SLC LOOP 1 DETECTOR POINT IDENTIFICATION LIST

101	PHOTO SMOKE DETECTOR	RISER ROOM	ALARM
102	WATER FLOW VANE	RISER ROOM	ALARM
103	SPRINKLER RISER TAMPER	RISER ROOM	TROUBLE
104	SPRINKLER POST INDICATOR V	RISER ROOM	TROUBLE
105	PHOTO SMOKE DETECTOR	CORRIDOR 106	ALARM
106	MANUAL PULL STATION	SOUTH EAST ENTRANCE	ALARM
107	MANUAL PULL STATION	SOUTH CAFETERIA ENTRANCE	ALARM
108	MANUAL PULL STATION	NORTH CAFETERIA ENTRANCE	ALARM
109	PHOTO DUCT DETECTOR	CAFETERIA	SUPERVISORY
110	PHOTO SMOKE DETECTOR	MEZZANINE	ALARM
111	PHOTO DUCT DETECTOR	MEZZANINE	SUPERVISORY
112	PHOTO SMOKE DETECTOR	P.E. STORE	ALARM
113	PHOTO SMOKE DETECTOR	JANITOR	ALARM
114	FIXED TEMP HEAT DETECTOR	KITCHEN	ALARM
115	PHOTO DUCT DETECTOR	SERVERY	SUPERVISORY
116	FIXED TEMP HEAT DETECTOR	SERVERY	ALARM
117	KITCHEN HOOD SUPPRESSANT	KITCHEN	ALARM
118	MANUAL PULL STATION	NORTH EAST ENTRANCE	ALARM
119	MANUAL PULL STATION	CORRIDOR 109 EAST ENTRANCE	ALARM
120	MANUAL PULL STATION	NORTH ENTRANCE	ALARM
121	MANUAL PULL STATION	NORTH WEST ENTRANCE	ALARM
122	MANUAL PULL STATION	VESTIBULE MAIN ENTRANCE	ALARM
123	PHOTO SMOKE DETECTOR	VESTIBULE	ALARM
124	MANUAL PULL STATION	CORRIDOR 163	ALARM
125	MANUAL PULL STATION	GYMNASIUM SOUTH END	ALARM
126	PHOTO DUCT DETECTOR	GYMNASIUM SOUTH WEST EXIT	SUPERVISORY
127	MANUAL PULL STATION	GYMNASIUM NORTH WEST EXIT	ALARM
128	MANUAL PULL STATION	GYMNASIUM NORTH END	ALARM
129	PHOTO DUCT DETECTOR	GYMNASIUM NORTH EAST DOOR	SUPERVISORY
130	MANUAL PULL STATION	PE EQUIPMENT STORAGE RM 186	ALARM
131	PHOTO SMOKE DETECTOR	UPPER MEZZANINE STAIRWELL	ALARM
132	PHOTO SMOKE DETECTOR	MEZZANINE STORAGE RM 283	ALARM
133	PHOTO SMOKE DETECTOR	CORRIDOR 173 WEST END	ALARM
134	PHOTO SMOKE DETECTOR	CORRIDOR 173 EAST END	ALARM
135	MANUAL PULL STATION	ROOM 181	ALARM
136	MANUAL PULL STATION	NORTH EAST EXIT	ALARM
137	MANUAL PULL STATION	NORTH EAST EXIT	ALARM
138	MANUAL PULL STATION	NORTH EAST EXIT	ALARM
139	PHOTO SMOKE DETECTOR	NORTH EAST EXIT	ALARM
140	PHOTO SMOKE DETECTOR	NORTH EAST EXIT	ALARM
141	PHOTO SMOKE DETECTOR	NORTH EAST EXIT	ALARM
142	MANUAL PULL STATION	NORTH EAST EXIT	ALARM
143	MANUAL PULL STATION	NORTH EAST EXIT	ALARM

