FIRE ALARM SYSTEM: OGDEN WEBER ATC COSMETOLOGY BUILDING

200 NORTH WASHINGTON BLVD
OGDEN, UT 84404

STATE OF UTAH
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
4110 State Office Building / SLC, Utah 84114 / (801) 538-3018

DFCM PROJECT NO. 08050240

PROTECTION CONSULTANTS, INC.
182 SOUTH 600 EAST, SUITE #202 - SALT LAKE CITY, UT 84102 - 801.596.1601

DRAWING SCHEDULE

SHEET	DRAWING TITLE
FA-1	FIRE ALARM PLAN (INITIATING DEVICES)
FA-2	FIRE ALARM PLAN (NOTIFICATION APPLIANCES)
FA-3	FIRE ALARM DETAILS

VICINITY MAP

SITE / AREA, BUILDING AND CODE CRITERIA

A. Applicable Codes:

	Year
1. International Building Code	2006
2. International Fire Code	2006
3. ADA Accessibility Guidelines	1994
4. National Electrical Code (NFPA 70)	2008
5. International Mechanical Code	2006
6. Utah State Fire Marshall Rule R710-4	N/A
7. National Fire Alarm Code (NFPA 72)	2007

B. Building Parameters:

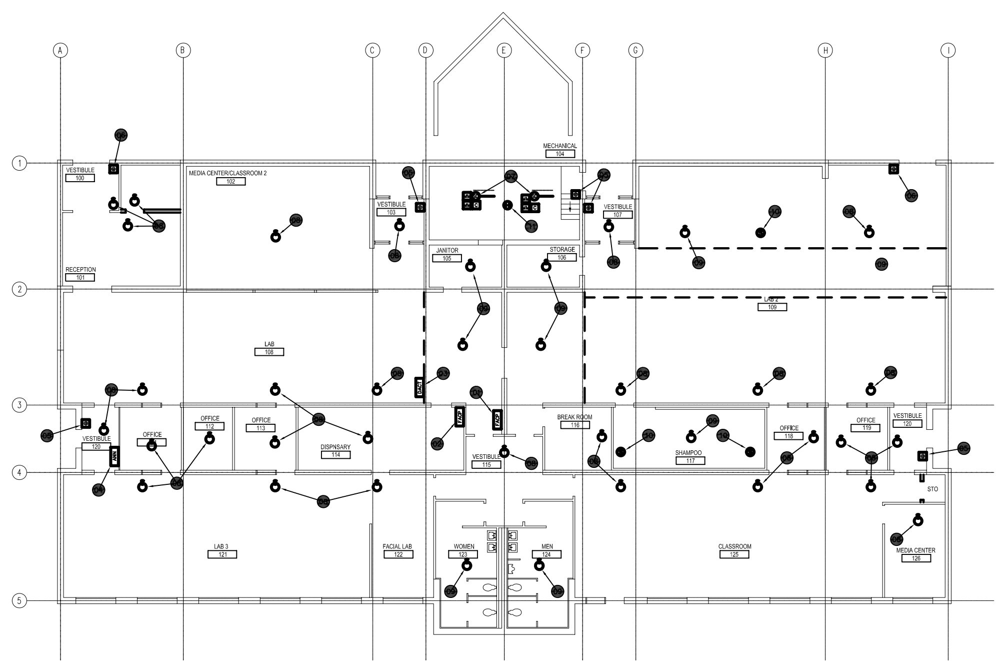
1. Occupancy Group:	B
2. Building Area:	10,600 Sq.Ft.
3. Stories:	One
4. Type of Construction:	Type V-B
5. Fire Sprinklers:	No
6. Occupancy Seperations:	None
7. Allowable Area Increase for Side Yards:	0.75 (30' Yard on all 4 sides)
8. Allowable Area:	15,750 Sq.Ft.

C. Fire Alarm Design Requirements:

1. Fire Alarm System Required:	Yes (IBC 907.2.1)
2. Occupant Notification:	Yes (IBC 907.2.1)
3. Visible Alarms:	Yes (IBC 907.9.1)
4. Manual Pull Stations:	Yes (IBC 907.3)
5. Smoke/Heat Detectors:	Yes (USFM R710-4)
6. Duct Smoke Detectors:	Yes (IBC 907.11)

[illegible]

