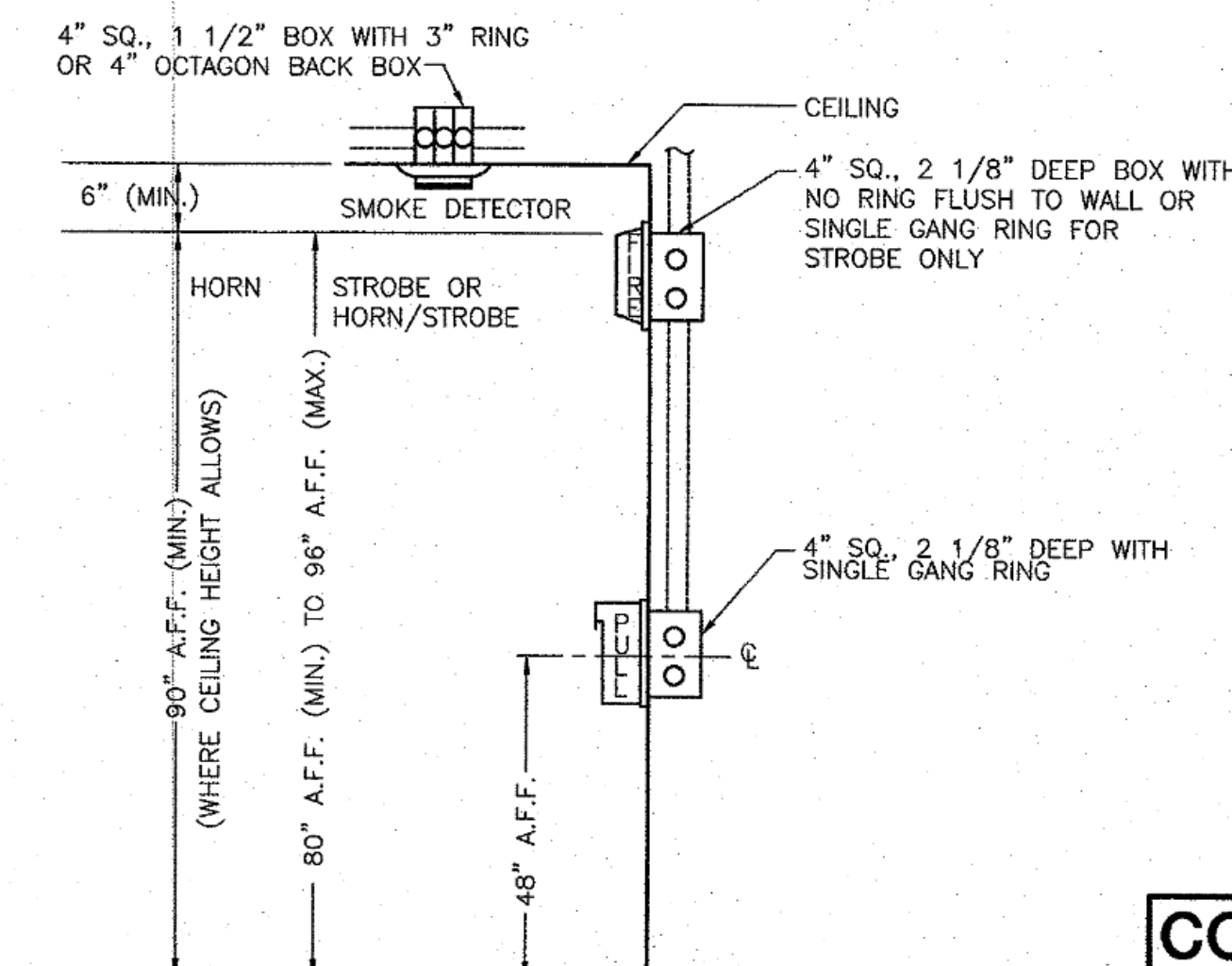


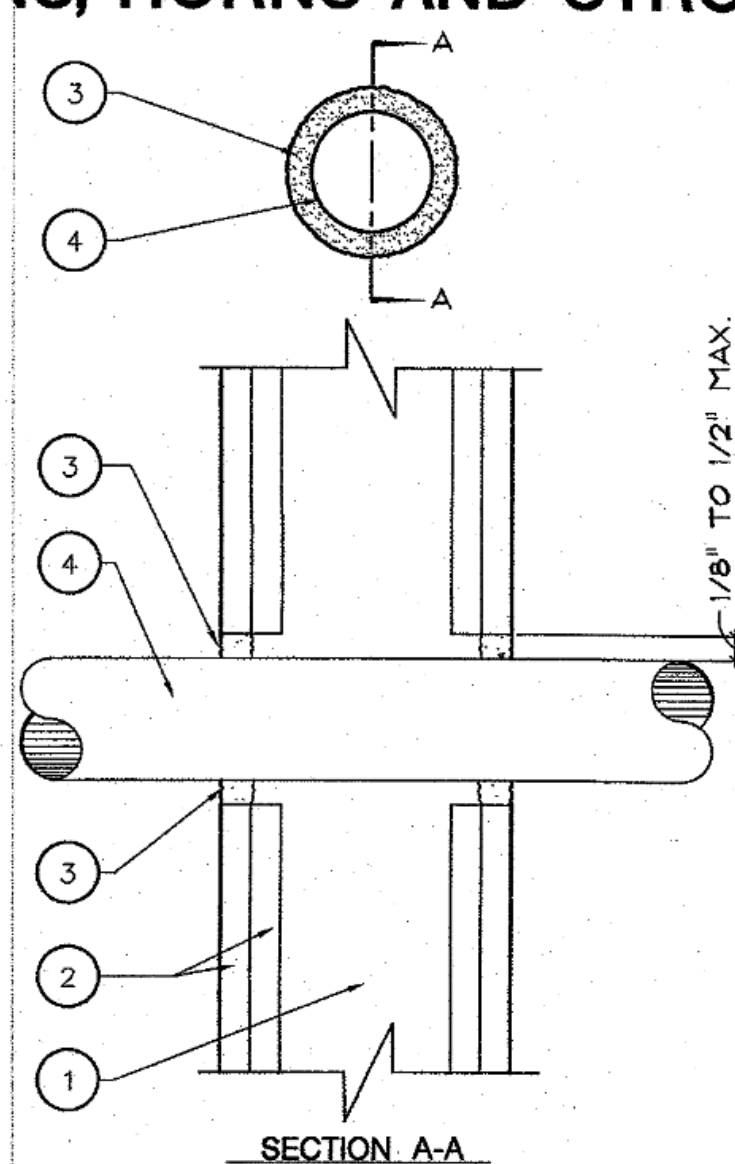
FIRE ALARM LEGEND				
SYMBOL	DESCRIPTION	MANUFACT.	MODEL NO.	CSFM LISTING
FACP	EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL	SIMPLEX	4020	# 11737 # 59618
FATC	FIRE ALARM TERMINAL CABINET/ NAC EXTENDER (TEMPORAL MODE) IDNET REPEATER	SIMPLEX	4099-9201	7300-0026:214
SD	SMOKE DETECTOR	SIMPLEX	4098-9714	7272-0026:218
DD	DUCT SMOKE DETECTOR	SIMPLEX	4098-9792	7300-0026:217
HD	HEAT DETECTOR	SIMPLEX	4098-9756	3240-0026:241
HD	HEAT DETECTOR BASE	SIMPLEX	4098-9733	7270-0026:216
HD	HEAT DETECTOR BASE	SIMPLEX	4098-9792	7300-0026:217
HD	HEAT DETECTOR BASE	SIMPLEX	4098-9614	7270-0026:221
HD	HEAT DETECTOR BASE	SIMPLEX	4098-9788	7300-0026:222
F	MANUAL PULL STATION	SIMPLEX	4099-9003	7150-0026:224
AM	ADDRESSABLE ALARM MODULE	SIMPLEX	4090-9001	7300-0026:223
S15	STROBE LIGHT	GENTEX	GECS-24WR	7125-0569:123
H30	COMBINATION HORN/STROBE	GENTEX	GECS-24WR	7135-0569:122
WP	WEATHERPROOF HORN	GENTEX	WGEC1838-75WR W/ NOISE BACKBOX AND GOE ENCLOSURE	7135-0569:122 7300-0569:124

* NUMBER INDICATES STROBE CANDELA 15, 30, 60, 75 OR 110
** CONNECT HORN CIRCUIT ONLY. DO NOT CONNECT STROBE.



