



State of Utah

GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lt. Governor

Department of Administrative Services

KIMBERLY K. HOOD  
Executive Director

Division of Facilities Construction and Management

DAVID G. BUXTON  
Director

## ADDENDUM NO. 1

Date: March 18, 2010  
To: Contractors  
From: Wayne Smith  
Reference: Fire Alarm System Upgrade – Various Buildings  
Utah State Fairpark – Salt Lake City, Utah  
DFCM Project No. 09209370  
Subject: **Addendum No. 1**

Pages	Addendum Cover Sheet	1 page
	<u>A/E's Addendum (Spec and Drawings)</u>	<u>6 pages</u>
	Total	7 pages

**Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.**

While we contend that SB220 should only be potentially applicable to a contract issued after the effective date of said bill, this is to clarify that for purposes of this contract, regardless of the execution or effective dates of this contract, the status of Utah Law and remedies available to the State of Utah and DFCM, as it relates to any matter referred to or affected by said SB220, shall be the Utah law in effect at the time of the issuance of this Addendum.

- 1.1 **SCHEDULE CHANGES:** No Project Schedule changes.
- 1.2 **GENERAL ITEMS:** See attached A/E Addendum (containing Specification and Drawings).



**Date:** March 18, 2010

**To:** Wayne Smith  
State of Utah DFCM

**From:** Greg Jones  
Protection Consultants, Inc.

**Project:** DFCM # 09209370  
Utah State Fair Park Fire Alarm Upgrade

**Subject:** Revisions to Contract Documents Included in Addendum #1

---

The following revisions were made to the contract documents for the fire alarm system upgrade for the Administration Building, Bonneville Building, Show Ring and Multipurpose Barn as the Utah State Fair Park. The revisions should be issued to the bidding contractors as Addendum #1.

**General Notes:**

1. Modified note 4 to clarify that contractor must prepare and submit fire alarm shop drawings to the Utah State Fire Marshal for review/approval.
2. Modified note 8 to require a minimum conduit size of 3/4"
3. Modified note 8 to include a requirement for rain tight conduit in Multipurpose Barn.
4. Modified note 8 to remove requirement for new exposed conduit to be painted.

**Key Notes:**

1. Modified key note 7 to require weather-proof back boxes for notification appliances in Multipurpose Barn.
2. Modified key note 10 to require all manual pull stations (new or replaced existing) to be mounted between 42" and 54" AFF.
3. Added key note 19 to require replacement of existing duct smoke detectors in Multipurpose Barn with new duct smoke detectors.

**Equipment Legend:**

1. Added duct smoke detector to legend.

**Sheet FA-1:**

1. Relocated FACP and AES Radio from corridor to Staff Room in Administration Building.
2. Removed key note 15 from tamper and flow switches in Show Ring.
3. Added location of existing manual pull station and horn in Show Ring.
4. Modified key note for pull stations at north and south exits of Bonneville Building (replace existing).
5. Added water flow bell to plan for Show Ring and added a note to indicate that bell shall remain and shall be connected to new FACP.
6. Added note in center of plan for Bonneville Building to indicate that location of ceiling mounted notification appliances must be adjusted as required to coordinate with location of existing skylights.

**Sheet FA-2:**

1. Added location of existing duct smoke detectors to be replaced in the Multipurpose Barn.

**Sheet FA-3:**

1. Added duct smoke detectors to fire alarm riser schematic for Multipurpose Barn.
2. Modified device count for SLC-1 on the fire alarm riser schematic for Multipurpose Barn
3. Modified sequence of operations for Administration/Bonneville Building and Show Ring to remove the duct smoke detector input and the shutdown air handler output.

**Specification Section 13851:**

1. Edited paragraph 1.03-G to read as follows:

*Contractor (and/or subcontractor) shall be licensed a fire alarm contractor in the State of Utah and shall employ a licensed electrician to oversee installation of conduit and wiring. License shall be active throughout the duration of the project*

UTAH STATE FAIR PARK - FIRE ALARM SYSTEM UPGRADE  
DFCM PROJECT # 09209370

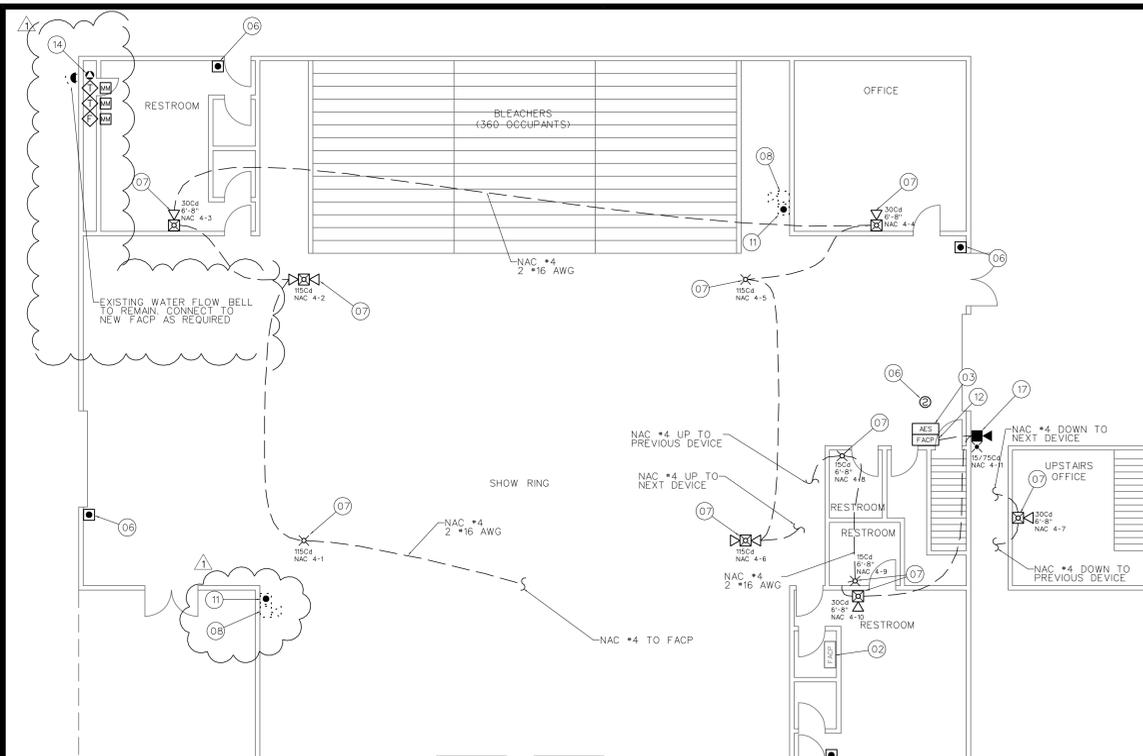
- G. Contractor (and/or subcontractor) shall be licensed a fire alarm contractor in the State of Utah and shall employ a licensed electrician to oversee installation of conduit and wiring. License shall be active throughout the duration of the project.

1.04 SUBMITTALS:

- A. Descriptive Data: Descriptive data shall be submitted on the following items of material and/or equipment. Such data shall consist of manufacturer's or supplier's catalog information in sufficient detail to allow verification that the material and/or equipment meets the specification requirements, or is equal to that specified. Descriptive data shall be included with the shop drawings submittal described in paragraph B below.
1. Fire alarm control panels.
  2. Initiating devices (smoke detectors, heat detectors, manual pull stations, monitor modules, etc.)
  3. Notification appliances.
- B. Shop Drawings: Prior to ordering or installing any equipment, contractor shall prepare shop drawings for submittal to Utah State Fire Marshal's Office and Owner/Engineer. Shop drawings shall include sufficient information, clearly presented, to determine compliance with drawings and specifications. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts. Indicate type and gauge of wire to be used for each different circuit type.
- C. Submit four sets of drawings, descriptive data, battery calculations and voltage drop calculations to the Owner/Engineer for review. After review and acceptance by the Owner/Engineer, submit to State Fire Marshal for review. Any review comments, and associated drawing revisions, from state or local approving authorities that affect the system design shall be approved by the Owner/Engineer prior to installation
- D. Testing Documentations/Certificates: Upon completion of installation submit to Architect two copies of all material and test certificates.
- E. As-Built Drawings: A complete set of "as-built" drawings shall be provided. As-built drawings shall be based on engineered drawings and shall show deviations from approved drawings, conduit routing, device addresses, exact locations of all installed equipment, specific interconnections between all equipment, and internal wiring of the equipment. As-built drawings shall be submitted in printed and electronic (CD) format and shall be delivered to the owner upon completion of system installation.
- F. O&M Manuals: Operating and instruction manuals shall be submitted prior to testing of the system. Three (3) complete sets of operating and instruction manuals shall be delivered to the owner upon completion. User operating instructions shall be provided prominently displayed on a separate sheet located next to the control unit in accordance with U.L. Standard 864.

