

KEY NOTES

- 1 APPROXIMATE LOCATION FOR THE EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL & VOICE EVACUATION PANEL TO REMAIN IN SERVICE. SEE FA ALARM PLANS AND RISER DIAGRAM 1/EA.01.
 - 2 PROVIDE POWER CONNECTION FOR 800A 480V BUILDING MAIN PANEL. SEE PC DRAWINGS AND SINGLE LINE DIAGRAM 1/EA.03.
 - 3 PROVIDE POWER CONNECTION FOR 400A 208V BUILDING DIST. PANEL. SEE PC DRAWINGS AND SINGLE LINE DIAGRAM 1/EA.03.
- (E) INDICATE EXISTING CONDUIT AND WIRING. FOR REFERENCE ONLY, FIELD VERIFY AS REQUIRED.

(E)SITE CONDUIT SYSTEM SCHEDULE

SYMBOL	SYSTEM	QUANTITY/SIZE	TYPE	REMARKS
D	POWER	(TWO) 4" C	PVC SCH.40	BUILDING A
E	POWER	(TWO) 4" C	PVC SCH.40	BUILDING C
F	POWER	(TWO) 4" C	PVC SCH.40	BUILDING D
G	POWER	(TWO) 4" C	PVC SCH.40	BUILDING E
H	POWER	(TWO) 4" C	PVC SCH.40	BUILDING F
I	POWER	(TWO) 4" C	PVC SCH.40	SOLAR PLANT
K	POWER	(TWO) 4" C	PVC SCH.40	SPARE
L	POWER	(TWO) 3" C	PVC SCH.40	FUTURE BUILDING
M	POWER	(TWO) 4" C	PVC SCH.40	208V

(E)PULL BOX SCHEDULE

NO.	SIZE	COVER MARKING
11	34"x52" CHRISTY N48	POWER
12	34"x52" CHRISTY N48	POWER
13	34"x52" CHRISTY N48	POWER
14	34"x52" CHRISTY N48	POWER
15	34"x52" CHRISTY N48	POWER
16	34"x52" CHRISTY N48	POWER
17	34"x52" CHRISTY N48	POWER

- NOTES:
1. ALL PULL BOX SHALL BE RATED N20 WITH STEEL COVER PLATE AND HOLD-DOWN BOLTS.
 2. PROVIDE ID LETTER ON COVER PLATE PER SCHEDULE.
 3. PROVIDE 4" MOLD STRIP FOR AROUND PULL BOX ON LANDSCAPE AREA.

PROJECT NOTES

- A. EXISTING ELECTRICAL SERVICE HAS BEEN INVESTIGATED AND FOUND TO HAVE ADEQUATE CAPACITY FOR THE PROPOSED LOAD ADDITION AS SHOWN ON THESE PLANS OR
- B. SOURCE OF POWER HAS BEEN INVESTIGATED AND IS ADEQUATE FOR THE ADDITIONAL LOAD.
- C. SITE INSPECTOR IS TO WITNESS AND VERIFY GROUNDING TEST.
- D. CONTRACTOR TO MONITOR EXISTING FIRE ALARM SYSTEM IF IT IS INTERRUPTED OR DISCONNECTED.

SITE PLAN - ELECTRICAL NEW SCHOOL INCREMENT #3

SCALE: 1" = 30'-0"

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Project: **NEW ELEMENTARY SCHOOL INCREMENT 3**
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & MARDI GRAS COURT

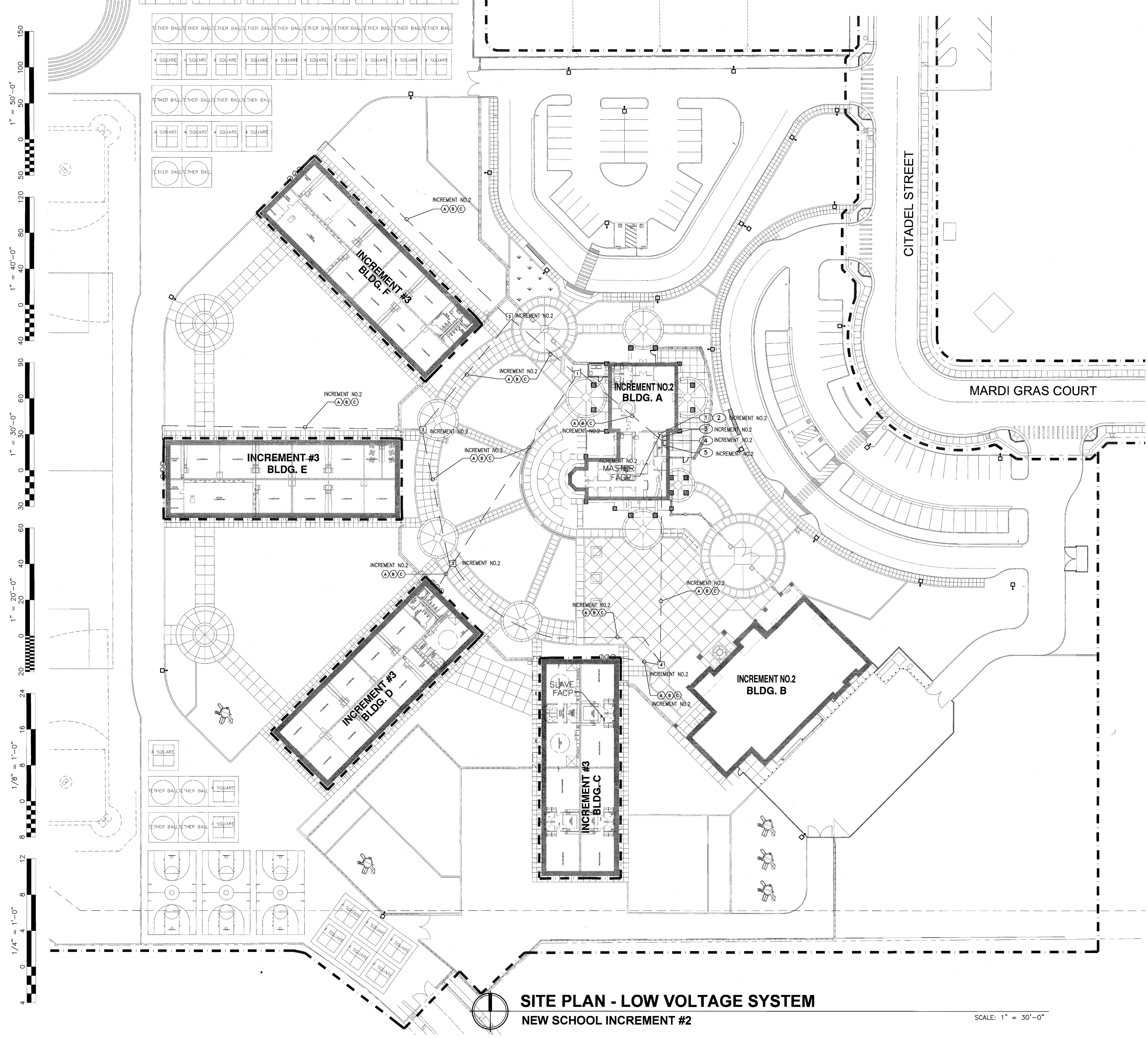
Sheet No.: **5262**
E1.01

DATE: JUN 27 2018

DATE: 01/31/18
DATE: 12/06/16
DESIGNED BY: J CHONG
CHECKED BY: J CHONG

AGENCY APPROVAL STAMP:
FILE # 15-6
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
03-1183549
AC / FLS / SS
DATE JUN 27 2018

PROFESSIONAL SEAL:
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Exp. 6/30/2020
ELECTRICAL
STATE OF CALIFORNIA



KEY NOTES

- 1 APPROXIMATE LOCATION FOR THE EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL & VOICE EVACUATION PANEL TO REMAIN IN SERVICE. PROVIDE CONNECTION TO THE NEW FIRE ALARM DEVICES PER PLANS. UPDATE NEW FIRE ZONE MAP. PROGRAM NEW DEVICES INFORMATION. MEASURE ACTUAL LOAD CURRENT AND VOLTAGE DROP FOR EACH NAC CIRCUITS, AND FACT STANDBY CURRENT AND ALARM CURRENT. SEND THE REPORT TO OWNER AND ENGINEER FOR REVIEW, AND PLASTIC LAMINATED ONE COPY FIRE FACP CABINET DOOR.
- 2 APPROXIMATE LOCATION FOR EXISTING EMERGENCY VOICE EVACUATION PANEL. FIELD VERIFY LOCATION.
- 3 APPROXIMATE LOCATION FOR THE EXISTING COMPUTER MOF SERVER EQUIPMENT IN ADMIN OFFICE. PROVIDE NEW CABLE AND CONNECTION FOR THE NEW SIGNAL DEVICES PER PLANS.
- 4 APPROXIMATE LOCATION FOR THE EXISTING PAVIC EQUIPMENT IN ADMIN OFFICE. PROVIDE NEW CABLE AND CONNECTION FOR THE NEW SIGNAL DEVICES PER PLANS.
- 5 APPROXIMATE LOCATION FOR THE EXISTING MASTER INTRUSION ALARM PANEL IN ADMIN OFFICE. PROVIDE NEW CABLE AND CONNECTION FOR THE NEW SIGNAL DEVICES PER PLANS.
- 6 EXISTING SIGNAL CONDUITS PATHWAY, FOR REFERENCE ONLY. CONTRACTOR SHOULD INCLUDE ALLOWANCE IN HIS BID PROPOSAL TO FIELD VERIFY EXACT LOCATION AND REQUIREMENT PER PLANS.
- 7 INDICATE EXISTING CONDUIT AND WIRING, FOR REFERENCE ONLY. FIELD VERIFY AS REQUIRED.

**INCREMENT NO.2
SITE CONDUIT SYSTEM SCHEDULE**

SYMBOL	SYSTEM	QUANTITY/SIZE	TYPE	REMARKS
(A)	PA/IC/TELE/SECURITY	(TWO) 4" C	PVC SCH.40	PROVIDE PULL ROPE FOR EMPTY CONDUIT AND SEAL WITH SILICONE SEALANT
(B)	DATA/TV	(TWO) 2" C	PVC SCH.40	
(C)	FIRE ALARM	(ONE) 2" C	PVC SCH.40	

**INCREMENT NO.2
PULL BOX SCHEDULE**

NO.	SIZE	COVER MARKING
1	34"x52" CHRISTY N48	SIGNAL
2	24"x36" CHRISTY N40	SIGNAL
3	24"x36" CHRISTY N40	SIGNAL
4	34"x52" CHRISTY N48	SIGNAL
5	24"x36" CHRISTY N40	SIGNAL
6	24"x36" CHRISTY N40	SIGNAL
7	24"x36" CHRISTY N40	SIGNAL

NOTES:
 1. ALL PULL BOX SHALL BE RATED #20 WITH STEEL COVER PLATE AND HOLD DOWN BOLTS.
 2. PROVIDE ID LETTER ON COVER PLATE PER SCHEDULE.
 3. PROVIDE 4" MOLD STRIP FOR AROUND PULL BOX ON LANDSCAPE AREA.

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Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT #3**
 BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & MARDI GRAS COURT

Sheet Title: **SITE PLAN - LOW VOLTAGE**

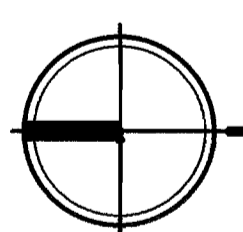
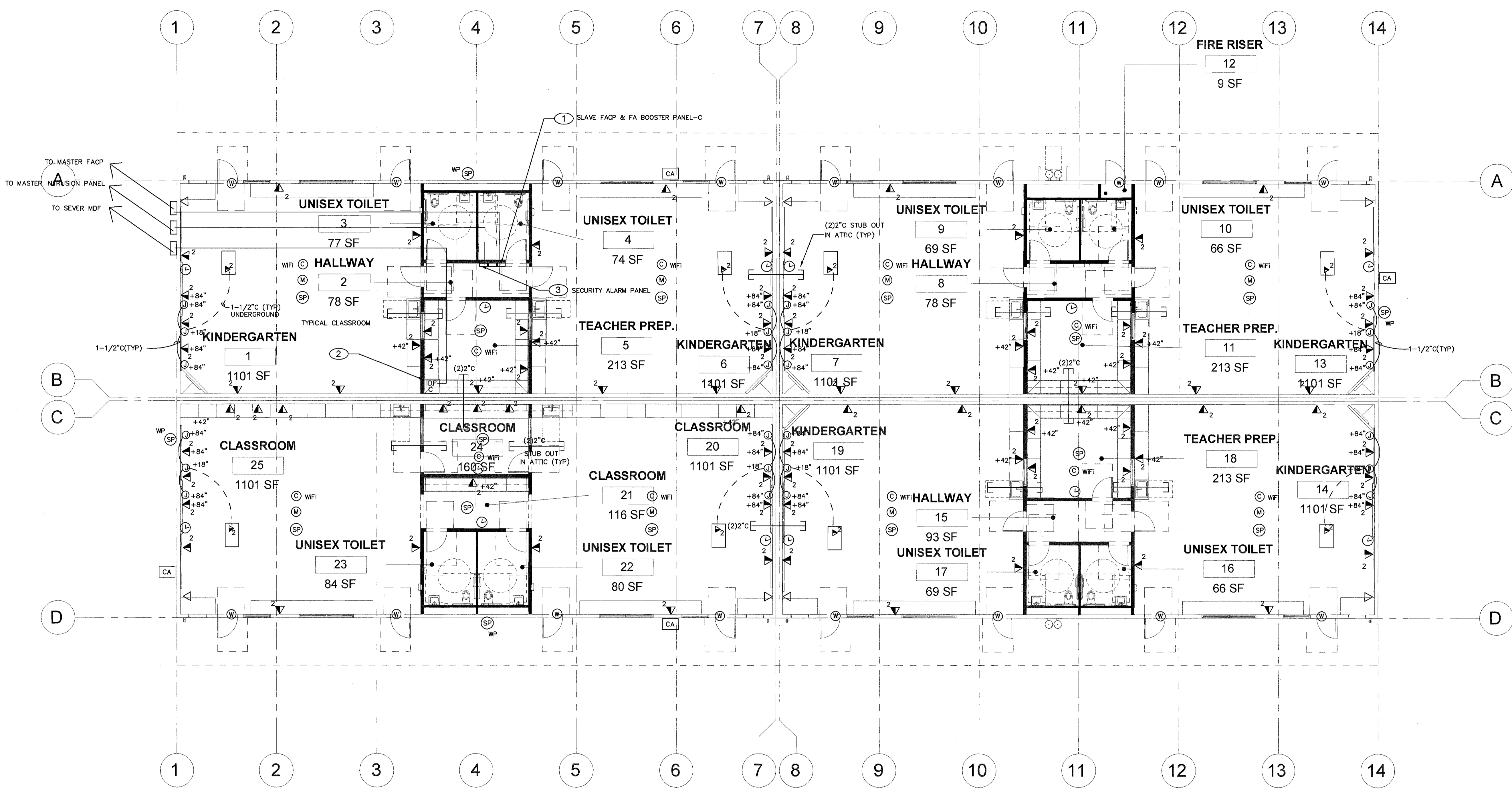
Revision Description: _____
 Revision: _____
 Rev. Date: _____

Issue Date: 07/31/18
 Date: 12/06/16
 Designer: J CHONG
 Checker: J CHONG

Agency Approval Stamp:
 FILE # 15-6
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 OFFICE OF REGULATION SERVICES
 03-11839-4
 AC: FLS/PL/SS
 DATE: JUN 27 2018
 TRACKING #: _____

Stamp(s):

Job No.: **5262**
 Sheet No.: **E1.02**
 Release: _____



SIGNAL AND COMMUNICATION PLAN - BLDG. 'C'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

KEY NOTES

- 1 SLAVE FACP AND FIRE ALARM NAC SIGNAL & EMERGENCY VOICE BOOSTER PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE FIBER OPTIC CABLE TO MDF IN ADMIN. OFFICE. SEE FA RISER DIAGRAM 1/E4.01.
- 2 IDF CABINET AND DATA EQUIPMENT. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE FIBER OPTIC CABLE TO MDF IN ADMIN. OFFICE. SEE RISER DIAGRAM 2/E4.02.
- 3 NETWORK SECURITY ALARM PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE INTERCONNECT CABLE TO MASTER SECURITY ALARM PANEL IN ADMIN. OFFICE. SEE RISER DIAGRAM 1/E4.02.

LEGEND

- SECURITY ALARM SYSTEM**
 FURNISH AND INSTALL BY OWNER'S VENDOR. COORDINATE AND PROVIDE RACKWAY FOR SECURITY ALARM DEVICES PER PLANS.
- (K) LCD KEYPAD, PROVIDE 4" SQ. BACK BOX, SINGLE GANG AND DEVICE MOUNTING PLATE. PROVIDE 3/4" C TO ACCESSIBLE ATTIC SPACE AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - (M) CEILING MOUNTED INTRUSION DETECTOR +84" AFF. PROVIDE LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - (W) DOOR CONTACT SWITCH. RECESS ABOVE DOOR JAMB AT OPEN SIDE. ROUGH-IN 1/2" C AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
- PA/TELEPHONE/INTERCOM SYSTEM**
- (S) HANDSET/PHONE OUTLET AT 48" AFF. - PROVIDE BLUE COLOR CAT.5e 4UTP CABLE TO IDF PATCH PANEL. HUBBELL WHITE COLOR JACK AND FACEPLATE.
 - (S) WALL MOUNTED CLOCK/SPEAKER COMBO AT +84" AFF. PROVIDE BACK BOX, 3/4" C WITH CABLE TO MASTER PA/IC. SEE SPECIFICATION FOR MORE INFORMATION.
 - (L) WIRELESS WALL CLOCK AT +84" AFF. SEE SPECIFICATION FOR MORE INFORMATION.
 - (SP) CEILING SPEAKER - RAULAND #US221 W/AC1401 BAFFLE. PROVIDE BACKBOX AND CEILING SUPPORT AS REQUIRED. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - (WP) OUTDOOR SPEAKER - ATLAS #AP15 HORN W/W/WRM AND LOWELL (#CB84 FOR SURFACE, #R75X FOR RECESS) BACK BOX W/SOLK GRILL. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
- DATA COMMUNICATION SYSTEM**
- (L) LETTER INDICATED NUMBER OF CABLE DROP AND DATA JACK REQUIREMENT.
 - (L) WALL DATA OUTLET AT +18" AFF. - NUMBER 3 INDICATED (THREE DATA DROP) HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6e 4UTP CABLE TO IDF PATCH PANEL.
 - (WFI) CEILING DATA OUTLET FOR WIRELESS ACCESS POINT WITH (TWO) RJ45 JACK. HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6e 4UTP CABLE TO IDF PATCH PANEL.
 - (IDF) WALL MOUNT DATA CABINET, MODEL: HUBBELL 36" H WITH SWING OUT DOOR AND RACK, PROVIDE EXHAUST FAN INSIDE. PROVIDE (4) 48 PORT PATCH PANEL, MODEL: HUBBELL #JDK4821U. DATA SWITCH FURNISH BY OWNER. INSTALL BY CONTRACTOR. PROVIDE ALL HARDWARE AND PATCH CABLE AS REQUIRED FOR A COMPLETE FUNCTION SYSTEM. PROVIDE 66 BLOCK INSIDE CABINET FOR SPEAKER WIRING TERMINATION.
 - (A) WIREMOLD RFB4E ON GRADE FLOOR BOX WITH 2HUB CONDUIT HUB FITTING. COORDINATE FINISH WITH ARCHITECT. PROVIDE FOURPLEX RECEPTACLE AND DATA OUTLETS, AND UNDERGROUND CONDUIT AND WIRING PER PLANS.
 - (T) OUTDOOR TELE/IC CABLE. 22AWG SOLID COPPER 25 PAIR OSP TELEPHONE CABLE.
 - (P1) PA/IC CABLE. CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - (FO) FIBER OPTIC CABLE VIA INNER DUCT WITH J-HOOK IN ATTIC AND 2" C FOR OUTDOOR. 12 STRAND OM4 MULTIMODE CABLE. TERMINATED IN TO FUSION SPLICED CONNECTORS AND PUT INTO HUBBELL BULKHEADS INSIDE IDF.
 - (C1) GENERAL CABLE BLUE COLOR CAT 6e 22AWG 4UTP.
 - (C2) GENERAL CABLE BLUE COLOR CAT 6e 22AWG 4UTP. (WIRELESS ACCESS POINT)
 - (CA) EXTERIOR WALL MOUNT SECURITY CAMERA. ROUGH IN DATA JACK AND MOUNTING BACK BOX. SEE SPECIFICATION. PROVIDE ONE CAT 6e 4UTP CABLE TO IDF PATCH PANEL.

