FIRE ALARM UPGRADES: CAMP WILLIAMS

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STATE OF UTAH
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
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DFCM PROJECT NO. 10179480

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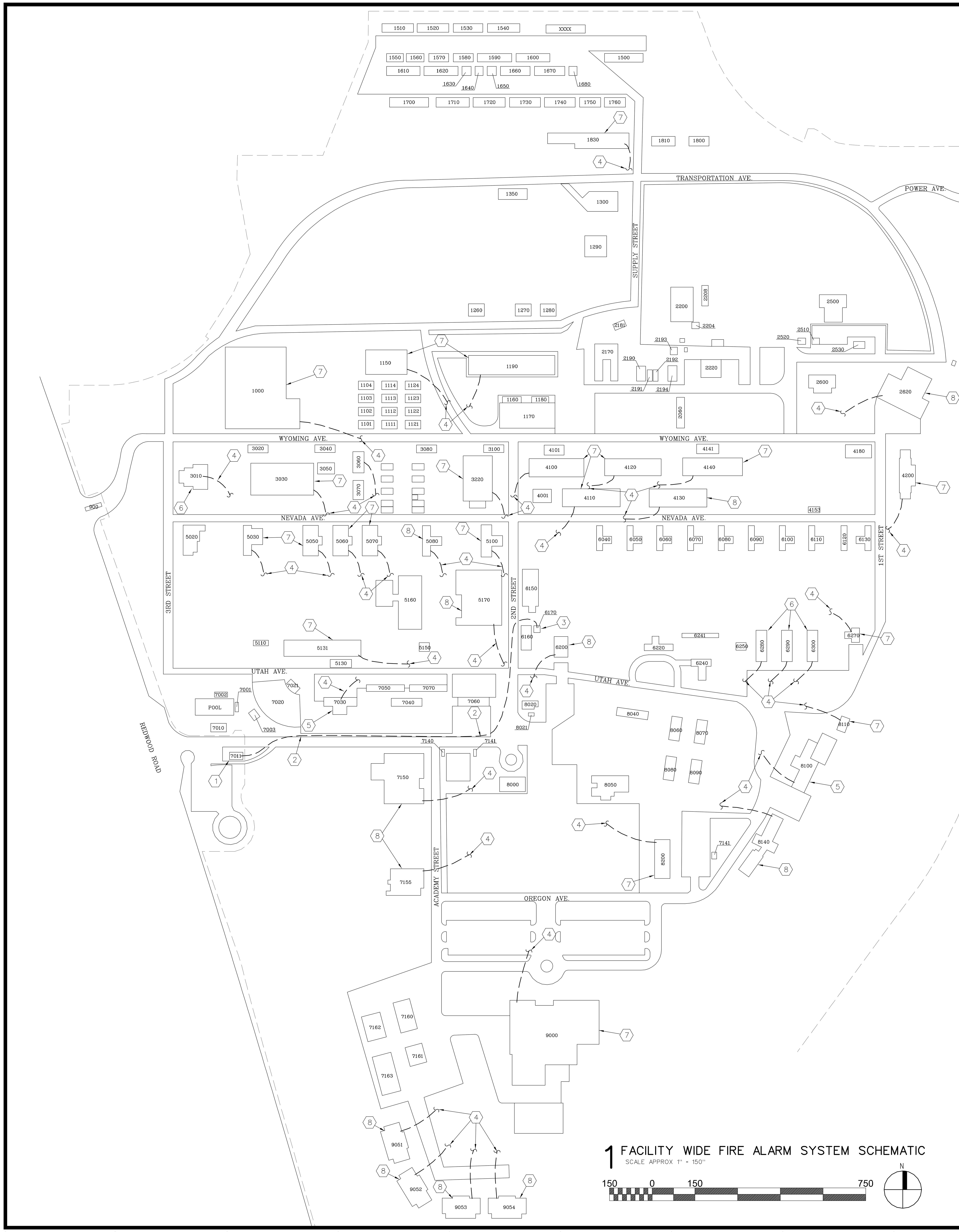
DRAWING SCHEDULE

SHEET	DRAWING TITLE
FA-0.1	FACILITY-WIDE FIRE ALARM SCHEMATIC
FA-1	FIRE ALARM PLANS BUILDINGS 6280, 6290 & 3010
FA-2	FIRE ALARM PLANS BUILDINGS 6300, 7030 & 8100
FA-3	FIRE ALARM DETAILS AND CALCULATIONS

SCHEDULE OF DEFERRED SUBMITTALS

SUB #	DESCRIPTION
1	FIRE ALARM SYSTEM SHOP DRAWINGS
2	FIRE ALARM SYSTEM EQUIPMENT CUT SHEETS
3	FIRE ALARM SYSTEM BATTERY CALCULATIONS
4	FIRE ALARM SYSTEM VOLTAGE DROP CALCULATIONS



1 FACILITY WIDE FIRE ALARM SYSTEM SCHEMATIC
SCALE APPROX 1" = 150'

150 0 150 750

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FIRE ALARM NETWORK KEY NOTES

1. EXISTING EST3 FIRE ALARM CONTROL PANEL TO REMAIN. CONFIGURE EXISTING FACP TO FUNCTION AS A FIRE ALARM REPORTING SYSTEM FOR THE FACILITY RECEIVING FIRE ALARM AND SUPERVISORY/TROUBLE SIGNALS FROM ALL NEW AND EXISTING FIRE ALARM SYSTEMS PRESENT AT CAMP WILLIAMS. FIRE ALARM AND SUPERVISORY/TROUBLE SIGNALS SHALL ANNUNCIATE BY BUILDING NUMBER. CONFIGURE FACILITY-WIDE FIRE ALARM SYSTEM AS FOLLOWS:
   A. INSTALL NEW SIGNALING LINE CIRCUIT FROM EXISTING EST3 PANEL IN BUILDING 7011 (GUARD HOUSE) TO BUILDING 6170 (TELECOM HUB).
   B. INSTALL MONITOR MODULE(S) FOR EACH FIRE ALARM SYSTEM PRESENT AT CAMP IN NEW TERMINAL CABINET IN BUILDING 6170 (TELECOM HUB).
   C. CONSTRUCT NEW INITIATING DEVICE CIRCUITS BETWEEN EACH FIRE ALARM SYSTEM AND MONITOR MODULES USING EXISTING WIRING (UNUSED PHONE LINES) PROVIDED BY OWNER AND PRESENT BETWEEN BUILDING 6170 (TELECOM HUB) AND ALL OTHER BUILDINGS.
   D. CONNECT INITIATING DEVICE CIRCUITS FOR EACH BUILDING TO FIRE ALARM, SUPERVISORY AND TROUBLE RELAYS AT EACH EXISTING FIRE ALARM CONTROL PANEL.
   E. PROGRAM FACILITY-WIDE FIRE ALARM CONTROL PANEL TO ANNUNCIATE FIRE ALARM AND SUPERVISORY/TROUBLE SIGNALS BY BUILDING NUMBER.
2. INSTALL NEW SIGNALING LINE CIRCUIT (4 CONDUCTOR - 18 AWG MINIMUM) FROM EXISTING EST3 FACILITY-WIDE FACP IN BUILDING 7011 (GUARD HOUSE) TO BUILDING 6170 (TELECOM HUB). INSTALL CIRCUIT IN EXISTING BURIED CONDUIT SUPPLIED BY OWNER. OUT-GOING AND RETURN CONDUCTORS MAY BE INSTALLED IN SAME BURIED CONDUIT BUT SHALL BE INSTALLED IN SEPARATE RACEWAYS (CLASS A) WITHIN BUILDINGS.
3. INSTALL TERMINAL CABINET(S) AND EST MONITOR MODULES FOR FACILITY-WIDE FIRE ALARM REPORTING SYSTEM IN BUILDING 6170 (TELECOM HUB). COORDINATE CABINET LOCATION(S) WITH OWNER. PROVIDE A SUFFICIENT NUMBER OF MODULES TO ALLOW A DISTINCT DEVICE ADDRESS FOR FIRE ALARM AND SUPERVISORY/TROUBLE RELAYS AT EACH FACP IN EACH BUILDING. LABEL EACH MODULE WITH BUILDING NUMBER CONNECTED TO THE MODULE. SIZE CABINETS TO HAVE EXCESS CAPACITY (CAPACITY FOR AN ADDITIONAL 10 MODULES) TO FACILITATE FUTURE EXPANSION OF FACILITY-WIDE FIRE ALARM REPORTING SYSTEM.
4. CONSTRUCT NEW INITIATING DEVICE CIRCUITS FROM EST MONITOR MODULES IN BUILDING 6170 (TELECOM HUB) AND FIRE ALARM AND SUPERVISORY/TROUBLE RELAYS OF EVERY FIRE ALARM SYSTEM AT CAMP WILLIAMS. CONSTRUCT INITIATING DEVICE CIRCUITS USING EXISTING WIRING (UNUSED PHONE LINES) PROVIDED BY OWNER. EXTEND CIRCUITS INSIDE EACH BUILDING FROM TELEPHONE BOARD TO FACP AS REQUIRED. ALL NEW WIRING INSIDE BUILDING SHALL BE INSTALLED IN ½" CONDUIT. INITIATING DEVICE CIRCUITS MAY BE CLASS B.
5. INSTALL NEW ADDRESSABLE FIRE ALARM SYSTEM THROUGHOUT BUILDING AS INDICATED ON DRAWINGS. FIRE ALARM SYSTEM AS INDICATED ON DRAWINGS. CONNECT NEW FIRE ALARM CONTROL PANEL TO FACILITY-WIDE FIRE ALARM REPORTING SYSTEM (SEE KEY NOTES 1-4 ABOVE).
6. EXISTING FIRE ALARM SYSTEM TO BE REMOVED AND REPLACED WITH NEW ADDRESSABLE FIRE ALARM SYSTEM AS INDICATED ON DRAWINGS. CONNECT NEW FIRE ALARM CONTROL PANEL TO FACILITY-WIDE FIRE ALARM REPORTING SYSTEM (SEE KEY NOTES 1-4 ABOVE).
7. EXISTING FIRE ALARM SYSTEM IN BUILDING TO RECEIVE MINOR MAINTENANCE/ADJUSTMENT AS INDICATED IN SCOPE OF WORK SCHEDULE ON THIS SHEET. CONNECT EXISTING FIRE ALARM CONTROL PANEL TO FACILITY-WIDE FIRE ALARM REPORTING SYSTEM (SEE KEY NOTES 1-4 ABOVE).
8. EXISTING FIRE ALARM SYSTEM IN BUILDING TO REMAIN. CONNECT EXISTING FIRE ALARM CONTROL PANEL TO FACILITY-WIDE FIRE ALARM REPORTING SYSTEM (SEE KEY NOTES 1-4 ABOVE).