1.05 SYSTEM DESCRIPTION:

- A. Remove existing fire alarm systems including all control equipment, enclosures, power supplies, initiating circuits and devices, notification appliance circuits and devices, conduit, junction boxes and all wiring. Existing conduit and junction boxes may remain where they comply with the provisions of the specification and will be used to mount new devices.
- B. Furnish and install a new addressable FACP at locations shown on drawings. FACP for Administration Building and Multipurpose Barn shall be Silent Knight model 5820XL or equal. FACP for Show Ring shall be Silent Knight model 5700 or equal. FACP shall have integrated



**SHOW RING FIRE ALARM PLAN**  
 1/8" = 1'-0"  
 0 8' 16' 32'

**1 VOLTAGE DROP CALCULATIONS ADMINISTRATION BUILDING - NAC #1**

Physical Parameters										
Source Voltage	20.4 V		16 AWG		2580 cmi		13 Ohm-cmi/ft			
Ref Start No.	Device/Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ftA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.		
FACP	50	50	30	0.094	1.012	19.890	2.500	1		
1	30	80	30	0.107	0.918	19.613	1.395	2		
2	40	120	15	0.086	0.811	19.286	1.667	3		
3	40	160	15	0.079	0.745	18.965	1.557	4		
4	40	200	75	0.176	0.666	18.717	1.414	5		
5	30	230	75	0.176	0.49	18.569	0.791	6		
6	35	265	15/75	0.09	0.314	18.458	0.596	7		
7	50	315	15	0.079	0.224	18.345	0.611	8		
8	25	340	15	0.086	0.145	18.309	0.199	9		
9	25	365	15	0.079	0.079	18.289	0.109	10		
<b>Total Circuit Length</b>						<b>365</b>	<b>Total Circuit Current</b>	<b>1.012</b>	<b>Total Circuit Voltage Drop %</b>	
									<b>10.84</b>	

**3 VOLTAGE DROP CALCULATIONS BONNEVILLE BUILDING - NAC #3**

Physical Parameters										
Source Voltage	20.4 V		16 AWG		2580 cmi		13 Ohm-cmi/ft			
Ref Start No.	Device/Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ftA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.		
FACP	80	80	15	0.086	0.89	19.882	3.517	1		
1	20	100	15	0.066	0.824	19.516	0.844	2		
2	30	130	75	0.176	0.758	19.287	1.174	3		
3	35	165	75	0.158	0.582	19.082	1.064	4		
4	25	190	15/75	0.09	0.424	18.975	0.560	5		
5	40	230	75	0.176	0.334	18.841	0.710	6		
6	25	255	75	0.158	0.158	18.801	0.211	7		
<b>Total Circuit Length</b>						<b>255</b>	<b>Total Circuit Current</b>	<b>0.89</b>	<b>Total Circuit Voltage Drop %</b>	
									<b>8.08</b>	

**5 FACP BATTERY CALCULATIONS ADMINISTRATION BUILDING**

SILENT KNIGHT 5820XL FIRE PANEL CALCULATIONS		REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)		
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5820XL	CONTROL PANEL	1	0.2150	0.2150	0.3850	0.3850
5860	ANNUNCIATOR	1	0.0200	0.0200	0.0250	0.0250
SK-PULL-DA	PULL STATION	4	0.0006	0.0024	0.0006	0.0024
SK-PHOTO	SMOKE DETECTOR	20	0.0006	0.0120	0.0006	0.0120
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0006	0.0000	0.0006	0.0000
SK-MINIMON	MONITOR MODULE	0	0.0006	0.0000	0.0006	0.0000
RX50N 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	2	0.0006	0.0012	0.0006	0.0012
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	0.0120	0.0120
<b>TOTAL</b>				<b>0.2506</b>		<b>1.4276</b>
<b>SECONDARY STANDBY BATTERY CALCULATIONS:</b>				<b>(STANDBY) X 24</b>		<b>6.7</b>
				<b>HOUR + (ALARM) X 5 MINUTES + 10% =</b>		

**7 FACP BATTERY CALCULATIONS SHOW RING**

SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS		REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)		
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5820XL	CONTROL PANEL	1	0.2000	0.2000	0.3250	0.3250
5860	ANNUNCIATOR	0	0.0200	0.0000	0.0250	0.0000
SK-PULL-DA	PULL STATION	4	0.0006	0.0024	0.0006	0.0024
SK-PHOTO	SMOKE DETECTOR	20	0.0006	0.0120	0.0006	0.0120
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0006	0.0000	0.0006	0.0000
SK-MINIMON	MONITOR MODULE	0	0.0006	0.0000	0.0006	0.0000
RX50N 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	2	0.0006	0.0012	0.0006	0.0012
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	0.0120	0.0120
<b>TOTAL</b>				<b>0.2156</b>		<b>1.8626</b>
<b>SECONDARY STANDBY BATTERY CALCULATIONS:</b>				<b>(STANDBY) X 24</b>		<b>5.9</b>
				<b>HOUR + (ALARM) X 5 MINUTES + 10% =</b>		

**2 VOLTAGE DROP CALCULATIONS BONNEVILLE BUILDING - NAC #2**

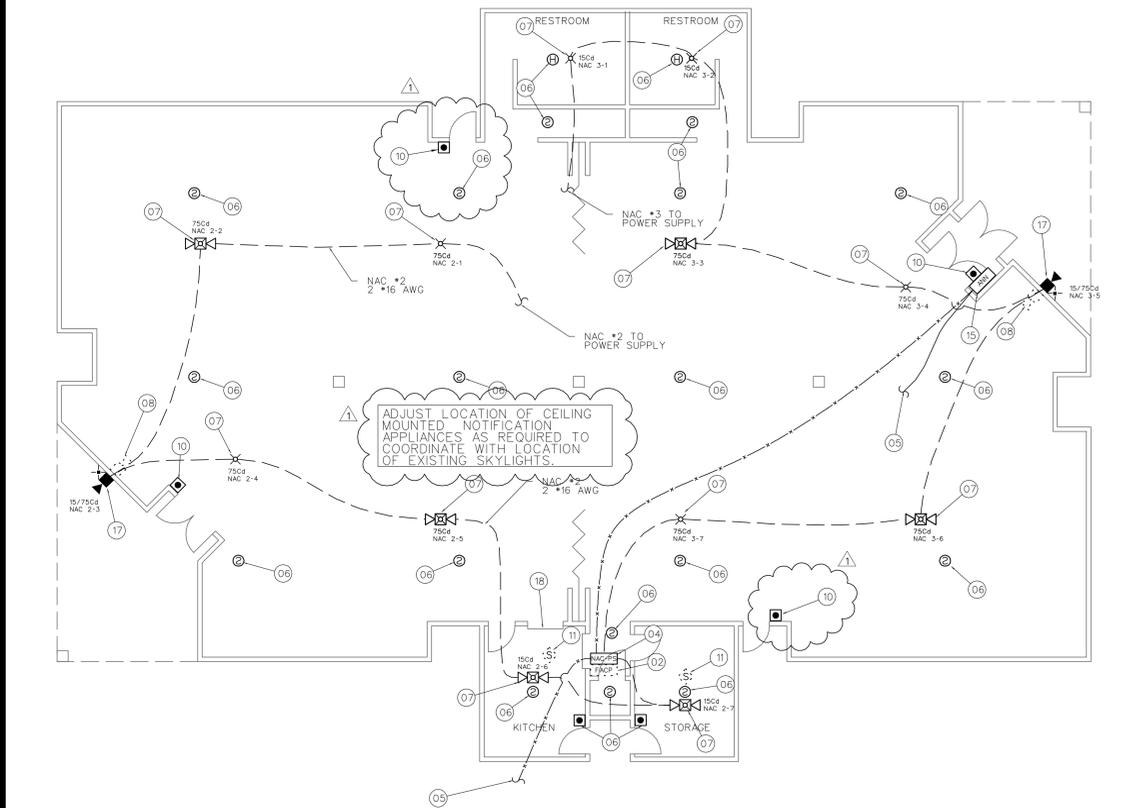
Physical Parameters										
Source Voltage	20.4 V		16 AWG		2580 cmi		13 Ohm-cmi/ft			
Ref Start No.	Device/Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ftA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.		
FCPS	75	75	75	0.176	0.952	19.890	3.527	1		
1	40	115	75	0.176	0.776	19.368	1.589	2		
2	40	155	19/75	0.09	0.6	19.126	1.249	3		
3	25	180	75	0.176	0.51	18.997	0.672	4		
4	40	220	75	0.176	0.334	18.863	0.709	5		
5	40	260	15	0.079	0.158	18.799	0.338	6		
6	25	285	15	0.079	0.079	18.779	0.106	7		
<b>Total Circuit Length</b>						<b>285</b>	<b>Total Circuit Current</b>	<b>0.952</b>	<b>Total Circuit Voltage Drop %</b>	
									<b>8.19</b>	

