FIRE ALARM SYSTEM: SNOW COLLEGE

150 EAST COLLEGE AVENUE
EPHRAIM, UT 84627

STATE OF UTAH
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
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DFCM PROJECT NO. 07159700

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DRAWING SCHEDULE

DRAWING #	SHEET	DRAWING TITLE
1	FA-0.1	FIRE ALARM NETWORK
2	PP-FA1	FIRE ALARM PLAN – PHYSICAL PLANT
3	PP-FA2	FIRE ALARM PLAN – HEAT PLANT, DETAILS & SCHEDULES
4	SH-FA1	FIRE ALARM PLAN – SNOW HALL
5	SH-FA2	FIRE ALARM PLAN – SNOW HALL, DETAILS & SCHEDULES
6	MN-FA1	FIRE ALARM PLAN – MARY NIELSON HALL (LOWER & UPPER LEVELS)
7	MN-FA2	FIRE ALARM DETAILS & SCHEDULES – MARY NIELSON HALL
8	FY-FA1	FIRE ALARM PLAN – FERN YOUNG (BASEMENT & 1ST FLOOR)
9	FY-FA2	FIRE ALARM PLAN – FERN YOUNG (2ND FLOOR), DETAILS & SCHEDULES
10	CH-FA1	FIRE ALARM PLAN – CASTILLEJA (1ST FLOOR)
11	CH-FA2	FIRE ALARM PLAN – CASTILLEJA (2ND FLOOR)
12	CH-FA3	FIRE ALARM PLAN – CASTILLEJA (BASEMENT), DETAILS & SCHEDULES
13	NH-FA1	FIRE ALARM PLAN – NUTTALL HALL (1ST & 2ND FLOORS)
14	NH-FA2	FIRE ALARM DETAILS & SCHEDULES – NUTTALL HALL
15	AH-FA1	FIRE ALARM PLAN – ANDERSON HALL (1ST FLOOR)
16	AH-FA2	FIRE ALARM PLAN – ANDERSON HALL (2ND LEVEL), DETAILS & SCHEDULES
17	GH-FA1	FIRE ALARM PLAN – GREENWOOD HALL
18	GH-FA2	FIRE ALARM PLAN – COTTAGES, DETAILS & SCHEDULES
19	AC-FA1	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-A)
20	AC-FA2	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-B)
21	AC-FA3	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-C)
22	AC-FA4	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-D)
23	AC-FA5	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-E)
24	AC-FA6	FIRE ALARM PLAN – ACTIVITY CENTER (AREA-F), DETAILS & SCHEDULES
25	SB-FA1	FIRE ALARM PLAN – SCIENCE (1ST FLOOR)
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30	FL-FA1	FIRE ALARM PLAN – FAMILY LIFE
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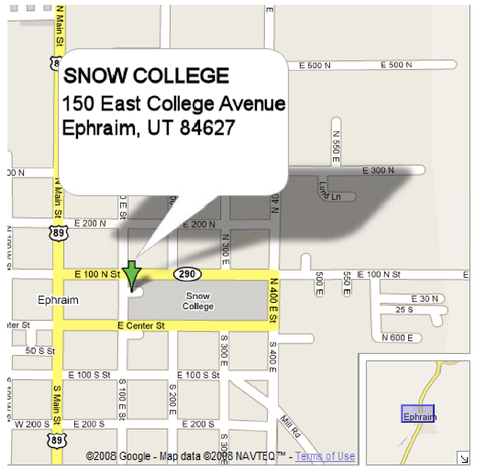
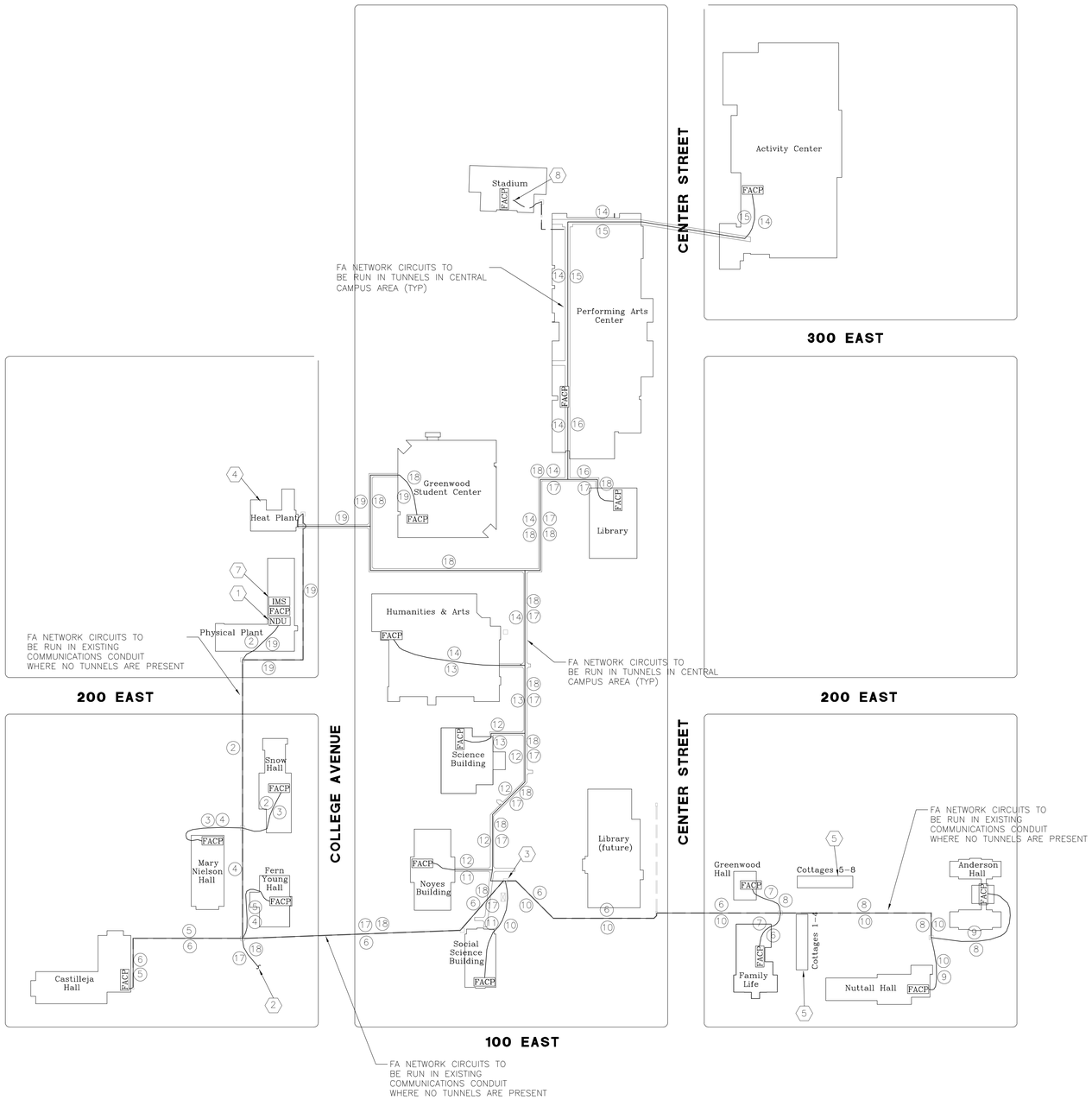
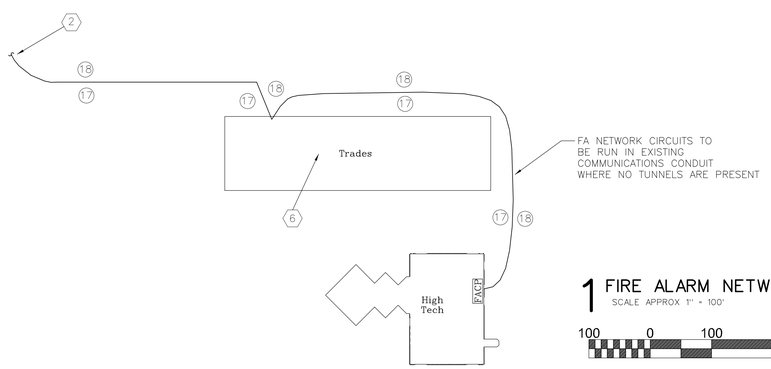
42	HB-FA3	FIRE ALARM DETAILS & SCHEDULES – HUMANITIES
43	SD-FA1	FIRE ALARM PLAN – STADIUM
44	PA-FA1	FIRE ALARM PLAN – PERFORMING ARTS
45	LI-FA1	FIRE ALARM PLAN – LIBRARY (1ST FLOOR)
46	LI-FA2	FIRE ALARM PLAN – LIBRARY (2ND FLOOR)
47	SC-FA1	FIRE ALARM PLAN – STUDENT CENTER
48	NY-FA1	FIRE ALARM PLAN – NOYES BUILDING

VICINITY MAP







1 FIRE ALARM NETWORK SCHEMATIC

SCALE APPROX 1" = 100'

100 0 100 500 N

FIRE ALARM NETWORK ROUTING

LEG #	FROM (FACP OR NET NODE)	TO (FACP OR NET NODE)	ESTIMATED MINIMUM DISTANCE**
*1	NETWORK DISPLAY UNIT	PHYSICAL PLANT	10'
2	PHYSICAL PLANT	SNOW HALL	600'
3	SNOW HALL	MARY NIELSON HALL	400'
4	MARY NIELSON HALL	FERN YOUNG HALL	650'
5	FERN YOUNG HALL	CASTILLEJA HALL	550'
6	CASTILLEJA HALL	FAMILY LIFE	1,850'
7	FAMILY LIFE	GREENWOOD HALL	300'
8	GREENWOOD HALL	ANDERSON HALL	800'
9	ANDERSON HALL	NUTTALL HALL	500'
10	NUTTALL HALL	SOCIAL SCIENCE	1,600'
11	SOCIAL SCIENCE	NOYES	570'
12	NOYES	SCIENCE	780'
13	SCIENCE	HUMANITIES	740'
14	HUMANITIES	ACTIVITY CENTER	2,510'
15	ACTIVITY CENTER	PERFORMING ARTS	850'
16	PERFORMING ARTS	LIBRARY	330'
17	LIBRARY	HIGH TECH/TRADES	6,000' ***
18	HIGH TECH/TRADES	STUDENT CENTER ****	6,000' *** + 1,300'
19	STUDENT CENTER	IMS	1,150'
20	IMS	NETWORK DISPLAY UNIT	200'
		TOTAL	15,690'

* LEG 1 & 20 (NDU TO IMS & TO ADJACENT FACP FOR PHYSICAL PLANT) MAY BE FIBER OR COPPER (CONTRACTOR'S OPTION)

** DISTANCE PROVIDED IS ENGINEER'S ESTIMATE ONLY AND NOT TO BE RELIED UPON FOR BID. CONTRACTOR SHALL FIELD VERIFY ACTUAL DISTANCE.

*** LEGS 17 & 18 TO USE (IN PART) EXISTING FIBER PROVIDED BY SNOW COLLEGE AND ARE NOT INCLUDED IN TOTAL

**** SPLICE FIBER AS REQUIRED AT TERMINATION POINT IN LIBRARY

FIRE ALARM NETWORK KEYED NOTES

1. NETWORK DISPLAY UNIT (NDU) TO BE INSTALLED ADJACENT TO FIRE ALARM CONTROL PANEL (FACP) IN PHYSICAL PLANT BUILDING. NDU SHALL DISPLAY ALL FIRE ALARM SIGNALS (ALARM, SUPERVISORY & TROUBLE) FROM ALL CONNECTED FACPS ON CAMPUS. NDU SHALL DISPLAY BUILDING WHERE SIGNAL ORIGINATES ALONG WITH DEVICE TYPE, ADDRESS AND A PRE-PROGRAMMED DESCRIPTION TO ENABLE RAPID IDENTIFICATION OF LOCATION OF FIRE ALARM SIGNAL. INSTALL A DIGITAL ALARM COMMUNICATOR/TRANSMITTER (DACT) TO RELAY SIGNALS RECEIVED BY THE NDU TO THE OFF-PREMISE CENTRAL STATION SELECTED BY THE OWNER. DACT MAY BE INTEGRATED INTO THE NDU OR SEPRATE FROM NDU.

2. NETWORK CONNECTION BETWEEN THE FACP IN THE LIBRARY (EAST CAMPUS) AND THE FACP IN THE HIGH TECH/TRADES BUILDING (WEST CAMPUS) SHALL USE EXISTING FIBER OPTIC CABLE PROVIDED BY OWNER. EXISTING FIBER RUNS THROUGH UTILITY TUNNEL FROM LIBRARY TO SOCIAL SCIENCE BUILDING, THEN IN UNDERGROUND COMMUNICATIONS CONDUIT TO NEAR FERN YOUN HALL WHERE IT TRANSITIONS TO OVERHEAD TELEPHONE POLES. COORDINATE USE OF EXISTING FIBER WITH OWNER.

3. TRANSITION NETWORK CIRCUITS FROM BURIED COMMUNICATIONS CONDUIT TO UTILITY TUNNELS NEAR SOCIAL SCIENCE BUILDING.

4. NO FACP IS PRESENT IN THE HEAT PLANT. FIRE ALARM DEVICES IN THE HEAT PLANT ARE CONNECTED TO FACP IN PHYSICAL PLANT. NO NETWORK CIRCUIT IS REQUIRED TO EXTEND TO HEAT PLANT.

5. NO FACP IS PRESENT IN COTTAGES 1-4 OR COTTAGES 5-8. FIRE ALARM DEVICES IN THE COTTAGES ARE CONNECTED TO THE FACP IN GREENWOOD HALL. NO NETWORK CIRCUIT IS REQUIRED TO EXTEND TO COTTAGES 1-4 OR COTTAGES 5-8.

6. NO FACP IS PRESENT IN THE TRADES BUILDING. FIRE ALARM DEVICES IN THE TRADES BUILDING ARE CONNECTED TO THE FACP IN THE HIGH TECH BUILDING. NO NETWORK CIRCUIT IS REQUIRED TO EXTEND TO THE TRADES BUILDING.

7. BID ALTERNATE #1:
FURNISH AND INSTALL A SIMPLEX TRUE ALARM INFORMATION MANAGEMENT SYSTEM (IMS) FOR THE CAMPUS FIRE ALARM NETWORK. IMS SHALL BE CONFIGURED FOR DESKTOP INSTALLATION WITH 17" LCD MONITOR, KEYBOARD AND MOUSE. IMS SHALL HAVE PRE-LOADED GRAPHIC MAPS/DISPLAYS OF ALL FIRE ALARM SYSTEMS CONNECTED TO THE NETWORK. MAPS/DISPLAYS SHALL INCLUDE FLOOR PLANS, ROOM DESIGNATIONS, INITIATING DEVICES (WITH ADDRESSES), CONTROL EQUIPMENT AND CONTROL RELAYS. COORDINATE LOCATION OF IMS INSTALLATION WITH OWNER. PROVIDE COMPLETE TRAINING IN IMS CONFIGURATION AND OPERATION TO OWNER.

8. FACP IN STADIUM IS NOT COMPATIBLE WITH NEW FIRE ALARM NETWORK AND NOT SCHEDULED TO BE UPGRADED UNDER THIS CONTRACT. EXTEND EXISTING ID-NET LOOP FROM ADJACENT PERFORMING ARTS BUILDING THROUGH UTILITY TUNNEL AND/OR BURIED CONDUIT TO STADIUM FACP. PROVIDE MONITOR MODULES ON EXTENDED ID-NET LOOP FOR ALARM, SUPERVISORY AND TROUBLE RELAYS OF STADIUM FACP. CONNECT MONITOR MODULES TO STADIUM FACP TO ALLOW NETWORK REPORTING OF STADIUM FACP EVENTS THROUGH PERFORMING ARTS FACP.

FIRE ALARM NETWORK GENERAL NOTES

1. PROVIDE A NEW FIRE ALARM NETWORK TO CONNECT EACH SIMPLEX FIRE ALARM PANEL (EXISTNG OR UPGRADED) ON THE CAMPUS OF SNOW COLLEGE (INCLUDING WEST CAMPUS) TO THE NEW NETWORK DISPLAY UNIT AND INFORMATION MANAGEMENT SYSTEM (BID ALTERNATE #1) TO BE INSTALLED IN THE PHYSICAL PLANT BUILDING. THE NETWORK ARCHITECTURE SHALL BE BASED ON A LOCAL AREA NETWORK WITH PEER-TO-PEER CONNECTIONS. ROUTING OF FIRE ALARM NETWORK CONNECTIONS SHALL BE AS SHOWN ON THIS DRAWING AND INDICATED IN THE TABLE ABOVE. EACH LEG SHALL BEGIN AT THE NETWORK INTERFACE BOARD AT ONE PANEL/NODE AND EXTEND WITHOUT INTERRUPTION OR BREAK TO THE NETWORK INTERFACE BOARD AT THE NEXT PANEL.

2. UNLESS OTHERWISE NOTED, ALL CABLING USED TO CREATE THE FIRE ALARM NETWORK SHALL BE NEW (EXCEPT EXISTING FIBER BETWEEN LIBRARY AND WEST CAMPUS) FIBER OPTIC CABLE THAT MEETS THE REQUIREMENTS OF THE EQUIPMENT MANUFACTURER (SIMPLEX). FIBER SHALL BE SINGLE MODE, LOW LOSS, 9/125 UM, MAXIMUM TOTAL ATTENUATION OF 15 DB WITH A MINIMUM OF 4 FIBERS PER CABLE. CABLE SHALL BE PLENUM RATED, RODENT RESISTANT AND SUITABLE FOR INSTALLATION IN MOIST ENVIRONMENTS.

3. EXCEPT AS NOTED BELOW, ALL NETWORK CABLE SHALL BE INSTALLED IN CONDUIT (RIGID OR EMT). CABLE SHALL BE ROUTED THROUGH EXISTING UTILITY TUNNELS WHERE TUNNELS ARE PRESENT AND MAY BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUITS WHERE NO TUNNELS ARE PRESENT. WHERE EXISTING PULL STRINGS ARE USED TO INSTALL NEW CABLE IN EXISTING BURIED CONDUITS THEY SAHLL BE REPLACED. COORDINATE LOCATION OF COMMUNICATIONS CONDUIT WITH OWNER. CONDUIT IS NOT REQUIRED WHERE NETWORK FIBER CAN BE INSTALLED ON AND SECURED TO EXISTING CABLE TRAYS IN UTILITY TUNNELS.

4. SEQUENCE INSTALLATION OF NEW CABLE AND CONNECTION OF EACH FACP TO THE NETWORK TO MINIMIZE THE DOWN TIME OF EACH FIRE ALARM SYSTEM. NOTIFY CAMPUS PERSONELL WHEN THE COMMUNICATION LINK BETWEEN ANY FIRE ALARM PANEL AND THE CENTRAL MONITORING STATION WILL BE INTERRUPTED. EXISTING FIRE ALARM PANEL MAY ONLY BE DISCONNECTED FROM LINK TO CENTRAL STATION WHILE THE CONTRACTOR IS ON CAMPUS WORKING ON FIRE ALARM NETWORK.

5. LENGTH OF REQUIRED FIBER REPORTED IN TABLE ABOVE SHOULD BE CONSIDERED AS AN ESTIMATE FOR BIDDING PURPOSES AND SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING FIBER OPTIC CABLE AND CONDUIT.

6. CONDUIT CONTAINING FIRE ALARM NETWORK CIRCUITS THAT IS LOCATED IN ACCESSIBLE UTILITY TUNNELS OR WITHIN BUILDINGS SHALL BE PERMANTENLY MARKED TO IDENTIFY CIRCUITS AS FIRE ALARM CIRCUITS. MARKING SHALL CONSIST OF RED PAINTED J-BOXES AND RED BANDING (PAINT OR TAPE) OF CONDUIT EVERY 20'. WHERE CIRCUIT IS INSTALLED EXPOSED ON CABLE TRAY (NO CONDUIT REQUIRED), CABLE SHALL HAVE A RED SHEATH OR SHALL BE MARKED (PAINT OR TAPE) RED EVERY 20'.

7. CONTRACTOR SHALL TEST EACH FIBER OPTIC CABLE INSTALLED UNDER THIS CONTRACT FOR CONTINUITY AND INTEGRITY. DOCUMENT EACH TEST AND SUBMIT TEST DOCUMENTS TO PROJECT ENGINEER FOR APPROVAL. EACH CABLE SHALL CONSIST OF A MINIMUM OF 4 SEPARATE FIBERS, 3 OF WHICH, SHALL BE VERIFIED BY TESTING TO BE CONTINUOUS AND COMPLETELY FUNCTIONAL FOR CURRENT OR FUTURE FIRE ALARM NETWORK SYSTEM USE.

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CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - FIRE ALARM NETWORK
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FA-0.1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

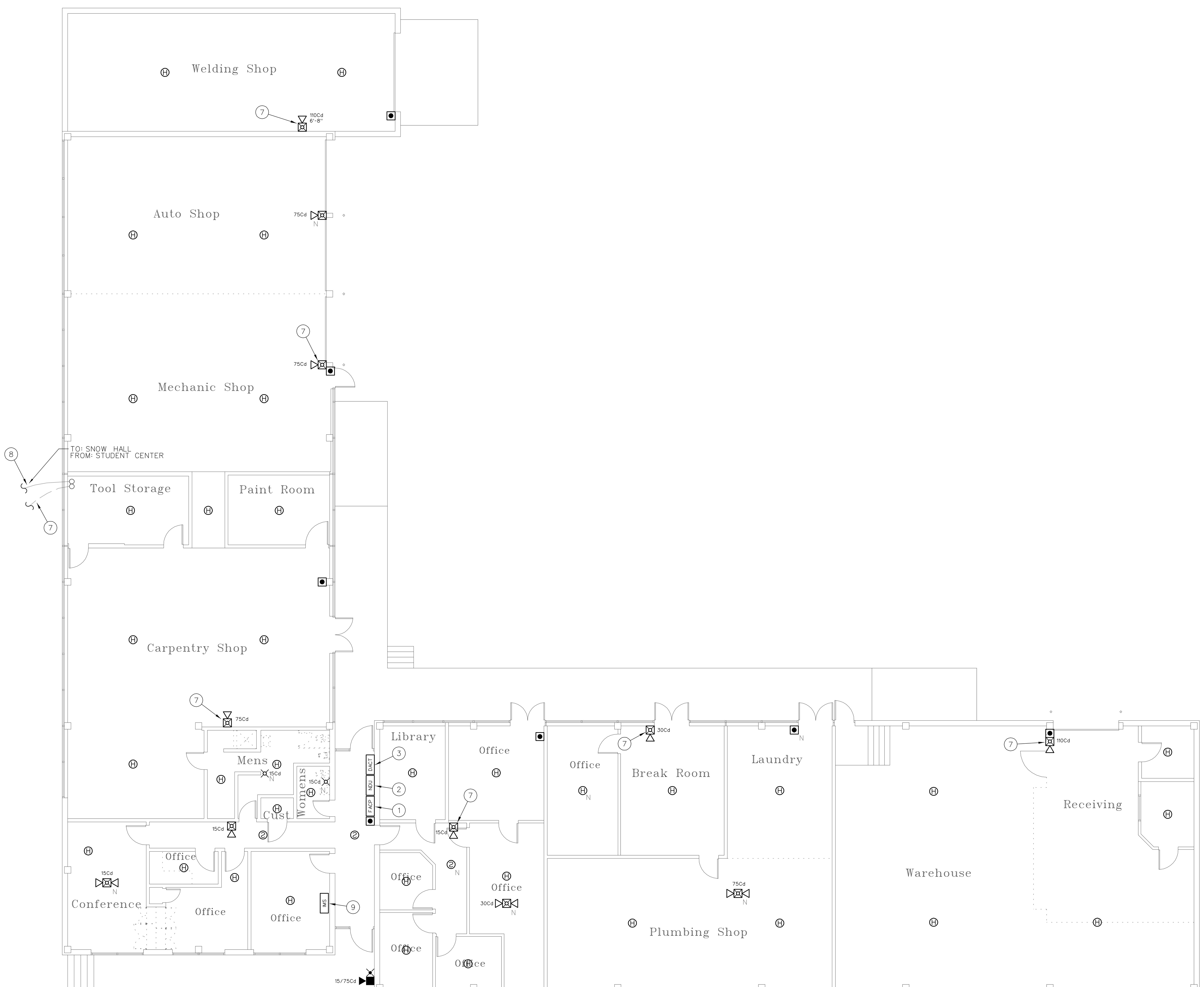
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



FIRE ALARM PLAN – PHYSICAL PLANT

SCALE: 1/8" = 1'-0"

0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4200) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 REPLACE EXISTING CAMPUS FIRE ALARM NETWORK CONTROL PANEL (SIMPLEX 2120) WITH NEW SIMPLEX NETWORK DISPLAY UNIT (NDU). PROVIDE ALL REQUIRED CIRCUITS, CABINETS, MODULES, INTERFACE CARDS, DEVICES, ETC. TO PROVIDE A COMPLETE NETWORK OF ALL FIRE ALARM CONTROL PANELS ON CAMPUS (SEE NETWORK PLAN - SHEET FA-0.1). EXISTING 120 VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY.

03 REPLACE EXISTING DIGITAL ALARM COMMUNICATOR/TRANSMITTER (DACT) WITH NEW DACT. DACT MAY BE INTEGRATED WITH NDU OR MAY BE SEPARATE BUT SHALL BE CONFIGURES TO RELAY ALL FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS RECEIVED BY NDU TO CENTRAL STATION SELECTED BY THE OWNER. EXISTING PHONE LINES MAY BE REUSED.

04 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM PHYSICAL PLANT TO HEAT PLANT TO ALLOW CONNECT ION OF INITIATING DEVICES IN HEAT PLANT TO FACP IN PHYSICAL PLANT. INSTALL SLC IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT PRESENT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE ISOLATOR MODULES ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.

05 REMOVE EXISTING FACP (SIMPLEX 4002) FOR HEAT PLANT. INSTALL NEW REMOTE POWER SUPPLY TO PROVIDE POWER TO NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULES TO MONITOR TROUBLE OUTPUTS OF POWER SUPPLY. EXISTING 120 VAC CIRCUIT FROM FACP (TO BE REMOVED) MAY BE USED TO PROVIDE PRIMARY POWER. PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY + 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW.

06 INSTALL ANNUNCIATOR PANEL FOR FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE AN ALPHANUMERIC DISPLAY INDICATE STATUS OF FIRE ALARM SYSTEM IN BOTH PHYSICAL PLANT AND HEAT PANT. SURFACE MOUNT ANNUNCIATOR AT 54" AFF. CONDUIT MAY BE EXPOSED. CONNECT ANNUNCIATOR TO FACP IN PHYSICAL PLANT WITH NEW CIRCUIT INSTALLED IN EXISTING UNDERGROUND COMMUNICATION CONDUIT PRESENT BETWEEN BUILDINGS. PROVIDE ISOLATOR MODULES/SURGE SUPPRESSION WHERE CONDUIT ENTERS/EXITS THE BUILDING.

07 EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

08 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

09 BID ALTERNATE #1:
FURNISH AND INSTALL A SIMPLEX TRUE ALARM INFORMATION MANAGEMENT SYSTEM (IMS) FOR THE CAMPUS FIRE ALARM NETWORK. IMS SHALL BE CONFIGURED FOR DESKTOP INSTALLATION WITH 17" LCD MONITOR, KEYBOARD AND MOUSE. IMS SHALL HAVE PRE-LOADED GRAPHIC MAPS/DISPLAYS OF ALL FIRE ALARM SYSTEMS CONNECTED TO THE NETWORK. MAPS/DISPLAYS SHALL INCLUDE FLOOR PLANS, ROOM DESIGNATIONS, INITIATING DEVICES (WITH ADDRESSES), CONTROL EQUIPMENT AND CONTROL RELAYS. COORDINATE LOCATION OF IMS INSTALLATION WITH OWNER. PROVIDE COMPLETE TRAINING IN IMS CONFIGURATION AND OPERATION TO OWNER.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - PHYSICAL PLANT AND HEAT PLANT
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - PHYSICAL PLANT
PP-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND 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.

