply with the Experience Requirements will result in rejection of the Proposal as non-responsive. The selected Proposer must have successfully completed in a timely fashion at least three (3) building construction projects with individual construction contract values that exceeds thirty million dollars ($30,000,000), each within the last ~~ten (10)~~ fifteen (15) years. The experience of the selected Proposer's principal(s) may be used to fulfill these Experience Requirements.
   If the Proposer intends to subcontract any element(s) of the Services that exceeds thirty percent (30%) of the total value of the Services to a single subcontractor or sub-subcontractor (referred to herein as a "Key Subcontractor"), the proposed Key Subcontractor must likewise demonstrate compliance with the Experience Requirements. Once approved, no substitution of a Key Subcontractor will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the BPCA.
2. The following Project sketches and drawings are formally incorporated into the RFP's Exhibit B-1:
   a. Sketch #SK-01: Suggested Pile Test Locations dated March 18, 2022 (included as Attachment #2);
   b. Drawing C603SE: *Water and Sewer Plan 09* (included as Attachment #3); and,
   c. Specification Section 284621.11 – *Addressable Fire-Alarm Systems* is hereby replaced in its entirety to reflect preferred equipment vendors/manufacturers in several locations across Sub-sections 2.2 – 2.10 (included as Attachment #4).

B) BPCA'S RESPONSE TO SUBSTANTIVE QUESTIONS:
The following responses (the "Responses") are provided to questions ("Questions") received by Battery Park City Authority ("BPCA") by 5:00 p.m. Eastern Standard Time on March 25, 2022, in connection with its RFP for the South Battery Park City Resiliency Wagner Park Pavilion Construction Services Project (the "Project"). The Responses are provided in bold, italicized print immediately following the Questions. All capitalized terms shall have the same definitions as provided in the RFP.

1) If using a key subcontractor, does the prime also need the past experience of completing (3) building over $30M, or just the key sub will suffice?
   See Section A – REVISIONS TO RFP, above.

2) Is there a pre-qual to this or is it a one-step procurement (Proposal with lump sum)
   There is no request for qualifications associated with this RFP. This is a one-step procurement.

[NO FURTHER TEXT ON THIS PAGE]

3) Tomorrow's [March 1, 2022] walkthrough is mandatory in order to submit a response to Package 3 exclusively? Or do we need to attend the walkthrough tomorrow in order to respond to Package 2 when it comes out?
Proposers' attendance to either the March 1, 2022 Project Site Walk-Through or the March 10, 2022 Project Site Walk-Through is mandatory to submit a response to this RFP, exclusively. Specific requirements to participate in the forthcoming procurement for the "Package 2" work (related to the Wagner Park Site Work) will be set forth in the forthcoming Request for Proposals for that project.

4) For the South Battery Park City project, we unfortunately were not able to attend the mandatory site visit. Is there any way that another one can be scheduled?
As stated in Addendum #5, released following BPCA's receipt of this Question, a second mandatory Project walk-through took place on March 10, 2022 at 10:00 a.m.

5) Can a digital model of the Project be provided during the bid period? It would [be] greatly beneficial to our Concrete Subcontractors in quantifying their proposals.
No, a digital model of the Project will not be provided during the procurement period for this Project. Proposers and their sub-contractors should quantify proposals based on the documents provided in the RFP and any subsequent Addenda issued since the RFP's release.

6) Exterior Elevation on A-201.00 call out Legend key note 17; Core Drill penetration(s) in CIP Concrete. Based on our experience this process is tedious and can cause flaws to the aesthetics of the architectural concrete. The concrete edges can a.) fracture b.) the core drill equipment must be mounted to the concrete surface causing additional patch holes c.) the 2% +/- color deviation is unattainable d.) exposed rebar will be visible etc. Would it be acceptable to form the circular penetration in the concrete instead of core drilling?
Formed circular openings are not an acceptable alternative to core drilled penetrations in architectural concrete. As noted in the Project's structural drawings provided as <u>Exhibit B-1</u> to the RFP (Drawings S-205.00, S-207.00, etc.), rebar placement will be coordinated with locations of core drilled penetrations. Core drilled penetrations will be evaluated according to Specification #033300 Architectural Cast-In-Place Concrete.

7) Are qualifications/clarifications allowed to accompany the bid submission?
The Proposal submissions are not supposed to include qualifying or request-for-clarification comments. The RFP's designated substantive question-and-answer period, which was extended in accordance with Addendas #3 and #5, is the period in which questions regarding the RFP and the overall procurement process are accepted and considered by BPCA, for its provision of answers to substantive questions via this Addendum #8, along with any subsequent pre-proposal addenda issued by BPCA in response to questions submitted during the timeframe allotted for questions.

8) Drawing A-131 calls out detail elevations on A611 and 612. These drawings are not listed in set. Please provide.
The detail elevation references to A611 and A612 on Drawing A-131 are incorrect. The correct detail elevation references are A608 and A609, respectively. This will be corrected and bubbled in a revised version of Drawing A-131, which will be issued via a forthcoming Addendum.

9) Can you please publish the sign in sheet from the mandatory site visit on 3/1/22.
The attendance lists from the March 1, 2022 and the March 10, 2022 Project Site Walk-Throughs are attached to this Addendum ("Attachment #1").

10) Per the RFP documents, I see that there is performance and payment bond requirements. Is there a possibility for the utilization of Subcontractor Default Insurance, in lieu of the P&P Bonds?
No. The payment and performance bond requirements cannot be waived or modified.

11) Specification Section 316201 Pile Load Testing; Please confirm that static load test(s) are the only type of testing that is required for piles.
Suggested pile test locations are shown on the Sketch #SK-01 dated March 18, 2022 – which, as stated in Section A – REVISIONS TO RFP (above), is attached hereto as Attachment #2. Pile load tests shall include compressive, uplift and lateral load tests in accordance with the requirements of the New York City Building Code. As a minimum, two (2) compressive and tensile load tests are required for a building footprint between 5,000 and 30,000 square feet. At least two (2) lateral load tests shall be performed. Piles driven for the various load tests shall be located in different areas along the perimeter of the proposed Pavilion structure to assist in establishing the estimated length of production piles.

12) Specification Section 316201 Pile Load Testing; please confirm how many test piles are required.
See response to Question #11, above.

13) Specification Section 316217 Steel H Piles. Please confirm as noted in this spec that the test piles indicated in Specification Section 316201 can be used as production piles in lieu of sacrificial piles.
Test piles can be used as production piles in accordance with the requirements of the Project Specifications.

14) Drawing FO-001.00 PILE FOUNDATION NOTES #5 states estimated pile depth ranges from 50' to 55'. Pricing can range dramatically depending on how the geotechnical report is interpreted. We feel it would be in the owners best interest to provide a predetermined depth (for all piles) that shall be used by all for bidding purposes. Otherwise, there is a potential for an unbalanced bid due to GC's and subcontractor's different interpretation of the project documents.
All piles will be driven to bedrock. The bedrock elevation varies throughout the Project Site. Pile lengths should be sufficient to reach bedrock and establish the required pile capacities indicated. The results of the subsurface investigation for this Project are included in the Geotechnical Report dated December 3, 2021, provided as part of <u>Exhibit B-2</u> to the RFP. As the estimated pile depth is a function of the existing grade at the time of the Project's construction, and unless specifically stated otherwise in the Project's Construction Documents, the pile depth is subject to the means and methods used by the selected Proposer. One purpose of the load testing program is to assist in establishing the estimated length of the production piles.

15) Please confirm a Bid Bond will not be required for the project.
As indicated in <u>Exhibit D</u> – Package 1, Section 1-7 of the RFP and stated in <u>Exhibit G</u> – Insurance Requirements, a payment bond and a performance bond are both required for this Project.

