

INSTALLATION NOTES

ALL DRAWINGS ARE DIAGRAMMATIC ONLY, AND SHALL NOT BE USED IN DETERMINING ACTUAL CONDUIT ROUTING. THE CONTRACTOR SHALL VERIFY ALL CONDUIT ROUTING CONDITIONS AT THE PROJECT SITE AS CONSTRUCTION PROGRESSES.

ALL FIRE ALARM DATA COMMUNICATIONS AND INITIATING CIRCUITS SHALL BE INSTALLED UTILIZING SOLID COPPER CONDUCTORS WITH OUTER COVERING COLORS PER THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS. ALL SMOKE DAMPER AND REMOTE TROUBLE INDICATOR CIRCUITS SHALL BE YELLOW. ALL CIRCUITS SHALL BE INDIVIDUALLY LABELED, BOTH AT THE DEVICE END AND AT THE SIGNAL TERMINAL, CABINET AND/OR FIRE ALARM MASTER PANEL TERMINATION POINT.

ALL FIRE ALARM CIRCUITS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE NOT ALLOWED UNLESS IN COVERED JUNCTION BOXES OR APPROVED TERMINAL BLOCKS. "T" TAPPING IS ALLOWED ONLY UNDER THESE CONDITIONS.

FORMULAS USED FOR CALCULATIONS:

FORMULA FOR BATTERY SIZING:
 FOR FACP/FAPS = 24 HOURS STANDBY & 5 MIN IN ALARM
 AMP HOUR = 1.2 (24 HOURS X (S)) + (5/60 HOUR X (A))

WHERE:
 1.2 = BATTERY DERATING VALUE
 (S) = TOTAL SUPERVISORY CURRENT (0 FOR NOTIFICATION DEVICES AND 48 MA FOR FCPS-24)
 (A) = TOTAL ALARM CURRENT

FORMULA FOR VOLTAGE DROP CALCULATIONS

TOTAL DC RESISTANCE = # OF WIRES X R_{dc}/1000 X ONE-WAY LOOP LENGTH FROM POWER SUPPLY TO MIDDLE OF LOAD

TOTAL VD = TOTAL DC RESISTANCE X TOTAL ALARM CURRENT

MINIMUM VOLTAGE AT DEVICES = 20.4V - TOTAL VD

20.4V = MINIMUM VOLTAGE AT END OF USEFUL BATTERY LIFE (85% OF 24VDC)

NOTE: THE MANUFACTURER'S OPERATING VOLTAGE IS BETWEEN 18VDC AND 33 VDC (FOR 24VDC NOMINAL).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	MANUAL PULL STATIONS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	SMOKE DETECTORS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3	FIRE ALARM SYSTEM AC POWER	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	FIRE ALARM SYSTEM LOW BATTERY	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	OPEN CIRCUIT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	GROUND FAULT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	HEAT DETECTORS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	NOTIFICATION CIRCUIT SHORT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9																			
10																			

(EXISTING MAIN FACP)
 BCSD ROOSEVELT (LOCATED IN ADMIN. BLDG.)

"FAPS" REMOTE POWER SUPPLY BATTERY CALCULATION

DEVICE	PANEL	FAPS
DESCRIPTION	STAND-BY (mA)	ALARM (mA)
FIRE ALARM REMOTE POWER SUPPLY	90	179
HORN/STROBE (75CD) (STROBE CURRENT)	165	1
EXTERIOR HORN	80	1
HORN/STROBE (75CD) (AUDIBLE CURRENT)	24	1
TOTALS (AMPS):		I(s) I(a)
		0.090 0.444
Amp Hour:		2.64
Battery to be provided -		7.0

(EXISTING MAIN FACP)
 BCSD ROOSEVELT (LOCATED IN ADMIN. BLDG.)

