"OCEANIA CRUISES, INC."

8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL. 33122

SCOPE OF WORK

TO PROVIDE THE EXISTING 2nd FLOOR A NEW FIRE ALARM SYSTEM AND REPLACE THE EXISTING EQUIPMENT / DEVICES FOR NEW EQUIPMENT / DEVICES ONLY TO THE AREA IN CONTRACT AS PER NFPA 72 & 101 STANDARDS TO DETECT EARLY FIRE, ALERT BUILDING OCCUPANTS AND FIRE DEPARTMENT IN THE EVENT OF A FIRE.

FIRE ALARM SYSTEM NOTES

1. THE EXTENT OF THE FIRE ALARM SYSTEM WORK IS INDICATED BY THE DRAWINGS AND SCHEDULES.
2. ANY SURFACE MOUNTED FIRE ALARM DEVICES, i.e., PULL STATION, STROBES, HORN/STROBE SHALL BE MOUNTED IN "SYSTEMS" BOXES PROVIDED BY THE MANUFACTURER. DO NOT USE 1900 TYPE ELECTRICAL BOXES PAINTED RED.
3. FIRE ALARM SHALL NOT BE INSTALLED UNTIL CLEANUP OF ALL OF ALL TRADES ARE COMPLETE. FAILURE TO COMPLY WITH THIS NOTE WILL VOID ALL WARRANTIES.
4. ALL FIRE ALARM SYSTEM DEVICES ARE UL LISTED AND COMPATIBLE WITH FIRE ALARM PANEL AND POWER SUPPLY.
5. SIGNALING CIRCUITS SHALL BE POWER LIMITED PER NEC 760-11. CABLE PENETRATION INTO OR THROUGH PLENUM AREAS USED FOR TRANSFER OF ENVIRONMENTAL AIR SHALL BE TEFLON INSULATED TYPE OR OF AN APPROVED TYPE IN ACCORDANCE WITH SECTION 800-3(D) OF THE NATIONAL ELECTRIC CODE.
6. FIRE ALARM CONTROL PANEL MUST BE CONNECTED TO BUILDING COLD-WATER GROUND VIA 1 GREEN #10 THHN OR EQUIVALENT.
7. ALL WIRING MUST CONFORM WITH NEC ARTICLE 760 AND LOCAL CODES. ALL EQUIPMENT SHALL BE UL LISTED. ALL DEVICES SHALL BE COMPATIBLE WITH THE CONTROL PANEL.
8. ALL INSTALLATION MATERIAL SUCH AS CONDUIT FITTINGS, BOXES, HANGERS, ETC. ARE TO BE PROVIDED AND INCLUDED.
9. ALL INITIATING AND INDICATING CIRCUITS MUST BE SUPERVISED.
10. CIRCUIT POLARITY MUST BE OBSERVED.
11. WIRE RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION OF ALL EQUIPMENT TO BE DETERMINED IN THE FIELD, BUT SHALL CONFORM WITH THE BASIC LAYOUT AS SHOWN ON DRAWINGS TO PREVENT CIRCUIT OVERLOAD.
12. DETECTORS SHALL NOT BE LOCATED IN DIRECT AIR STREAM FROM SUPPLY AIR OUTLETS. MAINTAIN A MINIMUM CLEAR DISTANCE OF 36". OFFSET/ADJUST LOCATIONS AS REQUIRED.
13. MINIMUM CONDUIT SIZE WILL BE 1/2" UNLESS OTHERWISE NOTED. CONDUIT SHALL BE NO MORE THAN 40% FILLED.
14. DO NOT MARK ID NUMBERS ON DEVICES. LABEL BASE ONLY.
15. POWER UP & POWER DOWN ON PANEL MUST BE DONE IN SEQUENCE:

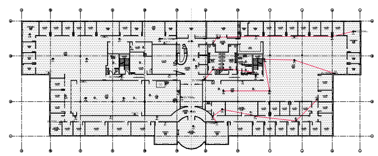
    POWER DOWN
    A - DISCONNECT BATTERY.
    B - TURN OFF AC POWER PRIMARY & SECONDARY.

    POWER UP
    A - TURN ON AC POWER PRIMARY & SECONDARY.
    B - RECONNECT BATTERIES.
16. THE FIRE ALARM CONTROL PANEL SHALL NOT BE USED TO POWER ANY UNAUTHORIZED EXTERNAL DEVICE.
17. STROBES ARE TO BE WALL MOUNTED AND SYNCRONIZED PER ADA REQUIREMENTS. LOCATION OF THESE DEVICES TO BE DETERMINED IN FIELD. MOUNT STROBES 80" AFF TO TOP OF LENS, OR 6" BELOW CEILING TO TOP OF LENS, WHICHEVER IS LOWER.
18. ALL HORNS TO BE TAPPED AT STD SETTING EACH PROVIDING 93 DB AT 10 FT (TYPICAL ANECHOIC DBA).
19. IDENTIFYING NUMBER ADJACENT TO DEVICE SYMBOL DENOTE DEVICE ZONE ADDRESS. DETECTOR 2-02 WILL IDENTIFY THE SECOND DEVICE CONNECTED TO LOOP 1 ON SLC BOARD.
20. HVAC SYSTEM SHALL COMPLY WITH NFPA 90A IN SYSTEM OF OVER 2,000 CFM CAPACITY, DUCT DETECTOR INSTALLATION SHALL BE AT A SUITABLE LOCATION.
21. BUILDING IS FULLY FIRE SPRINKLED AND SUPERVISED.
22. THIS FIRE ALARM SYSTEM WILL BE IN ACCORDANCE WITH CENTRAL STATION REQUIREMENTS (NFPA 72).
23. FIRE ALARM SYSTEM IS MONITOR BY A DIALER WITH (2) SUPERVISED TELEPHONE LINES.
24. FIRE ALARM IS REQUIRED UNDER SECTION NFPA 101.39.3.4
25. THE DESIGN COMPLIES WITH FLORIDA BUILDING CODES 2007 EDITION CHAPTER 9 & UNDER CODE OF ORDINANCES OF MIAMI-DADE COUNTY PART III - CODE OF ORDINANCES, CHAPTER 14 - FIRE PREVENTION.
26. INSTALLATION SHALL COMPLY WITH NFPA 1, 2006 EDITION, APPLICABLE CHAPTERS.
27. INSTALLATION SHALL COMPLY WITH NFPA 72, 2002 EDITION, APPLICABLE CHAPTERS.
28. INSTALLATION SHALL COMPLY WITH NFPA 101, 2006 EDITION, APPLICABLE CHAPTERS.
29. INSTALLATION SHALL COMPLY WITH NFPA 70 (NEC 2005 EDITION).
30. THE EXISTING BATTERY CALCULATIONS, THE EXISTING WIRE SIZE HAS BEEN ASSUMED FOR A COLLECTION OF DATA & COUNTING OF EXISTING EQUIPMENT / DEVICES. AS-BUILT PERFORMED ON 04/08/2009 BY ALARMS AND ELECTRONICS, INC. AND BY WORLD SECURITY AND ELECTRIC, INC. ON 01/09/2010 PROJECT # 10-0366.
31. EXISTING EQUIPMENT / DEVICES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THE DESIGN ONLY COVER ALL THE NEW / TO BE REPLACE, EQUIPMENT / DEVICES THAT ARE IN CONTRACT. SEE KEY MAP
32. EXISTING BUILDING HAS A 10 FEET CEILING HEIGHT (TYPICAL FOR ALL SPACES) ON THE SECOND FLOOR.