16) Please confirm that any Value Engineering Suggestions/pricing etc. shall be addressed after the initial bid submission. All bidders shall propose based upon plans and specs unless instructed differently.
Confirmed.

17) UV Recirculation: Is it acceptable to recirculate the water between the UV and the cistern instead of between the UV and Day Tank? This will eliminate the need for the dedicated pump P3 (1.5 HP, 30 gpm at 40 psi) for recirculation (the cistern transfer pumps can be used for this purpose).
Per the Project's performance specification criteria, it is required by any efficient means that the proposed system be able to produce the required amount of water at the specified water quality.

18) The RFP minimum requirements in Section 2.4 of the RFP states "The selected Proposer must have successfully completed in a timely fashion at least three (3) building construction projects with individual construction contract values that exceeds thirty million dollars ($30,000,000) each within the last ten (10) years." Exhibit D – Section 2 states "Proposers must meet the minimum requirements set forth in Section 2.4 – RFP Minimum Experience Requirements to be eligible to participate in this RFP. BPCA will evaluate the Proposers based on the demonstrated experience of the members of each Proposer's team, including the Proposers' and Key Subcontractors' individual and collective performance history, and experience on previous or current Projects of Similar Scope and Complexity." Exhibit D – Section 2-1 Project Profiles item (d) states, "The Proposer may submit up to eight (8) project profiles." In addition to the three (3) projects required for the minimum requirements, can one of the additional project profiles be completed within the last fifteen (15) years to demonstrate experience and performance history of similar scope and complexity for the work items listed in Exhibit D – Section 2? Please confirm whether a submitted project completed within the last fifteen (15) years would be included in the evaluation.
Yes, this is acceptable. See Section A – REVISIONS TO RFP, above.

19) Spec Section 012100 Allowances. Please confirm that Sub part 3.3. Schedule of Allowance Item B./ Salvage Allowance of $100,000.00 is for additional coverage over and above what has been illustrated on the drawings. All items called out on the drawings and in the specifications to be salvaged shall be included in the base bid.
Confirmed. Please refer to Addendum #6 for a corrected version of Specification 012100.

20) Spec Section 012100 Allowances. Please confirm that Sub part 3.3. Schedule of Allowance Item C./ Owner Requested Signage of $100,000.00 is for additional coverage over and above what has been illustrated on the drawings. All items called out on the drawings and in the specifications 101400 & 101453.10 shall included in the base bid.
Confirmed. Please see response to Question #20, above.

21) Please advise if the GC is required to provide a Site Field office for a.) The Owner and b.) the Architect/Engineer.
No, the selected Proposer (referred to in this Question #22 as the "GC") is not required to provide a Project Site field office for the Project's owner or for its architect/engineer.

22) Spec Section 015000- Temporary Facilities, Services and Controls sub part 3.14 Security Guards/Fire Guards on site; a.) Please confirm if the security is required even during normal working hours. Spec Section 015000 states 24/7 and spec section 017300 3.11/E states only when contractor personnel are not on site b.) Please advise if entire duration is to be Substantial Completion or Final Completion.
Please refer to Addendum #6 for an updated/revised version of Specification #015000. Such Specification #015000, Section 3.14 A. 1. has been revised to reflect that the presence of a security guard is only required at the Project Site when selected Proposer personnel are not on-site (such presence of a security guard will only be required up to final completion unless directed otherwise).

23) Based on our subcontractors' experiences with similar cast-in-place concrete buildings; many of the curved/arched concrete elements of the building detailed as poured in place pose constructability issues pertaining to formwork/pouring. Shotcrete method typically would be used in many of these applications. Will this be acceptable?
Shotcrete is not an acceptable substitute for cast-in-place architectural concrete. Please submit questions for specific constructability issues related to formwork/ pouring.

[NO FURTHER TEXT ON THIS PAGE]

24) Specification section 033300 / 1.8.6.8 Architectural Concrete; Acceptable color deviation via CIE L is 2% +/-. This percentage is extremely stringent and difficult to achieve based on the constructability of the concrete arches/curves. In conjunction with RFI #16 above shotcrete application will be required to construct portions of the building in which the 2% color deviation will not be achievable. Please advise.
The acceptable color range for architectural concrete, patching, and repairs from Reference Installation CIE L*a*b*C*h numbers may be 5% +/- for any criterion. As per Specification 033300, Section 1.8.3 Reference Installation: "The reference installation for color and uniformity shall be determined by the Architect in the Phase 3 Mockup review as per Section 1.6.7.7. The selected reference installations will indicate the acceptance ranges that can be used as a reference for color, degree of finish, and patching."

25) Page L200B states that both package 2 and 3 contractors to complete finish pavement surfaces, stone veneers and planting between allee retaining walls and street. Please clarify scope of work and delineation lines for packages 2 and 3. ***Please refer to the following call-out note on Page L200B's which clarifies the delineation between Package 2 and Package 3: "Package 3 Contractor to complete finish pavement surfaces, stone veneers and planting between allee retaining walls and street."***

26) Re: Chlorine Requirement for treated rainwater used in toilets. In the rainwater treatment train, a chlorine injection requirement is outlined in both drawing C831 and in the specification 221453, Section 2.13. The specification states that the objective is to maintain an unspecified but "low-level residual at the toilet fixtures." This chlorine injection is redundant to the UV sanitation in the treatment train. Whenever possible, we prefer to eliminate this kind of chlorine treatment due to the handling requirements for chlorine, plus operating time and costs. Is residual chlorine in this use a regulatory requirement in the jurisdiction? If not, could you approve a system that did not put chlorine into the toilets?
Chlorine treatment is the requirement as described on Drawing C831 and Specification #221453, Section 2.13. In their Proposals, prospective Proposers must follow this requirement as stated in the aforementioned/respective Project drawing and specification. The plans and specification provide direction for this work.

27) Chlorination: Is it acceptable to chlorinate the water as it enters the Day Tank, instead of chlorinating as it flows (at variable flow rates) from the Day Tank to the toilets?
See response to Question #26, above.

28) Reference Drawings C402SE, C403NE, C403SE, C822. There is a trench drain that runs along the Package 2 / Package 3 demarcation line on drawings C402SE, C403NE & C403SE. Please confirm the trench drain and concrete trench shown on Detail 4 on Drawing C822 are to be furnished and installed by the Package 3 Contractor. Please confirm the pavers, paving, based course, aggregate, drainage course, and Miradrain HC Drain on the Package 2 side of the trench drain are to be installed by the Package 2 Contractor.
Confirmed.

29) Reference Detail 2 / Drawing C832. Please confirm the Walk Off Matt assembly will be installed by the Package 3 Contractor, and the Package 2 Contractor will connect the drain pipes.
Exterior walk off mat drain pipes and connections to be provided and installed by Package 2 contractor. Walk off mats to be provided and installed by Package 3 Contractor.

[NO FURTHER TEXT ON THIS PAGE]

30) Reference Detail 4 / Drawing C832. Please confirm the 4" Downspout Drain from Overlook Planter Subdrain is to be installed by the Package 3 Contractor.
Confirmed.

31) Please provide information, amounts and for Liquidated Damages under this contract.
Information and amounts for liquidated damages will be addressed in the Standard Form of Contract, which will be issued via a forthcoming Addendum.