**4 VOLTAGE DROP CALCULATIONS SHOW RING - NAC #4**

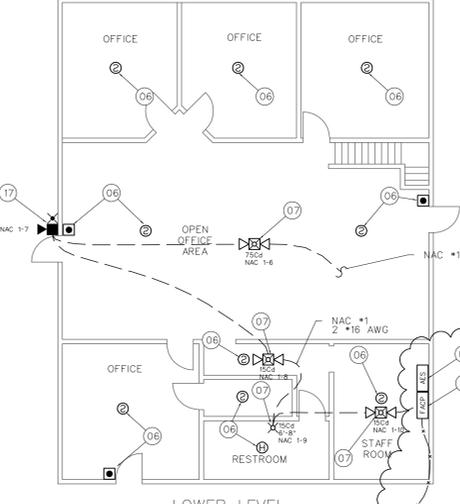
Physical Parameters										
Source Voltage	20.4 V		16 AWG		2580 cmi		13 Ohm-cmi/ft			
Ref Start No.	Device/Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ftA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.		
FACP	75	75	115	0.210	1.506	19.262	5.580	1		
1	35	110	115	0.218	1.296	18.805	2.373	2		
2	30	140	30	0.107	1.078	18.479	1.733	3		
3	85	225	30	0.107	0.911	17.847	4.501	4		
4	30	255	115	0.210	0.864	17.386	1.480	5		
5	40	295	115	0.218	0.654	17.122	1.516	6		
6	35	330	30	0.107	0.436	16.968	0.898	7		
7	25	355	15	0.066	0.329	16.885	0.488	8		
8	25	380	15	0.066	0.263	16.819	0.392	9		
9	10	390	30	0.107	0.197	16.799	0.118	10		
10	30	420	15/75	0.09	0.069	16.778	0.124	11		
<b>Total Circuit Length</b>						<b>420</b>	<b>Total Circuit Current</b>	<b>1.506</b>	<b>Total Circuit Voltage Drop %</b>	
									<b>19.20</b>	

**6 REMOTE POWER SUPPLY BATTERY CALCULATIONS BONNEVILLE BUILDING**

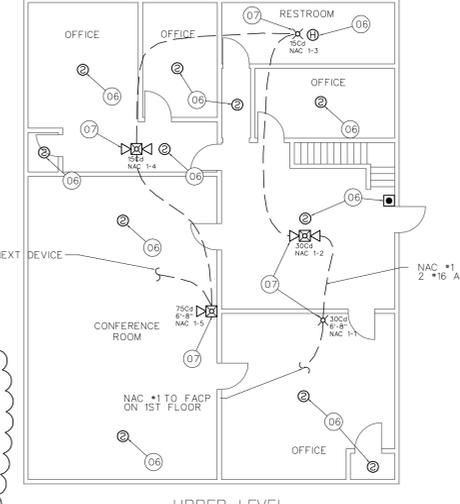
REMOTE POWER SUPPLY CALCULATIONS		REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)		
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5895XL	POWER SUPPLY	1	0.0400	0.0400	0.1600	0.1600
NAC #2	NAC CIRCUIT	1	0.0000	0.0000	0.9520	0.9520
NAC #3	NAC CIRCUIT	1	0.0000	0.0000	0.8900	0.8900
5815XL	SLC EXPANDER	1	0.1250	0.1250	0.1250	0.1250
SK-PHOTO	SMOKE DETECTOR	18	0.0006	0.0108	0.0006	0.0108
SK-PULL-DA	PULL STATION	6	0.0006	0.0036	0.0006	0.0036
SK-HEAT	HEAT DETECTOR	2	0.0006	0.0012	0.0006	0.0012
SK-MINIMON	INPUT MODULE	0	0.0006	0.0000	0.0006	0.0000
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0006	0.0000	0.0006	0.0000
<b>TOTAL</b>				<b>0.1806</b>		<b>4.964</b>
<b>SECONDARY STANDBY BATTERY CALCULATIONS:</b>				<b>(STANDBY) X 24</b>		<b>4.964</b>
				<b>HOUR + (ALARM) X 5 MINUTES + 10% =</b>		



**BONNEVILLE BUILDING FIRE ALARM PLAN**  
 1/8" = 1'-0"  
 0 8' 16' 32'



**ADMINISTRATION BUILDING FIRE ALARM PLAN**  
 1/8" = 1'-0"  
 0 8' 16' 32'



**ADMINISTRATION BUILDING FIRE ALARM PLAN**  
 1/8" = 1'-0"  
 0 8' 16' 32'

**FIRE ALARM SYSTEM KEY NOTES**

- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). PROVIDE NEW 120 VAC POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REMOVE EXISTING FIRE ALARM CONTROL PANEL (FACP), MODULES AND ENCLOSURE.
- FURNISH AND INSTALL NEW WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. AES MODEL AES-7744F. CONFIGURE TRANSMITTER TO RELAY FIRE ALARM AND SUPERVISORY SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER.
- FURNISH AND INSTALL NEW INTELLIGENT POWER SUPPLY (SILENT KNIGHT 5895XL OR EQUAL) TO PROVIDE 24 VDC POWER TO NEW NOTIFICATION APPLIANCE CIRCUITS. PROVIDE BACKUP BATTERIES SIZED TO MEET STANDBY DEMAND OF POWER SUPPLY FOR 24 HOURS WITH AN ADDITIONAL RESERVE FOR 5 MINUTES OF ALARM POWER NUMBER AND CAPACITY OF POWER SUPPLIES AND LAYOUT OF NOTIFICATION APPLIANCE CIRCUITS SHALL LIMIT VOLTAGE DROP BETWEEN POWER SUPPLY AND MOST REMOTE DEVICE ON CIRCUIT TO LESS THAN 20%. PROVIDE MODULES AS REQUIRED TO SYNCHRONIZE STROBE FLASHING OF ALL NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. PROVIDE NEW 120 VAC POWER FROM DEDICATED CIRCUIT.
- EXISTING BURIED CONDUIT BETWEEN ADMINISTRATION BUILDING AND BONNEVILLE BUILDING TO BE RE-USED. PULL NEW WIRE IN EXISTING CONDUIT TO ENABLE CONNECTION OF INTELLIGENT POWER SUPPLY IN BONNEVILLE BUILDING TO FACP IN ADMINISTRATION BUILDING VIA THE S-BUS CIRCUIT. CONTRACTOR SHALL FIELD VERIFY LOCATION OF CONDUIT STUB UP IN BOTH BUILDINGS. S-BUS CIRCUIT SHALL BE CLASS A BUT SUPPLY AND RETURN CONDUCTORS MAY BE RUN IN SAME UNDERGROUND CONDUIT. PROVIDE ISOLATOR MODULES ON S-BUS AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.
- FURNISH AND INSTALL NEW SMOKE OR HEAT DETECTOR OR MANUAL PULL STATION AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.
- FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT. NOTIFICATION APPLIANCES IN MULTIPURPOSE BARN SHALL BE MOUNTED ON WEATHER-PROOF BACK BOXES.
- EXISTING NOTIFICATION APPLIANCE TO BE REMOVED. REMOVE DEVICE, J-BOX, CONDUIT AND WIRING BACK TO FACP. PATCH, REPAIR AND/OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.
- REPLACE EXISTING NOTIFICATION APPLIANCE WITH NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REPLACE EXISTING MANUAL PULL STATION WITH NEW MANUAL PULL STATION AS SHOWN ON PLAN. PULL STATION SHALL BE MOUNTED BETWEEN 42" AND 54" AFF. ADJUST HEIGHT AS REQUIRED. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REMOVE EXISTING INITIATING DEVICE, CONDUIT AND J-BOX. PATCH, REPAIR AND PAINT AS NECESSARY TO MATCH SURROUNDING AREA.
- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5700 OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER USING NEW RADIO TRANSMITTER. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REPLACE EXISTING FIRE ALARM CONTROL PANEL (FACP) WITH NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER USING DIGITAL COMMUNICATOR AND EXISTING RADIO TRANSMITTER. EXISTING 120 VAC DEDICATED POWER MAY BE RE-USED.
- EXISTING FIRE SPRINKLER RISER (WET OR DRY-PIPE) WITH WATER FLOW VALVE SUPERVISORY AND OR AIR PRESSURE SUPERVISORY SWITCHES TO REMAIN. FURNISH AND INSTALL NEW ADDRESSABLE MODULES ON TO PROVIDE OFF-PREMISE MONITORING OF FIRE SPRINKLER SYSTEM. CONNECT NEW ADDRESSABLE MODULES TO NEW SIGNALING LINE CIRCUIT. EXISTING WATER FLOW BELL TO REMAIN.
- FURNISH AND INSTALL NEW REMOTE ANNUNCIATOR FOR ADDRESSABLE FIRE ALARM SYSTEM AS SHOWN ON DRAWING. CONNECT TO NEW S-BUS.
- EXISTING WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. CONNECT TO NEW FIRE ALARM SYSTEM AND TEST TO ENSURE PROPER OPERATION. REPAIR OR REPLACE AS NECESSARY.
- FURNISH AND INSTALL NEW WEATHER-PROOF HORN/STROBE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.
- EXISTING ROLL DOWN FIRE DOORS NO LONGER IN USE. DISCONNECT FROM EXISTING FACP.
- REPLACE EXISTING DUCT SMOKE DETECTOR WITH NEW DUCT DETECTOR. PROVIDE CONTROL RELAY TO SHUT-DOWN AIR HANDLERS UPON ACTIVATION OF ANY FIRE ALARM. TEST TO ENSURE PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.

