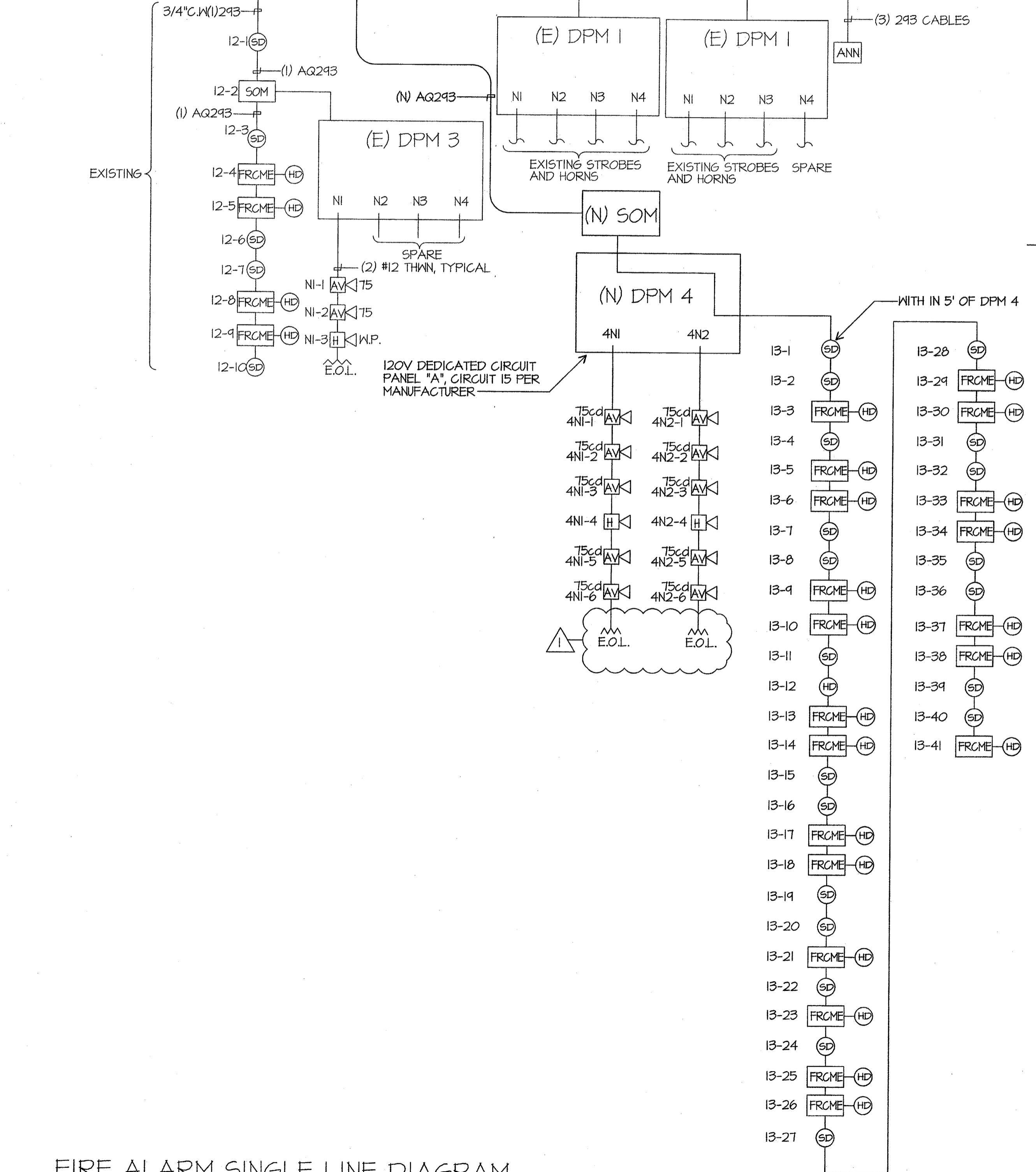


HORN/STROBE MOUNTING DETAIL  
SCALE: NONE

CONTRACTOR SHALL DISCONNECT AND RECONNECT ALL ZONES ASSOCIATED WITH EXISTING BUILDINGS ON CAMPUS AND PROVIDE TESTING FOR POSITIVE REPORTING. PROVIDE FIRE WATCH DURING IMPAIRMENT OF SYSTEM, PER NFPA & CFC (CHAPTER 14 + 9)