32) Provide information for the Warranties and Maintenance Period for this contract.
The principal warranty obligations of Contractor will be as set forth below. The Standard Form of Contract, defined in Section 2.2 of the RFP and to be issued as Exhibit H to the RFP in a forthcoming addendum, and will contain the following authoritative language regarding this matter: "Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor shall remove, replace and repair, at its sole cost and expense, all defects in workmanship, Materials, ratings, capacities, or design characteristics occurring in or to the Work including, without limitation, any portion of the Work furnished or performed by any Subcontractor or Materialman, within one year from the date of Final Acceptance. Contractor guarantees that all Work performed and all Materials furnished will conform to the Contract Documents as to kind, quality, functions, design and characteristics of material and workmanship. Contractor hereby acknowledges that BPCA may be required to incur substantial expense if correction of the Work is required particularly if such correction involves the uncovering, removal or replacement of concrete, wiring and piping installed at the Site. If Contractor shall fail to reimburse BPCA for any such expense which may become payable as provided in this paragraph, BPCA shall be entitled to deduct such expense from any payments required to be made by BPCA to Contractor pursuant to this Agreement. Contractor, upon demand, shall pay for any and all damage to any Work affected by or from such defects and all expenses necessary to remove, replace and repair such Work that may be damaged in removing, replacing or repairing such defects…[A] ny other guaranties set forth in the Contract Documents shall be applicable. The Contractor shall obtain all manufacturers' warranties and guarantees of all equipment and materials required by this Contract in the name of BPCA and shall deliver same to BPCA; provided that the delivery of such manufacturers' warranties and guarantees shall in no respect relieve the Contractor of its obligations under the preceding provisions of this Article."

33) Is there any retainage or retainage percentage under this contract?
Retainage information will be addressed in the Standard Form of Contract, which will be issued via a forthcoming Addendum.

34) Is the Project Executive (as defined under Exhibit D) a full-time person for this contract or can he/she be considered a time to time (part-time) basis individual when needed?
The Project Executive can be a part-time position as required.

35) Under Exhibit A – Scope of Work: there is no mention of Flood Barriers scope as determined under specification 107119.16. Please advise if this item is to be covered under the Phase 3 contract and provide locations or reference drawings for this work.
Yes, this will be part of the Pavilion building. It's required at the garage door and adjacent restaurant entry. Refer to drawings A-111, A-442, and FO-203 for information. The flood barrier design will be covered by shop drawings as required in the Specification Section 107119.16 1.03C.

[NO FURTHER TEXT ON THIS PAGE]

36) Under Division 31 – Earthwork, item 316217: Steel H Piles; these are the proposed piles to be used for the foundation of the proposed building. May the Owner consider a different type of pile with same or better properties than the noted H pile?
No substitutions for the H-Pile will be accepted.

37) Please clarify the total contract term of Phase 3 under this project. RFP information 2.2 Anticipated Contract Term, it calls for "The anticipated term of the contract award pursuant to this RFP ("the Contract") will be 30 months". However, in the same document, under item 2.3 Key Project Milestones it refers to Substantial Completion: 729 CCD or 24 Months. Also, the Final Completion as 819 CCD or 27 months from NTP. Which is the total contract term (27 months or 30 months)?
The "Contract Term" set forth in the agreement will be 30 months. However, the Contract Term is primarily an administrative date- the Contractor will be bound contractually to the Substantial Completion and Final Completion dates, which are anticipated to be as described in the RFP.

38) We are assuming this is a Tax Exempt project. Please confirm.
BPCA is exempt from payment of sales and compensating use taxes of the State of New York and of cities and counties thereof on all materials that will become an integral component of this project.

39) Drawing C603NE refers to adjoint drawing C603SE. This drawing was not part of the construction documents. Please provide.
As stated in Section A – REVISIONS TO RFP (above), Drawing C603SE is provided hereto as Attachment #3.

40) Is there any asbestos abatement in the existing building or Phase 3? If so; can you provide a summary and quantities of asbestos for our construction phase only.
Based on the age of the building we would not expect to see Asbestos Containing Materials (ACM), and we are not aware of any abatement that has occurred. If the Contractor encounters any ACM, or PACM (presumed Asbestos Containing Materials) they are to notify the Authority immediately.

41) The specifications did not mention any manufacturers. Is there a preferred brand of fire alarm manufacturer for this project, or is it open spec?
Yes; as stated Section A – REVISIONS TO RFP (above), the three (3) firms that qualify as preferred fire alarm manufacturers are listed in the revised version of Specification Section 284621.11 (attached hereto as Attachment #4).

42) Please confirm no Temporary Field Office for the Owner or any supplies are required under this Contract?
No, the selected Proposer is not required to provide a Project Site field office for the Owner. LiRo's trailers will be provided under the forthcoming Package 2 and 4 Contracts for the South BPC Resiliency Project.

43) How many total Photos are required for this contract?
Requirements for photos are specified in Specification 013233 – Photographic Records.

44) We believe that due to the nature of the project and the large expense associated with it, we would like to request additional 2 weeks postponement to solicit additional questions.
An extension of the question-and-answer period through April 13, 2022, was granted via Addendum #7.

[NO FURTHER TEXT ON THIS PAGE]

45) Exhibit F New York State Diversity Forms requires the proposer to submit a completed MWBE Utilization Plan (Exhibit F-2) with its Proposal. Given that it is difficult to finalize the MWBE subcontracts prior to the Proposal submission, will BPCA permit the Proposer to insert to be determined ("TBD") instead of the MWBE subcontractor's name?
Yes, this is permissible. Under this scenario, the Proposer should promptly notify BPCA as soon as such MWBE sub-contractor(s) are identified.

46) Exhibit F New York State Diversity Forms requires the proposer to submit a completed SDVOB Utilization Plan (Exhibit F-3) with its Proposal. Given that it is difficult to finalize the SDVOB subcontracts prior to the Proposal submission, will BPCA permit the Proposer to insert to be determined ("TBD") instead of the SDVOB subcontractor's name?
Yes, this is permissible. Under this scenario, the Proposer should promptly notify BPCA as soon as such SDVOB sub-contractor(s) are identified.

By signing the line below, I am acknowledging that all pages of this Addendum #8 have been received, reviewed and understood, and will be incorporated into the Proposal submitted. This document must be attached to the Proposal for consideration.

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

Number of pages received:_____ <fill in>

Distributed to: All prospective Proposers

[NO FURTHER TEXT ON THIS PAGE]

ATTACHMENT #1
PROJECT SITE WALK-THROUGH
03/01/22 AND 03/10/22 ATTENDANCE SHEETS

(Attached)

BATTERY PARK CITY AUTHORITY

One World Financial Center

NEW * YORK

MEETING SIGN-IN SHEET

Subject: South Battery Park City Resiliency Project - Site Walkthrough

Date: 3/1/2022

NAME	AFFILIATION	TELEPHONE	FAX
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PERCY CASANI	KELLER	973-332-6893	N/a.
DAN LAURI	SLS	646-484-1751	N/A
STEVE ALESSIO	SLS	917-751-3453	N/A
JOE ASCOLESE	PJS	914 419 1203	"
LAURA GRAM	LiRo	9173664124	
Ruslan Duda	Urban	718-478-3021	
Tina Ezratty	Posillico	315-664-1088	
Tom Ratliff	Kokolakis	240-876-5474	N/A
MATT STURM	EW HOWELL	516-390-2177	N/A
MIKE REVELLO	STATEWIDE	646 472 4963	N/A
PAUL PANCHO	CITNALTA CONST	631-563-1110	N/A
Bob Zirkel	EW Howell	516-250-5289	NA
Rachel Dencker	AECOM	347 925 3108	NA
[illegible]	SDL	631 777 1800	
Bob Schaaf	PADILLA CONST	631 428 7207	NA
Michael Gallo	Forte	631-332-8380	NA