FIRE ALARM NETWORK KEY NOTES

BUILDING	SCOPE OF WORK
1000 (47,000 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE HORN/STROBE IN FREEZER WITH NEW WEATHERPROOF DEVICE 3. ADD SMOKE DETECTOR ABOVE FACP 4. REPLACE FLOW SWITCH 5. REPLACE PULL STATION 6. CLEAN SMOKE DETECTORS (CEILING AND DUCT MOUNTED)
1150 (10,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE FACP BATTERIES 3. INSTALL NEW 120 VAC POWER SUPPLY (PER NFPA 70 & 72) 4. TEST AND TROUBLESHOOT SYSTEM
1190 (18,800 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. CLEAN SMOKE DETECTORS 3. REPLACE EXISTING SMOKE DETECTOR IN BREAK ROOM 4. REPLACE BATTERIES (10) 5. REPLACE EXTERIOR WEATHERPROOF HORN/STROBES (3) 6. ADD HEAT DETECTORS IN STORAGE AREA IN UPSTAIRS BREAK ROOM (2) 7. ADD HEAT DETECTORS IN FAN ROOM ABOVE SHOP (2) 8. ADD HEAT DETECTORS IN MAINTENANCE BAY AREA (4) 9. ADD HORN/STROBES IN MAINTENANCE BAY AREA (2) 10. ADD STROBE IN SHOWER ROOM AND BATHROOM (2)
1830 (13,000 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. ADJUST RETARD ON FLOW SWITCH TO 90 SECONDS (MAX) 3. INSTALL MODULES TO SYNCHRONIZE STROBES
2620 (20,800 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
3010 (8,100 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REMOVE CONVENTIONAL FA SYSTEM AND REPLACE WITH NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
3030 (20,000 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE BATTERIES (8) 3. CLEAN SMOKE DETECTORS (CEILING AND DUCT MOUNTED) 4. REPLACE EXTERIOR HORN/STROBES (4) 5. ADD HORN/STROBES IN BAY AREA (2) 6. INSTALL MODULES TO SYNCHRONIZE STROBES
3060 (3,450 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE BATTERIES (2) 3. UNCOVER PULL STATION LOCATED INSIDE WALL 4. ADD SMOKE DETECTORS (4) 5. ADD LOCK TO FACP CABINET 6. REPLACE EXTERIOR HORN/STROBE (1) 7. ADD STROBE IN BATHROOM (1)
3220 (12,900 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE BATTERIES (4) 3. ADD SMOKE DETECTOR ABOVE FACP 4. CLEAN SMOKE DETECTORS
4100 (7,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REWIRE BATTERIES (2) 3. ADD HORN/STROBES IN BATHROOM (1) 4. ADD LOCK TO FACP CABINET
4110 (7,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE EXTERIOR HORN/STROBE (1)
4120 (7,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. ADD STROBES IN BATHROOMS (4)
4130 (7,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
4140 (7,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE BATTERIES (4) 3. CLEAN SMOKE DETECTORS 4. REPLACE HORN/STROBES (1)
4200 (6,400 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. CLEAN SMOKE DETECTORS
5030 (8,600 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5050 (5,100 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5060 (5,100 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5070 (5,100 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5080 (3,800 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5100 (3,800 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
5131 (13,700 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE BATTERIES (4) 3. RELOCATE HEAT DETECTORS IN STORAGE ROOM 4. TEST AND TROUBLESHOOT SYSTEM
5170 (24,700 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
6200 (4,000 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
6270 (1,650 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE EXTERIOR HORN/STROBE (1) 3. REPLACE SMOKE DETECTORS IN KITCHEN WITH HEAT DETECTORS (3) 4. REPLACE SMOKE DETECTORS IN CORRIDOR 5. REPLACE BATTERIES (2)
6280 (2,900 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REMOVE EXISTING CONVENTIONAL FA SYSTEM AND REPLACE WITH NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
6290 (2,900 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REMOVE EXISTING CONVENTIONAL FA SYSTEM AND REPLACE WITH NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
6300 (2,900 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REMOVE EXISTING CONVENTIONAL FA SYSTEM AND REPLACE WITH NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
7030 (4,800 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. INSTALL NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
7150 (2,800 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
7155	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
8100 (2,500 SQ FT)	1. CONNECT NEW FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. INSTALL NEW ADDRESSABLE FA SYSTEM AS INDICATED ON DRAWINGS
8110 (2,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. CLEAN SMOKE DETECTORS 3. REPLACE BATTERIES (2) 4. REPAIR/REUSE ANNUNCIATOR 5. ADD SMOKE DETECTOR ABOVE FACP 6. ADD STROBE IN BATHROOM (1) 7. ADD HORN/STROBE IN LAUNDRY ROOM (1)
8140 (4,500 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
8200 (8,300 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. ADD LOCK TO FACP CABINET 3. REPLACE BATTERIES (2)
9000	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM 2. REPLACE SMOKE DETECTORS IN KITCHEN WITH HEAT DETECTORS (4) 3. RELOCATE SMOKE DETECTOR IN CORRIDOR AWAY FROM VENT (1) 4. REPLACE HORNS IN KITCHEN WITH HORN/STROBES (4)
9051 (7,400 SQ FT)	1. CONNECT EXISTING FACP TO FACILITY FIRE ALARM REPORTING SYSTEM
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08/02/10

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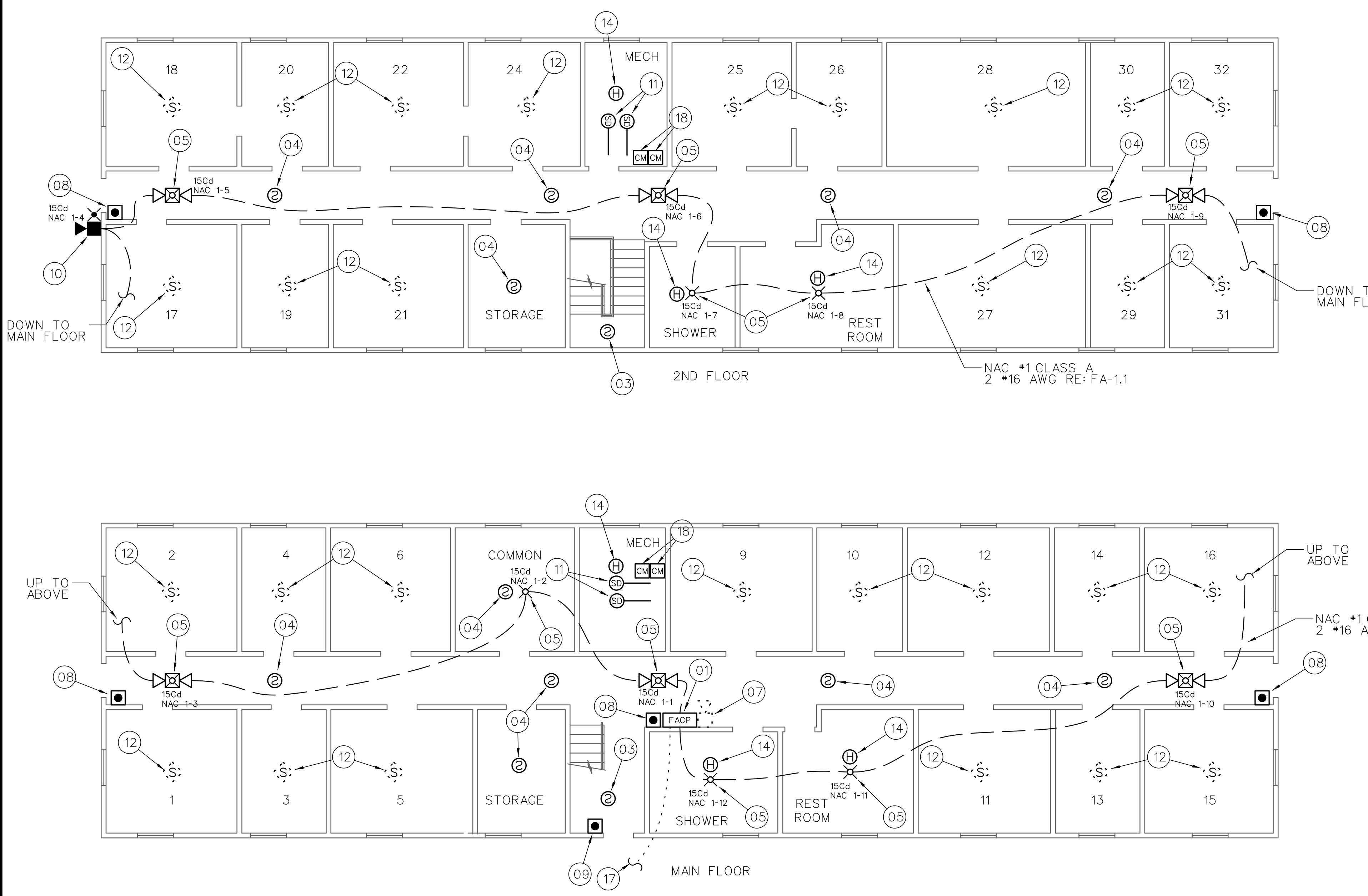
FACILITY WIDE - FIRE ALARM SYSTEM
CAMP WILLIAMS, UT