3 HEIGHT REQUIREMENTS FOR PULL STATIONS, HORNS AND STROBES

SCALE: NONE

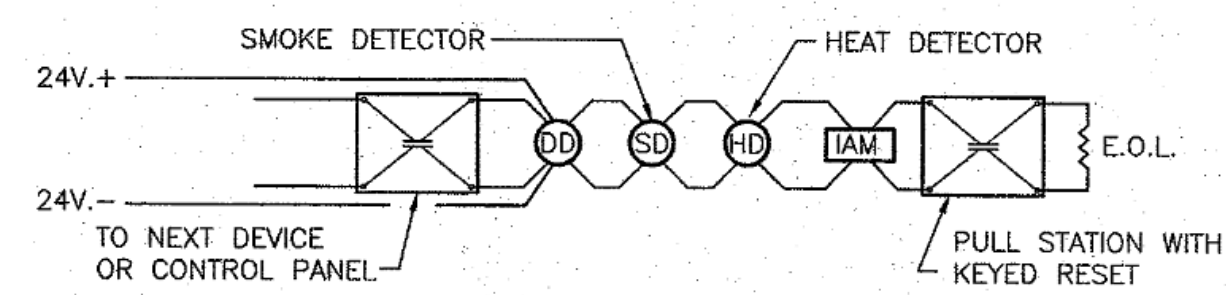


4 TYPICAL RATED FIRE WALL PENETRATION PER UL-WL1088

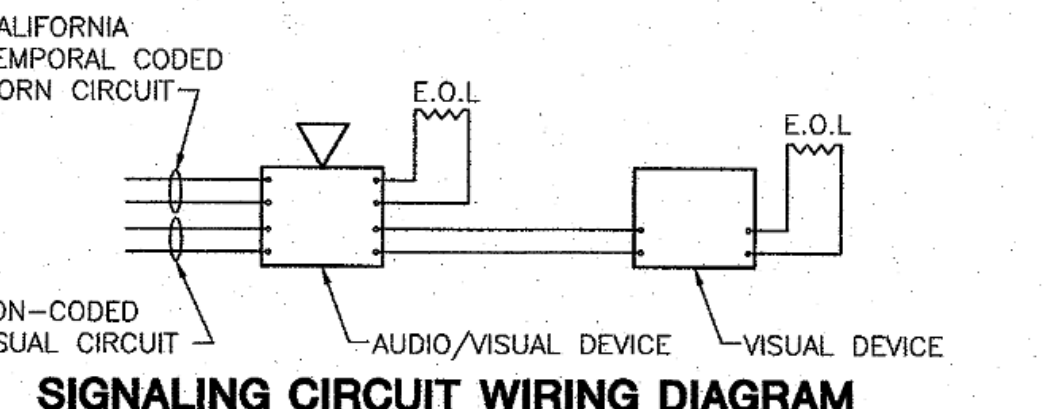
SCALE: NONE

CONDUCTOR SCHEDULE

KEY	CONDUIT	WIRES
1	3/4\" C.	(1) 1PR. 14 AWG. FPLP
2	3/4\" C.	(2) 1PR. 14 AWG. FPLP
3	3/4\" C.	(1) 1PR. 14 AWG. FPLP, (2) #12
4	3/4\" C.	(1) 1PR. 14 AWG. FPLP, (4) #12
5	3/4\" C.	(1) 1PR. 14 AWG. FPLP, (6) #12
6	3/4\" C.	(1) 1PR. 14 AWG. FPLP, (8) #12
7	3/4\" C.	(2) 1PR. 14 AWG. FPLP, (2) #12
8	3/4\" C.	(2) 1PR. 14 AWG. FPLP, (4) #12
9	3/4\" C.	(2) 1PR. 14 AWG. FPLP, (6) #12
10	3/4\" C.	(2) 1PR. 14 AWG. FPLP, (8) #12
11	3/4\" C.	(2) #12
12	3/4\" C.	(4) #12
13	3/4\" C.	(6) #12
14	3/4\" C.	(8) #12
15	3/4\" C.	(1) 1PR. 16 AWG. FPLP, SHIELDED

