THE SCHOOL DISTRICT OF PHILADELPHIA
SCHOOL REFORM COMMISSION
Office of Capital Programs
440 North Broad Street, Third Floor - Suite 371
Philadelphia, PA 19130-4015

TELEPHONE: (215) 400-4730

Addendum No. 1

Subject: BLANKENBURG ELEMENTARY SCHOOL
NEW CAFETERIA AND KITCHEN
SDP CONTRACT NOS. B-060 C, B-061, B-062, B-063 C OF 2020/21

Location: BLANKENBURG ELEMENTARY SCHOOL
4600 W. GIRARD AVENUE,
PHILADELPHIA, PA 19131

This Addendum, ***dated 26th of February, 2021,*** shall modify and become part of the Contract Documents for the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original documents.

1. Bids are being extended and now due on March 4th at 2:00p.m.

2. The successful bidder is required to attend a de-scoping meeting the following day after bids are due. The time for this meeting will be communicated on the bid opening day.

3. Deadline for questions has passed; no more new questions will be received.

4. Revised Drawing Sheets Issued

    a. Drawing G101:
        i. Added "COORDINATION WITH OTHER PROJECTS" notes.
    b. Drawing AD101:
        i. Added Keynote 14: Remove and relocate two (2) built-in existing wood storage cabinets from Existing Temporary Kitchen. Relocation in the school building to be determined.
            1. See attached photo of cabinets with this addendum.
    c. Drawing A400:
        i. Revised notes on plan at Room 31 (library / IMC).
    d. Drawing FA000:
        i. Revised fire alarm drawing.
    e. Drawing FA101:
        i. Revised fire alarm drawing.
    f. Drawing FA102:
        i. Revised fire alarm drawing.

5. Revised Drawings by Narrative:

a. (none)

6. Revised Specifications Issued:

    a. Section 28 3111 Digital Addressable Fire Alarm Systems

7. Drawing Sketches Issued

    a. (none)

8. Reports Issued

    a. (none)

9. Questions and Clarifications

A. **Question from Mulhern Electric:**

1. For fixture types A, A1, and B, the emergency battery pack is not specified for fixtures with "EM" subscript. Please clarify if we should provide the 10W #BSL10LST or 6W battery pack #BSL6LST.
    a. Fixtures requiring EM have been indicated with EM next to the fixture symbols on drawing E101. These will be provided with an integral battery pack for a back-up time of 90 minutes as indicated in Lighting fixture schedule note 1 on drawing E000. Provide 10W ballast.

2. Please provide suspension length from the ceiling for fixture type D. The mounting height above the floor is not indicated on electrical or architectural drawings (detail #8, A300). Suspension length is required for complete catalog number.
    a. Light fixture is 10’-6” to bottom of fixture. Suspension length to be verified in field to align with adjacent ceiling installation.

3. There is a note on detail 5 on drawings AD10 that states to terminate electrical and data lines at a column. This scope is not shown in the electrical drawings. Please confirm if this scope is by the EC or the GC.
    a. Scope is by EC. Intent is to ensure wires are out of the way for partition to be built by GC. See updated drawings with this Addendum for additional information regarding work in this area.

4. Detail 10 on A300 shows a recessed downlight in gyp ceiling. However, the fixture specified in that location (type C) is a suspended cylinder. Please confirm the specification is correct and that the detail should show a suspended cylinder fixture. If the detail is correct, provide a recessed downlight specification.
    a. Fixture Type C is correct as specified.

5. Spec section 260572 Overcurrent Protective Device Short-Circuit Study has been provided. Please confirm we are only to provide a study for new panelboard feeds PP-CAFÉ and PP-K. If we are to provide a full system short circuit study, please provide a full building single line diagram so that we can quantify the number of points in the system.

a. Study required for new panel boards only. For Short circuit calculations, consider a short circuit rating of 22KA minimum at Switchboard MSB which serves the new panelboards PP-CAFÉ & PP-K.

6. There are initiating device symbols on the fire alarm floor plans that are not indicated in the symbols list on FA000. It is unclear what type of audible initiating device should be provided (speaker? Horn?). Does the existing system have voice capability or not? Please provide an updated symbols list that reflects the existing system and includes all symbols shown on the plans.
    a. The audible device shall be a speaker. Existing system does not have voice capability. Symbol list has been updated and revised drawings and specifications attached.

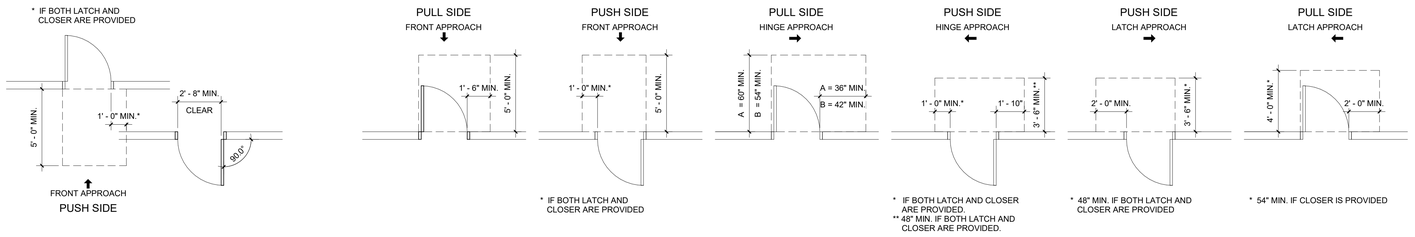
7. Specification 283111 states to provide a DACT (2.7). If the existing system is designed per latest fire alarm codes, there is likely a DACT at the main panel. Please confirm a new DACT is **not** required for this project.
    a. Provide DACT for the new fire alarm installation.

8. Please confirm general note 3 on FA000 ("provide a new addressable fire alarm system") is **not** applicable to this project, as the fire alarm plans indicate that we are connecting to an existing fire alarm system.
    a. The new Fire alarm system shall be a voice enabled addressable system. Refer to attached revised drawings (FA000, FA100, FA102) and specifications.

9. General demolition note 7 on FA000 calls for touch-up painting. Please confirm all painting is by the GC per spec section 011000-1.2(A)(1)(a).
    a. Painting shall be by GC.

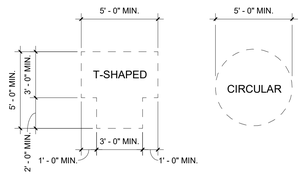
END OF ADDENDUM NO. 1 NARRATIVE.
REFERENCED SPECIFICATION, DRAWINGS, AND SKETCHES FOLLOW.

BLANKENBURG NEW CAFETERIA
EXISTING KITCHEN CABINETRY

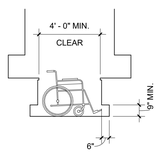


1 **CLEAR WIDTH OF DOORWAYS**
SCALE: 1/4" = 1'-0"

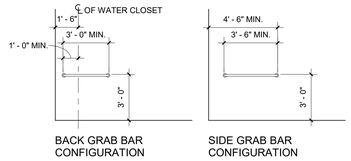
2 **DOOR APPROACH MANUVERING CLEARANCE**
SCALE: 1/4" = 1'-0"



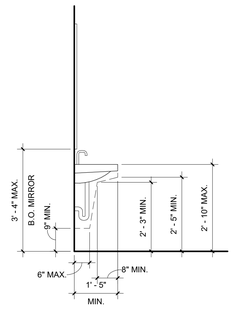
3 **WHEELCHAIR TURNING AREA**
SCALE: 1/4" = 1'-0"



4 **MINIMUM TOE CLEARANCE**
SCALE: 1/4" = 1'-0"



5 **ACCESSIBLE WATER CLOSET**
SCALE: 1/4" = 1'-0"



6 **LAVATORY CLEARANCES**
SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. THE WORK WILL TAKE PLACE AT A SCHOOL WHICH WILL REMAIN OPEN DURING REGULAR SCHOOL SESSIONS. THE WORK SHALL BE CONDUCTED AND PHASED AS NECESSARY TO ALLOW MINIMUM DISRUPTION TO THE SCHOOL OPERATIONS; CONTRACTORS ARE RESPONSIBLE TO PROVIDE THE WORK IN A MANNER WHICH WILL ACCOMMODATE SCHOOL OPERATIONS. HALL, STAIR AND DOOR WAYS AND EMERGENCY EGRESS PATHS MUST BE KEPT CLEAR DURING SCHOOL HOURS AND PLANNED EVENING EVENTS. ELECTRICAL POWER MAY NOT BE DISRUPTED DURING SCHOOL HOURS OR SCHEDULED EVENTS.
2. ALL WORK DURING SCHOOL SESSIONS MUST BE ISOLATED FOR SECURITY AND DUST CONTROL. TEMPORARY SECURITY BARRIERS SHALL BE 8'-0" HIGH MINIMUM AND OF 2x4 STUD WITH 3/4 PLYWOOD SHEATHING TEMPORARY DUST CONTROL BARRIERS SHALL FULL HEIGHT TAPED AND SEALED PLASTIC MEMBRANE BEHIND REQUIRED SECURITY BARRIERS.
3. WHERE WORK IS OCCURRING NOT DURING SCHOOL SESSIONS, A FORM OF ISOLATION OF SUCH AREAS ARE STILL REQUIRED TO PREVENT DUST SPREADING THROUGH THE BUILDING.
4. DIMENSIONED EXISTING CONDITIONS INDICATED ON DRAWINGS ARE TAKING FROM ORIGINAL DESIGN DRAWINGS OR AS OBSERVED FROM SITE VISITS AND PHOTOGRAPHS; NO EXPLORATORY TEST OR CUTS WHERE MADE; GC TO VERIFY IN FIELD (VIF) EXISTING CONDITIONS , DIMENSIONS AND HIDDEN CONDITIONS AS REQUIRED TO PERFORM THE WORK.