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 10179480

FA-0.1



BARRACKS (6280) FIRE ALARM PLAN

1/8" = 1'-0"

0 8' 16' 32'

1 VOLTAGE DROP CALCULATIONS BARRACKS (6280) - NAC #1

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref.Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	10	10	15	0.079	0.883	20.311	0.436	1
1	30	40	15	0.066	0.804	20.068	1.197	2
2	50	90	15	0.079	0.738	19.696	1.853	3
3	30	120	15	0.079	0.659	19.497	1.012	4
4	15	135	15	0.079	0.58	19.409	0.450	5
5	55	190	15	0.079	0.501	19.131	1.431	6
6	20	210	15	0.066	0.422	19.046	0.445	7
7	20	230	15	0.066	0.356	18.975	0.377	8
8	50	280	15	0.079	0.29	18.829	0.770	9
9	30	310	15	0.079	0.211	18.765	0.339	10
10	40	350	15	0.066	0.132	18.712	0.284	11
11	20	370	15	0.066	0.066	18.698	0.071	12
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	370			**0.883**			**8.66**	

2 VOLTAGE DROP CALCULATIONS SPECIAL FORCES (3010) - NAC #1

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref.Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	25	25	15	0.079	1.006	20.147	1.242	1
1	2	27	15	0.079	0.927	20.128	0.093	2
2	30	57	30	0.107	0.848	19.871	1.274	3
3	20	77	15	0.079	0.741	19.722	0.752	4
4	50	127	15	0.079	0.662	19.389	1.691	5
5	30	157	15	0.079	0.583	19.212	0.909	6
6	50	207	15	0.066	0.504	18.958	1.322	7
7	25	232	15	0.079	0.438	18.848	0.582	8
8	25	257	15	0.066	0.359	18.758	0.480	9
9	40	297	30	0.107	0.293	18.639	0.630	10
10	35	332	30	0.107	0.186	18.574	0.352	11
11	40	372	15	0.079	0.079	18.542	0.171	12
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	372			**1.006**			**9.50**	

3 VOLTAGE DROP CALCULATIONS SPECIAL FORCES (3010) - NAC #2

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref.Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	25	25	15	0.079	1.021	20.143	1.261	1
1	25	50	15	0.079	0.942	19.905	1.178	2
2	20	70	15	0.066	0.863	19.732	0.874	3
3	20	90	15	0.066	0.797	19.571	0.814	4
4	50	140	15	0.079	0.731	19.203	1.882	5
5	40	180	15	0.079	0.652	18.940	1.369	6
6	20	200	15	0.066	0.573	18.824	0.610	7
7	30	230	30	0.107	0.507	18.671	0.814	8
8	30	260	30	0.107	0.4	18.550	0.648	9
9	40	300	30	0.107	0.293	18.432	0.637	10
10	35	335	30	0.107	0.186	18.366	0.356	11
11	35	370	15	0.079	0.079	18.338	0.152	12
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	370			**1.021**			**10.59**	

4 VOLTAGE DROP CALCULATIONS BARRACKS (6290) - NAC #1

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref.Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	10	10	15	0.079	0.883	20.311	0.436	1
1	30	40	15	0.066	0.804	20.068	1.197	2
2	50	90	15	0.079	0.738	19.696	1.853	3
3	30	120	15	0.079	0.659	19.497	1.012	4
4	15	135	15	0.079	0.58	19.409	0.450	5
5	55	190	15	0.079	0.501	19.131	1.431	6
6	20	210	15	0.066	0.422	19.046	0.445	7
7	20	230	15	0.066	0.356	18.975	0.377	8
8	50	280	15	0.079	0.29	18.829	0.770	9
9	30	310	15	0.079	0.211	18.765	0.339	10
10	40	350	15	0.066	0.132	18.712	0.284	11
11	20	370	15	0.066	0.066	18.698	0.071	12
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	370			**0.883**			**8.66**	

5 FACP BATTERY CALCULATIONS BARRACKS (6280)

SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	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	6	0.0006	0.0036	0.0006	0.0036
SK-PHOTO	SMOKE DETECTOR	10	0.0006	0.0060	0.0006	0.0060
SK-DUCT	DUCT SMOKE DETECTOR	4	0.0006	0.0024	0.0006	0.0024
SK-MINIMON	MONITOR MODULE	0	0.0006	0.0000	0.0006	0.0000
RIXSON 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	6	0.0006	0.0036	0.0006	0.0036
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	2.0000	2.0000
TOTAL				0.2156		2.3406
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						5.9

6 FACP BATTERY CALCULATIONS SPECIAL FORCES (3010)

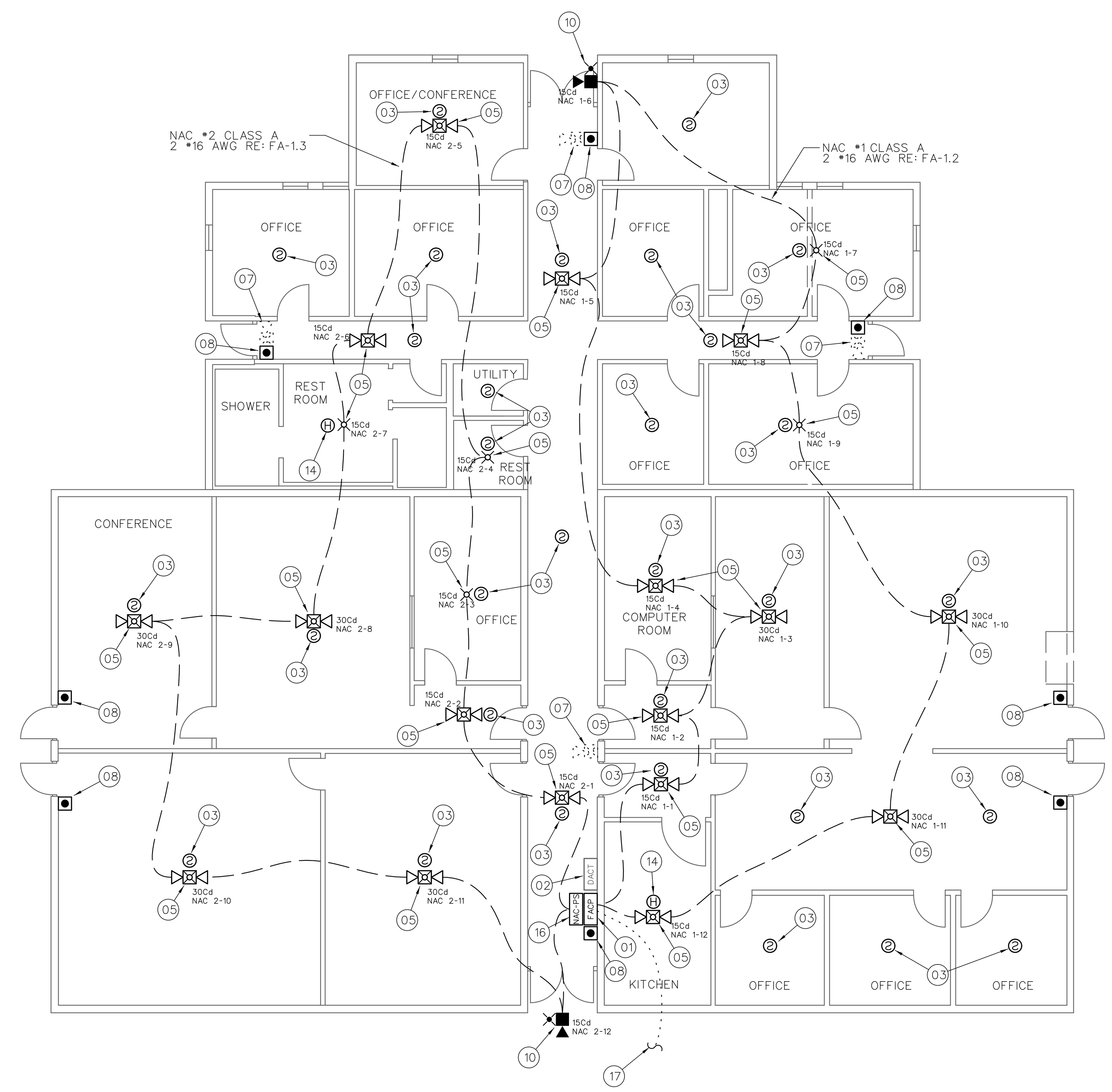
SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	CONTROL PANEL	1	0.2000	0.2000	0.3250	0.3250
5860	ANNUNCIATOR	0	0.0200	0.0000	0.0250	0.0000
SK-PULL-DA	PULL STATION	8	0.0006	0.0048	0.0006	0.0048
SK-PHOTO	SMOKE DETECTOR	29	0.0006	0.0174	0.0006	0.0174
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
RIXSON 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	2.0000	2.0000
TOTAL				0.2234		2.3484
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						6.1