BATTERY PARK CITY AUTHORITY

One World Financial Center

NEW * YORK

MEETING SIGN-IN SHEET

Subject: South BATTERY PARK CITY Resiliency Project Site WALK through

Date: 3/1/2022

NAME	AFFILIATION	TELEPHONE	FAX
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TELEPHON.DOC

BATTERY PARK CITY AUTHORITY

One World Financial Center

NEW * YORK

MEETING SIGN-IN SHEET

Subject: South Battery Park City Resiliency Project - Site Walkthrough

Date: 3/10/2022

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Laura Gray	LiRo	9173064124	GKAYL@LIRO.com
Ryan Tansey	DeMatteis	516-285-5500	RT@Dematteisorg.com
Dan VanDeKleek	DeMatteis	516 2855500	DVC@Dematteisorg.com
Manuel Dominguez	NY Asphalt Inc.	862-812-8115	mannyr@nyasphalt.com
Sanjay Bhakdoni	Cube Construction Services	201-341-6697	sanjayb@cubecsllc.com
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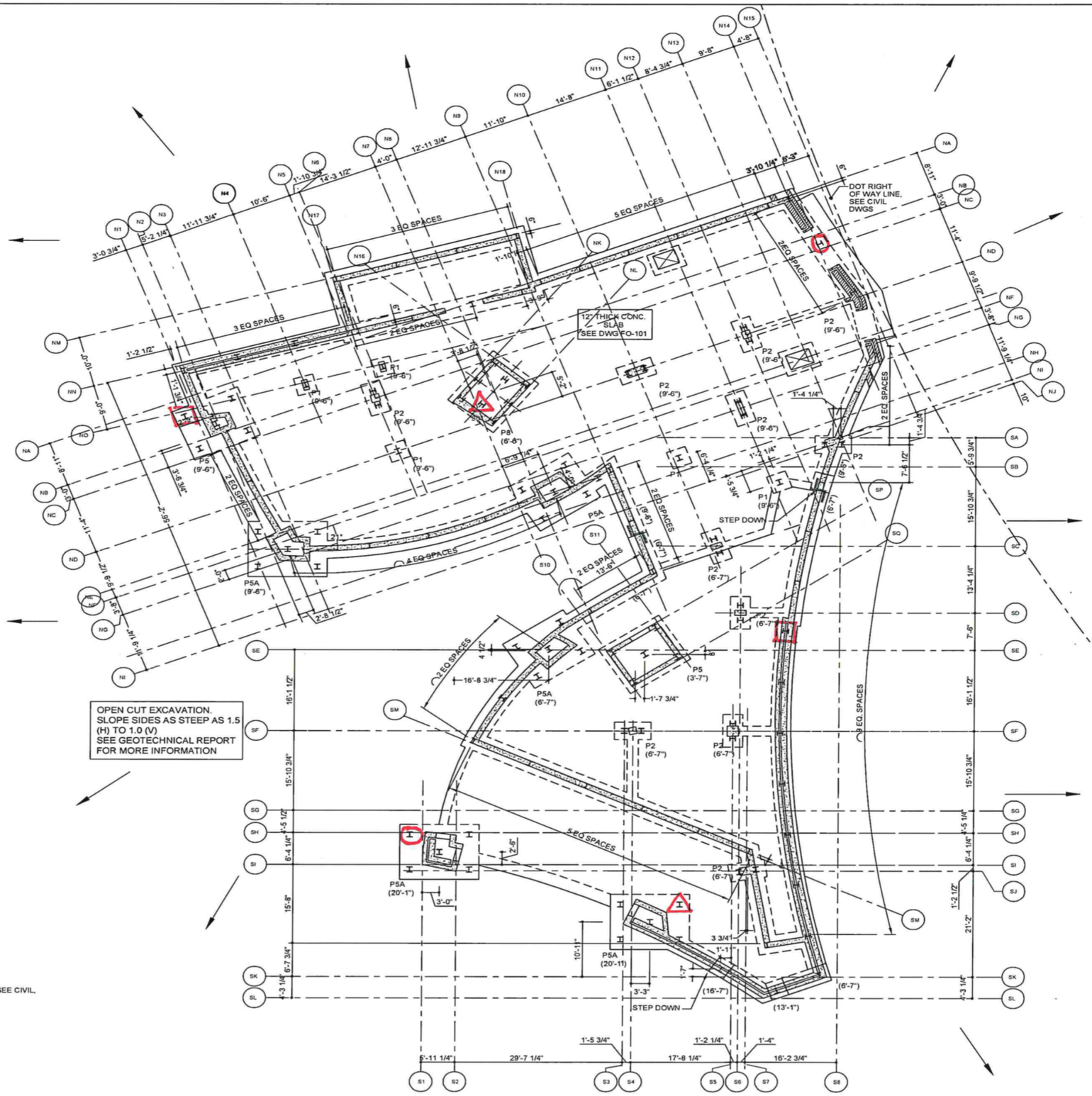
Joe Crowley	NY Asphalt Inc	718-966-6466	Jcrowley@nyasphalt.com
John Bua	Steven Bubner S.D.L.	631-777-1800	JBua@sdlco.com
Jim Buchan	Prismatic Development	201-408-0011	JBuchan@PrisDev.com
Chris Carter	LiRo	646.269.8185	CarterC@LiRo.com
Jose Rosado	BPCA	646-210-7581	N/A
Mike Lamancusa	BPCA	212-417-4335	N/A

ATTACHMENT #2
SKETCH #SK-01 DATED
MARCH 18, 2022

(Attached)

△ Compression
○ Lateral
□ Uplift



1 FO100 PILE LAYOUT PLAN
SCALE: 3/32"=1'-0"

NOTES:

1. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCH. DRAWINGS
2. TOP OF PILE CAP ELEVATION TO BE 1'-0" BELOW TOP OF SLAB U.O.N.
3. FOR FOUNDATION SECTIONS AND DETAILS, SEE DRAWING FO200 SERIES.
4. PILE CAPS TO BE CENTERED ON COLUMNS OR WALLS, U.O.N.
5. FOR FOUNDATION NOTES, SEE DRAWINGS FO001 AND FO002.
6. FOR COLUMN SCHEDULE, SEE DRAWING S400.
7. FOR ALL PROPOSED AND EXISTING UNDERGROUND UTILITY CONNECTIONS, SEE CIVIL, PLUMBING, ELECTRICAL AND SITE SURVEY DRAWINGS.

LEGEND:

1. P_{XX} INDICATES PILE CAP SIZE, SEE DWG FO300.00
2. (.....) INDICATES TOP OF PILE CAP ELEVATION U.O.N.
3. INDICATES STEP UP AND STEP DOWN.
4. INDICATES COLUMN ABOVE AND COLUMN BELOW.

