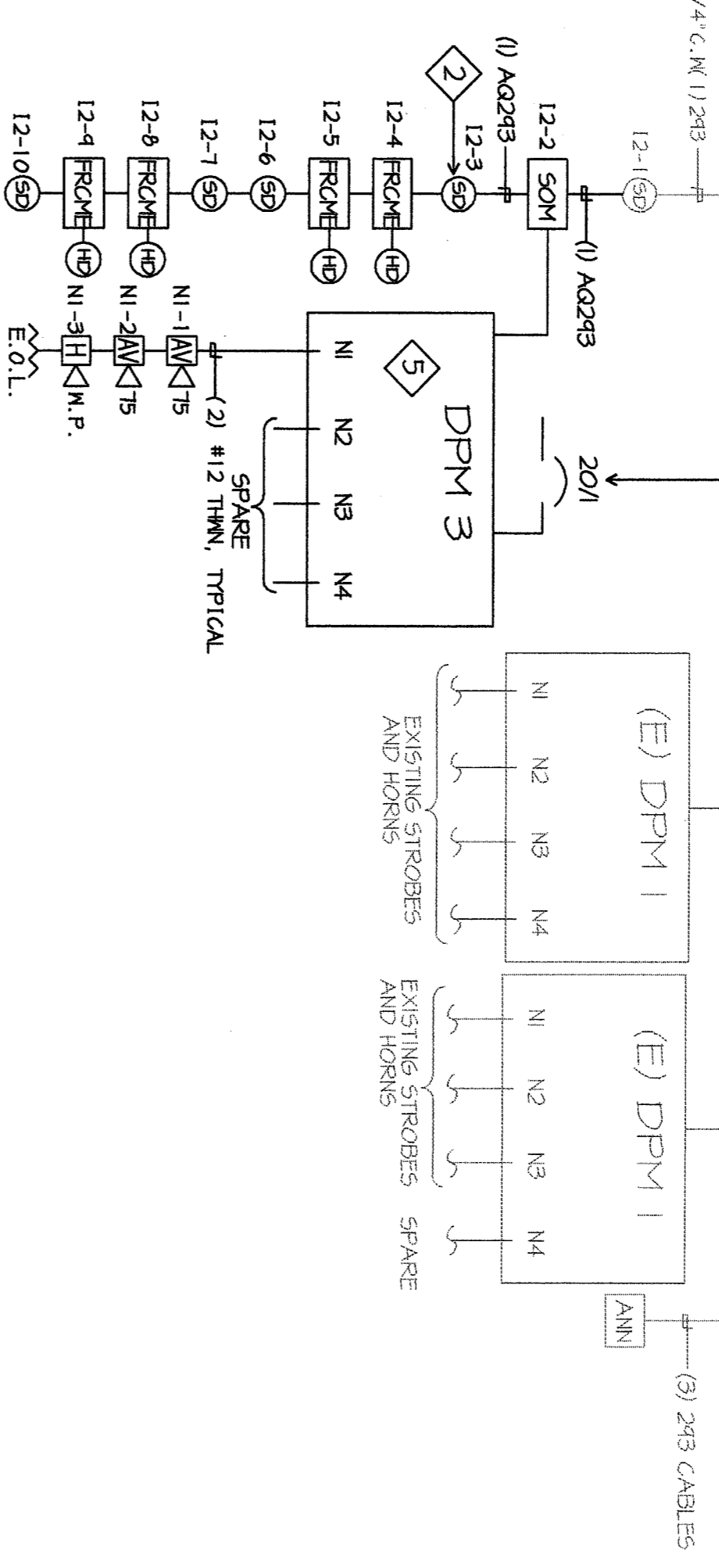


- FIRE ALARM SINGLE LINE DIAGRAM NOTES**
- EXISTING MAIN FIRE ALARM PANEL, DSA APPLICATION NUMBER 112293.
 - INSTALL SMOKE DETECTOR WITHIN 5' OF DPM.
 - PROVIDE MECHANICALLY PROTECTED DEDICATED BRANCH CIRCUIT.
 - CIRCUIT BREAKER SHALL HAVE RED MARKING, SHALL BE ACCESSIBLE TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT".
 - THE LOCATION OF THE CIRCUIT SERVING THE DPM SHALL BE PERMANENTLY IDENTIFIED AT THE DPM.



FIRE ALARM BATTERY CALCULATION-EXISTING MASTER PANEL FIRE INT 2127

EQUIPMENT DESCRIPTION	QUANTITY	SUPERVISORY CURRENT (AMPERES)	ALARM CURRENT (AMPERES)
MASTER PANEL	1	0.1	0.1
REMOTE ANNUNCIATOR PANEL	2	0.15	0.27
FAST RESPONSE CONTACT MODULE	7	0.00055	0.008
DIGITAL ALARM COMMUNICATOR	1	0.02	0.02
SMOKE DETECTOR	1	0.00039	0.00117
HEAT DETECTOR	4	0.00035	0.0014
SUB-TOTAL AMPERES		0.57722 AMPS	1.01917 AMPS
SUB-TOTAL AMPERE-HOURS		13.85328 A.H.	24.00 A.H.
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE			13.92689 A.H.
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR			x1.2
TOTAL MINIMUM AMPERE HOURS REQUIRED			16.72657 A.H.
EXISTING BATTERY CAPACITY			24.00 A.H.