7 FACP BATTERY CALCULATIONS BARRACKS (6290)

SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	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	6	0.0006	0.0036	0.0006	0.0036
SK-PHOTO	SMOKE DETECTOR	10	0.0006	0.0060	0.0006	0.0060
SK-DUCT	DUCT SMOKE DETECTOR	4	0.0006	0.0024	0.0006	0.0024
SK-MINIMON	MONITOR MODULE	0	0.0006	0.0000	0.0006	0.0000
RIXSON 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	6	0.0006	0.0036	0.0006	0.0036
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	2.0000	2.0000
TOTAL				0.2156		2.3406
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						5.9

8 REMOTE POWER SUPPLY BATTERY CALCULATIONS SPECIAL FORCES (3010)

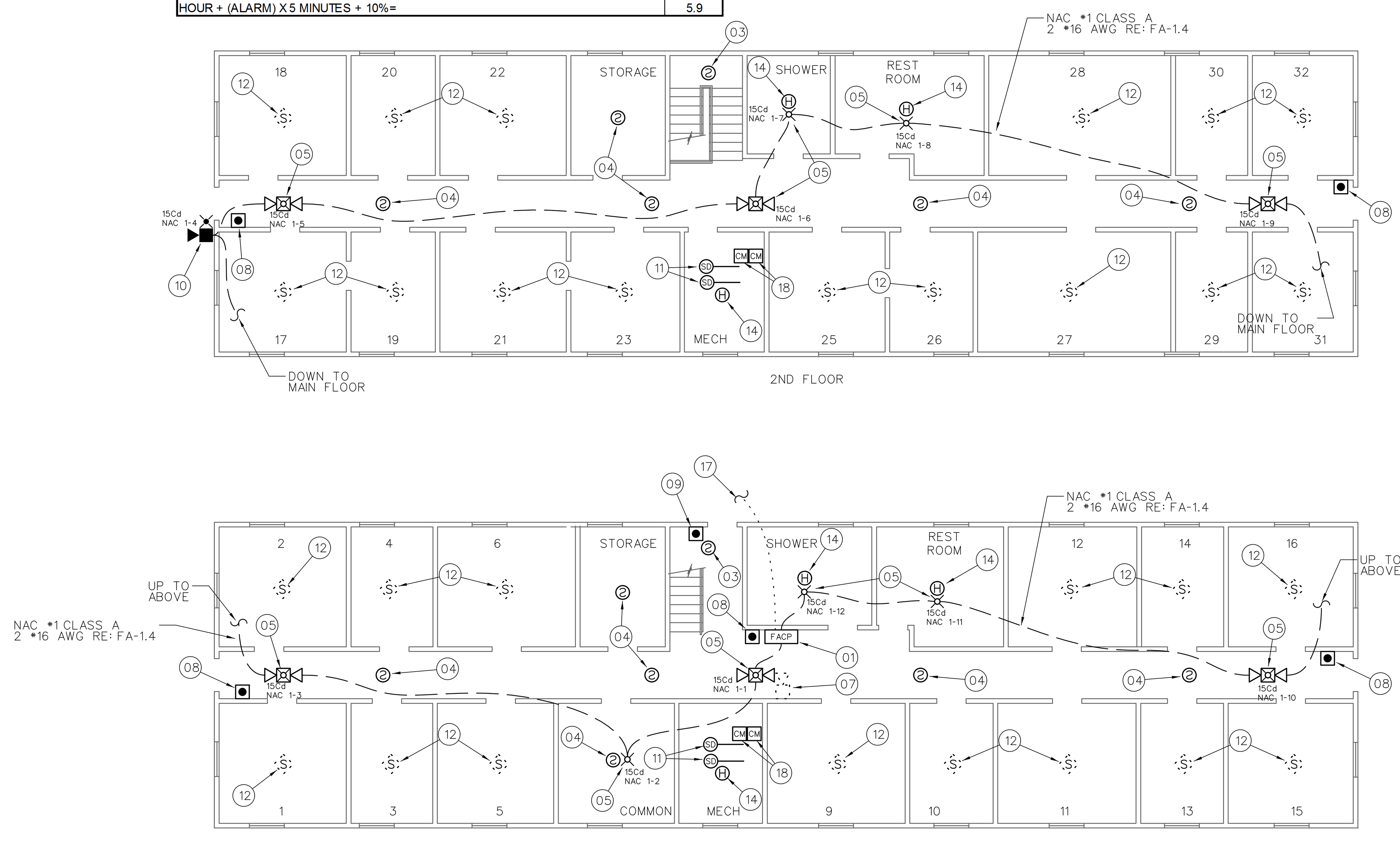
SILENT KNIGHT 5495 NAC POWER SUPPLY BATTERY CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5495	NAC POWER SUPPLY	1	0.0750	0.0750	0.1750	0.1750
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	2.0000	2.0000
NAC #2	NOTIFICATION CIRCUIT	1	0.0000	0.0000	0.0000	0.0000
TOTAL				0.0750		2.1750
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						2.2



SPECIAL FORCES (3010) FIRE ALARM PLAN

1/8" = 1'-0"

0 8' 16' 32'



BARRACKS (6290) FIRE ALARM PLAN

1/8" = 1'-0"

0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING FIRE ALARM CONTROL PANEL (FACP) WITH 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 OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER. EXISTING 120 VAC DEDICATED POWER MAY BE RE-USED.

02 REMOVE EXISTING FIRE ALARM COMMUNICATOR AND ENCLOSURE. PATCH, REPAIR AND/OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.

03 FURNISH AND INSTALL NEW SMOKE DETECTOR AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

04 REPLACE EXISTING SMOKE DETECTOR WITH NEW SMOKE DETECTOR AS SHOWN ON PLAN. 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.

05 FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.

06 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.

07 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.

08 REPLACE EXISTING MANUAL PULL STATION WITH NEW 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. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.

09 FURNISH AND INSTALL NEW 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.

10 REPLACE EXISTING EXTERIOR NOTIFICATION APPLIANCE WITH NEW WEATHER-PROOF HORN/STROBE AS SHOWN ON PLAN. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION AND WATER-PROOF. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.

11 FURNISH AND INSTALL NEW DUCT SMOKE DETECTOR ON HVAC DUCTWORK AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A SUPERVISORY SIGNAL.

12 EXISTING SINGLE STATION SMOKE DETECTOR TO REMAIN.

13 FURNISH AND INSTALL NEW MONITOR MODULE TO MONITOR ACTIVATION OF EXISTING WET-CHEMICAL COOKING HOOD. CONNECT MODULE TO EXISTING CONTACTS ON HOOD SUPPRESSION SYSTEM. CONNECT MODULE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

14 FURNISH AND INSTALL NEW SMOKE OR HEAT DETECTOR AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALLING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

15 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 SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER. PROVIDE NEW 120 VAC POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.

16 FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY (SILENT KNIGHT 5495 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 FLASSHED OF ALL NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. PROVIDE NEW 120 VAC POWER FROM DEDICATED CIRCUIT.

17 CONSTRUCT NEW INITIATING DEVICE CIRCUIT FROM EST MONITOR MODULE IN BUILDING 8020 (TELECOM HUB) AND FIRE ALARM CONTROL PANEL. RE: FA-0.1 KEY NOTE 4.

18 FURNISH AND INSTALL NEW CONTROL RELAY TO SHUT DOWN AIR HANDLERS UPON ACTIVATION OF FIRE ALARM. CONNECT TO NEW SIGNALING LINE CIRCUIT.