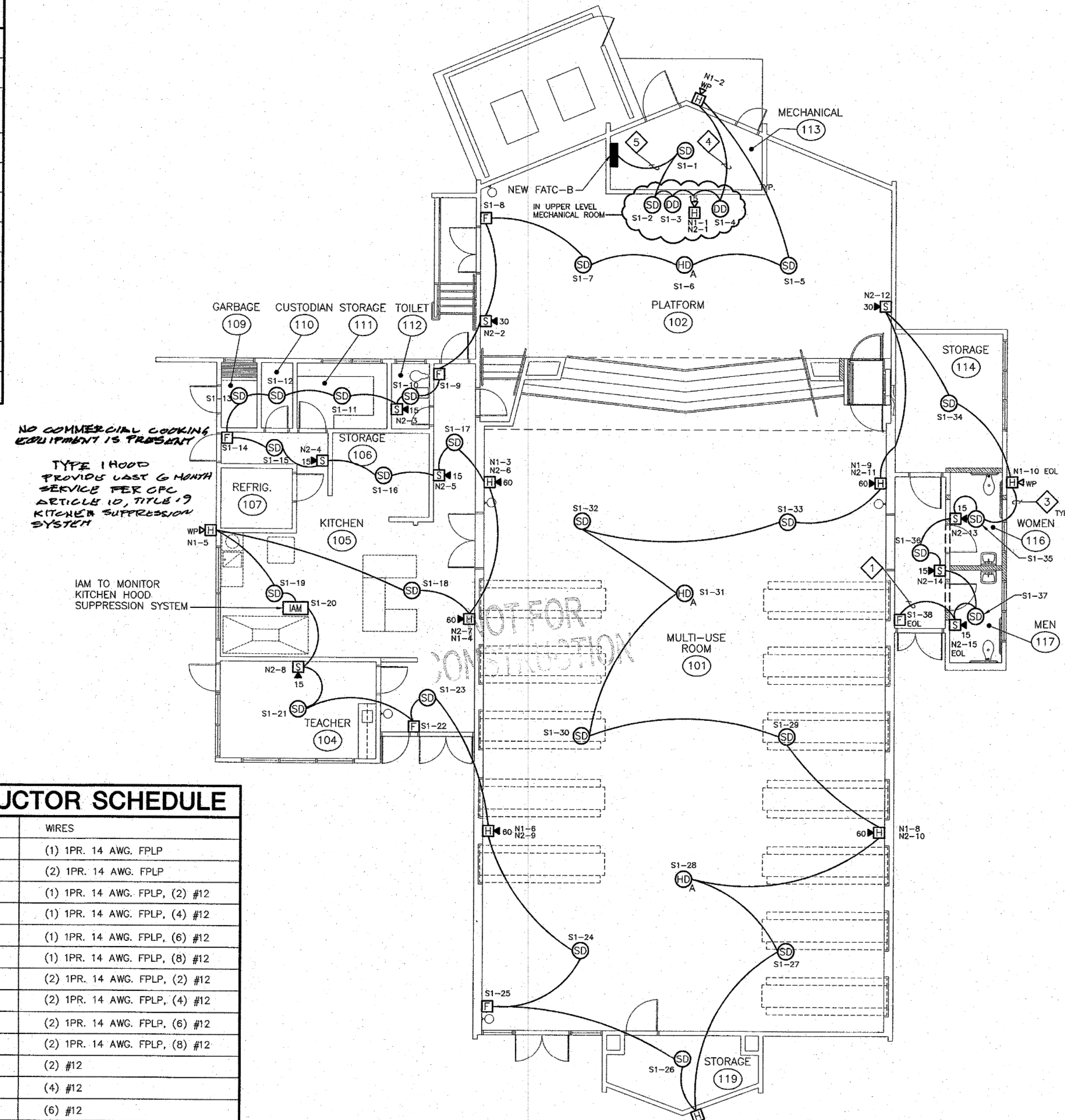


5 TYPICAL SIGNAL CIRCUIT WIRING DIAGRAM



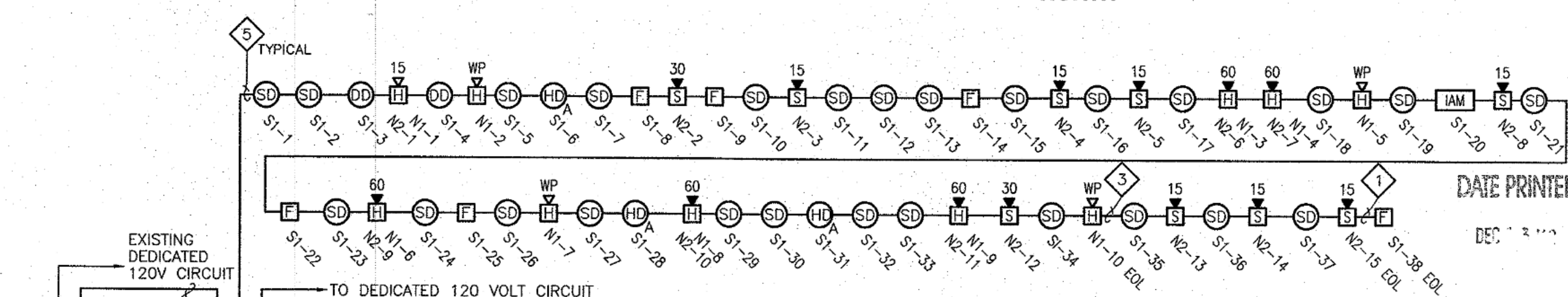
5 TYPICAL SIGNAL CIRCUIT WIRING DIAGRAM

SCALE: NONE



1 FIRE ALARM PLAN - BUILDING B

SCALE: 1/8\"/>



2 FIRE ALARM RISER DIAGRAM

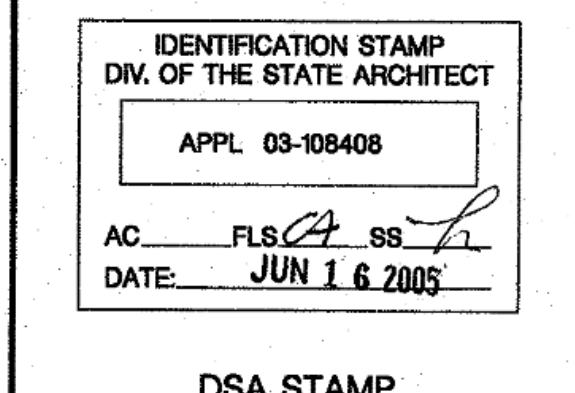
SCALE: NONE

INCLUDE SUPERVISION PER
CPC 10000.2.B.22.1.5 -
UL LISTED CENTRAL STATION.

NOTE:
FACP TO BE REPROGRAMMED FOR
OPERATION IN TEMPORAL MODE.

FIRE ALARM SYSTEM BATTERY CALCULATION			
PROJECT: WORKMAN ELEMENTARY SCHOOL MULTIPURPOSE BUILDING MODERNIZATION (#210460)			
LOCATION:			
SYSTEM COMPONENT: FATC-B			
SYSTEM CONDITION: NORMAL OPERATION DURING POWER FAILURE - 24 HOUR(S) STANDBY			
COMPONENT/DEVICE DESCRIPTION	QTY.	CURRENT DRAW EACH	TOTAL CURRENT DRAW
4099-9201 NAC POWER EXTENDER/TERMINAL CABINET	1	0.0670 A	0.067000 A