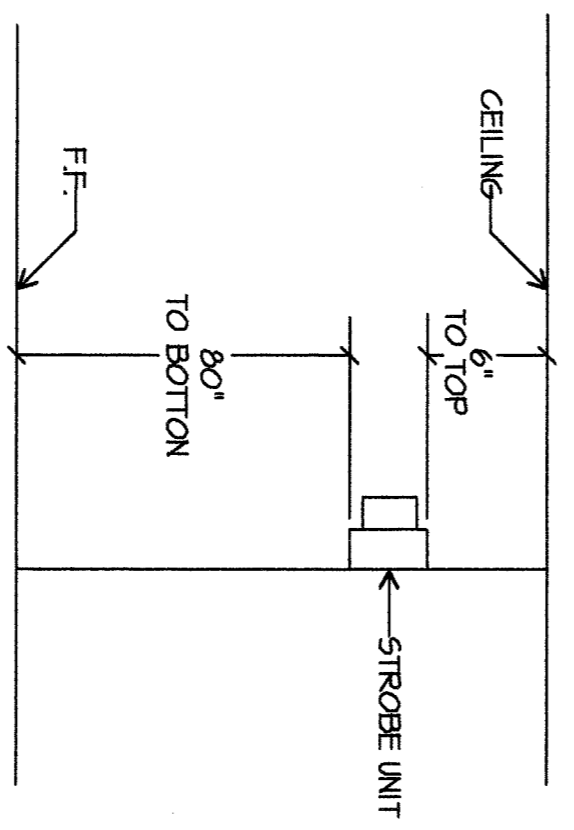
FIRE ALARM BATTERY CALCULATION-NEW DISTRIBUTED POWER MODULE 3

EQUIPMENT DESCRIPTION	QUANTITY	SUPERVISORY CURRENT (AMPERES)	ALARM CURRENT (AMPERES)
DISTRIBUTED POWER MODULE	1	0.075	0.175
AUDIBLE/VISUALS	2	0	0.242
HORN EXTERIOR	1	0.128	0.128
SUB-TOTAL AMPERES	0	0.075 AMPS	0.545 AMPS
SUB-TOTAL AMPERE-HOURS		1.8 A.H.	13.4575 A.H.
TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE			13.4575 A.H.
BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR			x1.2
TOTAL MINIMUM AMPERE HOURS REQUIRED			22.1496 A.H.
PROVIDED BATTERY CAPACITY			7.00 A.H.

