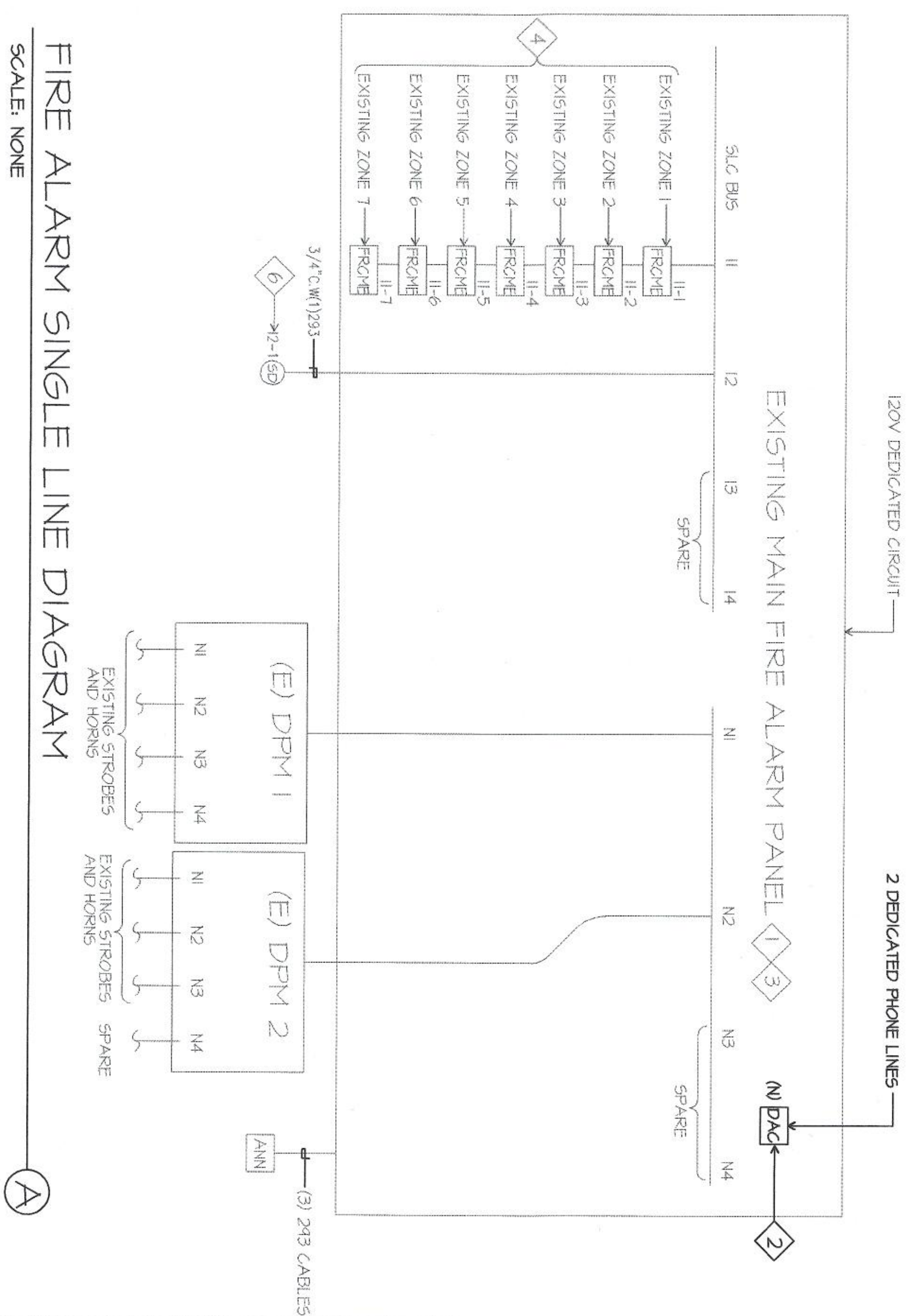
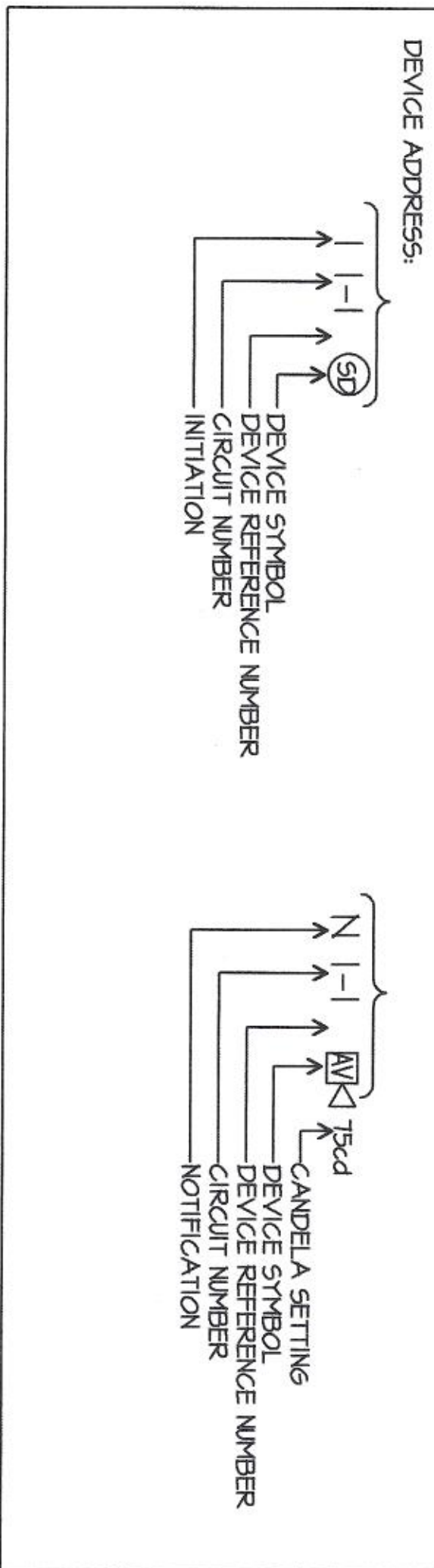