GECS-24WR (15 CD STROBE)	7	0.0780 A	0.546000 A
GECS-24WR (30 CD STROBE)	2	0.0960 A	0.192000 A
GECS-24WR (60 CD STROBE)	1	0.1370 A	0.137000 A
GECS-24WR (15 CD STROBE)	1	0.0780 A	0.078000 A
GECS-24WR (118 CD STROBE)	1	0.2240 A	0.224000 A
GECS-24WR (15 CD STROBE)	1	0.0780 A	0.078000 A
GECS-24WR (30 CD STROBE)	1	0.0960 A	0.096000 A
GECS-24WR (60 CD STROBE)	5	0.1370 A	0.685000 A
GECS-24WR (75 CD STROBE)	1	0.1800 A	0.180000 A
GECS-24WR (118 CD STROBE)	1	0.2240 A	0.224000 A
GECS-24WR (HORN CIRCUIT)	6	0.0280 A	0.168000 A
WGEC1838-75WR EXTERNAL HORN	4	0.0280 A	0.112000 A
TOTAL			1.948000 A
TOTAL CURRENT DRAW (I) = 1.948000 AMPERE			
BATTERY REQUIRED FOR ALARM OPERATION AT END OF 24 HOUR POWER FAILURE = 0.153 AMPERE HOUR (AH)			
BATTERIES USED (2): 2081-9272 = 0.290 AH			
4.039 = 1AH SPARE CAPACITY			