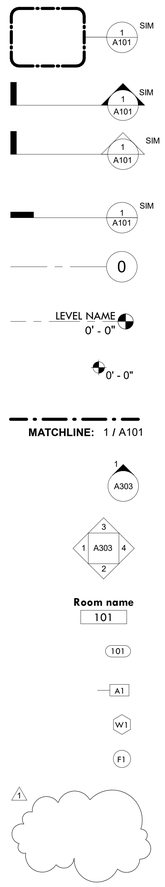
COORDINATION WITH OTHER PROJECTS

1. WORK IN ROOM 31 (LIBRARY / IMC) SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF ANY WORK ASSOCIATED WITH KITCHEN AND CAFETERIA.
2. DO NOT CLOSE IN PARTITION ASSOCIATED WITH WORK IN ROOM 31 (LIBRARY / IMC) UNTIL CONCURRENT CLASSROM MODIFICATIONS ELECTRICAL WORK ASSOCIATED WITH THIS WALL IS COMPLETED. COORDINATE WITH CONTRACTORS ON SITE TO ENSURE CLEAR SEQUENCE OF WORK.

BUILDING CODE NOTES

1. THE PREVAILING BUILDING CODES FOR THIS PROJECT ARE THE PHILADELPHIA BUILDING CODE 2015. INCORPORATING IBC 2018 WITH LOCAL MODIFICATIONS. THE OCCUPANT LOAD FOR EGRESS HAS BEEN CALCULATED IN ACCORDANCE WITH IBC 2018.
2. THE USE GROUP OF THE BUILDING IS GROUP E.
3. THE EXISTING SCHOOL BUILDING DOES NOT HAVE A FIRE PROTECTION SYSTEM (SPRINKLERS).
4. EXIT ACCESS CORRIDORS ARE NOT LESS THAN 72" WIDE WHERE THE OCCUPANT LOAD IS 100 OR GREATER AND NOT LESS THAN 44" WHERE THE OCCUPANT LOAD IS LESS THAN 100. CORRIDOR WALLS ARE NON LOAD BEARING AND SHALL BE FIRE RESISTANCE RATED 1 HOUR.
5. REQUIRED WIDTH FOR STAIRS/CORRIDORS = 0.30" PER OCCUPANT
   REQUIRED WIDTH FOR DOORS = 0.20" PER OCCUPANT
6. EXIT ACCESS TRAVEL DISTANCE SHALL NOT EXCEED 200 FEET. AT THE OPEN STAIR THE TRAVEL DISTANCE IS CALCULATED FROM THE REMOTE POINT ON THE BASEMENT FLOOR TO THE POINT OF EXIT ON THE FIRST FLOOR.

SYMBOLS



ABBREVIATIONS

AB	ANCHOR BOLT	MACH	MACHINE
ABV	ABOVE	MANUF	MANUFACTURER
ACP	ACOUSTICAL CEILING PANEL	MAS	MASONRY
ACT	ACOUSTICAL CEILING TILE	MATL	MATERIAL
AD	AREA DRAIN	MAX	MAXIMUM
ADA	AMERICANS WITH DISABILITIES ACT	MBMR	MODIFIED BITUMINOUS MEMBRANE ROOFING
ADDL	ADDITIONAL	MCP	METAL CEILING PANEL
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL
AFG	ABOVE FINISHED GRADE	MEP	MECHANICAL, ELECTRICAL, PLUMBING
AHU	AIR HANDLING UNIT	MER	MECHANICAL EQUIPMENT ROOM
ALUM	ALUMINUM	MISC	MISCELLANEOUS
ANOD	ANODIZED	MIN	MINIMUM
APPROX	APPROXIMATELY	MIR	MIRROR
ARCH	ARCHITECTURAL / ARCHITECT	MO	MASONRY OPENING
BD	BOARD	MTD	MOUNTED
BM	BEAM	MTL	METAL
BLKG	BLOCKING	N/A	NOT APPLICABLE
BLDG	BUILDING	NIC	NOT IN CONTRACT
BO	BOTTOM OF	NO	NUMBER
BOT	BOTTOM	NOM	NOMINAL
BOH	BACK OF HOUSE	NTS	NOT TO SCALE
BYND	BEYOND	OC	ON CENTER
C/C	CENTER TO CENTER	OCC	OCCUPANT
CL	CENTERLINE	OD	OUTSIDE DIAMETER
CLG	CEILING	OD	OVERFLOW DRAIN
CLR	CLEAR	OH	OPPOSITE HAND
CHAN	CHANNEL	OHD	OVERHEAD
CIP	CAST-IN-PLACE	OPNG	OPENING
CJ	CONTROL JOINT	PE	PROFESSIONAL ENGINEER
CMU	CONCRETE MASONRY UNIT	PLAM	PLASTIC LAMINATE
CFMF	COLD-FORMED METAL FRAMING	PLUMB	PLUMBING
COL	COLUMN	PLWD	PLYWOOD
CONC	CONCRETE	PT	PRESSURE-TREATED
CONST	CONSTRUCTION	PT / PTD	PAINT / PAINTED
CONT	CONTINUOUS	QUAL	QUALITY
CPT	CARPET	R	RISER
CT	CERAMIC TILE	RAD	RADIUS
CU	CONDENSING UNIT	RB	RUBBER BASE
CW	CURTAINWALL	RCP	REFLECTED CEILING PLAN
D	DEPTH / DEEP	RD	ROOF DRAIN
DBL	DOUBLE	REBAR	REINFORCING BAR(S)
DEMO	DEMOLISH / DEMOLITION	REINF	REINFORCING / REINFORCEMENT
DF	DRINKING FOUNTATIN	REF	REFERENCE / REFER TO
DIA	DIAMETER	REM	REMOVE / REMOVABLE
DIM / DIMS	DIMENSION / DIMENSIONS	REQD	REQUIRED
DK	DECK	REV	REVISED / REVISION
DN	DOWN	RF	ROOF
DOCS	DOCUMENTS	RM	ROOM
DR	DOOR	RO	ROUGH OPENING
DTL	DETAIL	RTU	ROOFTOP UNIT
DWG / DWGS	DRAWING / DRAWINGS	SAB	SOUND ATTENUATING BLANKET
EA	EACH	SAFB	SOUND ATTENUATING FIRE BLANKET
EL	ELEVATION	SBS	STYRENE-BUTADIENE-STYRENE
ELEV	ELVATOR	SC	SEALED CONTRETE
ELEC	ELECTRICAL	SCHED	SCHEDULE
EOS	EDGE OF SLAB	SEC	SECURE / SECURED
EQ	EQUAL	SECT	SECTION
EQUIP	EQUIPMENT	SF	SQUARE FEET
EWC	ELECTRIC WATER COOLER	SIM	SIMILAR
EXIST	EXISTING	SOH	SIMILAR OPPOSITE HAND
EJ	EXPANSION JOINT	SPEC	SPECIFICATION
EXP	EXPOSED	SPECD	SPECIFIED
EXT	EXTERIOR	SPK	SPRINKLER
FD	FLOOR DRAIN	SPRK	SPEAKER
FE	FIRE EXTINGUISHER	SPF	SPRAY POLYURETHANE FOAM
FEC	FIRE EXTINGUISHER CABINET	SS	STAINLESS STEEL
FF&E	FURNITURE, FINISHES & EQUIPMENT	SSM	SOLID SURFACE MATERIAL
FIN	FINISH	STL	STEEL
FIXT	FIXTURE	STOR	STORAGE
FLG	FLOORING	STRUCT	STRUCTURAL
FLR	FLOOR	SUSP	SUSPENDED
FND	FOUNDATION	T	TREAD
FO	FACE OF	TG	TEMPERED GLASS
FRMG	FRAMING	THK	THICK / THICKNESS
FRP	FIBERGLASS REINFORCED PLASTIC	TO	TOP OF
FRT	FIRE RETARDANT TREATED	TOC	TOP OF CONCRETE
FTG	FOOTING	TOFS	TOP OF FINISH SLAB
GA	GAUGE	TOS	TOP OF SLAB / TOP OF STEEL
GALV	GALVANIZED	TRZ	TERRAZZO
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GWB	GYPSUM WALLBOARD	UNO	UNLESS NOTED OTHERWISE
GYP	GYPSUM	UL	UNDERWRITER LABORATORY
H	HIGH	UT	UTILITY
HC	HANDICAPPED	V	VINYL
HDW	HARDWARE	VB	VAPOR BARRIER
HM	HOLLOW METAL	VB	VINYL BASE
HOR	HORIZONTAL	VCT	VINYL COMPOSITE TILE
HP	HIGH POINT	VERT	VERTICAL
HR	HOUR	VEST	VESTIBULE
HT	HEIGHT	VIF	VERIFY IN FIELD
IGU	INSULATED GLASS UNIT	VP	VISION PANEL
ID	INSIDE DIAMETER	W	WIDTH / WIDE
INFO	INFORMATION	W/	WITH
INSUL	INSULATION/ INSULATED	WD	WOOD
INT	INTERIOR	WM	WIRE MESH
JST	JOIST	W/O	WITHOUT
JT	JOINT	WP	WEATHERPROOF
L	ANGLE	WPFG	WATERPROOFING
L	LENGTH / LONG	WT	WEIGHT
LT WT CONC	LIGHT WEIGHT CONCRETE	WWF	WELDED WIRE FABRIC
LVR	LOUVER		

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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA DAVID N. SCHEUERMANN No. RA-013588-X

NAME (LICENSED PROFESSIONAL) DAVID N. SCHEUERMANN
STATE AND LICENSE NO: PA No. RA-013588-X
DATE 3/31/2020

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BID DRAWINGS
JANUARY 29, 2021

NO.	DATE	REVISION
10		
9		
8		
7		
6	2/16/21	ADDENDUM 1
5	1/29/21	BID DRAWINGS
4	1/04/21	PERMIT DRAWINGS
3	8/31/20	FOOD SERVICE REVIEW
2	4/29/20	CONSTRUCTION DOCUMENTS
1	2/26/20	SCHEMATIC DESIGN