FIRE ALARM SINGLE LINE DIAGRAM NOTES

- EXISTING FIRE ALARM PANEL WAS REPLACED DUE TO A LIGHTING STRIKE
- PROVIDE AND INSTALL DIGITAL ALARM COMMUNICATOR
- FIRE ALARM SYSTEM IS AN AUTOMATIC, ADDRESSABLE SYSTEM.
- EXISTING INITIATION ZONES (CONSISTING OF PULL STATIONS) ARE RECOGNIZED VIA DUAL INPUT MODULES (FCMCE).
- SMOKE DETECTOR INSTALLED WITHIN 5' OF MAIN FIRE ALARM PANEL.



DEVICE NUMBERING LEGEND



VOLTAGE DROP CALCULATIONS FOR EXISTING CIRCUITS

- (2) (13 A) (665 FT) (2.05 OHMS) = 2 V, $(\frac{2 V}{24 V}) \times 100 = 8.3\% \text{ V.D.}$
- (2) (15 A) (600 FT) (2.05 OHMS) = 1.12 V, $(\frac{1.12 V}{24 V}) \times 100 = 4.6\% \text{ V.D.}$
- (2) (17 A) (280 FT) (2.05 OHMS) = .68 V, $(\frac{.68 V}{24 V}) \times 100 = 2.8\% \text{ V.D.}$
- (2) (26 A) (300 FT) (2.05 OHMS) = .32 V, $(\frac{.32 V}{24 V}) \times 100 = 1.3\% \text{ V.D.}$
- (2) (24 A) (440 FT) (2.05 OHMS) = .4 V, $(\frac{.4 V}{24 V}) \times 100 = 1.6\% \text{ V.D.}$
- (2) (16 A) (440 FT) (2.05 OHMS) = .32 V, $(\frac{.32 V}{24 V}) \times 100 = 1.3\% \text{ V.D.}$
- (2) (23 A) (480 FT) (2.05 OHMS) = .45 V, $(\frac{.45 V}{24 V}) \times 100 = 1.8\% \text{ V.D.}$

FIRE ALARM BATTERY CALCULATION-EXISTING DISTRIBUTED POWER MODULE 2

EQUIPMENT DESCRIPTION	EXISTING QUANTITY	NEW QUANTITY	SUPERVISORY CURRENT (AMPERES)	ALARM CURRENT (AMPERES)
DISTRIBUTED POWER MODULE	1	0	0.075	0.175
EXISTING ZONE 1	1	0	0.24	0.24
EXISTING ZONE 2	1	0	0.18	0.18
EXISTING ZONE 3	1	0	0.23	0.23
EXISTING ZONE 4	0	0	0	0
EXISTING ZONE 5	0	0	0	0
EXISTING ZONE 6	0	0	0	0
EXISTING ZONE 7	0	0	0	0
SUB-TOTAL AMPERES			0.775 AMPS	0.825 AMPS
SUB-TOTAL AMPERE-HOURS			1.8 AH	0.0693 AH
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE				1.8693 AH
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR				x 1.2
TOTAL MINIMUM AMPERE HOURS REQUIRED				2.24316 AH
PROVIDED BATTERY CAPACITY				7.00 AH