1. SCOPE OF WORK: WORK SHALL INCLUDE REMOVAL OF EXISTING FIRE ALARM SYSTEM INCLUDING ALL CONTROL EQUIPMENT, POWER SUPPLIES, CABINETS, INITIATING CIRCUITS AND DEVICES, NOTIFICATION APPLIANCE CIRCUITS AND DEVICES. INSTALL NEW FIRE ALARM SYSTEM INCLUDING CONTROL PANEL WITH 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 – 2006 EDITION
   INTERNATIONAL FIRE CODE – 2006 EDITION
   INTERNATIONAL MECHANICAL CODE – 2006 EDITION
   UTAH STATE FIRE MARSHAL RULE R710-4
   NFPA 70 – 2005 EDITION
   NFPA 72 – 2007 EDITION
   NFPA 90A – 2002 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: FIRE ALARM SYSTEM CONTRACTOR SHALL PREPARE AND SUBMIT SHOPS DRAWINGS 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. ALL NEW DEVICES AND CIRCUITS WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY 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 OR WALLS TILE DAMAGED BY THE INSTALLER MUST BE REPAIRED TO MATCH SURROUNDINGS.
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: RECEIPT OF ANY FIRE ALARM SIGNAL AT THE FACP SHALL RESULT IN THE ACTIVATION OF ALL NOTIFICATION APPLIANCES IN THE BUILDING (STROBES AND HORN/STROBES). FOR PURPOSES OF FIRE ALARM NOTIFICATION, THE BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.
8. WIRING/CONDUIT: ALL WIRING SHALL BE NEW (EXISTING WIRING MAY NOT BE RE-USED) AND SHALL BE FREE OF OPENS, SHORTS AND GROUNDS. IN FINISHED AREAS, ALL WIRING SHALL BE INSTALLED IN METALLIC WIRE MOLD PAINTED TO MATCH SURROUNDINGS. IN UNFINISHED AREAS, WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT. MINIMUM CONDUIT SIZE SHALL BE 1/2". 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. SIGNALLING LINE 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 CIRCUIT MAY BE EXTENDED AND REUSED TO PROVIDE PRIMARY POWER TO NEW FACP. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANEL. 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 100 POINTS (DETECTORS, PULL STATIONS, MODULES, RELAYS, ETC.) PER LOOP. AT LEAST 20 ADDRESSES (20%) SHOULD BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: PROVIDE SMOKE DETECTORS WHERE ^
    TED BETWEEN 44" AND 52" AFF.
    HEAT DETECTORS: PROVIDE HEAT DETECTORS WHERE SHOWN ON PLANS IN MECHANICAL AREAS.
    ADDRESSABLE MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR EXISTING CONVENTIONAL DEVICES (DUCT SMOKE DETECTORS) TO REMAIN. LOCATE MONITOR MODULE ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION. LABEL AS PART OF THE FIRE ALARM SYSTEM WITH THE NAME OF THE DEVICE MONITORED ON THE COVER OF THE J-BOX.MODULE SHALL MOUNT ON 4-SQUARE BOX AND HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS OF MONITORED POINT.
12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. DEVICES SHALL BE INSTALLED ON NEW SURFACE MOUNT J-BOXES. 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. CONFIGURE NAC CIRCUITS TO ALLOW HORNS TO BE SILENCED INDEPENTLY FROM STROBE FLASHES.
13. FIRE SAFETY FUNCTIONS: CONTROL MODULES WITH RELAY CONTACTS CONTACTS SHALL BE INSTALLED AND PROGRAMMED TO PROVIDE FAN SHUTDOWN & ACTIVATION OF NOTIFICATION CIRCUIT POWER SUPPLIES (UNLESS PROVIDED BY SEPARATE CIRCUIT FROM FACP). 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. 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.
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 WEEK PRIOR TO SCHEDULED TEST.



FIRE ALARM PLAN (INITIATING DEVICES)

1/8" = 1'-0"

0 8' 16' 32'

[illegible]

(01) FURNISH AND INSTALL NEW ADDRESSABLE FIRE ALARM CONTROL PANEL (FACP). SURFACE MOUNT FACP ON WALL NEAR ELECTRICAL DISTRIBUTION PANEL. INSTALL FACP WITH KEYPAD AT 60" ABOVE FLOOR LEVEL. FACP SHALL BE SILENT KNIGHT 5820 XL OR FIRE-LITE MS-9600 WITH DACT-UD. EXTEND PHONE LINES (PRIMARY AND SECONDARY) FROM EXISTING TELEPHONE TERMINAL BOARD TO FACP TO PROVIDE OFF-PREMISE MONITORING. PHONE LINES AND MONITORING ACCOUNT TO BE PROVIDED BY OWNER.

(02) REMOVE EXISTING ADEMCO FACP. REMOVE EXISTING CONDUIT AND WIRING TO FACP. PATCH AND REPAIR WALL TO MATCH SURROUNDINGS.

(03) EXISTING DIGITAL ALARM COMMUNICATOR/TRANSMITER (DACT) PROVIDES OFF-PREMISE MONITORING FOR EXISTING FIRE ALARM SYSTEM. REMOVE EXISTING DACT, POWER CIRCUIT AND PHONE LINES (CONDUIT AND WIRING). PATCH AND PAINT REMIANING SURFACE TO MATCH SURROUNDINGS. OFF-PREMISE FIRE ALARM SIGNALS TO BE TRANSMITTED BY NEW FIRE ALARM CONTROL PANEL. EXTEND NEW PHONE LINES (PRIMARY AND SECONDARY) FROM NEAREST TELEPHONE BOARD TO FACP AS REQUIRED. MONITORING ACCOUNT AND PHONE LINES TO BE PROVIDED BY OWNER.