"FACP" FIRE ALARM CONTROL PANEL BATTERY CALCULATION

DEVICE	PANEL	FACP
DESCRIPTION	STAND-BY (mA)	ALARM (mA)
(X) FIRE ALARM CONTROL PANEL	63	370
(X) ZONE DETECTOR MOD.	0.875	22.37
(X) ACT. MODULE	26	1
(X) SMOKE DETECTORS	0.06	13.63
(X) TROUBLE RELAY		1
(X) AUX. POWER SUPPLY	20	1
(X) AUX. RELAY MOD.	19	79
(X) STROBES	33	8
(X) HORN/STROBES	68	15
NEW SMOKE DETECTORS (RELO R9)	0.045	150
TOTALS (AMPS):		I(s) I(a)
		0.138 3.100
Amp Hour:		4.28
Existing Battery -		7AH

VOLTAGE DROP CALCULATIONS

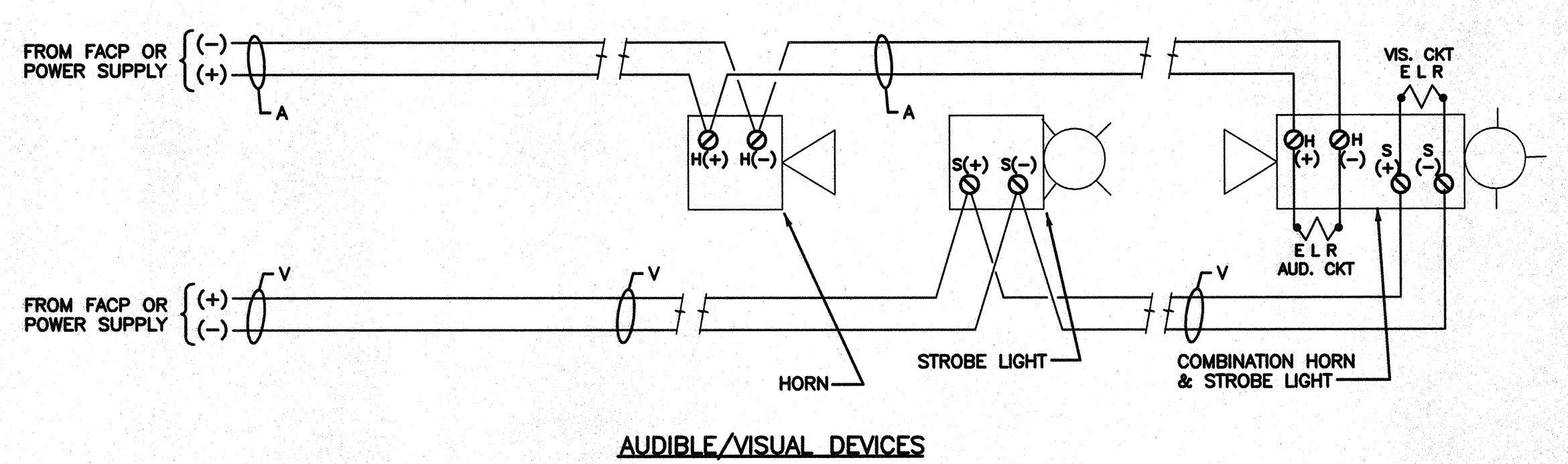
POWER SUPPLY #	LOCATED IN	LOOP TYPE & No.	DEVICES					WIRE SIZE	DC RESIST / 1000'	TOTAL ALARM CURRENT	TOTAL VOLTAGE DROP	MINIMUM BATTERY SIZE	BATTERY SELECTED			
			FA	DOOR BELL	HORN	MINI HORN	STROBES									
FAPS	RELO R9	N1	0.03	0.02	0.098	0.022	0.072	0.101	0.165	0.200	1.93	0.361	57	0.079	0.33	SEE BATTERY CALCS
															1.87	4.0