**FIRE ALARM EQUIPMENT LEGEND**

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	NEW ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL	SILENT KNIGHT SEE KEYNOTES FOR MODEL
FACP	EXISTING FIRE ALARM CONTROL PANEL	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
ANN	NEW FIRE ALARM REMOTE ANNUNCIATOR PANEL	MOUNT ON NEW OR EXISTING J-BOX RECESSED INTO WALL	SILENT KNIGHT 5880 OR EQUAL
NAC-PS	NEW INTELLIGENT POWER SUPPLY	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5895XL OR EQUAL
AES	EXISTING OR NEW WIRELESS TRANSMITTER	WALL MOUNT ABOVE FACP	WIRELESS TRANSMITTER TO SEND FIRE ALARM, TROUBLE AND SUPERVISORY SIGNALS AES MODEL AES-7744F
☉	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWING AT MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PHOTO OR EQUAL
☉	EXISTING SMOKE DETECTOR	EXISTING CEILING MOUNT	REMOVE EXISTING DEVICE, WIRING AND J-BOX
☉	NEW ADDRESSABLE HEAT DETECTOR (FROG TEMP)	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW HEAT DETECTORS IN ALL ROOMS WITHOUT SMOKE DETECTORS AT A MAXIMUM SPACING OF 50' O.C. SILENT KNIGHT SK-HEAT OR EQUAL
☉	NEW ADDRESSABLE MANUAL PULL STATION	WALL MOUNT AT 48" AFF ON NEW OR EXISTING J-BOX	SILENT KNIGHT SK-PULL-DA OR EQUAL
☉	EXISTING MANUAL PULL STATION TO BE REMOVED	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
☉	NEW ADDRESSABLE MONITOR MODULE	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT MONITORED	TO PROVIDE MONITORING OF CONVENTIONAL FIRE ALARM DEVICES OR CIRCUIT MONITORED SK-MINIMON OR EQUAL
☉	NEW FIRE ALARM HORN/STROBE	CEILING MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
☉	NEW FIRE ALARM HORN/STROBE	WALL MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
☉			

# 1 VOLTAGE DROP CALCULATIONS MULTIPURPOSE BARN - NAC #5

Physical Parameters										
Source Voltage					20.4 V					
Wire Gauge	16 AWG				2580 cmil					
Wire Resistivity					13 Ohm-cmil/ft					
Ref Start No.	Device Distance (feet)	Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ft <sup>2</sup> )	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref End No.	
FCPS	80	80	115	0.210	1.284	19.365	5.074	1	1	
	60	140	115	0.218	1.074	18.715	3.353	2	2	
	2	60	200	0.210	0.856	18.198	2.766	3	3	
	3	60	260	0.218	0.646	17.807	2.146	4	4	
	4	60	320	0.210	0.428	17.548	1.453	5	5	
	5	60	380	0.218	0.218	17.417	0.751	6	6	
Total Circuit Length		380		Total Circuit Current		1.284		Total Circuit Voltage Drop %		15.54

# 2 VOLTAGE DROP CALCULATIONS MULTIPURPOSE BARN - NAC #6

Physical Parameters										
Source Voltage					20.4 V					
Wire Gauge	16 AWG				2580 cmil					
Wire Resistivity					13 Ohm-cmil/ft					
Ref Start No.	Device Distance (feet)	Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ft <sup>2</sup> )	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref End No.	
FCPS	130	130	115	0.210	1.284	18.718	8.246	1	1	
	1	60	190	0.218	1.074	18.068	3.489	2	2	
	2	60	250	0.210	0.856	17.551	2.865	3	3	
	3	60	310	0.218	0.646	17.160	2.226	4	4	
	4	60	370	0.210	0.428	16.901	1.508	5	5	
	5	60	430	0.218	0.218	16.770	0.780	6	6	
Total Circuit Length		430		Total Circuit Current		1.284		Total Circuit Voltage Drop %		19.09

# 3 VOLTAGE DROP CALCULATIONS MULTIPURPOSE BARN - NAC #7

Physical Parameters										
Source Voltage					20.4 V					
Wire Gauge	16 AWG				2580 cmil					
Wire Resistivity					13 Ohm-cmil/ft					
Ref Start No.	Device Distance (feet)	Device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/ft <sup>2</sup> )	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref End No.	
FCPS	70	70	15	0.066	0.38	20.132	1.314	1	1	
	1	20	90	0.079	0.314	20.069	0.314	2	2	
	2	40	130	0.066	0.235	19.974	0.472	3	3	
	3	20	150	0.079	0.169	19.940	0.171	4	4	
	4	50	200	0.09	0.09	19.895	0.227	5	5	
Total Circuit Length		200		Total Circuit Current		0.38		Total Circuit Voltage Drop %		2.50

# 4 FACP BATTERY CALCULATIONS MULTIPURPOSE BARN

PART	DESCRIPTION	QTY	REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
			EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5820XL	CONTROL PANEL	1	0.2150	0.2150	0.3650	0.3650
5860	ANNUNCIATOR	1	0.0200	0.0200	0.0250	0.0250
SK-PULL-DA	PULL STATION	12	0.0006	0.0072	0.0006	0.0072
SK-PHOTO	SMOKE DETECTOR	1	0.0008	0.0008	0.0006	0.0006
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0008	0.0000	0.0006	0.0000
SK-MINION	MONITOR MODULE	4	0.0008	0.0032	0.0006	0.0024
RISON 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	0	0.0006	0.0000	0.0006	0.0000
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	1.2840	1.2840
NAC #2	NOTIFICATION CIRCUIT	1	0.0000	0.0000	1.2840	1.2840
NAC #3	NOTIFICATION CIRCUIT	1	0.0000	0.0000	0.5800	0.5800
TOTAL			0.2452	0.2452	3.9882	3.9882
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10% =					6.6	