FIRE ALARM CONTROL PANEL BATTERY CALCULATIONS

FIRE ALARM CONTROL PANEL	A	B	C	D	E	F
POTTERSIGNAL P300 FACP	DEVICE MODEL NUMBER	DEVICE QUANTITY	STANDBY CURRENT (A) SECONDARY	TOTAL STANDBY CURRENT (B x C)	ALARM CURRENT (A) SECONDARY	TOTAL ALARM CURRENT (B x E)
FIRE ALARM CONTROL PANEL	P300	1	0.13000	0.13000	0.22000	0.22000
FIRE ALARM LCD REMOTE ANNUNCIATOR	RA-6500	1	0.02000	0.02000	0.02500	0.02500
PHOTOELECTRIC SMOKE DETECTOR	PSA	15	0.00025	0.00375	0.00025	0.00375
PHOTOELECTRIC DUCT SMOKE DETECT.	DSD-P	3	0.01300	0.03900	0.06000	0.18000
ADDRESSABLE MANUAL PULL STATION	APS-SA	19	0.000325	0.00618	0.000325	0.00618
ADDRESSABLE HEAT DETECTOR	FHA	2	0.00025	0.00075	0.00025	0.00075
DUAL INPUT CONTACT MODULE	DCM-4	1	0.00025	0.00025	0.00025	0.00025
MONITORED OUTPUT MODULE	MOM-4	1	0.00025	0.00025	0.00025	0.00025
TWIN RELAY MODULE	TRM-4	3	0.00025	0.00075	0.00025	0.00075
REMOTE TEST / RETEST KEY STATION	MS-KA/R	3	0.00000	0.00000	0.01500	0.04500
AUDIBLE VISUAL NOTIFICATION 15cd	SH-1224R	4	0.00000	0.00000	0.14800	0.59200
AUDIBLE VISUAL NOTIFICATION 75cd	SH-1224R	4	0.00000	0.00000	0.23200	0.92800
VISUAL NOTIFICATION 15cd	SL-1224R	13	0.00000	0.00000	0.06100	0.79300
VISUAL NOTIFICATION 35cd	SL-1224R	2	0.00000	0.00000	0.10200	0.20400
VISUAL NOTIFICATION 75cd	SL-1224R	3	0.00000	0.00000	0.14500	0.43500

SUM COLUMN FOR STANDBY LOAD (Amps): 0.201
MULTIPLY BY REQUIRED STANDBY TIME (24 HOURS): 24
TOTAL STANDBY (Amps): 4.82

SUM COLUMN FOR ALARM LOAD (Amps): 3.434
MULTIPLY BY REQUIRED ALARM TIME (5 MIN - 0.084): 0.084
TOTAL ALARM (Amps): 0.288

TOTAL STANDBY (G)	TOTAL ALARM (H)	REQUIRED (G + H)	SAFETY FACTOR MULTIPLY BY 20% x 1.2	TOTAL SYSTEM AMPHERE-HOURS REQUIRED	BATTERIES USED: 4 REQUIRED WIRE IN SERIES
4.82	0.288	5.108	1.2	6.13	7 Ah, 12 Volt

FIRE ALARM REMOTE POWER SUPPLY # 1 BATTERY CALCULATIONS

FIRE ALARM CONTROL PANEL	A	B	C	D	E	F
REMOTE POWER SUPPLY # 1	DEVICE MODEL NUMBER	DEVICE QUANTITY	STANDBY CURRENT (A) SECONDARY	TOTAL STANDBY CURRENT (B x C)	ALARM CURRENT (A) SECONDARY	TOTAL ALARM CURRENT (B x E)
REMOTE POWER SUPPLY	PSN-64	1	0.06000	0.06000	0.20000	0.200
AUDIBLE VISUAL NOTIFICATION 15cd	SH-1224R	13	0.00000	0.00000	0.14800	1.924
AUDIBLE VISUAL NOTIFICATION 75cd	SH-1224R	2	0.00000	0.00000	0.23200	0.464
EXTERIOR AUDIBLE VISUAL APPLIANCE	SH-1224WP	4	0.00000	0.00000	0.22500	0.900
VISUAL NOTIFICATION 15cd	SL-1224R	8	0.00000	0.00000	0.06100	0.488
VISUAL NOTIFICATION 75cd	SL-1224R	9	0.00000	0.00000	0.14500	1.305