FIRE ALARM EQUIPMENT SPECIFICATIONS SCHEDULE

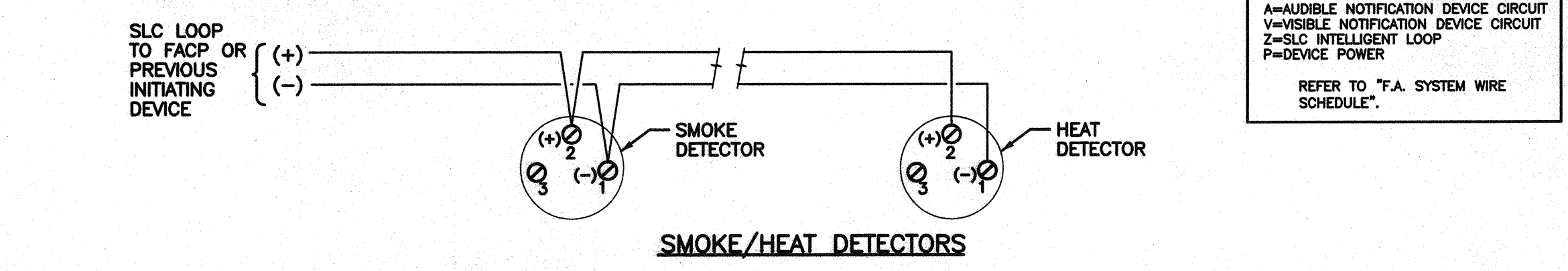
SYMBOL	MODEL NO	DESCRIPTION	MANUFACTURER	CSFM LISTING #	BACKBOX REQUIREMENTS	MOUNTING HEIGHT (TO CENTER U.O.N.)	REMARKS
FN-642-ULADA	FN-642-ULADA	FIRE ALARM REMOTE POWER SUPPLY	HOCHIKI	7315-0410-166	INCLUDED	+60"	1
SLR-24V NS6-220	SLR-24V NS6-220	PHOTOELECTRIC SMOKE DETECTOR W/B BASE	HOCHIKI	7272-0410-107 7300-0410-0132	4" SQ. X 2 1/8" DP. OUTLET BOX WITH S.G. RAISED RING		
DFE-190	DFE-190	HEAT DETECTOR W/B BASE (PROVIDE BASE NS6-100)	HOCHIKI	7270-0410-119	4" SQ. X 2 1/8" DP. OUTLET BOX WITH S.G. RAISED RING		
HSA-24MCW-FR	HSA-24MCW-FR	WALL MOUNTED COMBINATION HORN & STROBE LIGHT (CANDELA VALUE AS SHOWN ON PLANS) (900DBA)	WHELOCK	7125-0785-0161	4" SQ. X 2 1/8" DP. OUTLET BOX		
		END OF LINE RESISTOR			4" SQ. X 2 1/8" DP. OUTLET BOX		3
WPAH-24WP-R	WPAH-24WP-R	HORN WITH WEATHERPROOF ENCLOSURE (99DBA)	WHELOCK	7125-0785-0131	4" SQ. X 2 1/8" DP. OUTLET BOX & WBB BACK BOX.		

NOTES (FIRE ALARM EQUIPMENT SPECIFICATIONS SCHEDULE)

- (NOTE: THESE NOTES MAY NOT APPEAR ON ALL SHEETS)
- END OF LINE RESISTORS SHALL BE 10K FOR NOTIFICATION APPLIANCE CIRCUITS FEEDING FROM FIRE ALARM CONTROL PANEL AND 2.2K FOR NOTIFICATION APPLIANCE CIRCUITS FEEDING FROM FIRE ALARM POWER EXPANDER PANELS.
 - NOT USED.
 - PROVIDE WEATHERPROOF FLUSH WALL PLATE #WFP-R.
 - PROVIDE TRANSIENT SUPPRESSORS.