## FIRE ALARM SYSTEM KEY NOTES

- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). PROVIDE NEW 120 VAC POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REMOVE EXISTING FIRE ALARM CONTROL PANEL (FACP), MODULES AND ENCLOSURE.
- FURNISH AND INSTALL NEW WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. AES MODEL AES-7744F. CONFIGURE TRANSMITTER TO RELAY FIRE ALARM AND SUPERVISORY SIGNALS TO OFF-PREMISE MONITORING COMPANY.
- FURNISH AND INSTALL NEW INTELLIGENT POWER SUPPLY (SILENT KNIGHT 5895XL OR EQUAL) TO PROVIDE 24 VDC POWER TO NEW NOTIFICATION APPLIANCE CIRCUITS. PROVIDE BACKUP BATTERIES SIZED TO MEET STANDARD DEMAND OF POWER SUPPLY FOR 24 HOURS WITH AN ADDITIONAL RESERVE FOR 5 MINUTES OF ALARM POWER. NUMBER AND CAPACITY OF BATTERIES SHALL BE DETERMINED BY NOTIFICATION APPLIANCE CIRCuits. SHALL LIMIT VOLTAGE DROP BETWEEN POWER SUPPLY AND MOST REMOTE DEVICE ON CIRCUIT TO LESS THAN 20%. PROVIDE MODULES AS REQUIRED TO SYNCHRONIZE STROBE FLASHES OF ALL NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. PROVIDE NEW 120 VAC POWER FROM DEDICATED CIRCUIT.
- EXISTING BURIED CONDUIT BETWEEN ADMINISTRATION BUILDING AND BONNEVILLE BUILDING TO BE RE-USED. PULL NEW WIRE IN EXISTING CONDUIT TO ENABLE CONNECTION OF INTELLIGENT POWER SUPPLY IN BONNEVILLE BUILDING TO FACP IN ADMINISTRATION BUILDING VIA THE S-BUS CIRCUIT. CONTRACTOR SHALL FIELD VERIFY LOCATION OF CONDUIT STUB UP IN BOTH BUILDINGS. S-BUS CIRCUIT SHALL BE CLASS A BUT SUPPLY AND RETURN CONDUCTORS MAY BE RUN IN SAME UNDERGROUND CONDUIT PROVIDED ISOLATOR MODULES ON S-BUS AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.
- FURNISH AND INSTALL NEW SMOKE OR HEAT DETECTOR OR MANUAL PULL STATION AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.
- FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT. NOTIFICATION APPLIANCES IN MULTIPURPOSE BARN SHALL BE MOUNTED ON WEATHER-PROOF BACK BOXES.
- EXISTING NOTIFICATION APPLIANCE TO BE REMOVED. REMOVE DEVICE, J-BOX, CONDUIT AND WIRING BACK TO FACP. PATCH, REPAIR AND/OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.
- REPLACE EXISTING NOTIFICATION APPLIANCE WITH NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REMOVE EXISTING MANUAL PULL STATION WITH NEW MANUAL PULL STATION AS SHOWN ON PLAN. PULL STATION SHALL BE MOUNTED BETWEEN 42" AND 54" AFF. ADJUST HEIGHT AS REQUIRED. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REMOVE EXISTING INITIATING DEVICE, CONDUIT AND J-BOX. PATCH, REPAIR AND PAINT AS NECESSARY TO MATCH SURROUNDING AREA.
- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5700 OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER USING NEW RADIO TRANSMITTER. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REPLACE EXISTING FIRE ALARM CONTROL PANEL (FACP) WITH NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY USING DIGITAL COMMUNICATOR AND EXISTING RADIO TRANSMITTER. EXISTING 120 VAC DEDICATED POWER MAY BE RE-USED.
- EXISTING FIRE SPRINKLER RISER (WET OR DRY-PIPE) WITH WATER FLOW VALVE SUPERVISORY AND/OR AIR PRESSURE SUPERVISORY SWITCHES TO REMAIN. FURNISH AND INSTALL NEW ADDRESSABLE MODULES ON TO PROVIDE OFF-PREMISE MONITORING OF FIRE SPRINKLER SYSTEM. CONNECT NEW ADDRESSABLE MODULES TO NEW SIGNALING LINE CIRCUIT. EXISTING WATER FLOW BELL TO REMAIN.
- FURNISH AND INSTALL NEW REMOTE ANNUNCIATOR FOR ADDRESSABLE FIRE ALARM SYSTEM AS SHOWN ON DRAWING. CONNECT TO NEW S-BUS.
- EXISTING WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. CONNECT TO NEW FIRE ALARM SYSTEM AND TEST TO ENSURE PROPER OPERATION. REPAIR OR REPLACE AS NECESSARY.
- FURNISH AND INSTALL NEW WEATHER-PROOF HORN/STROBE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.
- EXISTING ROLL DOWN FIRE DOORS NO LONGER IN USE. DISCONNECT FROM EXISTING FACP.
- REPLACE EXISTING DUCT SMOKE DETECTOR WITH NEW DUCT DETECTOR. PROVIDE CONTROL RELAY TO SHUT-DOWN AIR HANDLERS UPON ACTIVATION OF ANY FIRE ALARM. TEST TO ENSURE PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.

## FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
[FACP]	NEW ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL	SILENT KNIGHT SEE KEYNOTES FOR MODEL
[FACP]	EXISTING FIRE ALARM CONTROL PANEL TO BE REMOVED	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
[ANN]	NEW FIRE ALARM REMOTE ANNUNCIATOR	MOUNT ON NEW OR EXISTING J-BOX RECESSED INTO WALL	SILENT KNIGHT 5880 OR EQUAL
[NAC-PS]	NEW INTELLIGENT POWER SUPPLY	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5895XL OR EQUAL
[AES]	EXISTING OR NEW WIRELESS TRANSMITTER	WALL MOUNT ABOVE FACP	WIRELESS TRANSMITTER TO SEND FIRE ALARM, TROUBLE AND SUPERVISORY SIGNALS. AES MODEL AES-7744F
[S]	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWINGS AT A MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PHOTO OR EQUAL
[S]	EXISTING SMOKE DETECTOR	EXISTING CEILING MOUNT	REMOVE EXISTING DEVICE, WIRING AND J-BOX
[H]	NEW ADDRESSABLE HEAT DETECTOR (FIXED TEMP)	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW HEAT DETECTORS IN ALL ROOMS WITHOUT SMOKE DETECTORS AT A MAXIMUM SPACING OF 50' O.C. SILENT KNIGHT SK-HEAT OR EQUAL
[M]	NEW ADDRESSABLE MANUAL PULL STATION	WALL MOUNT AT 48" AFF ON NEW OR EXISTING J-BOX	SILENT KNIGHT SK-PULL-DA OR EQUAL
[M]	EXISTING MANUAL PULL STATION TO BE REMOVED	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
[M]	NEW ADDRESSABLE MONITOR MODULE	MOUNT ON J-BOX WITHIN 3' OF FIRE ALARM DEVICES. SILENT KNIGHT SK-MINION OR EQUAL	TO PROVIDE MONITORING OF CONVENTIONAL FIRE ALARM DEVICES. SILENT KNIGHT SK-MINION OR EQUAL
[H]	NEW FIRE ALARM HORN/STROBE	CEILING MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED. SYSTEM SENSOR PC2W OR EQUAL.
[H]	NEW FIRE ALARM HORN/STROBE	WALL MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED. SYSTEM SENSOR PC2W OR EQUAL.
[H]	NEW FIRE ALARM STROBE	CEILING MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED. SYSTEM SENSOR PC2W OR EQUAL.
[H]	NEW EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT HEIGHT INDICATED ON DWGS	CANDELA RATING OF STROBE TO BE A MINIMUM OF 15/75 CAL. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT. POWER SUPPLY. COLOR SHALL BE RED. DEVICE SHALL BE LISTED FOR EXTERIOR INSTALLATION.
[H]	EXISTING FIRE ALARM HORN/STROBE	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
[H]	EXISTING FIRE ALARM HORN/STROBE	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
[H]	EXISTING FIRE ALARM HORN	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
[H]	DUCT SMOKE DETECTOR	REPLACE EXISTING DUCT DETECTOR	SILENT KNIGHT SK-DUCT OR EQUAL



MULTIPURPOSE BARN FIRE ALARM PLAN  
1/8" = 1'-0"  
0 8' 16' 32'

**PROFESSIONAL ENGINEERING**  
**rdi**  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF UTAH  
 No. 20087  
 License Expires 12/31/2025  
 1500 East 1000 South, Suite 202  
 Salt Lake City, UT 84143  
 Phone: 313.888.8888  
 Fax: 313.888.8888  
 Email: info@rdi-engineers.com