SUM COLUMN FOR STANDBY LOAD (Amps): .060
MULTIPLY BY REQUIRED STANDBY TIME (24 HOURS): 24
TOTAL STANDBY (Amps): 1.44

SUM COLUMN FOR ALARM LOAD (Amps): 5.281
MULTIPLY BY REQUIRED ALARM TIME (5 MIN - 0.084): 0.084
TOTAL ALARM (Amps): 0.444

TOTAL STANDBY (G)	TOTAL ALARM (H)	REQUIRED (G + H)	SAFETY FACTOR MULTIPLY BY 20% x 1.2	TOTAL SYSTEM AMPHERE-HOURS REQUIRED	BATTERIES USED: 4 REQUIRED WIRE IN SERIES
1.44	0.444	1.884	1.2	2.261	7 Ah, 12 Volt

FIRE ALARM REMOTE POWER SUPPLY # 2 BATTERY CALCULATIONS

FIRE ALARM CONTROL PANEL	A	B	C	D	E	F
REMOTE POWER SUPPLY # 1	DEVICE MODEL NUMBER	DEVICE QUANTITY	STANDBY CURRENT (A) SECONDARY	TOTAL STANDBY CURRENT (B x C)	ALARM CURRENT (A) SECONDARY	TOTAL ALARM CURRENT (B x E)
REMOTE POWER SUPPLY	PSN-64	1	0.06000	0.06000	0.20000	0.200
AUDIBLE VISUAL NOTIFICATION 15cd	SH-1224R	10	0.00000	0.00000	0.14800	1.480
AUDIBLE VISUAL NOTIFICATION 75cd	SH-1224R	2	0.00000	0.00000	0.23200	0.464
AUDIBLE VISUAL NOTIFICATION 35cd	SH-1224R	1	0.00000	0.00000	0.18800	0.188
AUDIBLE VISUAL NOTIFICATION 110cd	SH-1224R	1	0.00000	0.00000	0.28300	0.283
EXTERIOR AUDIBLE VISUAL APPLIANCE	SH-1224WP	1	0.00000	0.00000	0.22500	0.225
VISUAL NOTIFICATION 15cd	SL-1224R	5	0.00000	0.00000	0.06100	0.305
VISUAL NOTIFICATION 75cd	SL-1224R	14	0.00000	0.00000	0.14500	2.030
VISUAL NOTIFICATION 110cd	SL-1224R	1	0.00000	0.00000	0.19600	0.196

SUM COLUMN FOR STANDBY LOAD (Amps): .060
MULTIPLY BY REQUIRED STANDBY TIME (24 HOURS): 24
TOTAL STANDBY (Amps): 1.44

SUM COLUMN FOR ALARM LOAD (Amps): 5.371
MULTIPLY BY REQUIRED ALARM TIME (5 MIN - 0.084): 0.084
TOTAL ALARM (Amps): 0.451

TOTAL STANDBY (G)	TOTAL ALARM (H)	REQUIRED (G + H)	SAFETY FACTOR MULTIPLY BY 20% x 1.2	TOTAL SYSTEM AMPHERE-HOURS REQUIRED	BATTERIES USED: 1 REQUIRED WIRE IN SERIES
1.44	0.451	1.891	1.2	2.27	7 Ah, 12 Volt

POWER SUPPLY VOLTAGE DROP CALCULATIONS

VOLTAGE DROP CALCULATION (LUMP SUM-END OF LINE METHOD):
*Formula taken from National Fire Alarm Code Handbook (2008), section 7.3.2

$$V_{load} = V_{terminals} - (R_{conductors} \times I_{conductors}) \quad I_{conductors} = (V_{terminals} - V_{load}) \div R_{load}$$

V_{load} = ? (MINIMUM OPERATING VOLTAGE OF THE NOTIFICATION APPLIANCE)
$V_{terminals}$ = 24 V.D.C. RM END OF USEFUL BATTERY LIFE)
$I_{conductors}$ = TOTAL CURRENT DRAW OF THE CONNECTED APPLIANCES
$R_{conductors}$ = TOTAL CONDUCTOR RESISTANCE