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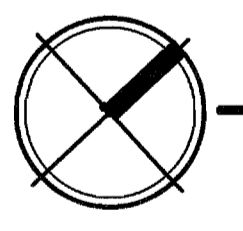
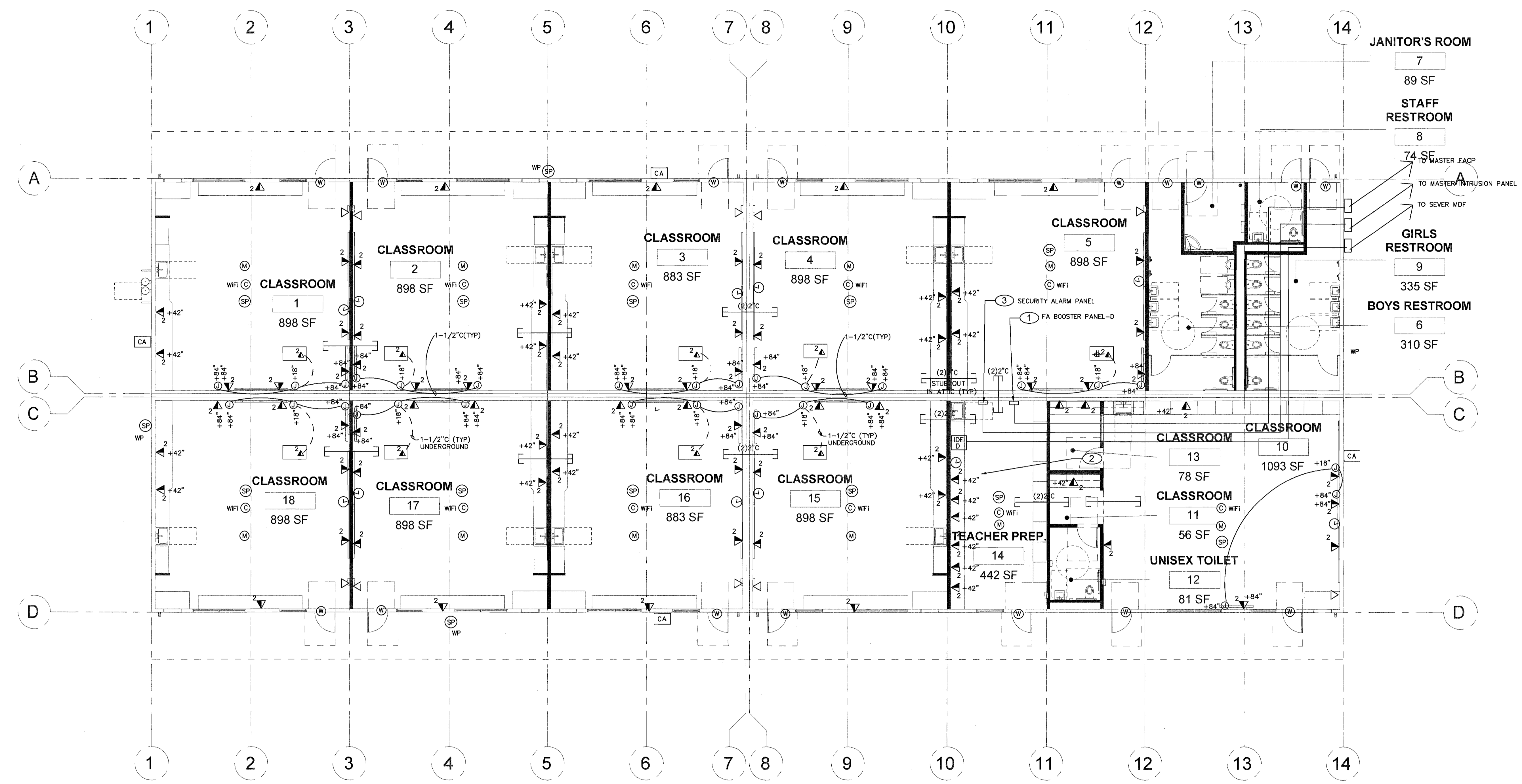
SIGNAL & COMMUNICATION PLAN - BUILDING 'C'
NEW ELEMENTARY SCHOOL INCREMENT 3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARDT GRAIS COURT

Sheet No.: 01/31/18
 Date: 12/06/16
 Designer: J. CHONG
 Checker: J. CHONG
 Agency Approval Stamp: FILE # 15-6
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 OFFICE OF REGULATION SERVICES
 03-116394
 DATE: JUN 27 2018
 TRACKING # -

Stamp:

Job No.: 5262
 Sheet No.: E2.10
 Release:

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SIGNAL AND COMMUNICATION PLAN - BLDG. 'D'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

KEY NOTES

- FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +48" AFF. AND INTERFACE CABLE TO MASTER PACP IN ADMIN. OFFICE. SEE Riser DIAGRAM 1/E4.01.
- IDF CABINET AND DATA EQUIPMENT. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE FIBER OPTIC CABLE TO MDF IN ADMIN. OFFICE. SEE RISER DIAGRAM 2/E4.02.
- NETWORK SECURITY ALARM PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +48" AFF. PROVIDE INTERCONNECT CABLE TO MASTER SECURITY ALARM PANEL IN ADMIN. OFFICE. SEE RISER DIAGRAM 1/E4.02.

LEGEND

- SECURITY ALARM SYSTEM**
- FURNISH AND INSTALL BY OWNER'S VENDOR. COORDINATE AND PROVIDE RACKWAY FOR SECURITY ALARM DEVICES PER PLANS.
 - LOD KEYPAD, PROVIDE 4" SQ. BACK BOX, SINGLE GANG AND DEVICE MOUNTING PLATE. PROVIDE 3/4" C TO ACCESSIBLE ATTIC SPACE AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING MOUNTED INTRUSION DETECTOR +84" AFF. PROVIDE LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - DOOR CONTACT SWITCH - RECES ABOVE DOOR JAMB AT OPEN SIDE. ROUGH-IN 1/2" C AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
- PA/TELEPHONE/INTERCOM SYSTEM**
- HANDSET/P PHONE OUTLET AT 48" AFF. - PROVIDE BLUE COLOR CAT5e 4UTP CABLE TO IDF PATCH PANEL. HUBBELL WHITE COLOR JACK AND FACEPLATE.
 - WALL MOUNTED CLOCK/SPEAKER COMBO AT +84" AFF. PROVIDE BACK BOX, 3/4" C WITH CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - WIRELESS WALL CLOCK AT +84" AFF. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING SPEAKER - RAULAND #02021 W/AC1401 Baffle. PROVIDE BACKBOX AND CEILING SUPPORT AS REQUIRED. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - OUTDOOR SPEAKER - ATLAS #APF15 HORN W/4M4R AND LOWELL (#CB84 FOR SURFACE, #B75X FOR RECESS) BACK BOX W/SOLK GRILL. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
- DATA COMMUNICATION SYSTEM**
- LETTER INDICATED NUMBER OF CABLE DROP AND DATA JACK REQUIREMENT.
 - WALL DATA OUTLET AT +18" AFF. - NUMBER 3 INDICATED (THREE DATA DROPS) HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6A 4UTP CABLE TO IDF PATCH PANEL.
 - CEILING DATA OUTLET FOR WIRELESS ACCESS POINT WITH (TWO) RJ45 JACK. HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6A 4UTP CABLE TO IDF PATCH PANEL.
 - WALL MOUNT DATA CABINET, MODEL: HUBBELL 36" H WITH SWING OUT DOOR AND RACK, PROVIDE EXHAUST FAN INSIDE. PROVIDE (4) 48 PORT PATCH PANEL, MODEL: HUBBELL #03X48U. DATA SWITCH FURNISH BY OWNER, INSTALL BY CONTRACTOR. PROVIDE ALL HARDWARE AND PATCH CABLE AS REQUIRED FOR A COMPLETE FUNCTION SYSTEM. PROVIDE 66 BLOCK INSIDE CABINET FOR SPEAKER WIRING TERMINATION.
 - WIREMOLD RFBHE ON GRADE FLOOR BOX WITH 2HUB CONDUIT HUB FITTING. COORDINATE FINISH WITH ARCHITECT. PROVIDE FOURPLEX RECEPTACLE AND DATA OUTLETS, AND UNDERGROUND CONDUIT AND WIRING PER PLANS.
 - OUTDOOR TELE/C CABLE, 22AWG SOLID COPPER 25 PAIR OSP TELEPHONE CABLE.
 - PA/C CABLE, CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - FIBER OPTIC CABLE VIA INNER DUCT WITH J-HOOK IN ATTIC AND 2" C FOR OUTDOOR. 12 STAND CM4 MULTIMODE CABLE. TERMINATED IN TO FUSION SPLICED CONNECTORS AND PUT INTO HUBBLE BULKHEADS INSIDE IDF.
 - GENERAL CABLE BLUE COLOR CAT 6e 22AWG 4UTP.
 - GENERAL CABLE BLUE COLOR CAT 6A 22AWG 4UTP. (WIRELESS ACCESS POINT)
 - EXTERIOR WALL MOUNT SECURITY CAMERA. ROUGH IN DATA JACK AND MOUNTING BACK BOX. SEE SPECIFICATION. PROVIDE ONE CAT 6A 4UTP CABLE TO IDF PATCH PANEL.

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SIGNAL & COMMUNICATION BLDG. 'D'
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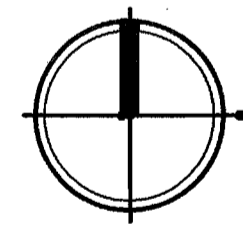
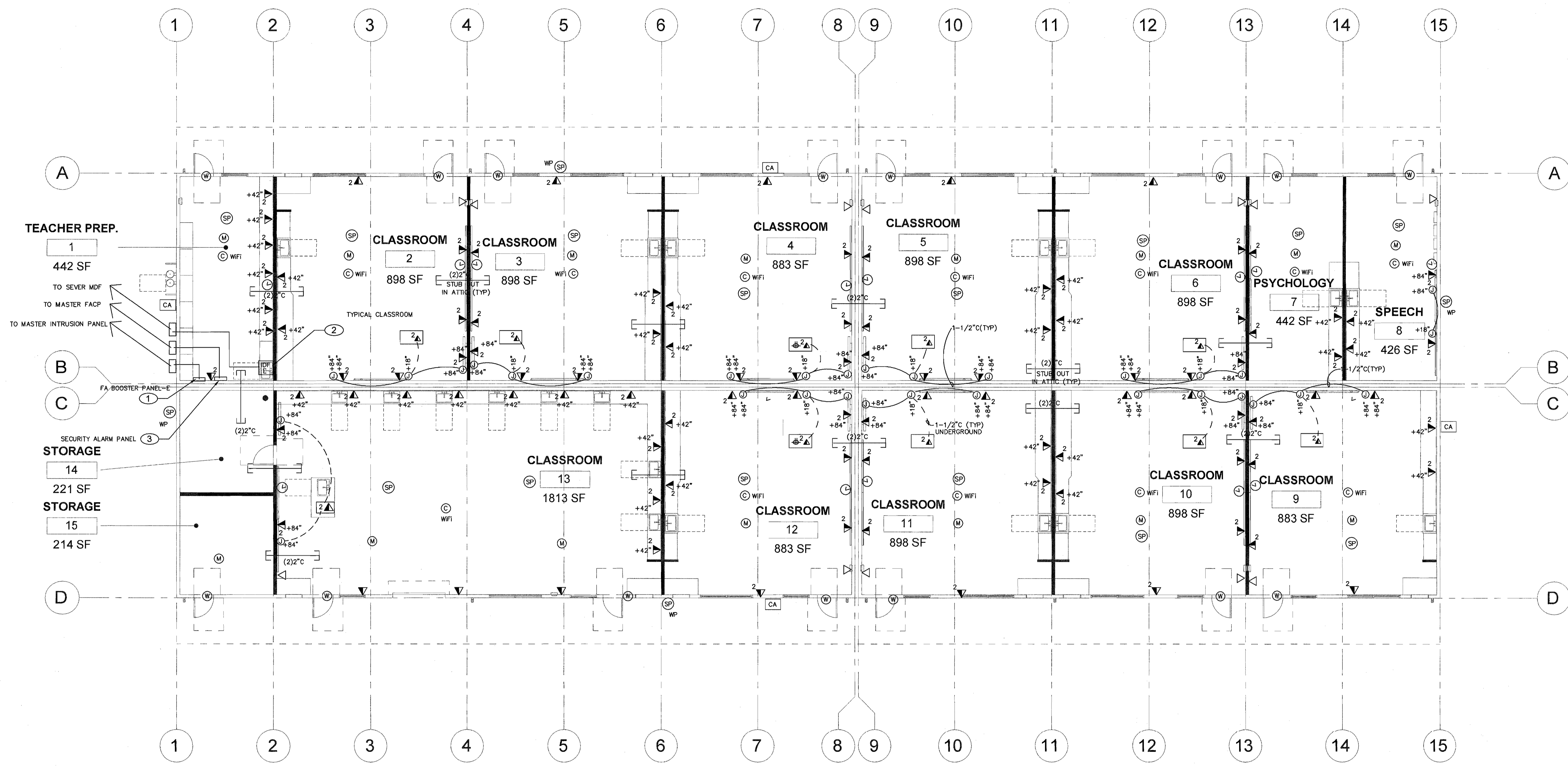
Sheet Title: SIGNAL & COMMUNICATION BLDG. 'D'
 Name: J. CHONG
 Date: 12/06/16
 Design: J. CHONG
 Date: JUN 27 2018

Agency Approval Stamp:
 FILE #15-6
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 OFFICE OF REGULATION SERVICES
 03-118394
 AC FL. FLS. SS
 DATE JUN 27 2018
 TRACKING # -

Professional Engineer Seal:
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 E. 14419
 Exp. 6/30/2020
 ELECTRICAL
 STATE OF CALIFORNIA

Job No.: 5262
 Sheet No.: E2.20
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SIGNAL AND COMMUNICATION PLAN - BLDG. 'E'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

KEY NOTES

- 1 FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +48" AFF. AND INTERFACE CABLE TO MASTER FACP IN ADMIN. OFFICE. SEE FA RISER DIAGRAM 1/E4.01.
- 2 IDF CABINET AND DATA EQUIPMENT. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE FIBER OPTIC CABLE TO MDF IN ADMIN. OFFICE. SEE RISER DIAGRAM 2/E4.02.
- 3 NETWORK SECURITY ALARM PANEL. PROVIDE 120V DEDICATED CIRCUIT AND OUTLET AT +84" AFF. PROVIDE INTERCONNECT CABLE TO MASTER SECURITY ALARM PANEL IN ADMIN. OFFICE. SEE RISER DIAGRAM 1/E4.02.

LEGEND

- SECURITY ALARM SYSTEM**
- FURNISH AND INSTALL BY OWNER'S VENDOR. COORDINATE AND PROVIDE RACKWAY FOR SECURITY ALARM DEVICES PER PLANS.
 - LOD KEYPAD, PROVIDE 4" SQ. BACK BOX, SINGLE GANG AND DEVICE MOUNTING PLATE. PROVIDE 3/4" TO ACCESSIBLE ATTIC SPACE AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING MOUNTED INTRUSION DETECTOR +84" AFF. PROVIDE LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - DOOR CONTACT SWITCH. RECESS ABOVE DOOR JAMB AT OPEN SIDE. ROUGH-IN 1/2" C AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
- PA/TELEPHONE/INTERCOM SYSTEM**
- HANDSET/FP PHONE OUTLET AT 46" AFF. - PROVIDE BLUE COLOR CAT5e 4UTP CABLE TO IDF PATCH PANEL. HUBBELL WHITE COLOR JACK AND FACEPLATE.
 - WALL MOUNTED CLOCK/SPEAKER COMBO AT +84" AFF. PROVIDE BACK BOX, 3/4" C WITH CABLE TO MASTER CLOCK AND 3/4" C SPEAKER CABLE TO MASTER PA/C. SEE SPECIFICATION FOR MORE INFORMATION.
 - WIRELESS WALL CLOCK AT +84" AFF. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING SPEAKER - RAILROAD #150221 W/ACC1401 Baffle. PROVIDE BACKBOX AND CEILING SUPPORT AS REQUIRED. PROVIDE CAT5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - OUTDOOR SPEAKER - ATLAS #AP15 HORN W/WMR AND LOWELL (#GB84 FOR SURFACE, #P75X FOR RECESS) BACK BOX W/SOLK GRILL. PROVIDE CAT5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
- DATA COMMUNICATION SYSTEM**
- LETTER INDICATED NUMBER OF CABLE DROP AND DATA JACK REQUIREMENT.
 - WALL DATA OUTLET AT +18" AFF. - NUMBER 3 INDICATED (THREE DATA DROPS) HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6a 4UTP CABLE TO IDF PATCH PANEL.
 - CEILING DATA OUTLET FOR WIRELESS ACCESS POINT WITH (TWO) RJ45 JACK. HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6a 4UTP CABLE TO IDF PATCH PANEL.
 - IDF WALL MOUNT DATA CABINET, MODEL: HUBBELL 36" H WITH SWING OUT DOOR AND RACK, PROVIDE EXHAUST FAN INSIDE. PROVIDE (4) 48 PORT PATCH PANEL, MODEL: HUBBELL #80X80EL. DATA SWITCH FURNISH BY OWNER. INSTALL BY CONTRACTOR. PROVIDE ALL HARDWARE AND PATCH CABLE AS REQUIRED FOR A COMPLETE FUNCTION SYSTEM. PROVIDE 66 BLOCK INSIDE CABINET FOR SPEAKER WIRING TERMINATION.
 - WREMOULD RFB4E ON GRADE FLOOR BOX WITH 2HUB CONDUIT HUB FITTING. COORDINATE FINISH WITH ARCHITECT. PROVIDE FOURPLEX RECEPTACLE AND DATA OUTLETS, AND UNDERGROUND CONDUIT AND WIRING PER PLANS.
 - OUTDOOR TELE/C CABLE. 22AWG SOLID COPPER 25 PAIR OSP TELEPHONE CABLE.
 - PA/C CABLE. CAT5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - FIBER OPTIC CABLE VIA INNER DUCT WITH 1/2" HOOD IN ATTIC AND 2" FOR OUTDOOR. 12 STAND OMA MULTIMODE CABLE. TERMINATED IN TO FUSION SPLICED CONNECTORS AND PUT INTO HUBBELL BULKHEADS INSIDE IDF.
 - GENERAL CABLE BLUE COLOR CAT 6e 22AWG 4UTP.
 - GENERAL CABLE BLUE COLOR CAT 6a 22AWG 4UTP. (WIRELESS ACCESS POINT)
 - EXTERIOR WALL MOUNT SECURITY CAMERA. ROUGH IN DATA JACK AND MOUNTING BACK BOX. SEE SPECIFICATION. PROVIDE ONE CAT 6a 4UTP CABLE TO IDF PATCH PANEL.

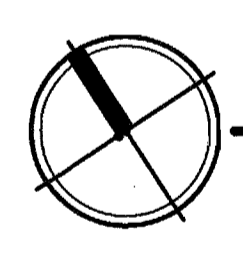
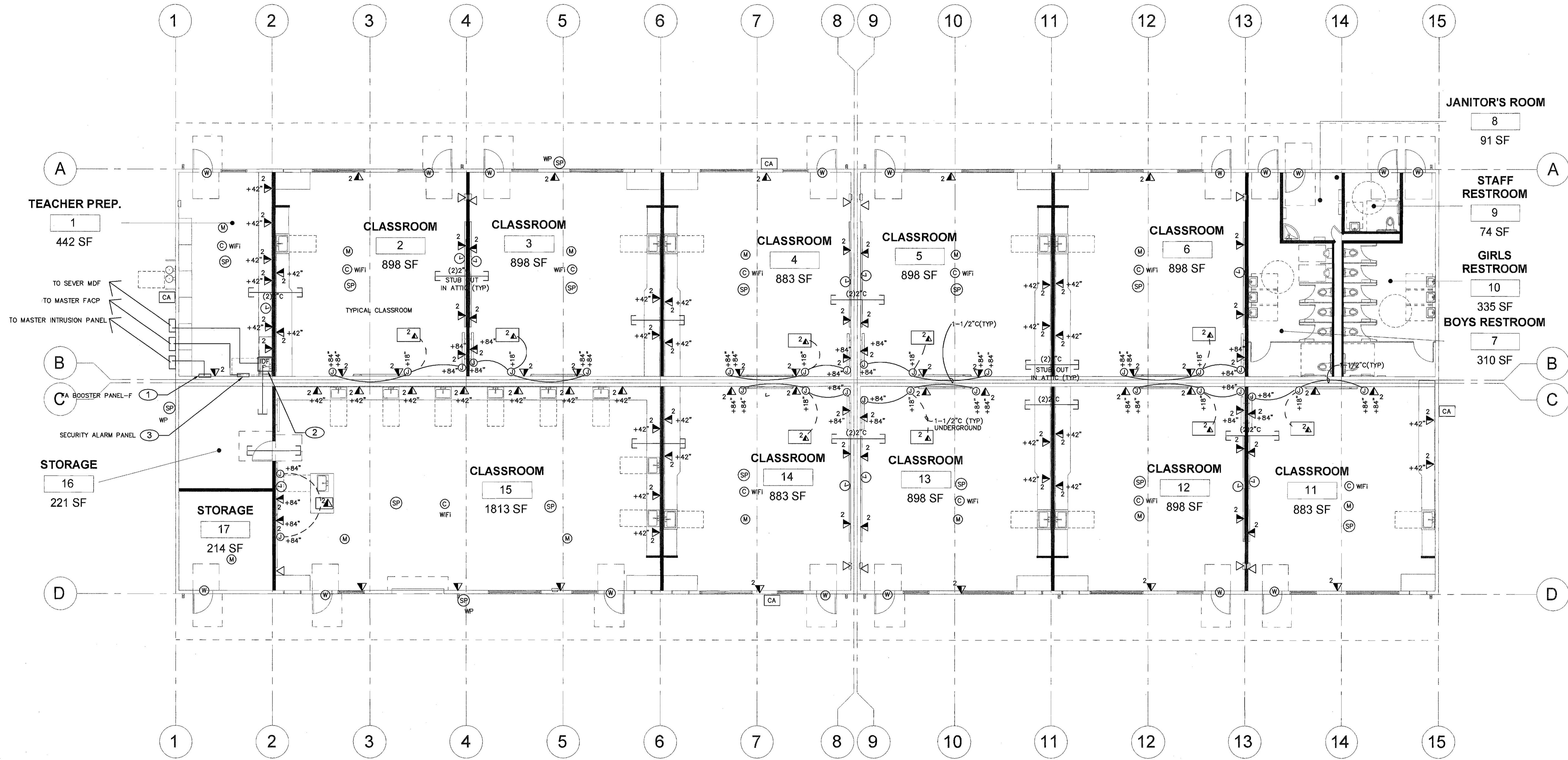
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SIGNAL & COMMUNICATION BLDG. 'E'
NEW ELEMENTARY SCHOOL INCREMENT 3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARD GRASS COURT

Sheet Title: SIGNAL & COMMUNICATION BLDG. 'E'
 Date: 01/31/18
 Designer: J. CHONG
 Checker: J. CHONG
 Agency Approval Stamp: FILE # 15-6 IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES 03-118394 AC FLS SS DATE JUN 27 2018 TRACKING # -
 Stamp(s): JOHN S. CHONG E 14419 Exp. 5/30/2020 ELECTRICAL STATE OF CALIFORNIA
 Job No.: 5262
 Sheet No.: E2.30
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SIGNAL AND COMMUNICATION PLAN - BLDG. 'F'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

KEY NOTES

- 1 FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL. PROVIDE 120V DEDICATE CIRCUIT AND OUTLET AT +48" AFF. AND INTERFACE CABLE TO MASTER FACP IN ADMIN. OFFICE. SEE FA RISER DIAGRAM 1/E4.01.
- 2 IDF CABINET AND DATA EQUIPMENT. PROVIDE 120V DEDICATE CIRCUIT AND OUTLET AT +84" AFF. PROVIDE FIBER OPTIC CABLE TO MDF IN ADMIN. OFFICE. SEE RISER DIAGRAM 2/E4.02.
- 3 NETWORK SECURITY ALARM PANEL. PROVIDE 120V DEDICATE CIRCUIT AND OUTLET AT +48" AFF. PROVIDE INTERCONNECT CABLE TO MASTER SECURITY ALARM PANEL IN ADMIN. OFFICE. SEE RISER DIAGRAM 1/E4.02.