LOCATION MAP

LEGEND & ABBREVIATIONS:

= DENOTES AREA IN CONTRACT ONLY



KEY PLAN - 2nd FLOOR

NOT TO SCALE

SYMBOL LEGEND

SYMBOL	DESCRIPTION	MODEL	MOUNTING
NAC.# SK-5495	POWER BOOSTER	SILENT KNIGHT SK5495	MOUNT 72" A.F.F. TO TOP,
SD	PHOTOELECTRIC SMOKE DETECTOR W/ BASE	NOTIFIER FSP-851	CEILING MOUNT ON A 4" 1900 BOX.
P	MANUAL PULL STATION	FIRELITE BG-12	MOUNT 48" A.F.F. TO CNTR ON A 3 1/2" DEEP, 1 GANG BOX.
M	MINI - MONITOR MODULE	NOTIFIER FMM-101	MOUNTS DIRECTLY TO A 4" BOX.
H	MULTI-CANDELA HORN STROBE	COOPER WHEELOCK AS-24MCW-FR	MOUNT 80" A.F.F. TO BOTTOM, ON A 4" WEATHER PROOF BOX
	MULTI-CANDELA HORN STROBE CEILING MOUNT	COOPER WHEELOCK AS-24MCC-FR	CEILING MOUNT ON A 4" 1900 BOX.
	MULTI-CANDELA STROBE DEVICE	COOPER WHEELOCK RSS-24MCW-FR	MOUNT 80" A.F.F. TO BOTTOM, ON A 4" 1900 BOX
	MULTI-CANDELA STROBE DEVICE CEILING MOUNT	COOPER WHEELOCK RSS-24MCC-FR	CEILING MOUNT ON A 4" 1900 BOX.
-W-	END OF LINE RESISTOR	( ) K	INSTALL VALUE AS SHOWN ON RISER

SEQUENCE OF OPERATION:

UPON ACTIVATION OF ANY MANUAL STATION THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.

UPON ACTIVATION OF ANY AUTOMATIC DEVICE THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.

UPON ACTIVATION OF THE ELEVATOR LOBBY SMOKE DETECTORS (WITH THE EXCEPTION OF THE ELEVATOR LOBBY DETECTOR AT THE PRIMARY LEVEL OF EGRESS), THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS UL LISTED CENTRAL STATION VIA DACT.
5. ELEVATORS SHALL RECALL TO THE PRIMARY LEVEL OF EGRESS.
6. FIREHAT IN ELEVATOR CAB SHALL ILLUMINATE.

UPON ACTIVATION OF THE ELEVATOR LOBBY SMOKE DETECTOR AT THE PRIMARY LEVEL OF EGRESS, THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS UL LISTED CENTRAL STATION VIA DACT.
5. ELEVATORS SHALL RECALL TO THE ALTERNATE LEVEL OF EGRESS.
6. FIREHAT IN ELEVATOR CAB SHALL ILLUMINATE.

UPON ACTIVATION OF THE ELEVATOR MACHINE ROOM SMOKE DETECTOR, THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS UL LISTED CENTRAL STATION VIA DACT.
5. ELEVATORS SHALL RECALL TO THE PRIMARY LEVEL OF EGRESS.
6. FIREHAT IN ELEVATOR CAB SHALL BLINK.

UPON ACTIVATION OF THE ELEVATOR TOP OF SHAFT SMOKE DETECTOR, THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.
5. ELEVATORS SHALL RECALL TO THE PRIMARY LEVEL OF EGRESS.
6. FIREHAT IN ELEVATOR CAB SHALL BLINK.

UPON ACTIVATION OF A ELEVATOR MACHINE ROOM HEAT DETECTOR OR ELEVATOR TOP OF SHAFT HEAT DETECTOR, THE FOLLOWING SHALL OCCUR:
1. ALL HORNS WILL SOUND UNTIL SYSTEM IS SILENCED.
2. ALL STROBES WILL FLASH UNTIL SYSTEM IS RESET.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP.
4. A SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.
5. THE ELEVATOR POWER CIRCUIT BREAKER SHALL TRIP TO THE OFF POSITION.
6. THE ELEVATOR SHALL REMAIN WITHOUT POWER UNTIL ALARM IS CLEAR AND FIRE ALARM SYSTEM IS BACK TO NORMAL.

UPON ACTIVATION OF A DUCT SMOKE DETECTOR, THE FOLLOWING SHALL OCCUR.
1. A SUPERVISORY SIGNAL SHALL BE SENT TO THE FACP.
2. A SUPERVISORY SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.
3. THE AIR HANDLER UNIT ASSOCIATED WITH THAT DUCT DETECTOR SHALL SHUT DOWN.

UPON ANY TROUBLE CONDITION IN THE FIRE ALARM SYSTEM:
1. THE TROUBLE L.E.D. SHALL ILLUMINATE TROUBLE L.E.D. AND SOUND THE BUZZER AT CONTROL PANEL.
2. IT SHALL DISPLAY DEVICE AND LOCATION.
3. AN ALARM SIGNAL SHALL BE SENT TO THE FACP & REMOTE ANNUNCIATOR.
4. A SIGNAL SHALL BE SENT TO THE OWNERS CENTRAL STATION VIA DACT.

FIRE ALARM WIRE LEGEND

A- 16/2 AWG FIRE POWER LIMITED (FPL) FOR INITIATING DEVICES.