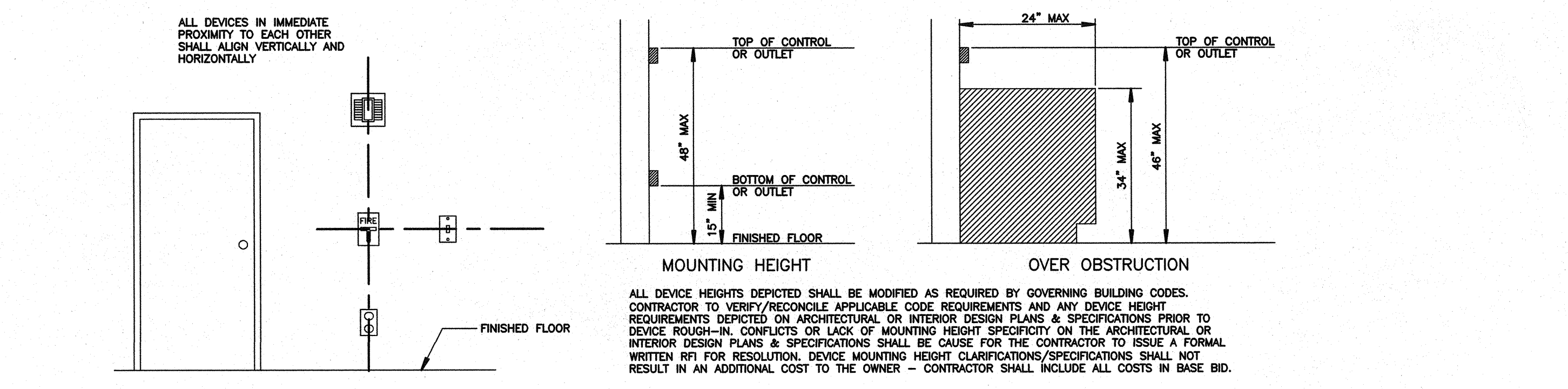


AUDIBLE/VISUAL DEVICES

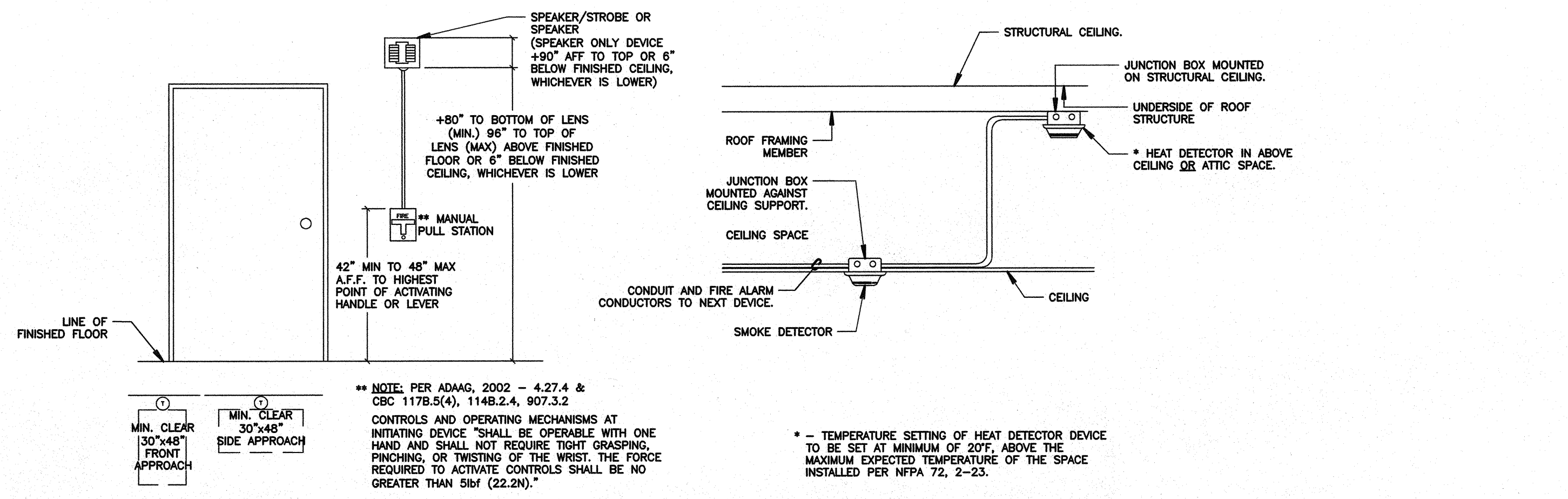


SMOKE/HEAT DETECTORS

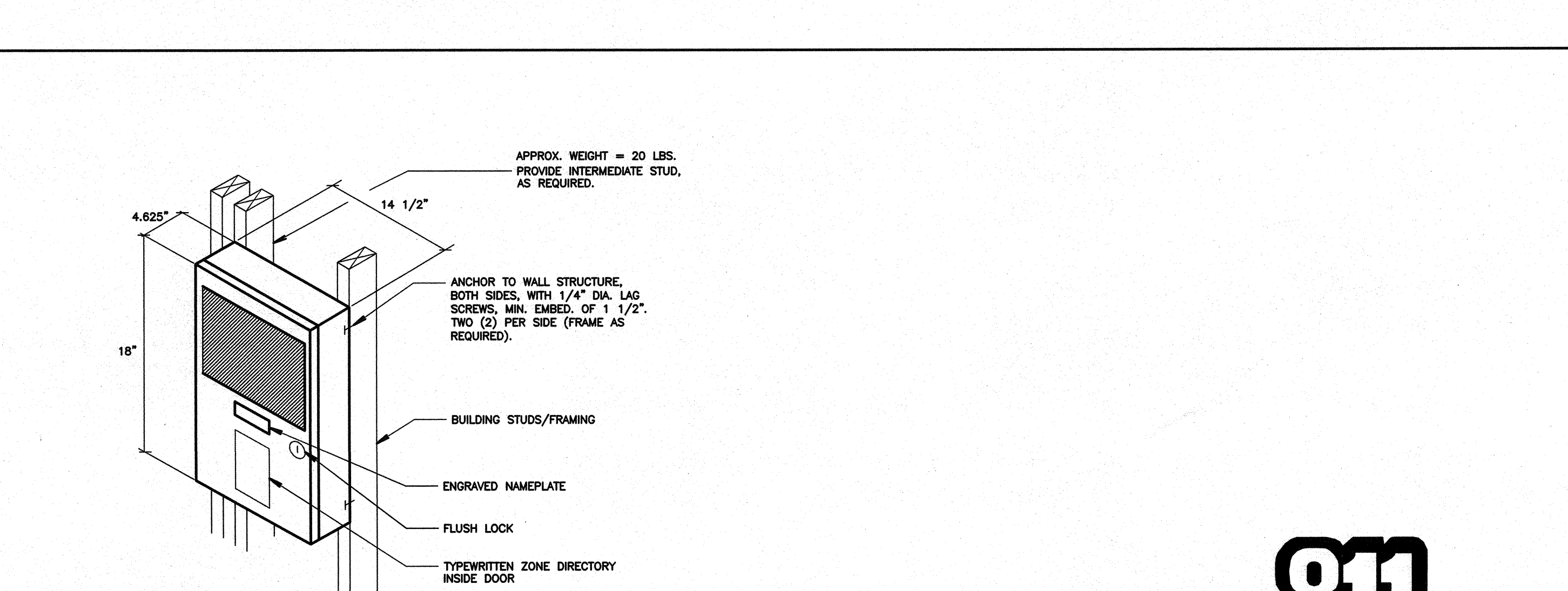
1 TYPICAL FIRE ALARM DEVICES WIRING DIAGRAMS DETAIL NOT TO SCALE



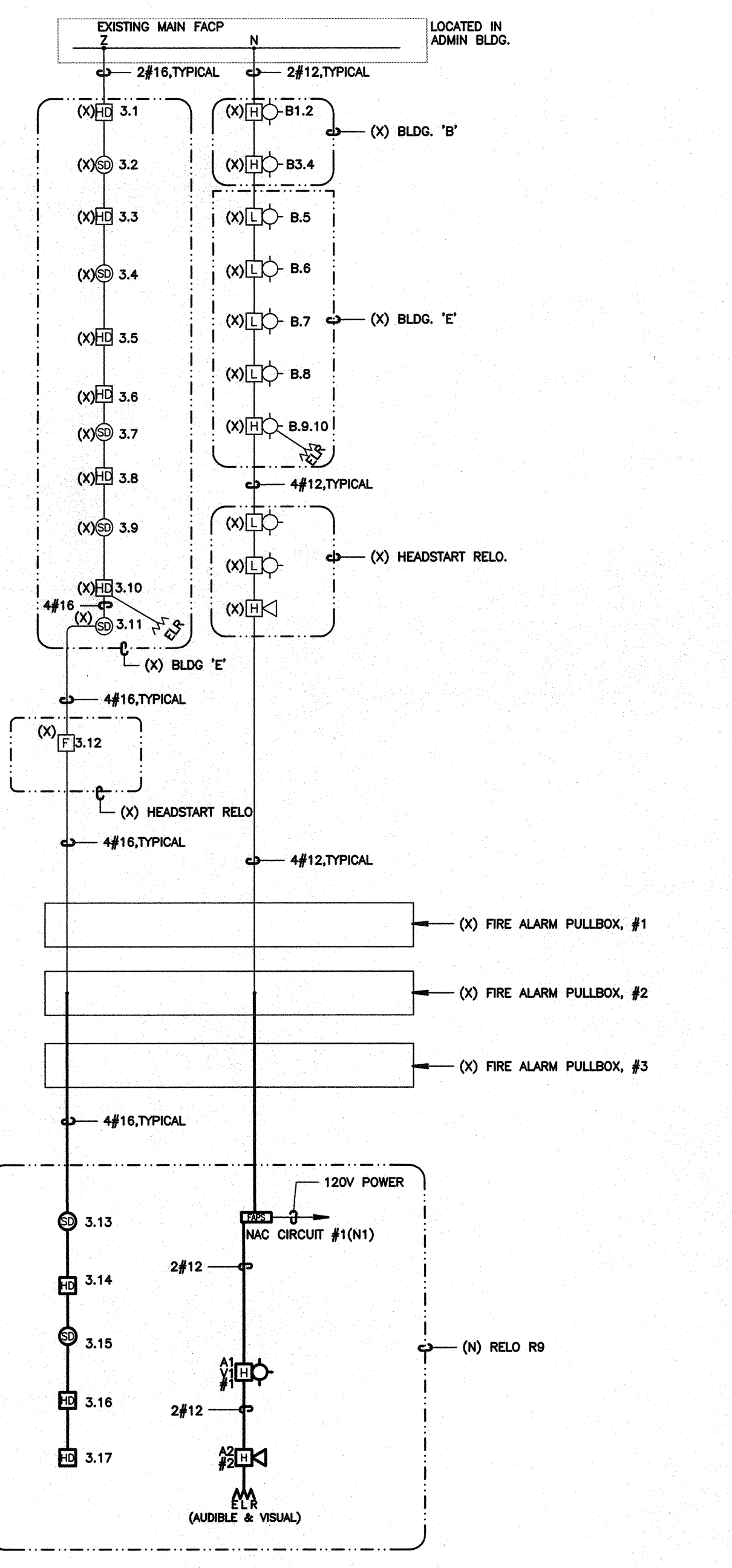
2 DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS NOT TO SCALE



3 TYPICAL FIRE ALARM DEVICE MOUNTING DETAILS SCALE: NOT TO SCALE



4 FIRE ALARM REMOTE POWER SUPPLY MOUNTING DETAIL NOT TO SCALE