(04) FURNISH AND INSTALL NEW FIRE ALARM ANNUNCIATOR. SURFACE MOUNT ANNUNCIATOR ON WALL NEAR EXISTING SECURITY ALARM KEYPAD. INSTALL WITH KEYPAD AT 60" ABOVE FLOOR LEVEL.

(05) REPLACE EXISTING PULL STATIONS WITH NEW ADDRESSABLE PULL STATIONS LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF. EXISTING J-BOX MAY BE RE-USED IF IT COMPLIES WITH HEIGHT REQUIRMENT.

(06) FURNISH AND INSTALL NEW ADDRESSABLE PULL STATION LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF ON NEW SURFACE MOUNT J-BOX.

(07) EXISTING DUCT SMOKE DETECTORS TO REMAIN. FURNISH AND INSTALL MONITOR MODULES TO MONITOR SUPERVISORY AND ALARM SIGNALS. PROVIDE CONTROL MODULE TO SHUTDOWN FANS UPON FIRE ALARM SIGNAL. TEST FOR PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.

(08) REPLACE EXISTING SMOKE DETECTOR WITH NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON EXISTING J-BOX.

(09) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(10) REMOVE EXISTING SMOKE DETECTOR. PROVIDE COVER PLATE FOR REMAINING J-BOX.

(11) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(12) FURNISH AND INSTALL NEW EXTERIOR HORN/STROBE. MOUNT ON NEW WEATHER-PROOF J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT.

(13) FURNISH AND INSTALL NEW INTERIOR HORN/STROBE. WALL OR CEILING MOUNT ON NEW SURFACE MOUNT J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT. SYNCRONIZE ALL NOTIFICATION APPLIANCES.

(14) REMOVE EXISTING HORN. PROVIDE COVER PLATE ON REMAINING J-BOX.

[illegible]

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL WITH KEYPAD AT 60" AFF	SILENT KNIGHT MODEL 5820XL OR FIRE-LITE MS-9600 WITH DACT-UD
FACP	EXISTING FIRE ALARM CONTROL PANEL	EXISTING	TO BE REMOVED
DACT	EXISTING DIGITAL ALARM COMMUNICATOR	EXISTING	TO BE REMOVED
ANN	NEW FIRE ALARM ANNUNCIATOR	SURFACE MOUNT ON WALL WITH KEYPAD AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING SMOKE DETECTORS AND REPLACE WITH NEW ADDRESSABLE DETECTORS COMPATIBLE WITH NEW FACP.
	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON SURFACE MOUNT J-BOX.	
	ADDRESSABLE HEAT DETECTOR (FIXED TEMP.)	CEILING MOUNTED ON SURFACE MOUNT J-BOX.	INSTALL NEW HEAT DETECTOR IN MECHANICAL ROOM AS INDICATED ON PLAN
	DUCT SMOKE DETECTOR	EXISTING	EXISTING TO REMAIN. CONNECT TO NEW FACP TO PROVIDE MONITORING OF DETECTOR TROUBLE AND ALARM SIGNALS.
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT WITH OPERATING ELEMENT AT 48" AFF ON SURFACE MOUNT J-BOX.	REPLACE EXISTING PULL STATIONS WITH NEW PULL STATIONS COMPATIBLE WITH NEW FACP
C	ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT CONTROLLED.	TO PROVIDE FAN SHUTDOWN.
	ADDRESSABLE MONITOR RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT MONITORED.	TO MONITOR DUCT SMOKE DETECTORS
	FIRE ALARM HORN/STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT 10' ABOVE EXTERIOR GRADE	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN/STROBE	WALL MOUNTED ON SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN	EXISTING	REMOVE EXISTING HORN AND INSTALL COVER PLATE ON REMAINING J-BOX

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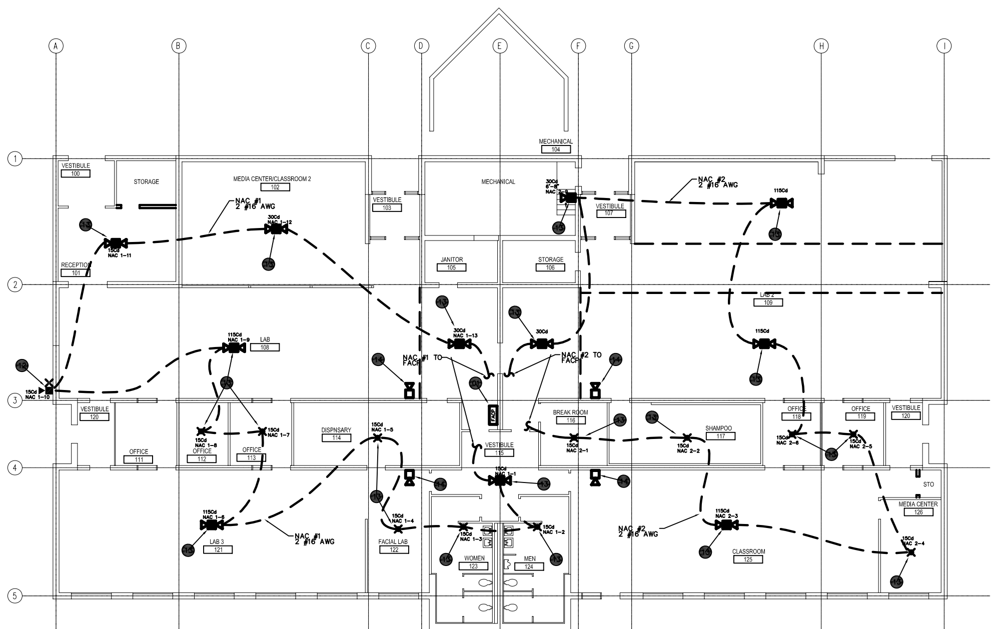
OGDEN WEBER APPLIED TECH. CENTER
COSMETOLOGY BUILDING
OGDEN, UTAH