B- 16/2 AWG FOR HORN/STROBE DEVICES.

C- 18/2 AWG FOR DATA COMMUNICATION.

NOTE:

WIRE TYPES LISTED IN THE WIRE LEGEND ARE THE MANUFACTURER'S MINIMUM WIRING REQUIREMENTS. CONTRACTOR SHALL CHOOSE WIRE TYPES AND RATING TO MEET THESE REQUIREMENTS AND ALL OF THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND NFPA FOR THE APPLICATIONS AND LOCATIONS OF USE.

FIRE ALARM SHEET INDEX

WORLD SECURITY & ELECTRIC, INC.
7963 N.W. 14th STREET
DORAL, FLORIDA 33126
TEL : 305.477.9640
FAX: 305.477.1083
www.worldsecurity-electric.com
LICENSE #: EC-0001652

NOTIFIER by Honeywell — FM APPROVED

Qualifier: THOMAS IGLESIAS

Signature: ____

Notary: Sworn to and suscribed before me This ____ Day of ____ 2010. By ____ Personally Known

△	Date	Revisions

Sheet Title: COVER AND SYSTEM NOTES

Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL. 33122

Date: 02/18/2010

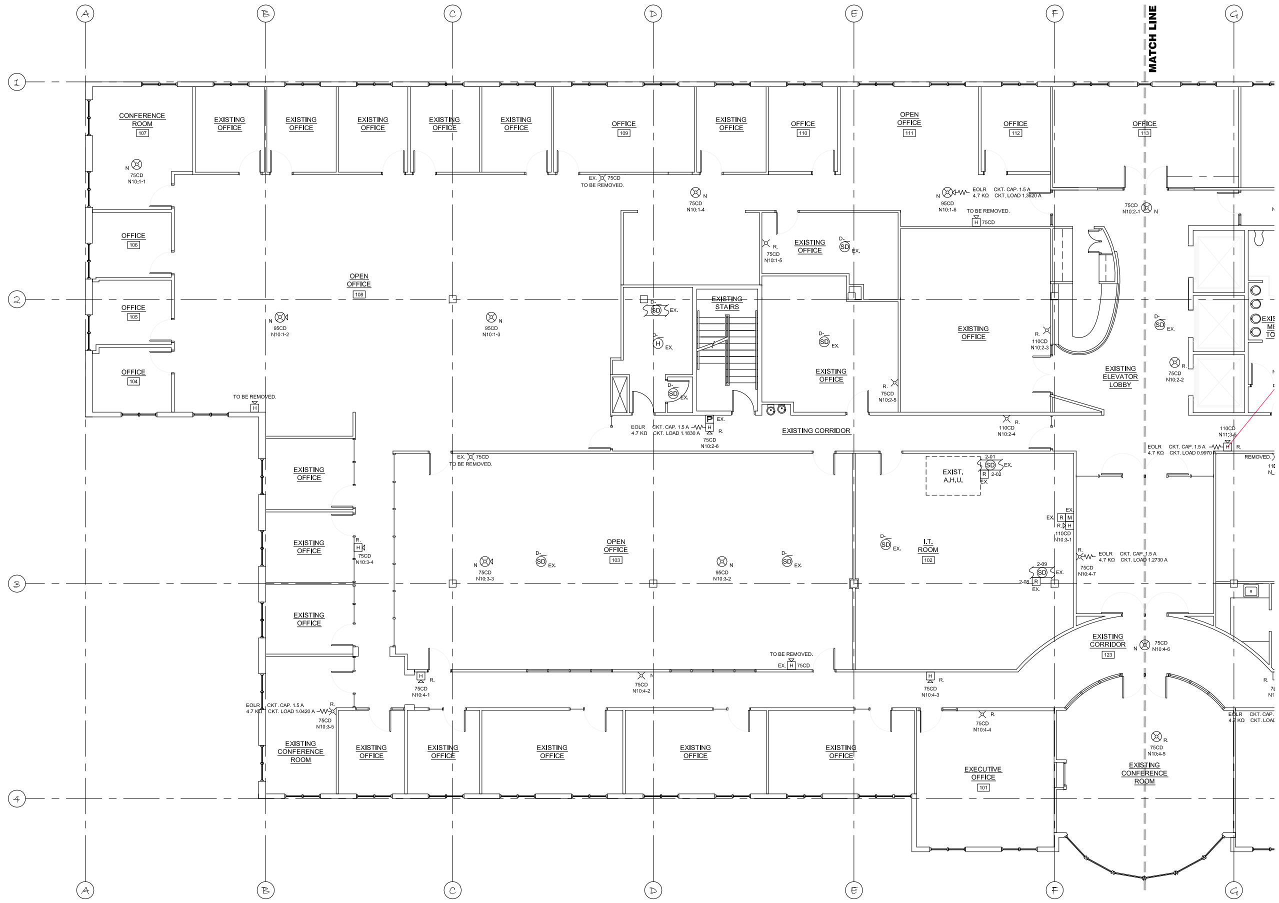
Scale: AS NOTED

Drawn: INVENTION, CORP.

Project No: 1002-0001

Sheet: FA

PATH FILE: G:\2010\10-03\1003-0003\First Submit\Final First Submit 1003-0003 8300 N.W. 33rd Street, Second Floor.dwg



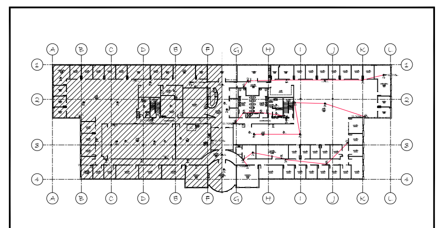
BUILDING IS FULLY FIRE SPRINKLED

LEGEND & ABBREVIATIONS:

N	=	DENOTES NEW EQUIPMENT / DEVICES.
EX.	=	DENOTES EXISTING EQUIPMENT / DEVICES.
R.	=	DENOTES EXISTING EQUIPMENT / DEVICES TO BE REPLACE FOR NEW EQUIPMENT / DEVICES.