FIRE ALARM BATTERY CALCULATION-EXISTING DISTRIBUTED POWER MODULE 1

EQUIPMENT DESCRIPTION	EXISTING QUANTITY	NEW QUANTITY	SUPERVISORY CURRENT (AMPERES)	ALARM CURRENT (AMPERES)
DISTRIBUTED POWER MODULE	1	0	0.075	0.175
EXISTING ZONE 1	1	0	0.3	0.3
EXISTING ZONE 2	1	0	0.43	0.43
EXISTING ZONE 3	1	0	0.07	0.07
EXISTING ZONE 4	1	0	0.26	0.26
EXISTING ZONE 5	0	0	0	0
EXISTING ZONE 6	0	0	0	0
EXISTING ZONE 7	0	0	0	0
SUB-TOTAL AMPERES			0.775 AMPS	1.255 AMPS
SUB-TOTAL AMPERE-HOURS			1.8 AH	0.10842 AH
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE				1.9042 AH
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR				x 1.2
TOTAL MINIMUM AMPERE HOURS REQUIRED				2.28504 AH
PROVIDED BATTERY CAPACITY				7.00 AH

FIRE ALARM BATTERY CALCULATION-EXISTING MASTER PANEL FIRE-NET 2127

EQUIPMENT DESCRIPTION	EXISTING QUANTITY	NEW QUANTITY	SUPERVISORY CURRENT (AMPERES)	ALARM CURRENT (AMPERES)
MASTER PANEL	1	0	0.1	0.1
REMOTE ANNUNCIATOR PANEL	2	0	0.15	0.27
FAST RESPONSE CONTACT MODULE	7	0	0.0055	0.008
DIGITAL ALARM COMMUNICATOR	1	0	0.02	0.02
SMOKE DETECTOR	1	0	0.0039	0.0039
SUB-TOTAL AMPERES			0.2424 AMPS	0.7169 AMPS
SUB-TOTAL AMPERE-HOURS			10.18175 AH	0.060177 AH
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE				10.24194 AH
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR				x 0.84
TOTAL MINIMUM AMPERE HOURS REQUIRED				12.2992 AH
PROVIDED BATTERY CAPACITY				24.00 AH

FIRE ALARM SYMBOL LIST MATRIX

SYMBOL	DEVICE	MFR & CAT#	REMARKS	OSPLN LISTING
■	MAIN FIRE ALARM PANEL	HOCHIKI FIRENET 2127		7185-0410-159
□	DIGITAL ALARM COMMUNICATOR	HOCHIKI RN-DAC	PROVIDE TWO DEDICATED PHONE LINES	7170-0410-170
ANN	REMOTE ANNUNCIATOR	HOCHIKI RN-LCDN		7120-0410-166
SD	SMOKE DETECTOR	HOCHIKI ALGV	WITH HSB-NSA-6 BASE	7272-0410-149
DNM	DUAL INPUT MODULE	HOCHIKI DCP-DMM	MOUNT IN MAIN FIRE ALARM PANEL	7300-1410-150
SYNG	SYNC MODULE	WHIELOCK DSM	MOUNT IN MAIN FIRE ALARM PANEL	7300-0785-132
DPM	EXISTING DISTRIBUTED POWER MODULE	SILENT KNIGHT MODEL 5495	RE-CONNECT TO NEW PANEL	7300-0559-123
F	PULL STATION		EXISTING	
H	HORN		EXISTING	
V	STROBE		EXISTING	

FIRE ALARM SEQUENCE OF OPERATION

INITIATION	AREA SMOKE DETECTOR	PULL STATION	AC POWER FAILURE
RETURN	YES	YES	YES
ANNUNCIATE AT FIRE CONTROL ROOM	YES	YES	(TROUBLE)
ANNUNCIATE AT 24 HOUR ATTEND LOCATION	YES	YES	(TROUBLE)
ACTIVATE AUDIO VISUAL THROUGHOUT FLOOR OR ALARM	YES	YES	YES
CENTRAL STATION MONITORING	YES	YES	YES

ORDIZ MELBY ARCHITECTS, INC.
 5500 KING AVENUE SUITE 200
 BAKERSFIELD, CALIFORNIA 93309
 TELEPHONE (805) 832-5256
 FACSIMILE (805) 832-4281

REGISTERED ARCHITECT
 No. C-1728
 STATE OF CALIFORNIA
 WILLIAM J. MELBY, AIA
 ARCHITECT C-14728
 ARCHITECT C-18385

IDENTIFICATION STAMP
 OFFICE OF THE ARCHITECT
 OFFICE OF REGISTERED ARCHITECTS
 FILE # 184
 DATE APR 14 2008

FIRE ALARM MAIN PANEL REPLACEMENT AT MUNSEY ELEMENTARY FOR:
BAKERSFIELD CITY SCHOOL DISTRICT
 1300 BAKER STREET
 BAKERSFIELD, CALIFORNIA 93305

PE ENGINEERS ARCHITECTS
 1000 WEST AVENUE
 SUITE 200
 BAKERSFIELD, CA 93309
 TEL: 805.832.7811
 FAX: 805.832.7812
 WWW.PEENGINEERSARCHITECTS.COM

PROJECT: #1140 F.A. Replacement
DATE: 1/14/08
DRAWN BY: [Signature]
CHECKED BY: [Signature]

SHEET TITLE: FIRE ALARM SLD, PANELS, CALCULATIONS
SHEET IDENTIFICATION NUMBER: E-3
SHEET #/NO. OF: 3/3