FIRE ALARM SYSTEM INSTALLATION
DFCM PROJECT #08050240

FIRE ALARM PLAN
(INITIATING DEVICES)
FA-1

[illegible]

1. SCOPE OF WORK: WORK SHALL INCLUDE REMOVAL OF EXISTING FIRE ALARM SYSTEM INCLUDING ALL CONTROL EQUIPMENT, POWER SUPPLIES, CABINETS, INITIATING CIRCUITS AND DEVICES, NOTIFICATION APPLIANCE CIRCUITS AND DEVICES. INSTALL NEW FIRE ALARM SYSTEM INCLUDING CONTROL PANEL WITH 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 – 2006 EDITION
   INTERNATIONAL FIRE CODE – 2006 EDITION
   INTERNATIONAL MECHANICAL CODE – 2006 EDITION
   UTAH STATE FIRE MARSHAL RULE R710-4
   NFPA 70 – 2005 EDITION
   NFPA 72 – 2007 EDITION
   NFPA 90A – 2002 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: FIRE ALARM SYSTEM CONTRACTOR SHALL PREPARE AND SUBMIT SHOPS DRAWINGS 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. ALL NEW DEVICES AND CIRCUITS WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY 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 OR WALLS TILE DAMAGED BY THE INSTALLER MUST BE REPAIRED TO MATCH SURROUNDINGS.
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: RECEIPT OF ANY FIRE ALARM SIGNAL AT THE FACP SHALL RESULT IN THE ACTIVATION OF ALL NOTIFICATION APPLIANCES IN THE BUILDING (STROBES AND HORN/STROBES). FOR PURPOSES OF FIRE ALARM NOTIFICATION, THE BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.
8. WIRING/CONDUIT: ALL WIRING SHALL BE NEW (EXISTING WIRING MAY NOT BE RE-USED) AND SHALL BE FREE OF OPENS, SHORTS AND GROUNDS. IN FINISHED AREAS, ALL WIRING SHALL BE INSTALLED IN METALLIC WIRE MOLD PAINTED TO MATCH SURROUNDINGS. IN UNFINISHED AREAS, WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT. MINIMUM CONDUIT SIZE SHALL BE 1/2". 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. SIGNALLING LINE 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 CIRCUIT MAY BE EXTENDED AND REUSED TO PROVIDE PRIMARY POWER TO NEW FACP. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANEL. 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 100 POINTS (DETECTORS, PULL STATIONS, MODULES, RELAYS, ETC.) PER LOOP. AT LEAST 20 ADDRESSES (20%) SHOULD BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: PROVIDE SMOKE DETECTORS WHERE SHOWN ON PLANS. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AT SAME LOCATION AS EXISTING PULL STATIONS USING EXISTING JUNCTION BOXES. ADJUST HEIGHT OF EXISTING J-BOX AS REQURIED SO THAT NEW PULL STATIONS ARE MOUNTED BETWEEN 44" AND 52" AFF.
    HEAT DETECTORS: PROVIDE HEAT DETECTORS WHERE SHOWN ON PLANS IN MECHANICAL AREAS.
    ADDRESSABLE MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR EXISTING CONVENTIONAL DEVICES (DUCT SMOKE DETECTORS) TO REMAIN. LOCATE MONITOR MODULE ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION. LABEL AS PART OF THE FIRE ALARM SYSTEM WITH THE NAME OF THE DEVICE MONITORED ON THE COVER OF THE J-BOX.MODULE SHALL MOUNT ON 4-SQUARE BOX AND HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS OF MONITORED POINT.
12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. DEVICES SHALL BE INSTALLED ON NEW SURFACE MOUNT J-BOXES. 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. CONFIGURE NAC CIRCUITS TO ALLOW HORNS TO BE SILENCED INDEPENTLY FROM STROBE FLASHES.
13. FIRE SAFETY FUNCTIONS: CONTROL MODULES WITH RELAY CONTACTS CONTACTS SHALL BE INSTALLED AND PROGRAMMED TO PROVIDE FAN SHUTDOWN & ACTIVATION OF NOTIFICATION CIRCUIT POWER SUPPLIES (UNLESS PROVIDED BY SEPARATE CIRCUIT FROM FACP). 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. 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.
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 WEEK PRIOR TO SCHEDULED TEST.