JOB NO: 104485  
 DWG ISSUE: ADD #1  
 DRAWN BY: BBH  
 CHECKED BY: GTJ

REVISIONS:  
 1 ADDITION  
 3/18/10

DRAWING DATE:  
 03/01/10

REVISION DATE:  
 03/18/10

UTAH STATE FAIR PARK  
 155 NORTH 1000 WEST  
 SALT LAKE CITY, UTAH

FIRE ALARM SYSTEM UPGRADE  
 DFCM PROJECT #0920370

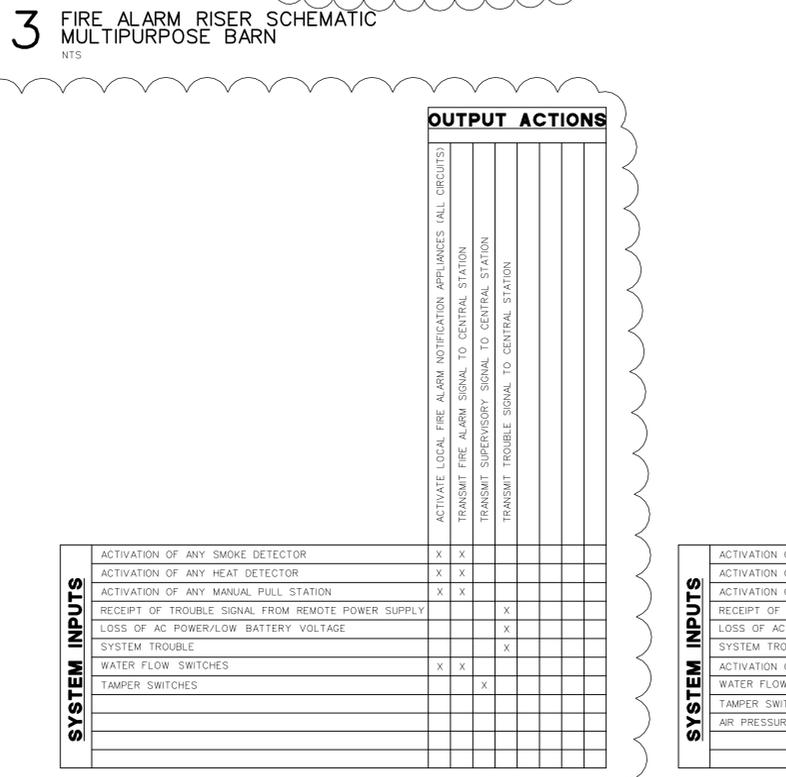
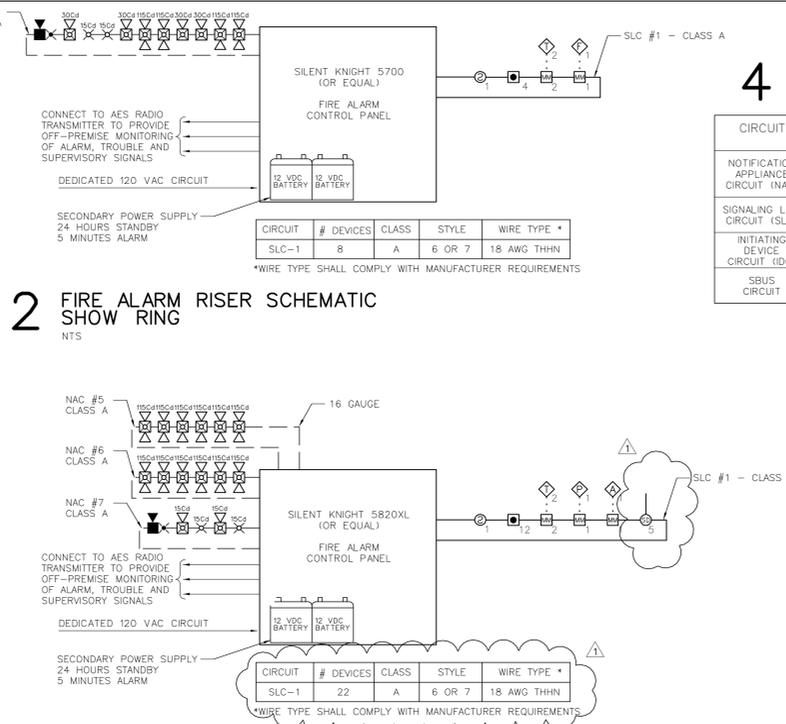
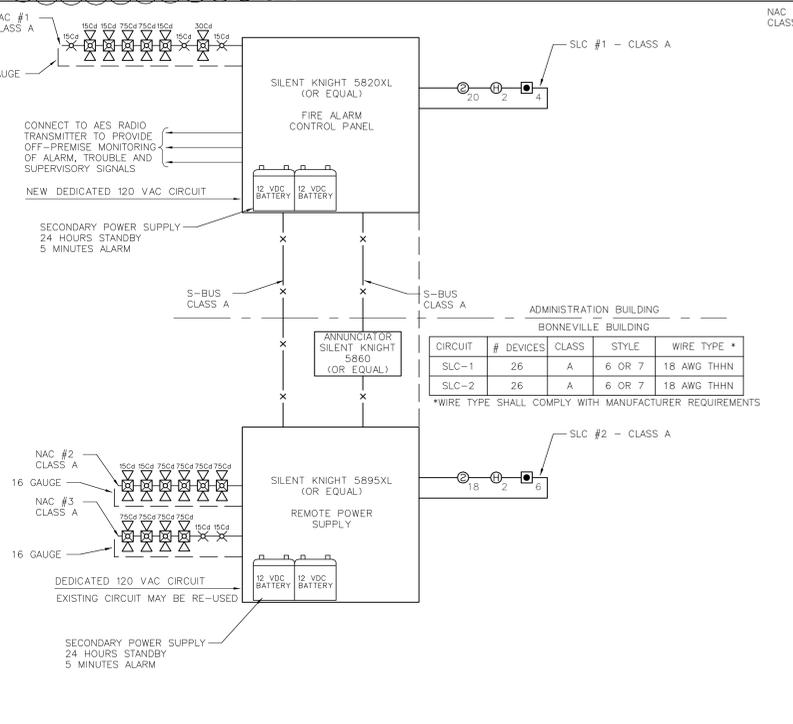
MULTIPURPOSE BARN  
 FIRE ALARM PLAN  
 FA-2