SCHOOL & LOCATION
BLANKENBURG ELEMENTARY SCHOOL
4600 W GIRARD AVE.
PHILADELPHIA, PA 19131

PROJECT TITLE
NEW CAFETERIA

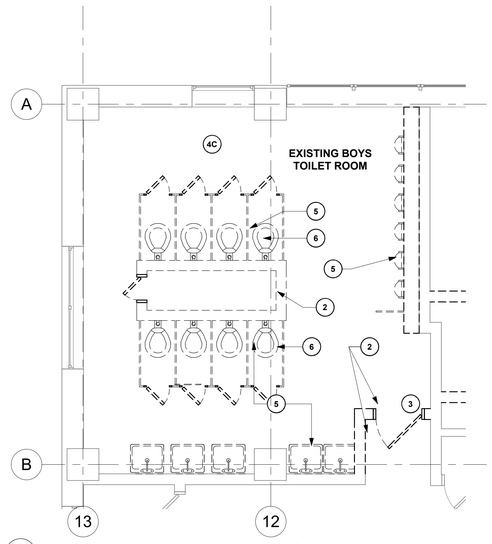
DRAWING TITLE
NOTES, ABBREVIATIONS, TYPICAL DETAILS

DRAWING SCALE AS INDICATED	
LOCATION NO. XXXX	FILE NO. XXX
DRAWN BY ECN	CHECKED BY GJC

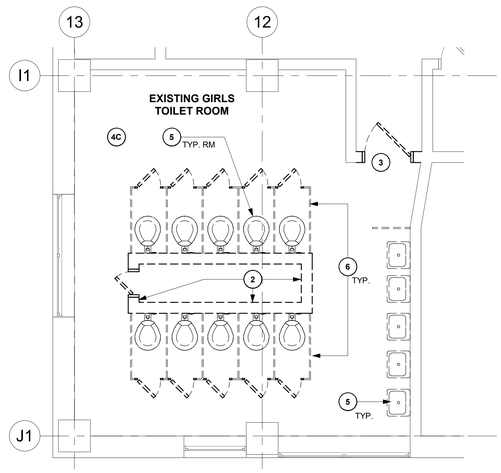
GC B-060 C	**OF**	**19/20**
MC B-061 C	**OF**	**19/20**
PC B-062 C	**OF**	**19/20**
EC B-063 C	**OF**	**19/20**

DRAWING NO.
G101

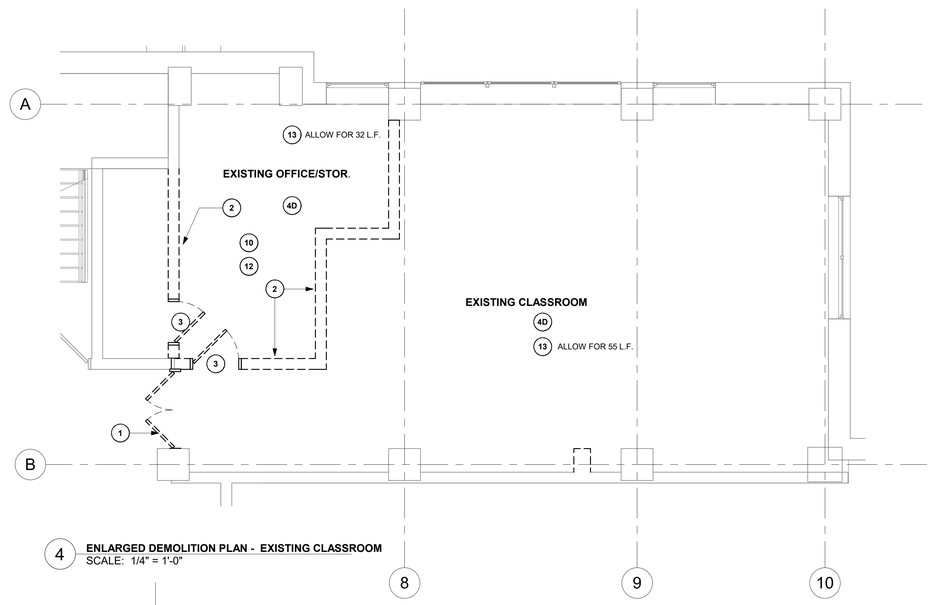
SHEET 2 OF 44



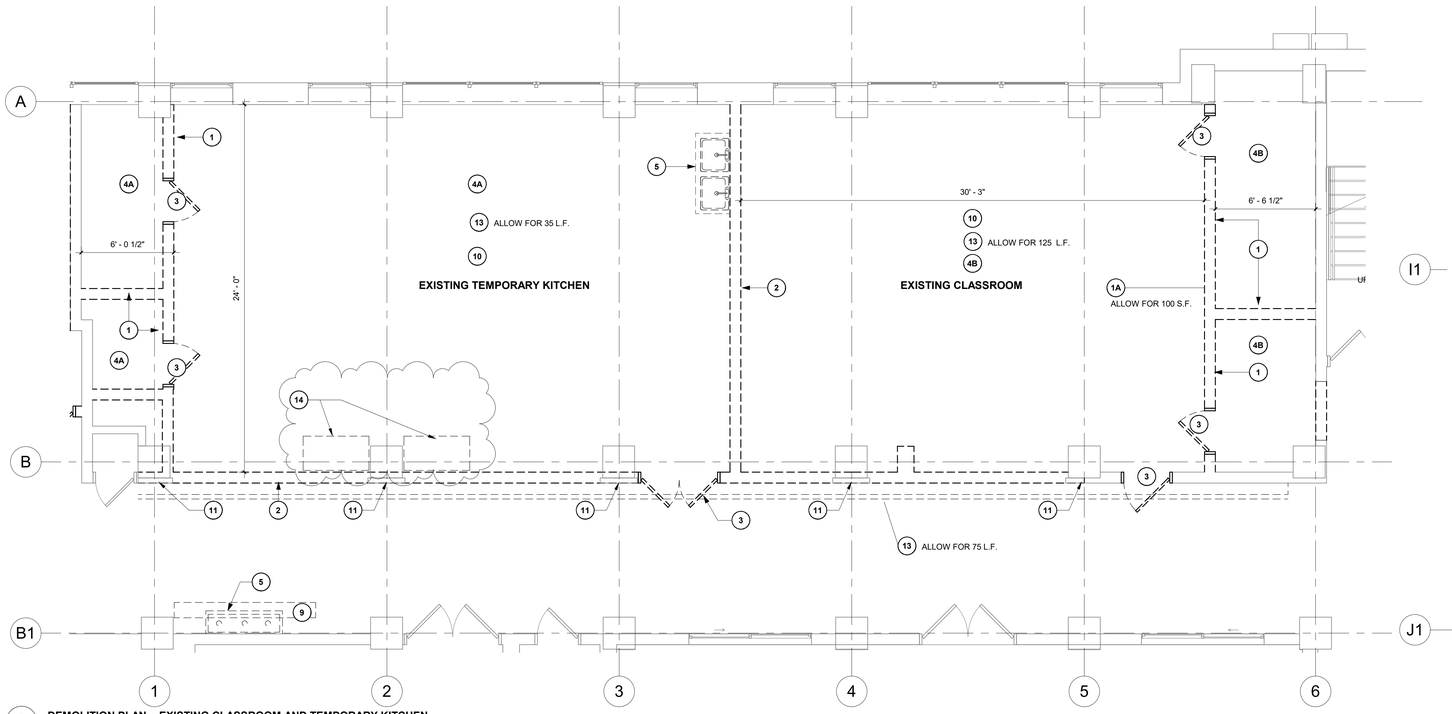
1 **ENLARGED DEMOLITION PLAN - EXISTING BOYS TOIELT ROOM**
SCALE: 1/4" = 1'-0"



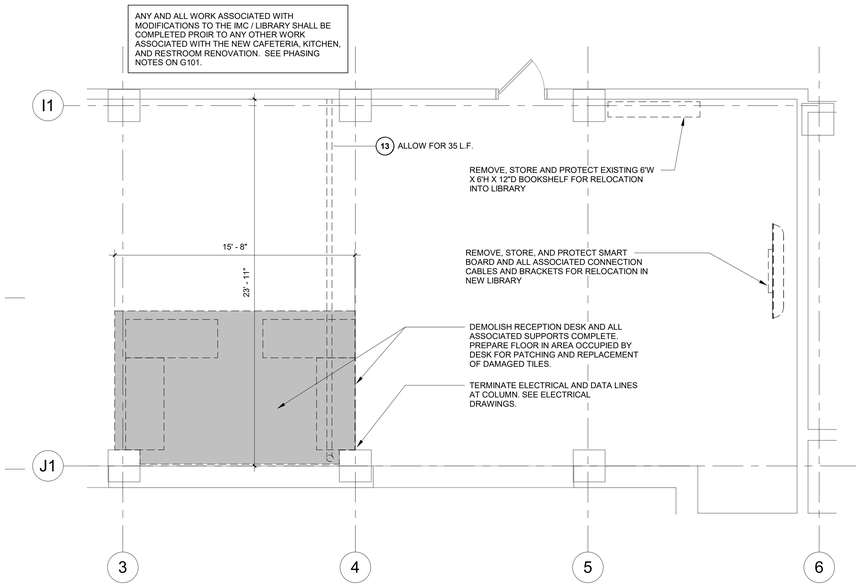
2 **ENLARGED DEMOLITION PLAN - EXISTING GIRLS TOILET ROOM**
SCALE: 1/4" = 1'-0"



4 **ENLARGED DEMOLITION PLAN - EXISTING CLASSROOM**
SCALE: 1/4" = 1'-0"



3 **DEMOLITION PLAN - EXISTING CLASSROOM AND TEMPORARY KITCHEN**
SCALE: 1/4" = 1'-0"



5 **DEMOLITION PLAN AT IMC**
SCALE: 1/4" = 1'-0"

DEMOLITION KEY NOTES

1. REMOVE PLASTER AND STUD WALL.
   - 1A. WALL INCLUDES ABATEMENT OF ACM GLUE DOTS AT CHALKBOARD. PROVIDE FOR AREA INDICATED ON DRAWINGS.
2. REMOVE BRICK MASONRY WALL
3. REMOVE DOOR & FRAME
4. REMOVE FLOOR FINISH:
   - 4A. REMOVE FLOOR FINISH AND PLYWOOD SUBFLOOR
   - 4B. REMOVE FLOOR FINISH, INCLUDING ABATEMENT FOR ASSOCIATED ACM MASTIC, AND PLYWOOD SUBFLOOR.
   - 4C. REMOVE FLOOR FINISH TO CONCRETE SLAB.
   - 4D. REMOVE FLOOR FINISH TO CONCRETE SLAB INCLUDING ABATEMENT FOR ANY ASSOCIATED ACM MASTIC.
5. REMOVE PLUMBING FIXTURE & CAP UTILITY
6. REMOVE TOILET PARTITIONS
7. REMOVE CASE WORK AND ASSOCIATED FIXTURES & CAP UTILITIES
8. DISCONNECT, REMOVE, AND SALVAGE FOOD SERVICE EQUIPMENT
9. REMOVE DIAMOND-TREAD STEEL ACCESS COVER. ALLOW FOR 12 L.F.
10. REMOVE ADHESIVE- APPLIED CEILING TILE IN THIS AREA, TYP.
11. MAINTAIN FACE BRICK ON CORRIDOR SIDE AT LOCATION NOTED. SEE DETAIL 2 / A600 FOR EXTENT OF WALL TO REMAIN
12. REMOVE ACP CEILING AND SUSPENSION GRID
13. REMOVE AND ABATE ACM PIPE INSULATION. ALLOW FOR PIPE LENGTHS INDICATED ON DRAWINGS.
14. REMOVE AND RELOCATE TWO (2) BUILT-IN EXISTING WOOD STORAGE CABINETS FROM EXISTING TEMPORARY KITCHEN. RELOCATION IN THE SCHOOL BUILDING TO BE DETERMINED.