FIRE ALARM PLAN (NOTIFICATION APPLIANCES)

1/8" = 1'-0"

0 8' 16' 32'

[illegible]

(01) FURNISH AND INSTALL NEW ADDRESSABLE FIRE ALARM CONTROL PANEL (FACP). SURFACE MOUNT FACP ON WALL NEAR ELECTRICAL DISTRIBUTION PANEL. INSTALL FACP WITH KEYPAD AT 60" ABOVE FLOOR LEVEL. FACP SHALL BE SILENT KNIGHT 5820 XL OR FIRE-LITE MS-9600 WITH DACT-UD. EXTEND PHONE LINES (PRIMARY AND SECONDARY) FROM EXISTING TELEPHONE TERMINAL BOARD TO FACP TO PROVIDE OFF-PREMISE MONITORING. PHONE LINES AND MONITORING ACCOUNT TO BE PROVIDED BY OWNER.

(02) REMOVE EXISTING ADEMCO FACP. REMOVE EXISTING CONDUIT AND WIRING TO FACP. PATCH AND REPAIR WALL TO MATCH SURROUNDINGS.

(03) EXISTING DIGITAL ALARM COMMUNICATOR/TRANSMITER (DACT) PROVIDES OFF-PREMISE MONITORING FOR EXISTING FIRE ALARM SYSTEM. REMOVE EXISTING DACT, POWER CIRCUIT AND PHONE LINES (CONDUIT AND WIRING). PATCH AND PAINT REMIANING SURFACE TO MATCH SURROUNDINGS. OFF-PREMISE FIRE ALARM SIGNALS TO BE TRANSMITTED BY NEW FIRE ALARM CONTROL PANEL. EXTEND NEW PHONE LINES (PRIMARY AND SECONDARY) FROM NEAREST TELEPHONE BOARD TO FACP AS REQUIRED. MONITORING ACCOUNT AND PHONE LINES TO BE PROVIDED BY OWNER.

(04) FURNISH AND INSTALL NEW FIRE ALARM ANNUNCIATOR. SURFACE MOUNT ANNUNCIATOR ON WALL NEAR EXISTING SECURITY ALARM KEYPAD. INSTALL WITH KEYPAD AT 60" ABOVE FLOOR LEVEL.

(05) REPLACE EXISTING PULL STATIONS WITH NEW ADDRESSABLE PULL STATIONS LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF. EXISTING J-BOX MAY BE RE-USED IF IT COMPLIES WITH HEIGHT REQUIRMENT.

(06) FURNISH AND INSTALL NEW ADDRESSABLE PULL STATION LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF ON NEW SURFACE MOUNT J-BOX.

(07) EXISTING DUCT SMOKE DETECTORS TO REMAIN. FURNISH AND INSTALL MONITOR MODULES TO MONITOR SUPERVISORY AND ALARM SIGNALS. PROVIDE CONTROL MODULE TO SHUTDOWN FANS UPON FIRE ALARM SIGNAL. TEST FOR PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.

(08) REPLACE EXISTING SMOKE DETECTOR WITH NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON EXISTING J-BOX.

(09) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(10) REMOVE EXISTING SMOKE DETECTOR. PROVIDE COVER PLATE FOR REMAINING J-BOX.

(11) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(12) FURNISH AND INSTALL NEW EXTERIOR HORN/STROBE. MOUNT ON NEW WEATHER-PROOF J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT.

(13) FURNISH AND INSTALL NEW INTERIOR HORN/STROBE. WALL OR CEILING MOUNT ON NEW SURFACE MOUNT J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT. SYNCRONIZE ALL NOTIFICATION APPLIANCES.

(14) REMOVE EXISTING HORN. PROVIDE COVER PLATE ON REMAINING J-BOX.

[illegible]