LEGEND

- SECURITY ALARM SYSTEM**
 FURNISH AND INSTALL BY OWNER'S VENDOR. COORDINATE AND PROVIDE RACEWAY FOR SECURITY ALARM DEVICES PER PLANS.
- 64 ZONE NETWORK INTRUSION PANEL. PROVIDE 110V DEDICATED CIRCUIT AND OUTLET. PROVIDE NETWORK CABLE TO MASTER PANEL IN ADMIN OFFICE SERVER ROOM.
 - LOD KEYPAD. PROVIDE 4" SQ. BACK BOX, SINGLE GANG AND DEVICE MOUNTING PLATE. PROVIDE 3/4" C TO ACCESSIBLE ATTIC SPACE AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING MOUNTED INTRUSION DETECTOR +84" AFF. PROVIDE LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
 - DOOR CONTACT SWITCH. RECESS ABOVE DOOR JAMB AT OPEN SIDE. ROUND-IN 1/2" C AND LOW VOLTAGE CABLE TO MASTER PANEL. SEE SPECIFICATION FOR MORE INFORMATION.
- PA/TELEPHONE/INTERCOM SYSTEM**
- HANDSET/P PHONE OUTLET AT 46" AFF - PROVIDE BLUE COLOR CAT.6e 4UTP CABLE TO IDF PATCH PANEL. HUBBELL WHITE COLOR JACK AND FACEPLATE.
 - WALL MOUNTED CLOCK/SPEAKER COMBO AT +84" AFF. PROVIDE BACK BOX, 3/4" C WITH CABLE TO MASTER CLOCK AND 3/4" C (1) SPEAKER CABLE TO MASTER PA/C. SEE SPECIFICATION FOR MORE INFORMATION.
 - WIRELESS WALL CLOCK AT +84" AFF. SEE SPECIFICATION FOR MORE INFORMATION.
 - CEILING SPEAKER - RAILROAD #10221 W/AC11401 Baffle. PROVIDE BACKBOX AND CEILING SUPPORT AS REQUIRED. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - OUTDOOR SPEAKER - ATLAS #AP15 HORN W/NEWR AND LOWELL (#CB84 FOR SURFACE, #B75X FOR RECESS) BACK BOX W/SOLK GRILL. PROVIDE CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
- DATA COMMUNICATION SYSTEM**
- LETTER INDICATED NUMBER OF CABLE DROP AND DATA JACK REQUIREMENT.
 - WALL DATA OUTLET AT +18" AFF - NUMBER 3 INDICATED (THREE DATA DROP) HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6e 4UTP CABLE TO IDF PATCH PANEL.
 - CEILING DATA OUTLET FOR WIRELESS ACCESS POINT WITH (TWO) RJ45 JACK HUBBELL WHITE COLOR JACKS AND FACEPLATE WITH CAT 6A 4UTP CABLE TO IDF PATCH PANEL.
 - WALL MOUNT DATA CABINET, MODEL: HUBBELL 36" W/ SWING OUT DOOR AND RACK. PROVIDE EXHAUST FAN INSIDE. PROVIDE (4) 48 PORT PATCH PANEL, MODEL: HUBBELL #D4048U. DATA SWITCH FURNISH BY OWNER. INSTALL BY CONTRACTOR. PROVIDE ALL HARDWARE AND PATCH CABLE AS REQUIRED FOR A COMPLETE FUNCTION SYSTEM. PROVIDE 66 BLOCK INSIDE CABINET FOR SPEAKER WIRING TERMINATION.
 - WIREMOLD RFB4E ON GRADE FLOOR BOX WITH 2HUB CONDUIT HUB FITTING. COORDINATE FINISH WITH ARCHITECT. PROVIDE FOURPLEX RECEPTACLE AND DATA OUTLETS, AND UNDERGROUND CONDUIT AND WIRING PER PLANS.
 - OUTDOOR TELE/C CABLE. 22AWG SOLID COPPER 25 PAIR OSP TELEPHONE CABLE.
 - PA/C CABLE. CAT.5e YELLOW CABLE TO IDF 66 BLOCK FOR TERMINATION.
 - FIBER OPTIC CABLE VIA INNER DUCT WITH J-HOOK IN ATTIC AND 2" C FOR OUTDOOR. 12 STAND 0M4 MULTIMODE CABLE. TERMINATED IN TO FUSION SPLICED CONNECTORS AND PUT INTO HUBBELL BULKHEADS INSIDE IDF.
 - GENERAL CABLE BLUE COLOR CAT 6e 22AWG 4UTP.
 - GENERAL CABLE BLUE COLOR CAT 6A 22AWG 4UTP. (WIRELESS ACCESS POINT)
 - EXTERIOR WALL MOUNT SECURITY CAMERA. ROUGH IN DATA JACK AND MOUNTING BACK BOX. SEE SPECIFICATION. PROVIDE ONE CAT 6A 4UTP CABLE TO IDF PATCH PANEL.

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SIGNAL & COMMUNICATION BLDG. 'F'
NEW ELEMENTARY SCHOOL INCREMENT #3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARD GRAIS COURT

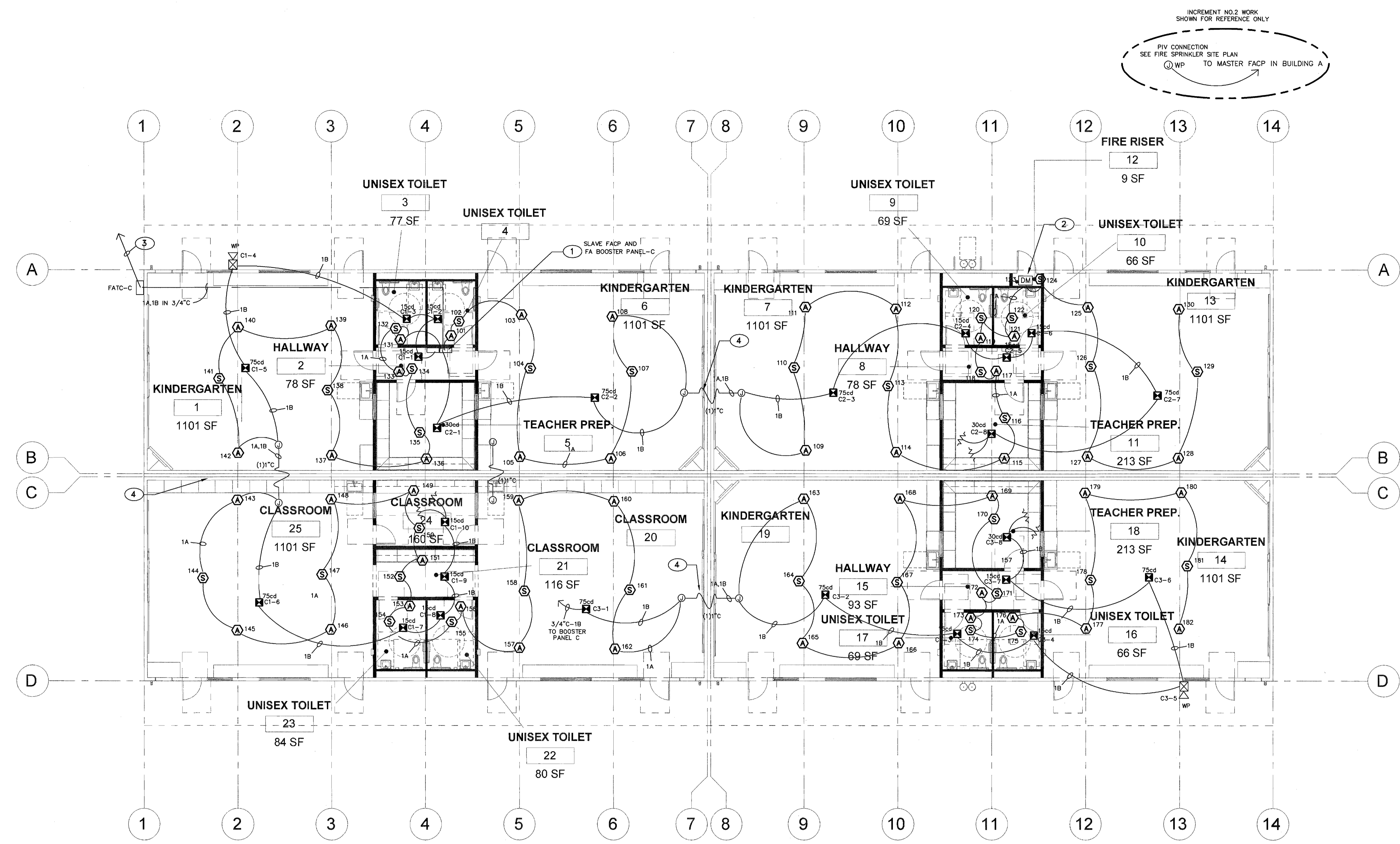
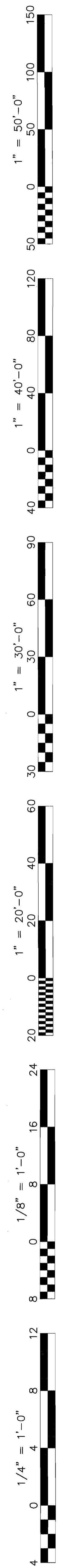
Project Name & Address: _____
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 Designer: J. CHONG
 Checker: J. CHONG
 Date: 12/06/16

Agency Approval Stamp:
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 jchong1nser@cs.com



FIRE ALARM PLAN - BLDG. 'C'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

FA CABLE SCHEDULE	
TYPE	DESCRIPTION
A	INITIALING CIRCUIT CABLE 2#16 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, MIN. 3/4" CONDUIT INSTALLATION
B	NAC SIGNAL CIRCUIT CABLE 2#12 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, AND 2#16 TWIST SHIELD SPEAKER CABLE, MIN. 3/4" CONDUIT INSTALLATION
C	INITIALING CIRCUIT CABLE 4#14 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR OUTDOOR CABLE, MIN. 3/4" CONDUIT INSTALLATION

KEY NOTES

- SLAVE FACP AND FIRE ALARM NAC SIGNAL & EMERGENCY VOICE BOOSTER PANEL, PROVIDE 110V DEDICATE CIRCUIT AND CONNECT TO PANEL CR1 CIRCUIT #30 WITH MECHANICAL LOCK ON BREAKER. PROVIDE CONNECTION FOR NEW FA DEVICES INTERFACE WITH MASTER FACP IN ADMIN BUILDING. SEE FA RISER DIAGRAM FOR DETAIL.
- FURNISH AND INSTALL MONITOR MODULES AND FA MONITORING CABLE FOR FIRE SPRINKLER FLOW SWITCH AND TAMPER SWITCH. SEE FIRE SPRINKLER PLANS FOR EXACT LOCATION AND DETAILS.
- NEW 1" U.G. CONDUIT WITH 1C, 1B FA CABLE INTERCONNECT TO EXISTING MASTER FACP IN ADMIN OFFICE VIA EXISTING U.G. SIGNAL CONDUITS AND PULL BOX.
- PROVIDE 1" WP FLEX CONDUIT IN ATTIC SPACE BETWEEN BUILDING FOR FA CABLE RACEWAY. FIELD VERIFY LOCATION, CORE DRILL AND SEAL EXTERIOR WALL AS REQUIRED.

LEGEND

- FACP FIRE ALARM CONTROL PANEL
- NAC NAC SIGNAL POWER SUPPLY
- DVC DIGITAL VOICE COMMAND CENTER
- ANN REMOTE ANNUNCIATOR
- CI-4
15cd INDICATE NUMBER 4 DEVICES IN CIRCUIT CI
- 15cd CEILING MOUNT SPEAKER STROBE
15cd 30cd 75cd 110cd
TEMPORAL CODE 3
- WP OUTDOOR EVACUATION SPEAKER WITH WEATHERPROOF BOX
TEMPORAL CODE 3
- g02 INDICATE INITIATING DEVICES ADDRESS
- S ADDRESSABLE CEILING SMOKE DETECTOR WITH BASE
- H CEILING HEAT DETECTOR 190°F TEMP WITH BASE
- DM DUAL MONITORING MODULE
- SM SYNC MODULE
- 1A INDICATE (1)FA CABLE TYPE A
- R END OF LINE RESISTOR

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FIRE ALARM PLAN
BLDG. 'C'
NEW ELEMENTARY SCHOOL
INCREMENT 3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARD GRASS COURT

Issue Date: 07/31/18 Date: 12/06/16
 Designer: J CHONG
 Checker: J CHONG

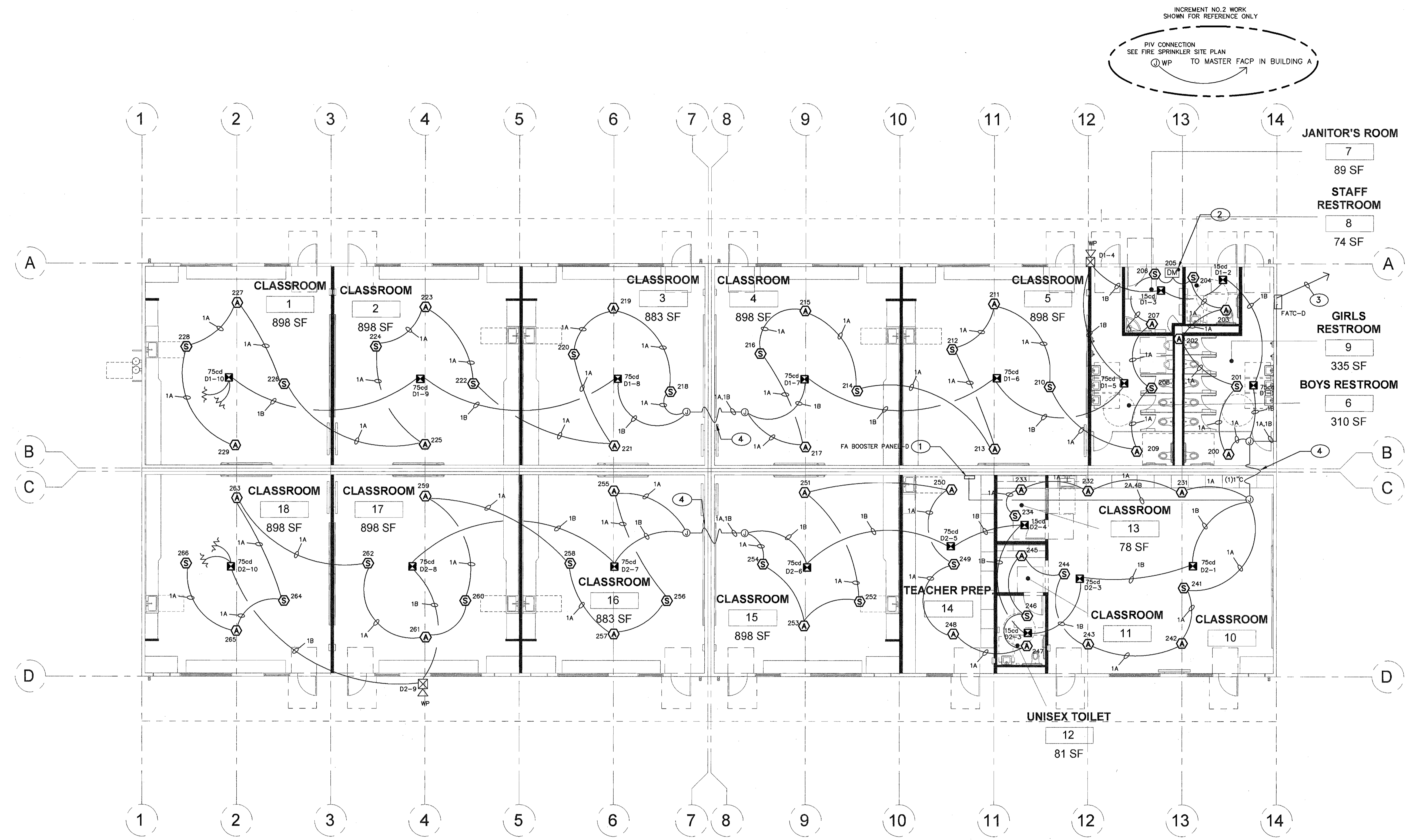
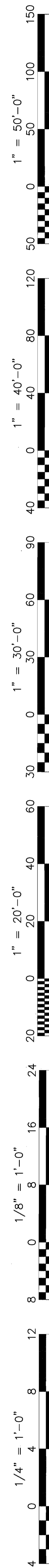
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FIRE ALARM PLAN - BLDG. 'D'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

FA CABLE SCHEDULE	
TYPE	DESCRIPTION
A	INITIALING CIRCUIT CABLE 2#16 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, MIN. 3/4" CONDUIT INSTALLATION
B	NAC SIGNAL CIRCUIT CABLE 2#12 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, AND 2#16 TWIST SHIELD SPEAKER CABLE, MIN. 3/4" CONDUIT INSTALLATION
C	INITIALING CIRCUIT CABLE 4#14 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR OUTDOOR CABLE, MIN. 3/4" CONDUIT INSTALLATION

KEY NOTES

- FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL PROVIDE 110V DEDICATED CIRCUIT AND CONNECT TO PANEL DR2 CIRCUIT #29 WITH MECHANICAL LOCK ON BREAKER. PROVIDE CONNECTION FOR NEW FA DEVICES INTERFACE WITH MASTER FACP IN ADMIN BUILDING. SEE FA RISER DIAGRAM FOR DETAIL.
- FURNISH AND INSTALL MONITOR MODULES AND FA MONITORING CABLE FOR FIRE SPRINKLER FLOW SWITCH AND TAMPER SWITCH. SEE FIRE SPRINKLER PLANS FOR EXACT LOCATION AND DETAILS.
- NEW 1" U.G. CONDUIT WITH 1C, 1B FA CABLE. INTERCONNECT TO EXISTING MASTER FACP IN ADMIN OFFICE VIA EXISTING U.G. SIGNAL CONDUITS AND PULL BOX.
- PROVIDE 1" WP FLEX CONDUIT IN ATTIC SPACE BETWEEN BUILDING FOR FA CABLE RACEWAY. FIELD VERIFY LOCATION, CORE DRILL AND SEAL EXTERIOR WALL AS REQUIRED.