DEMOLITION LEGEND

- EXISTING DOOR AND FRAME TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING WINDOW TO BE REMOVED
- EXISTING WALL TO BE REMOVED
- EXISTING WALL TO REMAIN
- EXISTING ITEM TO BE REMOVED
- EXISTING MECH. EQUIP TO BE REMOVED
- TEMPORARY SECURITY BARRIER

DEMOLITION NOTES

1. TEMPORARY SECURITY BARRIERS SHALL BE 8'-0" HIGH MINIMUM AND OF 2x4 STUD WITH 3/4 PLYWOOD SHEATHING TEMPORARY DUST CONTROL BARRIERS SHALL FULL HEIGHT TAPED AND SEALED PLASTIC MEMBRANE BEHIND REQUIRED SECURITY BARRIERS.

REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION USING METHODS AND EQUIPMENT TO PREVENT DAMAGE TO SURACES TO REMAIN AND DISPOSE OF ITEM OFF-SITE UNLESS NOTED TO BE SALVAGED OR REINSTALLED

REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION CAREFULLY USING GENTLE METHODS AND EQUIPMENT TO PREVENT DAMAGE TO THE ITEM AND SURFACES TO REMAIN. PREPARE ITEM FOR REUSE, AND DELIVER ITEM TO OWNER AS DIRECTED.

REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION CAREFULLY USING GENTLE METHODS AND EQUIPMENT TO PREVENT DAMAGE TO THE ITEM AND SURFACES TO REMAIN, PREPARE ITEM FOR REUSE AND REINSTALL WHERE INDICATED

EXISTING TO REMAIN: LEAVE EXISTING ITEMS THAT ARE NOT TO BE REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE SALVAGED OR REINSTALLED

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SEAL:

REGISTERED PROFESSIONAL ENGINEER DAVID N. SCHEUERMANN No. RA-013588-X

NAME (LICENSED PROFESSIONAL)	DATE
DAVID N. SCHEUERMANN	3/31/2020
STATE AND LICENSE NO.: PA No. RA-013588-X	

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PROJECT TITLE

NEW CAFETERIA

DRAWING TITLE

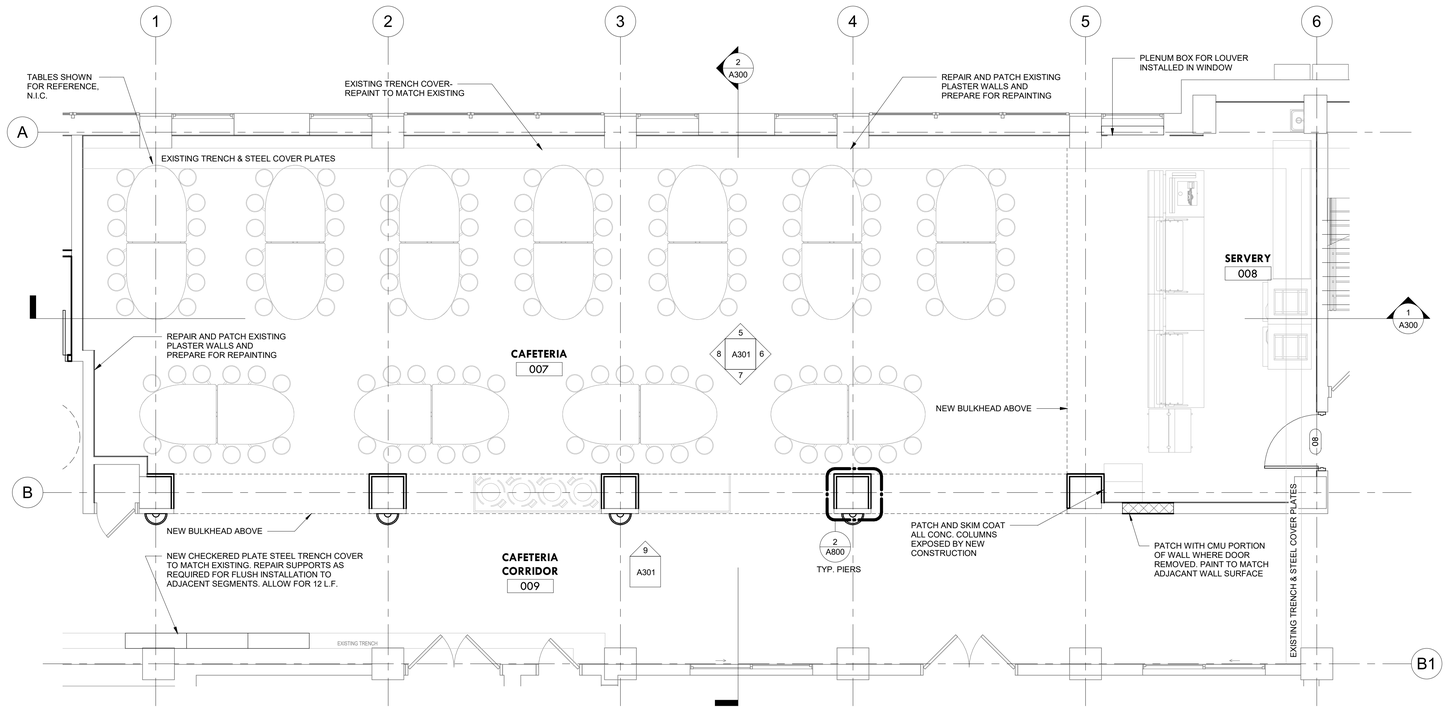
ENLARGED DEMOLITION PLANS

DRAWING SCALE AS INDICATED	
LOCATION NO. XXXX	FILE NO. XXX
DRAWN BY ECN	CHECKED BY GJC

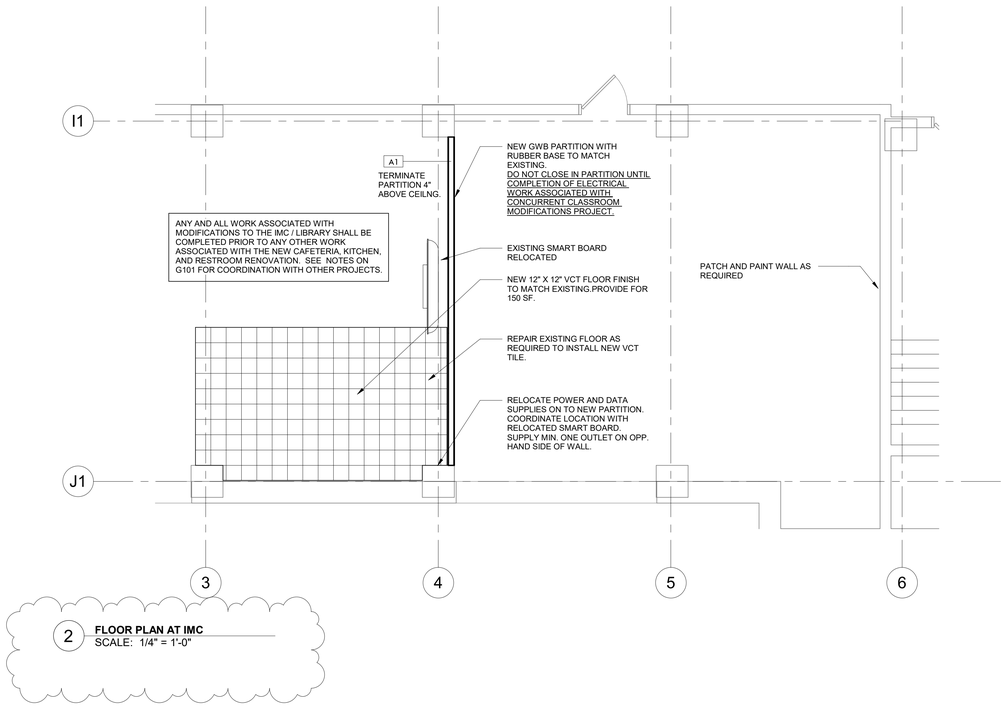
GC B-060 C	**OF**	**19/20**
MC B-061 C	**OF**	**19/20**
PC B-062 C	**OF**	**19/20**
EC B-063 C	**OF**	**19/20**

DRAWING NO.
AD101

SHEET 6 OF 44



1 ENLARGED CAFETERIA PLAN
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN AT IMC
SCALE: 1/4" = 1'-0"

NEW WORK NOTES

1. ALL DIMENSIONS ARE FROM FINISH FACE OF WALL, UNO
2. FOOD SERVICE CASEWORK AND ITEMS SHOWN FOR REFERENCE. SEE FOOD SERVICE DRAWINGS FOR EXACT LOCATIONS.