SECOND FLOOR PLAN

SCALE 1/8" = 1'-0"



KEY PLAN - 2nd FLOOR

NOT TO SCALE

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By ____________
Personally Known

△	Date	Revisions

Sheet Title: SECOND FLOOR PLAN

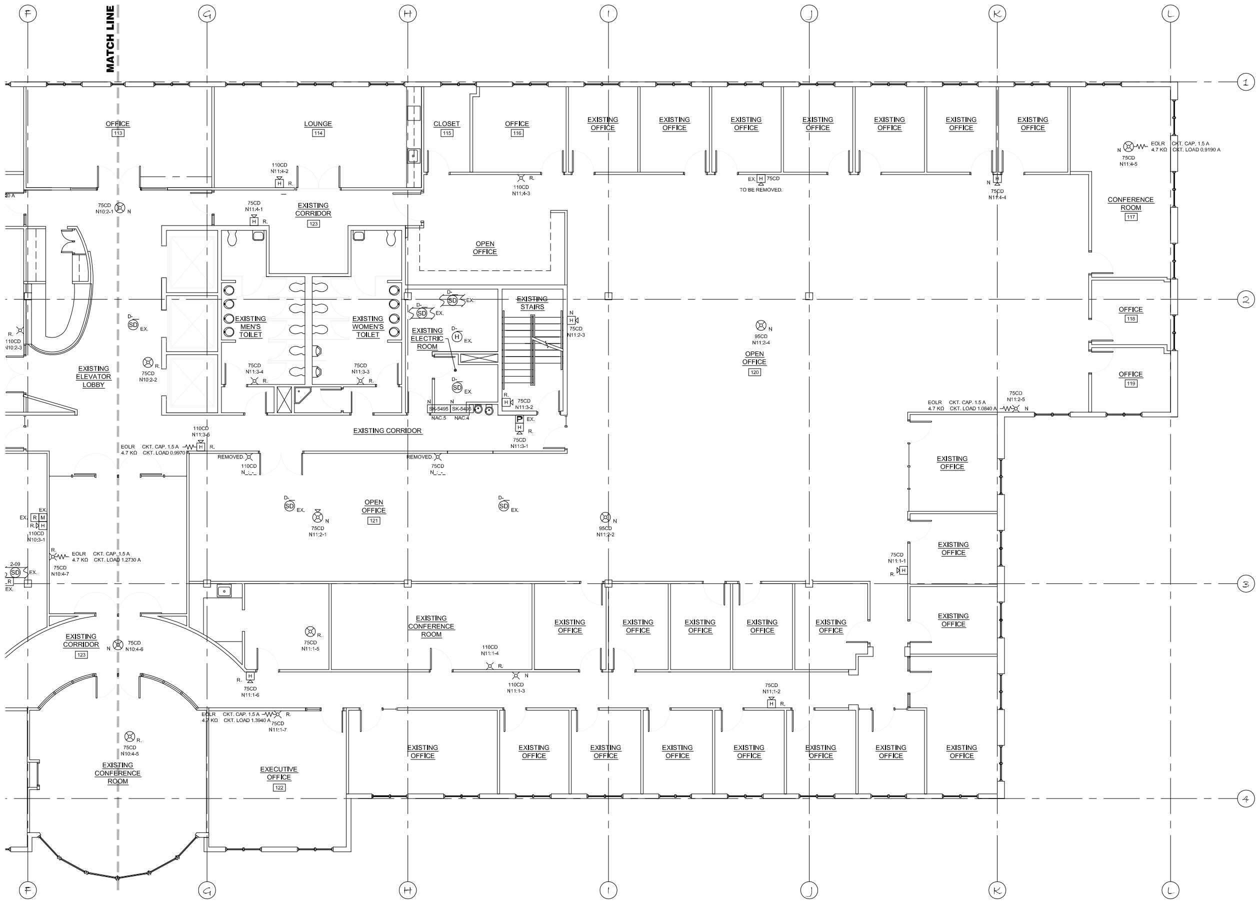
Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL 33122

Date:	02/18/2010
Scale:	AS NOTED
Drawn:	INVENTION, CORP.
Project No:	1002-0001

Sheet: FA-1

2 Of 7 Sheets



BUILDING IS FULLY FIRE SPRINKLED

LEGEND & ABBREVIATIONS:

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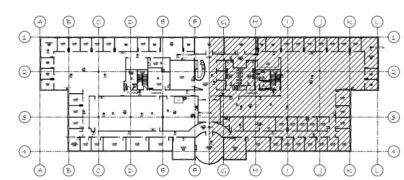

SECOND FLOOR PLAN

SCALE 1/8" = 1'-0"

KEY PLAN - 2nd FLOOR

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Signature

Notary: Sworn to and suscribed before me This ______ Day of ______ 2010.

By ______

Personally Known

Δ	Date	Revisions

Sheet Title: SECOND FLOOR PLAN

Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL 33122

Date: 02/18/2010

Scale: AS NOTED

Drawn: INVENTION, CORP.

Project No: 1002-0001

Sheet: FA-2

3 Of 7 Sheets

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LEGEND & ABBREVIATIONS:

N = DENOTES NEW EQUIPMENT / DEVICES.

EX. = DENOTES EXISTING EQUIPMENT / DEVICES.

R. = DENOTES EXISTING EQUIPMENT / DEVICES TO BE REPLACE FOR NEW EQUIPMENT / DEVICES.

FIRE ALARM SYSTEM RISER DIAGRAM

WSE WORLD SECURITY & ELECTRIC, INC.
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Qualifier: THOMAS IGLESIAS

Signature ____________

Notary
Sworn to and suscribed before me
This ______ Day of _____ 2010.
By ____________
Personally Known

△	Date	Revisions

Sheet Title: FIRE ALARM SYSTEM RISER DIAGRAM

Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL. 33122

Date:	02/18/2010
Scale:	AS NOTED
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Project No:	1003-0003

Sheet: FA-3

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(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-1)

LOCATED AT FIRST FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw						STROBE Max Current Draw						TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	Wall Mount			Ceiling Mount			Wall Mount			Ceiling Mount						
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N1:1	2												2	0	0.2420	1.5
N1:2 (SPARE)													0	0	0.0000	1.5
N1:3 (SPARE)													0	0	0.0000	1.5
N1:4 (SPARE)													0	0	0.0000	1.5
MAIN CIRCUIT BOARD													1	0.012	1.5	
												TOTAL DRAW (AMPS)		0.01	1.74	
STANDBY 24 HOURS												ALARM 5 Minutes / 1 Hour (60 Min.) =		0.083	Hour(s)	

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s))
24	x	0.01	=	0.288		0.083	x	1.74	=	0.15
REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s))		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAS BEEN PROVIDED	
0.288	+	0.15	=	0.43	x	1.2	=	0.52		

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N1:1	1.5	20.4	16	0.24	60	0.12	20.28
N1:2 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N1:3 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N1:4 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information In Detail see Sheet FA6 Sheet 7 of 7.