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL WITH KEYPAD AT 60" AFF	SILENT KNIGHT MODEL 5820XL OR FIRE-LITE MS-9600 WITH DACT-UD
FACP	EXISTING FIRE ALARM CONTROL PANEL	EXISTING	TO BE REMOVED
DACT	EXISTING DIGITAL ALARM COMMUNICATOR	EXISTING	TO BE REMOVED
ANN	NEW FIRE ALARM ANNUNCIATOR	SURFACE MOUNT ON WALL WITH KEYPAD AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING SMOKE DETECTORS AND REPLACE WITH NEW ADDRESSABLE DETECTORS COMPATIBLE WITH NEW FACP.
	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	CEILING MOUNTED ON SURFACE MOUNT J-BOX.	
	ADDRESSABLE HEAT DETECTOR (FIXED TEMP.)	CEILING MOUNTED ON SURFACE MOUNT J-BOX.	INSTALL NEW HEAT DETECTOR IN MECHANICAL ROOM AS INDICATED ON PLAN
	DUCT SMOKE DETECTOR	EXISTING	EXISTING TO REMAIN. CONNECT TO NEW FACP TO PROVIDE MONITORING OF DETECTOR TROUBLE AND ALARM SIGNALS.
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT WITH OPERATING ELEMENT AT 48" AFF ON SURFACE MOUNT J-BOX.	REPLACE EXISTING PULL STATIONS WITH NEW PULL STATIONS COMPATIBLE WITH NEW FACP
C	ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT CONTROLLED.	TO PROVIDE FAN SHUTDOWN.
	ADDRESSABLE MONITOR RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT MONITORED.	TO MONITOR DUCT SMOKE DETECTORS
	FIRE ALARM HORN/STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT 10' ABOVE EXTERIOR GRADE	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN/STROBE	WALL MOUNTED ON SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN	EXISTING	REMOVE EXISTING HORN AND INSTALL COVER PLATE ON REMAINING J-BOX

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FIRE ALARM SYSTEM INSTALLATION

DFCM PROJECT #08050240

FIRE ALARM PLAN (NOTIFICATION APPLIANCES)

FA-2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE REMOVAL OF EXISTING FIRE ALARM SYSTEM INCLUDING ALL CONTROL EQUIPMENT, POWER SUPPLIES, CABINETS, INITIATING CIRCUITS AND DEVICES, NOTIFICATION APPLIANCE CIRCUITS AND DEVICES. INSTALL NEW FIRE ALARM SYSTEM INCLUDING CONTROL PANEL WITH 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 – 2006 EDITION
   INTERNATIONAL FIRE CODE – 2006 EDITION
   INTERNATIONAL MECHANICAL CODE – 2006 EDITION
   UTAH STATE FIRE MARSHAL RULE R710-4
   NFPA 70 – 2005 EDITION
   NFPA 72 – 2007 EDITION
   NFPA 90A – 2002 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: FIRE ALARM SYSTEM CONTRACTOR SHALL PREPARE AND SUBMIT SHOPS DRAWINGS 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. ALL NEW DEVICES AND CIRCUITS WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY 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 OR WALLS TILE DAMAGED BY THE INSTALLER MUST BE REPAIRED TO MATCH SURROUNDINGS.
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: RECEIPT OF ANY FIRE ALARM SIGNAL AT THE FACP SHALL RESULT IN THE ACTIVATION OF ALL NOTIFICATION APPLIANCES IN THE BUILDING (STROBES AND HORN/STROBES). FOR PURPOSES OF FIRE ALARM NOTIFICATION, THE BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.
8. WIRING/CONDUIT: ALL WIRING SHALL BE NEW (EXISTING WIRING MAY NOT BE RE-USED) AND SHALL BE FREE OF OPENS, SHORTS AND GROUNDS. IN FINISHED AREAS, ALL WIRING SHALL BE INSTALLED IN METALLIC WIRE MOLD PAINTED TO MATCH SURROUNDINGS. IN UNFINISHED AREAS, WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT. MINIMUM CONDUIT SIZE SHALL BE 1/2". 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. SIGNALLING LINE 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 CIRCUIT MAY BE EXTENDED AND REUSED TO PROVIDE PRIMARY POWER TO NEW FACP. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANEL. 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 100 POINTS (DETECTORS, PULL STATIONS, MODULES, RELAYS, ETC.) PER LOOP. AT LEAST 20 ADDRESSES (20%) SHOULD BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: PROVIDE SMOKE DETECTORS WHERE SHOWN ON PLANS. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AT SAME LOCATION AS EXISTING PULL STATIONS USING EXISTING JUNCTION BOXES. ADJUST HEIGHT OF EXISTING J-BOX AS REQURIED SO THAT NEW PULL STATIONS ARE MOUNTED BETWEEN 44" AND 52" AFF.
    HEAT DETECTORS: PROVIDE HEAT DETECTORS WHERE SHOWN ON PLANS IN MECHANICAL AREAS.
    ADDRESSABLE MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR EXISTING CONVENTIONAL DEVICES (DUCT SMOKE DETECTORS) TO REMAIN. LOCATE MONITOR MODULE ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION. LABEL AS PART OF THE FIRE ALARM SYSTEM WITH THE NAME OF THE DEVICE MONITORED ON THE COVER OF THE J-BOX.MODULE SHALL MOUNT ON 4-SQUARE BOX AND HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS OF MONITORED POINT.
12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. DEVICES SHALL BE INSTALLED ON NEW SURFACE MOUNT J-BOXES. 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. CONFIGURE NAC CIRCUITS TO ALLOW HORNS TO BE SILENCED INDEPENTLY FROM STROBE FLASHES.
13. FIRE SAFETY FUNCTIONS: CONTROL MODULES WITH RELAY CONTACTS CONTACTS SHALL BE INSTALLED AND PROGRAMMED TO PROVIDE FAN SHUTDOWN & ACTIVATION OF NOTIFICATION CIRCUIT POWER SUPPLIES (UNLESS PROVIDED BY SEPARATE CIRCUIT FROM FACP). 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. 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.
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 WEEK PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) FURNISH AND INSTALL NEW ADDRESSABLE FIRE ALARM CONTROL PANEL (FACP). SURFACE MOUNT FACP ON WALL NEAR ELECTRICAL DISTRIBUTION PANEL. INSTALL FACP WITH KEYPAD AT 60" ABOVE FLOOR LEVEL. FACP SHALL BE SILENT KNIGHT 5820 XL OR FIRE-LITE MS-9600 WITH DACT-UD. EXTEND PHONE LINES (PRIMARY AND SECONDARY) FROM EXISTING TELEPHONE TERMINAL BOARD TO FACP TO PROVIDE OFF-PREMISE MONITORING. PHONE LINES AND MONITORING ACCOUNT TO BE PROVIDED BY OWNER.