LEGEND

- FACP FIRE ALARM CONTROL PANEL
- NAC NAC SIGNAL POWER SUPPLY
- DVC DIGITAL VOICE COMMAND CENTER
- ANN REMOTE ANNUNCIATOR
- D1-4 15cd INDICATE NUMBER 4 DEVICES IN CIRCUIT D1
- 15cd CEILING MOUNT SPEAKER STROBE
15cd 30cd 75cd 110cd
TEMPORAL CODE 3
- WP OUTDOOR EVACUATION SPEAKER
WITH WEATHERPROOF BOX
TEMPORAL CODE 3
- o02 INDICATE INITIATING DEVICES ADDRESS
- S ADDRESSABLE CEILING SMOKE DETECTOR
WITH BASE
- H CEILING HEAT DETECTOR
190° TEMP WITH BASE
- DM DUAL MONITORING MODULE
- SM SYNC MODULE
- 1A INDICATE (1)FA CABLE TYPE A
- END OF LINE RESISTOR

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FIRE ALARM PLAN
BLDG. 'D'
NEW ELEMENTARY SCHOOL
INCREMENT 3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARD GRASS COURT

Sheet Title: FIRE ALARM PLAN BLDG. 'D'
 Project Name & Address: NEW ELEMENTARY SCHOOL INCREMENT 3
 BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & WARD GRASS COURT

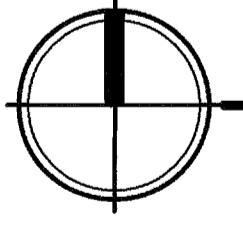
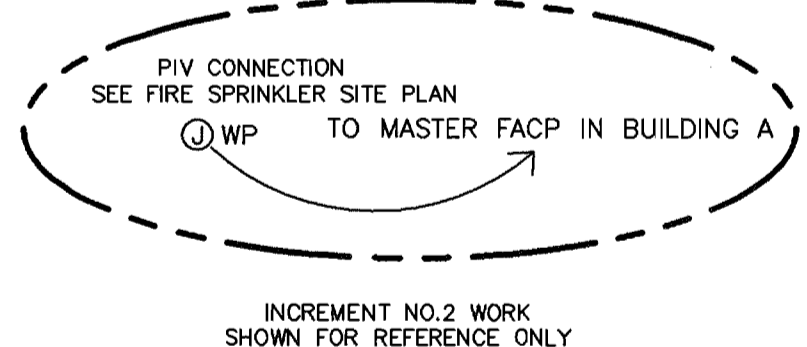
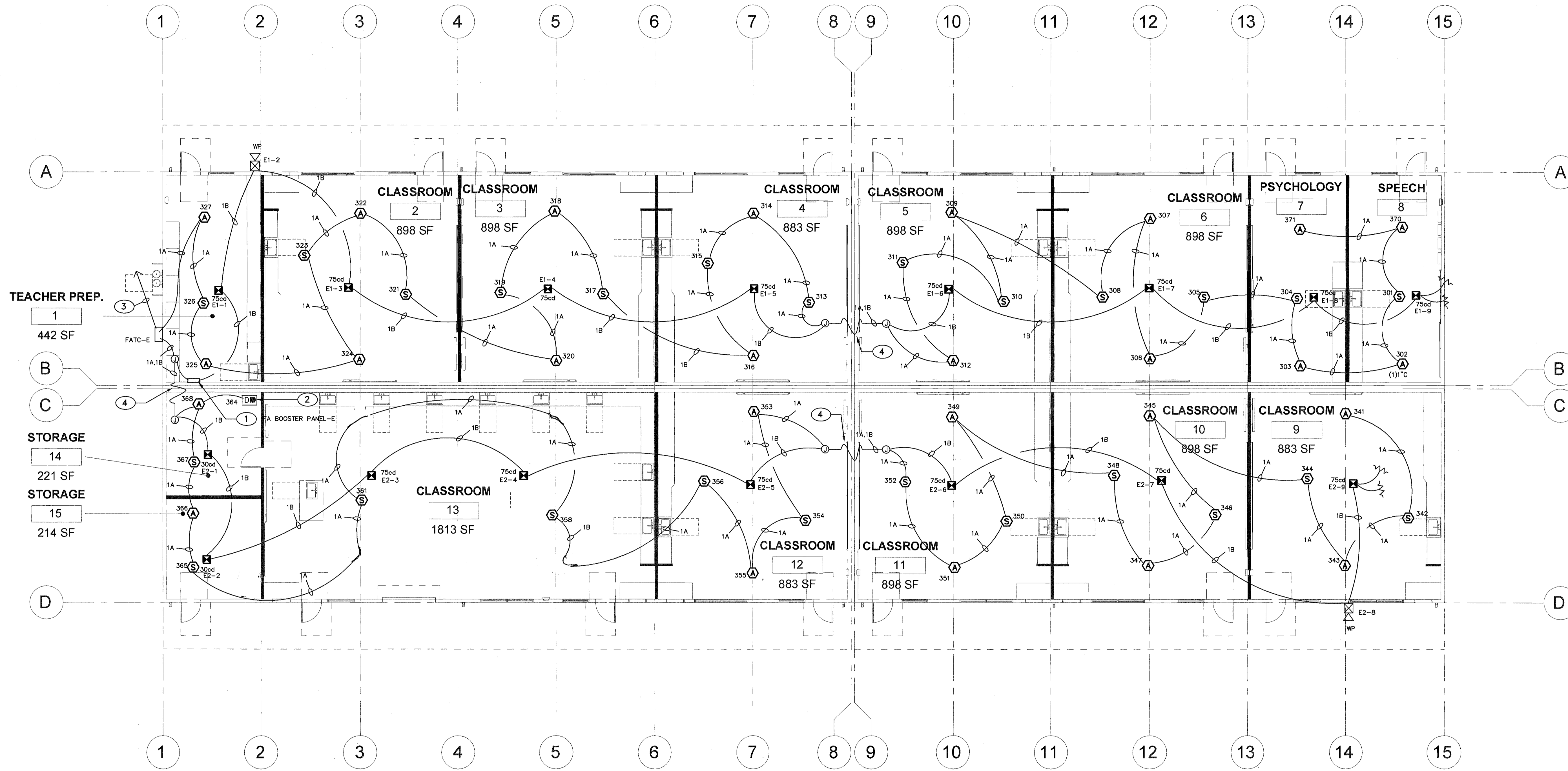
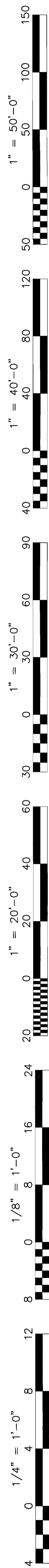
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 Designer: J. CHONG
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FIRE ALARM PLAN - BLDG. 'E'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

FA CABLE SCHEDULE	
TYPE	DESCRIPTION
A	INITIALING CIRCUIT CABLE 2#16 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, MIN. 3/4" CONDUIT INSTALLATION
B	NAC SIGNAL CIRCUIT CABLE 2#12 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, AND 2#16 TWIST SHIELD SPEAKER CABLE, MIN. 3/4" CONDUIT INSTALLATION
C	INITIALING CIRCUIT CABLE 4#14 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR OUTDOOR CABLE, MIN. 3/4" CONDUIT INSTALLATION

KEY NOTES

- FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL, PROVIDE 110V DEDICATED CIRCUIT AND CONNECT TO PANEL EX1 CIRCUIT #28 WITH MECHANICAL LOCK ON BREAKER. PROVIDE CONNECTION FOR NEW FA DEVICES INTERFACE WITH MASTER FACP IN ADMIN BUILDING. SEE FA RISER DIAGRAM FOR DETAIL.
- FURNISH AND INSTALL MONITOR MODULES AND FA MONITORING CABLE FOR FIRE SPRINKLER FLOW SWITCH AND TAMPER SWITCH. SEE FIRE SPRINKLER PLANS FOR EXACT LOCATION AND DETAILS.
- NEW 1" U.G. CONDUIT WITH 1C, 1B FA CABLE INTERCONNECT TO EXISTING MASTER FACP IN ADMIN OFFICE VIA EXISTING U.G. SIGNAL CONDUITS AND PULL BOX.
- PROVIDE 1" WP FLEX CONDUIT IN ATTIC SPACE BETWEEN BUILDING FOR FA CABLE RACEWAY. FIELD VERIFY LOCATION, CORE DRILL AND SEAL EXTERIOR WALL AS REQUIRED.

LEGEND

- [FACP] FIRE ALARM CONTROL PANEL
- [NAC] NAC SIGNAL POWER SUPPLY
- [DVCC] DIGITAL VOICE COMMAND CENTER
- [ANN] REMOTE ANNUCIATOR
- E1-1, 15cd INDICATE NUMBER 4 DEVICES IN CIRCUIT E1
- [SM] CEILING MOUNT SPEAKER STROBE
15cd 30cd 75cd 110cd
TEMPORAL CODE 3
- [WP] OUTDOOR EVACUATION SPEAKER WITH WEATHERPROOF BOX
TEMPORAL CODE 3
- o02 INDICATE INITIATING DEVICES ADDRESS
- [S] ADDRESSABLE CEILING SMOKE DETECTOR WITH BASE
- [H] CEILING HEAT DETECTOR 190°F TEMP WITH BASE
- [DM] DUAL MONITORING MODULE
- [SM] SYNC MODULE
- 1A INDICATE (1)FA CABLE TYPE A
- END OF LINE RESISTOR

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FIRE ALARM PLAN
BLDG 'E'
NEW ELEMENTARY SCHOOL
INCREMENT #3
 BAKERSFIELD CITY SCHOOL DISTRICT
 @ CITADEL ROAD & WARD GRAIS COURT

Sheet Title: FIRE ALARM PLAN BLDG 'E'
 Date: 01/31/18
 Designer: J. CHONG
 Checker: J. CHONG

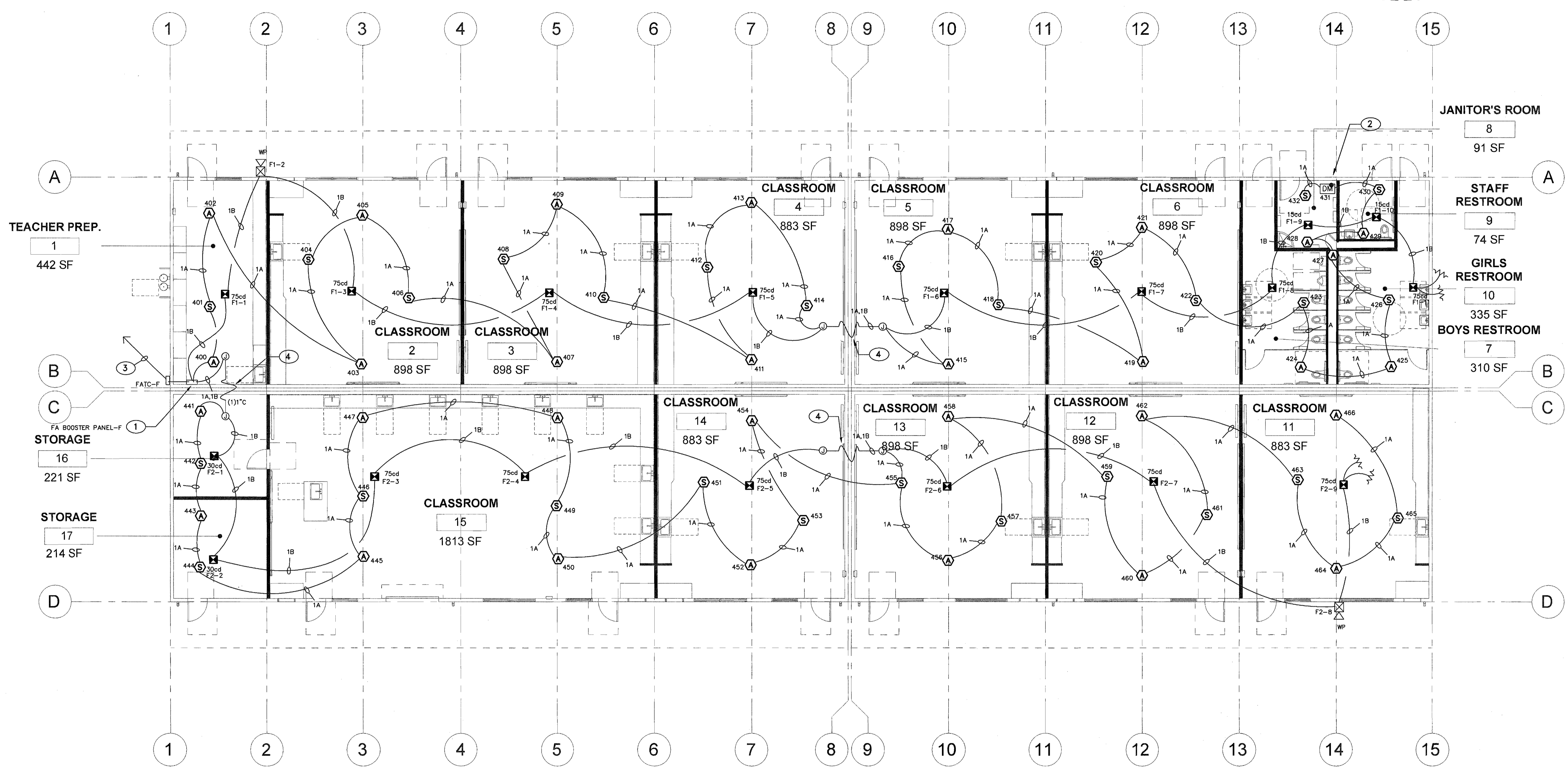
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FIRE ALARM PLAN - BLDG. 'F'
NEW SCHOOL INCREMENT #3

SCALE: 1/8" = 1'-0"

FA CABLE SCHEDULE	
TYPE	DESCRIPTION
A	INITIALING CIRCUIT CABLE 2#16 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, MIN. 3/4" CONDUIT INSTALLATION
B	NAC SIGNAL CIRCUIT CABLE 2#12 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR CABLE, AND 2#16 TWIST SHIELD SPEAKER CABLE, MIN. 3/4" CONDUIT INSTALLATION
C	INITIALING CIRCUIT CABLE 4#14 AWG SOLID COPPER PVC JACKET POWER LIMITED FPLR OUTDOOR CABLE, MIN. 3/4" CONDUIT INSTALLATION

KEY NOTES

- FIRE ALARM NAC SIGNAL AND EMERGENCY VOICE BOOSTER PANEL PROVIDE 110V DEDICATED CIRCUIT AND CONNECT TO PANEL FRI CIRCUIT #33 WITH MECHANICAL LOCK ON BREAKER. PROVIDE CONNECTION FOR NEW FA DEVICES INTERFACE WITH MASTER FACP IN ADMIN BUILDING. SEE FA RISER DIAGRAM FOR DETAIL.
- FURNISH AND INSTALL MONITOR MODULES AND FA MONITORING CABLE FOR FIRE SPRINKLER FLOW SWITCH AND TAMPER SWITCH. SEE FIRE SPRINKLER PLANS FOR EXACT LOCATION AND DETAILS.
- NEW 1" U.G. CONDUIT WITH 1C, 1B FA CABLE INTERCONNECT TO EXISTING MASTER FACP IN ADMIN OFFICE VIA EXISTING U.G. SIGNAL CONDUITS AND PULL BOX.
- PROVIDE 1" WP FLEX CONDUIT IN ATTIC SPACE BETWEEN BUILDING FOR FA CABLE RACEWAY. FIELD VERIFY LOCATION, CORE DRILL AND SEAL EXTERIOR WALL AS REQUIRED.

LEGEND

- [FACP] FIRE ALARM CONTROL PANEL
- [NAC] NAC SIGNAL POWER SUPPLY
- [DVC] DIGITAL VOICE COMMAND CENTER
- [ANN] REMOTE ANNUNCIATOR
- A1-4 15cd INDICATE NUMBER 4 DEVICES IN CIRCUIT A1
- [S] CEILING MOUNT SPEAKER STROBE
15cd 30cd 75cd 110cd
TEMPORAL CODE 3
- [WP] OUTDOOR EVACUATION SPEAKER WITH WEATHERPROOF BOX
TEMPORAL CODE 3
- 102 INDICATE INITIATING DEVICES ADDRESS
- [S] ADDRESSABLE CEILING SMOKE DETECTOR WITH BASE
- [H] CEILING HEAT DETECTOR 190F TEMP WITH BASE
- [DM] DUAL MONITORING MODULE
- [SM] SYNC MODULE
- 1A INDICATE (1)FA CABLE TYPE A
- [Z] END OF LINE RESISTOR

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Sheet Title: **FIRE ALARM PLAN BLDG 'F'**
 Project Name & Address: **NEW ELEMENTARY SCHOOL INCREMENT 3**
 BAKERSFIELD CITY SCHOOL DISTRICT @ CITADEL ROAD & WARDY GRAS COURT

Issue Date: 07/31/18 Date: 12/06/16 Designer: J. CHONG Checker: J. CHONG
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Job No.: **5262**
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BATTERY POWER CALCULATIONS

NAC SIGNAL & AUDIO BOOSTER PANEL C

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.075A	0.175A	0.175A
OUTDOOR SPEAKER	2	---	0.050A	0.100A
VISUAL 15cd	0	---	0.025A	0.000A
AUDIO/VISUAL 15cd	13	---	0.066A	0.858A
AUDIO/VISUAL 30cd	3	---	0.094A	0.272A
AUDIO/VISUAL 75cd	8	---	0.158A	1.264A
AUDIO/VISUAL 110cd	0	---	0.202A	0.000A
SYNC MODULES	3	---	0.035A	0.105A
1/4 W SPEAKER	26	---	0.010A	0.260A
SUB-TOTAL			0.075A	3.034A

24 HOUR STANDBY CURRENT 1.800AH
 15 MINUTE ALARM CURRENT (0.25 HR) 0.259AH
 SUBTOTAL 2.059AH
 20% SAFETY FACTOR 0.512AH
 TOTAL AMPS-HRS REQUIRED 3.071AH
 PROVIDE BATTERY WITH (2) 6AH BATTERY

BATTERY POWER CALCULATIONS

NEW NAC SIGNAL & AUDIO BOOSTER PANEL D

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.075A	0.175A	0.175A
OUTDOOR SPEAKER	2	---	0.050A	0.350A
VISUAL 15cd	0	---	0.025A	0.000A
AUDIO/VISUAL 15cd	4	---	0.025A	0.100A
AUDIO/VISUAL 30cd	0	---	0.066A	0.000A
AUDIO/VISUAL 75cd	14	---	0.094A	1.316A
AUDIO/VISUAL 110cd	0	---	0.158A	0.000A
SYNC MODULES	2	---	0.202A	0.404A
1/4 W SPEAKER	20	---	0.035A	0.700A
SUB-TOTAL			0.075A	3.045A

24 HOUR STANDBY CURRENT 1.800AH
 15 MINUTE ALARM CURRENT (0.25 HR) 0.259AH
 SUBTOTAL 2.059AH
 20% SAFETY FACTOR 0.512AH
 TOTAL AMPS-HRS REQUIRED 3.073AH
 PROVIDE BATTERY WITH (2) 6AH BATTERY

BATTERY POWER CALCULATIONS

NEW NAC SIGNAL & AUDIO BOOSTER PANEL E

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.075A	0.175A	0.175A
OUTDOOR SPEAKER	2	---	0.050A	0.100A
VISUAL 15cd	0	---	0.025A	0.000A
AUDIO/VISUAL 15cd	1	---	0.066A	0.066A
AUDIO/VISUAL 30cd	2	---	0.094A	0.188A
AUDIO/VISUAL 75cd	13	---	0.158A	2.054A
AUDIO/VISUAL 110cd	0	---	0.202A	0.000A
SYNC MODULES	2	---	0.035A	0.700A
1/4 W SPEAKER	18	---	0.010A	0.180A
SUB-TOTAL			0.075A	3.463A

24 HOUR STANDBY CURRENT 1.800AH
 15 MINUTE ALARM CURRENT (0.25 HR) 0.259AH
 SUBTOTAL 2.059AH
 20% SAFETY FACTOR 0.532AH
 TOTAL AMPS-HRS REQUIRED 3.233AH
 PROVIDE BATTERY WITH (2) 6AH BATTERY

BATTERY POWER CALCULATIONS

NEW NAC SIGNAL & AUDIO BOOSTER PANEL F

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.075A	0.175A	0.175A
OUTDOOR SPEAKER	2	---	0.050A	0.100A
VISUAL 15cd	0	---	0.025A	0.000A
AUDIO/VISUAL 15cd	2	---	0.066A	0.132A
AUDIO/VISUAL 30cd	2	---	0.094A	0.188A
AUDIO/VISUAL 75cd	14	---	0.158A	2.212A
AUDIO/VISUAL 110cd	0	---	0.202A	0.000A
SYNC MODULES	2	---	0.035A	0.070A
1/4 W SPEAKER	20	---	0.010A	0.200A
SUB-TOTAL			0.075A	3.077A

24 HOUR STANDBY CURRENT 1.800AH
 15 MINUTE ALARM CURRENT (0.25 HR) 0.259AH
 SUBTOTAL 2.059AH
 20% SAFETY FACTOR 0.516AH
 TOTAL AMPS-HRS REQUIRED 3.083AH
 PROVIDE BATTERY WITH (2) 6AH BATTERY

BATTERY POWER CALCULATIONS

AUDIO AMPLIFIER DVC IN ADMIN BUILDING (INCREMENT NO.2)

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.130A	1.000A	0.130A
SUB-TOTAL			0.130A	1.000A

24 HOUR STANDBY CURRENT 1.320AH
 15 MINUTE ALARM CURRENT (0.25 HR) 0.250AH
 SUBTOTAL 1.570AH
 20% SAFETY FACTOR 0.625AH
 TOTAL NEW AMPS-HRS REQUIRED 4.044AH
 PROVIDE BATTERY WITH (2) 12AH BATTERIES

BATTERY POWER CALCULATIONS

SLAVE FIRE ALARM CONTROL PANEL FACP IN BUILDING C

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.120A	0.9A	0.120A
INCREMENT NO.3 SMOKE DETECTOR	118	0.0003A	0.0065A	0.354A
INCREMENT NO.3 HEAT DETECTOR	120	0.0003A	0.0065A	0.780A
INCREMENT NO.3 MODULE	4	0.0003A	0.0065A	0.002A
SUB-TOTAL			0.1922A	10.573A

24 HOUR STANDBY CURRENT 4.613AH
 15 MINUTE ALARM CURRENT (0.25 HR) 2.842AH
 SUBTOTAL 7.256AH
 20% SAFETY FACTOR 1.451AH
 TOTAL NEW AMPS-HRS REQUIRED 8.707AH
 PROVIDE BATTERY WITH (2) 12AH BATTERIES

FIRE ALARM SYMBOLS AND SCHEDULE

ITEM	DESCRIPTION	MODEL NUMBER	CSFM NUMBER	MOUNT	BACK BOX
FACP	MASTER AND SLAVE FIRE ALARM CONTROL PANEL ADDRESSABLE NETWORK SYSTEM	NOTIFIER #NFS-640	7165-0028-0243	+60"	EQUIPMENT CABINET
DVC	(INCREMENT NO.2) DIGITAL VOICE COMMAND CENTER INTERCONNECT WITH FACP FOR REFERENCE ONLY	NOTIFIER #DVC-SBB-C4 ADDR-C4 (#NFS-640)	7165-0028-0243	+60"	EQUIPMENT CABINET
NAC	NAC POWER SUPPLIES & AMPLIFIER BOOSTER PANEL	WHEELLOCK #SPB-80/4	6911-0785-0157	+60"	EQUIPMENT CABINET
DM	ADDRESSABLE DUAL MONITOR MODULE FOR TAMPER/FLOW SWITCH	NOTIFIER #FMM-2	7300-0028-0219	+60"	4" SQ X 2 1/2"D
SM	ADDRESSABLE CEILING SMOKE DETECTOR WITH BASE	NOTIFIER #SP-851/B710P	7272-0028-0206	CEILING	4" SQ X 2 1/2"D
SM	ADDRESSABLE ATTIC HEAT DETECTOR 190FT TEMP WITH BASE	NOTIFIER #FST-851H/B710P	7270-0028-0196	CEILING	4" SQ X 2 1/2"D
SM	CEILING MOUNT SPEAKER STROBE WITH EVACUATION SPEAKER 15cd 30cd 75cd 110cd 157cd TEMPORAL CODE 3	NOTIFIER #SPSV WR	7320-1653-0201	+80"	4" SQ X 2 1/2"D
SM	OUTDOOR EVACUATION SPEAKER WITH WEATHERPROOF BOX TEMPORAL CODE 3	NOTIFIER #SPRKB WMBB	7320-1653-0201	+90"	4" SQ X 2 1/2"D
SM	SYNC MODULE	WHEELLOCK #05M	7300-0785-0132	+60"	4" SQ X 2 1/2"D
SM	POWER LIMITED CABLE	WEST PENN AQ SERIES	7161-0859-0101		IN CONDUITS
SM	END OF LINE RESISTOR	N/A	N/A		4" SQ X 2 1/2"D

FIRE ALARM SEQUENCE OF OPERATIONS

MANUAL PULL STATION	SMOKE DETECTORS (INCREMENT NO.2)	HEAT DETECTORS	DUCT DETECTOR (INCREMENT NO.2)	FIRE SPRINKLER BURNOUT SWITCH	FIRE SPRINKLER TAMPER SWITCH	POST INDICATOR VALVE (INCREMENT NO.2)	WIRING CONDITIONS
ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE
...