AECOM

SK-01
SOUTH BATTERY PARK CITY - RESILIENCY PROJECT
03-18-2022

ATTACHMENT #3
DRAWING C603SE:
WATER AND SEWER PLAN 09
Revised Compared to Exhibit B-1 of RFP

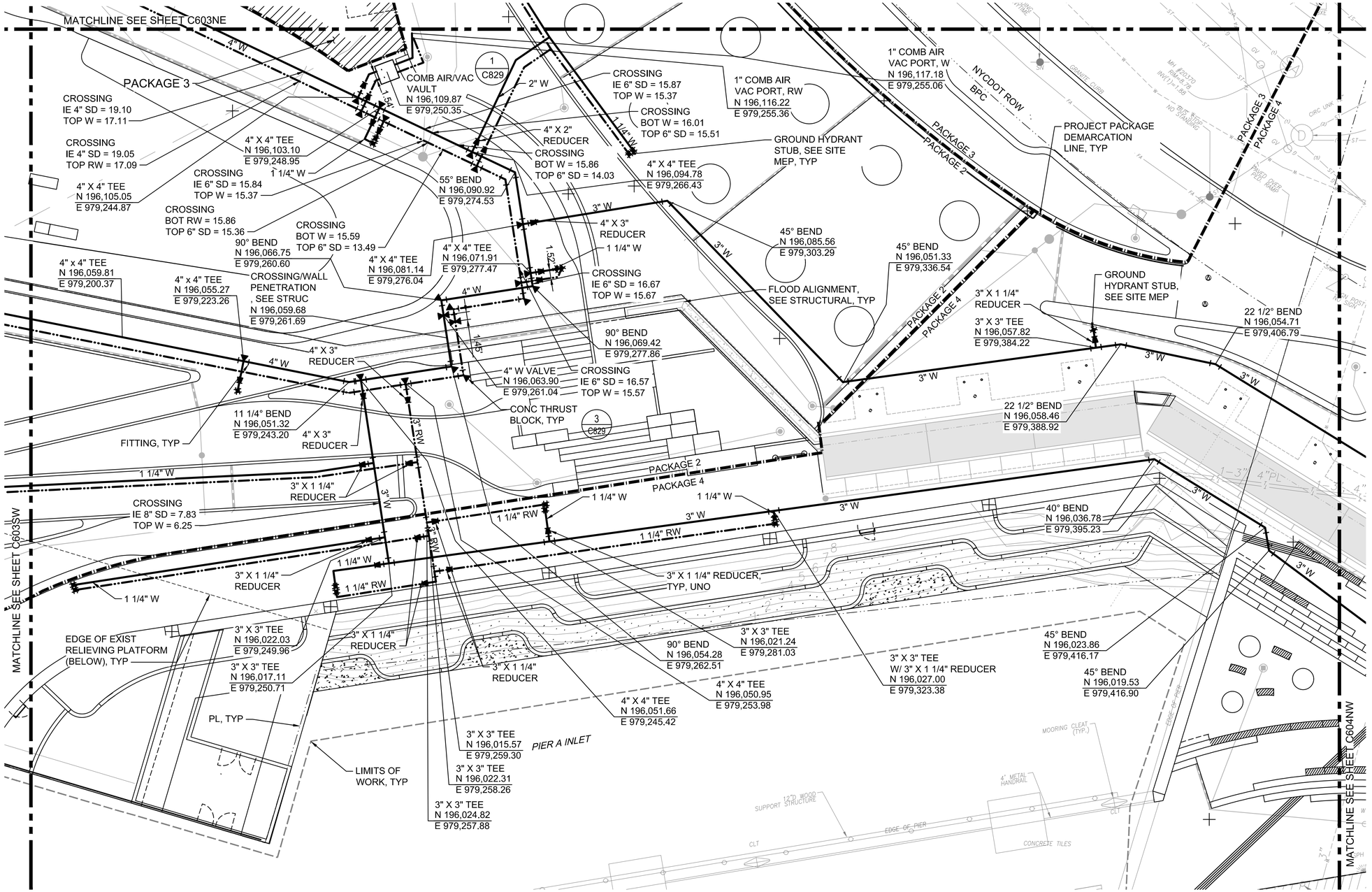
(Attached)

ANSI D 22" x 34"

NOTES:

1. SEE SHEET C001 FOR LEGEND AND ABBREVIATIONS.

2. SEE SHEET C002 FOR GENERAL NOTES, WATER NOTES, AND SANITARY SEWER .



GRAPHIC SCALE: 1" = 10'

10 5 0 5 10 20 30

AECOM

PROJECT

SOUTH BATTERY PARK CITY RESILIENCY DESIGN SERVICES

CLIENT

HUGH L. CAREY BATTERY PARK CITY AUTHORITY

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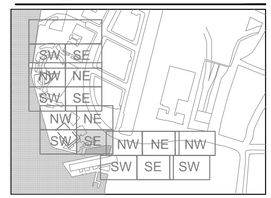
KEY PLAN



REGISTRATION

STATE OF NEW YORK
MATTHEW J. JONES
101122-1
LICENSED PROFESSIONAL ENGINEER
12/21/21

ISSUE/REVISION

I/R	DATE	DESCRIPTION
I	JAN 2022	BID SET

Designed By:	B. DUPUY
Drawn By:	J. POPE
Checked By:	S. HALUSCHAK
Approved By:	M. JONES

PROJECT/TERM CONTRACT NUMBER

Contract No. 18-2586

SHEET TITLE

WATER AND SEWER PLAN 09

SHEET NUMBER

C603SE

Last saved by: BED (2021-12-21) Last Plotted: 2021-12-21
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ATTACHMENT #4
SPECIFICATION SECTION 284621.11 –
ADDRESSABLE FIRE-ALARM SYSTEMS
Revised Compared to Exhibit B-1 of RFP

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. Addressable fire-alarm system.
2. Fire-alarm control Panel (FACP).
3. Manual fire-alarm boxes.
4. System smoke detectors.
5. Duct smoke detectors.
6. Heat detectors.
7. Fire-alarm notification appliances.
8. Exit-marking audible notification appliances.
9. Fire-alarm remote annunciators.
10. Fire-alarm addressable interface devices.
11. Digital alarm communicator transmitters (DACTs).

1.3 DEFINITIONS

A. DACT: Digital alarm communicator transmitter.

B. EMT: Electrical metallic tubing.

C. FACP: Fire-alarm control Panel.

D. High-Performance Building: A building that integrates and optimizes on a life-cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.

E. Mode: The terms "Active Mode," "Off Mode," and "Standby Mode" are used as defined in the 2007 Energy Independence and Security Act (EISA).

F. NICET: National Institute for Certification in Engineering Technologies.

G. PC: Personal computer.

H. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:

1. Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power supply having rated output not

greater than 150 V and 5 A, allowing use of alternate wiring methods complying with NFPA 70, Article 725.

2. Low Voltage: Listed and labeled for use in circuits supplied by a Class 1 or other power supply having rated output not greater than 1000 V, requiring use of wiring methods complying with NFPA 70, Article 300, Part I.

1.4 ACTION SUBMITTALS

A. Approved Permit Submittal: Submittals must be approved by authorities having jurisdiction prior to submitting them to Architect.

B. Product Data: For each type of product, including furnished options and accessories.

1. Include construction details, material descriptions, dimensions, profiles, and finishes.
2. Include rated capacities, operating characteristics, and electrical characteristics.

C. Shop Drawings: For fire-alarm system.

1. Comply with recommendations and requirements in "Documentation" section of "Fundamentals" chapter in NFPA 72.
2. Include plans, elevations, sections, and details, including details of attachments to other Work.
3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
4. Detail assembly and support requirements.
5. Include voltage drop calculations for notification-appliance circuits.
6. Include battery-size calculations.
7. Include input/output matrix.
8. Include written statement from manufacturer that equipment and components have been tested as a system and comply with requirements in this Section and in NFPA 72.
9. Include performance parameters and installation details for each detector.
10. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
11. Provide program report showing that air-sampling detector pipe layout balances pneumatically within airflow range of air-sampling detector.
12. Provide control wiring diagrams for fire-alarm interface to HVAC; coordinate location of duct smoke detectors and access to them.

    a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
    b. Show field wiring and equipment required for HVAC unit shutdown on alarm.
    c. Locate detectors in accordance with manufacturer's written instructions.
    d. Show air-sampling detector pipe routing.
13. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams.