VOLTAGE DROP INFORMATION:	
FIRE ALARM CONTROL PANEL:	FACP
NAC CIRCUIT:	1
HORN/STROBES:	2
STROBES:	11
CURRENT DRAW:	0.978 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	22.52 VDC
ESTIMATED CIRCUIT LENGTH:	229 Feet

VOLTAGE DROP INFORMATION:	
FIRE ALARM CONTROL PANEL:	FACP
NAC CIRCUIT:	2
HORN/STROBES:	6
STROBES:	8
CURRENT DRAW:	1.972 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	20.10 VDC
ESTIMATED CIRCUIT LENGTH:	528 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	1
NAC CIRCUIT:	3
HORN/STROBES:	7
STROBES:	4
CURRENT DRAW:	1.529 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	21.21 VDC
ESTIMATED CIRCUIT LENGTH:	439 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	1
NAC CIRCUIT:	4
HORN/STROBES:	1
STROBES:	2
CURRENT DRAW:	0.272 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	23.63 VDC
ESTIMATED CIRCUIT LENGTH:	273 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	1
NAC CIRCUIT:	5
HORN/STROBES:	5
STROBES:	1
CURRENT DRAW:	1.282 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	21.73 VDC
ESTIMATED CIRCUIT LENGTH:	383 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	1
NAC CIRCUIT:	6
HORN/STROBES:	3
STROBES:	10
CURRENT DRAW:	1.568 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	21.09 VDC
ESTIMATED CIRCUIT LENGTH:	408 Feet

POWER SUPPLY VOLTAGE DROP CALCULATIONS POWER SUPPLY # 2

VOLTAGE DROP CALCULATION (LUMP SUM-END OF LINE METHOD):
*Formula taken from National Fire Alarm Code Handbook (2008), section 7.3.2

$$V_{load} = V_{terminals} - (R_{conductors} \times I_{conductors}) \quad I_{conductors} = (V_{terminals} - V_{load}) \div R_{load}$$

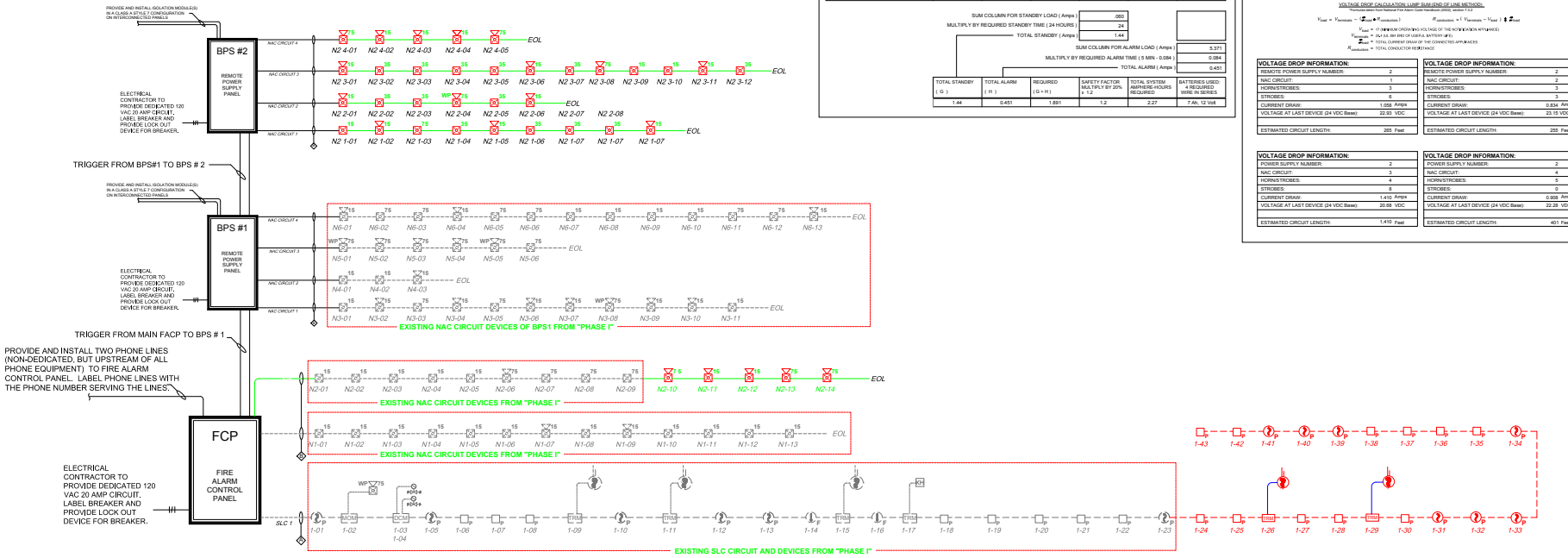
V_{load} = ? (MINIMUM OPERATING VOLTAGE OF THE NOTIFICATION APPLIANCE)
$V_{terminals}$ = 24 V.D.C. RM END OF USEFUL BATTERY LIFE)
$I_{conductors}$ = TOTAL CURRENT DRAW OF THE CONNECTED APPLIANCES
$R_{conductors}$ = TOTAL CONDUCTOR RESISTANCE