(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-2)

LOCATED AT FIRST FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw						STROBE Max Current Draw						TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	Wall Mount			Ceiling Mount			Wall Mount			Ceiling Mount						
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N1:1	5												5	0	0.6050	1.5
N1:2 (SPARE)													0	0	0.0000	1.5
N1:3 (SPARE)													0	0	0.0000	1.5
N1:4 (SPARE)													0	0	0.0000	1.5
MAIN CIRCUIT BOARD													1	0.012	1.5	
												TOTAL DRAW (AMPS)		0.01	2.11	
STANDBY 24 HOURS												ALARM 5 Minutes / 1 Hour (60 Min.) =		0.083	Hour(s)	

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s))
24	x	0.01	=	0.288		0.083	x	2.11	=	0.18
REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s))		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAVE BEEN PROVIDED	
0.288	+	0.18	=	0.46	x	1.2	=	0.56		

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N1:1	1.5	20.4	16	0.61	80	0.40	20.00
N1:2 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N1:3 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N1:4 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-3)

LOCATED AT FIRST FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw						STROBE Max Current Draw						TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	Wall Mount			Ceiling Mount			Wall Mount			Ceiling Mount						
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N3:1	7												7	0	0.8470	1.5
N3:2 (SPARE)													0	0	0.0000	1.5
N3:3 (SPARE)													0	0	0.0000	1.5
N3:4	3												3	0	0.3630	1.5
MAIN CIRCUIT BOARD													1	0.012	1.5	
												TOTAL DRAW (AMPS)		0.01	2.71	
STANDBY 24 HOURS												ALARM 5 Minutes / 1 Hour (60 Min.) =		0.083	Hour(s)	

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s))
24	x	0.01	=	0.288		0.083	x	2.71	=	0.23
REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s))		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAS BEEN PROVIDED	
0.288	+	0.23	=	0.51	x	1.2	=	0.62		

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N3:1	1.5	20.4	16	0.85	160	1.11	19.29
N3:2 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N3:3 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N3:4	1.5	20.4	16	0.36	160	0.48	19.92

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information In Detail see Sheet FA6 Sheet 7 of 7.

(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-4)

LOCATED AT FIRST FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw						STROBE Max Current Draw						TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	Wall Mount			Ceiling Mount			Wall Mount			Ceiling Mount						
	15/75cd	75cd	HORN ONLY	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.069	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N4:1	3												3	0	0.3630	1.5
N4:2 (SPARE)													0	0	0.0000	1.5
N4:3			3										3	0	0.2070	1.5
N4:4	1												1	0	0.1210	1.5
MAIN CIRCUIT BOARD													1	0.012	1.5	
												TOTAL DRAW (AMPS)		0.01	2.19	
STANDBY 24 HOURS												ALARM 5 Minutes / 1 Hour (60 Min.) =		0.083	Hour(s)	

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s))
24	x	0.01	=	0.288		0.083	x	2.19	=	0.18
REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s))		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAVE BEEN PROVIDED	
0.288	+	0.18	=	0.47	x	1.2	=	0.56		

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N4:1	1.5	20.4	16	0.36	340	1.01	19.39
N4:2 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40
N4:3	1.5	20.4	16	0.21	90	0.15	20.25
N4:4	1.5	20.4	16	0.12	160	0.16	20.24

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information In Detail see Sheet FA6 Sheet 7 of 7.

NAC-5 REMOVED

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-6)

LOCATED AT THIRD FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw						STROBE Max Current Draw						TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	Wall Mount			Ceiling Mount			Wall Mount			Ceiling Mount						
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N6:1	7												7	0	0.8470	1.5
N6:2	7												7	0	0.8470	1.5
N6:3	9												9	0	1.0890	1.5
N6:4 (SPARE)													0	0	0.0000	1.5
MAIN CIRCUIT BOARD													1	0.012	1.5	
												TOTAL DRAW (AMPS)		0.01	4.28	
STANDBY 24 HOURS												ALARM 5 Minutes / 1 Hour (60 Min.) =		0.083	Hour(s)	

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME (HOURS)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s))
24	x	0.01	=	0.288		0.083	x	4.28	=	0.36
REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s))		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM AMP -HOUR BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAS BEEN PROVIDED	
0.288	+	0.36	=	0.64	x	1.2	=	0.77		

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N6:1	1.5	20.4	16	0.85	220	1.53	18.87
N6:2	1.5	20.4	16	0.85	240	1.67	18.73
N6:3	1.5	20.4	16	1.09	260	2.32	18.08
N6:4 (SPARE)	1.5	20.4	16	0.00	0	0.00	20.40

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

BATTERY CALCULATION

WORLD SECURITY & ELECTRIC, INC.
7963 N.W. 14th STREET
DORAL, FLORIDA 33126
TEL : 305.477.9640
FAX: 305.477.1083
www.worldsecurity-electric.com
LICENSE #: EC-0001652

NOTIFIER by Honeywell
FM APPROVED

Qualifier
THOMAS IGLESIAS
Signature

Notary
Sworn to and suscribed before me
This ______ Day of ______ 2010.
By ______
Personally Known

△	Date	Revisions

Sheet Title: BATTERY CALCULATION

Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL 33122

Date: 02/18/2010
Scale: AS NOTED
Drawn: INVENTION, CORP.
Project No: 1002-0001

Sheet: FA-4

PATH FILE: G:\2010\10-03\1003-0003\First Submit\Final First Submit 1003-0003 8300 N.W. 33rd Street, Second Floor.dwg

(EXISTING) REMOTE POWER SUPPLY | CERBERUS PYROTRONICS PAD-2 (NAC-8)

LOCATED AT FOURT FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw – Wall / Ceiling Mount				STROBE Max Current Draw – Wall / Ceiling Mount				TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	15/75cd	30/75cd	75cd	110cd	15/75cd	30/75cd	75cd	110cd				
	0.063	0.084	0.143	0.178	0.063	0.084	0.143	0.178				
N8:1	11								11	0	0.6930	1.5
N8:2	4								4	0	0.2520	1.5
N8:3	5		3	1	3	3			15	0	1.3630	1.5
N8:4	12								12	0	0.7560	1.5
MAIN CIRCUIT BOARD									1	0.012	1.5	
								TOTAL DRAW (AMPS)		0.01	4.56	

STANDBY 24 HOURS — ALARM 5 Minutes / 1 Hour (60 Min.) = 0.083 Hour(s)