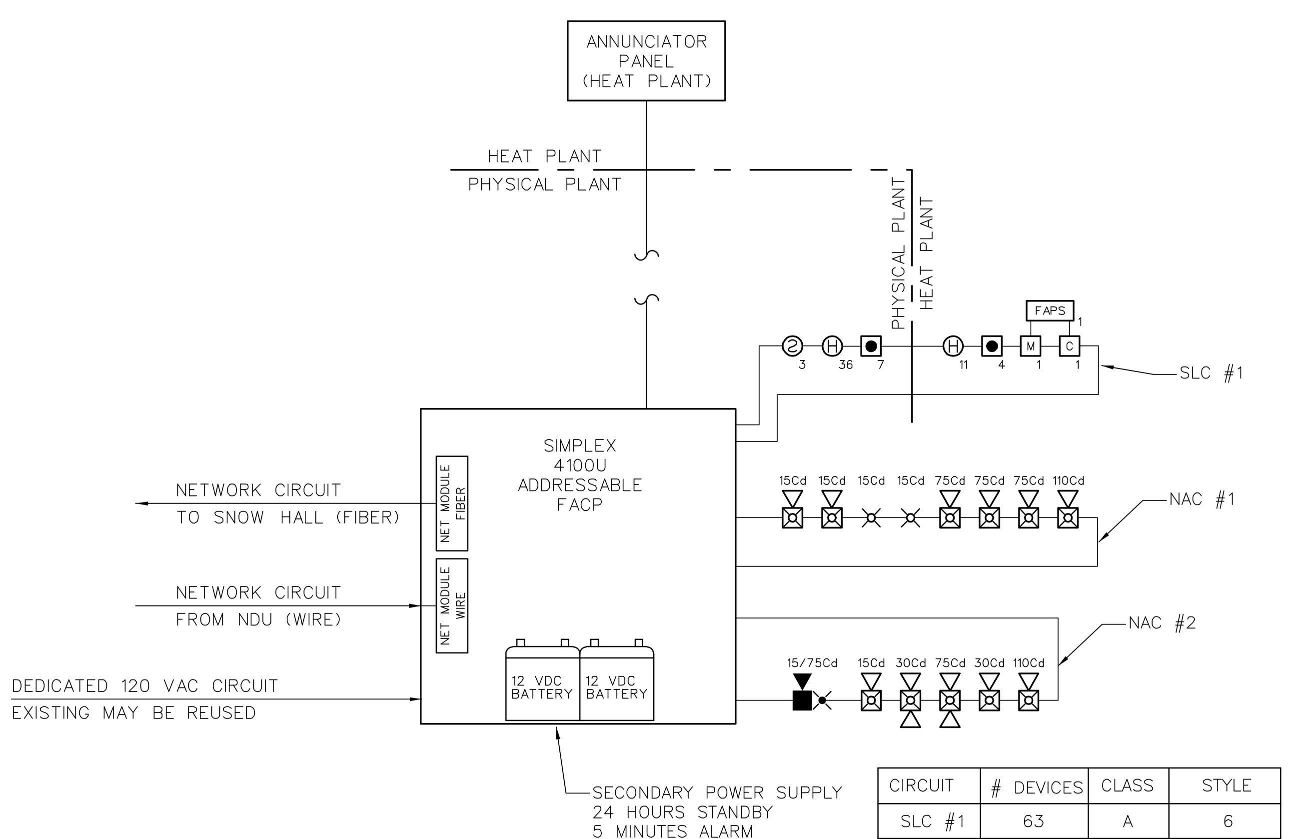
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

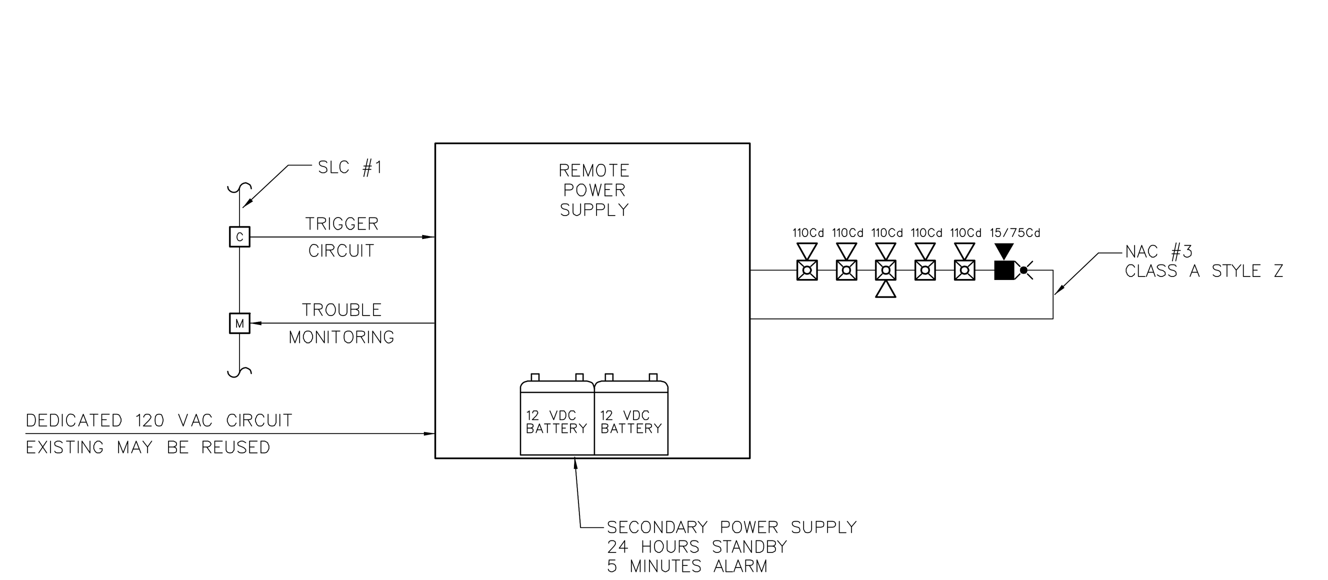
14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. IT IS THE INSTALLER'S RESPONSIBILITY TO NOTIFY PROPER AUTHORITIES AND PROVIDE A FIRE WATCH DURING INTERRUPTIONS OF FIRE DETECTION AND ALARM SERVICE IN THE BUILDING.

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 DAY PRIOR TO SCHEDULED TEST.

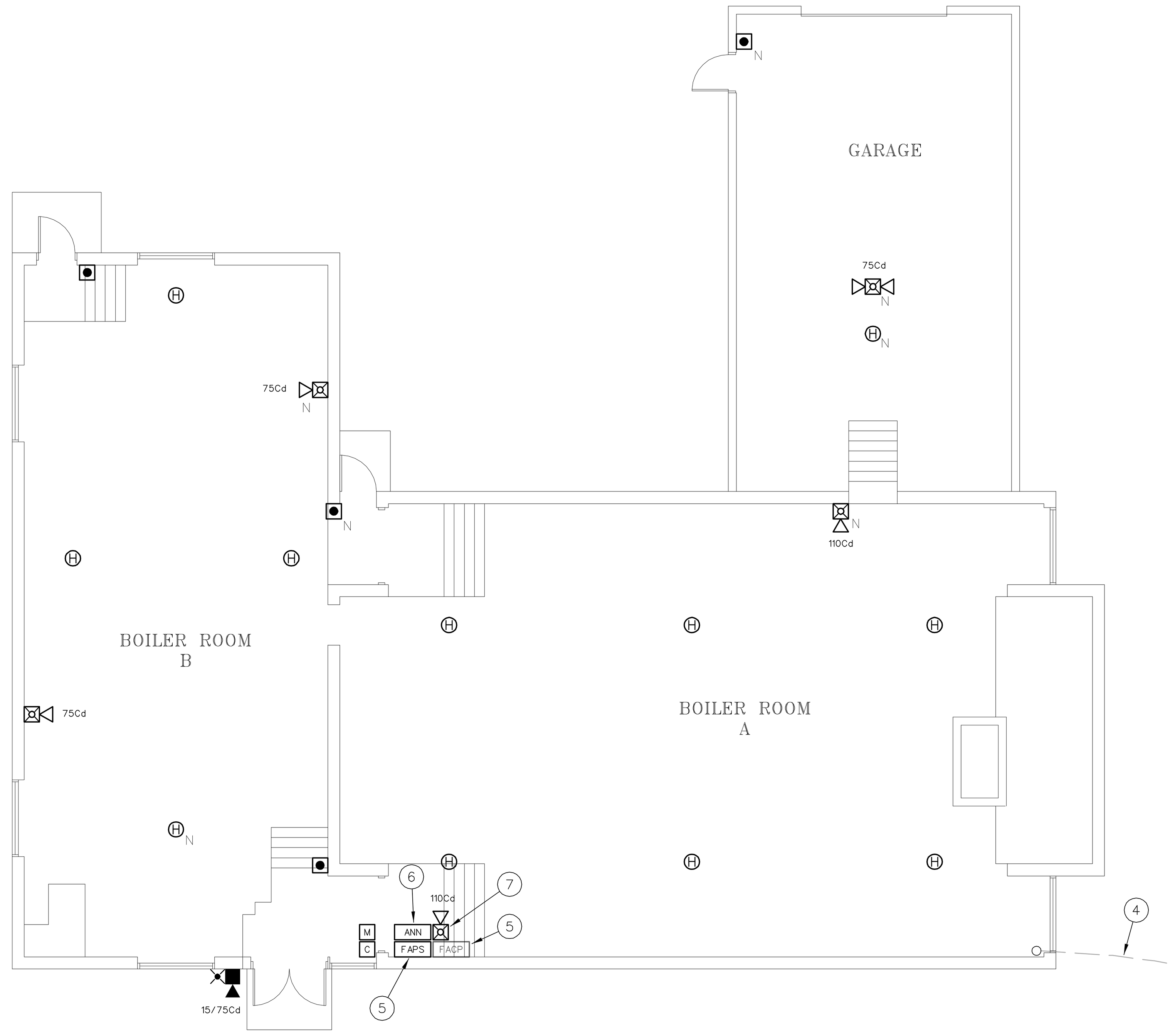


CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	63	A	6
NAC #1	8	A	Z
NAC #2	6	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM PHYSICAL PLANT
NTS



3 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM - HEAT PLANT
NTS



1 FIRE ALARM PLAN - HEAT PLANT
1/8" = 1'-0"
0 8' 16' 32'

SYSTEM INPUTS / OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU
ACTIVATION OF ANY SMOKE DETECTOR	X	X		
ACTIVATION OF ANY HEAT DETECTOR	X	X		
ACTIVATION OF ANY MANUAL PULL STATION	X	X		
REMOTE POWER SUPPLY TROUBLE				X
CIRCUIT TROUBLE				X
LOSS OF AC POWER			X	
LOW BATTERY VOLTAGE				X
SYSTEM TROUBLE				X

4 SEQUENCE OF OPERATION
NTS

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4200) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) REPLACE EXISTING CAMPUS FIRE ALARM NETWORK CONTROL PANEL (SIMPLEX 2120) WITH NEW SIMPLEX NETWORK DISPLAY UNIT (NDU). PROVIDE ALL REQUIRED CIRCUITS, CABINETS, MODULES, INTERFACE CARDS, DEVICES, ETC. TO PROVIDE A COMPLETE NETWORK OF ALL FIRE ALARM CONTROL PANELS ON CAMPUS (SEE NETWORK PLAN - SHEET FA-0.1). EXISTING 120 VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY.

(03) REPLACE EXISTING DIGITAL ALARM COMMUNICATOR/TRANSMITTER (DACT) WITH NEW DACT. DACT MAY BE INTEGRATED WITH NDU OR MAY BE SEPARATE BUT SHALL BE CONFIGURES TO RELAY ALL FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS RECEIVED BY NDU TO CENTRAL STATION SELECTED BY THE OWNER. EXISTING PHONE LINES MAY BE REUSED.

(04) EXTEND SIGNALING LINE CIRCUIT (SLC) FROM PHYSICAL PLANT TO HEAT PLANT TO ALLOW CONNECT ION OF INITIATING DEVICES IN HEAT PLANT TO FACP IN PHYSICAL PLANT. INSTALL SLC IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT PRESENT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE ISOLATOR MODULES ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.

(05) REMOVE EXISTING FACP (SIMPLEX 4002) FOR HEAT PLANT. INSTALL NEW REMOTE POWER SUPPLY TO PROVIDE POWER TO NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULES TO MONITOR TROUBLE OUTPUTS OF POWER SUPPLY. EXISTING 120 VAC CIRCUIT FROM FACP (TO BE REMOVED) MAY BE USED TO PROVIDE PRIMARY POWER. PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY + 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW.

(06) INSTALL ANNUNCIATOR PANEL FOR FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE AN ALPHANUMERIC DISPLAY INDICATE STATUS OF FIRE ALARM SYSTEM IN BOTH PHYSICAL PLANT AND HEAT PANT. SURFACE MOUNT ANNUNCIATOR AT 54" AFF. CONDUIT MAY BE EXPOSED. CONNECT ANNUNCIATOR TO FACP IN PHYSICAL PLANT WITH NEW CIRCUIT INSTALLED IN EXISTING UNDERGROUND COMMUNICATION CONDUIT PRESENT BETWEEN BUILDINGS. PROVIDE ISOLATOR MODULES/SURGE SUPPRESSION WHERE CONDUIT ENTERS/EXITS THE BUILDING.

(07) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(08) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(09) BID ALTERNATE #1:
FURNISH AND INSTALL A SIMPLEX TRUE ALARM INFORMATION MANAGEMENT SYSTEM (IMS) FOR THE CAMPUS FIRE ALARM NETWORK. IMS SHALL BE CONFIGURED FOR DESKTOP INSTALLATION WITH 17" LCD MONITOR, KEYBOARD AND MOUSE. IMS SHALL HAVE PRE-LOADED GRAPHIC MAPS/DISPLAYS OF ALL FIRE ALARM SYSTEMS CONNECTED TO THE NETWORK. MAPS/DISPLAYS SHALL INCLUDE FLOOR PLANS, ROOM DESIGNATIONS, INITIATING DEVICES (WITH ADDRESSES), CONTROL EQUIPMENT AND CONTROL RELAYS. COORDINATE LOCATION OF IMS INSTALLATION WITH OWNER. PROVIDE COMPLETE TRAINING IN IMS CONFIGURATION AND OPERATION TO OWNER.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - PHYSICAL PLANT AND HEAT PLANT
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - HEAT PLANT, DETAILS & SCHEDULES
PP-F2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

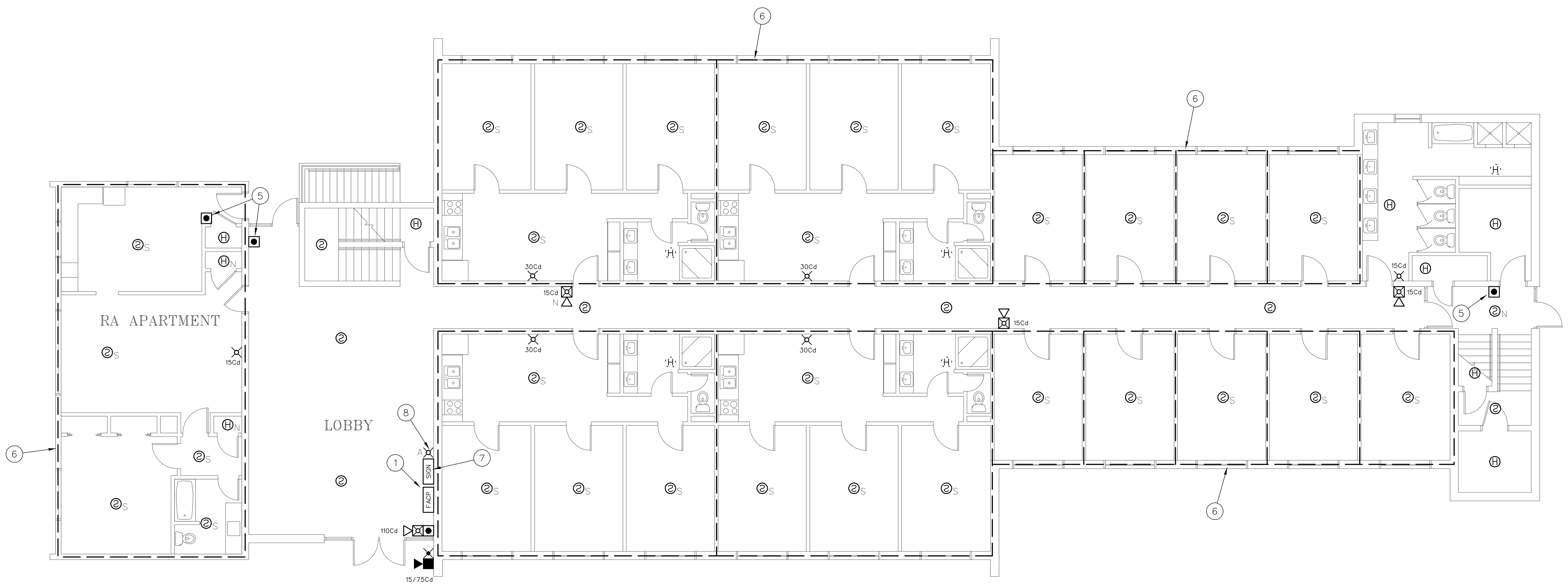
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

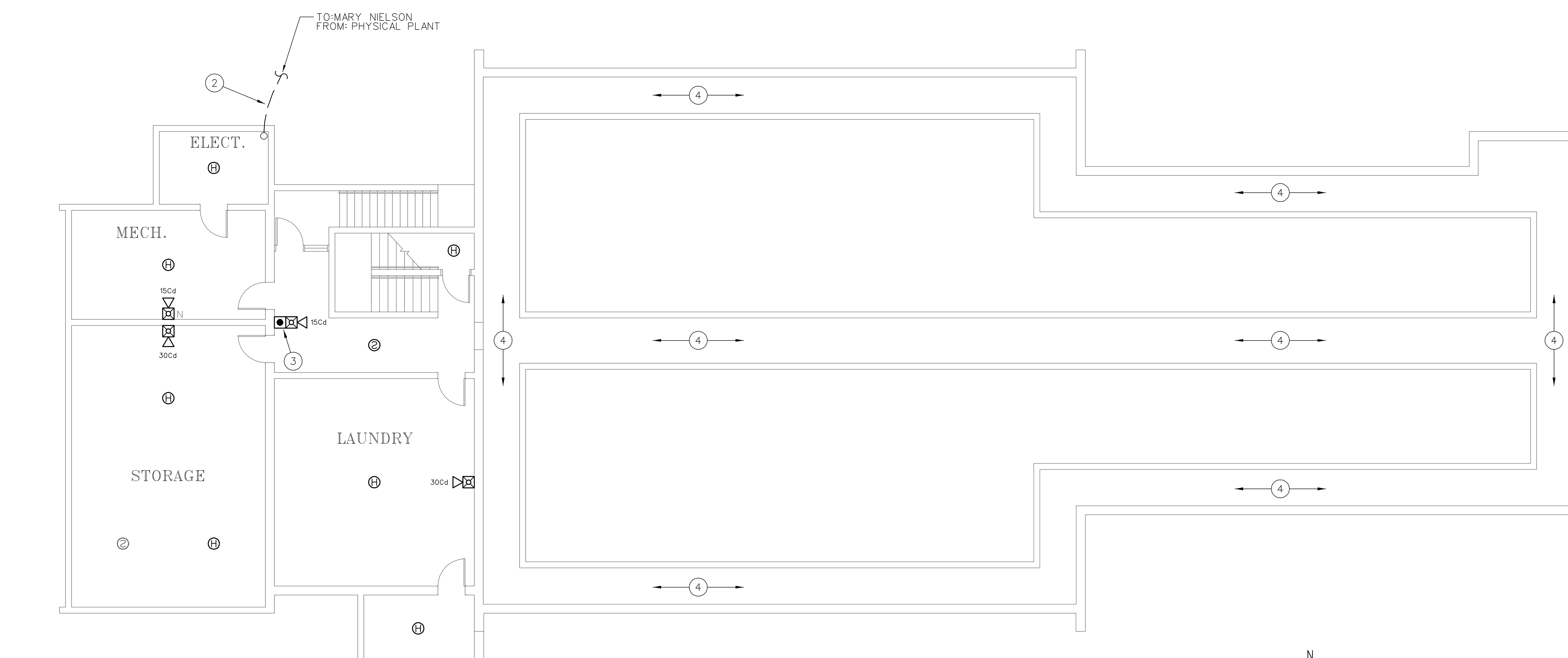
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



2 FIRE ALARM PLAN - SNOW HALL (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



1 FIRE ALARM PLAN - SNOW HALL (BASEMENT)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

01. REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).
02. INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).
03. EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.
04. NO FIRE ALARM SYSTEM DEVICES (INITIATING DEVICES OR NOTIFICATION APPLIANCES) REQUIRED IN TUNNELS BELOW BUILDING.
05. EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.
06. DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.
07. INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.
08. INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
②N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2 (dashed)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 (dashed) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
②S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
ⒽN	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H (dashed)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H (dashed) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■●	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■● N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
● (dashed)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● (dashed) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD (dashed)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD (dashed) A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D (dashed)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T (dashed)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F (dashed)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
☒	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
▽☒	HORN/STROBE		
▷☒◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
☒N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
▽☒N	HORN/STROBE		
▷☒◁N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
▼■☒	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
▼■☒N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(dashed)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
☒A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - SNOW HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - SNOW HALL

SH-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

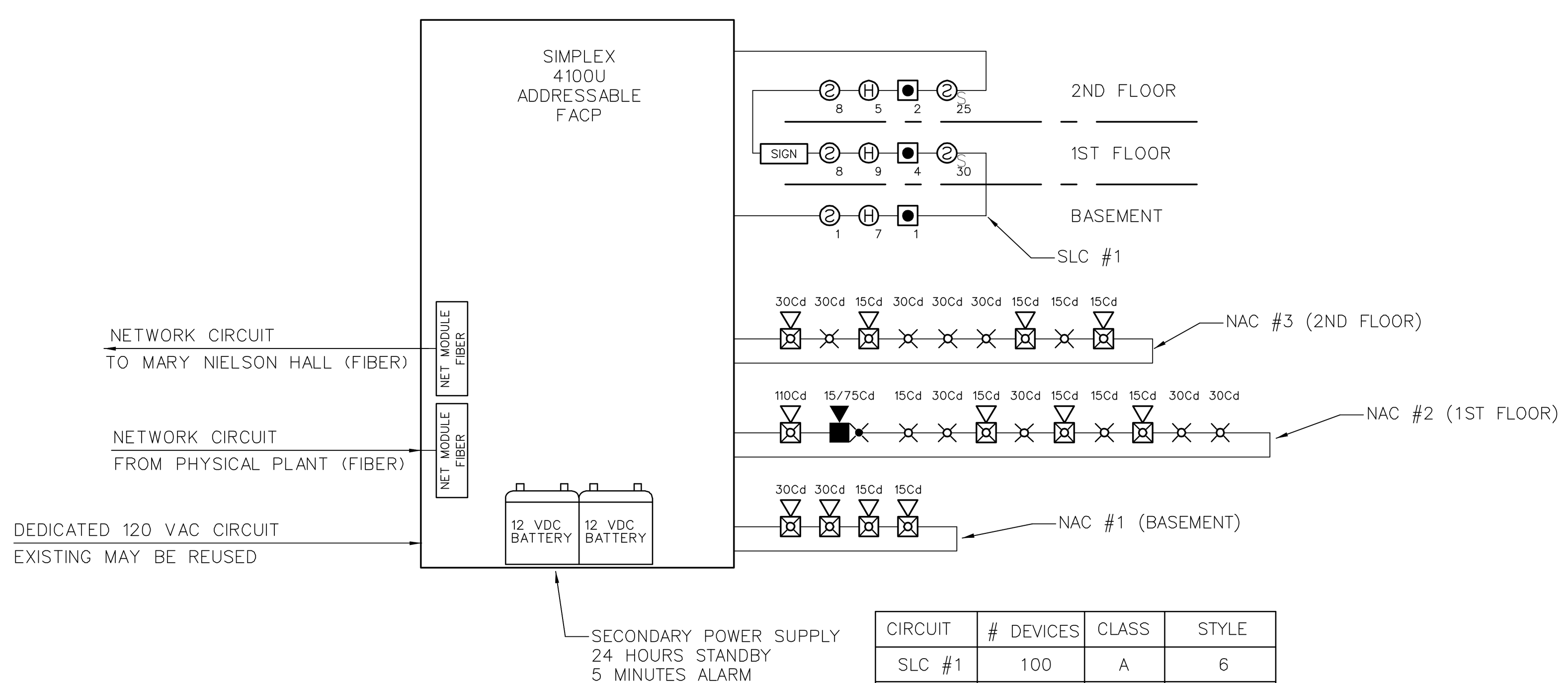
04 NO FIRE ALARM SYSTEM DEVICES (INITIATING DEVICES OR NOTIFICATION APPLIANCES) REQUIRED IN TUNNELS BELOW BUILDING.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

07 INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

08 INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



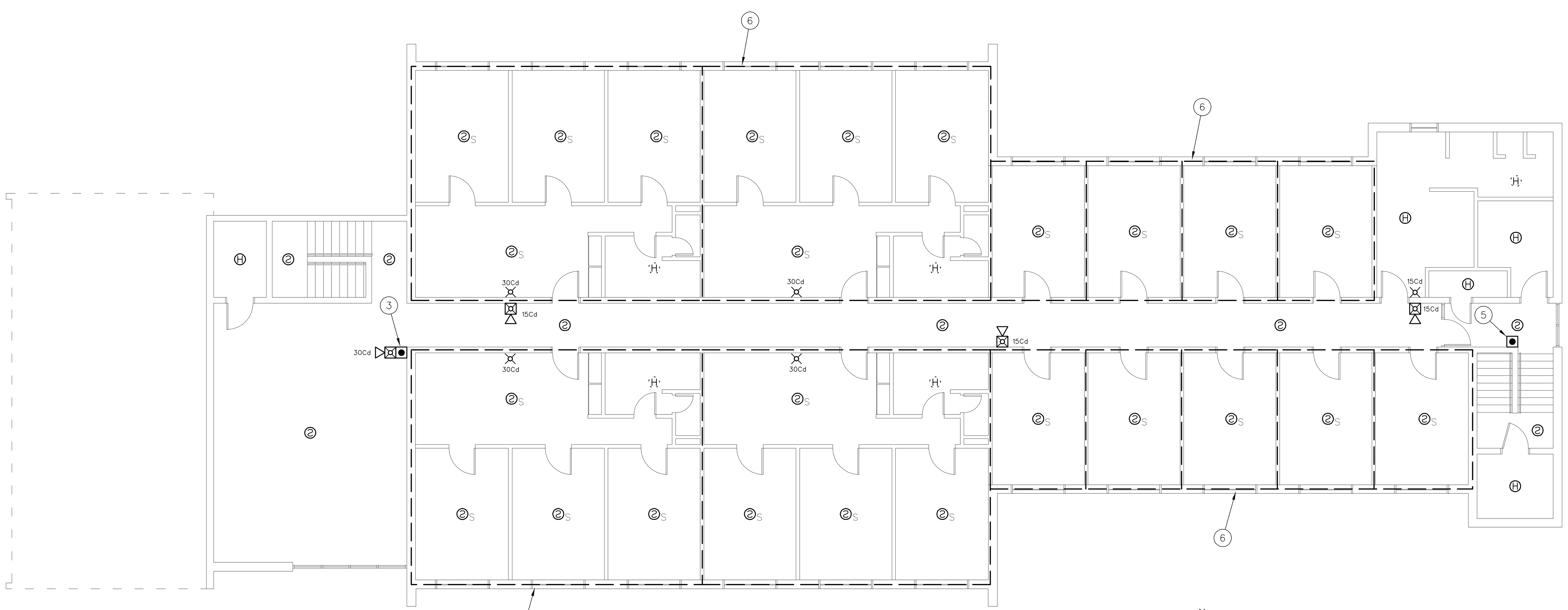
CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	100	A	6
NAC #1	4	A	Z
NAC #2	11	A	Z
NAC #3	9	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT
ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			
ACTIVATION OF ANY RESIDENTIAL TYPE SMOKE ALARM			X		X
RECIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY				X	
CIRCUIT TROUBLE			X		
LOSS OF AC POWER				X	
LOW BATTERY VOLTAGE				X	
SYSTEM TROUBLE					