NEW WORK LEGEND

- EXISTING DOOR TO REMAIN
- NEW DOOR, SEE DOOR SCHEDULE
- 101 — DOOR TAG, SEE DOOR SCHEDULE
- A1 — WALL TAG, SEE PARTITION TYPES

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BID DRAWINGS
JANUARY 29, 2021

NO.	DATE	REVISION
10		
9		
8		
7		
6	~~2/19/21~~	~~ADDENDUM 1~~
5	1/29/21	BID DRAWINGS
4	1/04/21	PERMIT DRAWINGS
3	8/31/20	FOOD SERVICE REVIEW
2	4/29/20	CONSTRUCTION DOCUMENTS
1	2/26/20	SCHEMATIC DESIGN

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PROJECT TITLE
NEW CAFETERIA

DRAWING TITLE
ENLARGED PLANS

DRAWING SCALE: AS INDICATED	
LOCATION NO.: XXXX	FILE NO.: XXX
DRAWN BY: ECN	CHECKED BY: GJC

GC B-060 C OF 19/20
MC B-061 C OF 19/20
PC B-062 C OF 19/20
EC B-063 C OF 19/20

DRAWING NO.
A400

SHEET 12 OF 44

ELECTRICAL SYMBOLS:

- MANUAL PULL STATION – MH 4'-0" AFF W/ STOPPER II PLASTIC COVER
- STROBE LIGHT – MH 6'-8" AFF OR 6" FROM CEILING, WHICHEVER IS LOWER, NUMBER INDICATES STROBE CANDELA INTENSITY, NO NUMBER INDICATES 30 CANDELA.
- COMBINATION SPEAKER & STROBE, MH 6'-8" AFF OR 6" FROM CEILING WHICHEVER IS LOWER, NUMBER INDICATES STROBE CANDELA INTENSITY, NO NUMBER INDICATES 30 CANDELA.
- FIRE ALARM HORN
- SMOKE DETECTOR – CEILING MOUNTED
- BEAM DETECTOR
- BEAM DETECTOR REFLECTOR
- HEAT DETECTOR, ADDRESSABLE TYPE – CEILING MOUNTED
- CARBON MONOXIDE DETECTOR, ADDRESSABLE TYPE – CEILING MOUNTED
- DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT
- FACP – FIRE ALARM MAIN CONTROL PANEL
- FAAP – REMOTE LCD ANNUNCIATOR PANEL
- PSTR – POWER BOOSTER PANEL
- MM – MONITORING MODULE
- CM – CONTROL MODULE
- RT – REMOTE TEST & INDICATING STATION (FOR DUCT TYPE SMOKE DETECTORS)
- END OF LINE RESISTOR
- (R) – EXISTING MANUAL PULL STATION TO BE REMOVED.
- (R) – EXISTING FIRE ALARM BELL TO BE REMOVED
- C/M – "C/M" INDICATES CEILING MOUNTED DEVICE.
- WG – "WG" INDICATES DEVICE W/ WIRE GUARD
- WP – "WP" INDICATES WEATHERPROOF DEVICE.
- NEW BRANCH CIRCUIT WIRING
- QTY. OF ARROWHEADS INDICATE HOMERUN CIRCUITRY. NUMBER OF CIRCUITS AS INDICATED IN DRAWINGS.

ABBREVIATIONS:

A	AMPERES
AC	ALTERNATING CURRENT
ACT	ACOUSTIC TILE CEILING
AD	ACCESS DOOR
A/E	ARCHITECT/ENGINEER
AF	AMPERES, FRAME
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITIES HAVING JURISDICTION
AIC	AMPERES, INTERRUPTING CAPACITY
AT	AMPERES, TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AS	AMPERES, SENSOR OR SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BHP	BRAKE HORSEPOWER
C	CONDUIT
CB	CIRCUIT BREAKER
CAP	CAPACITY
CF	CUBIC FEET
CKT	CIRCUIT
CM	CONTROL MODULE
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
(E)	EXISTING TO REMAIN
(ERR)	EXISTING WORK TO BE REMOVED & REINSTALLED
(ER)	EXISTING WORK TO BE REMOVED & REPLACED
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FIN	FINISH(ED)
FLA	FULL LOAD AMPERE
FMC	FLEXIBLE METAL CONDUIT
FVNR	FULL VOLTAGE NON-REVERSING
FT	FEET
G	GROUND
GA	GAUGE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
GWB	GYPSUM WALL BOARD
HORZ	HORIZONTAL
Hz	HERTZ
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
IN	INCHES
IT	INFORMATIONAL/INSTRUCTIONAL TECHNOLOGY
KA	KILO AMPERES
KAIC	KILO AMPERES INTERRUPTING CAPACITY
KCMIL	KILO CIRCULAR MILS
KVA	KILO VOLT AMPERES
KW	KILO WATTS
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
LS	LIGHTING STANDARD
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MFS	MAXIMUM FUSE SIZE
MH	MOUNTING HEIGHT
MIN	MINIMUM OR MINUTE
MLO	MAIN LUGS ONLY
MNT	MOUNTED
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOPD	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
MSB	MAIN DISTRIBUTION SWITCHBOARD
MTR	MOTOR
N	NEW WORK. THIS NOTATION WILL SELDOM APPEAR (IF AT ALL) SINCE ALL WORK IS NEW UNLESS OTHERWISE NOTED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NIGHT-LIGHT (ON CONTINUOUSLY)
NTS	NOT TO SCALE
OS	OCCUPANCY SENSOR
P	POLE(S)
PH, ø	PHASE
PIR	PASSIVE INFRARED
PNL	PANEL
PT	POTENTIAL TRANSFORMER
(R)	REMOVE/DEMOLISH EXISTING
(RE)	REINSTALLED EXISTING WORK
RMC	RIGID METAL CONDUIT
RMS	ROOT-MEAN-SQUARE
SCCR	SHORT CIRCUIT CURRENT RATING
SDP	SCHOOL DISTRICT OF PHILADELPHIA (OWNER)
SPEC	SPECIFICATION
SMR	SURFACE METAL RACEWAY
TBD	TO BE DETERMINED
TCOM	TELECOMMUNICATIONS
TDDE	TIME-DELAY DUAL ELEMENT (FUSES)
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLTS
VF	VENTILATION FAN
VIF	VERIFY IN FIELD
W	WATTS
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
Z	IMPEDANCE

FIRE ALARM GENERAL NOTES:

1. ALL NEW WORK TO BE DONE IN ACCORDANCE WITH:
   a. THE 2017 NATIONAL ELECTRICAL CODE.
   b. NFPA 72 NATIONAL FIRE ALARM CODE, LATEST EDITION.
   c. 2018 PHILADELPHIA FIRE CODE
   d. REQUIREMENTS OF AUTHORITY HAVING JURISDICTION (AHJ).
   e. PHILADELPHIA BUILDING CODE 11th EDITION 2016.
   f. ALL FEDERAL, STATE & LOCAL CODES & ORDINANCES.
2. ARRANGE & PAY FOR ALL PERMITS & INSPECTIONS.
3. PROVIDE A NEW ADDRESSABLE FIRE ALARM SYSTEM FOR THE SCHOOL.
4. THE NEW FIRE ALARM SYSTEM IS TO BE ACCEPTED BY FIRE MARSHALL BEFORE THE EXISTING FIRE ALARM SYSTEM IS DEMOLISHED.
5. CONTRACTOR TO SURVEY EXISTING BUILDING FOR DEMOLITION WORK OF THE EXISTING FIRE ALARM SYSTEM.
6. ELECTRICAL CONTRACTOR SHALL USE CONDULET SEALING FITTINGS W/ APPROVED SEALING COMPOUND ON ALL CONDUITS PASSING FROM INTERIOR TO EXTERIOR OF A BUILDING & BETWEEN AREAS OF WIDELY DIFFERENT TEMPERATURES. SEAL ALL CONDUIT PENETRATIONS THROUGH RATED WALLS & FLOORS TO MAINTAIN FIRE INTEGRITY.
7. WIRING TO BE RUN IN CONDUIT & COMPLY W/ NFPA 70 ARTICLE 760. CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. MINIMUM CONDUIT SIZE TO BE 3/4". ALL WIRING SHALL BE COPPER. ALL RISER CONDUIT & CONDUIT IN MECH/ELEC/BOILER ROOM & CRAWL SPACES SHALL BE GALVANIZED RIGID STEEL CONDUIT. USE THREADED STEEL FITTINGS FOR ALL RMC TYPE CONDUIT.
8. ALL CONDUIT/WIRING RUN BETWEEN FLOORS TO BE RUN IN RIGID CONDUIT W/ A SEAL FITTING BELOW THE CEILING BEFORE PENETRATING THE FLOOR SLAB.
9. AIR HANDLING EQUIPMENT ITEMS:
   a. PROVIDE ADDRESSABLE DUCT DETECTORS & PERFORM AHU SHUT DOWN LOCALLY.
   b. PROVIDE AHU SHUT DOWN UPON FIRE ALARM SYSTEM ALARM CONDITIONS VIA CONTROL MODULES. WIRE OUTPUTS INTO AHU STARTER CIRCUITS.
10. SUPPLIER TO RECOMMEND FOR APPROVAL THE NUMBER & LOCATION OF POWER BOOSTER PANELS W/ SHOP DRAWING SUBMITTAL. SUGGESTED LOCATIONS ARE INDICATED ON DRAWINGS.
11. PROVIDE LABEL AT PULL STATIONS AS REQUIRED BY PHILADELPHIA CITY CODE. PROVIDE A SIGN AT EACH MANUAL PULL STATION. SIGN SHALL BE MOUNTED IMMEDIATELY ADJACENT TO PULL STATION. THE SIGN SHALL READ "IN CASE OF FIRE, SOUND ALARM & CALL THE FIRE DEPARTMENT".
12. FIRE ALARM SYSTEM RISER SHOWN ON THIS DRAWING IS TYPICAL ONLY & IT MAY NOT INDICATE ALL PERIPHERAL DEVICES; REFER TO THE PLANS FOR LOCATIONS & QUANTITIES OF THE ALL PERIPHERAL DEVICES. PLANS & FIRE ALARM SYSTEM RISER MAY NOT INDICATE ALL REQUIRED POWER BOOSTER PANELS; CONTRACTOR SHALL PROVIDE ALL REQUIRED POWER BOOSTER PANELS FOR THE COMPLETE SYSTEM.