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME (HOURS)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s)
24	x	0.01	=	0.288		0.083	x	4.56	=	0.38

REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s)		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM AMP -HOUR BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES HAS BEEN PROVIDED
0.288	+	0.38	=	0.67	x	1.2	=	0.80	

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N8:1	1.5	20.4	16	0.69	80	0.46	19.71
N8:2	1.5	20.4	16	0.25	60	0.12	20.15
N8:3	1.5	20.4	16	1.36	100	0.00	19.04
N8:4	1.5	20.4	16	0.76	120	0.00	19.64

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

NAC-9 REMOVED

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

NAC-12 REMOVED

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

(NEW) POWER BOOSTER | SILENT KNIGHT SK-5495 (NAC-10)

LOCATED AT SECOND FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw – Wall Mount			AUDIBLE / STROBE – Ceiling Mount			STROBE Max Current Draw – Wall Mount			STROBE – Ceiling Mount			TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N10:1						2		1			2	1	6	0	1.3620	1.5
N10:2		1						1	2		2		6	0	1.1830	1.5
N10:3		1	1		1			1				1	5	0	1.0420	1.5
N10:4		2						3			2		7	0	1.2730	1.5
MAIN CIRCUIT BOARD													1	0.091	1.45	
												TOTAL DRAW (AMPS)		0.09	6.31	

STANDBY 24 HOURS — ALARM 5 Minutes / 1 Hour (60 Min.) = 0.083 Hour(s)

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s)
24	x	0.09	=	2.18		0.08	x	6.31	=	0.53

REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s)		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES WILL BE PROVIDED
2.18	+	0.53	=	2.71	x	1.25	=	3.39	

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N10:1	1.5	20.4	16	1.36	120	1.34	19.06
N10:2	1.5	20.4	16	1.18	80	0.78	19.62
N10:3	1.5	20.4	16	1.04	115	0.98	19.42
N10:4	1.5	20.4	16	1.27	110	1.15	19.25

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

(NEW) POWER BOOSTER | SILENT KNIGHT SK-5495 (NAC-11)

LOCATED AT SECOND FLOOR ELECTRICAL ROOM

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUIT #	AUDIBLE / STROBE Max Current Draw – Wall Mount			AUDIBLE / STROBE – Ceiling Mount			STROBE Max Current Draw – Wall Mount			STROBE – Ceiling Mount			TOTAL DEVICE COUNT	TOTAL STANDBY (Amp)	TOTAL ALARM (Amp)	MAX LOAD PER CIRCUIT (Amp)
	15/75cd	75cd	110cd	30cd	75cd	95cd	15/75cd	75cd	110cd	30cd	75cd	95cd				
	0.121	0.200	0.267	0.138	0.221	0.285	0.090	0.165	0.220	0.105	0.189	0.249				
N11:1		3						1	2		1		7	0	1.3940	1.5
N11:2		1			1			1				2	5	0	1.0840	1.5
N11:3		2	1					2					5	0	0.9970	1.5
N11:4		2	1						1		1		5	0	1.0760	1.5
MAIN CIRCUIT BOARD													1	0.091	1.45	
												TOTAL DRAW (AMPS)		0.09	6.00	

STANDBY 24 HOURS — ALARM 5 Minutes / 1 Hour (60 Min.) = 0.083 Hour(s)

REQUIRED STANDBY TIME Hour(s)		TOTAL SYSTEM STANDBY CURRENT (Amp)		REQUIRED AMPERE HOUR BATTERY		REQUIRED ALARM TIME Hour(s)		TOTAL SYSTEM ALARM CURRENT (Amp)		REQUIRED ALARM CAPACITY (Amp - Hour(s)
24	x	0.09	=	2.18		0.08	x	6.00	=	0.50

REQUIRED STANDBY TIME Hour(s)		REQUIRED ALARM CAPACITY (Amp - Hour(s)		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM Amp -Hour(s) BATTERY REQUIRED	7.0 AMP - HOUR BATTERIES WILL BE PROVIDED
2.18	+	0.50	=	2.68	x	1.25	=	3.36	

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT (AMPS)	CIRCUIT VDC OUTPUT	WIRE SIZE	DRAW IN ALARM	CIRCUIT DISTANCE IN FEET	VDC DROP	VDC @ LAST DEVICE
N11:1	1.5	20.4	16	1.39	100	1.14	19.26
N11:2	1.5	20.4	16	1.08	110	0.98	19.42
N11:3	1.5	20.4	16	1.00	60	0.49	19.91
N11:4	1.5	20.4	16	1.08	130	1.15	19.25

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

(EXISTING) FIRE ALARM PANEL BATTERY CALCULATION CYBERUS PYROTRONICS MXL-IQ

LOCATED AT FIRST FLOOR MAIN LOBBY

FIRE ALARM PANEL STANDBY BATTERIES SHALL BE SIZE TO
PROVIDE 24 HOURS SUPERVISION (STANDBY)
PLUS 5 MINUTES OF ALARM FOR ALL DEVICES.

CIRCUITS NUMBERS/DESCRIPTION	DEVICE COUNT	STANDBY CURRENT (amps)	ALARM CURRENT (amps)	75cd STROBE max current draw	110cd STROBE max current draw	HORN ONLY MAX CURRENT DRAW	75cd HORN/STB MAX CURRENT DRAW	110cd HORN/STB MAX CURRENT DRAW	TOTAL STANDBY (amps)	TOTAL ALARM (amps)
				0.158	0.202	0.069	0.176	0.212		
(EXISTING) MOTHERBOARD MXL-IQ	1	0.01200	1.50000						0.012	1.500
(EXISTING) RELAY MODULE TRI-B6R	10	0.00010	0.00010						0.001	0.001
(EXISTING) SMOKE DETECTOR ILP-1	111	0.00120	0.00150						0.133	0.167
(EXISTING) HEAT DETECTOR ILT-1	51	0.00012	0.00015						0.006	0.008
(EXISTING) ADDRESSABLE PULL STATION MSI-10B	13	0.00010	0.00010						0.001	0.001
(REPLACED) MINI-MONITOR MODULE TRI-B6M	37	0.00010	0.00010						0.004	0.004
(REPLACED) MINI - MONITOR MODULE FMM-101	0	0.00000	0.00000						0.000	0.000
(NEW) SMOKE DETECTOR FSP-851	0	0.00000	0.00000						0.000	0.000
AV1	0			0	0	0	0	0	0.000	0.000
AV2	0			0	0	0	0	0	0.000	0.000
AV3	0			0	0	0	0	0	0.000	0.000
AV4	0			0	0	0	0	0	0.000	0.000
								TOTAL DRAW (AMPS)	0.15732	1.68015