**FIRE ALARM SYSTEM GENERAL NOTES**

- SCOPE OF WORK: WORK SHALL INCLUDE REMOVAL OF EXISTING CONVENTIONAL FIRE ALARM SYSTEMS INCLUDING ALL CONTROL EQUIPMENT, POWER SUPPLIES, CABINETS, INT. CIRCUITS AND DEVICES. NOTIFICATION APPLIANCE CIRCUITS AND DEVICES. INSTALL NEW FIRE ALARM SYSTEMS INCLUDING CONTROL PANELS WITH NEW SIGNALING LINE CIRCUITS, INITIATING DEVICE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS. NEW FIRE ALARM SYSTEM SHALL BE IN ACCORDANCE WITH NFPA 72, THESE DRAWINGS AND SPECIFICATIONS.
- APPLICABLE CODES/STANDARDS: 2006 EDITION INTERNATIONAL BUILDING CODE - 2006 EDITION UTAH STATE FIRE MARSHAL RULE R710-4 NFPA 70 - 2005 EDITION NFPA 72 - 2007 EDITION
- QUALITY ASSURANCE: ALL EQUIPMENT, MATERIAL AND DEVICES USED FOR THE FIRE ALARM SYSTEM INSTALLATION SHALL BE UL LISTED AND/OR FM APPROVED FOR USE IN FIRE PROTECTION SYSTEMS. ALL INITIATING DEVICES SHALL BE LISTED COMPATIBLE WITH THE FIRE ALARM CONTROL PANEL (FACP). MAJOR SYSTEM COMPONENTS (CONTROL PANELS, INITIATING DEVICES, ADDRESSABLE MODULES AND RELAYS, POWER SUPPLIES, ETC.) SHALL BE FROM A STATE OF UTAH DFCM APPROVED MANUFACTURER. APPROVED MANUFACTURERS INCLUDE FIRE-LITE AND SILENT KNIGHT.
- SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSHAL, OWNER AND ENGINEER FOR REVIEW/ APPROVAL PRIOR TO ORDERING OR INSTALLING ANY EQUIPMENT. SUBMITTALS SHALL CONFORM TO THE CONSTRUCTION DOCUMENTS REQUIREMENTS OF IF 907.1.1.
- DEMOLITION: IT IS THE INSTALLER'S RESPONSIBILITY FOR THE DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM. EXISTING DEVICES AND CONDUIT NOT BEING REPLACED AND REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES OR SMOKE DETECTORS SHALL BE REMOVED AND REMAINING WALL OR CEILING SURFACE REPAIRED OR REPLACED TO MATCH SURROUNDING AREAS. REMOVE ALL UNUSED WIRE IN ALL REMAINING J-BOXES AND/OR CONDUITS. ANY CEILING TILE DAMAGED BY THE INSTALLER MUST BE REPLACED WITH THE SAME OR EQUIVALENT TILE.
- SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE REQUIREMENTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS. SYSTEM SHALL PROVIDE OFF-PREMISE NOTIFICATION OF STATUS TO CENTRAL STATION DETERMINED BY OWNER.
- OCCUPANT NOTIFICATION: NOTIFICATION CIRCUITS SHALL BE ZONED WITH ONE ZONE PER BUILDING. PROVIDE REMOTE NOTIFICATION POWER SUPPLIES IN EACH BUILDING TO POWER NOTIFICATION CIRCUITS. CONFIGURE NOTIFICATION CIRCUITS IN EACH BUILDING TO ACTIVATE ONLY UPON OPERATION OF AN INITIATING DEVICE IN THAT BUILDING.
- WIRING/CONDUIT: ALL WIRING SHALL BE NEW EXISTING WIRING MAY NOT BE RE-USED AND SHALL BE FREE OF SPURS, SHORTS AND GROUNDS. ALL WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT. METAL CLAD OR ARMORED CABLE MAY BE USED WHERE INSTALLED AND SUPPORTED PER NFPA 70, DFCM REQUIREMENTS AND NEMA STANDARD RV1 CONDUIT AND FITTINGS IN MULTIPURPOSE BARN SHALL BE RAIN TIGHT. MINIMUM CONDUIT SIZE SHALL BE 3/4". CONDUIT SHALL BE CONCEALED IN FINISHED AREAS AND MAY BE EXPOSED IN UNFINISHED AREAS. OF SURROUNDING BUILDING ELEMENTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE, POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT ASPER NFPA 70 ARTICLE 760.
- WIRING STYLES/PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE & S-BUS CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 OR 7 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.
- POWER EXISTING DEDICATED BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW FACP AND REMOTE NOTIFICATION CIRCUITS. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANEL AND NOTIFICATION CIRCUIT POWER SUPPLIES. BATTERY BACKUP SHALL BE OF SUFFICIENT CAPACITY TO PROVIDE 24 HOURS OF STANDBY POWER WITH AN ADDITIONAL RESERVE TO OPERATE SYSTEM FOR 5 MINUTES IN ALARM.
- INITIATING DEVICES: DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS IN SUPPLY DUCTS OF ALL AIR HANDLERS WITH A CAPACITY IN EXCESS OF 2,000 CFM. SMOKE DETECTORS: PROVIDE SMOKE DETECTORS WHERE SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AT SAME LOCATION AND HEIGHT AS EXISTING PULL STATIONS USING EXISTING JUNCTION BOXES. WHERE NEW MANUAL PULL STATIONS ARE INDICATED ON THE PLAN INSTALL WITH OPERATING ELEMENT AT 48" AFF. HEAT DETECTORS: PROVIDE HEAT DETECTORS WHERE SHOWN ON PLANS IN ALL AREAS NOT PROTECTED WITH SMOKE DETECTORS. MAXIMUM SPACING FOR HEAT DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL.
- NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDINGS. VOLUME OF HORNS SHALL BE SUFFICIENT TO PROVIDE A SOUND LEVEL OF 15 DB ABOVE AMBIENT IN ALL OCCUPIED AREAS. VISIBLE ALARMS SHALL BE PROVIDED THROUGHOUT ALL OCCUPIED AREAS OF THE BUILDING INCLUDING PRIVATE OFFICES AND AREAS WITH POSSIBLE OCCUPANCY BY HEARING IMPAIRED PERSONS. STROBES SHALL FLASH IN SYNCHRONIZATION.
- FIRE SAFETY FUNCTIONS: CONTROL MODULE WITH RELAY CONTACTS SHALL BE INSTALLED AND PROGRAMMED TO PROVIDE THE BUILDING INCLUDING PRIVATE OFFICES AND AREAS WITH POSSIBLE OCCUPANCY BY HEARING IMPAIRED PERSONS. STROBES SHALL FLASH IN SYNCHRONIZATION.
- PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM. EXISTING FIRE ALARM SYSTEM SHALL REMAIN IN SERVICE UNTIL NEW SYSTEM IS INSTALLED AND OPERATIONAL. IT IS THE INSTALLER'S RESPONSIBILITY TO NOTIFY PROPER AUTHORITIES AND PROVIDE A FIRE WATCH DURING INTERRUPTIONS OF FIRE DETECTION AND ALARM SERVICE IN THE BUILDING.
- TESTING: SCHEDULE AND PERFORM ALL ACCEPTANCE TESTS REQUIRED BY NFPA 72. TESTING SHALL BE WITNESSED BY STATE FIRE MARSHAL'S OFFICE, PROJECT ENGINEER, DFCM AND BUILDING MAINTENANCE PERSONNEL. SUBMIT A WRITTEN TESTING PLAN DETAILING EACH TEST TO BE PERFORMED TO EACH AGENCY AT LEAST ONE DAY PRIOR TO SCHEDULED TEST.

**FIRE ALARM SYSTEM KEY NOTES**

- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). PROVIDE NEW 120 VAC POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REMOVE EXISTING FIRE ALARM CONTROL PANEL (FACP), MODULES AND ENCLOSURE.
- FURNISH AND INSTALL NEW WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. AES MODEL AES-7744F. CONFIGURE TRANSMITTER TO RELAY FIRE ALARM AND SUPERVISORY SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER.
- FURNISH AND INSTALL NEW INTELLIGENT POWER SUPPLY (SILENT KNIGHT 5895XL OR EQUAL) TO PROVIDE 24 VDC POWER TO NEW NOTIFICATION APPLIANCE CIRCUITS. PROVIDE BACKUP BATTERIES SIZED TO MEET STANDBY DEMAND OF POWER SUPPLY FOR 24 HOURS WITH AN ADDITIONAL RESERVE FOR 5 MINUTES OF ALARM POWER. NUMBER AND CAPACITY OF POWER SUPPLIES AND LAYOUT OF NOTIFICATION APPLIANCE CIRCUITS SHALL LIMIT VOLTAGE DROP BETWEEN POWER SUPPLY AND MOST REMOTE DEVICE ON CIRCUIT TO LESS THAN 20%. PROVIDE MODULES AS REQUIRED TO SYNCHRONIZE STROBE FLASHING OF ALL NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. PROVIDE NEW 120 VAC POWER FROM DEDICATED CIRCUIT.
- EXISTING BURIED CONDUIT BETWEEN ADMINISTRATION BUILDING AND BONNEVILLE BUILDING TO BE RE-USED. PULL NEW WIRE IN EXISTING CONDUIT TO ENABLE CONNECTION OF INTELLIGENT POWER SUPPLY IN BONNEVILLE BUILDING TO FACP IN ADMINISTRATION BUILDING VIA THE S-BUS CIRCUIT. CONTRACTOR SHALL FIELD VERIFY LOCATION OF CONDUIT STUB UP IN BOTH BUILDINGS. S-BUS CIRCUIT SHALL BE CLASS A BUT SUPPLY AND RETURN CONDUCTORS MAY BE RUN IN SAME UNDERGROUND CONDUIT. PROVIDE ISOLATOR MODULES ON S-BUS AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.
- FURNISH AND INSTALL NEW SMOKE OR HEAT DETECTOR OR MANUAL PULL STATION AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.
- FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT. NOTIFICATION APPLIANCES IN MULTIPURPOSE BARN SHALL BE MOUNTED ON WEATHER-PROOF BACK BOXES.
- EXISTING NOTIFICATION APPLIANCE TO BE REMOVED. REMOVE DEVICE, J-BOX, CONDUIT AND WIRING BACK TO FACP. PATCH, REPAIR AND/ OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.
- REPLACE EXISTING NOTIFICATION APPLIANCE WITH NEW NOTIFICATION APPLIANCE. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REPLACE EXISTING MANUAL PULL STATION WITH NEW MANUAL PULL STATION AS SHOWN ON PLAN. PULL SHALL BE MOUNTED BETWEEN 42" AND 54" AFF. ADJUST HEIGHT AS REQUIRED. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.
- REMOVE EXISTING INITIATING DEVICE, CONDUIT AND J-BOX. PATCH, REPAIR AND PAINT AS NECESSARY TO MATCH SURROUNDING AREA.
- FURNISH AND INSTALL NEW ADDRESSABLE FACP (SILENT KNIGHT 5700 OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER USING NEW RADIO TRANSMITTER. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.
- REPLACE EXISTING FIRE ALARM CONTROL PANEL (FACP) WITH NEW ADDRESSABLE FACP (SILENT KNIGHT 5820XL OR EQUAL). FACP SHALL PROVIDE ALL REQUIRED PROTECTED PREMISES FIRE SAFETY FUNCTIONS (ACTIVATION OF LOCAL ALARMS). FACP SHALL RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER USING DIGITAL COMMUNICATOR AND EXISTING RADIO TRANSMITTER. EXISTING 120 VAC DEDICATED POWER MAY BE RE-USED.
- EXISTING FIRE SPRINKLER RISER (WET OR DRY-PIPE) WITH WATER FLOW, VALVE SUPERVISORY AND OR AIR PRESSURE SUPERVISORY SWITCHES TO REMAIN. FURNISH AND INSTALL NEW ADDRESSABLE MODULES ON TO PROVIDE OFF-PREMISE MONITORING OF FIRE SPRINKLER SYSTEM. CONNECT NEW ADDRESSABLE MODULES TO NEW SIGNALING LINE CIRCUIT. EXISTING WATER FLOW BELL TO REMAIN.
- FURNISH AND INSTALL NEW REMOTE ANNUNCIATOR FOR ADDRESSABLE FIRE ALARM SYSTEM AS SHOWN ON DRAWING. CONNECT TO NEW S-BUS.
- EXISTING WIRELESS TRANSMITTER TO PROVIDE OFF-PREMISE MONITORING FOR NEW FIRE ALARM SYSTEM. CONNECT TO NEW FIRE ALARM SYSTEM AND TEST TO ENSURE PROPER OPERATION. REPAIR OR REPLACE AS NECESSARY.
- FURNISH AND INSTALL NEW WEATHER-PROOF HORN/STROBE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.
- EXISTING ROLL DOWN FIRE DOORS NO LONGER IN USE. DISCONNECT FROM EXISTING FACP.
- REPLACE EXISTING DUCT SMOKE DETECTOR WITH NEW DUCT DETECTOR. PROVIDE CONTROL RELAY TO SHUT-DOWN AIR HANDLERS UPON ACTIVATION OF ANY FIRE ALARM TEST TO ENSURE PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.