(OUTPUT ACTIONS)

3 SEQUENCE OF OPERATION
NTS



1 FIRE ALARM PLAN - SNOW HALL (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - SNOW HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - SNOW HALL

SH-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

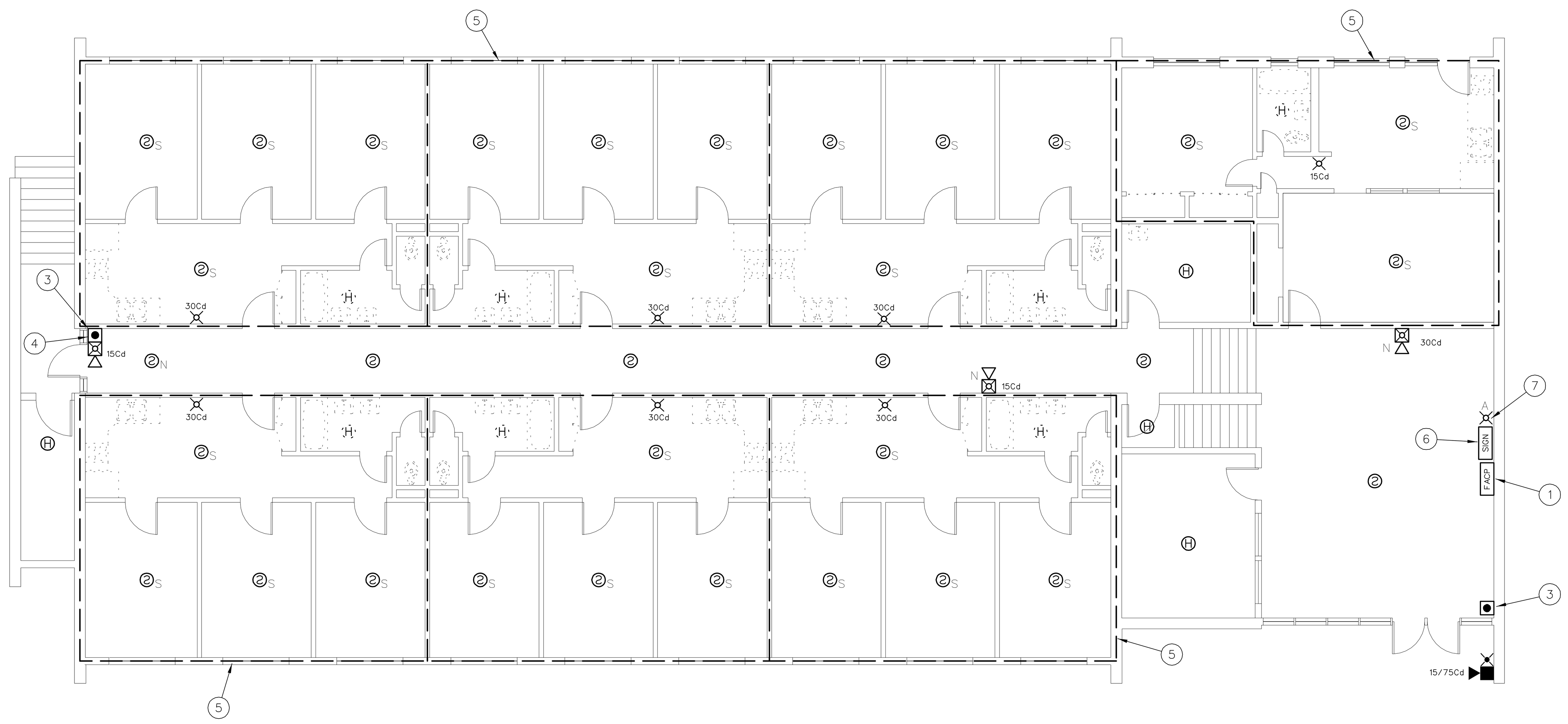
(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(04) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

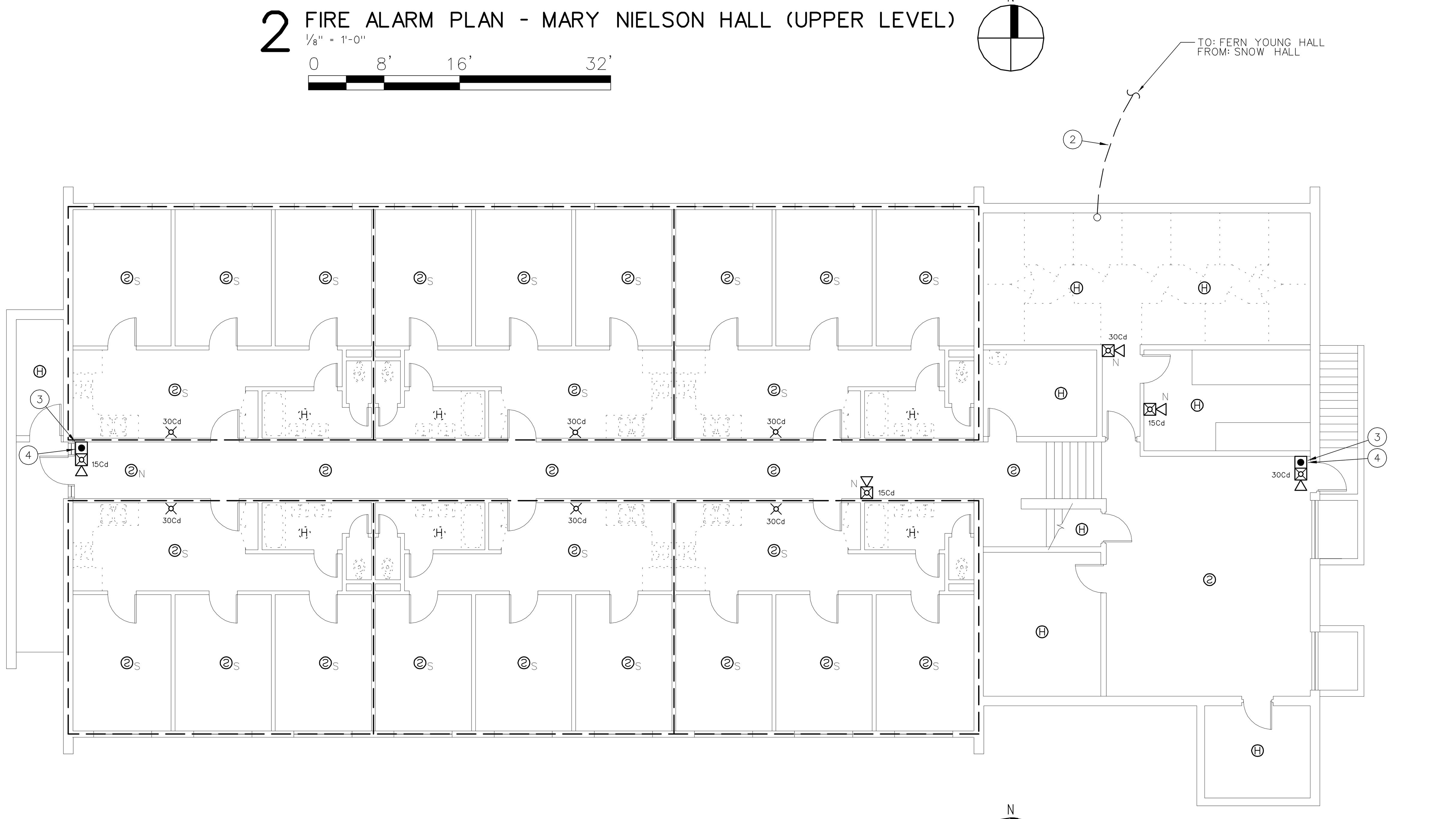
(05) DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

(06) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(07) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



2 FIRE ALARM PLAN - MARY NIELSON HALL (UPPER LEVEL)
1/8" = 1'-0"
0 8' 16' 32'



1 FIRE ALARM PLAN - MARY NIELSON HALL (LOWER LEVEL)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
② N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(2) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
② S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
Ⓗ N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
(H)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(H) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
(●)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
(●) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
(SD)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
(SD) A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
(D)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
(T)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(F)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
⊗	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
⊠	HORN/STROBE		
▷⊠◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
⊗ N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
⊠ N	HORN/STROBE		
▷⊠◁ N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
▼■⊗	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
▼■⊗ N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(⊠)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
⊗ A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - MARY NIELSON HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - MARY NIELSON HALL (LOWER AND UPPER LEVELS)
MN-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

2. APPLICABLE CODES/STANDARDS:
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   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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
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4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

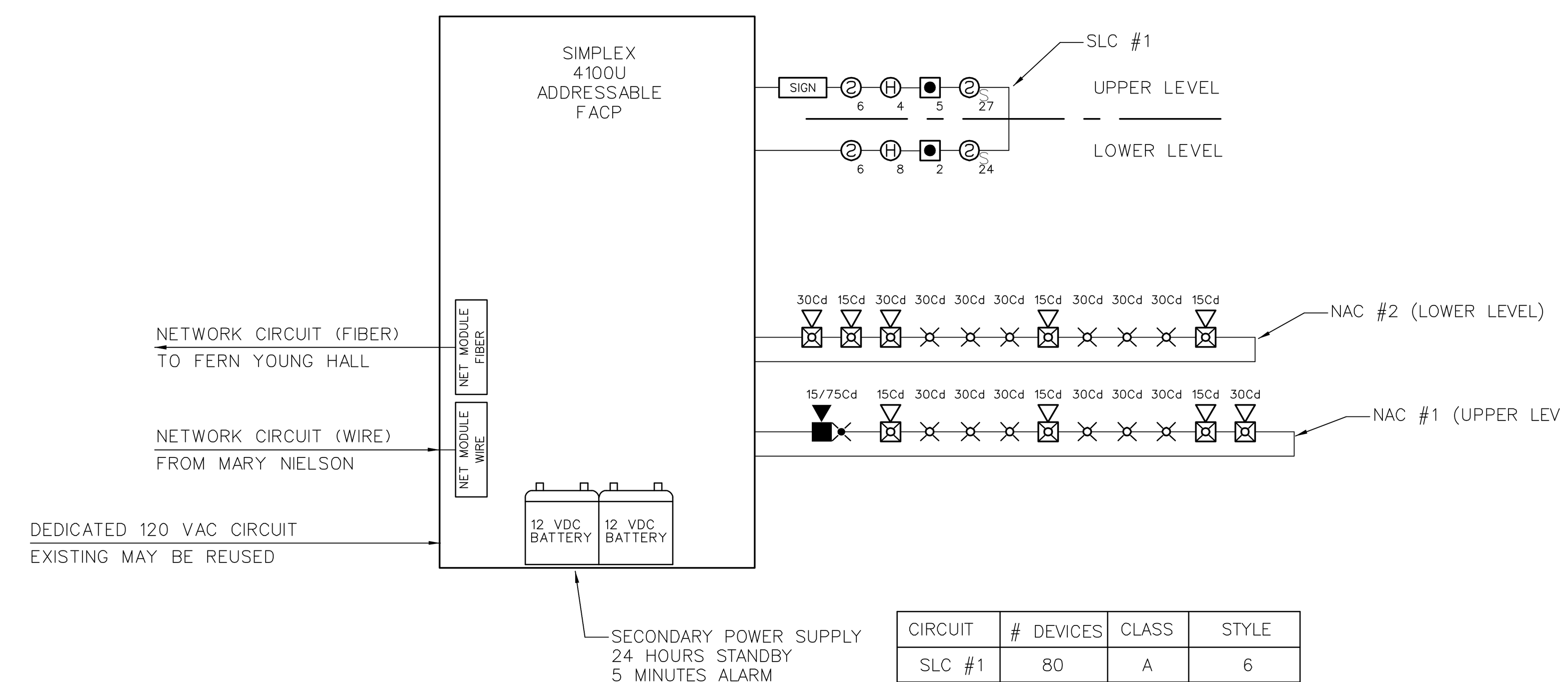
03 EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

04 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

05 DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

06 INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

07 INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	80	A	6
NAC #1	11	A	Z
NAC #2	11	A	Z

1 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

SYSTEM INPUTS	OUTPUT ACTIONS: ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT
ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			
ACTIVATION OF ANY RESIDENTIAL TYPE SMOKE ALARM			X		X
RECIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY				X	
CIRCUIT TROUBLE			X		
LOSS OF AC POWER				X	
LOW BATTERY VOLTAGE				X	
SYSTEM TROUBLE					

2 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - MARY NIELSON HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM
DETAILS & SCHED
MARY NIELSON HALL
MN-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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

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5. DEMOLITION: IT IS THE INSTALLER'S RESPONSIBILITY FOR THE DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
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   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
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13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

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FIRE ALARM SYSTEM KEY NOTES

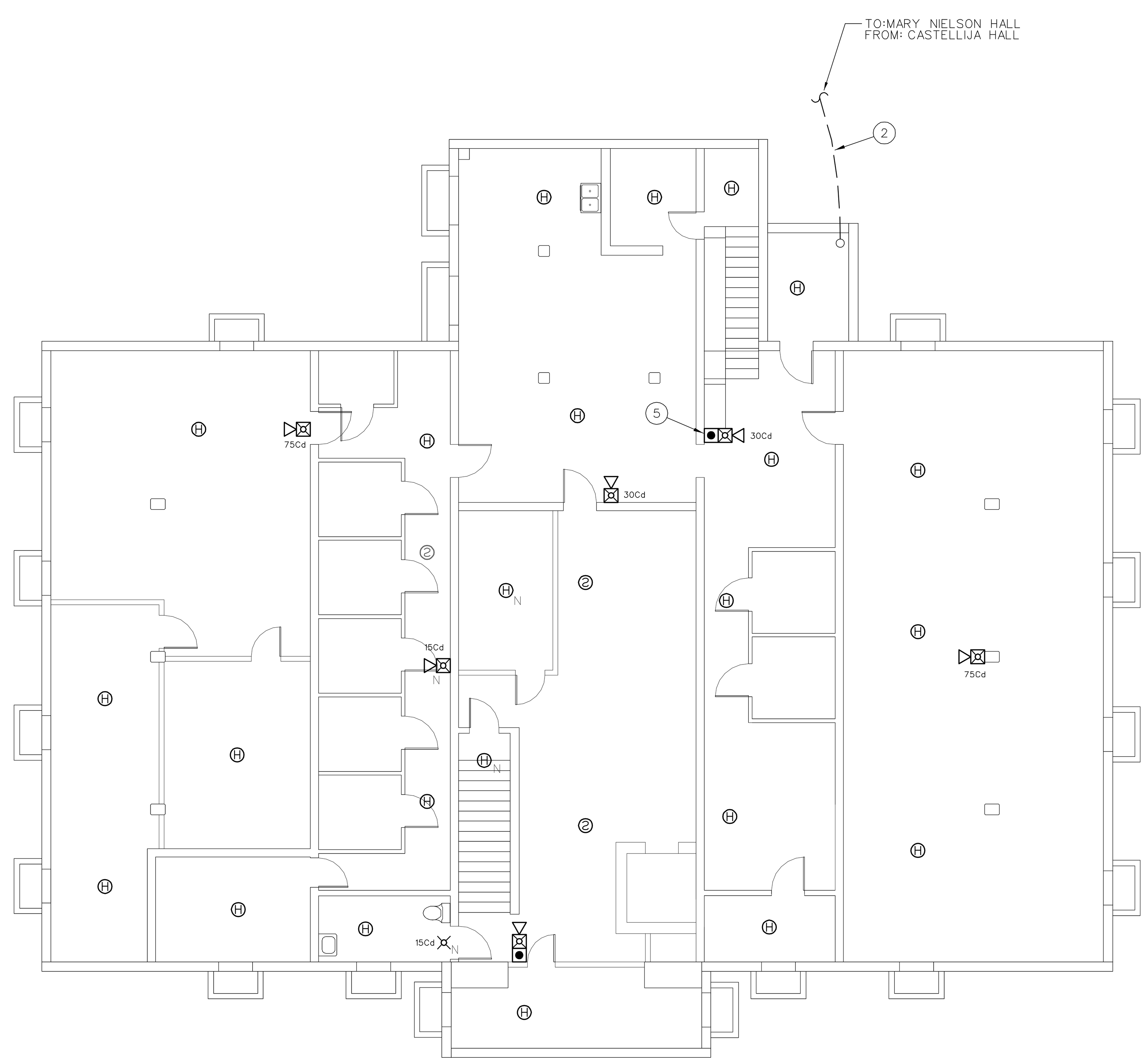
01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

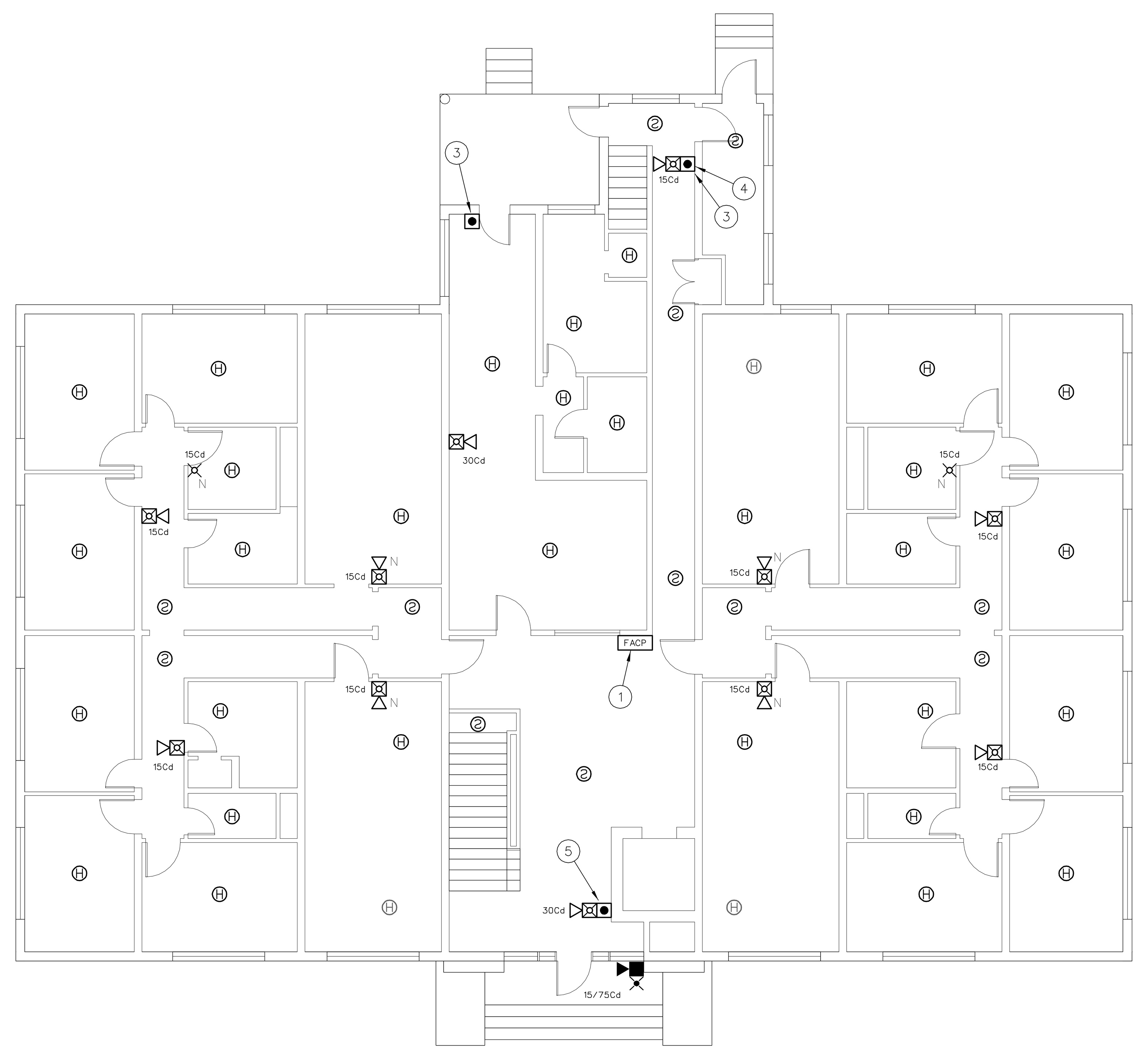
03 EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

04 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.



1 FIRE ALARM PLAN - FERN YOUNG (BASEMENT)
1/8" = 1'-0"



2 FIRE ALARM PLAN - FERN YOUNG (1ST FLOOR)
1/8" = 1'-0"

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - FERN YOUNG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
FERN YOUNG
(BASEMENT &
1ST FLOOR)
FY-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

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FIRE ALARM SYSTEM KEY NOTES

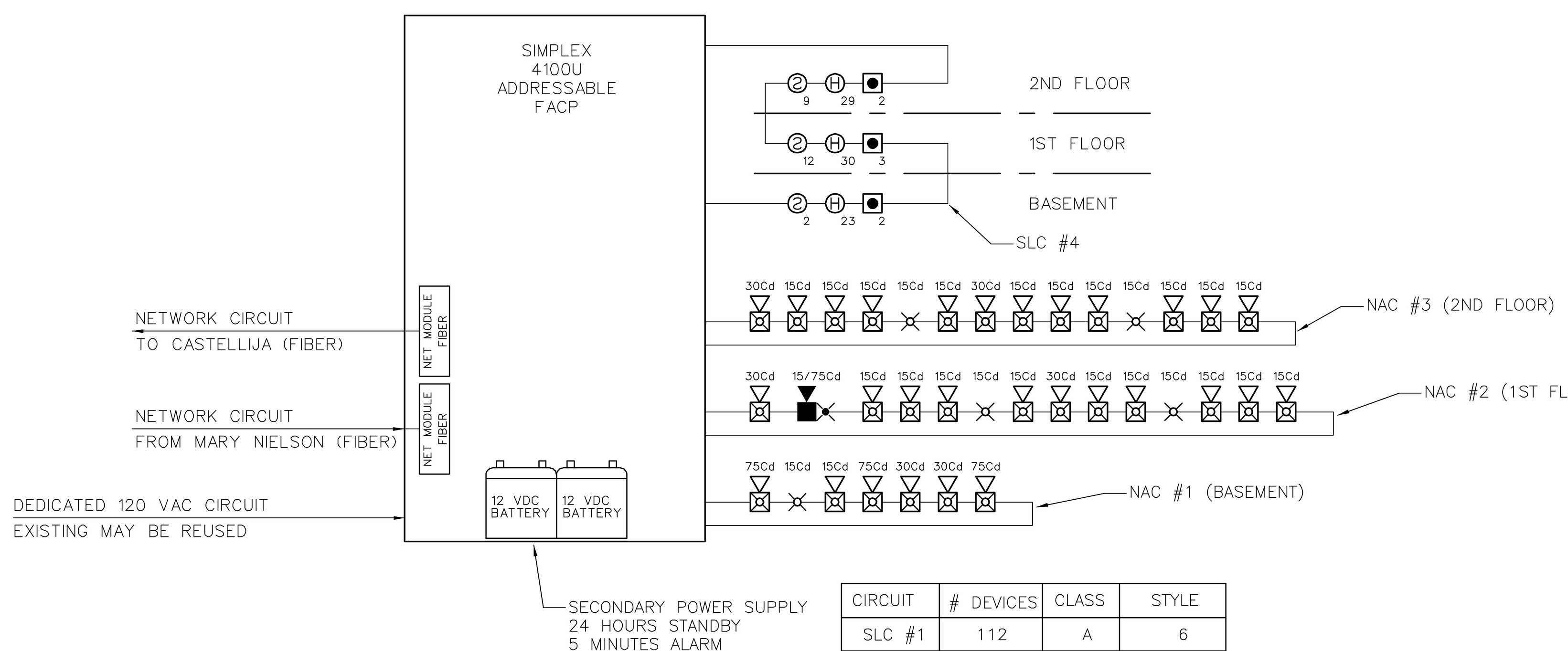
(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(04) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.



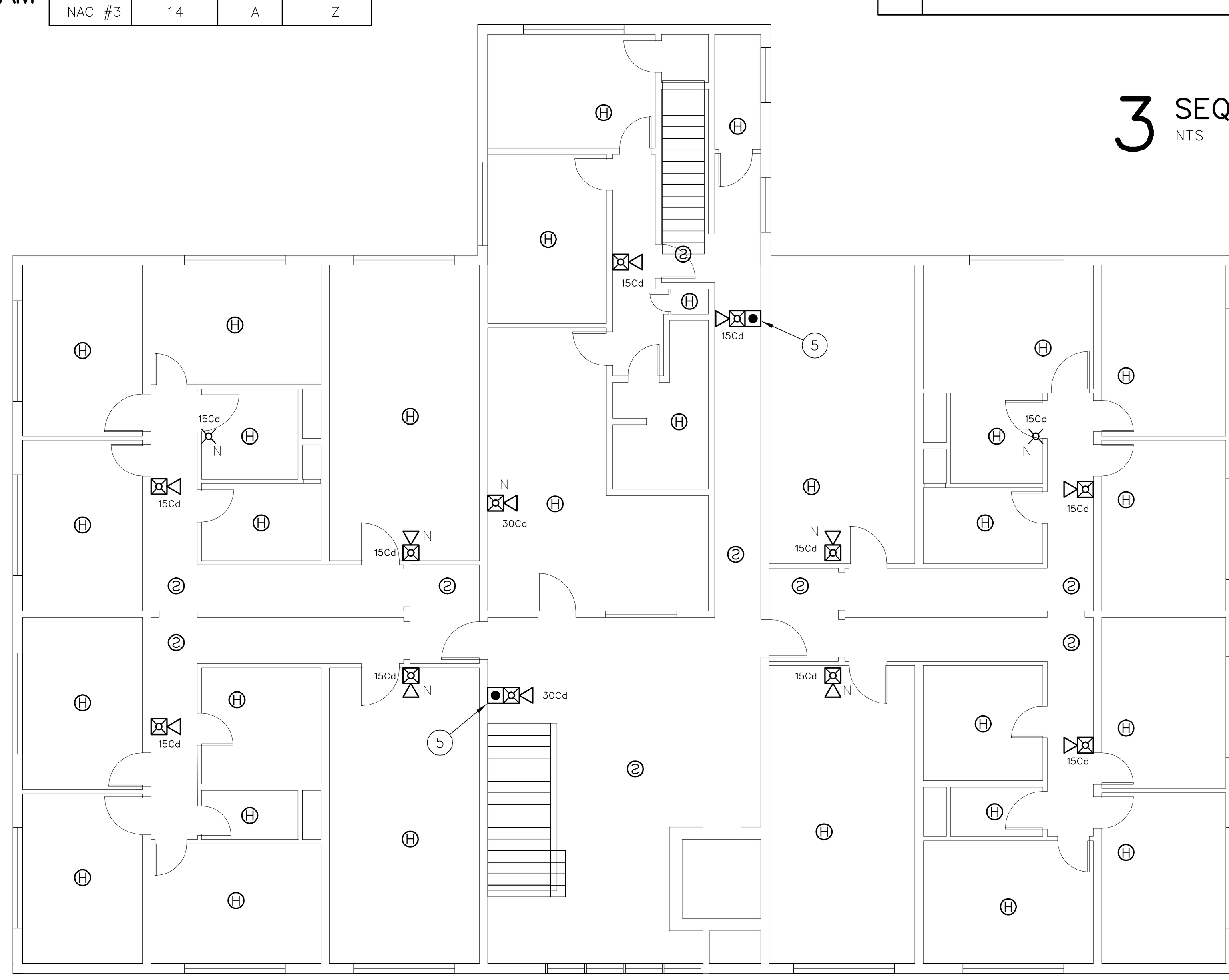
CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	112	A	6
NAC #1	7	A	Z
NAC #2	14	A	Z
NAC #3	14	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

SYSTEM INPUTS	ACTIVATE ALL LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	
ACTIVATION OF ANY SMOKE DETECTOR	X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			
CIRCUIT TROUBLE				X	
LOSS OF AC POWER			X		
LOW BATTERY VOLTAGE				X	
SYSTEM TROUBLE				X	

OUTPUT ACTIONS

3 SEQUENCE OF OPERATION
NTS



1 FIRE ALARM PLAN - FERN YOUNG (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

N

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - FERN YOUNG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN FERN YOUNG (2ND LEVEL) DETAILS AND SCHEDULES

FY-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

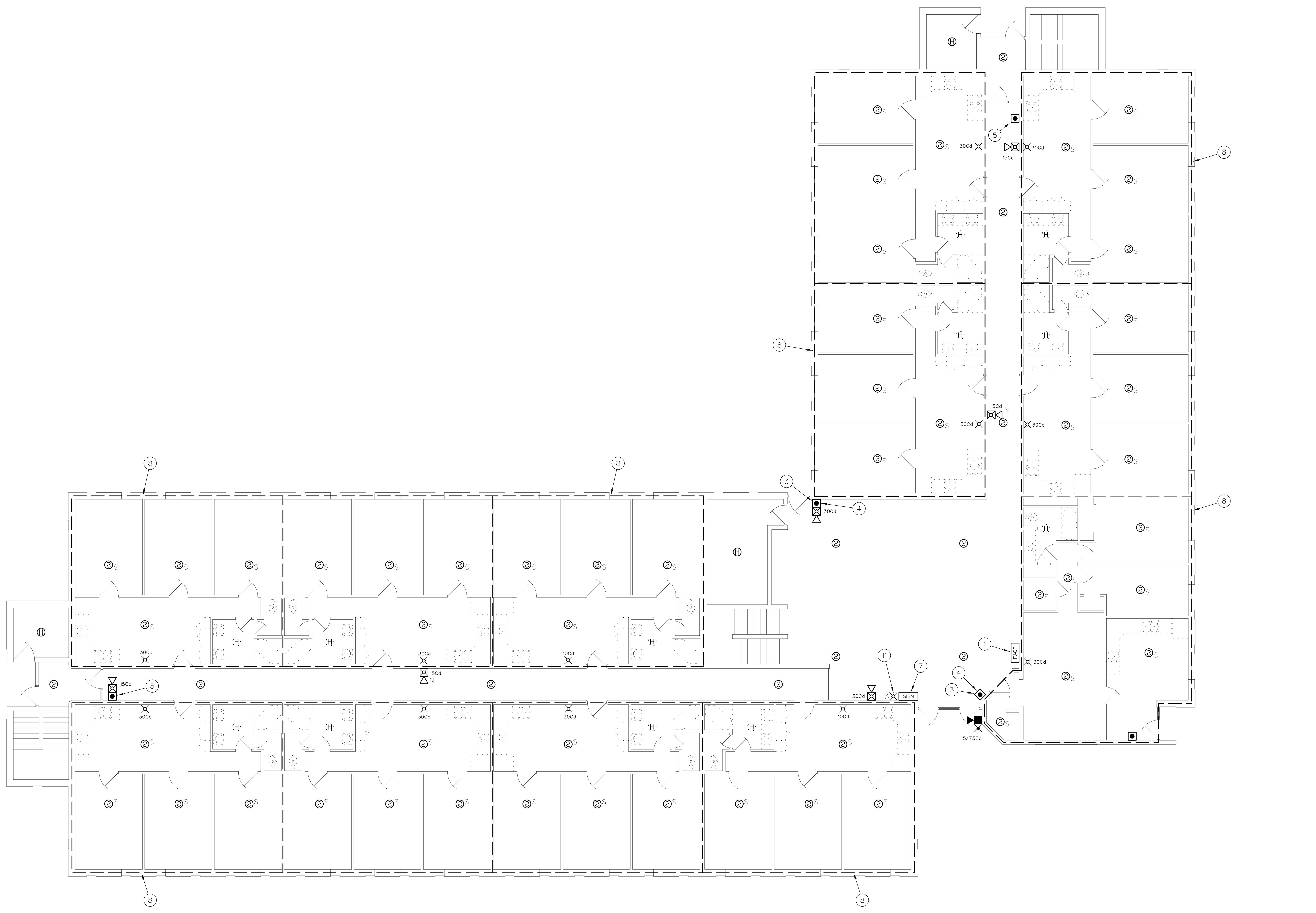
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48'' AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - CASTILLEJA HALL (1ST FLOOR)
1/8'' = 1'-0''
0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48'' AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48'' AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(04) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) REPLACE EXISTING FIRE SPRINKLER VALVE TAMPER SWITCH AND PRESSURE TYPE WATER FLOW SWITCH WITH NEW EQUIPMENT. INSTALL INPUT MODULES TO CONNECT SWITCHES TO NEW ADDRESSABLE FACP.