(02) REMOVE EXISTING ADEMCO FACP. REMOVE EXISTING CONDUIT AND WIRING TO FACP. PATCH AND REPAIR WALL TO MATCH SURROUNDINGS.

(03) EXISTING DIGITAL ALARM COMMUNICATOR/TRANSMITER (DACT) PROVIDES OFF-PREMISE MONITORING FOR EXISTING FIRE ALARM SYSTEM. REMOVE EXISTING DACT, POWER CIRCUIT AND PHONE LINES (CONDUIT AND WIRING). PATCH AND PAINT REMIANING SURFACE TO MATCH SURROUNDINGS. OFF-PREMISE FIRE ALARM SIGNALS TO BE TRANSMITTED BY NEW FIRE ALARM CONTROL PANEL. EXTEND NEW PHONE LINES (PRIMARY AND SECONDARY) FROM NEAREST TELEPHONE BOARD TO FACP AS REQUIRED. MONITORING ACCOUNT AND PHONE LINES TO BE PROVIDED BY OWNER.

(04) FURNISH AND INSTALL NEW FIRE ALARM ANNUNCIATOR. SURFACE MOUNT ANNUNCIATOR ON WALL NEAR EXISTING SECURITY ALARM KEYPAD. INSTALL WITH KEYPAD AT 60" ABOVE FLOOR LEVEL.

(05) REPLACE EXISTING PULL STATIONS WITH NEW ADDRESSABLE PULL STATIONS LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF. EXISTING J-BOX MAY BE RE-USED IF IT COMPLIES WITH HEIGHT REQUIRMENT.

(06) FURNISH AND INSTALL NEW ADDRESSABLE PULL STATION LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. WALL MOUNT AT 48" AFF ON NEW SURFACE MOUNT J-BOX.

(07) EXISTING DUCT SMOKE DETECTORS TO REMAIN. FURNISH AND INSTALL MONITOR MODULES TO MONITOR SUPERVISORY AND ALARM SIGNALS. PROVIDE CONTROL MODULE TO SHUTDOWN FANS UPON FIRE ALARM SIGNAL. TEST FOR PROPER OPERATION AND REPAIR OR REPLACE AS NECESSARY.

(08) REPLACE EXISTING SMOKE DETECTOR WITH NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON EXISTING J-BOX.

(09) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(10) REMOVE EXISTING SMOKE DETECTOR. PROVIDE COVER PLATE FOR REMAINING J-BOX.

(11) FURNISH AND INSTALL NEW SMOKE DETECTOR LISTED COMPATIBLE WITH FIRE ALARM CONTROL PANEL. CEILING MOUNT ON NEW SURFACE MOUNT J-BOX.

(12) FURNISH AND INSTALL NEW EXTERIOR HORN/STROBE. MOUNT ON NEW WEATHER-PROOF J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT.

(13) FURNISH AND INSTALL NEW INTERIOR HORN/STROBE. WALL OR CEILING MOUNT ON NEW SURFACE MOUNT J-BOX. CONNECT TO NEW NOTIFICATION APPLIANCE CIRCUIT. SYNCRONIZE ALL NOTIFICATION APPLIANCES.

(14) REMOVE EXISTING HORN. PROVIDE COVER PLATE ON REMAINING J-BOX.

1 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	———

2 VOLTAGE DROP CALCULATIONS 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.
FCPS	20	20	15	0.079	1.283	20.141	1.268	1
1	20	40	15	0.066	1.204	19.899	1.205	2
2	20	60	15	0.066	1.138	19.669	1.153	3
3	20	80	15	0.066	1.072	19.453	1.098	4
4	30	110	15	0.066	1.006	19.149	1.563	5
5	45	155	115	0.218	0.94	18.723	2.226	6
6	30	185	15	0.066	0.722	18.505	1.166	7
7	20	205	15	0.066	0.656	18.372	0.715	8
8	30	235	115	0.218	0.59	18.194	0.971	9
9	50	285	15	0.079	0.372	18.007	1.030	10
10	40	325	15	0.079	0.293	17.888	0.656	11
11	35	360	30	0.107	0.214	17.813	0.422	12
12	50	410	30	0.107	0.107	17.759	0.303	13