FIRE ALARM SYSTEM VOLTAGE DROP CALCULATION			
PROJECT: WORKMAN ELEMENTARY SCHOOL MULTIPURPOSE BUILDING MODERNIZATION (#210460)			
LOCATION:			
SYSTEM COMPONENT: FATC-B*			
SYSTEM CIRCUIT: HORN CIRCUIT "N1"			
COMPONENT/DEVICE DESCRIPTION	QTY.	CURRENT DRAW EACH	TOTAL CURRENT DRAW
GECS-24WR (HORN CIRCUIT)	6	0.0280 A	0.168000 A
WGEC1838-75WR EXTERNAL HORN	4	0.0280 A	0.112000 A
TOTAL			0.280000 A
TOTAL CURRENT DRAW (I) = 0.280000 AMPERE			
CIRCUIT LENGTH (L): 525 FT. WIRE SIZE AND TYPE: 12 AWG. CU. STRANDED			
CIRCUIT VOLTAGE (E): 24 V. DC RESISTANCE/1000 FT. (R): 1.98 OHMS			
FORMULA (OHMS LAW) & CALCULATION:			
I = AMPERES R = RESISTANCE R ₀ = CKT. RESISTANCE E = CKT. VOLTAGE L = CKT. LENGTH			
R x L / 1000 = R ₀ R ₀ = E / I R ₀ = E / (I x R) E = I x R E = I x (R ₀ x L / 1000) PERCENT DROP = (E / E) x 100 = PERCENT DROP			
R x L / 1000 = R ₀ R ₀ = E / I R ₀ = E / (I x R) E = I x R E = I x (R ₀ x L / 1000) PERCENT DROP = (E / E) x 100 = PERCENT DROP			
R = 1.98 OHMS E = 24 VOLTS I = 0.280 AMPERES L = 525 FT. (max allowed)			
PERCENT DROP = 1.21 %			
SYSTEM COMPONENT: FATC-B*			
COMPONENT/DEVICE DESCRIPTION	QTY.	CURRENT DRAW EACH	TOTAL CURRENT DRAW
GECS-24WR (15 CD STROBE)	7	0.0780 A	0.546000 A
GECS-24WR (30 CD STROBE)	2	0.0960 A	0.192000 A
GECS-24WR (60 CD STROBE)	1	0.1370 A	0.137000 A
GECS-24WR (15 CD STROBE)	1	0.0780 A	0.078000 A
GECS-24WR (118 CD STROBE)	1	0.2240 A	0.224000 A
GECS-24WR (15 CD STROBE)	1	0.0780 A	0.078000 A
GECS-24WR (30 CD STROBE)	1	0.0960 A	0.096000 A
GECS-24WR (60 CD STROBE)	5	0.1370 A	0.685000 A
GECS-24WR (75 CD STROBE)	1	0.1800 A	0.180000 A
GECS-24WR (118 CD STROBE)	1	0.2240 A	0.224000 A
TOTAL			1.501000 A
TOTAL CURRENT DRAW (I) = 1.501000 AMPERE			
CIRCUIT LENGTH (L): 525 FT. WIRE SIZE AND TYPE: 12 AWG. CU. STRANDED			
CIRCUIT VOLTAGE (E): 24 V. DC RESISTANCE/1000 FT. (R): 1.98 OHMS			
FORMULA (OHMS LAW) & CALCULATION:			
I = AMPERES R = RESISTANCE R ₀ = CKT. RESISTANCE E = CKT. VOLTAGE L = CKT. LENGTH			
R x L / 1000 = R ₀ R ₀ = E / I R ₀ = E / (I x R) E = I x R E = I x (R ₀ x L / 1000) PERCENT DROP = (E / E) x 100 = PERCENT DROP			
R x L / 1000 = R ₀ R ₀ = E / I R ₀ = E / (I x R) E = I x R E = I x (R ₀ x L / 1000) PERCENT DROP = (E / E) x 100 = PERCENT DROP			
R = 1.98 OHMS E = 24 VOLTS I = 1.501 AMPERES L = 525 FT. (max allowed)			
PERCENT DROP = 6.50 %			



PROJECT NO.: 210460 DATE: 11-02-04

FIRE ALARM PLAN AND DETAILS BUILDING B

FA2.1

ARCHITECT'S STAMP

ENGINEER'S STAMP

CONVINA-VALLEY

UNIFIED SCHOOL DISTRICT
ROWLAND ELEMENTARY SCHOOL
MULTI-PURPOSE BUILDING MODERNIZATION

KPI Architects Inc.
Architects • Engineers
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Covina, California 91709-3026
951-270-3879 Fax: 951-270-2947



Rowland Elementary School
CONVINA VALLEY USD
1855 E ROWLAND AVE. WEST COVINA, CA 91709

DSA Submitted Set
5/5/22
REVISIONS

75-22605-00

REFERENCE DRAWING

E2.2

FOR REFERENCE ONLY