GENERAL DEMOLITION NOTES:

1. ALL EXISTING WORK TO REMAIN ACTIVE, BUT DISTURBED OR DISCONNECTED DUE TO ALTERATIONS PER THIS RENOVATION SHALL BE REPLACED & PUT BACK IN OPERATING CONDITION AS REQUIRED TO MAINTAIN CONTINUITY UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ENGINEER.
2. ALL DISCONNECTED OR ABANDONED WIRE, CABLE & SURFACE CONDUITS OR RACEWAYS SHALL BE REMOVED.
3. ALL EXISTING BUILDING MATERIALS DAMAGED DURING RENOVATIONS SHALL BE REPAIRED & REPLACED BY THE CONTRACTOR. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO CEILING TILES, GRID, FLOORING, PARTITIONS & SIMILAR BUILDING ITEMS. ALL DAMAGE SHALL BE REPAIRED TO A QUALITY & FINISH LEVEL OF ADJACENT AREAS & SUBJECT TO THE APPROVAL OF OWNER & ENGINEER.
4. PROVIDE PHYSICAL & DUST PROTECTION OF OWNER'S EQUIPMENT, FURNITURE & FLOORING DURING RENOVATION. EQUIPMENT PROTECTION SHALL BE INSTALLED & REMOVED ON A DAILY BASIS AS DIRECTED BY OWNER.
5. ALL ELECTRICAL WORK DAMAGED DURING RENOVATION SHALL BE REPAIRED & REPLACED BY THE CONTRACTOR . THIS SHALL INCLUDE, BUT NOT LIMITED TO: RACEWAYS, WIREWAYS, BACKBOXES, LIGHTING FIXTURES, LAMPS, WIRING DEVICES & SIMILAR ELECTRICAL EQUIPMENT. ALL DAMAGE SHALL BE REPAIRED TO A QUALITY LEVEL SUBJECT TO APPLICABLE CODE & APPROVAL OF OWNER & ENGINEER.
6. PROVIDE A FINISH GRADE COVERPLATE ON ALL WALL & FLOOR BOXES, FOR ALL DEVICES TO BE REMOVED.
7. PROVIDE TOUCH-UP & FINISH PAINTING AS REQUIRED IN AREAS AFFECTED BY REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW. FINISH & QUALITY LEVEL SHALL MATCH ADJACENT AREAS & BE SUBJECT TO APPROVAL OF OWNER & ENGINEER.
8. PERFORM ALTERATIONS & CONNECTION TO EXISTING FACILITIES W/ A MINIMUM OF INTERRUPTION. WHERE INTERRUPTION IS NECESSARY, PREPARE A TIME SCHEDULE FOR SAME, COORDINATE W/ & OBTAIN WRITTEN CLEARANCE FROM PRINCIPAL & OWNER (SDP). PROVIDE & PLACE NOTICES IN AFFECTED AREAS & ON FIXTURES OR EQUIPMENT WHICH WILL BE TEMPORARILY OUT OF USE. REMOVE NOTICES WHEN INTERRUPTION IS COMPLETE.
9. ALL DEMOLITION/REMOVAL SHALL BE PERFORMED IN A NEAT, WORKMANLIKE MANNER W/ GREAT EMPHASIS ON MINIMIZING COLLATERAL DAMAGE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL DEMOLISHED MATERIALS FROM THE SITE & DISPOSAL THEREOF, UNLESS SPECIFICALLY NOTED OTHERWISE.

DRAWING LIST:

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FOOD SERVICE REVIEW SUBMISSION JANUARY 4, 2021

NO.	DATE	REVISION
10		
9		
8		
7		
6		
5	2/25/21	*ADDENDUM #1*
4	1/04/21	*PERMIT DRAWINGS*
3	8/31/20	*FOOD SERVICE REVIEW*
2	4/29/20	*CONSTRUCTION DOCUMENTS*
1	2/26/20	*SCHEMATIC DESIGN*

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PROJECT TITLE
NEW CAFETERIA

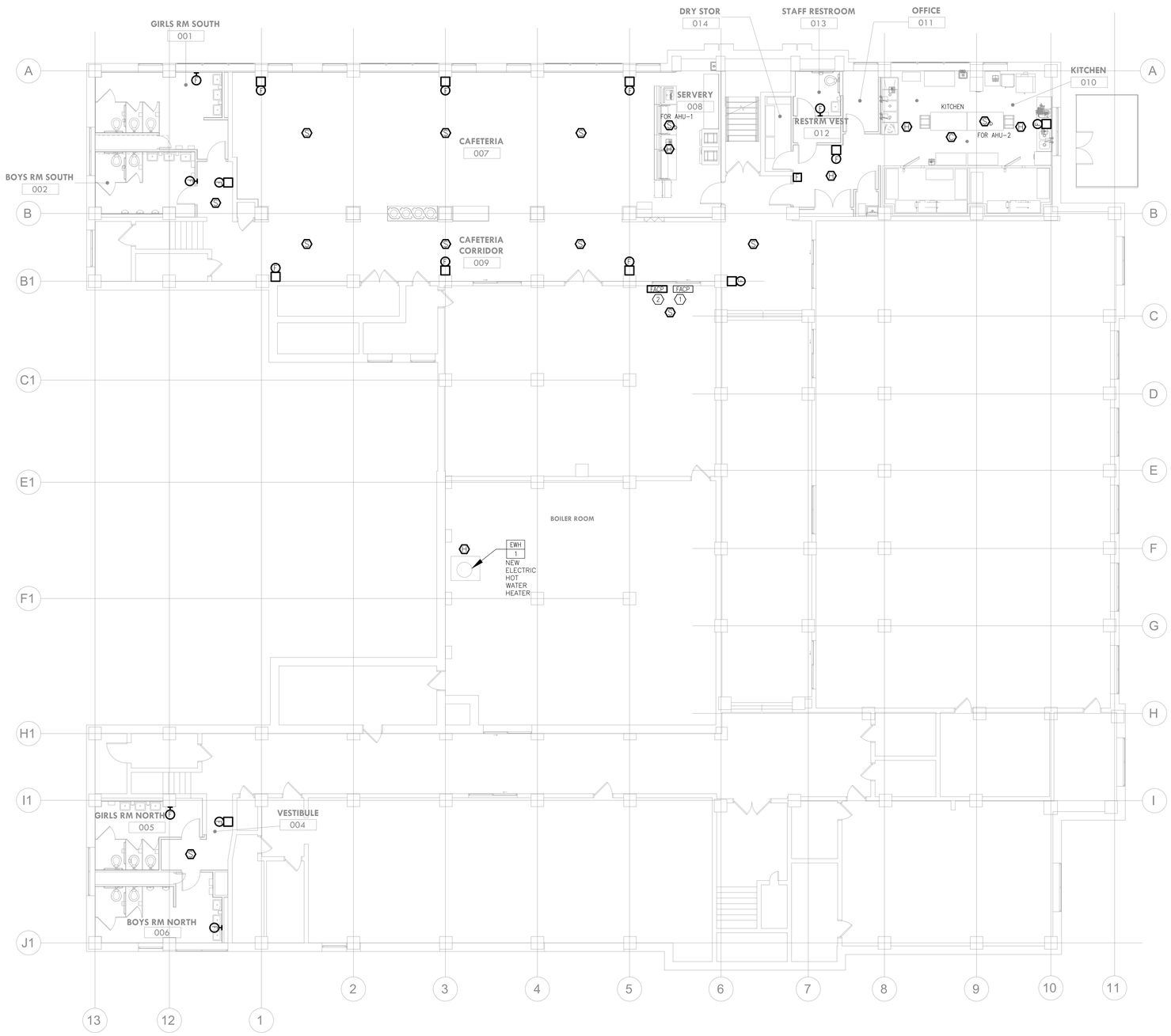
DRAWING TITLE
FIRE ALARM SYMBOLS, ABBREVIATIONS, SCHEDULES AND NOTES

DRAWING SCALE: AS INDICATED
LOCATION NO.: XXXX
FILE NO.: XXX
DRAWN BY: DL
CHECKED BY: SA

GC B-040 C	**OF**	**19/20**
MC B-061 C	**OF**	**19/20**
PC B-062 C	**OF**	**19/20**
EC B-063 C	**OF**	**19/20**

DRAWING NO.
FA000

SHEET 08 OF 44



KEYED NOTES:

1. EXISTING MAIN FIRE ALARM PANEL
2. NEW FIRE ALARM PANEL

1 BASEMENT NEW WORK FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"

THE SCHOOL DISTRICT OF PHILADELPHIA

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PROJECT TITLE
NEW CAFETERIA

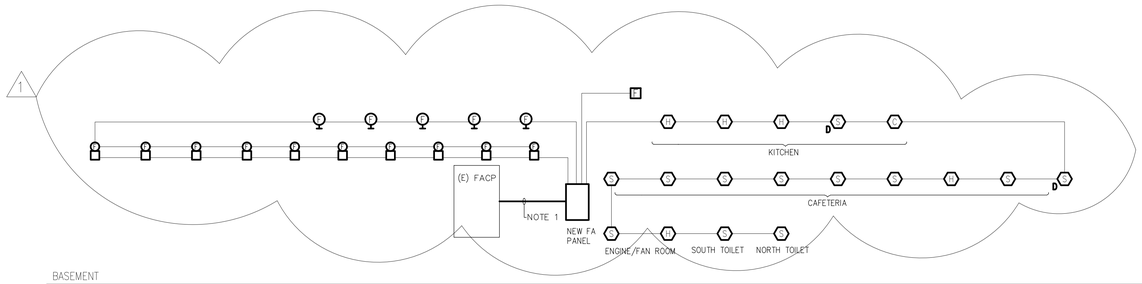
DRAWING TITLE
BASEMENT NEW WORK FIRE ALARM PLAN

DRAWING SCALE: AS INDICATED	
LOCATION NO.: XXXX	FILE NO.: XXX
DRAWN BY: DL	CHECKED BY: SA

GC B-060 C	**OF**	**19/20**
MC B-061 C	**OF**	**19/20**
PC B-062 C	**OF**	**19/20**
EC B-063 C	**OF**	**19/20**

DRAWING NO.
FA101
1

SHEET 39 OF 44



1 FIRE ALARM RISER DIAGRAM
SCALE: NTS

NOTE:

1. PROVIDE NEW FIRE ALARM PANEL AND CROSS-TRIP TO EXISTING FACP. PROVIDE ALL NECESSARY HARDWIRE & SOFTWARE FOR CROSS-TRIP OF EXISTING FIRE ALARM PANEL TO NEW FIRE ALARM PANEL.