(07) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(08) DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

(09) NO FIRE ALARM SYSTEM DEVICES (INITIATING DEVICES OR NOTIFICATION APPLIANCES) REQUIRED IN TUNNELS BELOW BUILDING.

(10) INSTALL NEW REMOTE POWER SUPPLY TO POWER NOTIFICATION APPLIANCE CIRCUITS ON 2ND LEVEL. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TROUBLE OUTPUT TO POWER SUPPLY. INSTALL NEW DEDICATED DISTRIBUTION PANEL WITH ADEQUATE CAPACITY FOR EXPANSION (COORDINATE WITH OWNER). PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY + 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW.

(11) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - CASTILLEJA HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
CASTILLEJA
(1ST FLOOR)
CH-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

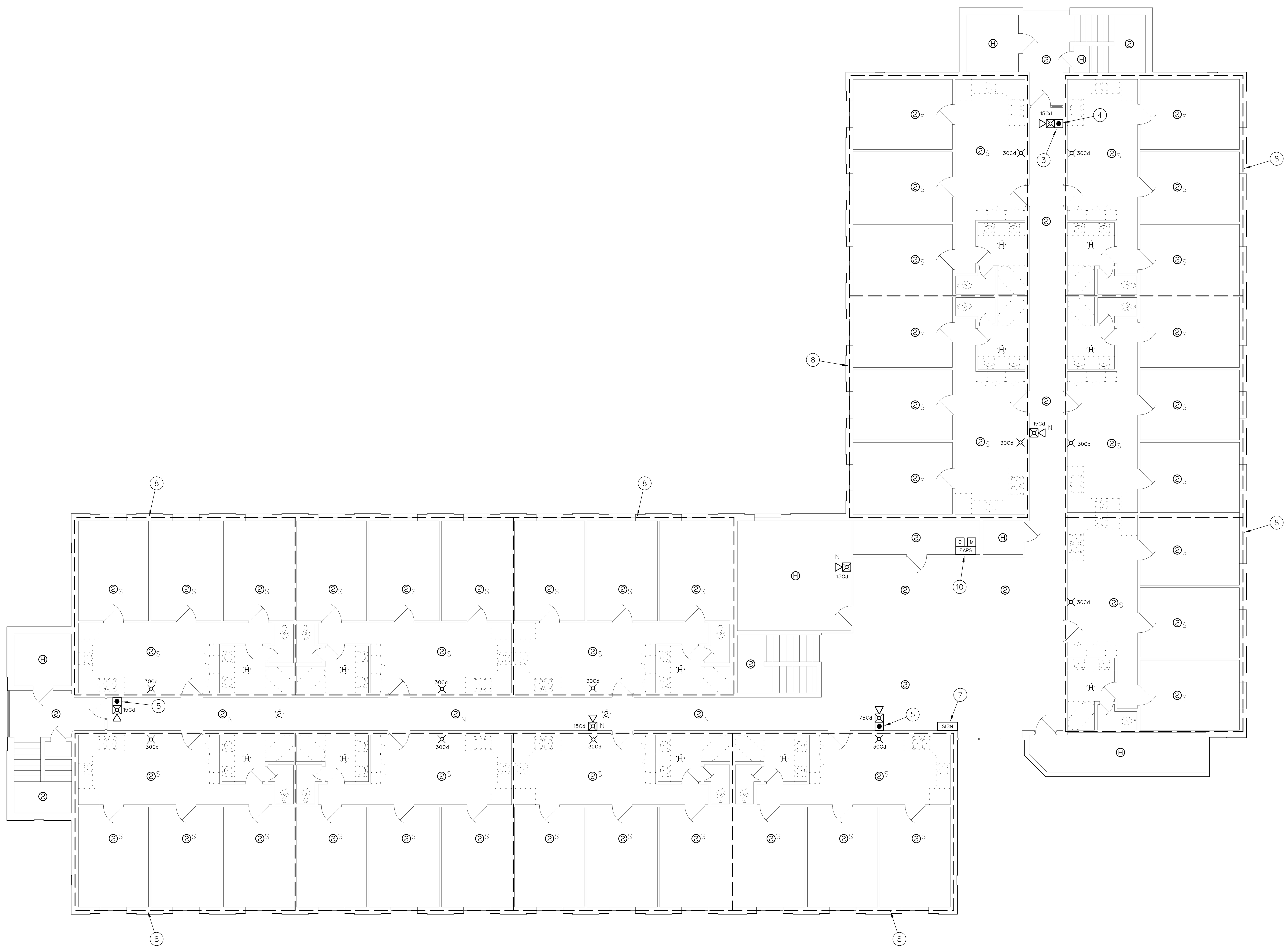
11. INITIATING DEVICES:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48'' AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - CASTILLEJA HALL (2ND FLOOR)
1/8'' = 1'-0''
0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48'' AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48'' AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

04 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 REPLACE EXISTING FIRE SPRINKLER VALVE TAMPER SWITCH AND PRESSURE TYPE WATER FLOW SWITCH WITH NEW EQUIPMENT. INSTALL INPUT MODULES TO CONNECT SWITCHES TO NEW ADDRESSABLE FACP.

07 INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

08 DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

09 NO FIRE ALARM SYSTEM DEVICES (INITIATING DEVICES OR NOTIFICATION APPLIANCES) REQUIRED IN TUNNELS BELOW BUILDING.

10 INSTALL NEW REMOTE POWER SUPPLY TO POWER NOTIFICATION APPLIANCE CIRCUITS ON 2ND LEVEL. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TROUBLE OUTPUT TO POWER SUPPLY. INSTALL NEW DEDICATED DISTRIBUTION PANEL WITH ADEQUATE CAPACITY FOR EXPANSION (COORDINATE WITH OWNER). PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY + 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW.

11 INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
'2'	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
'2' A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
'H'	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
'H' A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
[●]	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
[●] N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
'●'	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
'●' A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
(SD)	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(SD) N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
'SD'	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
'SD' A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
'D'	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
'T'	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
'F'	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - CASTILLEJA HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
CASTILLEJA
(2ND FLOOR)

CH-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIONENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
CONTACT: DAVE CROFF
ADDRESS: 2702 S 1030 W • 60 SALT LAKE CITY, UT 84119
PHONE: 801-703-2735
FAX: 801-262-9423
EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND.
EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIRING SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQUIRED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01. REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL PROVIDE SPARE CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02. INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03. EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

04. EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

05. EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06. REPLACE EXISTING FIRE SPRINKLER VALVE TAMPER SWITCH AND PRESSURE TYPE WATER FLOW SWITCH WITH NEW EQUIPMENT. INSTALL INPUT MODULES TO CONNECT SWITCHES TO NEW ADDRESSABLE FACP.

07. INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

08. DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

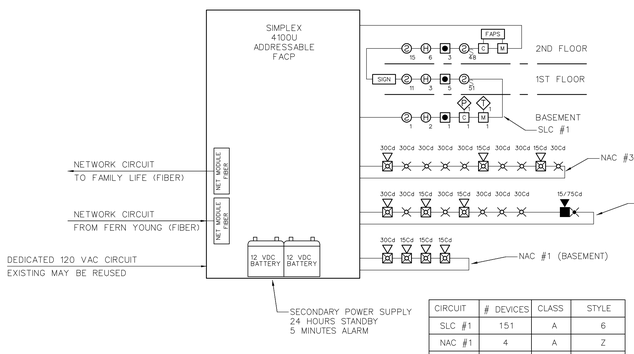
09. NO FIRE ALARM SYSTEM DEVICES (INITIATING DEVICES OR NOTIFICATION APPLIANCES) REQUIRED IN TUNNELS BELOW BUILDING.

10. INSTALL NEW REMOTE POWER SUPPLY TO POWER NOTIFICATION APPLIANCE CIRCUITS ON 2ND LEVEL. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TROUBLE OUTPUT TO POWER SUPPLY. INSTALL NEW DEDICATED DISTRIBUTION PANEL WITH ADEQUATE CAPACITY FOR EXPANSION (COORDINAT WITH OWNER). PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY + 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW.

11. INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS.
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
HN	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
HA	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE PONT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
DN	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON CMCS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

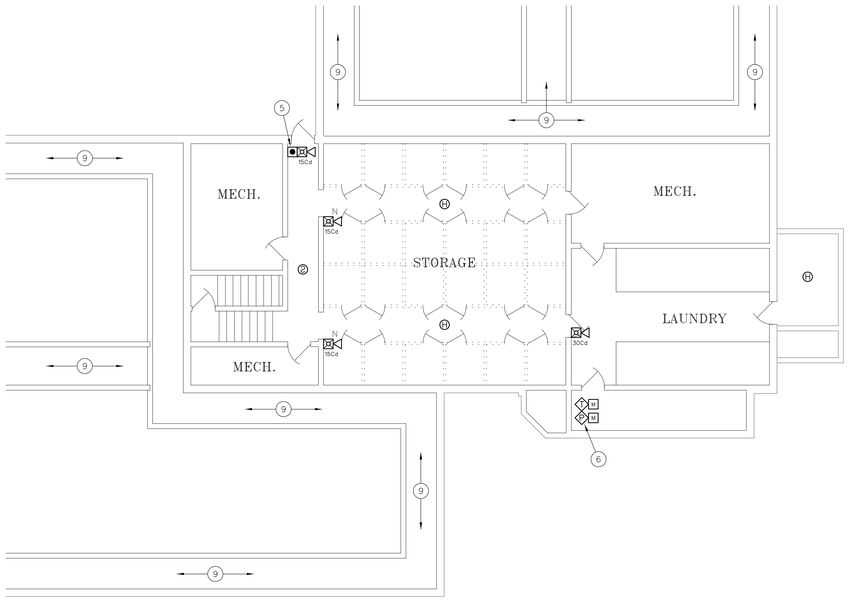


CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	151	A	6
NAC #1	4	A	Z
NAC #2	9	A	Z
NAC #3	10	A	Z

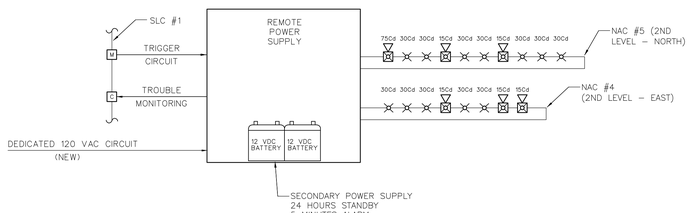
2 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

		OUTPUT ACTIONS				
		ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT
SYSTEM INPUTS	ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X			
	ACTIVATION OF ANY HEAT DETECTOR	X	X			
	ACTIVATION OF ANY MANUAL PULL STATION	X	X			
	ACTIVATION OF ANY RESIDENTIAL TYPE SMOKE ALARM			X		X
	RECIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY				X	
	CIRCUIT TROUBLE			X		
	LOSS OF AC POWER				X	
	LOW BATTERY VOLTAGE				X	
	SYSTEM TROUBLE					

3 SEQUENCE OF OPERATION
NTS



1 FIRE ALARM PLAN - CASTILLEJA HALL (BASEMENT)
1/8" = 1'-0"
0 8' 16' 32'



4 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM
NTS

JOB NO. 104160
DWG ISSUE: BID SET

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SNOW COLLEGE - CASTILLEJA HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
CASTILLEJA (BMNT)
DETAILS & SCHEDULES
CH-FA3

SHEET 12 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
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4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

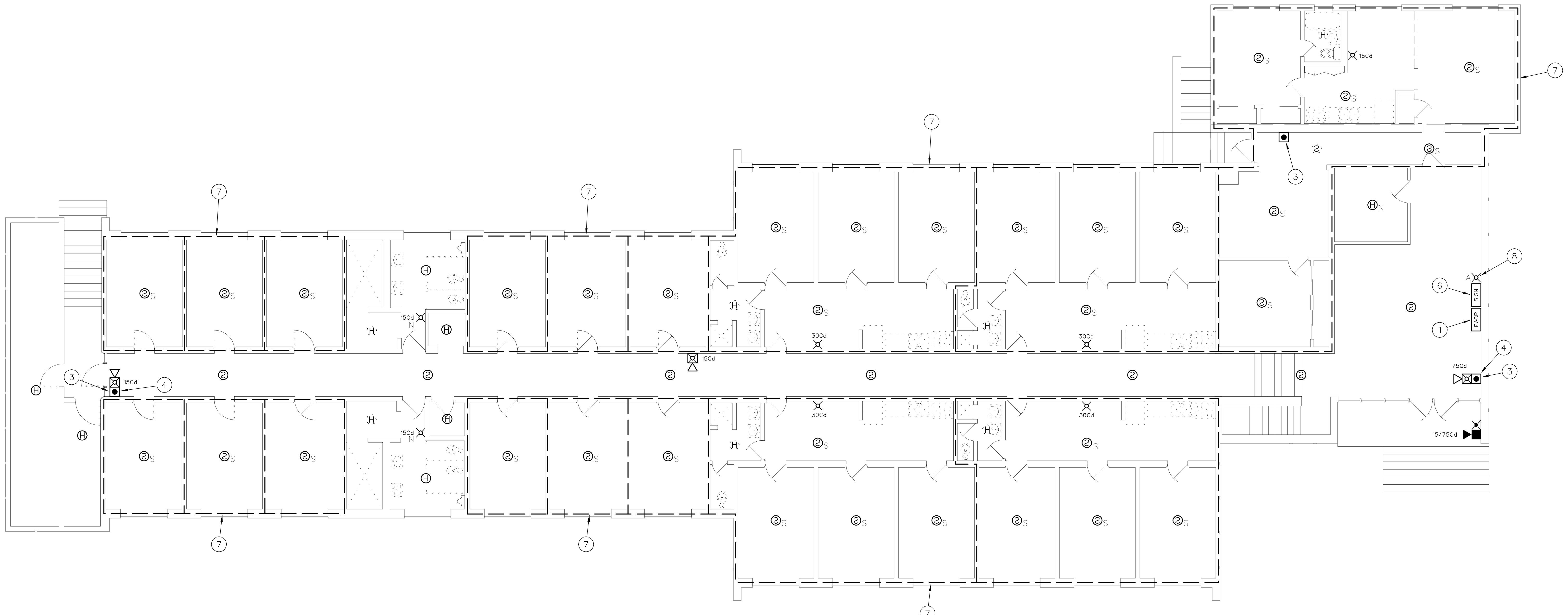
(04) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

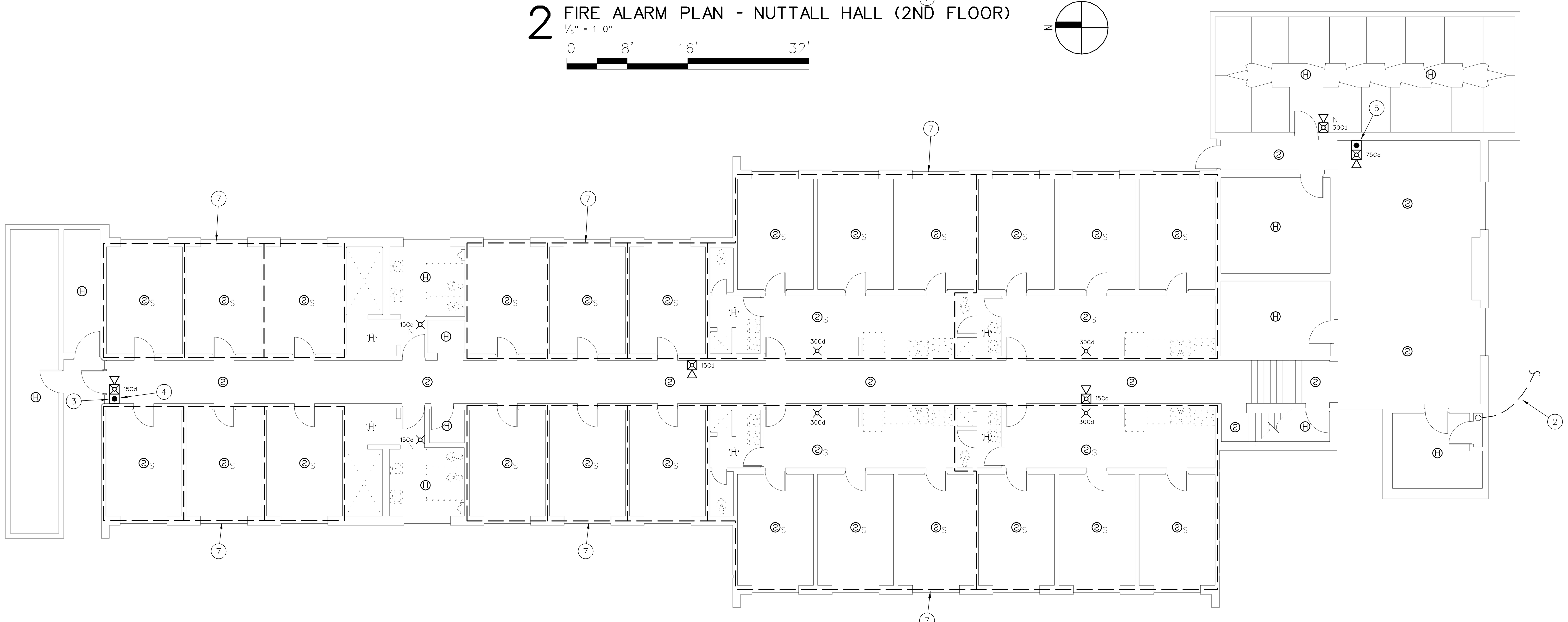
(06) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(07) DASHED OUTLINE DENOTES EXTENT OF ARE TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

(08) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



2 FIRE ALARM PLAN - NUTTALL HALL (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



1 FIRE ALARM PLAN - NUTTALL HALL (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2 (dashed)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 (dashed) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H (dashed)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H (dashed) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■●	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■● N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
● (dashed)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● (dashed) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD (dashed)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD (dashed) A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D (dashed)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T (dashed)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F (dashed)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
☒	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
▽☒	HORN/STROBE		
▷☒◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
☒ N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
▽☒ N	HORN/STROBE		
▷☒◁ N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
▼■	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
▼■ N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(dashed)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
☒ A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DRAWING DATE: 04/30/09
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SNOW COLLEGE - NUTTALL HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN NUTTALL HALL (1ST & 2ND FLOORS)

NH-FA1

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1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

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   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
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5. DEMOLITION: IT IS THE INSTALLER'S RESPONSIBILITY FOR THE DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

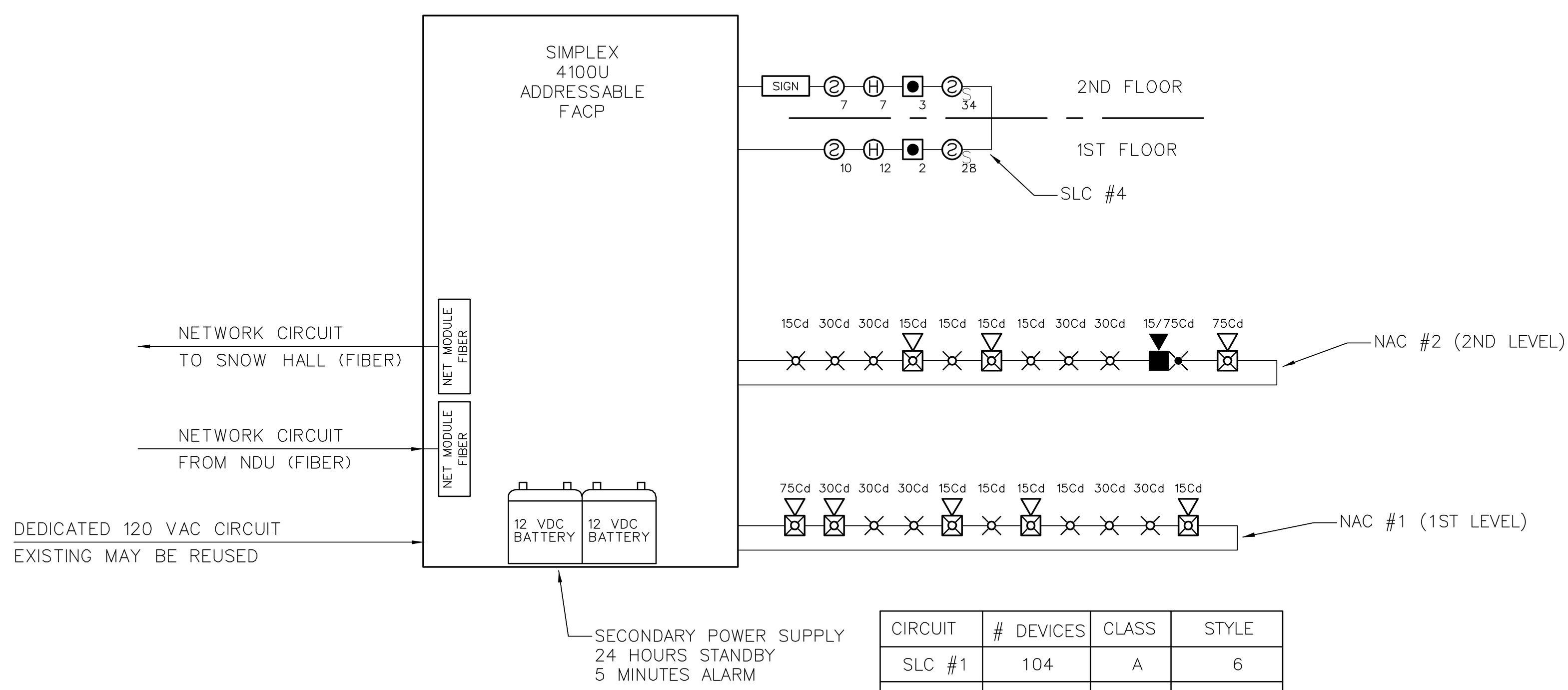
(04) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO BE REUSED. ADJUST HEIGHT OF ENCLOSURE AS REQUIRED FOR RELOCATION OF J-BOX (SEE NOTE 3 ABOVE). INSTALL PULL STATION WITHIN RELOCATED ENCLOSURE.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(07) DASHED OUTLINE DENOTES EXTENT OF ARE TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

(08) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	104	A	6
NAC #1	11	A	Z
NAC #2	11	A	Z

1 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

SYSTEM INPUTS	OUTPUT ACTIONS: ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT
ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			
ACTIVATION OF ANY RESIDENTIAL TYPE SMOKE ALARM			X		X
CIRCUIT TROUBLE			X		
LOSS OF AC POWER				X	
LOW BATTERY VOLTAGE				X	
SYSTEM TROUBLE					

2 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - NUTTALL HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM DETAILS & SCHEDULES
NUTTALL HALL
NH-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
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13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

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FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