D. Delegated Design Submittal: For notification appliances and smoke and heat detectors, in addition to submittals listed above, indicate compliance with performance requirements and

design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1. Drawings showing location of each notification appliance and smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of device.
2. Design Calculations: Calculate requirements for selecting spacing and sensitivity of detection, complying with NFPA 72. Calculate spacing and intensities for strobe signals and sound-pressure levels for audible appliances.
3. Indicate audible appliances required to produce square wave signal per NFPA 72.

1.5 INFORMATIONAL SUBMITTALS

A. Certificates:

1. Seismic Performance Certificates: For FACP, accessories, and components, from manufacturer. Include the following information:

    a. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
    b. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
    c. Detailed description of equipment anchorage devices on which certification is based and their installation requirements.

B. Field quality-control reports.

C. Qualification Statements: For Installer.

D. Sample Warranty: Submittal must include line item pricing for replacement parts and labor.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.

    a. Comply with "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
    b. Complete wiring diagrams showing connections between devices and equipment. Each conductor must be numbered at every junction point with indication of origination and termination points.
    c. Riser diagram.
    d. Device addresses.
    e. Air-sampling system sample port locations and modeling program report showing layout meets performance criteria.
    f. Record copy of site-specific software.
    g. Provide "Inspection and Testing Form" in accordance with "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:

1) Equipment tested.
2) Requirements and recommendations related to results of maintenance.
3) Manufacturer's user training manuals.

h. Manufacturer's required maintenance related to system warranty requirements.
i. Abbreviated operating instructions for mounting at FACP and each annunciator.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup:
3. Device address list.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Material: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps for Remote Indicating Lamp Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.
2. Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.
3. Smoke Detectors, Fire Detectors: Quantity equal to 10 percent of amount of each type installed, but no fewer than one unit of each type.
4. Audible and Visual Notification Appliances: 2 of each type installed.
5. Fuses: 2 of each type installed in system. Provide in box or cabinet with compartments marked with fuse types and sizes.

1.8 QUALITY ASSURANCE

A. Installer Qualifications:

1. Personnel must be trained and certified by manufacturer for installation of units required for this Project.
2. Installation must be by personnel certified by NICET as fire-alarm Level 2 technician.
3. Obtain certification by NRTL in accordance with NFPA 72.
4. Licensed or certified by authorities having jurisdiction.

1.9 FIELD CONDITIONS

A. Seismic Conditions: Unless otherwise indicated on Contract Documents, specified Work in this Section must withstand the seismic hazard design loads determined in accordance with ASCE/SEI 7 for installed elevation above or below grade.

1. The term "withstand" means "unit must remain in place without separation of parts from unit when subjected to specified seismic design loads."

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail because of defects in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ADDRESSABLE FIRE-ALARM SYSTEM

A. Description:

1. Noncoded, UL-certified addressable system, with multiplexed signal transmission and horn-and-strobe notification for evacuation.

B. Performance Criteria:

1. Regulatory Requirements:

a. Fire-Alarm Components, Devices, and Accessories: Listed and labeled by a NRTL in accordance with NFPA 70 for use with selected fire-alarm system and marked for intended location and application.

2. General Characteristics:

a. Automatic sensitivity control of certain smoke detectors.
b. Fire-alarm signal initiation must be by one or more of the following devices:

1) Manual stations.
2) Heat detectors.
3) Smoke detectors.
4) Duct smoke detectors.
5) Automatic sprinkler system water flow.
6) Fire standpipe system.
7) Dry system pressure flow switch.
8) Fire pump running.

c. Fire-alarm signal must initiate the following actions:

1) Continuously operate alarm notification appliances, including voice evacuation notices.
2) Identify alarm and specific initiating device at FACP.
3) Transmit alarm signal to remote alarm receiving station.
4) Release fire and smoke doors held open by magnetic door holders.
5) Switch HVAC equipment controls to fire-alarm mode.
6) Close smoke dampers in air ducts of designated air-conditioning duct systems.

7) Recall elevators to primary or alternate recall floors.
8) Activate elevator power shunt trip.

d. Supervisory signal initiation must be by one or more of the following devices and actions:
1) High- or low-air-pressure switch of dry-pipe or preaction sprinkler system.
2) Elevator shunt-trip supervision.
3) Independent fire-detection and -suppression systems.
4) Fire pump is running.
5) Fire pump has lost power.
6) Power to fire pump has phase reversal.

e. System trouble signal initiation must be by one or more of the following devices and actions:
1) Loss of primary power at FACP.
2) Ground or single break in internal circuits of FACP.
3) Break in standby battery circuitry.
4) Failure of battery charging.
5) Abnormal position of switch at FACP or annunciator.

f. System Supervisory Signal Actions:

1) Initiate notification appliances.
2) After time delay of 2 minutes, transmit trouble or supervisory signal to remote alarm receiving station.

2.2 FIRE-ALARM CONTROL UNIT (FACP)

A. Manufacturers:
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. Description: Field-programmable, microprocessor-based, modular, power-limited design with electronic modules.

C. Performance Criteria:

1. Regulatory Requirements: Comply with NFPA 72 and UL 864.
2. General Characteristics:

a. System software and programs must be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining information through failure of primary and secondary power supplies.
b. Include real-time clock for time annotation of events on event recorder and printer.
c. Provide communication between FACP and remote circuit interface panels, annunciators, and displays.
d. FACP must be listed for connection to central-station signaling system service.
e. Provide nonvolatile memory for system database, logic, and operating system and event history. System must require no manual input to initialize in the event of

complete power down condition. FACP must provide minimum 500-event history log.

f. Addressable Initiation Device Circuits: FACP must indicate which communication zones have been silenced and must provide selective silencing of alarm notification appliance by building communication zone.

1) Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: FACP must be listed for releasing service.

g. Fire-Alarm Annunciator: Arranged for interface between human operator at FACP and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.

1) Annunciator and Display: LCD, 80 characters, minimum.
2) Keypad: Arranged to permit entry and execution of programming, display, and control commands.

h. Alphanumeric Display and System Controls: Arranged for interface between human operator at FACP and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.

1) Annunciator and Display: LCD, 3 line(s) of 80 characters, minimum.

i. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:
1) Install fault circuit isolators to comply with circuit performance requirements of NFPA 72 or with manufacturer's written instructions, whichever is more conservative.

j. Serial Interfaces:

1) One dedicated RS 485 port for central-station operation using point ID DACT.

k. Stairwell and Elevator Shaft Pressurization: Provide output signal using addressable relay to start stairwell and elevator shaft pressurization system. Signal must remain on until alarm conditions are cleared and fire-alarm system is reset. Signal must not stop in response to alarm acknowledge or signal silence commands.

1) Pressurization starts when alarm is received at FACP.
2) Alarm signals from smoke detectors at pressurization air supplies have higher priority than other alarm signals that start system.

l. Smoke-Alarm Verification:

1) Initiate audible and visible indication of "alarm-verification" signal at FACP.
2) Activate approved "alarm-verification" sequence at FACP and detector.

m. Notification-Appliance Circuit:

1) Audible appliances must sound in three-pulse temporal pattern, as defined in NFPA 72.
2) Where notification appliances provide signals to sleeping areas, alarm signal must be 520 Hz square wave with intensity 15 dB above average ambient sound level or 5 dB above maximum sound level, or at least 75 dB(A-weighted), whichever is greater, measured at pillow.
3) Visual alarm appliances must flash in synchronization where multiple appliances are in same field of view, as defined in NFPA 72.

n. Elevator Recall: Initiate by one of the following alarm-initiating devices:

1) Elevator lobby detectors except lobby detector on designated floor.
2) Smoke detectors in elevator machine room.
3) Smoke detectors in elevator hoistway.

o. Elevator controller must be programmed to move cars to alternate recall floor if lobby detectors located on designated recall floors are activated.

p. Water-flow alarm connected to sprinkler in elevator shaft and elevator machine room must shut down elevators associated with location without time delay.