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
ANN	NEW FIRE ALARM REMOTE ANNUNCIATOR PANEL	MOUNT ON NEW OR EXISTING J-BOX RECESSED INTO WALL.	SILENT KNIGHT 5860 OR EQUAL
NAC-PS	NEW INTELLIGENT POWER SUPPLY.	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5495 OR EQUAL
	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX.	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWING AT A MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PHOTO OR EQUAL
S	EXISTING SINGLE STATION SMOKE DETECTOR	EXISTING CEILING MOUNT	EXISTING TO REMAIN.
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
	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
CM	NEW ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE CONTROLLED	TO SHUT DOWN AIR HANDLERS UPON ACTIVATION OF FIRE ALARM. SILENT KNIGHT SK-RELAY OR EQUAL
MM	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 PC2R 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 P2R 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 SCR OR EQUAL
	NEW EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT HEIGHT INDIACTED ON DWGS	CANDELA RATING OF STROBE TO BE A MINIMUM OF 15/75 Cd. DEVICE SHALL BE POWERED BY FACP OR REMOTE POWER SUPPLY. COLOR SHALL BE RED. DEVICE SHALL BE LISTED FOR EXTERIOR INSTALLATION
	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.

08/02/10

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DRAWING DATE: 08/02/10
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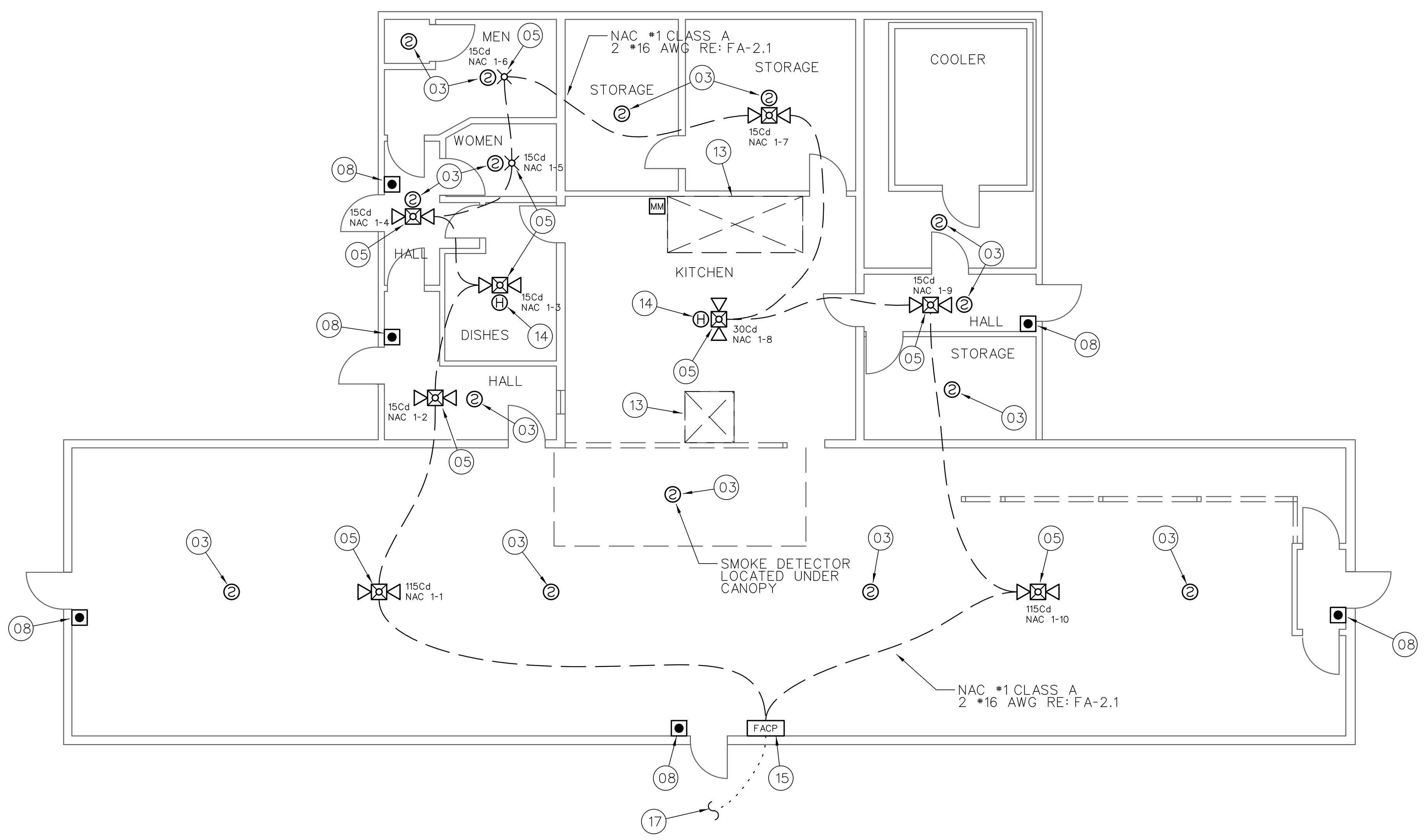
FACILITY WIDE - FIRE ALARM SYSTEM
CAMP WILLIAMS, UT

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 10179480

BARRACKS (6280 & 6290) & SPECIAL FORCES (3010) FIRE ALARM PLAN

FA-1



MESS HALL (7030) FIRE ALARM PLAN

1/8" = 1'-0"

0 8' 16' 32'

1 VOLTAGE DROP CALCULATIONS MESS HALL (7030) - NAC #1

Physical Parameters								
Source Voltage					20.4	V		
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref. Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	55	55	115	0.218	1.07	19.807	2.907	1
1	25	80	15	0.079	0.852	19.592	1.084	2
2	15	95	15	0.079	0.773	19.475	0.596	3
3	15	110	15	0.079	0.694	19.371	0.539	4
4	15	125	15	0.066	0.615	19.278	0.480	5
5	15	140	15	0.066	0.549	19.195	0.430	6
6	30	170	15	0.079	0.483	19.049	0.761	7
7	30	200	30	0.107	0.404	18.926	0.641	8
8	25	225	15	0.079	0.297	18.852	0.395	9
9	35	260	115	0.218	0.218	18.775	0.408	10
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	260			1.07			8.24	

2 VOLTAGE DROP CALCULATIONS OFFICER'S CLUB (8100) - NAC #1

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref. Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	50	50	15	0.079	1.1	19.846	2.717	1
1	15	65	15	0.066	1.021	19.691	0.778	2
2	15	80	15	0.066	0.955	19.547	0.733	3
3	15	95	15	0.079	0.889	19.413	0.687	4
4	25	120	15	0.079	0.81	19.209	1.051	5
5	85	205	15	0.066	0.731	18.582	3.260	6
6	25	230	15	0.066	0.665	18.415	0.902	7
7	50	280	75	0.176	0.599	18.113	1.639	8
8	85	365	30	0.107	0.423	17.751	2.000	9
9	35	400	15	0.079	0.316	17.639	0.628	10
10	40	440	15	0.079	0.237	17.544	0.542	11
11	20	460	15	0.079	0.158	17.512	0.182	12
12	40	500	15	0.079	0.079	17.480	0.182	13
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	500			1.1			15.30	

3 VOLTAGE DROP CALCULATIONS BARRACKS (6300) - NAC #1

Physical Parameters								
Source Voltage						20.4	V	
Wire Gauge			16	AWG		2580	cmil	
Wire Resistivity						13	Ohm-cmil/ft	
Ref. Start No.	Device/device Distance (feet)	Cumulative Distance (feet)	Light Intensity (Cd/dBA)	Device Current (Amps)	Circuit Current (Amps)	Device Voltage (Vdc)	% Voltage Drop	Ref. End No.
FACP	10	10	15	0.079	0.883	20.311	0.436	1
1	30	40	15	0.066	0.804	20.068	1.197	2
2	50	90	15	0.079	0.738	19.696	1.853	3
3	30	120	15	0.079	0.659	19.497	1.012	4
4	15	135	15	0.079	0.58	19.409	0.450	5
5	55	190	15	0.079	0.501	19.131	1.431	6
6	20	210	15	0.066	0.422	19.046	0.445	7
7	20	230	15	0.066	0.356	18.975	0.377	8
8	50	280	15	0.079	0.29	18.829	0.770	9
9	30	310	15	0.079	0.211	18.765	0.339	10
10	40	350	15	0.066	0.132	18.712	0.284	11
11	20	370	15	0.066	0.066	18.698	0.071	12
Total Circuit Length			Total Circuit Current			Total Circuit Voltage Drop %		
	370			0.883			8.66	