NOTE: SOME SEQUENCE OF OPERATIONS SHOWN MAY NOT APPLY

VOLTAGE DROP CALCULATION

WORST CASE VOLTAGE DROP AT THE LAST DEVICE

VO = VOLTAGE DROP
 I = TOTAL LOAD
 K = 11
 CM = DISTANCE TO THE LOAD
 CM = CIRCULAR MILLS (CROSS SECTION OF 12 AWG = 6530)
 V = VOLTAGE (24Vdc)
 VO = $K \cdot I \cdot \sqrt{CM}$

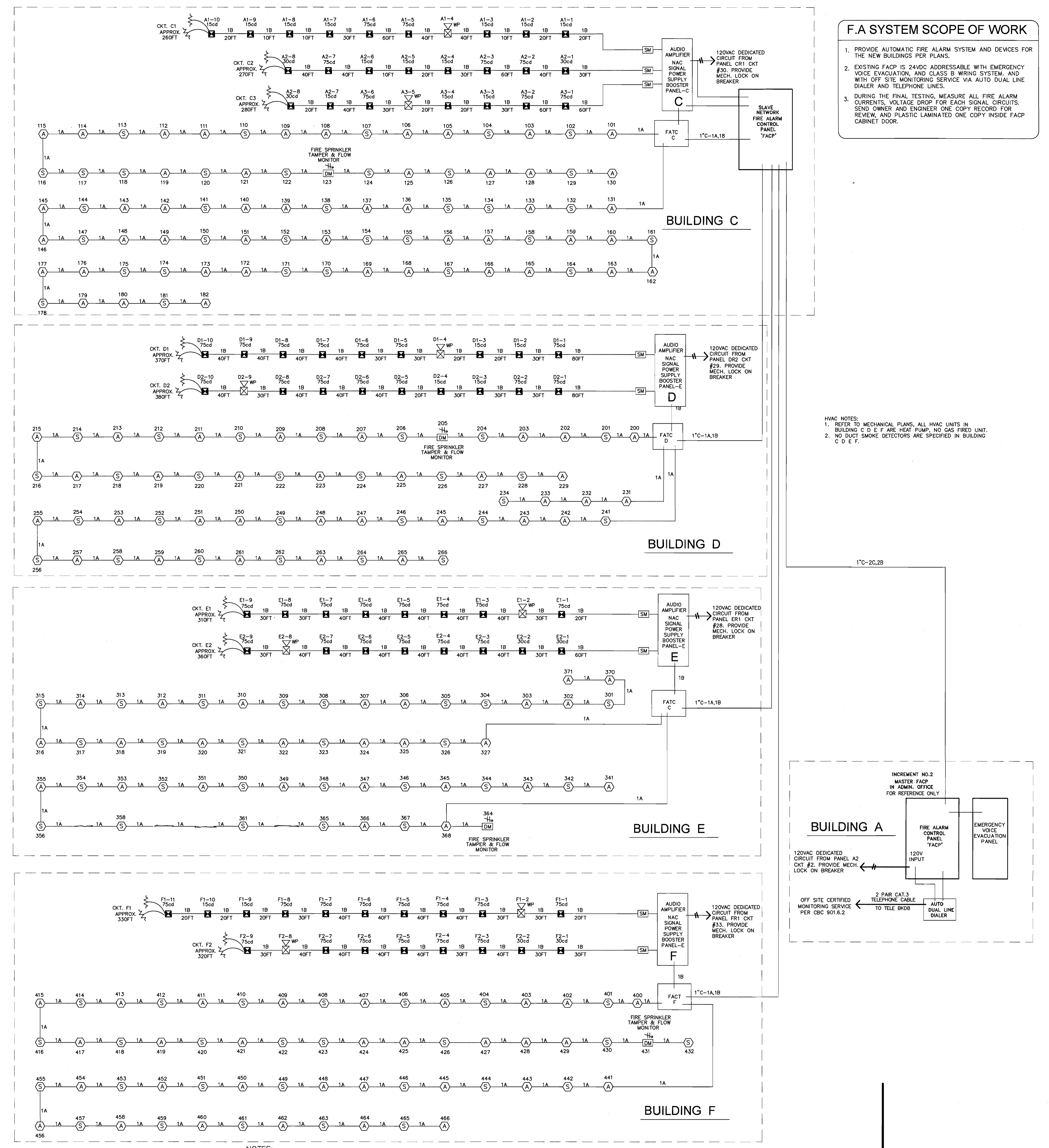
CIRCUIT NUMBER	AMPERES	APPROX LENGTH	RESISTIVITY OHM	WIRE AWG	AREA CM	VOLTS DROPPED	% VOLTS DROP
OKT. C1 SMOKE	1.769A	260'	21.6	12	6530	0.7708V	3.2%
OKT. C2 SMOKE	0.500A	260'	21.6	16	2583	0.7944V	0.3%
OKT. C3 SMOKE	0.877A	270'	21.6	12	6530	0.7397V	3.1%
OKT. C4 SMOKE	0.500A	270'	21.6	16	2583	1.066V	4.4%
OKT. C5 SMOKE	0.475A	280'	21.6	12	6530	0.2828V	1.2%
OKT. C6 SMOKE	1.769A	280'	21.6	12	6530	0.7708V	3.2%
OKT. C7 SMOKE	0.500A	370'	21.6	16	2583	0.7944V	0.3%
OKT. C8 SMOKE	0.877A	370'	21.6	12	6530	0.7397V	3.1%
OKT. C9 SMOKE	0.500A	380'	21.6	16	2583	1.066V	4.4%
OKT. C10 SMOKE	0.475A	380'	21.6	12	6530	0.2828V	1.2%
OKT. C11 SMOKE	1.769A	310'	21.6	12	6530	0.7708V	3.2%
OKT. C12 SMOKE	0.500A	310'	21.6	16	2583	0.7944V	0.3%
OKT. C13 SMOKE	0.877A	360'	21.6	12	6530	0.7397V	3.1%
OKT. C14 SMOKE	0.500A	360'	21.6	16	2583	1.066V	4.4%
OKT. C15 SMOKE	0.475A	330'	21.6	12	6530	0.2828V	1.2%
OKT. C16 SMOKE	1.769A	330'	21.6	12	6530	0.7708V	3.2%
OKT. C17 SMOKE	0.500A	320'	21.6	16	2583	0.7944V	0.3%
OKT. C18 SMOKE	0.877A	320'	21.6	12	6530	0.7397V	3.1%

BATTERY POWER CALCULATIONS

MASTER FIRE ALARM CONTROL PANEL FACP IN BUILDING A - DATA ROOM A18 (INCREMENT NO.2)

DEVICE	NO. OF DEVICES	CURRENT PER DEVICE	STANDBY CURRENT	ALARM CURRENT
UNIT	1	0.120A	0.9A	0.120A
INCREMENT NO.2				
BUILDING A & B SMOKE DETECTOR	78	0.0003A	0.0065A	0.235A
BUILDING A & B SMOKE DETECTOR	20	0.0003A	0.0065A	0.0060A
BUILDING A & B HEAT DETECTOR	9	0.0003A	0.0065A	0.0021A
BUILDING A & B MODULE	18	0.0003A	0.0065A	0.0045A
SUB-TOTAL			0.1561A	9.78A

24 HOUR STANDBY CURRENT 3.746AH
 15 MINUTE ALARM CURRENT (0.25 HR) 2.445AH
 SUBTOTAL 6.191AH
 20% SAFETY FACTOR 1.238AH
 TOTAL NEW AMPS-HRS REQUIRED 7.429AH
 PROVIDE BATTERY WITH (2) 12AH BATTERIES



NOTES:
 1. RISER DIAGRAM IS DIAGRAMMATIC. SEE FIRE ALARM FLOOR PLAN AND FIELD VERIFY EXACT ROUTING AS REQUIRED.
 2. ALL INTERIOR FIRE ALARM CONDUCTORS ARE INSTALLED IN EMT CONDUIT AND CONCEAL ABOVE CEILING OR INSIDE WALL WITH 3/4" FC.
 3. FIRE ALARM CONDUCTOR CANNOT SPLICE INSIDE PULL BOX. CONDUIT MUST BE CONTINUE RUN BETWEEN FIRE ALARM DEVICES BACK BOX OR TERMINAL CABINET.

FIRE ALARM RISER DIAGRAM

N.T.S.

F.A SYSTEM SCOPE OF WORK

- PROVIDE AUTOMATIC FIRE ALARM SYSTEM AND DEVICES FOR THE NEW BUILDINGS PER PLANS.
- EXISTING FACP IS 24VDC ADDRESSABLE WITH EMERGENCY VOICE EVACUATION, AND CLASS B WIRING SYSTEM, AND WITH OFF SITE MONITORING SERVICE VIA AUTO DUAL LINE DIALER AND TELEPHONE LINES.
- DURING THE FINAL TESTING, MEASURE ALL FIRE ALARM CURRENTS, VOLTAGE DROP FOR EACH SIGNAL CIRCUIT. SEND OWNER AND ENGINEER ONE COPY RECORD FOR REVIEW, AND PLASTIC LAMINATED ONE COPY INSIDE FACP CABINET DOOR.

HVAC NOTES:
 1. REFER TO MECHANICAL PLANS, ALL HVAC UNITS IN BUILDING C D E F ARE HEAT PUMP, NO GAS FIRED UNIT.
 2. NO DUCT SMOKE DETECTORS ARE SPECIFIED IN BUILDING C D E F.

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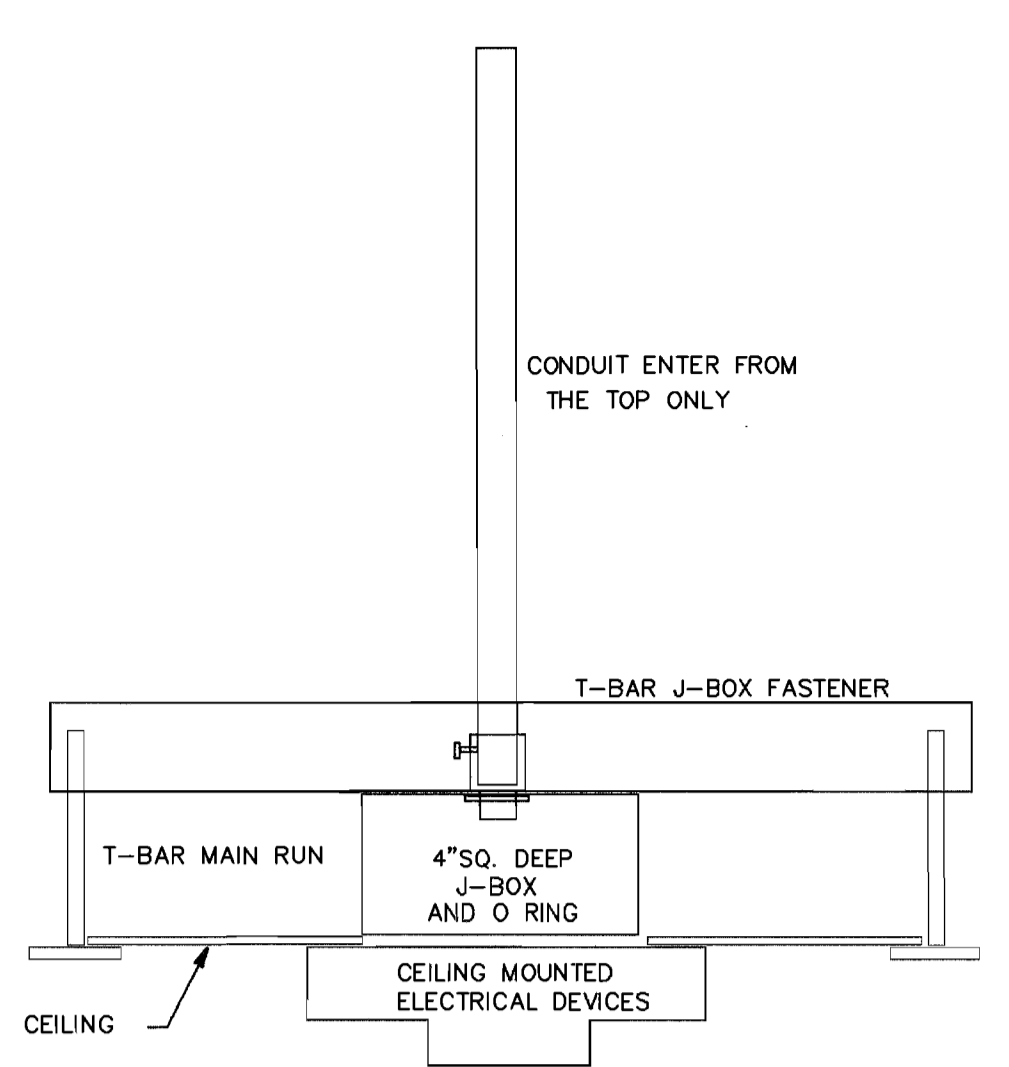
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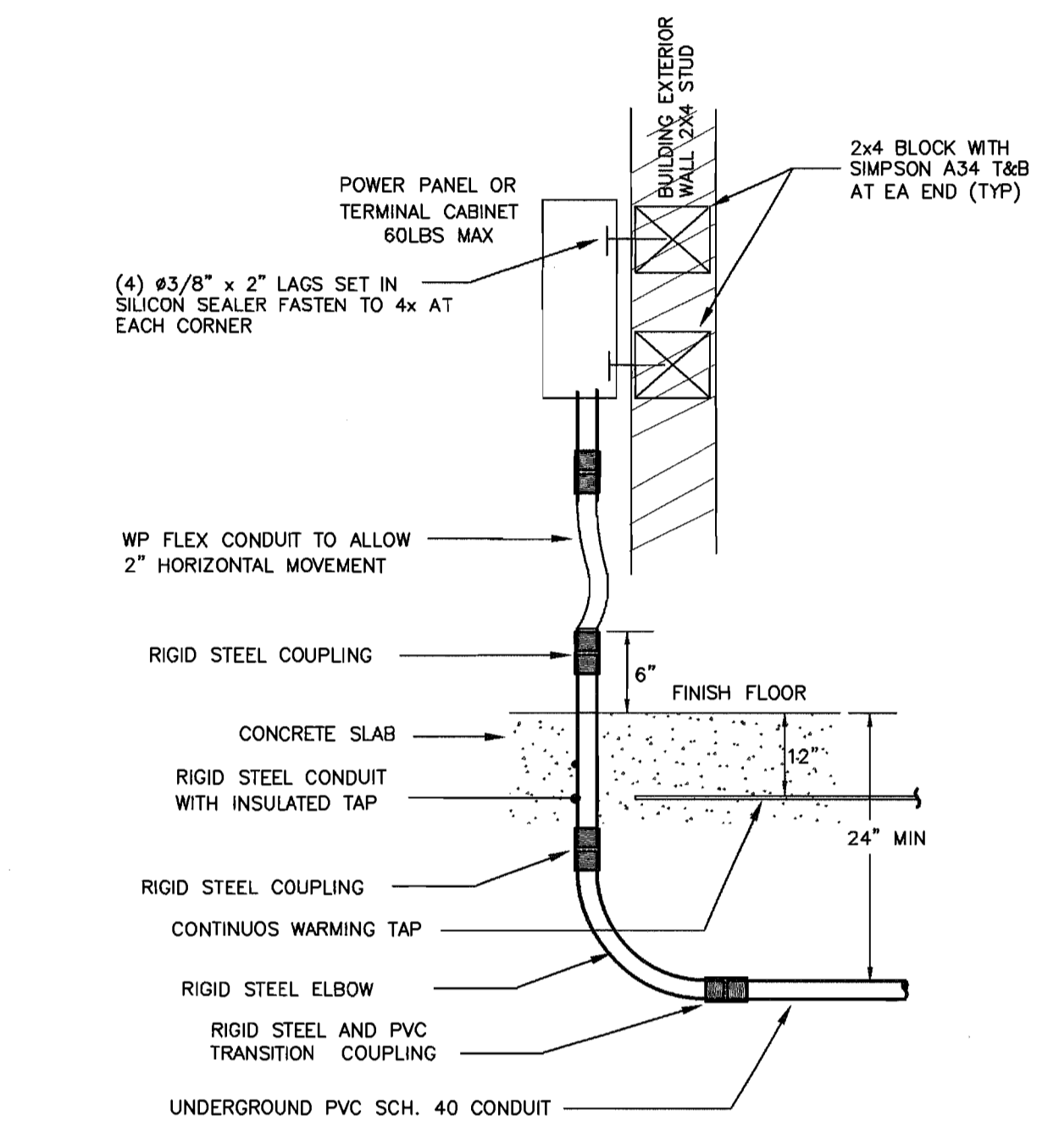
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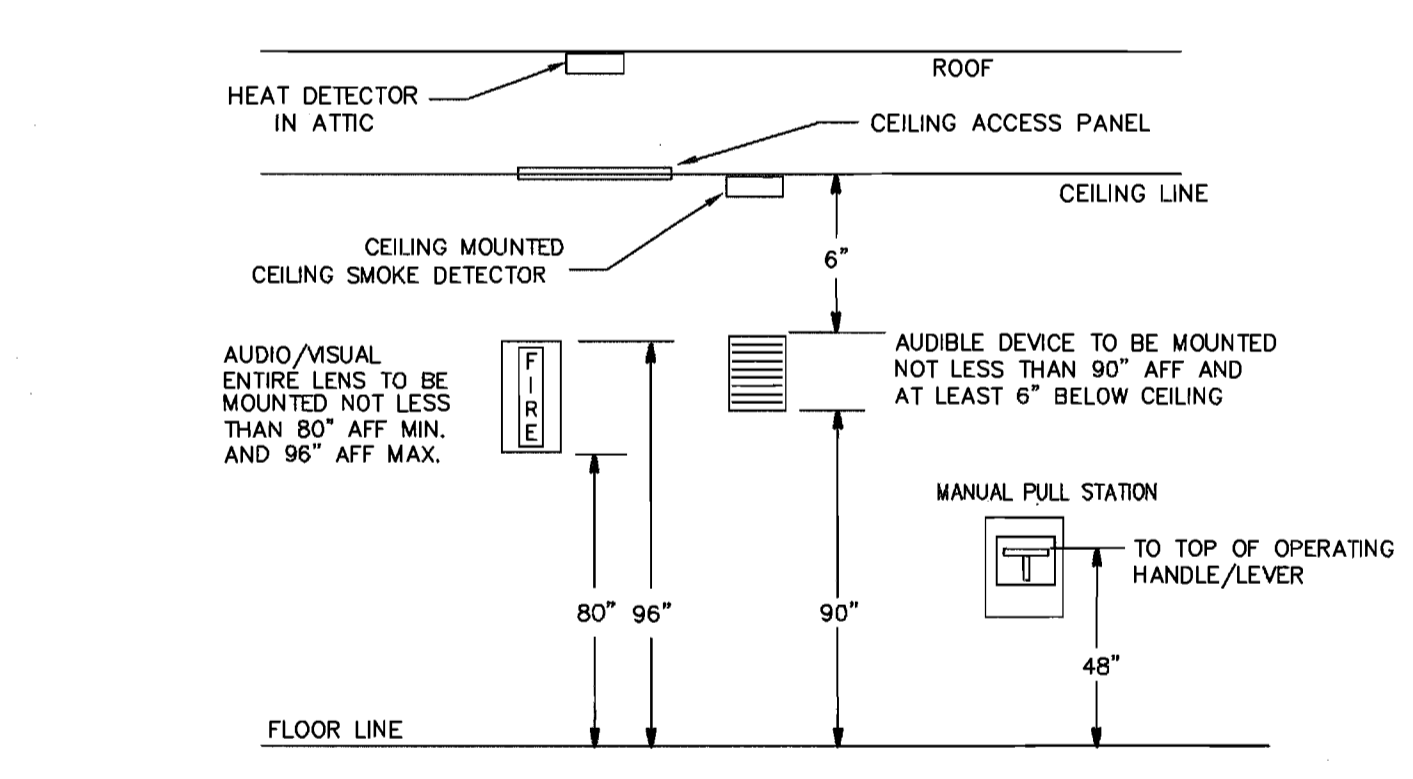
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 1" = 40'-0"
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 1/4" = 1'-0"