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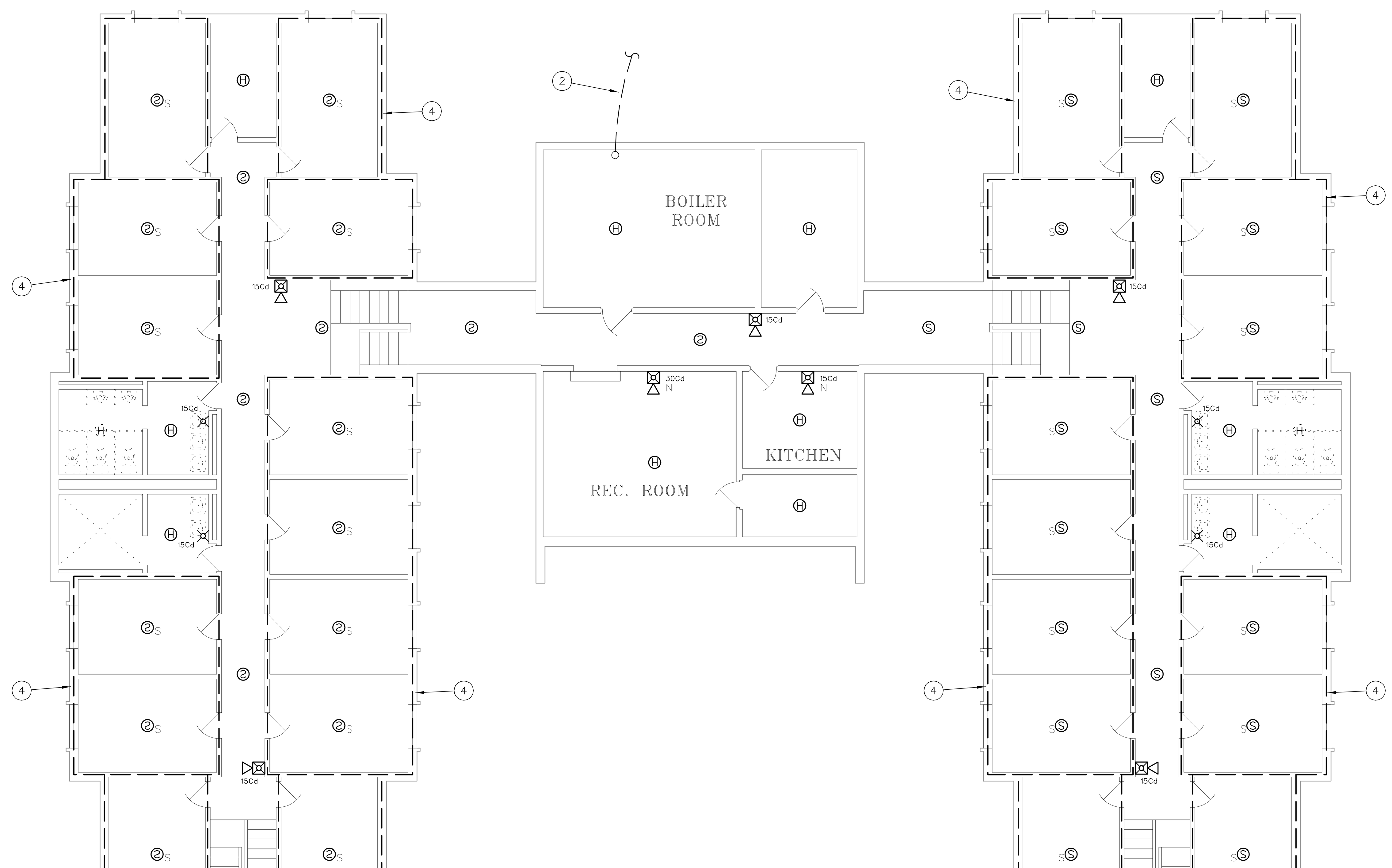
(05) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(06) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(07) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



1 FIRE ALARM PLAN - ANDERSON HALL (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
②N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
'2'	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
'2'A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
②S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
ⒽN	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
'H'	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
'H'A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
'●'	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
'●'A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
'SD'	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
'SD'A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
'D'	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
'T'	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
'F'	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
☓	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
▽☒	HORN/STROBE		
▷☒◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
☓N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
▽☒N	HORN/STROBE		
▷☒◁N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
▼■☓	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
▼■☓N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(dashed)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
☓A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISIONS:

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REVISION DATE: XX/XX/XX

SNOW COLLEGE - ANDERSON HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ANDERSON HALL
(1ST LEVEL)
AH-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
CONTACT: DAVE CROFF
ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
PHONE: 801-703-2735
FAX: 801-262-9423
EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
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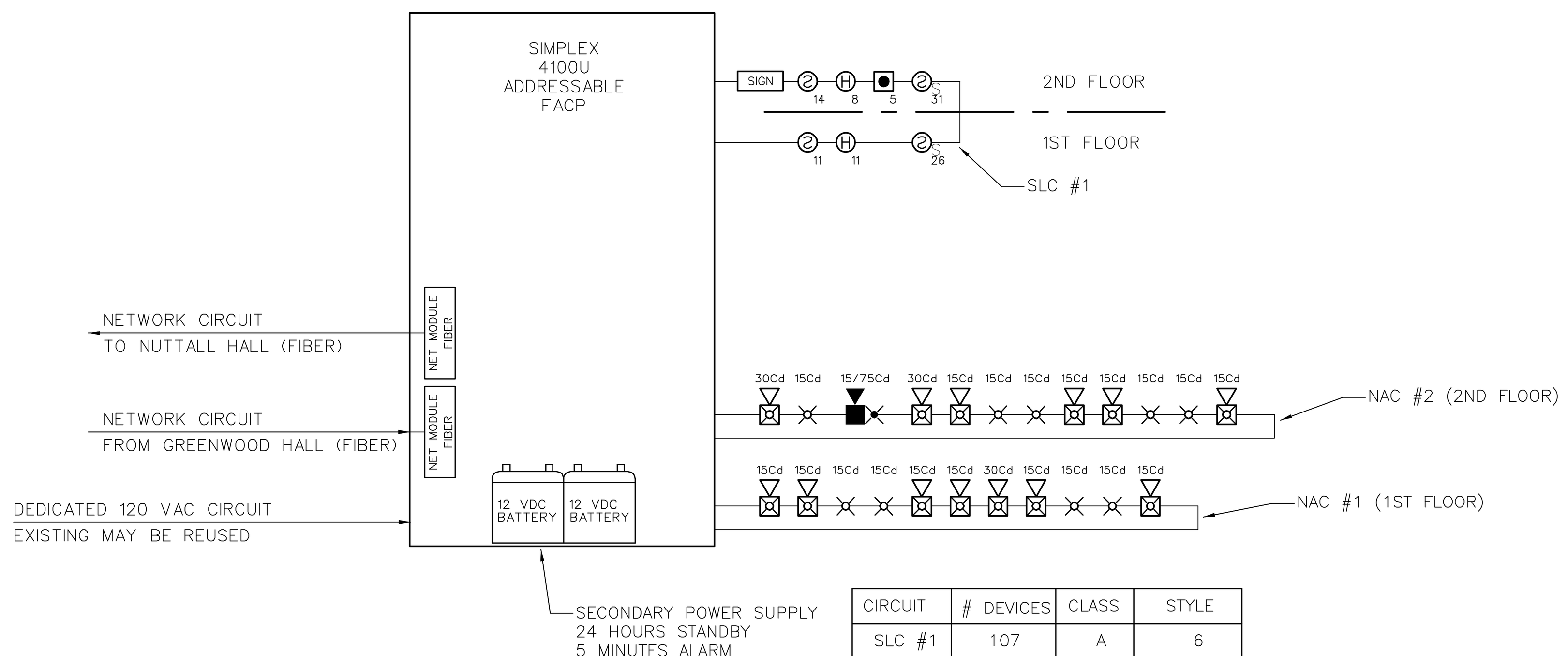
(04) DASHED OUTLINE DENOTES EXTENT OF ARE TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

(05) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(06) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(07) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



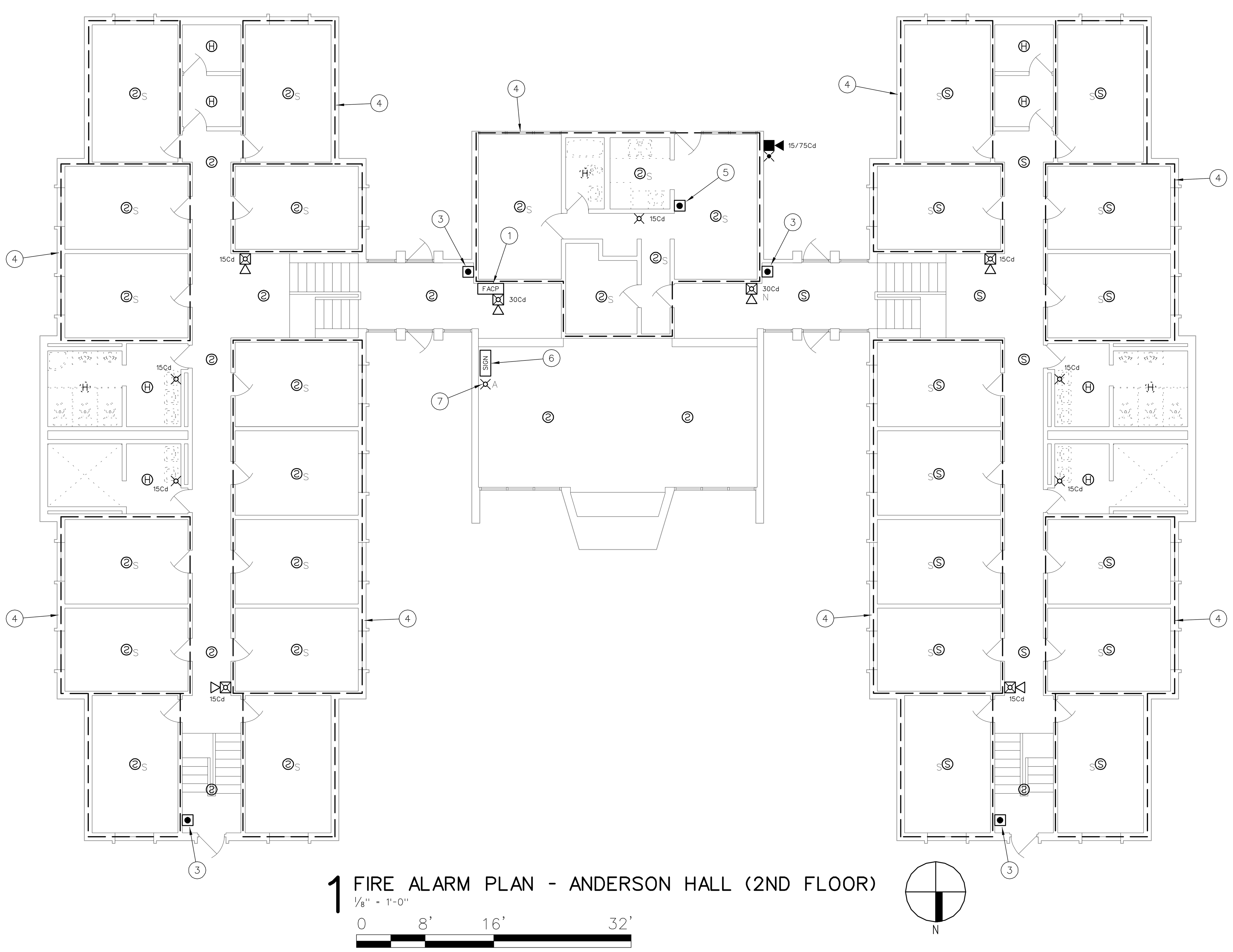
CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	107	A	6
NAC #1	12	A	Z
NAC #2	11	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT
ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			
ACTIVATION OF ANY RESIDENTIAL TYPE SMOKE ALARM			X		X
CIRCUIT TROUBLE			X		
LOSS OF AC POWER				X	
LOW BATTERY VOLTAGE				X	
SYSTEM TROUBLE					

(Column group heading: OUTPUT ACTIONS)

3 SEQUENCE OF OPERATION
NTS



1 FIRE ALARM PLAN - ANDERSON HALL (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - ANDERSON HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ANDERSON HALL
(2ND LEVEL), DETAILS
& SCHEDULES
AH-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

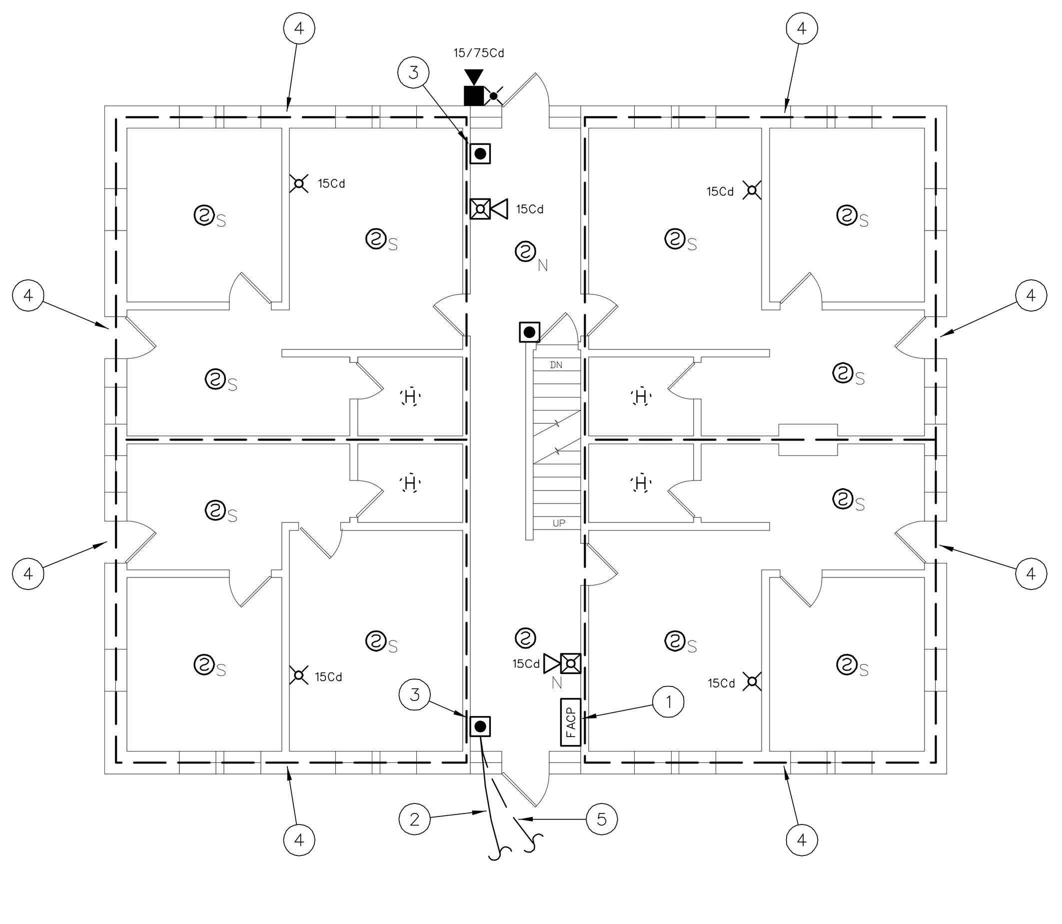
11. INITIATING DEVICES:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

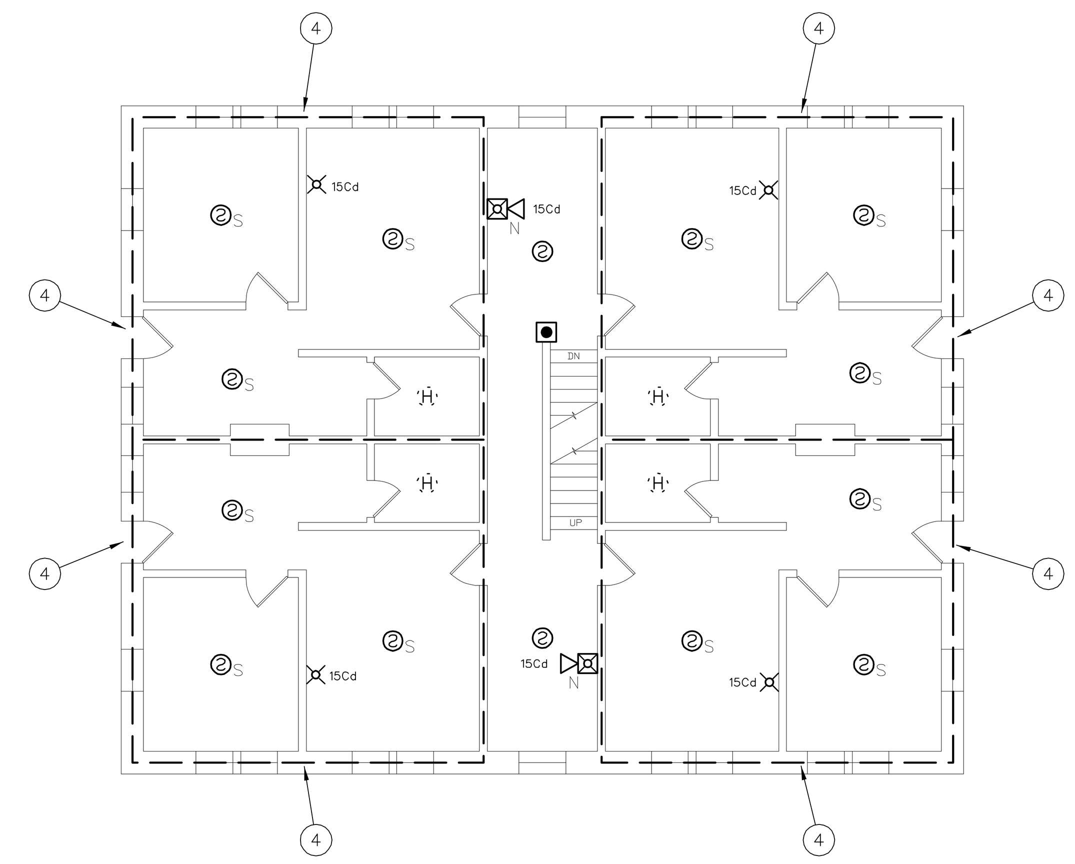
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

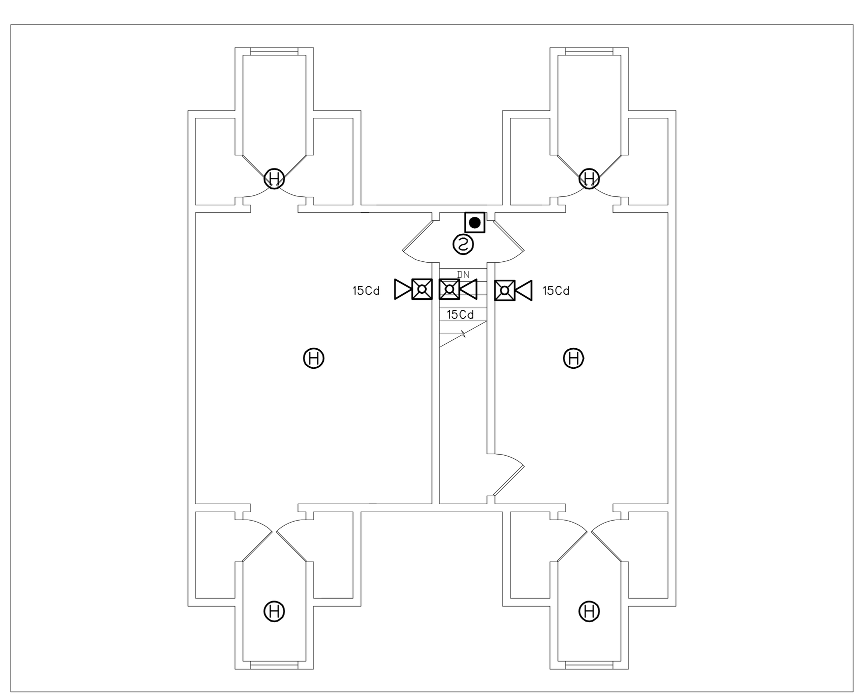
15. TESTING: SCHEDULE AND PERFORM ALL ACCEPTANCE TESTS REQUIRED BY NFPA 72. TESTING SHALL BE WITNESSED BY STATE FIRE MARSHAL'S OFFICE, PROJECT ENGINEER, DFCM AND BUILDING MAINTENANCE PERSONNEL. SUBMIT A WRITTEN TESTING PLAN DETAILING EACH TEST TO BE PERFORMED TO EACH AGENCY AT LEAST ONE DAY PRIOR TO SCHEDULED TEST.



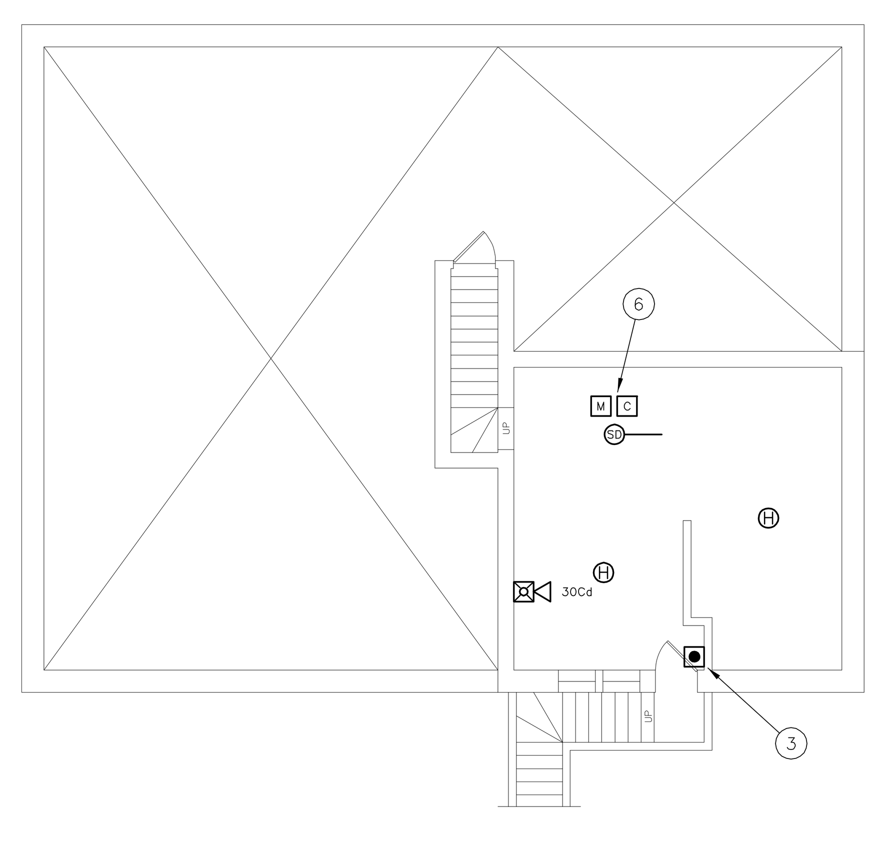
1 FIRE ALARM PLAN - GREENWOOD HALL (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



2 FIRE ALARM PLAN - GREENWOOD HALL (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



3 FIRE ALARM PLAN - GREENWOOD HALL (3RD FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



4 FIRE ALARM PLAN - GREENWOOD HALL (BASEMENT)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

04 DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

05 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM GREENWOOD HALL TO COTTAGES 1-4 AND COTTAGES 5-8 TO ALLOW CONNECTION OF INITIATING DEVICES IN COTTAGES TO FACP IN GREENWOOD HALL. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE ISOLATOR MODULES ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.

06 INSTALL DUCT MOUNTED SMOKE DETECTOR IN RETURN AIR DUCT OF FORCED AIR HEATING SYSTEM. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SUPERVISED, RESETTABLE 24 VDC POWER TO DETECTOR FROM FACP. INSTALL ADDRESSABLE OUTPUT RELAY AT FAN CONTROLS TO PROVIDE FAN SHUTDOWN AS INDICATED IN SEQUENCE OF OPERATIONS.

07 INSTALL REMOTE POWER SUPPLY TO POWER NOTIFICATION APPLIANCES IN COTTAGES 1-4 AND COTTAGES 5-8. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULES TO MONITOR TROUBLE OUTPUTS OF POWER SUPPLY. PROVIDE NEW 120 VAC DEDICATED CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. EXTEND NAC CIRCUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE TRANSIENT VOLTAGE/SURGE SUPPRESSION WHERE CIRCUITS ENTER/EXIT BUILDINGS.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
② N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(2) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
② S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
Ⓗ N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
(H)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(H) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
(●)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
(●) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
(SD)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
(SD) A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
(D)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
(T)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(F)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - GREENWOOD HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
GREENWOOD HALL
GH-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48'' AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

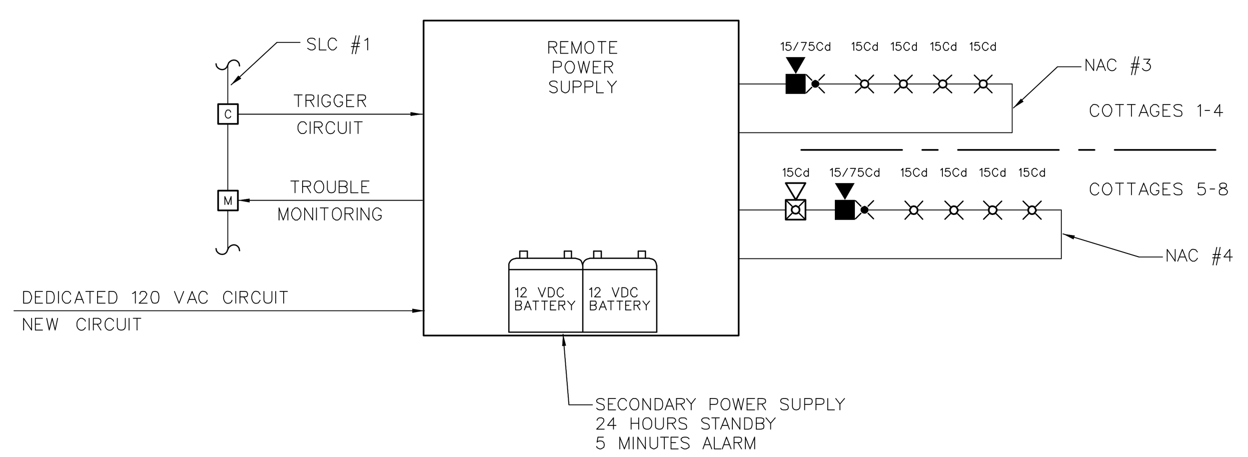
03 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

04 DASHED OUTLINE DENOTES EXTENT OF AREA TO BE CONSIDERED AS A SINGLE DWELLING UNIT. SOUNDER BASES ON ALL SMOKE ALARMS WITHIN DWELLING UNIT SHALL BE PROGRAMMED TO ACTIVATE UPON OPERATION OF ANY SINGLE SMOKE ALARM WITHIN THE SAME DWELLING.

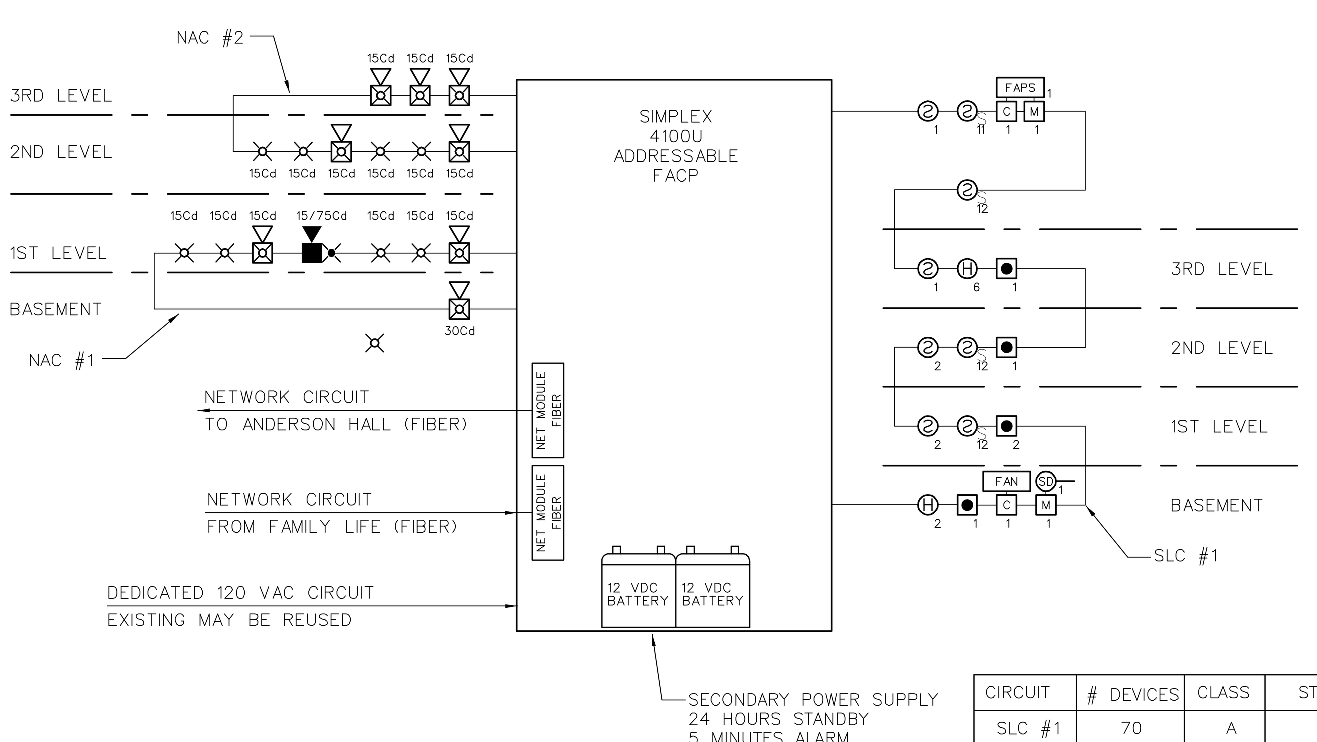
05 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM GREENWOOD HALL TO COTTAGES 1-4 AND COTTAGES 5-8 TO ALLOW CONNECTION OF INITIATING DEVICES IN COTTAGES TO FACP IN GREENWOOD HALL. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE ISOLATOR MODULES ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDINGS.