4 FACP BATTERY CALCULATIONS MESS HALL (7030)

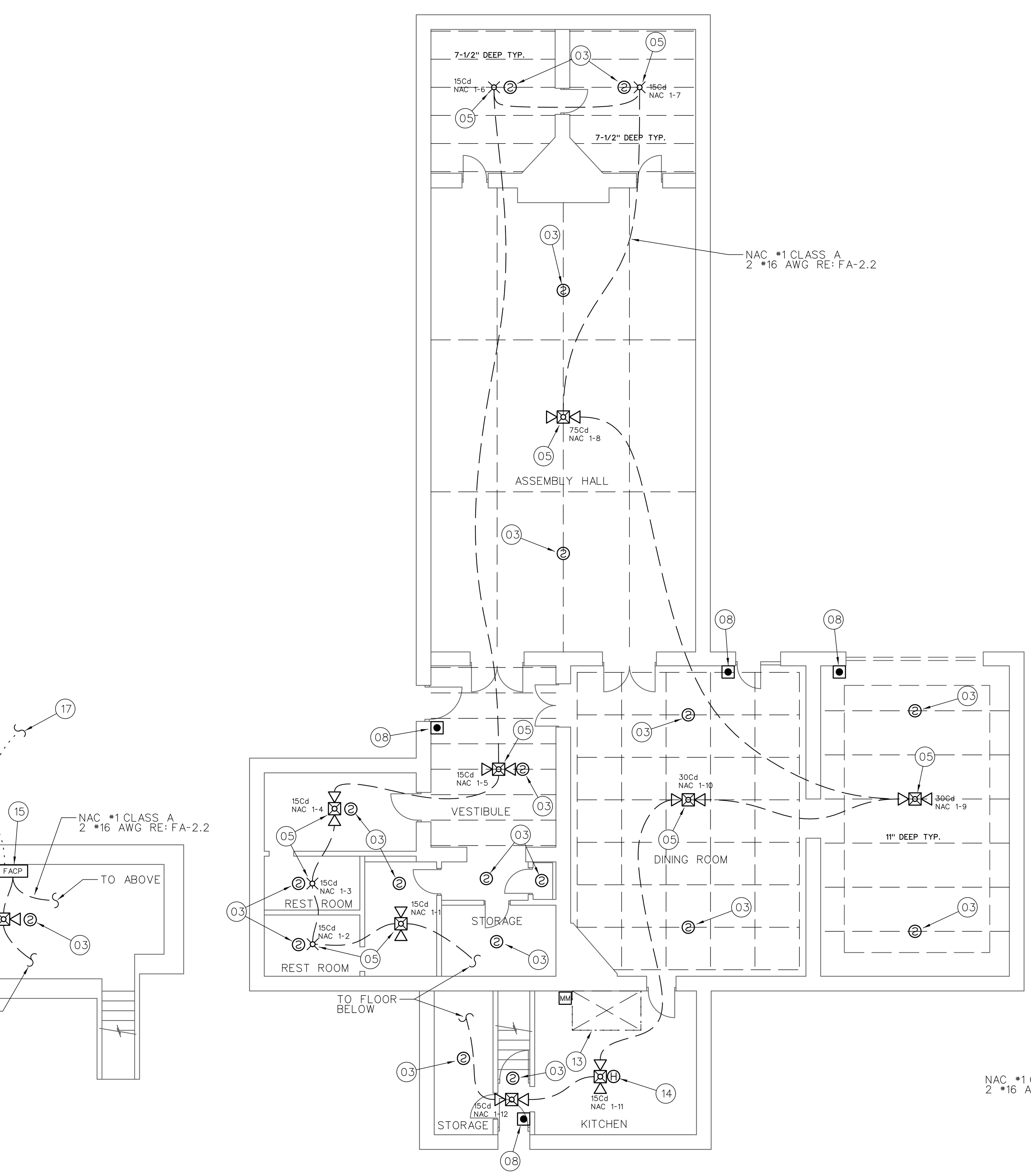
SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	CONTROL PANEL	1	0.2000	0.2000	0.3250	0.3250
5860	ANNUNCIATOR	0	0.0200	0.0000	0.0250	0.0000
SK-PULL-DA	PULL STATION	6	0.0006	0.0036	0.0006	0.0036
SK-PHOTO	SMOKE DETECTOR	15	0.0006	0.0090	0.0006	0.0090
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0006	0.0000	0.0006	0.0000
SK-MINIMON	MONITOR MODULE	1	0.0006	0.0006	0.0006	0.0006
RIXSON 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	2.0000	2.0000
TOTAL				0.2144		2.3394
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						5.9

5 FACP BATTERY CALCULATIONS OFFICER'S CLUB (8100)

SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	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	19	0.0006	0.0114	0.0006	0.0114
SK-DUCT	DUCT SMOKE DETECTOR	0	0.0006	0.0000	0.0006	0.0000
SK-MINIMON	MONITOR MODULE	1	0.0006	0.0006	0.0006	0.0006
RIXSON 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	1	0.0006	0.0006	0.0006	0.0006
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	2.0000	2.0000
TOTAL				0.2150		2.3400
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						5.9

6 FACP BATTERY CALCULATIONS BARRACKS (6300)

SILENT KNIGHT 5700 FIRE PANEL CALCULATIONS			REQUIRED CURRENT (STANDBY)		REQUIRED CURRENT (ALARM)	
PART	DESCRIPTION	QTY	EACH (A)	TOTAL (A)	EACH (A)	TOTAL (A)
5700	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	6	0.0006	0.0036	0.0006	0.0036
SK-PHOTO	SMOKE DETECTOR	10	0.0006	0.0060	0.0006	0.0060
SK-DUCT	DUCT SMOKE DETECTOR	4	0.0006	0.0024	0.0006	0.0024
SK-MINIMON	MONITOR MODULE	0	0.0006	0.0000	0.0006	0.0000
RIXSON 996	DOOR HOLD-OPEN DEVICE	0	0.0200	0.0000	0.0000	0.0000
SK-HEAT	HEAT DETECTOR	6	0.0006	0.0036	0.0006	0.0036
NAC #1	NOTIFICATION CIRCUIT	1	0.0000	0.0000	2.0000	2.0000
TOTAL				0.2156		2.3406
SECONDARY STANDBY BATTERY CALCULATIONS: (STANDBY) X 24 HOUR + (ALARM) X 5 MINUTES + 10%=						5.9



OFFICER'S CLUB (8100) FIRE ALARM PLAN

1/8" = 1'-0"

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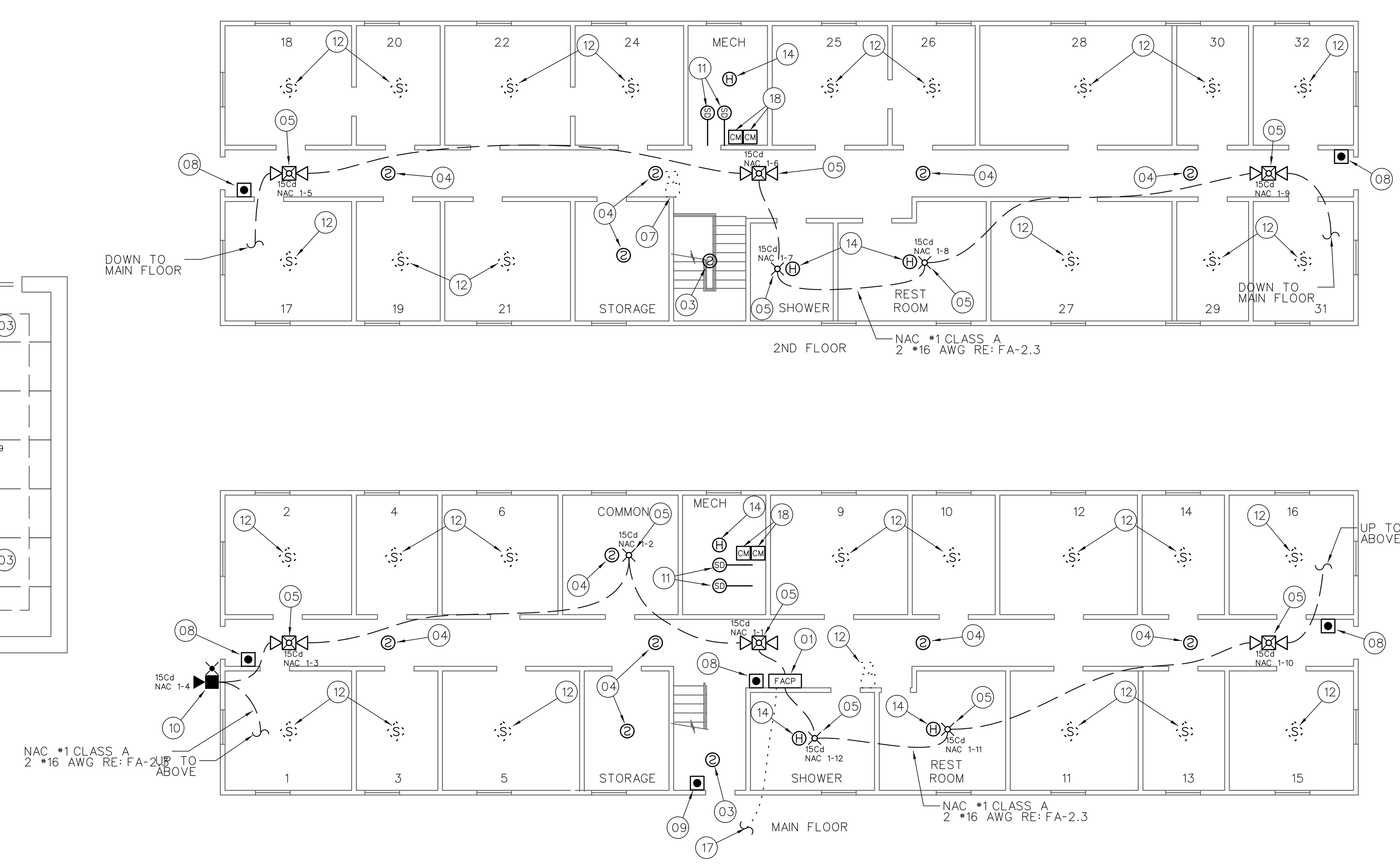

BARRACKS (6300) FIRE ALARM PLAN

1/8" = 1'-0"

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02 REMOVE EXISTING FIRE ALARM COMMUNICATOR AND ENCLOSURE. PATCH, REPAIR AND/OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.