5 FIRE ALARM SYSTEM RISER DIAGRAM SCALE: NOT TO SCALE

CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH THE WORK. REPORT DISCREPANCIES TO THE ARCHITECT. ALL CONSTRUCTION SHALL CONFORM TO THE C.B.C.

SITE IMPROVEMENTS FOR MODULAR CLASSROOM ROOSEVELT ELEMENTARY SCHOOL
 2324 VERDE STREET
 FOR BAKERSFIELD CITY SCHOOL DISTRICT
 BAKERSFIELD, KERN COUNTY, CALIFORNIA, 93306

IDENTIFICATION STAMP
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1601 NEW STINE ROAD, SUITE 281
 BAKERSFIELD, CA 93309
 PH: (661) 397-4377
 FAX: (661) 397-4378
 WWW.SCARCHITECT.COM

STEPHEN J. GORIN, NCBRR, AIA, LEED AP BD+
 LICENSED PROFESSIONAL ARCHITECT
 No. C-16788
 EXPIRES 12/31/2025
 STATE OF CALIFORNIA

FIRE ALARM DETAILS, WIRING DIAGRAMS, AND RISER DIAGRAM



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PERMIT SUBMITTAL

JOB NO.
 DRAWN BY: G. GARCIA
 CHECKED BY: D. FERRANTI
 DATE: 2/12/2016

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 OF SHEETS