SEQUENCE OF OPERATIONS	HEAT DETECTOR	MANUAL PULL STATION	SMOKE DETECTOR	DUCT SMOKE DETECTOR
	FIRE ALARM DEVICES			
ACTIVATES HORNS TO SOUND SPECIFIC CODE				
ACTIVATES HORNS TO SOUND SPECIFIC CODE		X		
ACTIVATES HORNS TO SOUND 10-2 CODE	X		X	X
ACTIVATES HORNS TO SOUND 10-1 CODE				
ACTIVATES STROBE LIGHTS THROUGHOUT THE BUILDING	X	X	X	X
CAUSE AN AUDIBLE ALERT AND VISUAL ALARM AT THE MAIN CONTROL PANEL AND REMOTE ANNUNCIATORS	X	X	X	X
RECORD RELEVANT ALARM TYPE AND LOCATION DATA AT THE FIRE ALARM PRINTER	X	X	X	X
SHUTS OFF HVAC SYSTEM SERVING THE ALARM AREA	X	X	X	X
MANUAL ALARM SIGNAL TO THE CENTRAL OFFICE COMPANY		X		
AUTOMATIC ALARM SIGNAL TO THE CENTRAL OFFICE COMPANY	X		X	X
SPRINKLER ALARM SIGNAL TO THE CENTRAL OFFICE COMPANY				
TROUBLE SIGNAL TO THE CENTRAL OFFICE COMPANY				
ACTIVATES 8" VIBRATING BELL OVER FAP	X		X	X

2 FIRE ALARM MATRIX
SCALE: NTS

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PROJECT TITLE
NEW CAFETERIA

DRAWING TITLE
FIRE ALARM RISER

DRAWING SCALE: AS INDICATED	
LOCATION NO.: XXXX	FILE NO.: XXX
DRAWN BY: DL	CHECKED BY: SA

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PC B-062 C	**OF**	**19/20**
EC B-063 C	**OF**	**19/20**

DRAWING NO.
FA102

SHEET 40 OF 44

SECTION 283111 - DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM **(ADDENDUM #1)**

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 Voice Fire-alarm control unit.
2. Addressable Manual fire-alarm boxes.
3. Addressable System smoke detectors.
4. Addressable Heat detectors.
5. Visual Notification appliances (Fire alarm Strobes)
6. Voice/Tone Notification appliances (Fire Alarm Speakers)
7. Remote Annunciator.
8. Addressable interface device.
9. Integral Digital alarm communicator transmitter.
10. System printer.

1.3 SUBMITTALS

A. General Submittal Requirements:

1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to the Engineer & the Philadelphia School District.
2. Shop Drawings shall be prepared by persons with the following qualifications:

    a. Trained and certified by manufacturer in fire-alarm system design.
    b. NICET-certified fire-alarm technician, Level IV minimum.
    c. Licensed or certified by authorities having jurisdiction.

B. Product Data: For each type of product indicated.

C. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.

1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
2. Include voltage drop calculations for notification appliance circuits.
3. Include battery-size calculations.
4. Include amplifier loads
   Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
5. Show critical dimensions that relate to placement and support of sampling tubes,

detector housing, and remote status and alarm indicators. Locate detectors according to manuf acturer's written recommendations.

6. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
7. Include floor plans to indicate final outlet locations showing address of each addressable device.
8. Submit 3 copies for permit & 7 copies to the District for approval.
9. Also furnish PDF copy on CD.

D. Qualification Data: For qualified Installer.

E. Seismic Qualification Certificates: For fire-alarm control unit, accessories, and components, from manufacturer.

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

F. Field quality-control reports.

G. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
3. Record copy of site-specific software.
4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:

    a. Frequency of testing of installed components.
    b. Frequency of inspection of installed components.
    c. Requirements and recommendations related to results of maintenance.
    d. Manufacturer's user training manuals.

5. Manufacturer's required maintenance related to system warranty requirements.
6. Abbreviated operating instructions for mounting at fire-alarm control unit.
7. Copy of NFPA 25.

H. THE PHILADELPHIA SCHOOL DISTRICT SHALL RETAIN COMPLETE RIGHTS AND OWNERSHIP TO ALL SOFTWARE RUNNING IN THE SYSTEM. The fire alarm equipment vendor shall provide useable hard and soft copies of the software database to the Philadelphia School District at the end of the warranty period. The database provided shall be useable by any authorized and certified distributor of the product line, and shall include all applicable passwords necessary for total and unrestricted use and modification of the database. The Consulting Engineer shall define the extent of hardcopy database documentation to be provided.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of all devices required for this Project.
B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level II technician.
C. Installer shall be licensed by the City of Philadelphia to install, repair, service and test fire alarm systems.
D. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer.
E. 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.
F. NFPA Certification: Obtain certification according to NFPA 72 by an NRTL.
G. City of Philadelphia Certification.

1.5 PROJECT CONDITIONS

A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:

1. Notify Owner no fewer than 7 days in advance of proposed interruption of fire-alarm service.
2. Do not proceed with interruption of fire-alarm service without Owner's written permission.

1.6 SEQUENCING AND SCHEDULING

A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the building.
B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

1.7 SOFTWARE SERVICE AGREEMENT

A. Comply with UL 864.

B. Technical Support: Beginning with Substantial Completion, provide software support for three years.

C. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within three years from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.

1. Provide 30 days' notice to Owner to allow scheduling and access to system and to allow Owner to upgrade computer equipment if necessary.

D. Provide a certified copy of the fire alarm program on a disk or USB drive with the password necessary to open the program.

1.8 EXTRA MATERIALS

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

1. Smoke Detectors & Heat Detectors: Quantity equal to 10 percent of amount of each type installed, but no fewer than 1 unit of each type.
2. Detector Bases: Quantity equal to 5 percent of amount of each type installed, but no fewer than 1 unit of each type.
3. Keys and Tools: One extra set for access to locked and tamper-proofed components.
4. Audible and Visual Notification Appliances: 10 percent of each type installed.

1.9 WARRANTY AND MAINTENANCE

A. Warranty: Contractor shall warrant the complete fire alarm system installation against defective materials or faulty workmanship for a period of THREE (3) YEARS from the date of acceptance.

B. Maintenance Service: Contractor shall also provide THREE (3) YEARS of factory-authorized maintenance service from the date of acceptance, including any required maintenance or repairs, hardware and software updates, testing and re-certifications.

C. Required Response:

1. Emergency Calls: Contractor shall provide factory-authorized service within FOUR (4) HOURS after notification by the District's Maintenance Department of system trouble or failure.

2. Non-Emergency Calls: Contractor shall provide factory-authorized service within EIGHT (8) HOURS after notification by the District's Maintenance Department of system trouble or failure".

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, design & layout.

Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:

1. Edwards System Technology, Inc.(EST)
2. Siemens Building Technologies, Inc.; Fire Safety Division.
3. SimplexGrinnell LP; a Tyco International company.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

A. Fire-alarm signal initiation shall be by one or more of the following devices:

1. Manual stations.
2. Heat detectors.
3. Smoke detectors.
4. Verified automatic alarm operation of smoke detectors.

5. Automatic sprinkler system water flow.

B. Fire-alarm signal shall initiate the following actions:

1. Continuously operate alarm notification appliances.
2. Identify alarm at fire-alarm control unit and remote annunciator(s).
3. Transmit an alarm signal to the remote alarm receiving station.
4. Unlock electric door locks in designated egress paths.
5. Release fire and smoke doors held open by magnetic door holders.
6. Activate voice/alarm communication system.
7. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
8. Activate smoke-control system (smoke management) at firefighter smoke-control system panel.
9. Activate stairwell and elevator-shaft pressurization systems.
10. Close smoke dampers in air ducts of designated air-conditioning duct systems.
11. Recall elevators to primary or alternate recall floors.
12. Activate emergency lighting control.
13. Activate emergency shutoffs for gas and fuel supplies.
14. Record events in the system memory.
15. Record events by the system printer.

C. Supervisory signal initiation shall be by one or more of the following devices and actions:

1. Valve supervisory switch.
2. Duct smoke detectors.
3. Low-air-pressure switch of a dry-pipe sprinkler system.
4. Elevator shunt-trip supervision.
5. Fire Pump running, loss of power and/or phase reversal

D. System trouble signal initiation shall be by one or more of the following devices and actions:

1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of primary power at fire-alarm control unit.
4. Ground or a single break in fire-alarm control unit internal circuits.
5. Abnormal ac voltage at fire-alarm control unit.
6. Break in standby battery circuitry.
7. Failure of battery charging.
8. Abnormal position of any switch at fire-alarm control unit or annunciator.

E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit and remote annunciators. Record the event on system printer.

2.3 FIRE-ALARM CONTROL UNIT

A. General Requirements for Fire-Alarm Control Unit:

1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.

a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
b. Include a real-time clock for time annotation of events on the event recorder and printer.

2. Addressable initiation devices that communicate device identity and status.

    a. Smoke sensors shall additionally communicate sensitivity settings and allow for adjustment of sensitivity at fire-alarm control unit.
    b. Temperature sensors shall additionally test for and communicate the sensitivity range of the device.

3. Addressable control circuits for operation of mechanical equipment.

4. The system shall not have a Self- Mapping Feature & all devices need to be hand programmable, 1 hand held programmer to be supplied with project.