STANDBY 24 HOURS — ALARM 5 MINUTES x 1/24 = 0.208 Hours

REQUIRED STANDBY TIME (HOURS)		TOTAL SYSTEM STANDBY CURRENT (AMPS)		REQUIRED STANDBY CAPACITY (AMP-HOURS)		REQUIRED ALARM TIME (HOURS)		TOTAL SYSTEM ALARM CURRENT (AMPS)		REQUIRED ALARM CAPACITY (AMP-HOURS)
24	x	0.157	=	3.776		0.208	x	1.680	=	0.349

REQUIRED STANDBY CAPACITY (AMP - HOURS)		REQUIRED ALARM CAPACITY (AMP - HOURS)		REQUIRED AMPERE HOUR BATTERY		DERATING FACTOR @ 1.2		MINIMUM AMP-HOUR BATTERY REQUIRED	12.0 AMP - HOUR BATTERIES WILL BE PROVIDED
3.776	+	0.349	=	4.13	x	1.2	=	4.95	

VOLTAGE DROP TABLE - NOTIFICATION ALARM CIRCUITS

CIRCUIT #	MAX OUTPUT	CIR. VDC OUTPUT	WIRE SIZE	DRAW IN ALARM AMPS.	CIR. DISTANCE FT.	VDC DROP	VDC @ LAST DEVICE
AV1	1.5	20.4	14	0.000	0	0.00	20.40
AV2	1.5	20.4	14	0.000	0	0.00	20.40
AV3	1.5	20.4	14	0.000	0	0.00	20.40
AV4	1.5	20.4	14	0.000	0	0.00	20.40

See NFPA 70 | (NEC 2008 Edition) | Chapter 9 | Table #8 for Wire Gage Resistance.
(16 awg = 8.21ohm/1000') for more Information in Detail see Sheet FA6 Sheet 7 of 7.

BATTERY CALCULATION

WORLD SECURITY & ELECTRIC, INC.
7963 N.W. 14th STREET
DORAL, FLORIDA 33126
TEL : 305.477.9640
FAX: 305.477.1083
www.worldsecurity-electric.com
LICENSE #: EC-0001652

NOTIFIER by Honeywell — FM APPROVED

Qualifier: THOMAS IGLESIAS
Signature

Notary
Sworn to and suscribed before me
This ______ Day of _____ 2010.
By ____________
Personally Known

△	Date	Revisions

Sheet Title: BATTERY CALCULATION

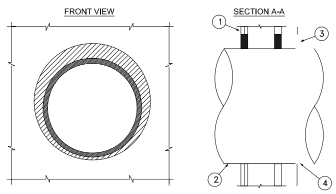
Project Name: "OCEANIA CRUISES, INC."
Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL. 33122

Date: 02/18/2010
Scale: AS NOTED
Drawn: INVENTION, CORP.
Project No: 1002-0001

Sheet: FA-5
6 Of 7 Sheets

PENETRATION DETAIL # 1

U.L SYSTEM NO. WL1054
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY
F RATING = 1-HR. OR 2-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = LESS THAN 4 CFM/SQ. FT.



1. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(2-HR. SHOWN.)
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 20" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 6" DIAMETER COPPER PIPE.
   C. MAXIMUM 6" DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" DIAMETER EWT.
3. a. MINIMUM 5/8" DEPTH HILTI FS-ONE FIRESTOP SEALANT OR EQUIVALENT = 1-HR. FIRE-RATING
   b. MINIMUM 1-1/4" DEPTH HILTI FS-ONE FIRESTOP SEALANT OR EQUIVALENT = 2-HR. FIRE-RATING
4. MINIMUM 1/2" BEAD HILTI FS-ONE FIRESTOP SEALANT OR EQUIVALENT FOR POINT OF CONTACT.

NOTE: 1. MAXIMUM DIAMETER OF OPENING = 22-1/4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".

INSTALLATION INSTRUCTIONS FOR UL NO. WL1054

STEP 1 - PREPARATION: ALL SURFACES MUST BE CLEAN,SOUND, DRY AND FROST FREE PRIOR TO APPLICATION OF FIRESTOPPING MATERIALS.

STEP 2 - FIRESTOPPING SEALANT: APPLY A MINIMUM 5/8" OR 1-1/4" DEPTH OF FS-ONE

TOOL EXCESS SEALANT BEYOND PERIMETER OF THE

SEAL UNDISTURBED FOR 48 HOURS.

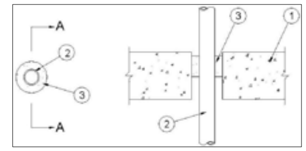
CONDUIT FIRESTOPPING DETAIL

NOT TO SCALE

PENETRATION DETAIL # 2

SYSTEM No. C-AJ-1505

February 18, 2004
F Rating - 3 Hr
T Rating - 3/4 Hr



SECTION A-A

1. **Floor or Wall Assembly -** Min 4-1/2 in.114 mm) thick reinforced lightweight or normal weight (100-150 pcf (1600-2400 kg/cu meter structural concrete. Floor may also be constructed of any min 6 in. 152 mm) thick UL Classified hollow-core Precast Concrete Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 3 in. (76 mm).

See **Precast Concrete Units (CFTV)** and **Concrete Block** (CAZT) categories in the Fire Resistance Directory for names of manufacturers.

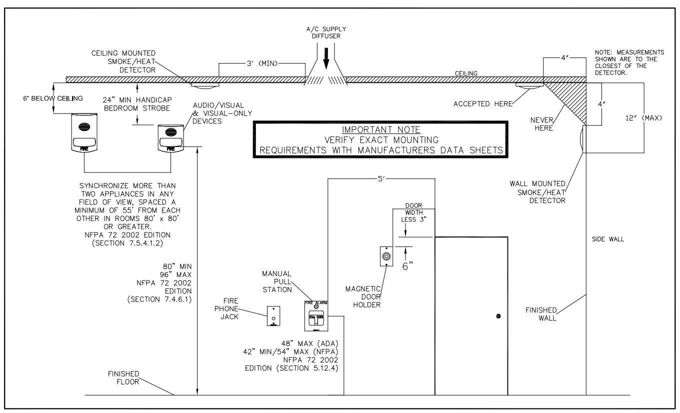
2. **Through Penetrants** One metallic pipe, conduit or tubing to be installed within the firestop system. The annular space shall be min 3/8 10 mmto max 3/4 in.19 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

   A. Steel Pipe Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Conduit Nom 1-1/2 in. (38 mm) diam (or smaller) steel electrical metallic tubing or rigid steel conduit.