06 INSTALL DUCT MOUNTED SMOKE DETECTOR IN RETURN AIR DUCT OF FORCED AIR HEATING SYSTEM. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SUPERVISED, RESETTABLE 24 VDC POWER TO DETECTOR FROM FACP. INSTALL ADDRESSABLE OUTPUT RELAY AT FAN CONTROLS TO PROVIDE FAN SHUTDOWN AS INDICATED IN SEQUENCE OF OPERATIONS.

07 INSTALL REMOTE POWER SUPPLY TO POWER NOTIFICATION APPLIANCES IN COTTAGES 1-4 AND COTTAGES 5-8. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULES TO MONITOR TROUBLE OUTPUTS OF POWER SUPPLY. PROVIDE NEW 120 VAC DEDICATED CIRCUIT FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. PROVIDE BATTERIES FOR SECONDARY POWER SUPPLY (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM). CONFIGURE OUTPUT OF POWER SUPPLY TO SYNCHRONIZE THE FLASHES OF ALL FIRE ALARM NOTIFICATION APPLIANCES WITHIN A SINGLE FIELD OF VIEW. EXTEND NAC CIRCUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). PROVIDE TRANSIENT VOLTAGE/SURGE SUPPRESSION WHERE CIRCUITS ENTER/EXIT BUILDINGS.



4 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM - COTTAGES 1-4 & 5-8
NTS



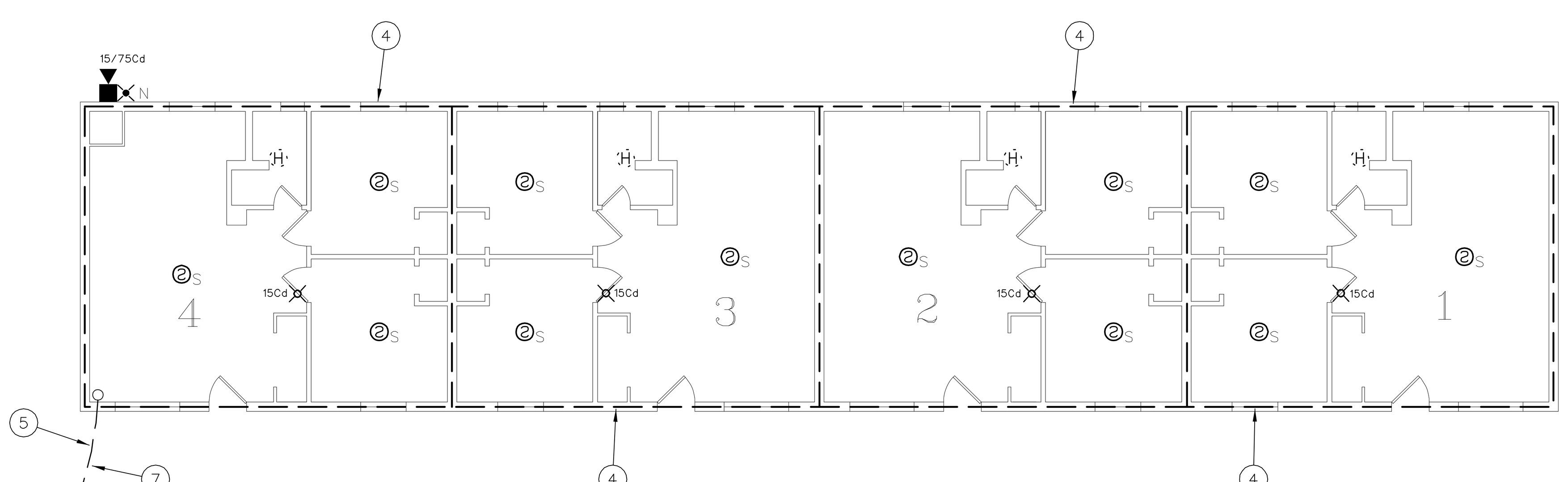
CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	70	A	6
NAC #1	8	A	Z
NAC #2	9	A	Z

3 FIRE ALARM SINGLE LINE RISER DIAGRAM
NTS

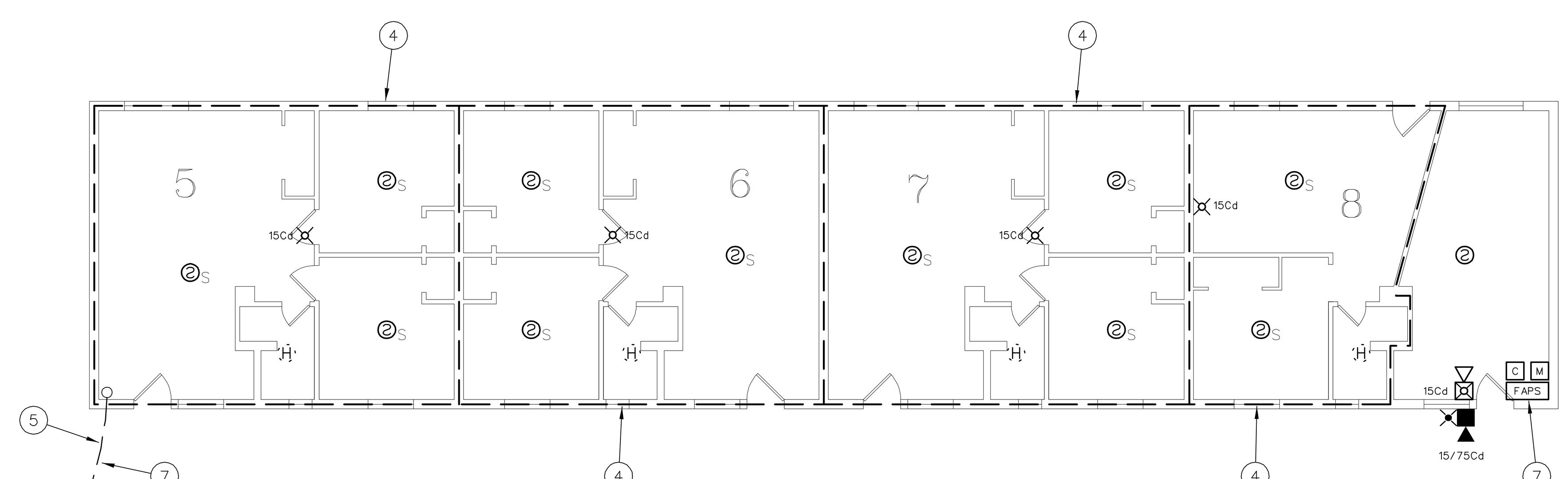
SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	ACTIVATE ALL SOUNDER BASES WITHIN DWELLING UNIT	SHUT DOWN AIR HANDLER
ACTIVATION OF ANY SMOKE DETECTOR (EXCEPT RESIDENTIAL TYPE)	X	X				X
ACTIVATION OF ANY HEAT DETECTOR	X	X				X
ACTIVATION OF ANY MANUAL PULL STATION	X	X				
ACTIVATION OF ANY SINGLE RESIDENTIAL TYPE SMOKE ALARM			X		X	
RECIPT OF TROUBLE SIGNAL FROM REMOTE POWER SUPPLY				X		
CIRCUIT TROUBLE			X			
LOSS OF AC POWER				X		
LOW BATTERY VOLTAGE				X		
SYSTEM TROUBLE						
ACTIVATION OF DUCT SMOKE DETECTOR			X			X
DUCT SMOKE DETECTOR TROUBLE				X		
ACTIVATION OF ANY TWO RESIDENTIAL SMOKE ALARMS IN A SINGLE DWELLING UNIT	X	X			X	X

(OUTPUT ACTIONS across the top; SYSTEM INPUTS down the side.)

4 SEQUENCE OF OPERATION
NTS



1 FIRE ALARM PLAN - GREENWOORD HALL (COTTAGES 1-4)
1/8'' = 1'-0''
0 8' 16' 32'
N



2 FIRE ALARM PLAN - GREENWOORD HALL (COTTAGES 5-8)
1/8'' = 1'-0''
0 8' 16' 32'
N

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - GREENWOOD HALL
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN COTTAGES, DETAILS & SCHEDULES
GH-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
CONTACT: DAVE CROFF
ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
PHONE: 801-703-2735
FAX: 801-262-9423
EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND.
EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

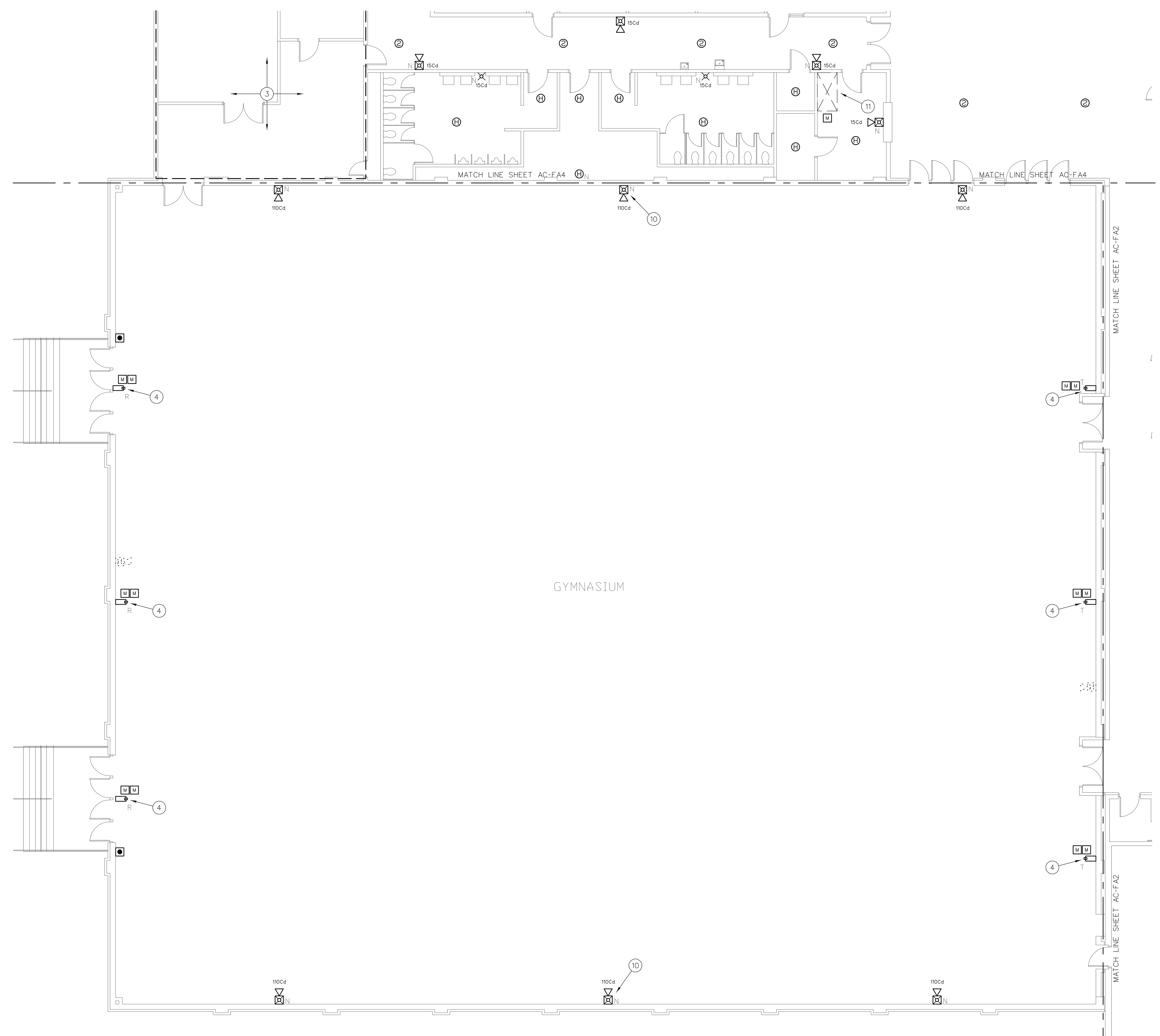
11. INITIATING DEVICES:
SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

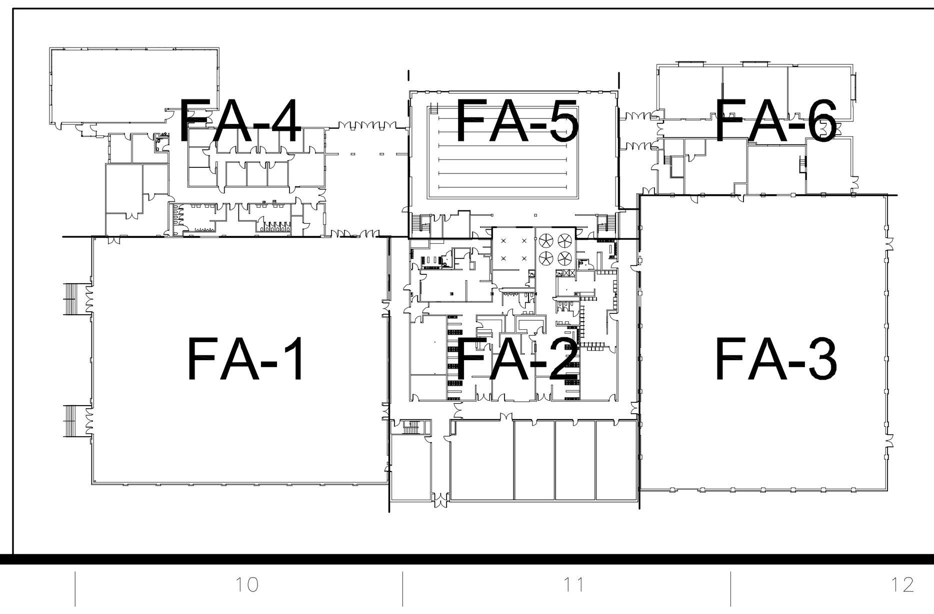
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

01 EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

04 REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

05 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

06 NOT USED

07 INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

08 EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

09 INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

10 EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

11 EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

12 INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

13 INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

14 INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - ACTIVITY CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - A)

AC-FA1

SHEET 19 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

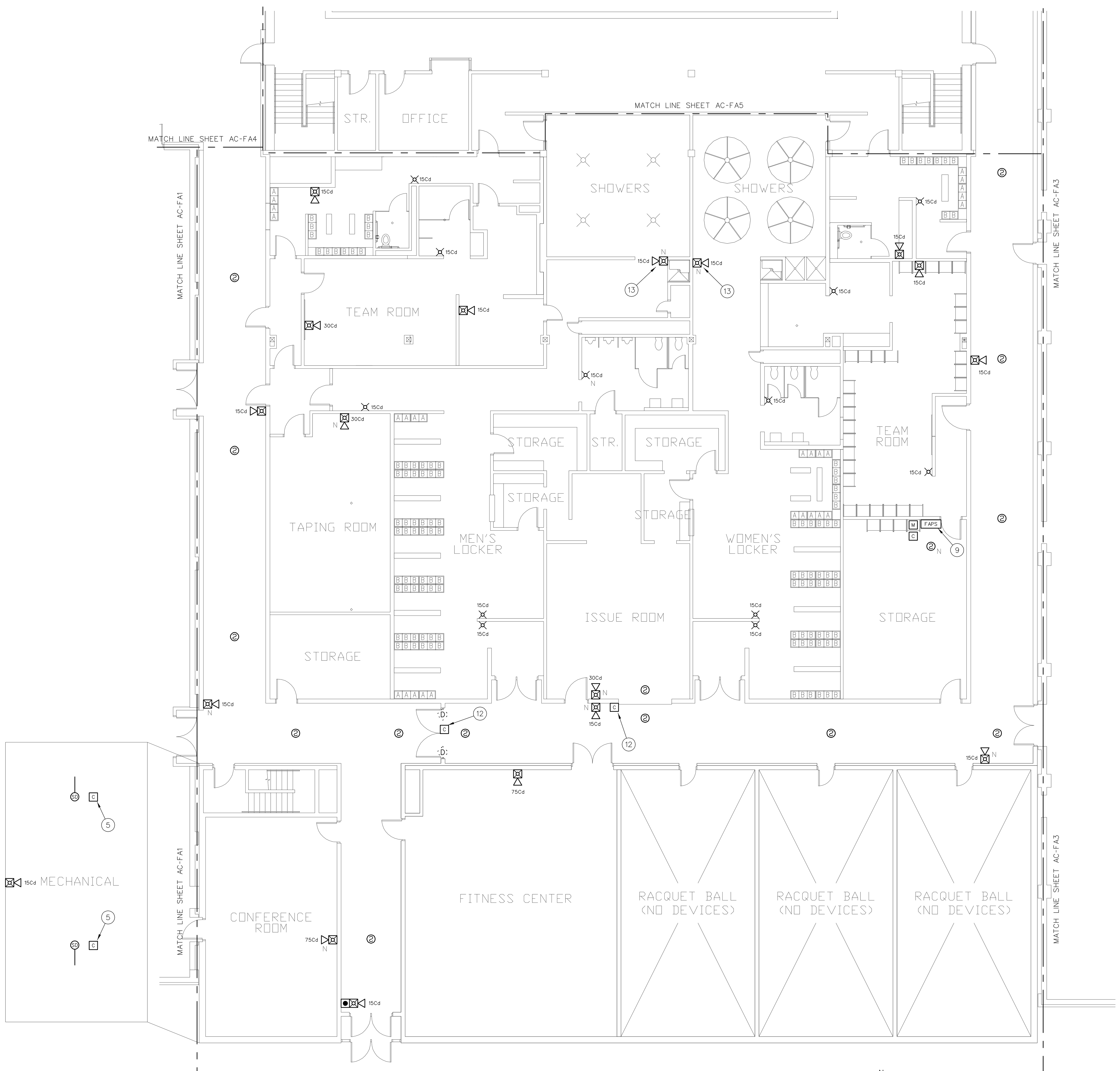
11. INITIATING DEVICES:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

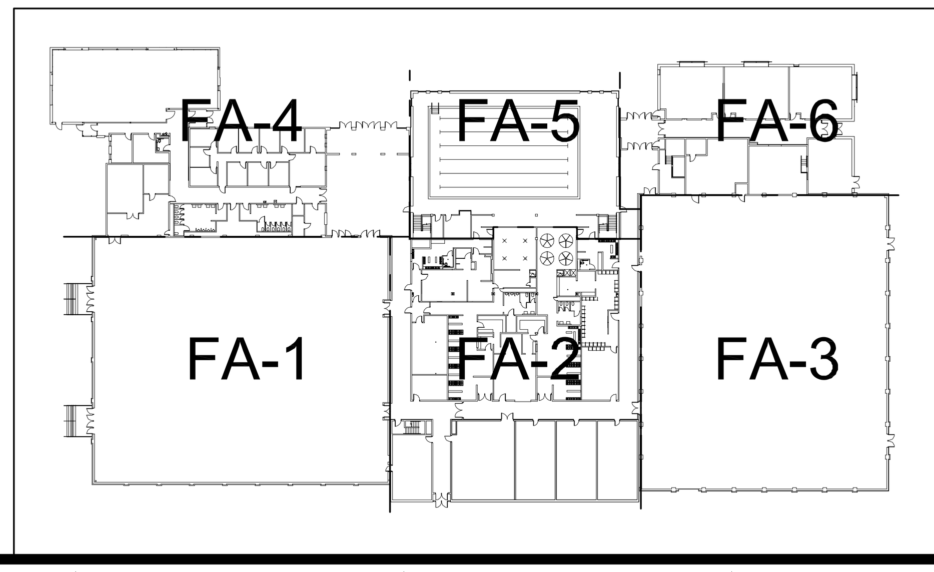
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

(04) REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

(06) NOT USED

(07) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(08) EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

(09) INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

(10) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(11) EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

(12) INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

(13) INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

(14) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
②N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(2)A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
②S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
ⒽN	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
(H)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(H)A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
(●)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
(●)A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
(SD)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
(SD)A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
(D)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
(T)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(F)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
⊠	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
▽⊠	HORN/STROBE		
▷⊠◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
⊠N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
▽⊠N	HORN/STROBE		
▷⊠◁N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
▼⊠	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
▼⊠N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(⊠)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
⊠A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

PCI PROTECTION CONSULTANTS, INC.
Fire Protection Engineers
-Since 1983-
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DWG ISSUE: BID SET

DRAWN BY: BBH
CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - ACTIVITY CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - B)

AC-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

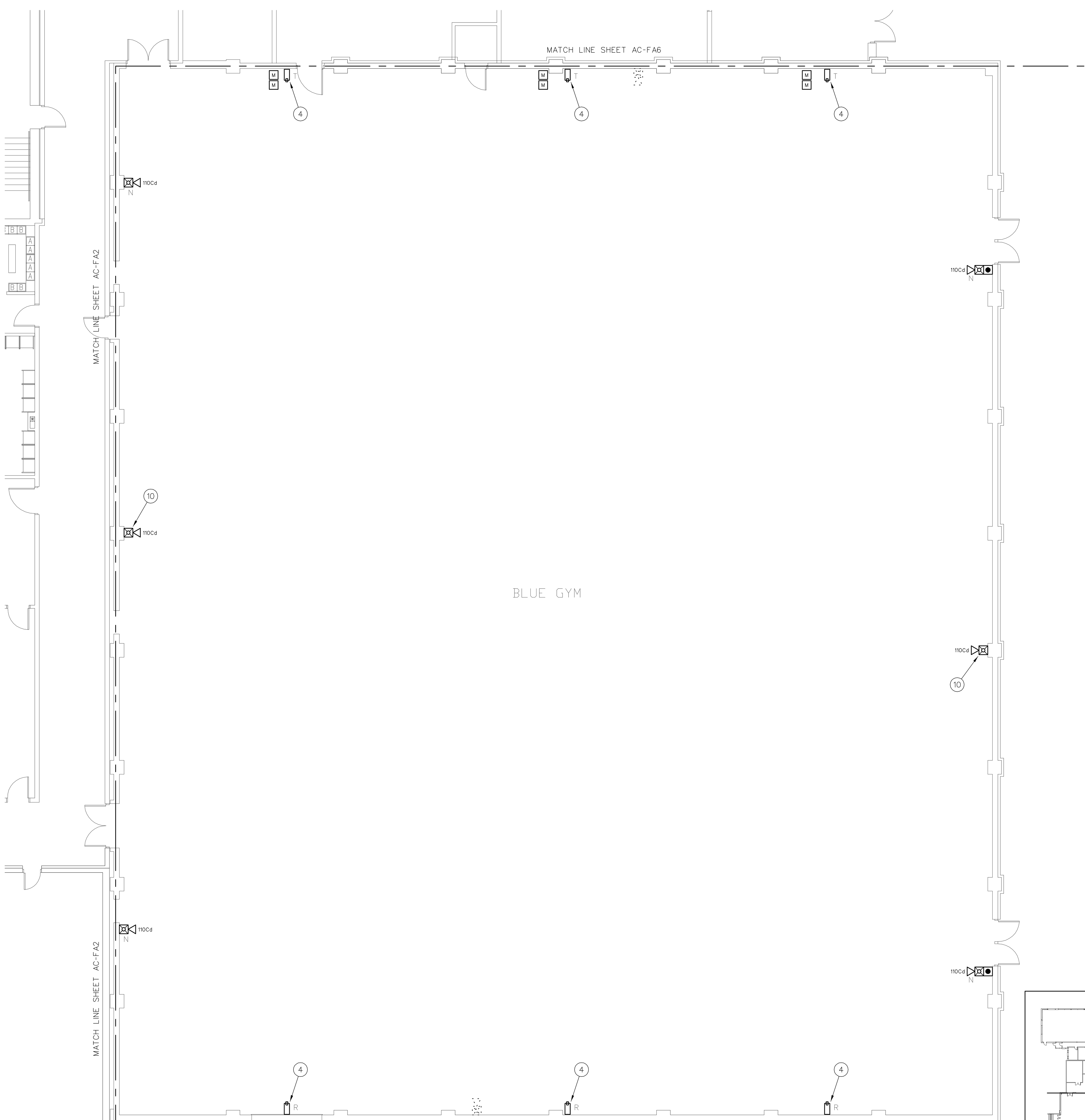
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

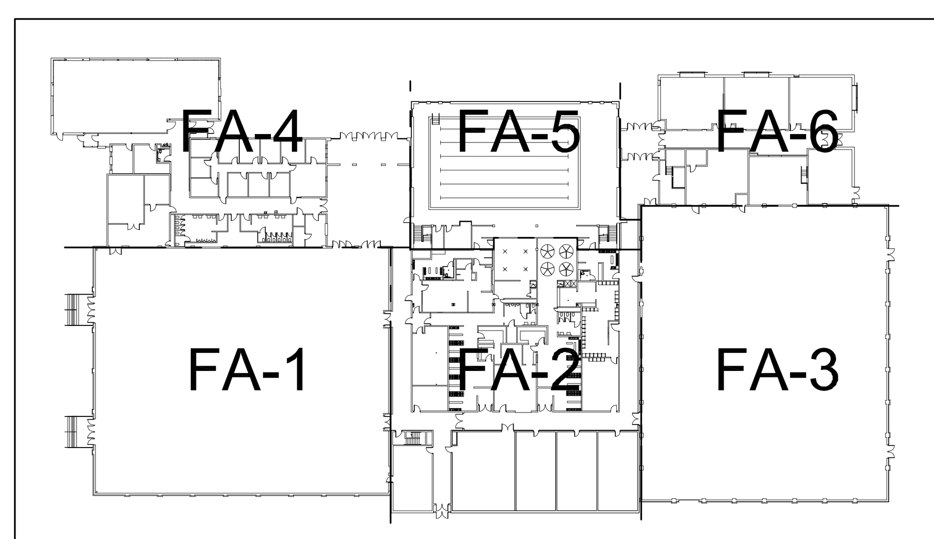
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

(04) REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

(06) NOT USED

(07) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(08) EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

(09) INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

(10) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(11) EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

(12) INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

(13) INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

(14) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
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	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
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Fire Protection Engineers
-Since 1983-

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EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - C)

AC-FA3

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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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