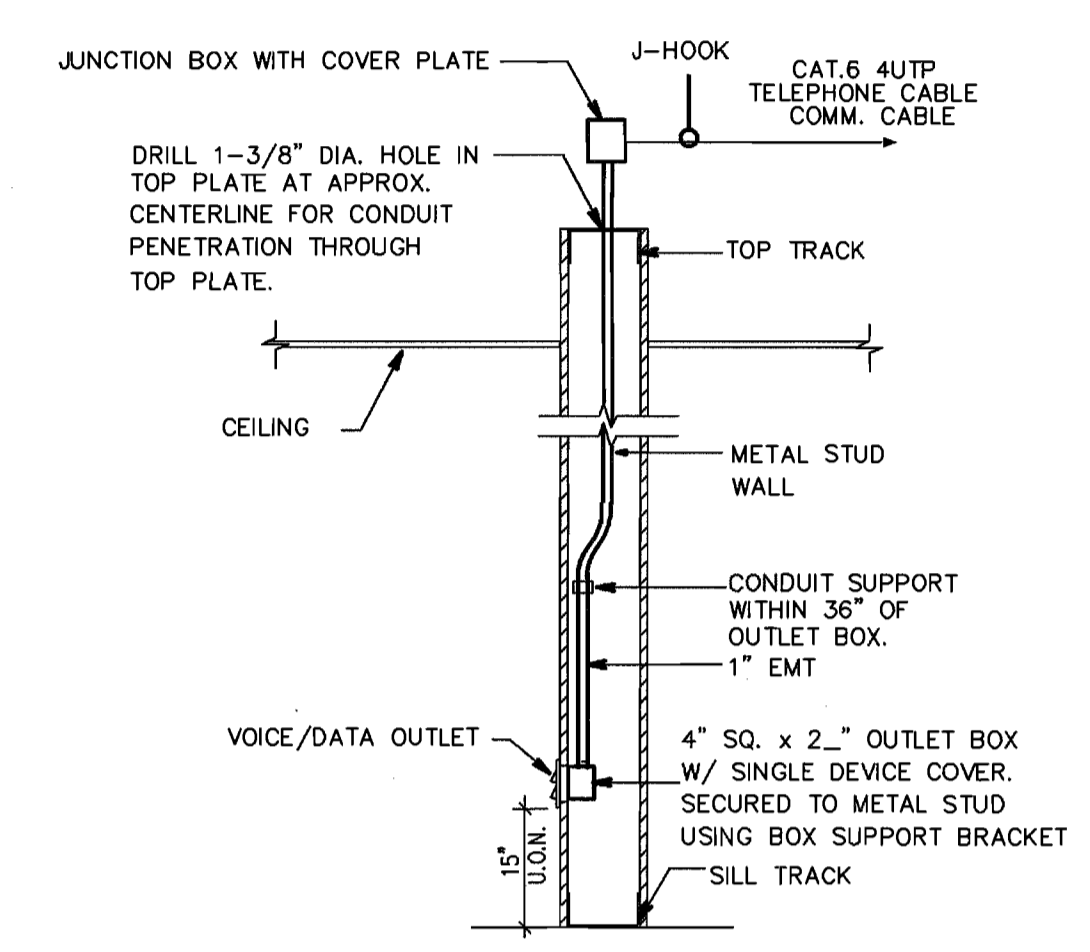
4 CEILING MOUNT DEVICES DETAIL
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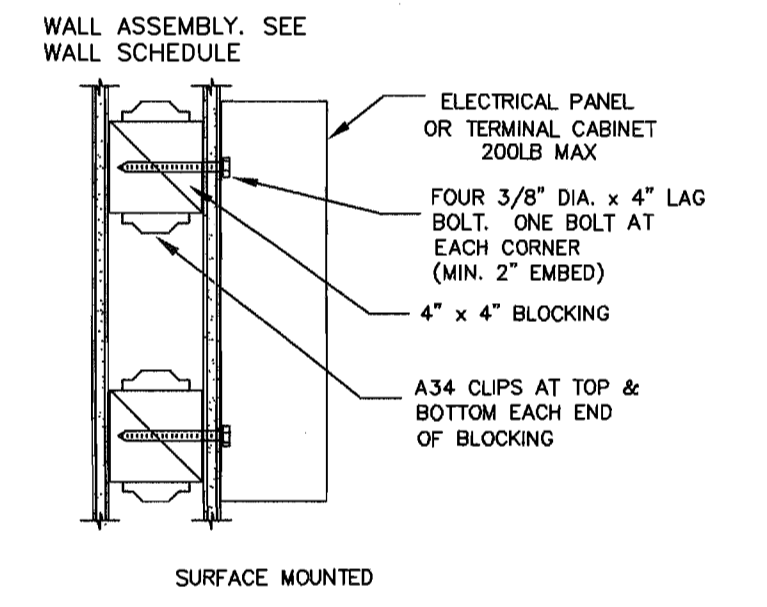
3 UNDERGROUND CONDUIT RISER DETAIL
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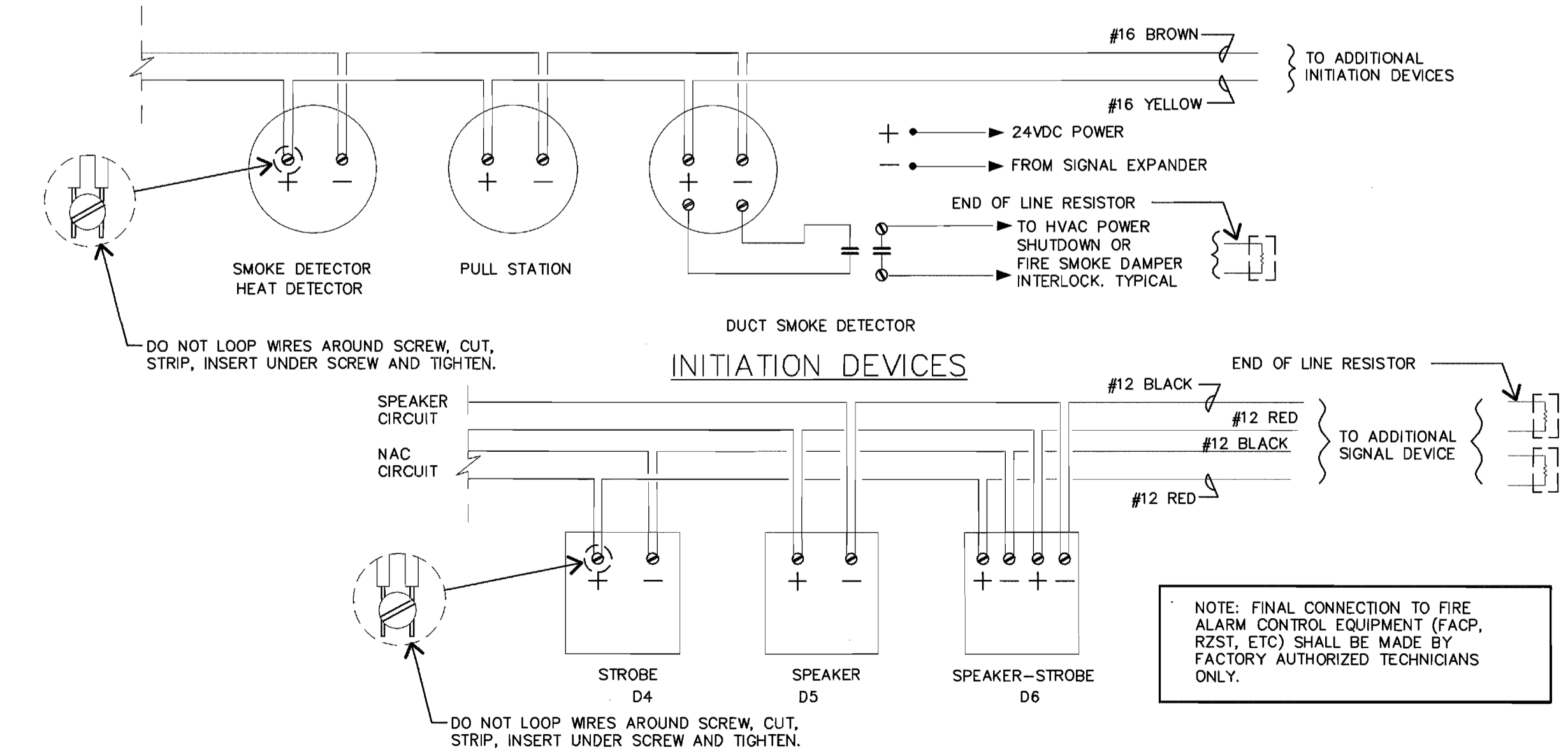
2 FIRE ALARM DEVICES MTD DETAIL
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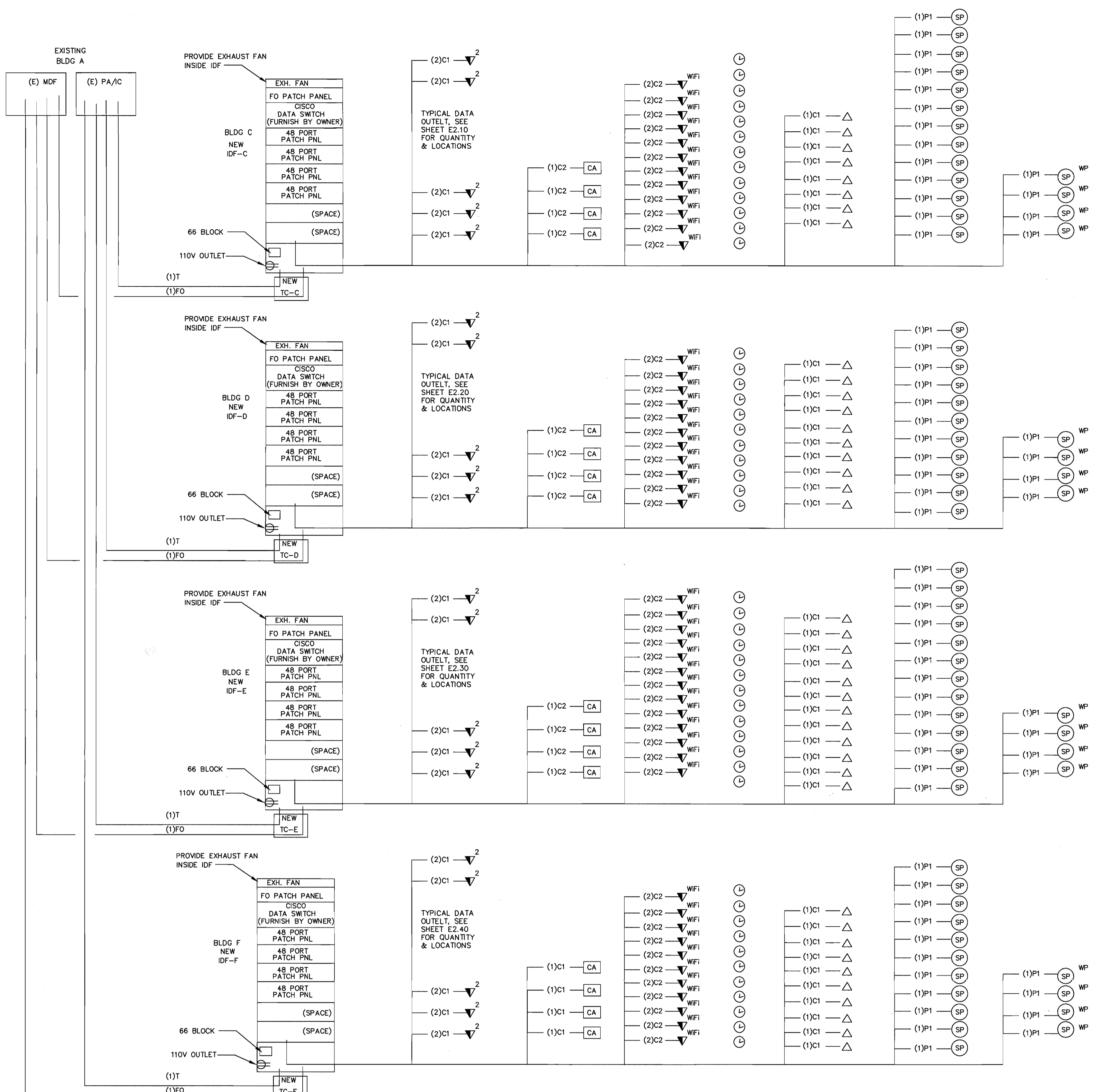
6 DATA AND VOICE OUTLET DETAIL
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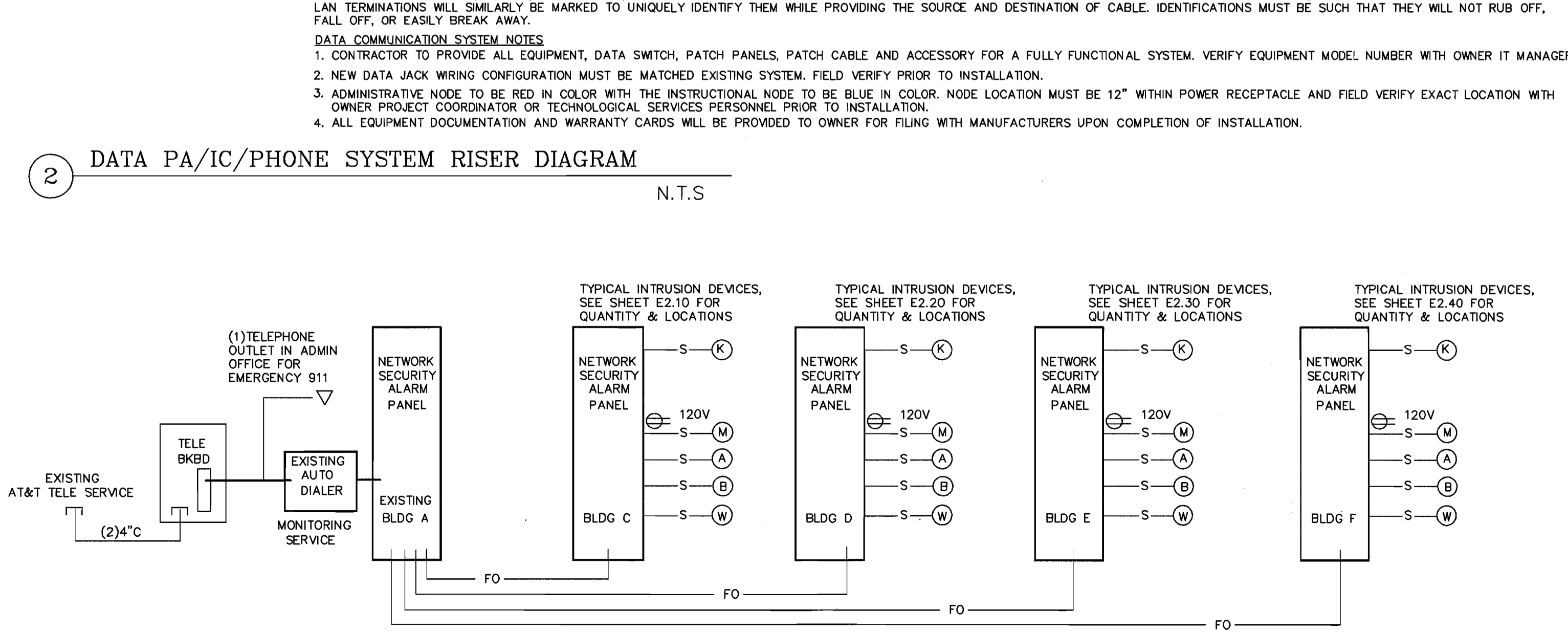
5 IDF CABINET MOUNTING DETAIL
 NTS



1 TYPICAL FIRE ALARM DEVICES WIRING DIAGRAM
 N.T.S.



2 DATA PA/IC/PHONE SYSTEM RISER DIAGRAM
 N.T.S.



1 SECURITY ALARM RISER DIAGRAM
 NTS

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 Checker: **J. CHONG**

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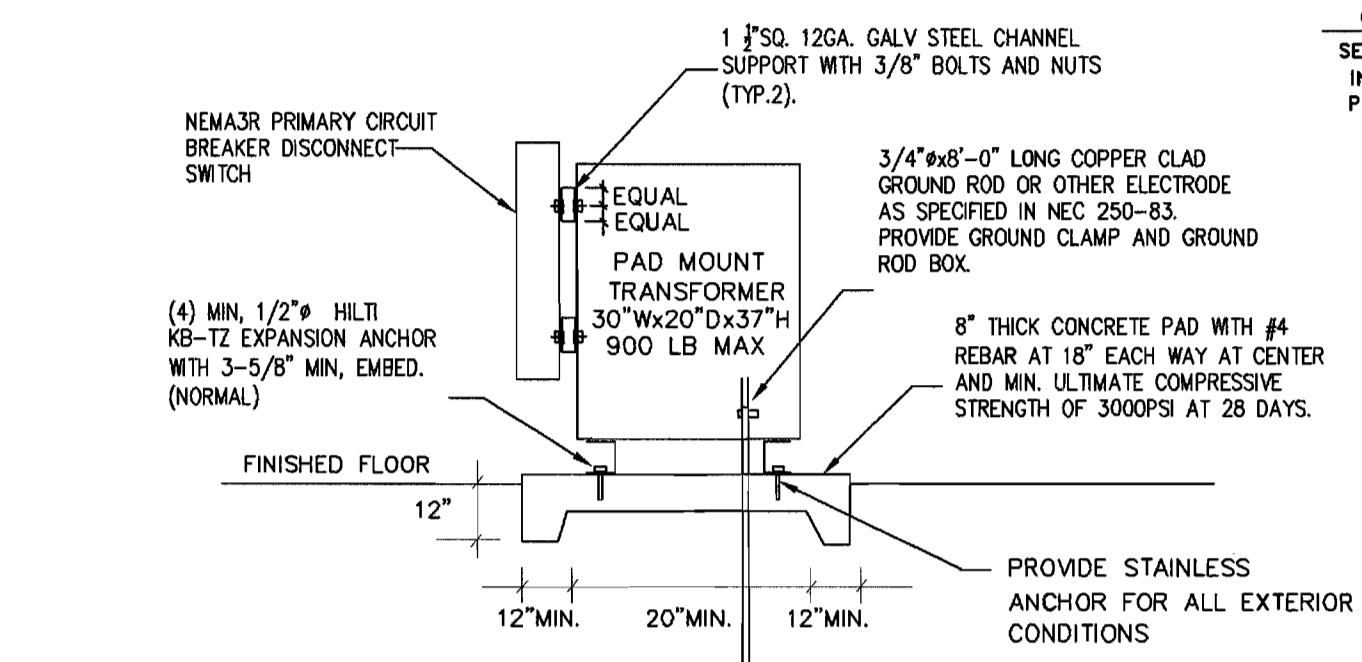
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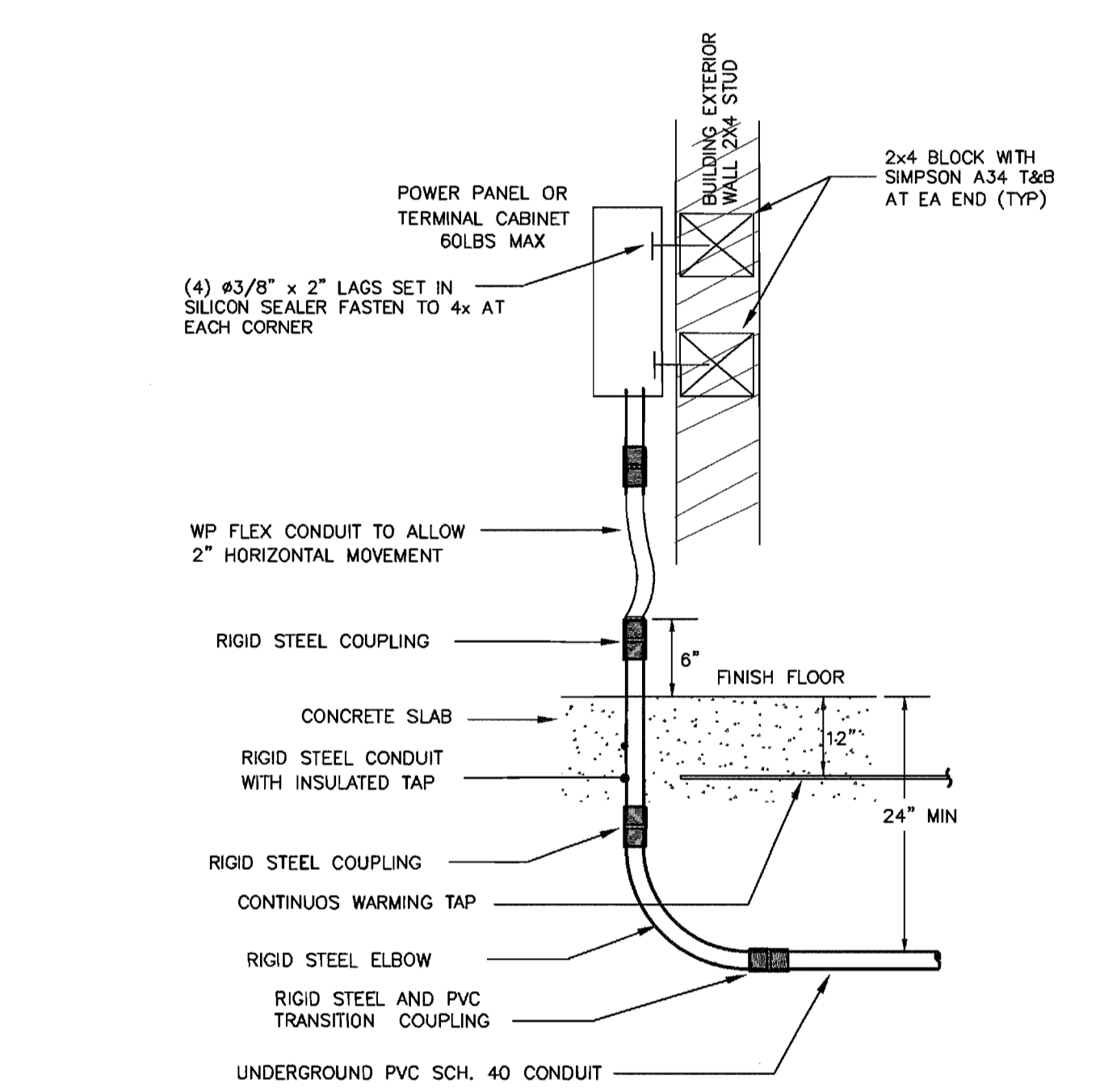
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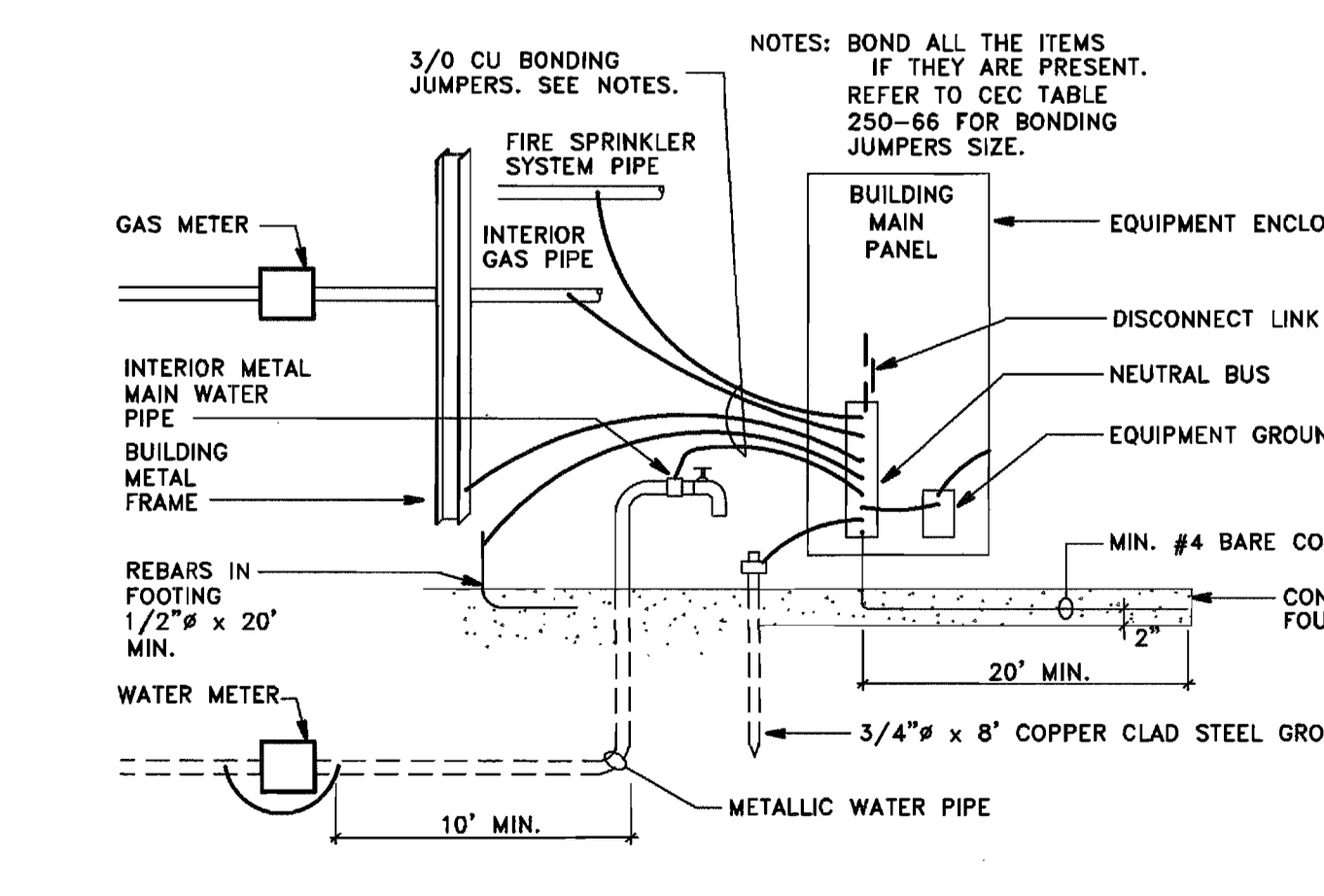
ITEM	KVA	PRIMARY	SECONDARY	WIDTH	DEPTH	HEIGHT	WEIGHT	MOUNTING	REMARKS/LOCATION
TA	112.5KVA	480V DELTA	208Y/120V 3PH	30"	24"	37"	750 LB	GROUND	GENERAL PURPOSE BUILDING A
TB	225KVA	480V DELTA	208Y/120V 3PH	48"	35"	59"	2500 LB	GROUND	GENERAL PURPOSE BUILDING B
TC	112.5KVA	480V DELTA	208Y/120V 3P 4W	30"	24"	37"	750 LB	GROUND	GENERAL PURPOSE BUILDING C
TD	112.5KVA	480V DELTA	208Y/120V 3P 4W	30"	24"	37"	750 LB	GROUND	GENERAL PURPOSE BUILDING D
TE	112.5KVA	480V DELTA	208Y/120V 3P 4W	30"	24"	37"	750 LB	GROUND	GENERAL PURPOSE BUILDING E
TF	112.5KVA	480V DELTA	208Y/120V 3P 4W	30"	24"	37"	750 LB	GROUND	GENERAL PURPOSE BUILDING F