1) Water-flow switch associated with sprinkler in elevator pit may have delay to allow elevators to move to designated floor.

q. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke-barrier walls must be connected to fire-alarm system.

r. Remote Smoke-Detector Sensitivity Adjustment: Controls must select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and print out final adjusted values on system printer.

s. Status Annunciator: Indicate status of various voice/alarm speaker zones and status of firefighters' two-way telephone communication zones.

t. Preamplifiers, amplifiers, and tone generators must automatically transfer to backup units, on primary equipment failure.

u. Printout of Events: On receipt of signal, print alarm, supervisory, and trouble events. Identify zone, device, and function. Include type of signal (alarm, supervisory, or trouble) and date and time of occurrence. Differentiate alarm signals from other printed indications. Also, print system reset event, including same information for device, location, date, and time. Commands initiate printing of list of existing alarm, supervisory, and trouble conditions in system and historical log of events.

v. Primary Power: 24 V(dc) obtained from 120 V(ac) service and power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and DACT must be powered by 24 V(dc) source.

w. Alarm current draw of entire fire-alarm system must not exceed 80 percent of power-supply module rating.

x. Secondary Power: 24 V(dc) supply system with batteries, automatic battery charger, and automatic transfer switch.

D. Accessories:

1. Instructions: Computer printout or typewritten instruction card mounted behind plastic or glass cover in stainless steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe functional operation of system under normal, alarm, and trouble conditions.
2. Preaction System Functionality:

a. Initiate Presignal Alarm: This function must cause audible and visual alarm and indication to be provided at FACP. Activation of initiation device connected as part of preaction system must be annunciated at FACP only, without activation of general evacuation alarm.

2.3 MANUAL FIRE-ALARM BOXES

A. Manufacturers
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes must be finished in red with molded, raised-letter operating instructions in contrasting color; must show visible indication of operation; and must be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

1. Single-action mechanism, type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to FACP.
2. Station Reset: Key- or wrench-operated switch.
3. Indoor Protective Shield: Factory-fabricated, clear plastic enclosure hinged at top to permit lifting for access to initiate alarm. Lifting cover actuates integral battery-powered audible horn intended to discourage false-alarm operation.
4. Weatherproof Protective Shield: Factory-fabricated, clear plastic enclosure hinged at top to permit lifting for access to initiate alarm.
5. Able to be used in all areas.

2.4 SYSTEM SMOKE DETECTORS

A. Photoelectric Smoke Detectors:

1. Manufacturers
a. Edwards Systems Technology, EST
b. SimplexGrinnell LP; a Tyco International Company
c. Notifier, by Honeywell

2. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 268.

b. General Characteristics:

1) Detectors must be four-wire type.
2) Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.
3) Base Mounting: Detector and associated electronic components must be mounted in twist-lock module that connects to fixed base. Provide terminals in fixed base for connection to building wiring.
4) Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
5) Integral Visual-Indicating Light: LED type, indicating detector has operated.
6) Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.
7) Operator at FACP, having designated access level, must be able to manually access the following for each detector:

a) Primary status.
b) Device type.
c) Present average value.
d) Present sensitivity selected.
e) Sensor range (normal, dirty, etc.).

8) Fixed-temperature sensing characteristic of combination smoke- and heat-detection units must be independent of rate-of-rise sensing and must be settable at FACP to operate at 135 or 155 deg F (57 or 68 deg C).
9) Multiple levels of detection sensitivity for each sensor.
10) Sensitivity levels based on time of day.

2.5 DUCT SMOKE DETECTORS

A. Manufacturers
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. Description: Photoelectric-type, duct-mounted smoke detector.

C. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.
b. UL 268A.

2. General Characteristics:

a. Detectors must be four-wire type.
b. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.
c. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
d. Integral Visual-Indicating Light: LED type, indicating detector has operated.
e. Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.
f. Operator at FACP, having designated access level, must be able to manually access the following for each detector:

1) Primary status.
2) Device type.
3) Present average value.
4) Present sensitivity selected.
5) Sensor range (normal, dirty, etc.).

g. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with supplied detector for smoke detection in HVAC system ducts.
h. Each sensor must have multiple levels of detection sensitivity.
i. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
j. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.

2.6 HEAT DETECTORS

A. Combination-Type Heat Detectors:

1. Manufacturers:
a. Edwards Systems Technology, EST
b. SimplexGrinnell LP; a Tyco International Company
c. Notifier, by Honeywell

2. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 521.

b. General Characteristics:

1) Temperature sensors must test for and communicate sensitivity range of device.

c. Actuated by fixed temperature of 135 deg F (57 deg C) or rate of rise that exceeds 15 deg F (8 deg C) per minute unless otherwise indicated.

2.7 FIRE-ALARM NOTIFICATION APPLIANCES

A. Fire-Alarm Audible Notification Appliances:

1. Manufacturers:
- **a. Edwards Systems Technology, EST**
- **b. SimplexGrinnell LP; a Tyco International Company**
- **c. Notifier, by Honeywell**

2. Description: Horns, bells, or other notification devices that cannot output voice messages.
3. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.

b. General Characteristics:

1) Individually addressed, connected to signaling-line circuit, equipped for mounting as indicated, and with screw terminals for system connections.
2) Connected to notification-appliance signal circuits, zoned as indicated, equipped for mounting as indicated, and with screw terminals for system connections.
3) Audible notification appliances must have functional humidity range of 10 to 90 percent relative humidity.
4) ISO Temporal 3 Evacuation Tone: at 24 V.
5) ISO Temporal 3 Alert Tone: at 24 V.
6) Horns: Electric-vibrating-polarized type, 24 V(dc); with provision for housing operating mechanism behind grille. Comply with UL 464. Horns must produce sound-pressure level of 90 dB(A-weighted), measured 10 ft. (3 m) from horn, using coded signal prescribed in UL 464 test protocol.
7) Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.

B. Fire-Alarm Visible Notification Appliances:

1. Manufacturers:
- **a. Edwards Systems Technology, EST**
- **b. SimplexGrinnell LP; a Tyco International Company**
- **c. Notifier, by Honeywell**

2. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 1971.

b. General Characteristics:

1) Rated Light Output:

a) 15 to 110 cd.
b) 15/30/75/110 cd, selectable in field.

2) Clear or nominal white polycarbonate lens mounted on aluminum faceplate.
3) Mounting: Wall mounted unless otherwise indicated.
4) For units with guards to prevent physical damage, light output ratings must be determined with guards in place.
5) Flashing must be in temporal pattern, synchronized with other units.
6) Strobe Leads: Factory connected to screw terminals.
7) Mounting Faceplate: Factory finished, red or white.

2.8 FIRE-ALARM REMOTE ANNUNCIATORS

A. Manufacturers:
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.

2. General Characteristics:

a. Annunciator functions must match those of FACP for alarm, supervisory, and trouble indications. Manual switching functions must match those of FACP, including acknowledging, silencing, resetting, and testing.

1) Mounting: Flush cabinet, NEMA 250, Type 1.

b. Display Type and Functional Performance: Alphanumeric display and LED indicating lights must match those of FACP. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.9 FIRE-ALARM ADDRESSABLE INTERFACE DEVICES

A. Manufacturers:
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. Performance Criteria:

1. Regulatory Requirements:

   a. NFPA 72.

2. General Characteristics:

   a. Include address-setting means on module.
   b. Store internal identifying code for control panel use to identify module type.
   c. Listed for controlling HVAC fan motor controllers.
   d. Monitor Module: Microelectronic module providing system address for alarm-initiating devices for wired applications with normally open contacts.
   e. Integral Relay: Capable of providing direct signal to elevator controller to initiate elevator recall.