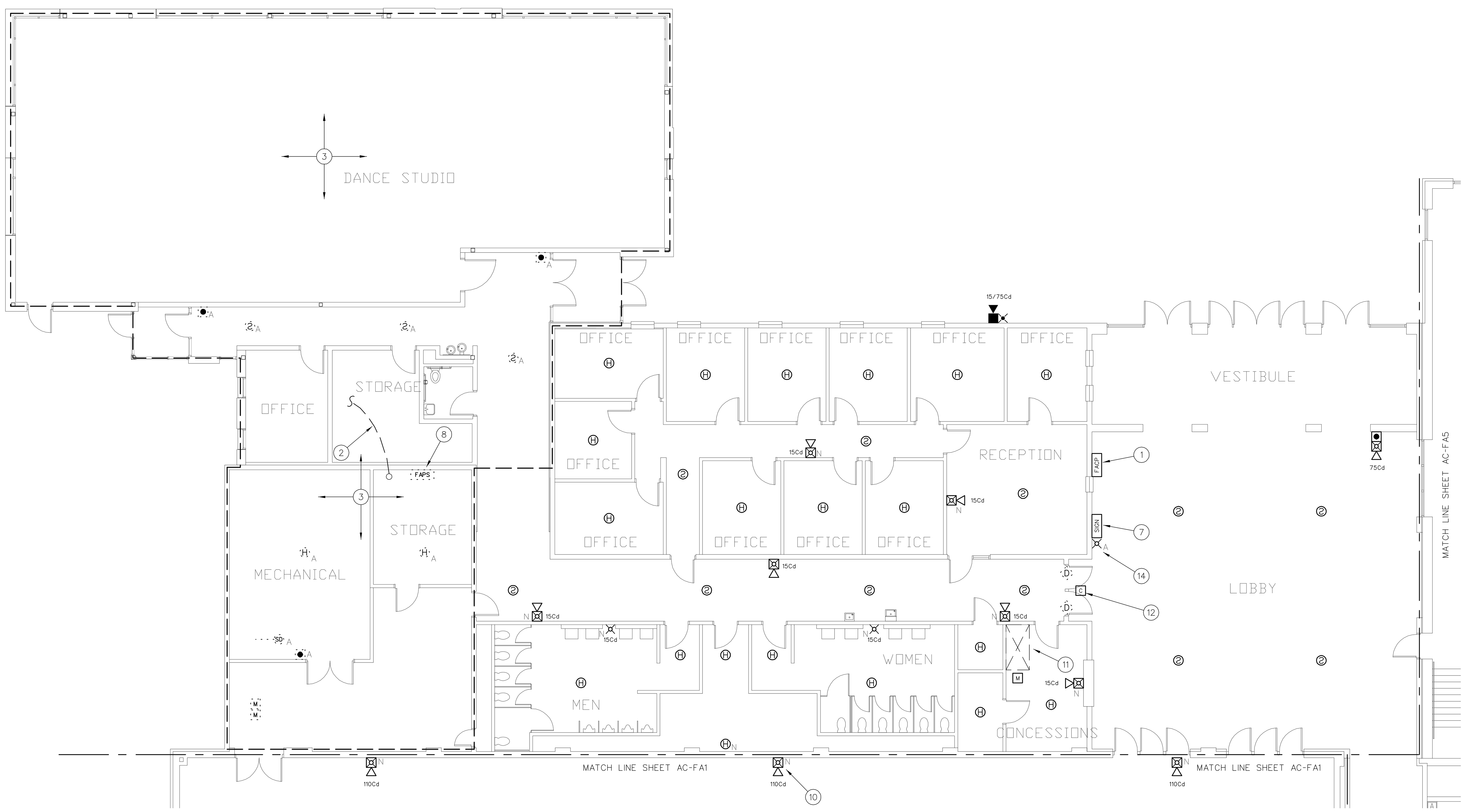
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

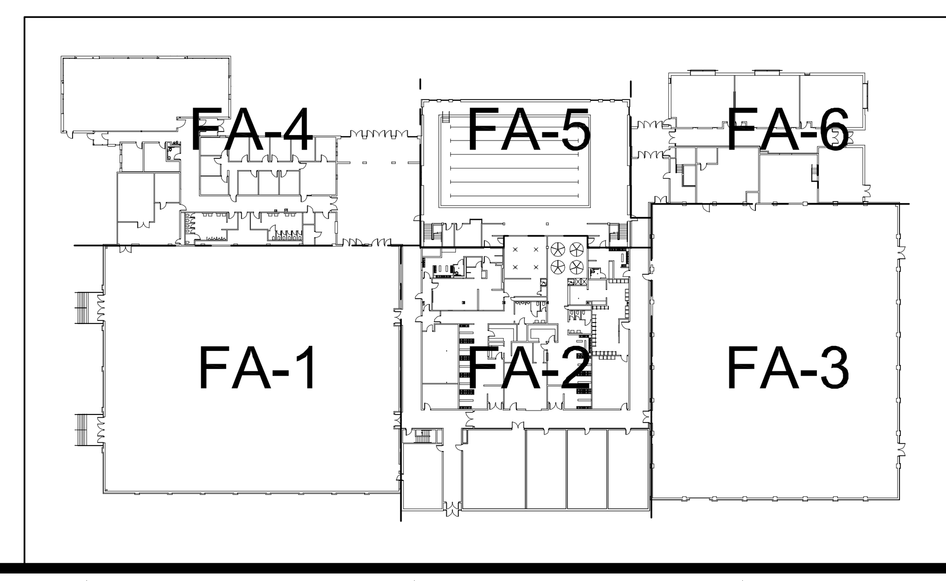
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

01 EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

04 REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

05 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

06 NOT USED

07 INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

08 EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

09 INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

10 EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

11 EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

12 INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

13 INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

14 INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2 (dashed)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A (dashed)	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H (dashed)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A (dashed)	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
● (dashed)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A (dashed)	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD (dashed)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A (dashed)	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D (dashed)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T (dashed)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F (dashed)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(dashed)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - ACTIVITY CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - D)

AC-FA4

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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

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6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

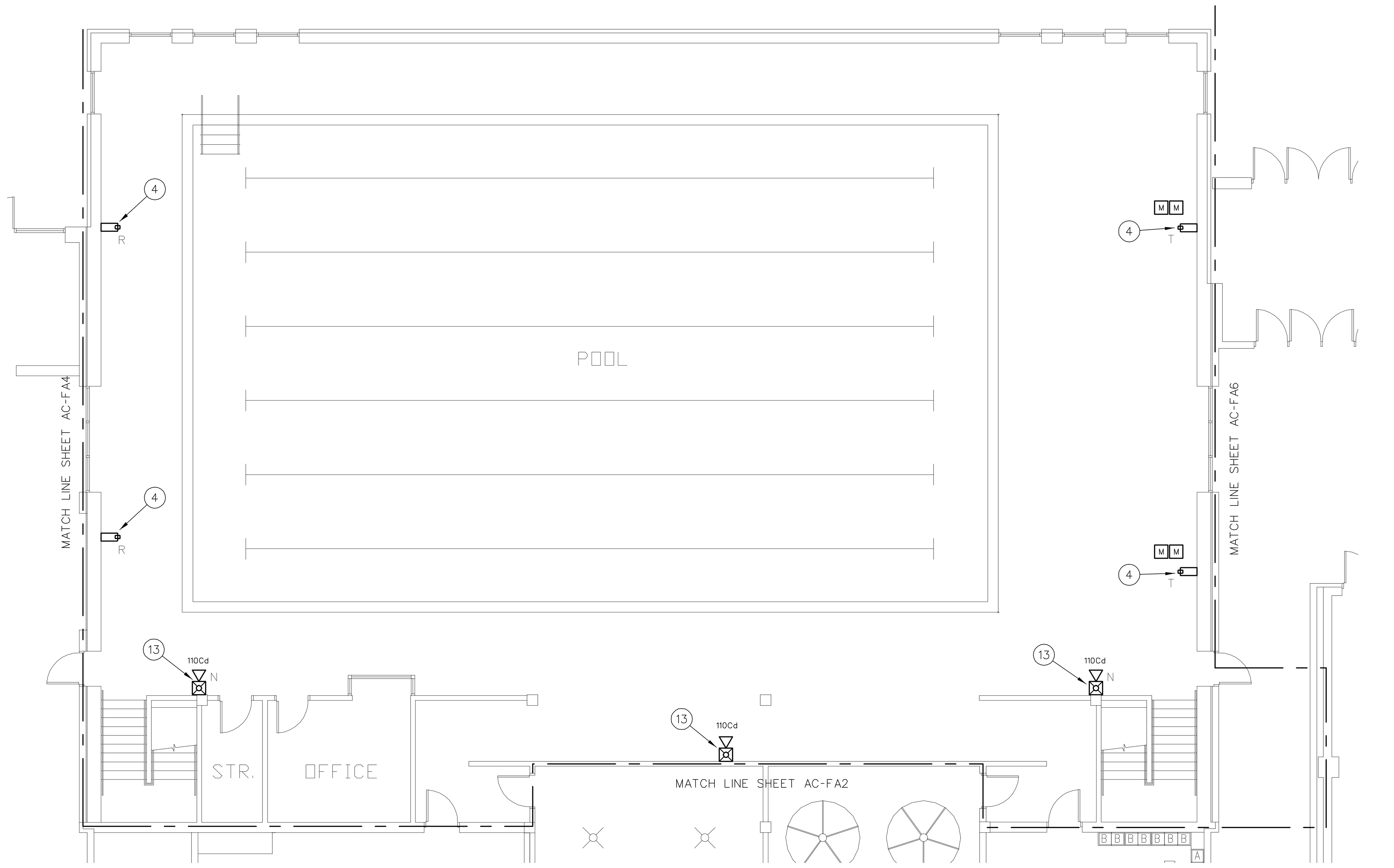
11. INITIATING DEVICES:
SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

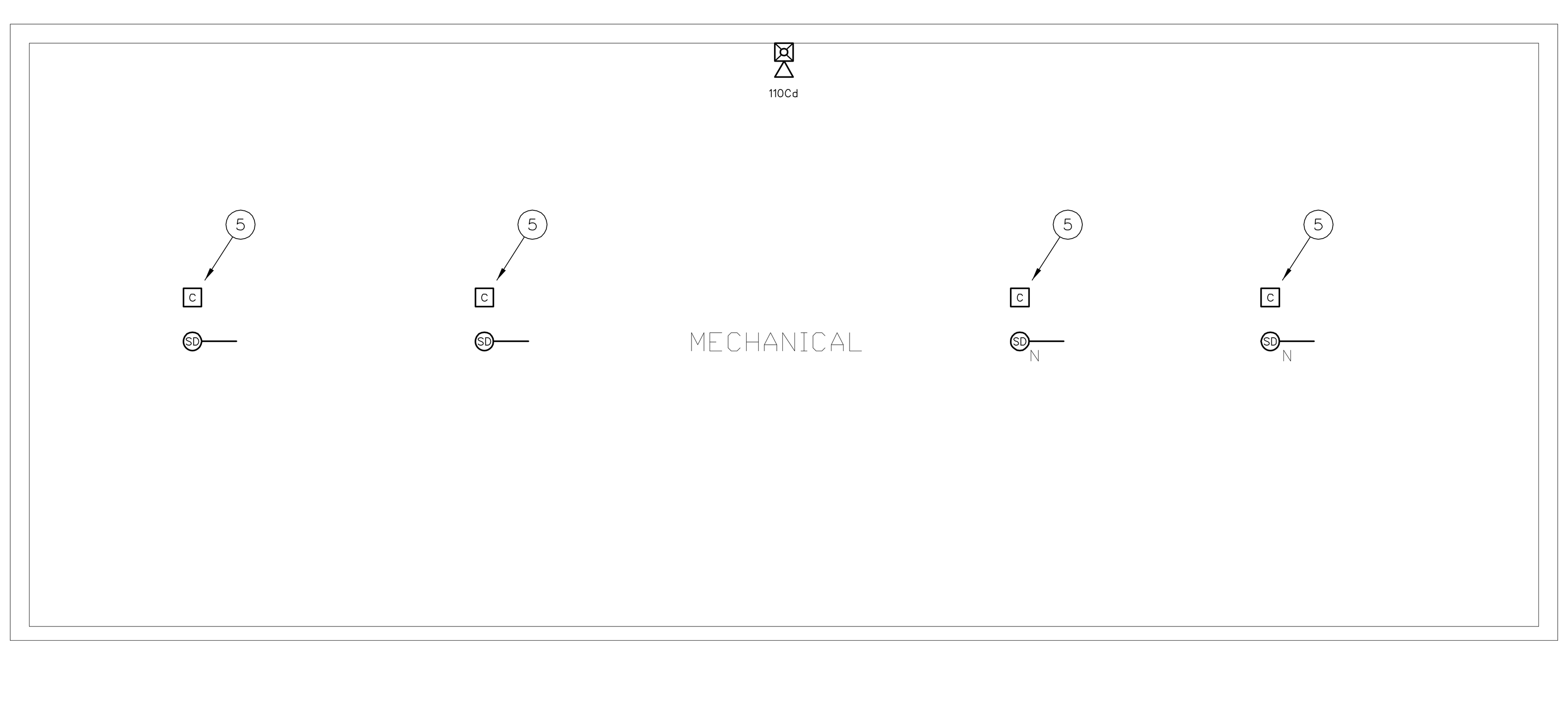
12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. VOLUME OF HORNS SHALL BE SUFFICIENT TO PROVIDE A SOUND LEVEL OF 15 Db ABOVE AMBIENT IN ALL OCCUPIED AREAS. VISIBLE ALARMS SHALL BE PROVIDED THROUGHOUT ALL OCCUPIED AREAS OF THE BUILDING AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

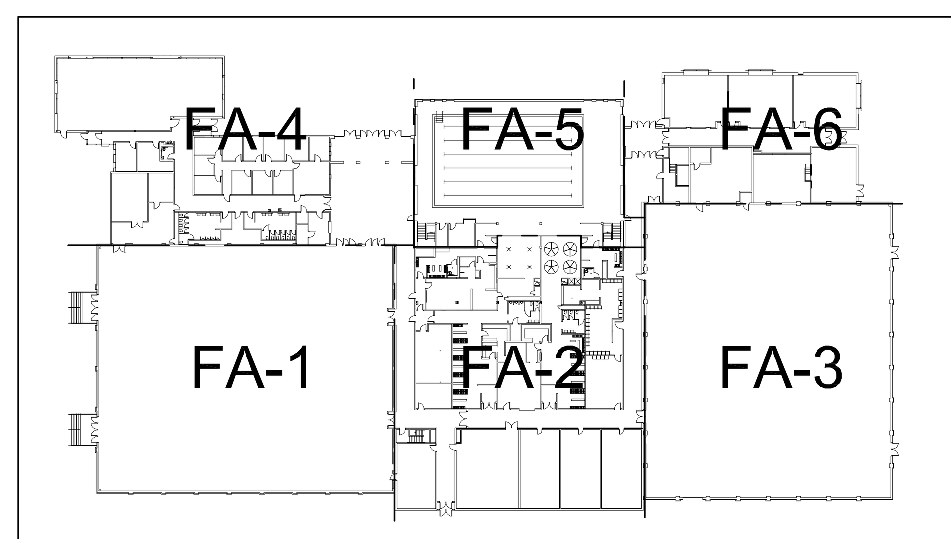
14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. IT IS THE INSTALLER'S RESPONSIBILITY TO NOTIFY PROPER AUTHORITIES AND PROVIDE A FIRE WATCH DURING INTERRUPTIONS OF FIRE DETECTION AND ALARM SERVICE IN THE BUILDING.

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 DAY PRIOR TO SCHEDULED TEST.





1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

(04) REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

(06) NOT USED

(07) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(08) EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

(09) INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

(10) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(11) EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

(12) INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

(13) INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

(14) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(2) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISION DATE: XX/XX/XX

SNOW COLLEGE - ACTIVITY CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - E)

AC-FA5

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

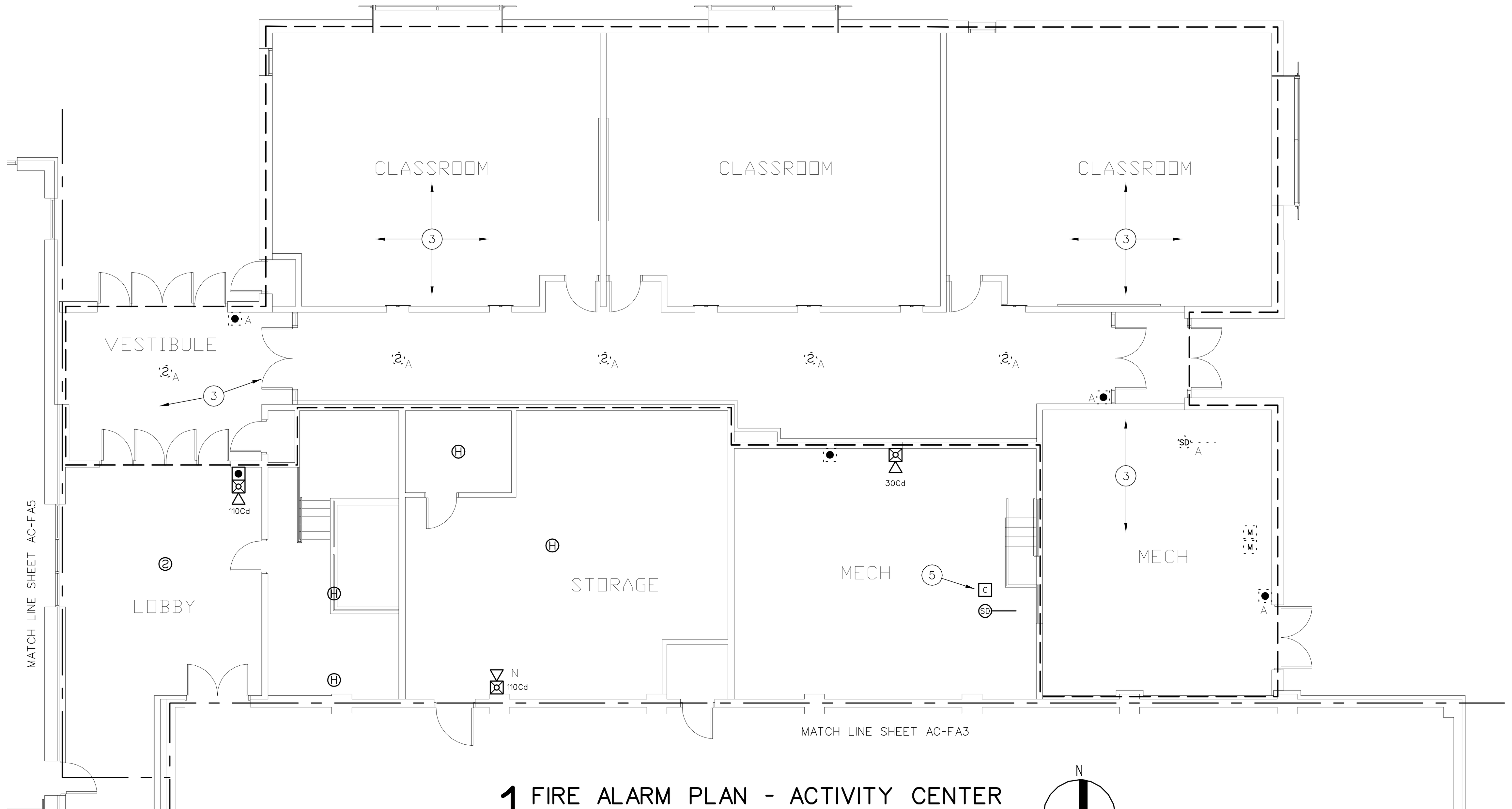
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

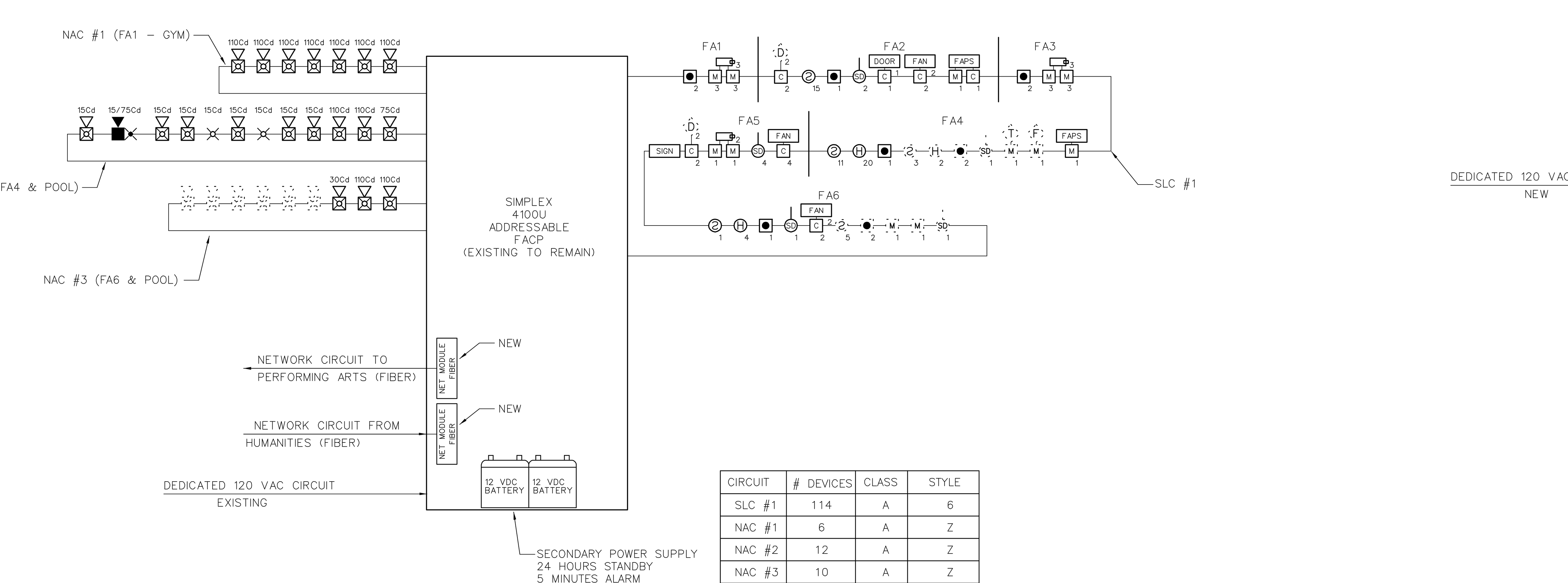
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - ACTIVITY CENTER
1/8" = 1'-0"
0 8' 16' 32'



2 FIRE ALARM SINGLE LINE RISER DIAGRAM ACTIVITY CENTER
NTS

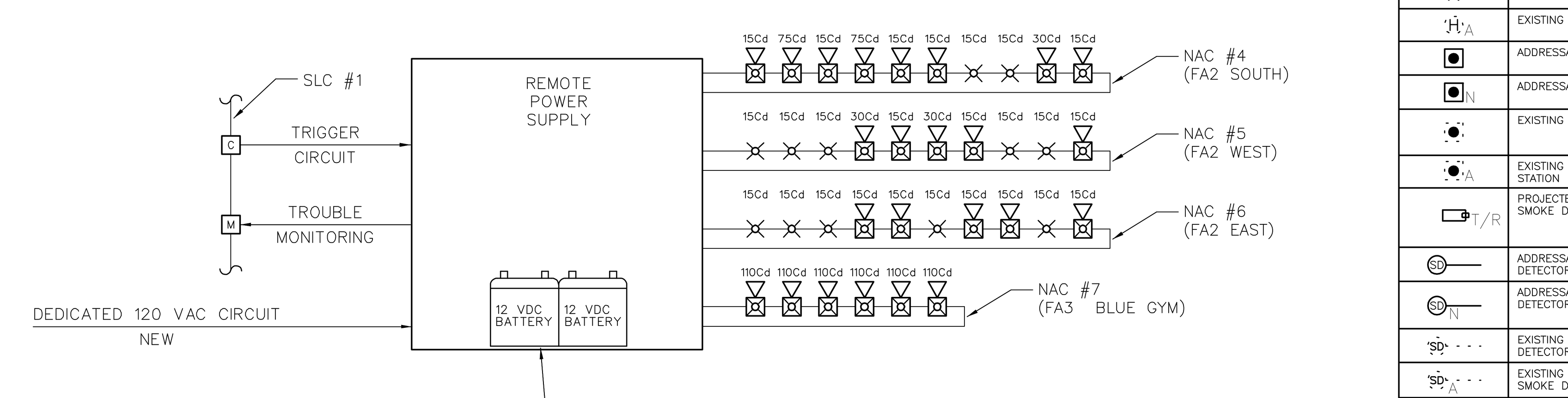
CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	114	A	6
NAC #1	6	A	Z
NAC #2	12	A	Z
NAC #3	10	A	Z
NAC #4	10	A	Z
NAC #5	10	A	Z
NAC #6	10	A	Z
NAC #7	6	A	Z

* DEVICE COUNT APPROXIMATE. CONTRACTOR TO FIELD VERIFY ACTUAL NUMBER OF EXISTING ADDRESSABLE DEVICES

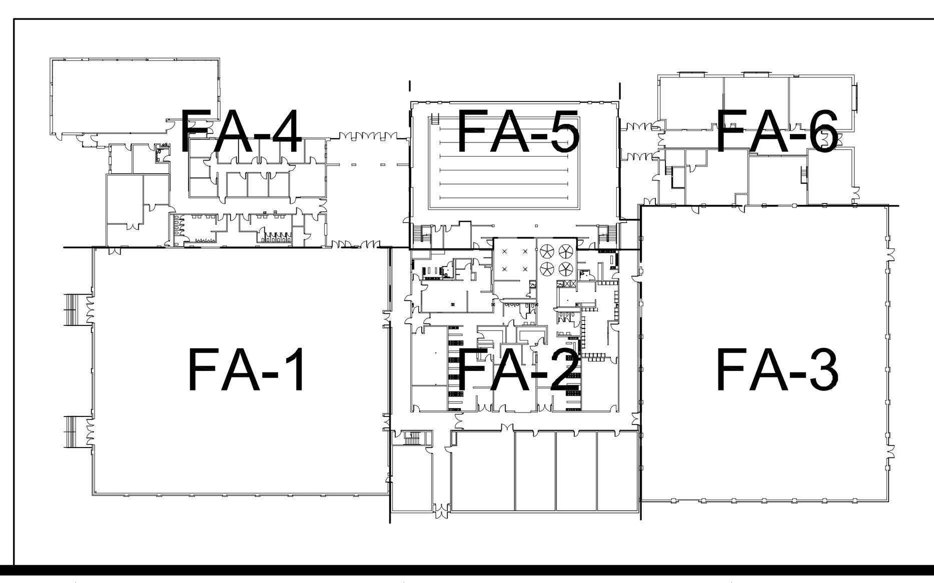
OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE ALL LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR HANDLERS	RELEASE FIRE DOOR			
ACTIVATION OF ANY SPOT TYPE SMOKE DETECTOR	X	X			X				
ACTIVATION OF ANY PROJECTED BEAM TYPE SMOKE DETECTOR	X	X			X				
PROJECTED BEAM TYPE SMOKE DETECTOR TROUBLE			X						
ACTIVATION OF ANY HEAT DETECTOR	X	X			X				
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X		X				
ACTIVATION OF ANY HEAT DETECTOR ON EITHER SIDE OF ROLL DOWN FIRE DOOR	X	X			X	X			
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					
NAC POWER SUPPLY TROUBLE				X					

3 SEQUENCE OF OPERATION
NTS



4 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM
NTS



FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) BUILDING ADDITION AT NORTHWEST AND NORTHEAST CORNERS OF BUILDING CONTAIN ADDRESSABLE INITIATING DEVICES AND UPGRADED AUDIBLE/VISIBLE NOTIFICATION APPLIANCES. EXISTING ADDRESSABLE INITIATING DEVICES AND UPGRADED NOTIFICATION APPLIANCES IN BUILDING ADDITIONS TO REMAIN WITHOUT MODIFICATION.

(04) REPLACE EXISTING PROJECTED BEAM TYPE SMOKE DETECTOR WITH NEW EQUIPMENT. NEW BEAM DETECTORS SHALL BE SINGLE ENDED TYPE WITH TRANSMITTER AND RECEIVER ON ONE WALL AND REFLECTING PAD ON OPPOSITE WALL. DETECTORS SHALL HAVE BUILT-IN SENSITIVITY TEST FEATURE WITH REMOTE TEST SWITCH (SYSTEM SENSOR BEAM 12245 OR EQUAL). INSTALL REMOTE TEST SWITCH ADJACENT TO FACP OR AT OTHER LOCATION APPROVED BY THE OWNER. PROVIDE TWO MONITOR MODULES (ALARM AND TROUBLE CONDITIONS) AT DETECTOR TO FACILITATE CONNECTION OF DETECTOR TO FACP AS AN ADDRESSABLE POINT. PROVIDE SUPERVISED 12 VDC OR 24 VDC POWER.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

(06) NOT USED

(07) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(08) EXISTING REMOTE POWER SUPPLY FOR NOTIFICATION APPLIANCES IN ADDITION TO REMAIN.

(09) INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

(10) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(11) EXISTING FIRE SUPPRESSION SYSTEM PROTECTING COOKING HOOD TO REMAIN. PROVIDE MONITOR MODULE AND CONNECT TO ACTIVATION CONTACTS OF FIRE SUPPRESSION SYSTEM CONTROLS TO FACILITATE CONNECTION OF SYSTEM TO FACP AS AN ADDRESSABLE POINT.

(12) INSTALL NEW CONTROL RELAY OPERATE EXISTING ROLL DOWN DOOR. PROGRAM RELAY TO RELEASE DOOR UPON OPERATION OF SMOKE DETECTOR ON EITHER SIDE OF DOOR. TEST DOOR FOR PROPER FUNCTION. PERFORM MINOR ADJUSTMENTS OR REPAIRS TO EXISTING FIRE DOOR AS REQUIRED. NOTIFY OWNER AND ENGINEER IN WRITING IF DOOR IS NOT OPERATIONAL OR IF DOOR REQUIRED MAJOR REPAIR.