03 FURNISH AND INSTALL NEW SMOKE DETECTOR AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

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FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
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NAC-PS	NEW INTELLIGENT POWER SUPPLY.	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5495 OR EQUAL
	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX.	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWING AT A MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PHOTO OR EQUAL
S	EXISTING SINGLE STATION SMOKE DETECTOR	EXISTING CEILING MOUNT	EXISTING TO REMAIN.
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
	NEW ADDRESSABLE MANUAL PULL STATION.	WALL MOUNT AT 48" AFF ON NEW OR EXISTING J-BOX.	SILENT KNIGHT SK-PULL-DA OR EQUAL
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CM	NEW ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE CONTROLLED	TO SHUT DOWN AIR HANDLERS UPON ACTIVATION OF FIRE ALARM. SILENT KNIGHT SK-RELAY OR EQUAL
MM	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 PC2R 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 P2R 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 SCR OR EQUAL
	NEW EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT HEIGHT INDIACTED ON DWGS	CANDELA RATING OF STROBE TO BE A MINIMUM OF 15/75 Cd. DEVICE SHALL BE POWERED BY FACP OR REMOTE POWER SUPPLY. COLOR SHALL BE RED. DEVICE SHALL BE LISTED FOR EXTERIOR INSTALLATION
	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.

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FACILITY WIDE - FIRE ALARM SYSTEM
CAMP WILLIAMS, UT

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 10179480

BARRACKS (6300), MESS HALL (7030) & OFFICER'S CLUB (8100) BUILDINGS FIRE ALARM PLAN

FA-2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE REMOVAL OF EXISTING CONVENTIONAL FIRE ALARM SYSTEMS INCLUDING ALL CONTROL EQUIPMENT, POWER SUPPLIES, CABINETS, INIT. 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.

2. APPLICABLE CODES/STANDARDS:
   INTERNATIONAL BUILDING CODE - 2009 EDITION
   INTERNATIONAL FIRE CODE - 2009 EDITION
   UTAH STATE FIRE MARSHAL RULE R710-4
   NFPA 70 - 2008 EDITION
   NFPA 72 - 2007 EDITION
   NFPA 101 - 2009 EDITION

3. 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.

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR FIRE ALARM 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 IFC 907.1.1.

5. 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.

6. 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.

7. 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.

8. WIRING/CONDUIT: ALL WIRING SHALL BE NEW (EXISTING WIRING MAY NOT BE RE-USED) AND SHALL BE FREE OF OPENS, 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. MINIMUM CONDUIT SIZE SHALL BE 1/2". CONDUIT SHALL BE CONCEALED IN FINISHED AREAS AND MAY BE EXPOSED IN UNFINISHED AREAS. PAINT EXPOSED CONDUIT TO MATCH COLOR OF SURROUNDING BUILDING ELEMENTS. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE, POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER NFPA 70 ARTICLE 760.

9. 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.

10. POWER: EXISTING DEDICATED BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW FACP AND REMOTE NOTIFICATION CIRCUIT POWER SUPPLIES. 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.

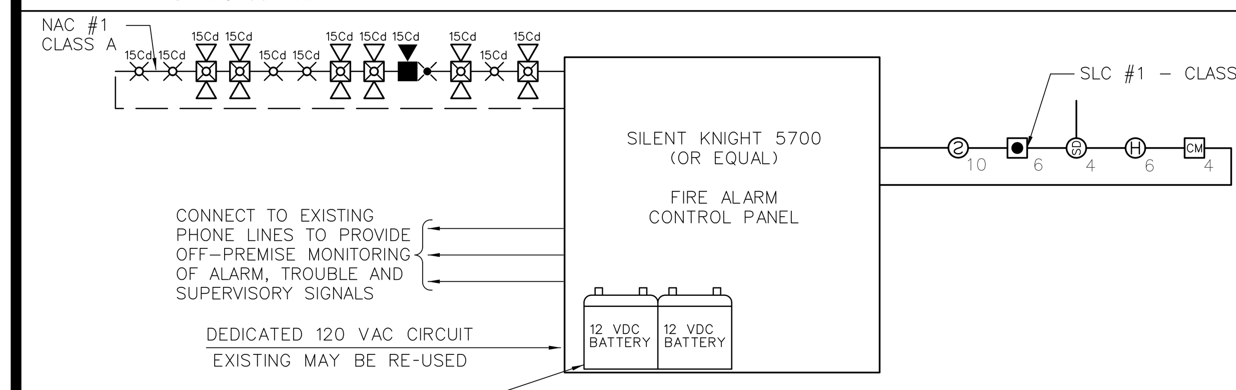
11. INITIATING DEVICES:
    WET CHEMICAL FIRE SUPPRESSION SYSTEMS: PROVIDE MONITOR MODULES TO INTERFACE ACTUATION RELAYS OF EXISTING FIRE SUPPRESSION SYSTEMS WITH NEW FACP.
    SMOKE DETECTORS: PROVIDE SMOKE DETECTORS WHERE SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES. MAXIMUM SPACING OF DETECTORS SHALL 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.

12. 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.

13. FIRE SAFETY FUNCTIONS: CONTROL MODULE WITH RELAY CONTACTS SHALL BE INSTALLED AND PROGRAMMED TO PROVIDE DOOR RELEASE AND FAN SHUTDOWN. THE CONTROL RELAY MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM. PROVIDE A SCHEDULE OF PROPOSED WORK TO OWNER FOR APPROVAL PRIOR TO INITIATING WORK.

15. 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.