Total Circuit Length	Total Circuit Current	Total Circuit Voltage Drop %
410	1.283	13.78

3 VOLTAGE DROP CALCULATIONS 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.
FCPS	25	25	15	0.066	1.198	20.098	1.480	1
1	30	55	15	0.066	1.132	19.756	1.703	2
2	25	80	115	0.218	1.066	19.487	1.359	3
3	45	125	15	0.066	0.848	19.103	1.973	4
4	30	155	15	0.066	0.782	18.866	1.238	5
5	20	175	15	0.066	0.716	18.722	0.765	6
6	30	205	115	0.218	0.65	18.526	1.050	7
7	40	245	115	0.218	0.432	18.351	0.940	8
8	45	290	30	0.107	0.214	18.254	0.529	9
9	55	345	30	0.107	0.107	18.195	0.325	10

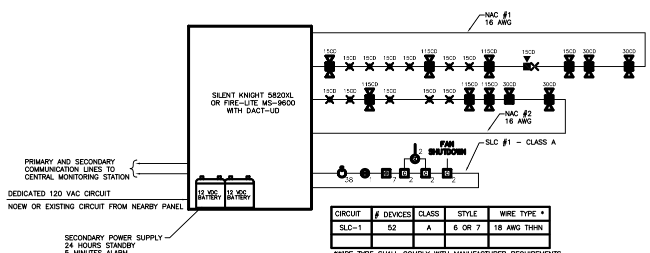
Total Circuit Length	Total Circuit Current	Total Circuit Voltage Drop %
345	1.198	11.36

4 SEQUENCE OF OPERATION

SYSTEM INPUTS \ OUTPUT ACTIONS	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 HANDLER			
ACTIVATION OF ANY SMOKE DETECTOR	X	X			X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			X			
ACTIVATION OF DUCT SMOKE DETECTOR			X		X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			X			
LOSS OF AC POWER/LOW BATTERY VOLTAGE				X				
SYSTEM TROUBLE				X				

5 FIRE ALARM RISER SCHEMATIC

NTS



CIRCUIT	# DEVICES	CLASS	STYLE	WIRE TYPE *
SLC-1	52	A	6 OR 7	18 AWG THHN

*WIRE TYPE SHALL COMPLY WITH MANUFACTURER REQUIREMENTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT ON WALL WITH KEYPAD AT 60" AFF	SILENT KNIGHT MODEL 5820XL OR FIRE-LITE MS-9600 WITH DACT-UD
FACP	EXISTING FIRE ALARM CONTROL PANEL	EXISTING	TO BE REMOVED
DACT	EXISTING DIGITAL ALARM COMMUNICATOR	EXISTING	TO BE REMOVED
ANN	NEW FIRE ALARM ANNUNCIATOR	SURFACE MOUNT ON WALL WITH KEYPAD AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING SMOKE DETECTORS AND REPLACE WITH NEW ADDRESSABLE DETECTORS COMPATIBLE WITH NEW FACP.
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	ADDRESSABLE HEAT DETECTOR (FIXED TEMP.)	CEILING MOUNTED ON SURFACE MOUNT J-BOX.	INSTALL NEW HEAT DETECTOR IN MECHANICAL ROOM AS INDICATED ON PLAN
SD	DUCT SMOKE DETECTOR	EXISTING	EXISTING TO REMAIN. CONNECT TO NEW FACP TO PROVIDE MONITORING OF DETECTOR TROUBLE AND ALARM SIGNALS.
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT WITH OPERATING ELEMENT AT 48" AFF ON SURFACE MOUNT J-BOX.	REPLACE EXISTING PULL STATIONS WITH NEW PULL STATIONS COMPATIBLE WITH NEW FACP
C	ADDRESSABLE CONTROL RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT CONTROLLED.	TO PROVIDE FAN SHUTDOWN.
M	ADDRESSABLE MONITOR RELAY	MOUNT ON J-BOX WITHIN 3' OF DEVICE OR CIRCUIT MONITORED.	TO MONITOR DUCT SMOKE DETECTORS
	FIRE ALARM HORN/STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM STROBE	CEILING MOUNTED ON SURFACE MOUNT J-BOX	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	EXTERIOR FIRE ALARM HORN/STROBE	WALL MOUNTED ON NEW WEATHERPROOF J-BOX AT 10' ABOVE EXTERIOR GRADE	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN/STROBE	WALL MOUNTED ON SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	CANDELA RATING OF STROBE SHALL BE AS INDICATED ON DRAWINGS. STROBES SHALL BE SYNCHRONIZED WITH ALL OTHER STROBES IN VIEW. COLOR SHALL BE RED
	FIRE ALARM HORN	EXISTING	REMOVE EXISTING HORN AND INSTALL COVER PLATE ON REMAINING J-BOX

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DETAILS
FA-3