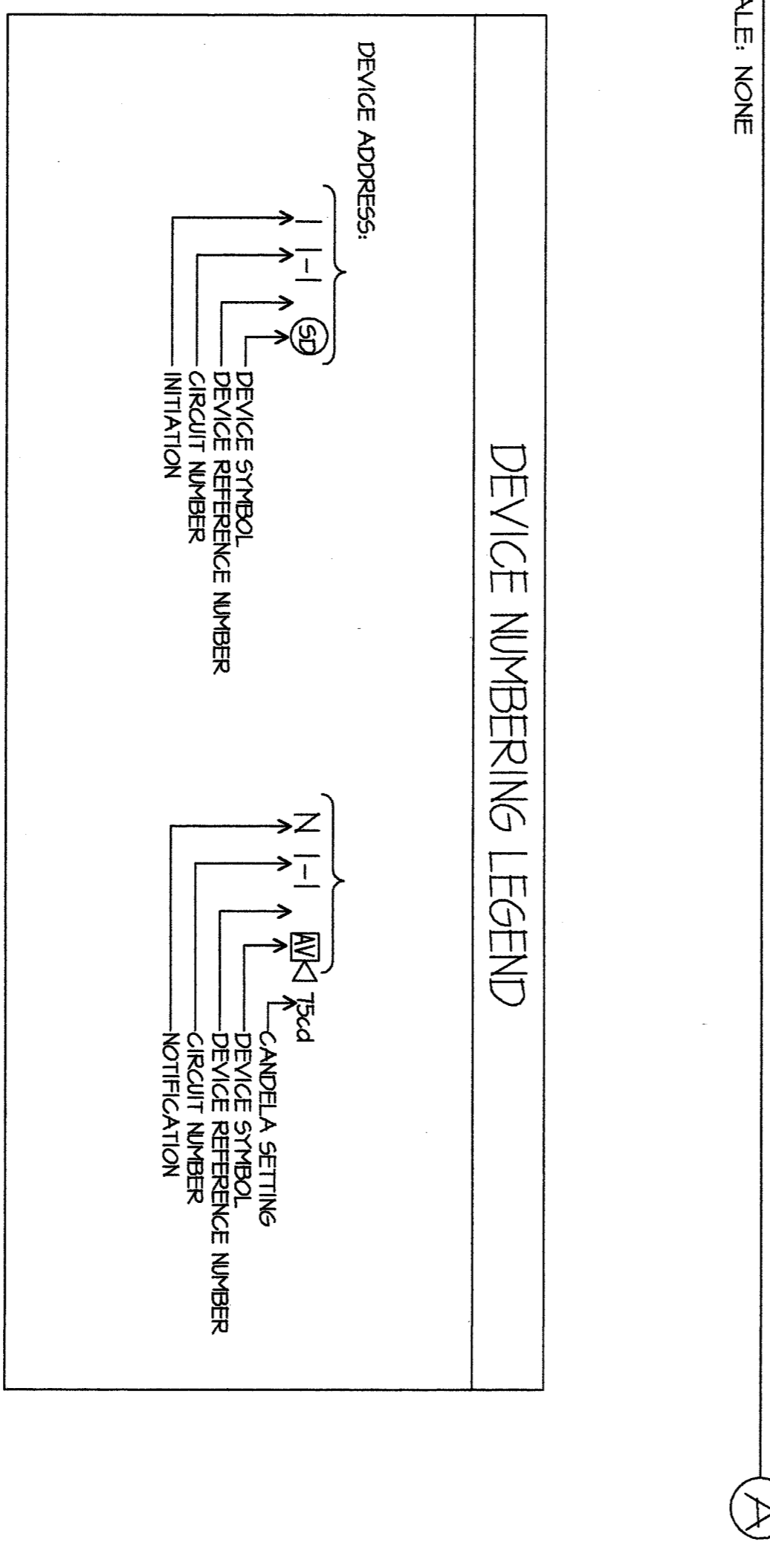
FIRE ALARM SYMBOL LIST MATRIX

SYMBOL	DEVICE	MFR & CAT#	REMARKS	CSFM LISTING
DPM	MAC POWER EXTENDER	HOCHIKI FN542-UJLADA		7315-0410-166
SD	SMOKE DETECTOR	HOCHIKI ALGV	WITH HSB-NSA-6 BASE	7272-0410-149
HD	HEAT DETECTOR	HOCHIKI DFE-190	WITH NSB-100 BASE	7270-0410-119
FRM	FAST RESPONSE CONTACT MODULE	HOCHIKI DCP-FRMC		7300-0410-150
SOM	SUPERVISED OUTPUT MODULE	HOCHIKI SOM		7300-0410-150
AV	HORN STROBE	WHEELLOCK AS24MCW 90DBA		7125-0785-131
H	HORN	WHEELLOCK ASWP 98DBA	EXTERIOR W/P HORN	7125-0785-131

HORN/STROBE MOUNTING DETAIL



FIRE ALARM SINGLE LINE DIAGRAM

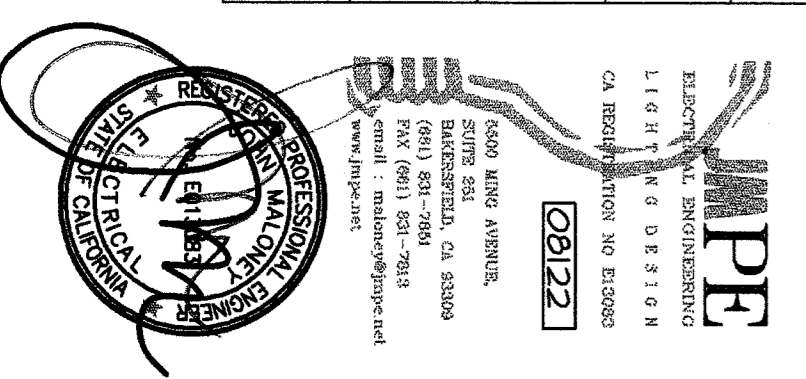


VOLTAGE DROP CALCULATIONS FOR EXISTING CIRCUITS

DPM 3, CIRCUIT N1
 $(2) (37.1 \text{ A}) (165 \text{ FT}) (2.05 \text{ OHMS}) = 25 \text{ V}$, $(25 \text{ V}) / (24 \text{ V}) = 104 \%$ & V.D.
 1000 FT

FIRE ALARM SEQUENCE OF OPERATION

RESPONSE	INITIATION	AREA SMOKE DETECTOR	AREA THERMAL DETECTOR	POWER FAILURE
ANNUNCIATE AT FIRE CONTROL ROOM	ALARM AND TROUBLE	YES	YES	YES
ANNUNCIATE AT 24 HOUR ATTEND LOCATION	ALARM AND TROUBLE	YES	YES	(TROUBLE)
ACTIVATE AUDIO VISUAL THROUGHOUT FLOOR OF ALARM	ALARM AND TROUBLE	YES	YES	YES
CENTRAL STATION MONITORING		YES	YES	YES



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 TELEPHONE (805) 832-6258
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 ARCHITECT C-161855

BAKERSFIELD CITY SCHOOL DISTRICT
 1300 BAKER STREET
 BAKERSFIELD, CALIFORNIA 93305

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SHEET TITLE
FIRE ALARM SLD, PANELS, CALCULATIONS

SHEET IDENTIFICATION NUMBER
E-2

SHEET #14/NO OF