**4 WIRE SCHEDULE**

CIRCUIT	NUMBER OF CONDUCTORS	CIRCUIT CLASS	CIRCUIT STYLE	WIRE GAUGE (MIN)	GRAPHIC DESIGNATION
NOTIFICATION APPLIANCE CIRCUIT (NAC)	2	A	Z	16 AWG	---
SIGNALING LINE CIRCUIT (SLC)	2	A	6 OR 7	18 AWG	---
INITIATING DEVICE CIRCUIT (IDC)	2	A	D	18 AWG	---
SBUS CIRCUIT	4	A	6 OR 7	14 AWG	-X-

CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	8	A	6 OR 7	18 AWG THHN

\*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

**1 FIRE ALARM RISER SCHEMATIC ADMINISTRATION & BONNEVILLE BUILDING**

**2 FIRE ALARM RISER SCHEMATIC SHOW RING**

**3 FIRE ALARM RISER SCHEMATIC MULTIPURPOSE BARN**

**5 SEQUENCE OF OPERATION ADMINISTRATION & BONNEVILLE BUILDINGS**

SYSTEM INPUTS	OUTPUT ACTIONS			
	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ADMINISTRATION)	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (BONNEVILLE)	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION
ACTIVATION OF ANY SMOKE DETECTOR (ADMINISTRATION)	X	X		
ACTIVATION OF ANY HEAT DETECTOR (ADMINISTRATION)	X	X		
ACTIVATION OF ANY MANUAL PULL STATION (ADMINISTRATION)	X	X		
RECEIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY			X	
LOSS OF AC POWER/LOW BATTERY VOLTAGE			X	
SYSTEM TROUBLE			X	
ACTIVATION OF ANY SMOKE DETECTOR (BONNEVILLE)	X	X		
ACTIVATION OF ANY HEAT DETECTOR (BONNEVILLE)	X	X		
ACTIVATION OF ANY MANUAL PULL STATION (BONNEVILLE)	X	X		

**6 SEQUENCE OF OPERATION SHOW RING**

**7 SEQUENCE OF OPERATION MULTIPURPOSE BARN**

**OUTPUT ACTIONS**

SYSTEM INPUTS	OUTPUT ACTIONS (ALL CIRCUITS)			
	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION
ACTIVATION OF ANY SMOKE DETECTOR	X	X		
ACTIVATION OF ANY HEAT DETECTOR	X	X		
ACTIVATION OF ANY MANUAL PULL STATION	X	X		
RECEIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY			X	
LOSS OF AC POWER/LOW BATTERY VOLTAGE			X	
SYSTEM TROUBLE			X	
WATER FLOW SWITCHES		X	X	
TAMPER SWITCHES			X	
AIR PRESSURE			X	

**OUTPUT ACTIONS**

SYSTEM INPUTS	OUTPUT ACTIONS (ALL CIRCUITS)			
	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION
ACTIVATION OF ANY SMOKE DETECTOR	X	X		
ACTIVATION OF ANY HEAT DETECTOR	X	X		
ACTIVATION OF ANY MANUAL PULL STATION	X	X		
RECEIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY			X	
LOSS OF AC POWER/LOW BATTERY VOLTAGE			X	
SYSTEM TROUBLE			X	
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X	
WATER FLOW SWITCHES		X	X	
TAMPER SWITCHES			X	
AIR PRESSURE			X	

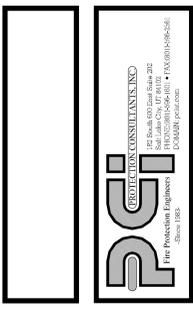
**FIRE ALARM EQUIPMENT LEGEND**

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	NEW ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL	SILENT KNIGHT SEE KEYNOTES FOR MODEL
FACP	EXISTING FIRE ALARM CONTROL PANEL TO BE REMOVED	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
ANN	NEW FIRE ALARM REMOTE ANNUNCIATOR PANEL	MOUNT ON NEW OR EXISTING J-BOX RECESSED INTO WALL	SILENT KNIGHT 5880 OR EQUAL
NAC-IP	NEW INTELLIGENT POWER SUPPLY	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5895XL OR EQUAL
AES	EXISTING OR NEW WIRELESS TRANSMITTER	WALL MOUNT ABOVE FACP	WIRELESS TRANSMITTER TO SEND FIRE ALARM, TROUBLE AND SUPERVISORY SIGNAL AES MODEL AES-7744F
⊙	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWINGS AT A MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PIROD OR EQUAL
⊙	EXISTING SMOKE DETECTOR	EXISTING CEILING MOUNT	REMOVE EXISTING DEVICE, WIRING AND J-BOX
⊙	NEW ADDRESSABLE HEAT DETECTOR (FIXED TEMP)	CEILING MOUNTED ON RECESSED J-BOX	INSTALL NEW HEAT DETECTORS IN ALL ROOMS WITHOUT SMOKE DETECTORS AT A MAXIMUM SPACING OF 50' O.C. SILENT KNIGHT SK-HEAT OR EQUAL
⊙	NEW ADDRESSABLE MANUAL PULL STATION	WALL MOUNT AT 48" AFF ON NEW OR EXISTING J-BOX	SILENT KNIGHT SK-PULL-DA OR EQUAL
⊙	EXISTING MANUAL PULL STATION TO BE REMOVED	EXISTING TO BE REMOVED	EXISTING TO BE REMOVED
⊙	NEW ADDRESSABLE MONITOR MODULE	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT MONITORED	TO PROVIDE MONITORING OF CONVENTIONAL FIRE ALARM DEVICES. SILENT KNIGHT SK-MINIMON OR EQUAL
⊙	NEW FIRE ALARM HORN/STROBE	CEILING MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
⊙	NEW FIRE ALARM HORN/STROBE	WALL MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
⊙	NEW FIRE ALARM STROBE	CEILING MOUNTED ON RECESSED J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
⊙	NEW EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT HEIGHT INDICATED ON DWGS	CANDELA RATING OF STROBE TO BE A MINIMUM OF 15/75 CAL. DEVICE SHALL BE POWERED FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY. COLOR SHALL BE RED SYSTEM SENSOR PC2W OR EQUAL.
⊙	EXISTING FIRE ALARM HORN/STROBE	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
⊙	EXISTING FIRE ALARM HORN/STROBE	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
⊙	EXISTING FIRE ALARM HORN	EXISTING TO BE REMOVED.	REMOVE EXISTING DEVICE, WIRING J-BOX AND CONDUIT.
⊙	DUCT SMOKE DETECTOR	REPLACE EXISTING DUCT DETECTOR	SILENT KNIGHT SK-DUCT OR EQUAL

DRAWING DATE: 03/01/10  
REVISION DATE: 03/18/10

UTAH STATE FAIR PARK  
155 NORTH 1000 WEST  
SALT LAKE CITY, UTAH  
FIRE ALARM SYSTEM UPGRADE  
DFCM PROJECT #0920370

DETAILS AND CALCULATIONS  
FA-3



JOB NO. 104485  
DWG ISSUE: ADD #1  
DRAWN BY: BBH  
CHECKED BY: GTJ

REVISIONS:  
1. 3/18/10