FIRE ALARM SINGLE LINE DIAGRAM  
SCALE: NONE

**FIRE ALARM BATTERY CALCULATION-EXISTING MASTER PANEL FIRENET 2127**

EQUIPMENT DESCRIPTION	QUANTITY	SUPERVISORY CURRENT (AMPERES)		ALARM CURRENT (AMPERES)			
		EXISTING	NEW	EACH	SUB-TOTAL	EACH	SUB-TOTAL
MASTER PANEL	1			0.1	0.1	0.1	0.1
REMOTE ANNUNCIATOR PANEL	1			0.15	0.15	0.27	0.27
SUPERVISED OUTPUT MODULE	3		1	0.0003	0.0012	0.0003	0.0012
FAST RESPONSE CONTACT MODULE	11		20	0.00055	0.01705	0.008	0.248
DIGITAL ALARM COMMUNICATOR	1			0.02	0.02	0.02	0.02
SMOKE DETECTOR	3		21	0.00039	0.00936	0.00039	0.00936
HEAT DETECTOR	4		20	0.00035	0.0084	0.00035	0.0084
<b>SUB TOTAL AMPERES</b>				<b>0.30601</b>	<b>AMPERS</b>	<b>0.65696</b>	<b>AMPERS</b>
<b>SUB TOTAL AMPERE-HOURS</b>				<b>x 24 HOURS</b>		<b>x 0.084 HOURS</b>	
				<b>7.34424</b>	<b>A.H.</b>	<b>0.055185</b>	<b>A.H.</b>
<b>TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE</b>						<b>7.399425</b>	<b>A.H.</b>
<b>BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR</b>						<b>x 1.2</b>	
<b>TOTAL MINIMUM AMPERE HOURS REQUIRED</b>						<b>8.87931</b>	<b>A.H.</b>
<b>EXISTING BATTERY CAPACITY</b>						<b>24.00</b>	<b>A.H.</b>

**FIRE ALARM BATTERY CALCULATION-NEW DISTRIBUTED POWER MODULE 4**

EQUIPMENT DESCRIPTION	QUANTITY	SUPERVISORY CURRENT (AMPERES)		ALARM CURRENT (AMPERES)			
		EXISTING	NEW	EACH	SUB-TOTAL	EACH	SUB-TOTAL
DISTRIBUTED POWER MODULE			1	0.075	0.075	0.175	0.175
AUDIBLE/VISUALS	75		10		0	0.121	1.21
HORN EXTERIOR	2				0	0.062	0.124
<b>SUB TOTAL AMPERES</b>			<b>0</b>	<b>0.075</b>	<b>AMPERS</b>	<b>1.509</b>	<b>AMPERS</b>
<b>SUB TOTAL AMPERE-HOURS</b>				<b>x 24 HOURS</b>		<b>x 0.084 HOURS</b>	
				<b>1.8</b>	<b>A.H.</b>	<b>0.126756</b>	<b>A.H.</b>
<b>TOTAL REQUIRED AMPERE-HOURS FOR DISTRIBUTED POWER MODULE</b>						<b>1.926756</b>	<b>A.H.</b>
<b>BATTERY NON-LINEAR DISCHARGE CHARACTERISTIC FACTOR</b>						<b>x 1.2</b>	
<b>TOTAL MINIMUM AMPERE HOURS REQUIRED</b>						<b>2.312107</b>	<b>A.H.</b>
<b>PROVIDED BATTERY CAPACITY</b>						<b>7.00</b>	<b>A.H.</b>

**FIRE ALARM SYMBOL LIST MATRIX**

SYMBOL	DEVICE	MFR & CAT#	REMARKS	CSFM LISTING
DPM	NAC POWER EXTENDER	HOCHIKI FN-642-ULADA		7315-0410:166
SD	SMOKE DETECTOR	HOCHIKI ALG-V	WITH HSB-NSA-6 BASE	7272-0410:149
HD	HEAT DETECTOR	HOCHIKI DFE-190	WITH NS6-100 BASE	7270-0410:119
FRCME	FAST RESPONSE CONTACT MODULE	HOCHIKI DCP-FRCME		7300-0410:150
SOM	SUPERVISED OUTPUT MODULE	HOCHIKI SOM		7300-0410:150
AV	HORN STROBE	WHEELOCK AS24MCW 90dBA		7125-0785:131
H W.P.	HORN	WHEELOCK ASWP 99dBA	EXTERIOR W.P. HORN	7125-0785:131

**FIRE ALARM SEQUENCE OF OPERATION**

	INITIATION	AREA SMOKE DETECTOR	AREA THERMAL DETECTOR	AC POWER FAILURE
RESPONSE				
ANNUNCIATE AT FIRE CONTROL ROOM				YES (TROUBLE)
ALARM AND TROUBLE		YES	YES	(TROUBLE)
ANNUNCIATE AT 24 HOUR ATTEND LOCATION				YES (TROUBLE)
ALARM AND TROUBLE		YES	YES	(TROUBLE)
ALARM		YES	YES	YES
CENTRAL STATION MONITORING		YES	YES	YES

**VOLTAGE DROP CALCULATIONS**

CIRCUIT	2x	LENGTH x	AMPS x	RESISTANCE x	= VOLTS	VOLTAGE DROP
4N1	2	150	0.667	0.00205	0.410	1.71 %
4N2	2	170	0.667	0.00205	0.465	1.94 %

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