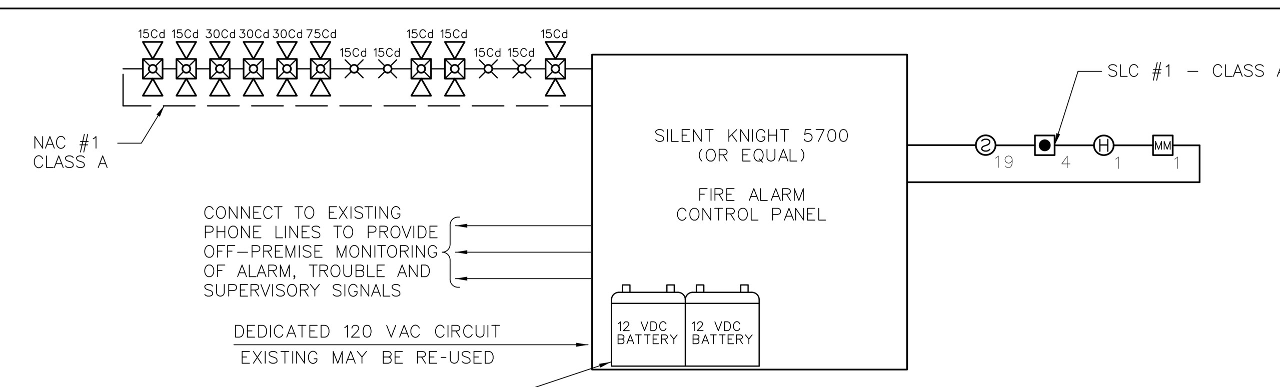


CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	26	A	6 OR 7	18 AWG THHN

*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

1 FIRE ALARM RISER SCHEMATIC BARRACKS (6280, 6290 & 6300)

NTS



CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	25	A	6 OR 7	18 AWG THHN

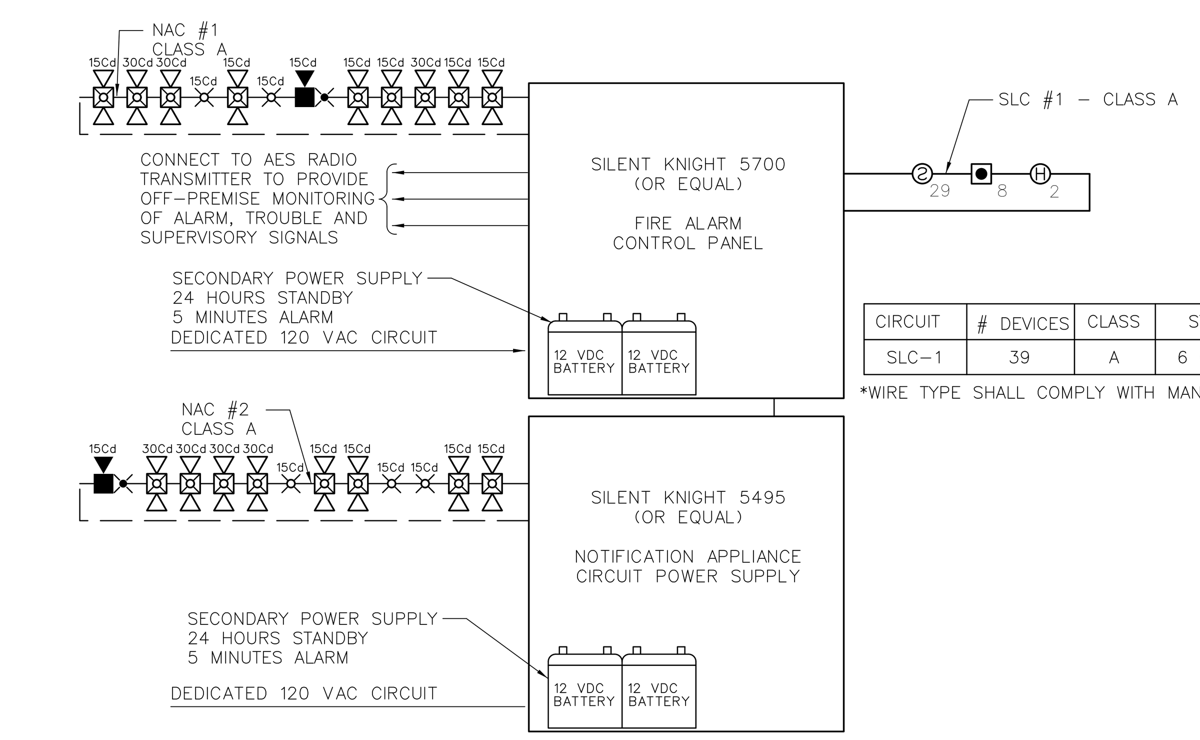
*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

2 FIRE ALARM RISER SCHEMATIC OFFICER'S CLUB (8100)

NTS

3 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	-×———×-

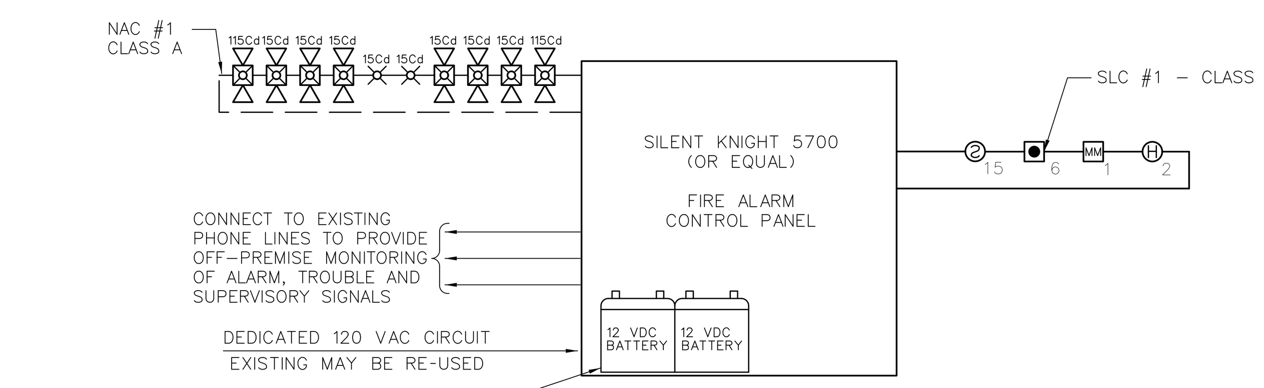


CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	39	A	6 OR 7	18 AWG THHN

*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

4 FIRE ALARM RISER SCHEMATIC SPECIAL FORCES (3010)

NTS



CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	24	A	6 OR 7	18 AWG THHN

*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

5 FIRE ALARM RISER SCHEMATIC MESS HALL (7030)

OUTPUTS

INPUTS	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	SHUT DOWN AIR HANDLERS
ACTIVATION OF ANY SMOKE DETECTOR	X	X			X
ACTIVATION OF ANY HEAT DETECTOR	X	X			X
ACTIVATION OF ANY MANUAL PULL STATION	X	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		X

6 SEQUENCE OF OPERATION BARRACKS (6280, 6290 & 6300)

OUTPUTS

INPUTS	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 WET CHEMICAL COOKING HOOD	X	X			

7 SEQUENCE OF OPERATION OFFICER'S CLUB (8100)

OUTPUTS

INPUTS	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	

8 SEQUENCE OF OPERATION SPECIAL FORCES (3010)

OUTPUTS

INPUTS	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 WET CHEMICAL COOKING HOOD	X	X			

9 SEQUENCE OF OPERATION MESS HALL (7030)

FIRE ALARM SYSTEM KEY NOTES

01. REPLACE EXISTING FIRE ALARM CONTROL PANEL (FACP) WITH 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 OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER. EXISTING 120 VAC DEDICATED POWER MAY BE RE-USED.

02. REMOVE EXISTING FIRE ALARM COMMUNICATOR AND ENCLOSURE. PATCH, REPAIR AND/OR PAINT WALL SURFACE TO MATCH SURROUNDING AREA.

03. FURNISH AND INSTALL NEW SMOKE DETECTOR AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

04. REPLACE EXISTING SMOKE DETECTOR WITH NEW SMOKE DETECTOR AS SHOWN ON PLAN. 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.

05. FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE AS SHOWN ON PLAN. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.

06. 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.

07. 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.

08. REPLACE EXISTING MANUAL PULL STATION WITH NEW 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. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION.

09. FURNISH AND INSTALL NEW 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.

10. REPLACE EXISTING EXTERIOR NOTIFICATION APPLIANCE WITH NEW WEATHER-PROOF HORN/STROBE AS SHOWN ON PLAN. EXISTING CONDUIT AND J-BOXES MAY BE RE-USED IF IN GOOD CONDITION AND WATER-PROOF. CONNECT NEW DEVICE TO CORRESPONDING NOTIFICATION APPLIANCE CIRCUIT.

11. FURNISH AND INSTALL NEW DUCT SMOKE DETECTOR ON HVAC DUCTWORK AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A SUPERVISORY SIGNAL.

12. EXISTING SINGLE STATION SMOKE DETECTOR TO REMAIN.

13. FURNISH AND INSTALL NEW MONITOR MODULE TO MONITOR ACTIVATION OF EXISTING WET-CHEMICAL COOKING HOOD. CONNECT MODULE TO EXISTING CONTACTS ON HOOD SUPPRESSION SYSTEM. CONNECT MODULE TO NEW SIGNALING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

14. FURNISH AND INSTALL NEW SMOKE OR HEAT DETECTOR AS SHOWN ON PLAN. CONNECT NEW DEVICE TO NEW SIGNALLING LINE CIRCUIT AND PROGRAM ACTIVATION OF DEVICE AS A FIRE ALARM SIGNAL.

15. 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 SIGNALS TO OFF-PREMISE MONITORING COMPANY SELECTED BY OWNER. PROVIDE NEW 120 VAC POWER CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL.

16. FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY (SILENT KNIGHT 5495 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 FLASSHED OF ALL NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. PROVIDE NEW 120 VAC POWER FROM DEDICATED CIRCUIT.

17. CONSTRUCT NEW INITIATING DEVICE CIRCUIT FROM EST MONITOR MODULE IN BUILDING 8020 (TELECOM HUB) AND FIRE ALARM CONTROL PANEL. RE: FA-0.1 KEY NOTE 4.

18. FURNISH AND INSTALL NEW CONTROL RELAY TO SHUT DOWN AIR HANDLERS UPON ACTIVATION OF FIRE ALARM. CONNECT TO NEW SIGNALING LINE CIRCUIT.

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
ANN	NEW FIRE ALARM REMOTE ANNUNCIATOR PANEL	MOUNT ON NEW OR EXISTING J-BOX RECESSED INTO WALL.	SILENT KNIGHT 5860 OR EQUAL
NAC-PS	NEW INTELLIGENT POWER SUPPLY.	SURFACE MOUNT ON WALL	TO POWER NOTIFICATION APPLIANCE CIRCUITS. SILENT KNIGHT 5495 OR EQUAL
	NEW ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON RECESSED J-BOX.	INSTALL NEW SMOKE DETECTORS AS SHOWN ON DRAWING AT A MAXIMUM SPACING OF 30' O.C. SILENT KNIGHT SK-PHOTO OR EQUAL
S	EXISTING SINGLE STATION SMOKE DETECTOR	EXISTING CEILING MOUNT	EXISTING TO REMAIN.
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
	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
CM	NEW ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE CONTROLLED	TO SHUT DOWN AIR HANDLERS UPON ACTIVATION OF FIRE ALARM. SILENT KNIGHT SK-RELAY OR EQUAL
MM	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 PC2R 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 P2R 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 SCR OR EQUAL
	NEW EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT HEIGHT INDIACTED ON DWGS	CANDELA RATING OF STROBE TO BE A MINIMUM OF 15/75 Cd. DEVICE SHALL BE POWERED BY FACP OR REMOTE POWER SUPPLY. COLOR SHALL BE RED. DEVICE SHALL BE LISTED FOR EXTERIOR INSTALLATION
	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.

08/02/10

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FACILITY WIDE - FIRE ALARM SYSTEM
CAMP WILLIAMS, UT

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 10179480

DETAILS AND CALCULATIONS
FA-3