VOLTAGE DROP INFORMATION:	
REMOTE POWER SUPPLY NUMBER:	2
NAC CIRCUIT:	1
HORN/STROBES:	3
STROBES:	6
CURRENT DRAW:	1.058 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	22.93 VDC
ESTIMATED CIRCUIT LENGTH:	265 Feet

VOLTAGE DROP INFORMATION:	
REMOTE POWER SUPPLY NUMBER:	2
NAC CIRCUIT:	2
HORN/STROBES:	3
STROBES:	3
CURRENT DRAW:	0.834 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	23.15 VDC
ESTIMATED CIRCUIT LENGTH:	255 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	2
NAC CIRCUIT:	3
HORN/STROBES:	4
STROBES:	8
CURRENT DRAW:	1.410 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	20.68 VDC
ESTIMATED CIRCUIT LENGTH:	1,410 Feet

VOLTAGE DROP INFORMATION:	
POWER SUPPLY NUMBER:	2
NAC CIRCUIT:	4
HORN/STROBES:	5
STROBES:	0
CURRENT DRAW:	0.908 Amps
VOLTAGE AT LAST DEVICE (24 VDC Base):	22.28 VDC
ESTIMATED CIRCUIT LENGTH:	401 Feet



SINGLE LINE RISER DETAIL

SCALE: NOT TO SCALE

N2 1-07 / N2 1-07 — BPS#2 / BPS#2 NAC CIRCUIT # / DEVICE NUMBER ON THAT CIRCUIT

N1 4-7 / N1- 7 — NAC CIRCUIT # / DEVICE NUMBER ON THAT CIRCUIT

1-01 / 1 - 01 — SLC LOOP NUMBER / INDIVIDUAL DEVICE ADDRESS

WIRE SCHEDULE

ALL WIRES TO BE #18 AWG

SIGNALING LINE CIRCUIT (SLC)	SLC	SLC	#18 - 2 PR.S.P.
NOTIFICATION APPLIANCE CIRCUIT (NAC)	NAC	NAC	#14 - 2 PR.S.P.
AUXILIARY POWER CIRCUIT	AUX	AUX	#14 - 2 PR.S.P.
REMOTE TEST CIRCUIT	RTS	RTS	#18 - 2 PR.S.P.

*Minimum Conductor Size.
**As required by N.E.C., 760.51 for low voltage power circuits, as well as manufacturer's recommendations.

NICET IV CERTIFIED #116837

YOUR COMPANY
1234 S. SOMEWHERE STREET
CITY, STATE, ZIP 45678-9010
PHONE: 123.456.7890
FAX: 123.456.7890
www.yourwebsite.com

YOUR COMPANY LOGO HERE

YOUR CLIENT'S INFORMATION GOES HERE

01 JAN 2014
PROJECT #

SHEET DESCRIPTION
POINT IDENTIFICATION CALCULATIONS
SINGLE LINE RISER

SHEET NUMBER
FA-4