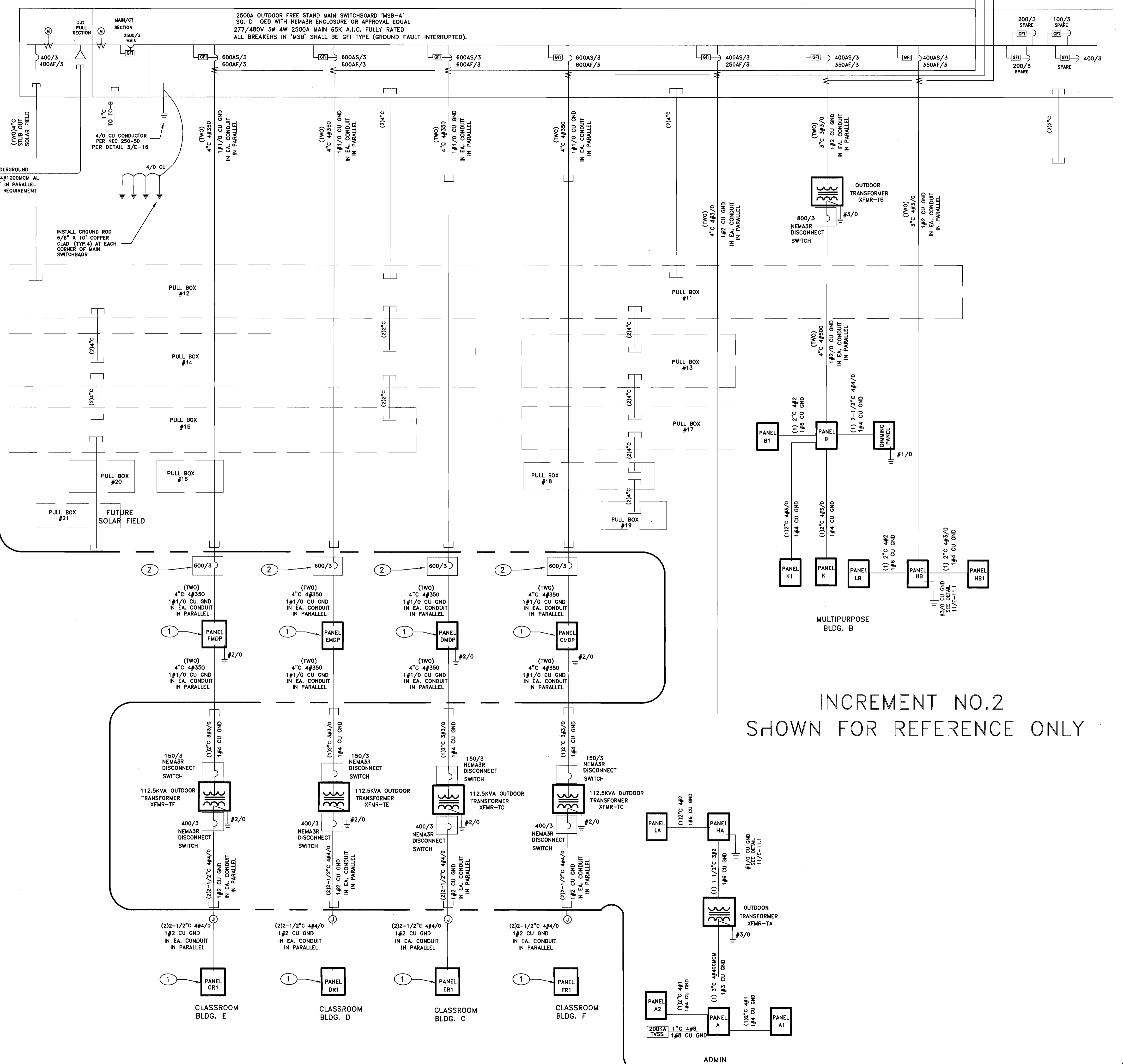
4 PAD MOUNT XFMR MT'D DETAIL N.T.S.



3 UNDERGROUND CONDUIT RISER DETAIL N.T.S.



2 BUILDING MAIN SWBD GROUNDING DETAIL N.T.S.



1 SINGLE LINE DIAGRAM N.T.S.

KEY NOTES

- 1 PROVIDE POWER CONNECTION FOR BUILDING PANEL. SEE PC ELECTRICAL PLANS.
- 2 PROVIDE NEMA3R DISCONNECT SWITCH FOR BUILDING MAIN PURPOSE.

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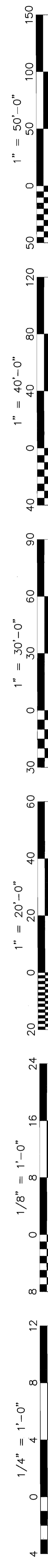
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SINGLE LINE DIAGRAM
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SECTION 28 31 00
FIRE ALARM SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. EXPANDABLE EMERGENCY EVACUATION FIRE ALARM SYSTEM.

1.2 REFERENCES

1.3 SYSTEM DESCRIPTION

- A. A NEW INTELLIGENT REPORTING, STYLE 7 NETWORKED, FULLY PEER-TO-PEER, MICROPROCESSOR-CONTROLLED FIRE DETECTION AND EMERGENCY VOICE ALARM COMMUNICATION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS INDICATED ON THE DRAWINGS.
- B. EACH SIGNALING LINE CIRCUIT (SLC) AND NOTIFICATION APPLIANCE CIRCUIT (NAC): LIMITED TO ONLY 80 PERCENT OF ITS TOTAL CAPACITY DURING INITIAL INSTALLATION.
- C. BASIC PERFORMANCE:
 - 1. NETWORK COMMUNICATIONS CIRCUIT (NETSOLO) SERVING NETWORK NODES: WIRED USING SINGLE TWISTED NON-SHIELDED 2-CONDUCTOR CABLE OR CONNECTED USING APPROVED FIBER OPTIC CABLE BETWEEN NODES IN CLASS A CONFIGURATION.
 - 2. SIGNALING LINE CIRCUITS (SLC) SERVING ADDRESSABLE DEVICES: WIRED CLASS A.
 - 3. INITIATION DEVICE CIRCUITS (IDC) SERVING NON-ADDRESSABLE DEVICES CONNECTED TO ADDRESSABLE MONITOR MODULES: WIRED CLASS A.
 - 4. NOTIFICATION APPLIANCE CIRCUITS (NAC) SERVING STROBES, HORNS AND SPEAKERS: WIRED CLASS A.
 - 5. ON CLASS A CONFIGURATIONS: SINGLE GROUND FAULT OR OPEN CIRCUIT ON SIGNALING LINE CIRCUIT SHALL NOT CAUSE SYSTEM MALFUNCTION, LOSS OF OPERATING POWER, OR ABILITY TO REPORT ALARM.
 - 6. ALARM SIGNALS ARRIVING AT INCC COMMAND CENTER: NOT BE LOST FOLLOWING PRIMARY POWER FAILURE UNTIL ALARM SIGNAL IS PROCESSED AND RECORDED.
 - 7. TRANSpondERS:
 - a. OPERATE IN PEER-TO-PEER FASHION WITH OTHER PANELS AND TRANSPODERS IN SYSTEM.
 - b. EACH TRANSPODER SHALL STORE COPY OF AUDIO EVACUATION MESSAGES AND TONES.
 - c. SYSTEMS THAT USE CENTRALIZED MESSAGE STORAGE AND CONTROL AT MAIN FIRE ALARM CONTROL PANEL SHALL NOT BE ACCEPTABLE.
 - 8. NETWORK NODE COMMUNICATIONS, AUDIO EVACUATION CHANNELS AND FIRE PHONE
 - 9. COMMUNICATED BETWEEN PANELS AND TRANSPODERS ON SINGLE TWISTED PAIR OF COPPER WIRES OR FIBER OPTIC CABLES.
 - 10. TO ENHANCE SYSTEM SURVIVABILITY, ABILITY TO OPERATE ON LOSS OF INCC COMMAND CENTER, SHORT OR OPEN OF ENTIRE RISER AT INCC COMMAND CENTER SHALL BE DEMONSTRATED AT TIME OF SYSTEM ACCEPTANCE TESTING.
 - 11. SYSTEMS THAT ARE NOT CAPABLE OF PROVIDING TRUE CLASS A PERFORMANCE FOR FIRE FIGHTER'S PHONE COMMUNICATIONS SHALL NOT BE ACCEPTABLE.
 - 12. SIGNALING LINE CIRCUITS (SLC):
 - a. RESIDE IN REMOTE TRANSPODERS WITH ASSOCIATED AUDIO ZONES.
 - b. SLC MODULES SHALL OPERATE IN PEER-TO-PEER FASHION WITH ALL OTHER PANELS AND TRANSPODERS IN SYSTEM.
 - c. ON LOSS OF INCC COMMAND CENTER, EACH TRANSPODER SHALL CONTINUE TO COMMUNICATE WITH REMAINDER OF SYSTEM, INCLUDING ALL SLC FUNCTIONS AND AUDIO MESSAGES LOCATED IN ALL TRANSPODERS.
 - d. SYSTEMS THAT PROVIDE A "DEGRADED" MODE OF OPERATION UPON LOSS OF INCC COMMAND CENTER OR SHORT IN RISER SHALL NOT BE ACCEPTABLE.
 - 13. AUDIO AMPLIFIERS AND TONE-GENERATING EQUIPMENT: ELECTRICALLY SUPERVISED FOR NORMAL AND ABNORMAL CONDITIONS.
 - 14. AMPLIFIERS: LOCATED IN TRANSPODER CABINETS SERVING NO MORE THAN 3 FLOORS PER TRANSPODER TO ENHANCE SYSTEM SURVIVABILITY, REDUCE REQUIRED RISER WIRING, SIMPLY INSTALLATION, AND REDUCE POWER LOSSES IN LENGTH OF SPEAKER CIRCUITS.
 - 15. SPEAKER NAC CIRCUITS: ARRANGED SUCH THAT THERE IS A MINIMUM OF 1 SPEAKER CIRCUIT PER FIRE ALARM ZONE.
 - 16. NOTIFICATION APPLIANCE CIRCUITS (NAC), SPEAKER CIRCUITS, AND CONTROL EQUIPMENT: ARRANGED SUCH THAT LOSS OF ANY 1 SPEAKER CIRCUIT WILL NOT CAUSE LOSS OF ANY OTHER SPEAKER CIRCUIT IN SYSTEM.
 - 17. SPEAKER CIRCUITS:
 - a. ELECTRICALLY SUPERVISED FOR OPEN AND SHORT CIRCUIT CONDITIONS.
 - b. IF SHORT CIRCUIT EXISTS ON SPEAKER CIRCUIT, IT SHALL NOT BE POSSIBLE TO ACTIVATE THAT CIRCUIT.
 - c. ARRANGED FOR 25 OR 70 VMS AND SHALL BE POWER LIMITED IN ACCORDANCE WITH NEC 20 PERCENT SPARE CAPACITY FOR FUTURE EXPANSION OR INCREASED POWER OUTPUT REQUIREMENTS.
 - d. SPEAKER CIRCUITS AND CONTROL EQUIPMENT:
 - a. ARRANGED SUCH THAT LOSS OF ANY 1 SPEAKER CIRCUIT WILL NOT CAUSE LOSS OF ANY OTHER SPEAKER CIRCUIT IN SYSTEM.
 - b. SYSTEMS UTILIZING "BI-TONE" AUDIO CONFIGURATIONS SHALL NOT BE ACCEPTABLE.
 - c. 2-WAY TELEPHONE COMMUNICATION CIRCUITS:
 - a. SHALL COMMUNICATE OVER THE NETWORK BETWEEN TRANSPODERS.
 - b. SUPERVISED FOR OPEN AND SHORT CIRCUIT CONDITIONS.
 - c. SHORT CIRCUIT CONDITION ON 2-WAY TELEPHONE COMMUNICATIONS CIRCUIT SHALL RESULT IN TROUBLE CONDITION AND NOT RESULT IN CALL-IN CONDITION.
 - d. VOICE COMMUNICATION:
 - a. CONNECT TELEPHONE CIRCUITS TO SPEAKER CIRCUITS TO ALLOW VOICE COMMUNICATION OVER SPEAKER CIRCUIT FROM TELEPHONE HANDSET.
 - b. CAPABLE OF REMOTE PHONE-TO-PHONE CONVERSATIONS AND PARTY-LINE COMMUNICATIONS AS REQUIRED.

- D. BASIC SYSTEM FUNCTIONAL OPERATION: WHEN FIRE ALARM CONDITION IS DETECTED AND REPORTED BY 1 OF THE SYSTEM ALARM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL IMMEDIATELY OCCUR:
 - 1. SYSTEM ALARM LEADS: FLASH.
 - 2. LOCAL PIEZO-ELECTRIC SIGNAL IN CONTROL PANEL: SOUND AT A PULSE RATE.
 - 3. 80-CHARACTER LED DISPLAY: INDICATE ALL INFORMATION ASSOCIATED WITH FIRE ALARM CONDITION, INCLUDING TYPE OF ALARM POINT AND ITS LOCATION WITHIN PROTECTED PREMISES.
 - 4. HISTORICAL LOG: RECORD INFORMATION ASSOCIATED WITH FIRE ALARM CONTROL PANEL CONDITION, ALONG WITH TIME AND DATE OF OCCURRENCE. HISTORY LOG SHALL HAVE CAPACITY FOR RECORDING UP TO 4,100 EVENTS.
 - 5. SYSTEM OUTPUT PROGRAMS ASSIGNED VIA CONTROL-BY-EVENT EQUATIONS TO BE ACTIVATED BY PARTICULAR POINT IN ALARM SHALL BE EXECUTED, AND THE ASSOCIATED SYSTEM OUTPUTS (ALARM NOTIFICATION APPLIANCES AND/OR RELAYS) SHALL BE ACTIVATED.
 - A. CLOSE FIRE DOORS.
 - B. SHUT DOWN AIR HANDLERS AS REQUIRED BY CODE.
 - C. NOTIFY THE CENTRAL STATION OR MUNICIPAL TEL.
 - D. STROBES FLASH SYNCHRONIZED CONTINUOUSLY.
 - E. AUDIO PORTION OF SYSTEM: SOUND ALERT TONE FOLLOWED BY PRE-RECORDED MESSAGE DETERMINED BY EVENT AND THIS SCENARIO REPEATING OR OTHER MESSAGE AS APPROVED BY LOCAL AUTHORITY UNTIL SYSTEM IS RESET.

- E. FIRE ALARM SYSTEM FUNCTIONALITY:
 - 1. PROVIDE COMPLETE, ELECTRICALLY SUPERVISED DISTRIBUTED, CLASS A NETWORKED ANALOG/ADDRESSABLE FIRE ALARM AND CONTROL SYSTEM, WITH ANALOG INITIATING DEVICES, INTEGRAL MULTIPLE-CHANNEL VOICE EVACUATION, AND FIRE FIGHTER'S PHONE SYSTEM.
 - 2. FIRE ALARM SYSTEM:
 - a. CONSIST OF MULTIPLE-VOICE CHANNELS WITH NO ADDITIONAL HARDWARE REQUIRED FOR TOTAL OF 4 CHANNELS.
 - b. INCORPORATE MULTIPROCESSOR-BASED CONTROL PANELS, INCLUDING MODEL E3 SERIES MODULES INCLUDES INTELLIGENT NETWORK INCC COMMAND CENTER(S) (NCC), INTELLIGENT LOOP INTERFACE (LI-MB-E3 OR LI95-MB-E3), INTELLIGENT NETWORK TRANSPODERS (NWT), COMMUNICATING OVER PEER-TO-PEER TOKEN RING NETWORK WITH STANDARD CAPACITY OF UP TO 64 NODES EXPANDABLE TO 128.
 - 3. EACH LI-MB-E3 OR LI95-MB-E3 NODE: INCORPORATE 2 SIGNALING LINE CIRCUITS (SLC), WITH CAPACITY TO SUPPORT IN VELOCITY MODE UP TO 159 ANALOG ADDRESSABLE DETECTORS AND 159 ADDRESSABLE MODULES PER LI-MB-E3 SLC OR SUPPORT IN APOLLO MODE UP TO 126 DETECTORS AND MODULES PER LI95-MB-E3 SLC.
 - 4. VOICE, DATA, AND FIRE FIGHTER'S PHONE RISER: TRANSMIT OVER SINGLE PAIR OF WIRES OR FIBER OPTIC CABLE.
 - 5. EACH INTELLIGENT NETWORK TRANSPODER: CAPABLE OF PROVIDING 16 DISTRIBUTED VOICE MESSAGES, FIRE FIGHTER PHONES CONNECTIONS, SLC LOOP FOR AUDIO CONTROL DEVICES, AND INTEGRAL NETWORK INTERFACE.
 - 6. EACH NETWORK NODE: INCORPORATE BOOLEAN CONTROL-BY-EVENT PROGRAMMING, INCLUDING AS A MINIMUM AND/OR NOT, AND TIMER FUNCTIONS.
 - 7. CONTROL PANELS: CAPABILITY TO ACCEPT FIRMWARE UPGRADES VIA CONNECTION WITH LAPTOP COMPUTER, WITHOUT REQUIREMENT OF REPLACING MICROCHIPS.
 - 8. NETWORK:
 - a. BASED ON PEER-TO-PEER TOKEN RING TECHNOLOGY OPERATING AT 625 K BAUD, USING CLASS A CONFIGURATION.
 - b. CAPABILITY OF USING TWISTED-PAIR WIRING, PAIR OF FIBER OPTIC MULTI-MODE CABLE STRANDS UP TO 200 MICRONS OR SINGLE-MODE OPTIMIZED FOR 3/125 MICRONS, OR ANY COMBINATION, TO MAXIMIZE FLEXIBILITY IN SYSTEM CONFIGURATION.
 - 9. EACH NETWORK NODE:
 - a. CAPABILITY OF BEING PROGRAMMED OFF-LINE USING WINDOWS-BASED SOFTWARE SUPPLIED BY FIRE ALARM SYSTEM MANUFACTURER. CAPABILITY OF BEING DOWNLOADED BY CONNECTING LAPTOP COMPUTER INTO ANY OTHER NODE IN SYSTEM. SYSTEMS THAT REQUIRE SYSTEM SOFTWARE TO BE DOWNLOADED TO EACH TRANSPODER AT EACH TRANSPODER LOCATION SHALL NOT BE ACCEPTABLE.
 - b. CAPABILITY OF BEING GROUPED WITH ANY NUMBER OF ADDITIONAL NODES TO PRODUCE A "REGION", ALLOWING THAT GROUP OF NODES TO ACT AS 1, WHILE RETAINING PEER-TO-PEER FUNCTIONALITY. SYSTEMS UTILIZING "MASTER/SLAVE" CONFIGURATIONS SHALL NOT BE ACCEPTABLE.
 - c. CAPABILITY OF ANNUNCIATING ALL EVENTS WITHIN ITS "REGION" OR ANNUNCIATING ALL EVENTS FROM ENTIRE NETWORK, ON FRONT PANEL LED OR TOUCHSCREEN DISPLAY WITHOUT ADDITIONAL EQUIPMENT.
 - d. EACH SLC NETWORK NODE: CAPABILITY OF HAVING INTEGRAL DACT (DIGITAL ALARM COMMUNICATOR TRANSMITTER) THAT CAN REPORT EVENTS IN EITHER ITS REGION, OR ENTIRE NETWORK TO SINGLE CENTRAL STATION MONITORING CENTER.