      1) Allow control panel to switch relay contacts on command.
      2) Have minimum of two normally open and two normally closed contacts available for field wiring.

   f. Control Module:

      1) Operate notification devices.
      2) Operate solenoids for use in sprinkler service.

2.10 DIGITAL ALARM COMMUNICATOR TRANSMITTERS (DACTs)

A. Manufacturers:
1. Edwards Systems Technology, EST
2. SimplexGrinnell LP; a Tyco International Company
3. Notifier, by Honeywell

B. Performance Criteria:

1. Regulatory Requirements:

   a. NFPA 72.

2. General Characteristics:

   a. DACT must be acceptable to remote central station and must be listed for fire-alarm use.
   b. Functional Performance: Unit must receive alarm, supervisory, or trouble signal from FACP and automatically capture 2 telephone line(s) and dial preset number for remote central station. When contact is made with central station(s), signals must be transmitted. If service on either line is interrupted for longer than 45 seconds, transmitter must initiate local trouble signal and transmit signal indicating loss of telephone line to remote alarm receiving station over remaining line. Transmitter must automatically report telephone service restoration to central station. If service is lost on both telephone lines, transmitter must initiate local trouble signal.
   c. Local functions and display at DACT must include the following:

1) Verification that both telephone lines are available.
2) Programming device.
3) LED display.
4) Manual test report function and manual transmission clear indication.
5) Communications failure with central station or FACP.

d. Digital data transmission must include the following:

1) Address of alarm-initiating device.
2) Address of supervisory signal.
3) Address of trouble-initiating device.
4) Loss of ac supply.
5) Loss of power.
6) Low battery.
7) Abnormal test signal.
8) Communication bus failure.

e. Secondary Power: Integral rechargeable battery and automatic charger.
f. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.

1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.

B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.

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

3.2 INSTALLATION OF EQUIPMENT

A. Comply with NECA 305, NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

1. Devices placed in service before other trades have completed cleanup must be replaced.
2. Devices installed, but not yet placed, in service must be protected from construction dust, debris, dirt, moisture, and damage in accordance with manufacturer's written storage instructions.

B. Manual Fire-Alarm Boxes:

1. Install manual fire-alarm box in normal path of egress within 60 inch (1520 mm) of exit doorway.
2. Mount manual fire-alarm box on background of contrasting color.
3. Operable part of manual fire-alarm box must be between 42 and 48 inch (1060 and 1220 mm) above floor level. Devices must be mounted at same height unless otherwise indicated.

C. Smoke- and Heat-Detector Spacing:

1. Comply with "Smoke-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
2. Comply with "Heat-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
3. Smooth ceiling spacing must not exceed 30 ft. (9 m).
4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas must be determined in accordance with Annex Ain NFPA 72.
5. HVAC: Locate detectors not closer than 36 inch (910 mm) from air-supply diffuser or return-air opening.
6. Lighting Fixtures: Locate detectors not closer than 12 inch (300 mm) from lighting fixture and not directly above pendant mounted or indirect lighting.

D. Install cover on each smoke detector that is not placed in service during construction. Cover must remain in place except during system testing. Remove cover prior to system turnover.

E. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend full width of duct. Tubes more than 36 inch (9100 mm) long must be supported at both ends.

1. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.

F. Air-Sampling Smoke Detectors: If using multiple pipe runs, runs must be pneumatically balanced.

G. Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location. Do not install smoke detectors in sprinklered elevator shafts.

H. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within dwelling or suite, they must be connected so that operation of smoke alarm causes alarm in smoke alarms to sound.

I. Remote Status and Alarm Indicators: Install in visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.

J. Audible Alarm-Indicating Devices: Install not less than 6 inch (150 mm) below ceiling. Install bells and horns on flush-mounted back boxes with device-operating mechanism concealed behind grille. Install devices at same height unless otherwise indicated.

K. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inch (150 mm) below ceiling. Install devices at same height unless otherwise indicated.

L. Device Location-Indicating Lights: Locate in public space near device they monitor.

3.3 ELECTRICAL CONNECTIONS

A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

C. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.

D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate must be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."

3.4 CONTROL CONNECTIONS

A. Install control and electrical power wiring to field-mounted control devices.

B. Connect control wiring in accordance with Section 260523 "Control-Voltage Electrical Power Cables."

3.5 PATHWAYS

A. Pathways must be installed in EMT.

B. Exposed EMT must be painted red enamel.

3.6 CONNECTIONS

A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system.

1. Verify that hardware and devices are listed for use with installed fire-alarm system before making connections.

B. Make addressable connections with supervised interface device to the following devices and systems. Install interface device less than 36 inch (910 mm) from device controlled. Make addressable confirmation connection when such feedback is available at device or system being controlled.

1. Alarm-initiating connection to stairwell and elevator-shaft pressurization systems.
2. Smoke dampers in air ducts of designated HVAC duct systems.
3. Magnetically held-open doors.
4. Electronically locked doors and access gates.
5. Alarm-initiating connection to elevator recall system and components.
6. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
7. Supervisory connections at valve supervisory switches.

3.7 IDENTIFICATION

A. Install framed instructions in location visible from FACP.

3.8 GROUNDING

A. Ground FACP and associated circuits in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

B. Ground shielded cables at control panel location only. Insulate shield at device location.

3.9 FIELD QUALITY CONTROL

A. Field tests must be witnessed by Engineer.

B. Administrant for Tests and Inspections:

1. Owner will engage qualified testing agency to administer and perform tests and inspections.
2. Engage qualified testing agency to administer and perform tests and inspections.
3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
4. Administer and perform tests and inspections.

C. Tests and Inspections:

1. Visual Inspection: Conduct visual inspection prior to testing.

    a. Inspection must be based on completed record Drawings and system documentation that is required by "Completion Documents, Preparation" table in "Documentation" section of "Fundamentals" chapter in NFPA 72.
    b. Comply with "Visual Inspection Frequencies" table in "Inspection" section of "Inspection, Testing and Maintenance" chapter in NFPA 72; retain "Initial/Reacceptance" column and list only installed components.

2. System Testing: Comply with "Test Methods" table in "Testing" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

3. Test audible appliances for public operating mode in accordance with manufacturer's written instructions. Perform test using portable sound-level meter complying with Type 2 requirements in ASA S1.4 Part 1/IEC 61672-1.
4. Test audible appliances for private operating mode in accordance with manufacturer's written instructions.
5. Test visible appliances for public operating mode in accordance with manufacturer's written instructions.
6. Factory-authorized service representative must prepare "Fire Alarm System Record of Completion" in "Documentation" section of "Fundamentals" chapter in NFPA 72 and "Inspection and Testing Form" in "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

D. Reacceptance Testing: Perform reacceptance testing to verify proper operation of added or replaced devices and appliances.

E. Fire-alarm system will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

G. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

H. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.10 MAINTENANCE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service must include 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies must be manufacturer's authorized replacement parts and supplies.

1. Include visual inspections in accordance with "Visual Inspection Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
2. Perform tests in "Test Methods" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
3. Perform tests per "Testing Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

3.11 SOFTWARE SERVICE AGREEMENT

A. Comply with UL 864.

B. Technical Support: Beginning at Substantial Completion, service agreement must include software support for 2 years.

C. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within 2 years from date of Substantial Completion. Upgrading software must include operating system and new or revised licenses for using software.

1. Upgrade Notice: At least 30 days to allow Owner to schedule access to system and to upgrade computer equipment if necessary.

END OF SECTION 284621.11