3. **Fill, Void or Cavity Material* - Putty or Equivalent Sealant Material -** Min 2 in. (51 mm) thickness of fill material applied within the annulus, recessed ¼ to 3/8 in. (6 to 10 mm from top surface of floor or both surfaces of wall. In floors constructed of hollow-core precast concrete units, fill material to be installed flush with both surfaces of assembly.

TREMCO INC. – TREMstop Putty or Equivalent Material

*Bearing the UL Classification Mark



A/C SUPPLY DIFFUSER
CEILING MOUNTED SMOKE/HEAT DETECTOR
3' (MIN)
CEILING
6" BELOW CEILING
24" MIN HANDICAP BEDROOM STROBE
AUDIO/VISUAL & VISUAL-ONLY DEVICES
IMPORTANT NOTE
VERIFY EXACT MOUNTING REQUIREMENTS WITH MANUFACTURERS DATA SHEETS
SYNCHRONIZE MORE THAN TWO APPLIANCES IN ANY FIELD OF VIEW, SPACED A MINIMUM OF 55' FROM EACH OTHER IN ROOMS 80' x 80' OR GREATER. NFPA 72 2002 EDITION (SECTION 7.5.4.1.2)
80" MIN 96" MAX NFPA 72 2002 EDITION (SECTION 7.4.6.1)
MANUAL PULL STATION
FIRE ALARM
FIRE PHONE JACK
48" MAX (ADA) 42" MIN/54" MAX (NFPA) NFPA 72 2002 EDITION (SECTION 5.12.4)
FINISHED FLOOR
5'
DOOR WIDTH LESS 3"
6"
MAGNETIC DOOR HOLDER
4"
NOTE: MEASUREMENTS SHOWN ARE TO THE CLOSEST OF THE DETECTOR.
ACCEPTED HERE
NEVER HERE
4"
12" (MAX)
WALL MOUNTED SMOKE/HEAT DETECTOR
SIDE WALL
FINISHED WALL

DEVICE MOUNTING HEIGHTS

SCALE: N.T.S.

Table 8 Conductor Properties

Size (AWG or kcmil)	Area mm²	Area Circular mils	Conductors – Stranding Quantity	Stranding Diameter mm	Stranding Diameter in.	Overall Diameter mm	Overall Diameter in.	Overall Area mm²	Overall Area in.²	DC Resistance at 75°C (167°F) – Copper Uncoated ohm/km	Copper Uncoated ohm/kFT	Copper Coated ohm/km	Copper Coated ohm/kFT	Aluminum ohm/km	Aluminum ohm/kFT
18	0.823	1620	1	—	—	1.02	0.040	0.823	0.001	25.5	7.77	26.5	8.08	42.0	12.8
18	0.823	1620	7	0.39	0.015	1.16	0.046	1.06	0.002	26.1	7.95	27.7	8.45	42.8	13.1
16	1.31	2580	1	—	—	1.29	0.051	1.31	0.002	16.0	4.89	16.7	5.08	26.4	8.05
16	1.31	2580	7	0.49	0.019	1.46	0.058	1.68	0.003	16.4	4.99	17.3	5.29	26.9	8.21
14	2.08	4110	1	—	—	1.63	0.064	2.08	0.003	10.1	3.07	10.4	3.19	16.6	5.06
14	2.08	4110	7	0.62	0.024	1.85	0.073	2.68	0.004	10.3	3.14	10.7	3.26	16.9	5.17
12	3.31	6530	1	—	—	2.05	0.081	3.31	0.005	6.34	1.93	6.57	2.01	10.45	3.18
12	3.31	6530	7	0.78	0.030	2.32	0.092	4.25	0.006	6.50	1.98	6.73	2.05	10.69	3.25
10	5.261	10380	1	—	—	2.588	0.102	5.26	0.008	3.984	1.21	4.148	1.26	6.561	2.00
10	5.261	10380	7	0.98	0.038	2.95	0.116	6.76	0.011	4.070	1.24	4.226	1.29	6.679	2.04
8	8.367	16510	1	—	—	3.264	0.128	8.37	0.013	2.506	0.764	2.579	0.786	4.125	1.26
8	8.367	16510	7	1.23	0.049	3.71	0.146	10.76	0.017	2.551	0.778	2.653	0.809	4.204	1.28
6	13.30	26240	7	1.56	0.061	4.67	0.184	17.09	0.027	1.608	0.491	1.671	0.510	2.652	0.808
4	21.15	41740	7	1.96	0.077	5.89	0.232	27.19	0.042	1.010	0.308	1.053	0.321	1.666	0.508
3	26.67	52620	7	2.20	0.087	6.60	0.260	34.28	0.053	0.802	0.245	0.833	0.254	1.320	0.403
2	33.62	66360	7	2.47	0.097	7.42	0.292	43.23	0.067	0.634	0.194	0.661	0.201	1.045	0.319
1	42.41	83690	19	1.69	0.066	8.43	0.332	55.80	0.087	0.505	0.154	0.524	0.160	0.829	0.253

Portion taked from NFPA 70 (NEC 2008) Chapter 9 Table #8 for Wire Gage Resistance.

WIRE GAGE RESISTANCE TABLE

WORLD SECURITY & ELECTRIC, INC.
7963 N.W. 14th STREET
DORAL, FLORIDA 33126
TEL : 305.477.9640
FAX: 305.477.1083
www.worldsecurity-electric.com
LICENSE #: EC-0001652

NOTIFIER by Honeywell
FM APPROVED

Qualifier
THOMAS IGLESIAS
Signature

Notary
Sworn to and suscribed before me
This ______ Day of _____ 2010.
By ______________
Personally Known

△	Date	Revisions

Sheet Title: PENETRATION DETAILS, DEVICE MOUNTING DETAILS & WIRE GAGE RESISTANCE TABLE

Project Name: "OCEANIA CRUISES, INC."

Location: 8300 N.W. 33rd STREET, SUITE 200, MIAMI, FL 33122

Date: 02/18/2010
Scale: AS NOTED
Drawn: INVENTION, CORP.
Project No: 1002-0001

Sheet: FA-6
7 of 7 Sheets