- 11. EACH CONTROL PANEL: CAPABILITY OF STORING ITS ENTIRE PROGRAM, AND ALLOW INSTALLER TO ACTIVATE ONLY DEVICES THAT ARE INSTALLED DURING CONSTRUCTION, WITHOUT FURTHER DOWNLOADING OF SYSTEM.
- 12. PASSWORD PROTECTION: EACH SYSTEM SHALL BE PROVIDED WITH 4 LEVELS OF PASSWORD PROTECTION WITH UP TO 16 PASSWORDS.
- 13. HAVE THE CAPACITY FOR MULTIPLE PRE-RECORDED MESSAGES (AT LEAST SIXTEEN (16), BUT MORE IF REQUIRED BY LOCAL AHA) AND ADDRESS A LIST OF SUBJECTS.
 - a. FIRE EVACUATION AND RELOCATION.
 - b. FUGEDOR OR HOSTILE PERSON SORTED WITHIN OR AROUND THE BUILDING GROUNDS.
 - c. DIRECTIONS TO OCCUPANTS TO TAKE COVER WITHIN BUILDING.
 - d. EMERGENCY WEATHER CONDITIONS APPROPRIATE FOR LOCAL AREA.

- 1.4 SUBMITTALS
- A. COMPLY WITH SECTION 01330 (01 33 00) - SUBMITTAL PROCEDURES.
- B. INCLUDE SUFFICIENT INFORMATION, CLEARLY PRESENTED, TO DETERMINE COMPLIANCE WITH THE SPECIFICATIONS AND THE DRAWINGS.
- C. EQUIPMENT SUBMITTALS:
 - 1. COVER PAGE: INDICATE THE FOLLOWING:
 - a. PROJECT NAME AND ADDRESS.
 - b. ENGINEERED SYSTEMS DISTRIBUTOR'S NAME AND OTHER CONTACT INFORMATION.
 - c. INSTALLING CONTRACTOR'S NAME AND OTHER CONTACT INFORMATION.
 - d. DATE OF EQUIPMENT SUBMITTALS. INDICATE ON REVISED SUBMITTALS THE ORIGINAL SUBMITTAL DATE AND REVISED SUBMITTAL DATE.
 - 2. TABLE OF CONTENTS: LISTS EACH SECTION OF EQUIPMENT SUBMITTAL.
 - 3. SCOPE OF WORK NARRATIVE: DETAIL IDENTIFIED SCOPE OF WORK.
 - 4. SEQUENCE OF OPERATIONS: USE MATRIX OR WRITTEN TEXT FORMAT, DETAILING ACTIVATION OF EACH TYPE OF DEVICE AND ASSOCIATED RESULTING ACTIVATION OF THE FOLLOWING:
 - a. CONTROL PANEL.
 - b. ANNUNCIATOR PANELS.
 - c. NOTIFICATION APPLIANCES.
 - d. BUILDING FIRE SAFETY FUNCTIONS, INCLUDING ELEVATOR RECALL, ELEVATOR POWER SHUTDOWN, DOOR LOCK RELEASE, DOOR HOLDER RELEASE, HVAC UNIT SHUTDOWN, SMOKE EVACUATION SYSTEM ACTIVATION, AND STAIR PRESSURIZATION FAN ACTIVATION.
 - 5. QUANTITY: INDICATE FOR EACH COMPONENT OF SYSTEM THE FOLLOWING:
 - a. MODEL NUMBER.
 - b. DESCRIPTION.
 - c. SLC CIRCUIT SCHEDULE: DETAIL ADDRESS AND ASSOCIATED DESCRIPTION OF EACH ADDRESSABLE DEVICE. CLEARLY PROVIDE INFORMATION THAT INDICATES NUMBER OF BOTH ACTIVE AND SPARE ADDRESSES.
 - 6. BATTERY CALCULATIONS: SHOW LOAD OF EACH OF, AND TOTAL OF, COMPONENTS OF SYSTEM ALONG WITH STANDBY AND ALARM TIMES THAT CALCULATIONS ARE BASED ON. SHOW CALCULATED SPARE CAPACITY AND SIZE OF INTENDED BATTERY.

- D. SHOP DRAWINGS:
 - 1. COVER PAGE: INDICATE THE FOLLOWING:
 - a. PROJECT NAME AND ADDRESS.
 - b. ENGINEERED SYSTEMS DISTRIBUTOR'S NAME AND OTHER CONTACT INFORMATION.
 - c. INSTALLING CONTRACTOR'S NAME AND OTHER CONTACT INFORMATION.
 - d. DATE OF EQUIPMENT SUBMITTALS. INDICATE ON REVISED SUBMITTALS THE ORIGINAL SUBMITTAL DATE AND REVISED SUBMITTAL DATE.
 - 2. FLOOR PLANS:
 - a. PROVIDE SEPARATE FLOOR PLAN FOR EACH FLOOR.
 - b. IF A FLOOR PLAN MUST BE SPLIT USING MATCH LINES TO FIT ON THE PAGE, PROVIDE MATCH LINES AND MATCH LINE REFERENCES THAT REFER TO SHEET NUMBER THAT SHOWS AREA ON OPPOSITE SIDE OF MATCH LINE.
 - 3. PREPARE USING AUTOCAD.
 - 4. PREPARE TO SCALE 1/8 INCH = 1'-0", UNLESS OTHERWISE REQUIRED BY THE ARCHITECT OR ENGINEER.
 - 5. SHOW EQUIPMENT AND DEVICE LOCATIONS.
 - 6. SHOW WIRING INFORMATION IN POINT-TO-POINT FORMAT.
 - 7. SHOW CONDUIT ROUTING, IF REQUIRED BY THE AHA.
 - 8. TITLE BLOCK: PROVIDE ON EACH SHEET AND INCLUDE, AT A MINIMUM, THE FOLLOWING:
 - a. PROJECT NAME.
 - b. PROJECT ADDRESS.
 - c. SHEET NUMBER.
 - d. SCALE OF DRAWING.
 - e. DATE OF DRAWING.
 - f. REVISION DATES, IF APPLICABLE.
 - 9. CONTROL PANEL: PROVIDE SHEET THAT DETAILS EXTERIOR AND INTERIOR VIEWS OF CONTROL PANEL AND CLEARLY ASSOCIATED WIRING INFORMATION.
 - 10. ANNUNCIATOR PANELS: PROVIDE SHEET THAT DETAILS EXTERIOR AND INTERIOR VIEWS OF ANNUNCIATOR PANELS AND CLEARLY SHOWS ASSOCIATED WIRING INFORMATION.

- E. CERTIFICATION: SUBMIT WITH EQUIPMENT SUBMITTALS AND SHOP DRAWINGS, LETTER OF CERTIFICATION FROM MAJOR EQUIPMENT MANUFACTURER, INDICATING PROPOSED ENGINEERED SYSTEM DISTRIBUTOR IS AN AUTHORIZED REPRESENTATIVE OF MAJOR EQUIPMENT MANUFACTURER.
- F. PROJECT RECORD DRAWINGS:
 - 1. SUBMIT COMPLETE PROJECT RECORD DRAWINGS WITHIN 14 CALENDAR DAYS AFTER ACCEPTANCE TEST.
 - 2. PROJECT RECORD DRAWINGS SHALL BE SIMILAR TO SHOP DRAWINGS, BUT REVISED TO REFLECT CHANGES MADE DURING CONSTRUCTION.
- G. OPERATION AND MAINTENANCE MANUALS:
 - 1. SUBMIT COMPLETE OPERATION AND MAINTENANCE MANUALS WITHIN 14 CALENDAR DAYS AFTER ACCEPTANCE TEST.
 - 2. OPERATION AND MAINTENANCE MANUALS SHALL BE SIMILAR TO EQUIPMENT SUBMITTALS, BUT REVISED TO REFLECT CHANGES MADE DURING CONSTRUCTION.
 - 3. INCLUDE FACTORY'S STANDARD INSTALLATION AND OPERATING INSTRUCTIONS.

- 1.5 QUALITY ASSURANCE
- A. CODES AND STANDARDS:
 - B. EQUIPMENT, PROGRAMMING, AND INSTALLATION SUPERVISION:
 - 1. PROVIDE SERVICES OF APPROVED PLATINUM LEVEL ENGINEERED SYSTEMS DISTRIBUTOR OF GAMEWELL-FCI FOR EQUIPMENT, PROGRAMMING, AND INSTALLATION SUPERVISION.
 - 2. PROVIDE PROOF OF FACTORY TRAINING WITHIN 14 CALENDAR DAYS OF AWARD OF THE CONTRACT.
 - C. SOFTWARE MODIFICATIONS:
 - 1. PROVIDE SERVICES OF PLATINUM LEVEL GAMEWELL-FCI FACTORY-TRAINED AND AUTHORIZED TECHNICIAN TO PERFORM SYSTEM SOFTWARE MODIFICATIONS, UPGRADES, OR CHANGES.
 - 2. PROVIDE USE OF ALL HARDWARE, SOFTWARE, PROGRAMMING TOOLS, AND DOCUMENTATION NECESSARY TO MODIFY FIRE ALARM SYSTEM SOFTWARE ON-SITE.
 - 3. MODIFICATION INCLUDES ADDITION AND DELETION OF DEVICES, CIRCUITS, ZONES, AND CHANGES TO SYSTEM OPERATION AND CUSTOM LABEL CHANGES FOR DEVICES OR ZONES.
 - 4. SYSTEM STRUCTURE AND SOFTWARE SHALL PLACE NO LIMIT ON TYPE OR EXTENT OF SOFTWARE MODIFICATIONS ON-SITE.
 - 5. MODIFICATION OF SOFTWARE SHALL NOT REQUIRE POWER-DOWN OF SYSTEM OR LOSS OF SYSTEM FIRE PROTECTION WHILE MODIFICATIONS ARE BEING MADE.

- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. DELIVERY: DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY IDENTIFYING PRODUCT NAME AND MANUFACTURER.
- B. STORAGE: STORE MATERIALS IN CLEAN, DRY AREA INDOORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- C. HANDLING: PROTECT MATERIALS FROM DAMAGE DURING HANDLING AND INSTALLATION.
- 1.7 COORDINATION
- A. COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER SECTIONS, INCLUDING SPRINKLER SYSTEMS AS SPECIFIED IN SECTION _____, ELEVATORS AS SPECIFIED IN SECTION _____, HVAC SYSTEMS AS SPECIFIED IN SECTION _____, AND SECURITY/DOOR LOCKING SYSTEMS AS SPECIFIED IN SECTION _____.

- 1.8 WARRANTY
- A. WARRANTY PERIOD FOR SYSTEM EQUIPMENT: 1 YEAR FROM DATE OF FINAL ACCEPTANCE.

- PART 2 PRODUCTS
- 2.1 MANUFACTURER
- A. MANUFACTURER AND SYSTEM DEVICES MODEL NUMBER ARE LISTED PER PLANS.
- B. REFERENCES TO MANUFACTURER'S MODEL NUMBERS AND OTHER INFORMATION IS INTENDED TO ESTABLISH MINIMUM STANDARDS OF PERFORMANCE, FUNCTION, AND QUALITY.

PART 3 EXECUTION

- 3.1 EXAMINATION
 - A. EXAMINE AREAS AND SURFACES TO RECEIVE FIRE ALARM SYSTEM.
 - 1. NOTIFY ARCHITECT OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT USE.
 - 2. DO NOT BEGIN INSTALLATION UNTIL UNACCEPTABLE CONDITIONS ARE CORRECTED.
- 3.2 INSTALLATION
 - A. INSTALL FIRE ALARM SYSTEM IN ACCORDANCE WITH NFPA 72, NFPA 70, STATE AND LOCAL CODES, MANUFACTURER'S INSTRUCTIONS, AND AS INDICATED ON THE DRAWINGS.
 - B. CONCEAL CONDUIT, JUNCTION BOXES, AND CONDUIT SUPPORTS AND HANGERS IN FINISHED AREAS. CONCEAL OR EXPOSE CONDUIT, JUNCTION BOXES, AND CONDUIT SUPPORTS AND HANGERS IN UNFINISHED AREAS.
 - C. DO NOT INSTALL SMOKE DETECTORS BEFORE SYSTEM PROGRAMMING AND TEST PERIOD. IF CONSTRUCTION IS ONGOING DURING THIS PERIOD, TAKE MEASURES TO PROTECT SMOKE DETECTORS FROM CONTAMINATION AND PHYSICAL DAMAGE.
 - D. FLUSH-MOUNT FIRE DETECTION AND ALARM SYSTEM DEVICES, CONTROL PANELS, AND REMOTE ANNUNCIATORS IN FINISHED AREAS. FLUSH-MOUNT OR SURFACE-MOUNT FIRE DETECTION AND ALARM SYSTEM DEVICES, CONTROL PANELS, AND REMOTE ANNUNCIATORS IN UNFINISHED AREAS.
 - E. ENSURE MANUAL STATIONS ARE SUITABLE FOR SURFACE MOUNTING OR SEMI-FLUSH MOUNTING AS INDICATED ON THE DRAWINGS. INSTALL NOT LESS THAN 42 INCHES, NOR MORE THAN 48 INCHES, ABOVE FINISHED FLOOR MEASURED TO OPERATING HANDLE.

- 3.3 FIELD QUALITY CONTROL
 - A. MANUFACTURER'S FIELD SERVICES: PROVIDE SERVICE OF COMPETENT, FACTORY-TRAINED TECHNICIAN AUTHORIZED BY MANUFACTURER TO TECHNICALLY SUPERVISE AND PARTICIPATE DURING PRE-TESTING AND ACCEPTANCE TESTING OF SYSTEM.
 - B. TESTING:
 - 1. CONDUCT COMPLETE VISUAL INSPECTION OF CONTROL PANEL CONNECTIONS AND TEST WIRING FOR SHORT CIRCUITS, GROUND FAULTS, CONTINUITY, AND INSULATION BEFORE ENERGIZING CABLES AND WIRES.
 - 2. VERIFY EACH SPRINKLER SYSTEM CONTROL VALVE AND VERIFY PROPER SUPERVISORY ALARM AT INCC COMMAND CENTER.
 - 3. VERIFY ACTIVATION OF FLOW SWITCHES.
 - 4. OPEN INITIATING DEVICE CIRCUITS AND VERIFY THAT TROUBLE SIGNAL ACTUATES.
 - 5. OPEN SIGNALING LINE CIRCUITS AND VERIFY THAT TROUBLE SIGNAL ACTUATES.
 - 6. OPEN AND SHORT NOTIFICATION APPLIANCE CIRCUITS AND VERIFY THAT TROUBLE SIGNAL ACTUATES.
 - 7. GROUND INITIATING DEVICE CIRCUITS AND VERIFY RESPONSE OF TROUBLE SIGNALS.
 - 8. GROUND SIGNALING LINE CIRCUITS AND VERIFY RESPONSE OF TROUBLE SIGNALS.
 - 9. GROUND NOTIFICATION APPLIANCE CIRCUITS AND VERIFY RESPONSE OF TROUBLE SIGNALS.
 - 10. CHECK ALERT TONE AND PRE-RECORDED VOICE MESSAGE TO ALARM NOTIFICATION DEVICES.
 - 11. CHECK INSTALLATION, SUPERVISION, AND OPERATION OF INTELLIGENT SMOKE DETECTORS.
 - 12. INTRODUCE ON SYSTEM EACH OF THE ALARM CONDITIONS THAT SYSTEM IS REQUIRED TO DETECT. VERIFY PROPER RECEIPT AND PROPER PROCESSING OF SIGNAL AT INCC COMMAND CENTER AND CORRECT ACTIVATION OF CONTROL POINTS.
 - 13. CONSULT MANUFACTURER'S MANUAL TO DETERMINE PROPER TESTING PROCEDURES WHEN SYSTEM IS EQUIPPED WITH OPTIONAL FEATURES. THIS IS INTENDED TO ADDRESS SUCH ITEMS AS VERIFYING CONTROLS PERFORMED BY INDIVIDUALLY ADDRESSED OR GROUPED DEVICES, SENSITIVITY MONITORING, VERIFICATION FUNCTIONALITY, AND SIMLAR.

- C. ACCEPTANCE TESTING:
 - 1. BEFORE INSTALLATION SHALL BE CONSIDERED COMPLETED AND ACCEPTABLE BY AHA. A COMPLETE TEST USING AS A MINIMUM, THE FOLLOWING SCENARIOS SHALL BE PERFORMED AND WITNESSED BY REPRESENTATIVE APPROVED BY ENGINEER, MONITORING COMPANY AND/OR FIRE DEPARTMENT SHALL BE NOTIFIED BEFORE FINAL TEST IN ACCORDANCE WITH LOCAL REQUIREMENTS.
 - 2. CONTRACTOR'S JOB FOREMAN, IN PRESENCE OF REPRESENTATIVE OF MANUFACTURER, REPRESENTATIVE OF OWNER, AND FIRE DEPARTMENT SHALL OPERATE EVERY INSTALLED DEVICE TO VERIFY PROPER OPERATION AND CORRECT ANNUNCIATION AT CONTROL PANEL.
 - 3. OPEN SIGNALING LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS IN AT LEAST 2 LOCATIONS TO VERIFY PRESENCE OF SUPERVISION.
 - 4. COMPLETELY DISCONNECT INCC COMMAND CENTER FROM REST OF NETWORK, INCLUDING VOICE INCC COMMAND CENTER. ACTIVATE INITIATING DEVICE FROM TRANSPODER. ALL SPEAKER CIRCUITS ACTIVATED FROM EACH TRANSPODER SHALL TRANSMIT THE CORRECT EVACUATION OR ALERT MESSAGE. THESE MESSAGES SHALL BE SAME MESSAGES TRANSMITTED WITH INCC COMMAND CENTER ACTIVATED. DEFAULT TONES OR MESSAGES SHALL NOT BE ACCEPTABLE.
 - 5. COMPLETELY DISCONNECT INCC COMMAND CENTER FROM REST OF NETWORK. ACTIVATE INITIATING DEVICE. ALL CONTROL OUTPUTS SUPPORTED BY TRANSPODER SLC CIRCUITS SHALL OPERATE UNDER PROJECT PROGRAMMING MODE. DEFAULT OR DEGRADE MODE PROGRAMMING SHALL NOT BE ACCEPTABLE.
 - 6. FIRE FIGHTER PHONE RISER SHALL BE DIRECTLY SHORTED BETWEEN INCC COMMAND CENTER AND FIRST TRANSPODER, FOLLOWED BY TEST OF FIRE PHONES BETWEEN INCC COMMAND CENTER AND FARTHEST TRANSPODER. PHONES SHALL OPERATE IN NORMAL FASHION.
 - 7. ALL AUDIO RISERS SHALL BE DIRECTLY SHORTED BETWEEN INCC COMMAND CENTER AND FIRST AUDIO TRANSPODER, FOLLOWED BY TEST OF FIRE PHONES BETWEEN INCC COMMAND CENTER AND FARTHEST TRANSPODER. PHONES SHALL OPERATE IN NORMAL FASHION. CORRECT PRE-RECORDED MESSAGES SHALL TRANSMIT FROM ALL SPEAKERS, INCLUDING EVACUATION AND ALERT CHANNELS. DEFAULT OR DEGRADE MESSAGES SHALL NOT BE ACCEPTABLE.
 - 8. WHEN TESTING HAS BEEN COMPLETED TO SATISFACTION OF BOTH CONTRACTOR'S JOB FOREMAN AND REPRESENTATIVES OF MANUFACTURER AND OWNER, A NOTARIZED LETTER CO-SIGNED BY EACH ATTESTING TO SATISFACTORY COMPLETION OF SAID TESTING SHALL BE FORWARDED TO OWNER AND FIRE DEPARTMENT.
 - 9. LEAVE FIRE ALARM SYSTEM IN PROPER WORKING ORDER AND, WITHOUT ADDITIONAL EXPENSE TO OWNER, REPLACE DEFECTIVE MATERIALS AND EQUIPMENT PROVIDED WITHIN 1 YEAR (365 DAYS) FROM DATE OF FINAL ACCEPTANCE BY THE OWNER.

- 3.4 DEMONSTRATION
 - A. PROVIDE INSTRUCTION AS REQUIRED FOR OPERATING FIRE ALARM SYSTEM.
 - B. PROVIDE HANDS-ON DEMONSTRATIONS OF OPERATION OF FIRE ALARM SYSTEM COMPONENTS AND FUNCTIONS.

END OF SECTION

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NEW ELEMENTARY SCHOOL INCREMENT 3
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & WARD GRASS COURT

Sheet Title: FIRE ALARM SPECIFICATION

Project Name & Address:
NEW ELEMENTARY SCHOOL INCREMENT 3
BAKERSFIELD CITY SCHOOL DISTRICT
@ CITADEL ROAD & WARD GRASS COURT

Issue Date: 01/31/18
Date: 12/06/16
Checked: J. CHONG
Drawn: J. CHONG
Scale: 1/8" = 1'-0"

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