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

1. Annunciator and Display: Liquid-crystal type, 40 lines, minimum.
2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.
3. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class B.
4. Serial Interfaces: Two RS-232 ports for printers.

C. Notification Appliance Circuit: Operation shall sound in a code three temporal pattern followed by a fire department approved voice message.

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

E. Remote Smoke-Detector Sensitivity Adjustment: Controls shall 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 the final adjusted values on system printer.

F. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.

G. Voice/Alarm Signaling Service as shown on drawings: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided in a separate cabinet located in the fire command center.

H. 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 all other printed indications. Also print system reset event, including same information for device, location, date, and time. Commands initiate the printing of a list of existing alarm, supervisory, and trouble conditions in the system and a historical log of events.

I. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, shall be powered by 24-V dc source.

1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.

J. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.

1. Batteries: Sealed lead calcium.

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

L. The Fire Alarm control panel shall be provided with a one man walk test feature and program the Fire Alarm panel for this feature.

2.4 MANUAL FIRE-ALARM BOXES

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

1. Single -action mechanism to initiate an alarm, plastic-rod, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
2. Station Reset: Key- or wrench-operated switch.
3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
4. Weatherproof Protective Shield where shown: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.
5. Provide a sign to each manual pull station. The sign shall be mounted immediately adjacent to the manual pull station. The sign shall read “INCASE OF FIRE: SOUND ALARM AND CALL THE FIRE DEPARTMENT”.

2.5 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be two-wire type.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type indicating detector is operating.
7. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.

    a. Rate-of-rise temperature characteristic shall be selectable at fire-alarm control unit for 15 deg per minute.

b. Fixed-temperature sensing shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 deg.
c. Provide multiple levels of detection sensitivity for each sensor.

B. Photoelectric Smoke Detectors:

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall 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.).

C. Ionization Smoke Detector:

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall 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.).

2.6 HEAT DETECTORS ADDRESSABLE & CONVENTIONAL

A. General Requirements for Heat Detectors: Comply with UL 521.

B. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135° F or a rate of rise that exceeds 15° per minute unless otherwise indicated.

1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

C. Heat Detector, Conventional High Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 135° F.

1. Mounting: Twist-lock base.
2. Remote Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
3. Mount in a climate controlled area.

D. Heat Detector, Conventional High Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 190° F.

1. Mounting: Twist-lock base.
2. Remote Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
3. Mount in a climate controlled area.

2.7 NOTIFICATION APPLIANCES

A. Connect to a signaling line circuit, equipped for mounting as indicated and with screw terminals for system connections.

B. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.

1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.

C. Visible Notification Appliances (Strobes): Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1 inch (25 mm) high letters on the lens.

1. Rated Light Output:

   a. 15/30/75/110 cd, selectable in the field.

2. Mounting: Wall mounted unless otherwise indicated.
3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
4. Flashing shall be in a temporal pattern, synchronized with other units.
5. Strobe Leads: Factory connected to screw terminals.
6. Mounting Faceplate: Factory finished, white.

D. Voice/Tone Notification Appliances (Speakers):

1. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.
2. High-Range Units: Rated 2 to 15 W.
3. Low-Range Units: Rated 1 to 2 W.
4. Mounting: Flush or surface mounted and bidirectional.
5. Matching Transformers: Tap range matched to acoustical environment of speaker location.

2.8 REMOTE ANNUNCIATOR

A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.

1. Mounting: Flush or Surface cabinet, NEMA 250, Type 1.

B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

C. Provide one at main entrance, main office & building engineer’s office.

2.9 ADDRESSABLE INTERFACE DEVICE

A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.

B. Integral Relay: Capable of providing open or closed contact.

2.10 DIGITAL ALARM COMMUNICATOR TRANSMITTER

DACT: Provide alarm communicator transmitter (DACT) to transmit alarm signals to a Central Monitoring Station (CMS). The DACT shall Provide Two Cat. 5 cables from the fire alarm control panel to the telephone demarcation station (main telephone service box) to transmit alarm signal to the security officer at School District main office.

A. Secondary Power: Integral rechargeable battery and automatic charger.

B. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

2.11 SYSTEM PRINTER

A. Printer shall be listed and labeled by an NRTL as an integral part of fire-alarm system.

2.12 DEVICE GUARDS

A. Description: Welded wire mesh of size and shape for the heat detector, smoke detector, Audio Visual, or other device requiring protection.

1. Factory fabricated and furnished by manufacturer of device.
2. Finish: Paint of color to match the protected device.
3. Provide for all devices in all gyms and locker rooms and where otherwise noted on drawings.

2.13 PANEL LOCKS

All locks and keys for fire alarm panel and power booster panels shall be keyed alike and keyed to the master key system of the School District of Philadelphia. Locks and pulls for doors of cabinets shall be Corbin #15767. The master key shall be #CAT 60.

2.15 AMPLIFIERS

A) Each audio power amplifier shall have integral audio signal de-multiplexers, allowing the amplifier to select any one of eight digitized audio channels as directed by system programming.

B)

C) Audio amplifiers shall be power limited and protected from short circuits conditions on the audio circuit wiring. Each amplifier output shall provide a selectable 25/70 Vrms output, suitable for connection to emergency speakers.

D)

E) To enhance system survivability in the event of a total loss of audio data communications, all amplifiers shall default to the local “EVAC” tone generator channel. If the local panel has an alarm condition, then all amplifiers will sound the EVAC message on their speaker circuits. In the event of a loss of the fully digitized, multiplexed audio riser data, the audio amplifiers shall automatically default to an internally generated alarm tone which shall sound a 3-3-3 temporal pattern.

2.16 REMOTE BOOSTER POWER SUPPLIES

A) Install Remote NAC Power Supplies (boosters) as required, to minimize NAC voltage drops. Remote NAC power supplies shall be treated as peripheral NAC devices and shall not be considered fire alarm control units.

B) The NAC power supplies shall be fully enclosed in a surface mounted steel enclosure with hinged door and cylinder lock, and finished in red enamel. Door keys shall be the identical to FACP enclosure keys. The enclosure shall have factory installed mounting brackets for additional UL listed fire alarm equipment within its cabinet. Enclosures shall be sized to allow ample space for interconnection of all components and field wiring, and up to 10AH batteries. The enclosure shall have provisions for an optional tamper switch. All FACP addressable control modules required to initiate the required NAC power supply output functions shall be installed within the NAC power supply enclosure

C) Remote NAC power supply input circuits shall be configurable as Class B supervised inputs or for connection to any 6 to 45 VDC initiation source.

D) Remote booster power supplies shall provide four (4) synchronized Class B supervised or two (2) Class A, power limited, 24VDC filtered and regulated Notification Appliance Circuits (NACs). Each NAC output shall be configurable as a continuous 24Vdc auxiliary power output circuit. The booster power supply shall be capable of a total output of 6 amps.

E) The power supply NACs shall be configurable to operate independently at any one of the following rates: continuous synchronized, or 3-3-3 temporal. It shall be possible to configure the NACs to follow the main FACP NAC or activate from intelligent addressable synchronized modules. All visible NACs within the facility shall be synchronized.

F) Upon failure of primary AC power, the remote power supply shall automatically switch over to secondary battery power without losing any system functions. It shall be possible to delay reporting of an AC power failure for up to 6 hours. All standby batteries shall be continuously monitored by the power supply. Low battery and disconnection of battery power supply conditions shall immediately annunciated as locally as battery trouble. All power supply trouble conditions (DC power failure, ground faults, low batteries, and IDC/NAC circuit faults) shall identify the specific remote power supply affected at the main FACP. All power supply trouble conditions except loss of AC power shall report immediately. Interconnecting NAC Booster power supplies in a manner which prevents identification of an individual power supply trouble shall not be considered as an equal.

G) The remote booster power supply shall be capable of recharging up to 24AH batteries to 70% capacity in 24 hours maximum. Batteries provided shall be sized to meet the same power supply performance requirements as the main FACP, as detailed elsewhere in this specification.

H) All AC power connections shall be to the building's designated dedicated emergency electrical power circuit. The power circuit disconnect means shall be clearly labeled FIRE ALARM CIRCUIT CONTROL and shall have a red marking. The location of the circuit disconnect shall be labeled permanently inside the each remote NAC power supply the disconnect serves.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

A. Comply with NFPA 72 for installation of fire-alarm equipment.

B. Equipment Mounting: Install fire-alarm control unit on concrete wall with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.

C. Smoke- or Heat-Detector Spacing:

1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
3. Smooth ceiling spacing shall not exceed 30 feet.
4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Appendix A or Appendix B NFPA 72.
5. HVAC: Locate detectors not closer than 3 feet from air-supply diffuser or return-air opening.
6. Lighting Fixtures: Locate detectors not closer than 12 inches from any part of a lighting fixture.

D. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.

E. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.

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

G. Audible Alarm-Indicating Devices: Install not less than 6 inches below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.

H. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches below the ceiling.

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

J. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

K. Annunciator: Install with top of panel not more than 54 inches above the finished floor.

3.2 CONNECTIONS

A. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.

1. Smoke dampers in air ducts of designated air-conditioning duct systems.
2. Alarm-initiating connection to elevator recall system and components.
3. Alarm-initiating connection to activate emergency lighting control.
4. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
5. Supervisory connections at valve supervisory switches.
6. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
7. Supervisory connections at elevator shunt trip breaker.

8. Supervisory connections at fire-pump power, running and failure including a dead-phase or phase- reversal condition.
9. Supervisory connections at fire-pump control panel.

3.3 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

B. Install framed instructions in a location visible from fire-alarm control unit.

3.4 GROUNDING

A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

3.5 FIELD QUALITY CONTROL

A. Field tests shall be witnessed by Owner.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

D. Tests and Inspections:

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

    a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
    b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.

2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliance.

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

G. Prepare test and inspection reports.

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

I. Annual Test and Inspections with certification: One year after date of Substantial Completion & one year following that, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections & turn over to the owner.

3.6 DEMONSTRATION / FACTORY TRAINING

A. Engage a factory-authorized service representative to train Owner's Fire Alarm technician maintenance personnel, ON SITE, 8 hours minimum, to adjust, operate, and maintain fire-alarm system.

END OF SECTION 283111