(13) INSTALL NOTIFICATION APPLIANCE LISTED FOR EXTERIOR INSTALLATION ON A WATERPROOF J-BOX IN AREAS WITH HIGH RELATIVE HUMIDITY.

(14) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISION DATE: XX/XX/XX

SNOW COLLEGE - ACTIVITY CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
ACTIVITY CENTER
(AREA - F), DETAILS
& SCHEDULES
AC-FA6

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

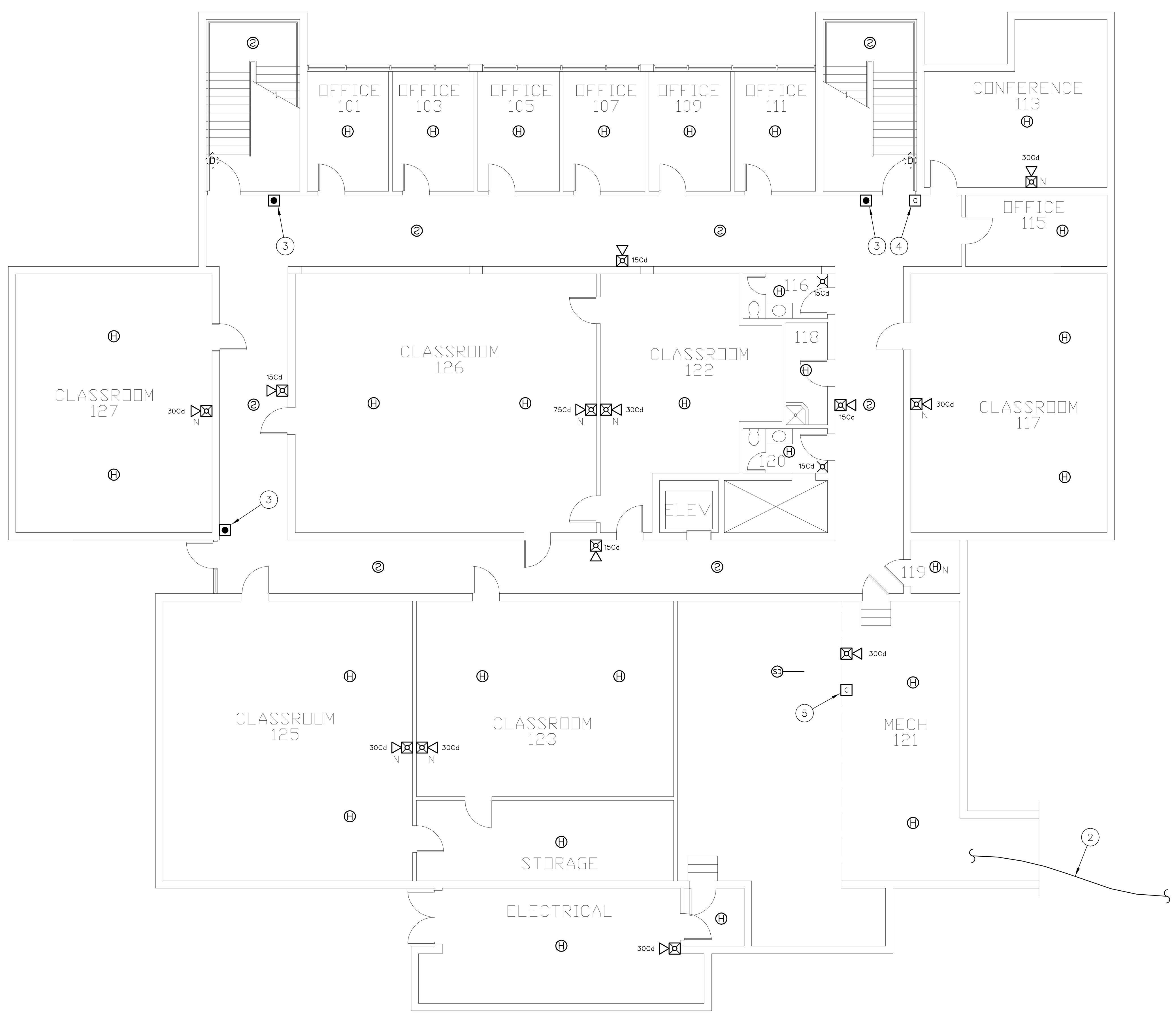
(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(04) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(06) EXISTING CONVENTIONAL, EXPLOSION-PROOF HEAT DETECTOR TO REMAIN. PROVIDE NEW ADDRESSABLE MONITOR MODULE TO FACILITATE CONNECTION OF CONVENTIONAL DEVICE TO NEW FACP AS AN ADDRESSABLE POINT. LOCATE MONITOR MODULE BELOW CEILING IN CORRIDOR. LABEL MODULE COVER WITH DEVICE TYPE, LOCATION AND ADDRESS.



1 FIRE ALARM PLAN - SCIENCE BUILDING (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - SCIENCE BUILDING
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - SCIENCE (1ST FLOOR)

SB-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

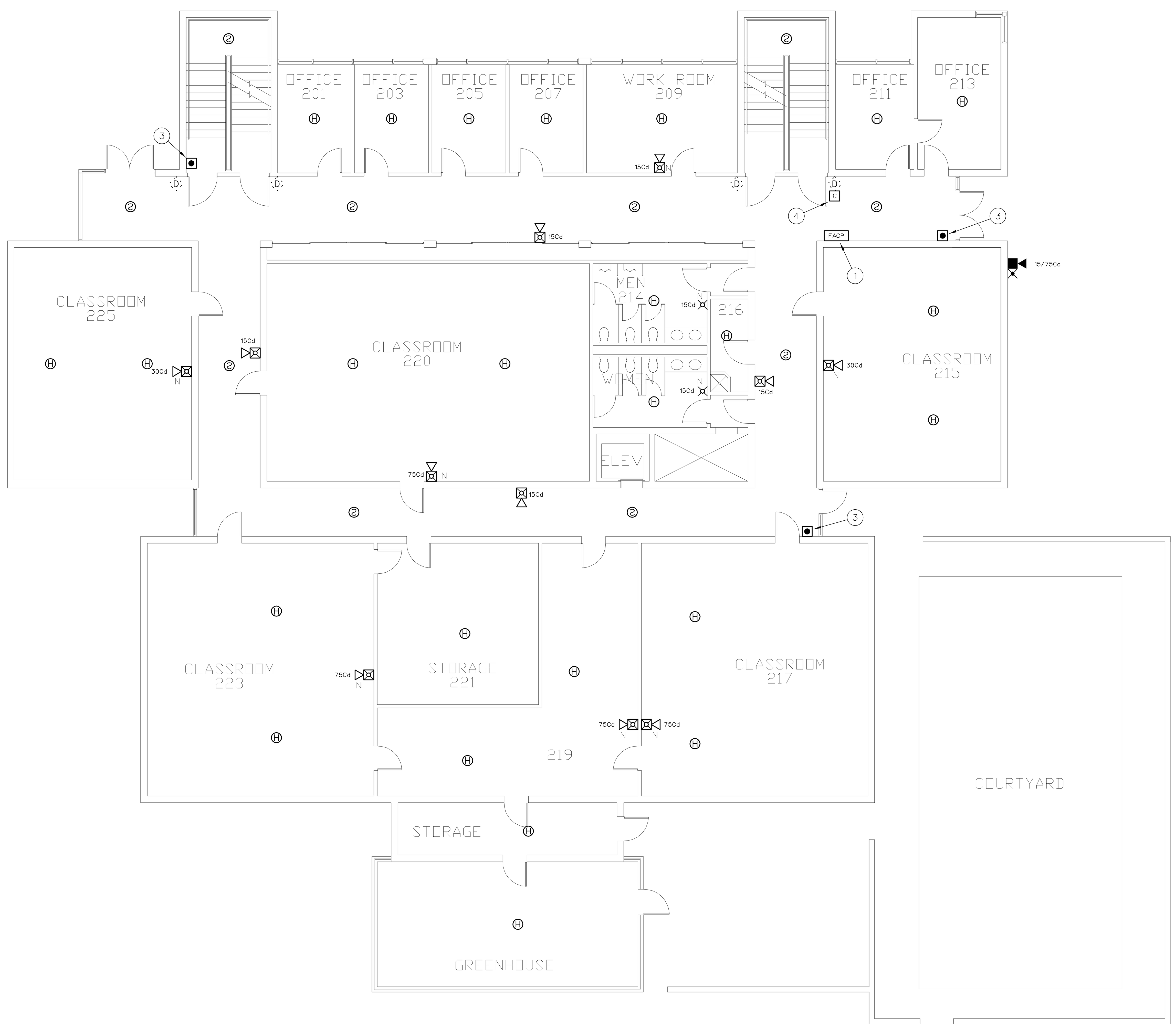
(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

(04) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(06) EXISTING CONVENTIONAL, EXPLOSION-PROOF HEAT DETECTOR TO REMAIN. PROVIDE NEW ADDRESSABLE MONITOR MODULE TO FACILITATE CONNECTION OF CONVENTIONAL DEVICE TO NEW FACP AS AN ADDRESSABLE POINT. LOCATE MONITOR MODULE BELOW CEILING IN CORRIDOR. LABEL MODULE COVER WITH DEVICE TYPE, LOCATION AND ADDRESS.



1 FIRE ALARM PLAN - SCIENCE BUILDING (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2)N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2 (dashed)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 (dashed) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2)S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUIBLE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H)N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H (dashed)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H (dashed) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
[●]	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
[●]N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
● (dashed)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● (dashed) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
(SD)—	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(SD)—N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD - - -	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A - - -	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D (dashed)	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T (dashed)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F (dashed)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(strobe symbol)	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
(horn/strobe symbol)	HORN/STROBE		
(ceiling horn/strobe symbol)	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
(strobe symbol) N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
(horn/strobe symbol) N	HORN/STROBE		
(ceiling horn/strobe symbol) N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
(exterior horn/strobe symbol)	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
(exterior horn/strobe symbol) N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(dashed symbol)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
(strobe symbol) A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - SCIENCE BUILDING
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - SCIENCE (2ND FLOOR)

SB-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
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13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

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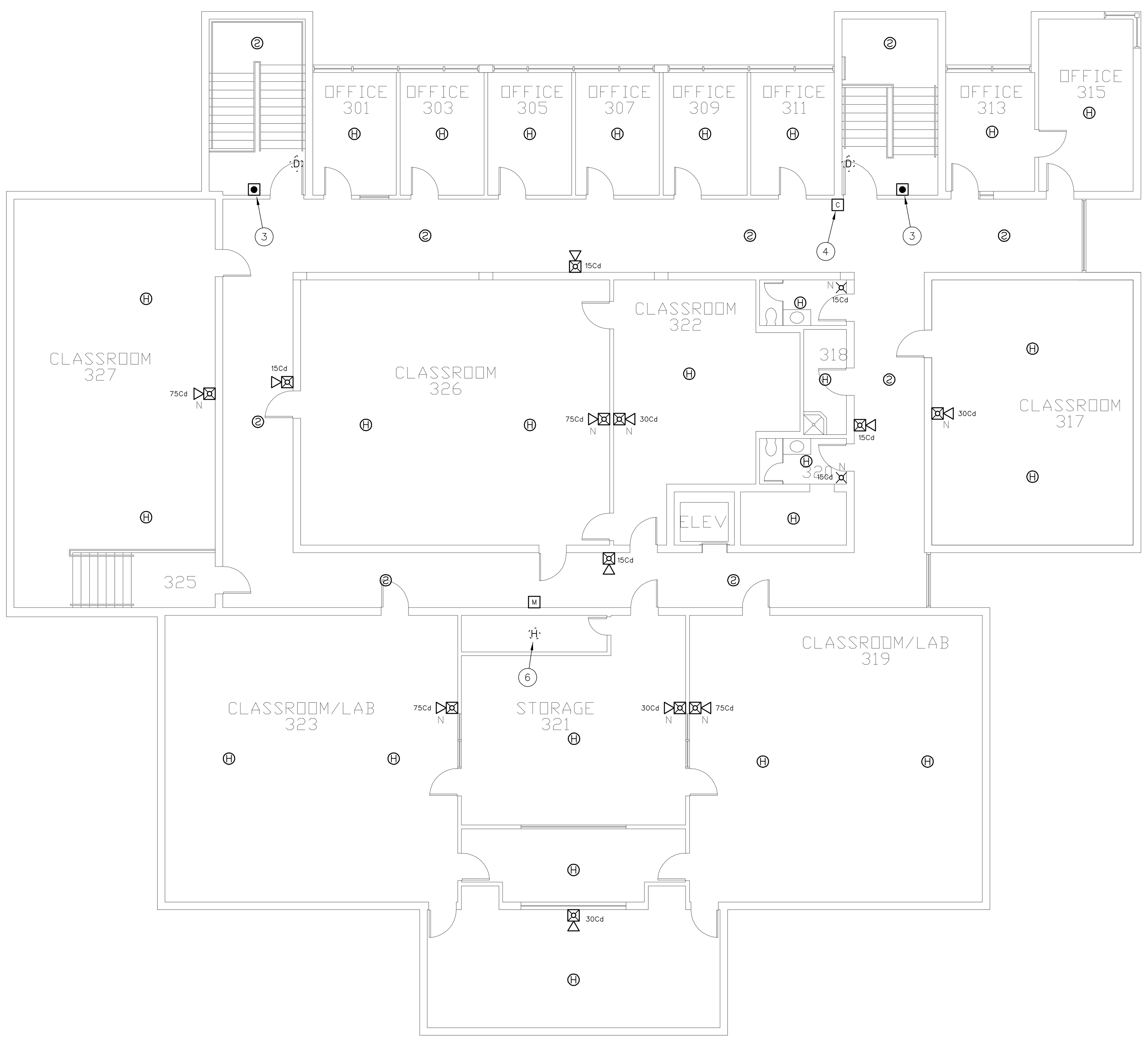
(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM PULL STATION LOCATED ABOVE MAXIMUM HEIGHT OF 48" AFF REQUIRED BY IBC AND ADA GUIDELINES. REMOVE EXISTING J-BOX AND RELOCATE TO 48" AFF. INSTALL NEW ADDRESSABLE PULL STATION ON RECESSED J-BOX.

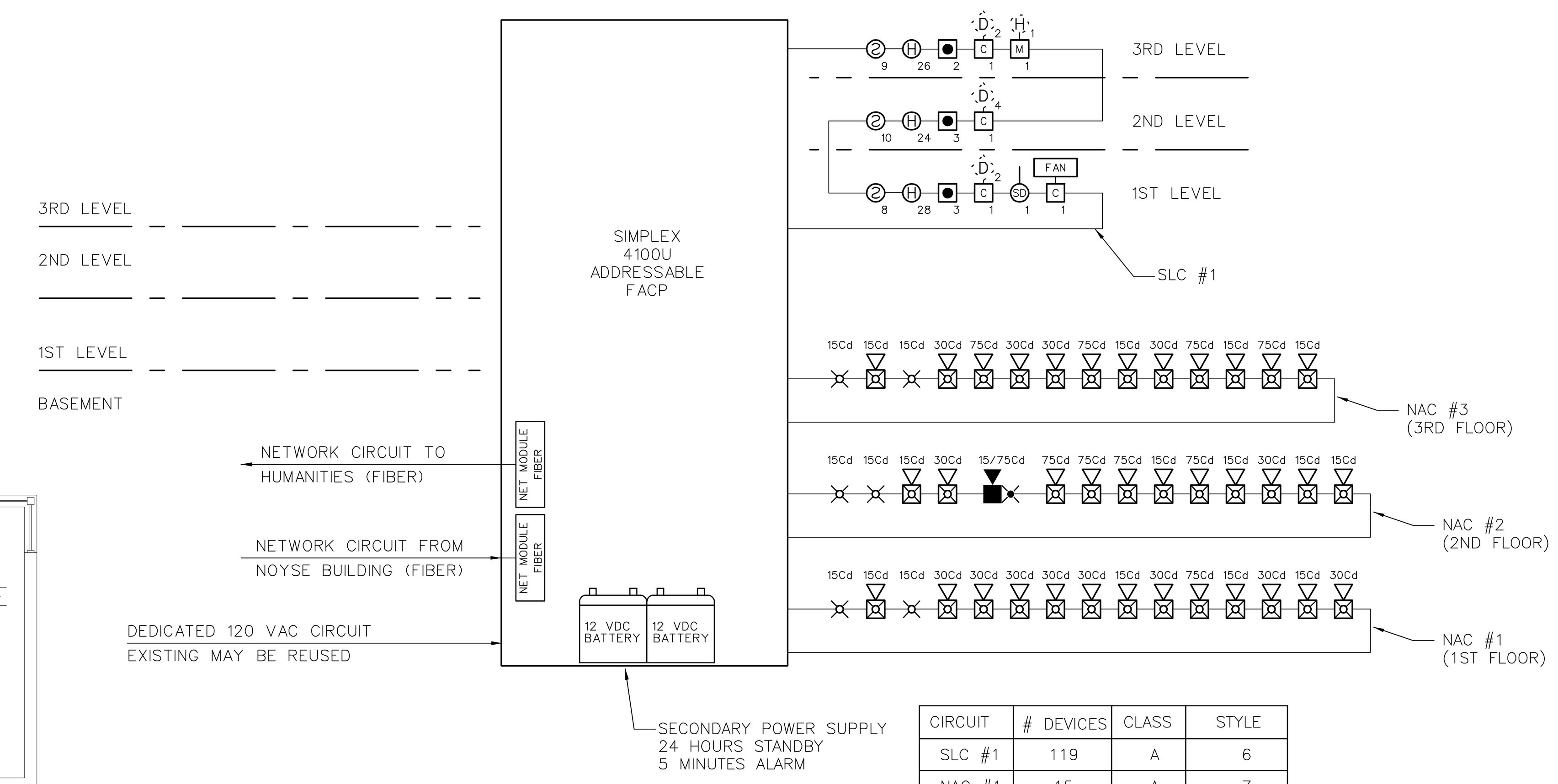
(04) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(06) EXISTING CONVENTIONAL, EXPLOSION-PROOF HEAT DETECTOR TO REMAIN. PROVIDE NEW ADDRESSABLE MONITOR MODULE TO FACILITATE CONNECTION OF CONVENTIONAL DEVICE TO NEW FACP AS AN ADDRESSABLE POINT. LOCATE MONITOR MODULE BELOW CEILING IN CORRIDOR. LABEL MODULE COVER WITH DEVICE TYPE, LOCATION AND ADDRESS.



1 FIRE ALARM PLAN - SCIENCE BUILDING (3RD FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	119	A	6
NAC #1	15	A	Z
NAC #2	14	A	Z
NAC #2	14	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM
SCIENCE BUILDING
NTS

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR HANDLER(S)	RELEASE FIRE DOORS			
ACTIVATION OF ANY SMOKE DETECTOR	X	X			X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			X	X			
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X		X				
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					

3 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISION DATE: XX/XX/XX

SNOW COLLEGE - SCIENCE BUILDING
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN SCIENCE (3RD FLOOR), DETAILS & SCHEDULES
SB-FA3

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

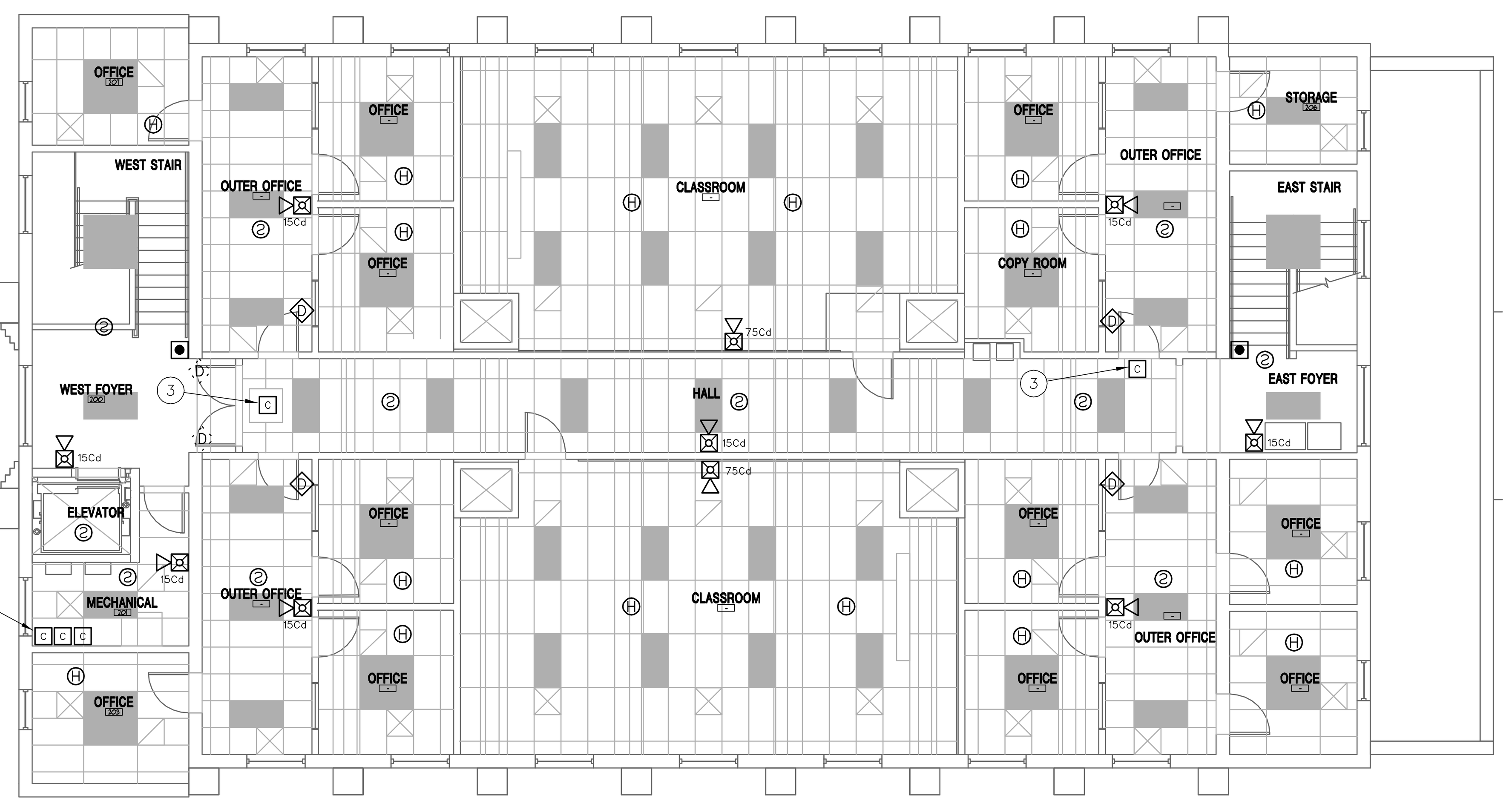
(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

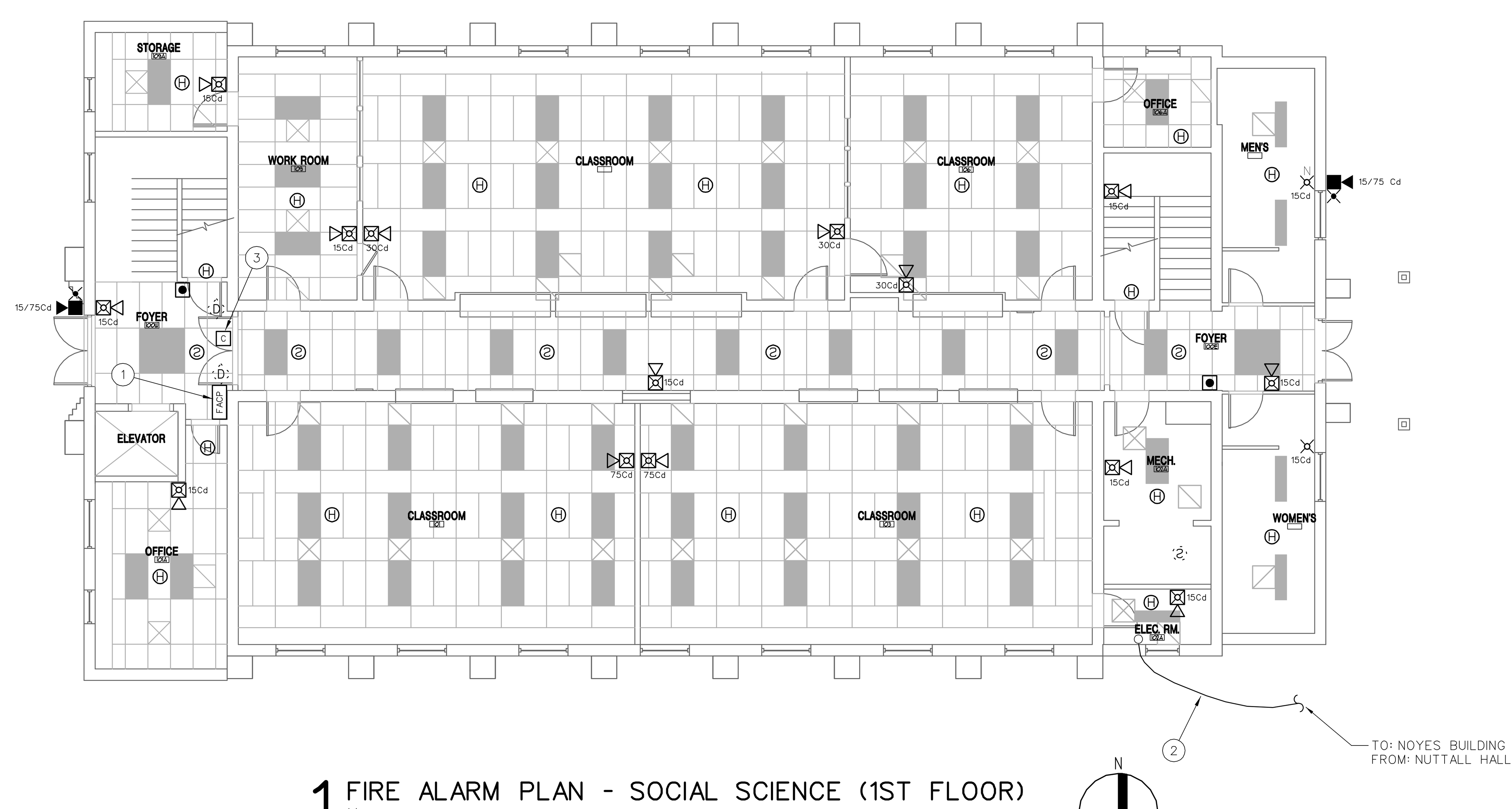
(05) INSTALL PROGRAMMABLE OUTPUT MODULES TO INTERFACE WITH ELEVATOR CONTROLS TO PROVIDE ELEVATOR RECALL FUNCTIONS. ELEVATOR RECALL SHALL CONFORM TO NFPA 71 AND ASME A17.1. PROGRAM RECALL FUNCTIONS AS FOLLOWS:

PRIMARY RECALL (TO 1ST LEVEL): ACTIVATION OF SMOKE DETECTOR IN ELEVATOR SHAFT, EQUIPMENT ROOM OR 2ND LEVEL ELEVATOR LOBBY
SECONDARY RECALL (TO 2ND LEVEL): ACTIVATION OF SMOKE DETECTOR IN 1ST FLOOR ELEVATOR LOBBY

COORDINATE CONNECTION OF OUTPUT MODULES TO ELEVATOR CONTROLS WITH ELEVATOR SERVICE CONTRACTOR. OWNER (DFCM) TO PAY COST OF ELEVATOR SERVICE CALL FROM ELEVATOR SERVICE CONTRACTOR (IF REQUIRED).



2 FIRE ALARM PLAN - SOCIAL SCIENCE (2ND FLOOR)
1/8" = 1'-0"
0 8' 16' 32'



1 FIRE ALARM PLAN - SOCIAL SCIENCE (1ST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - SOCIAL SCIENCE BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
SOCIAL SCIENCE
(1ST & 2ND FLOOR)

SS-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

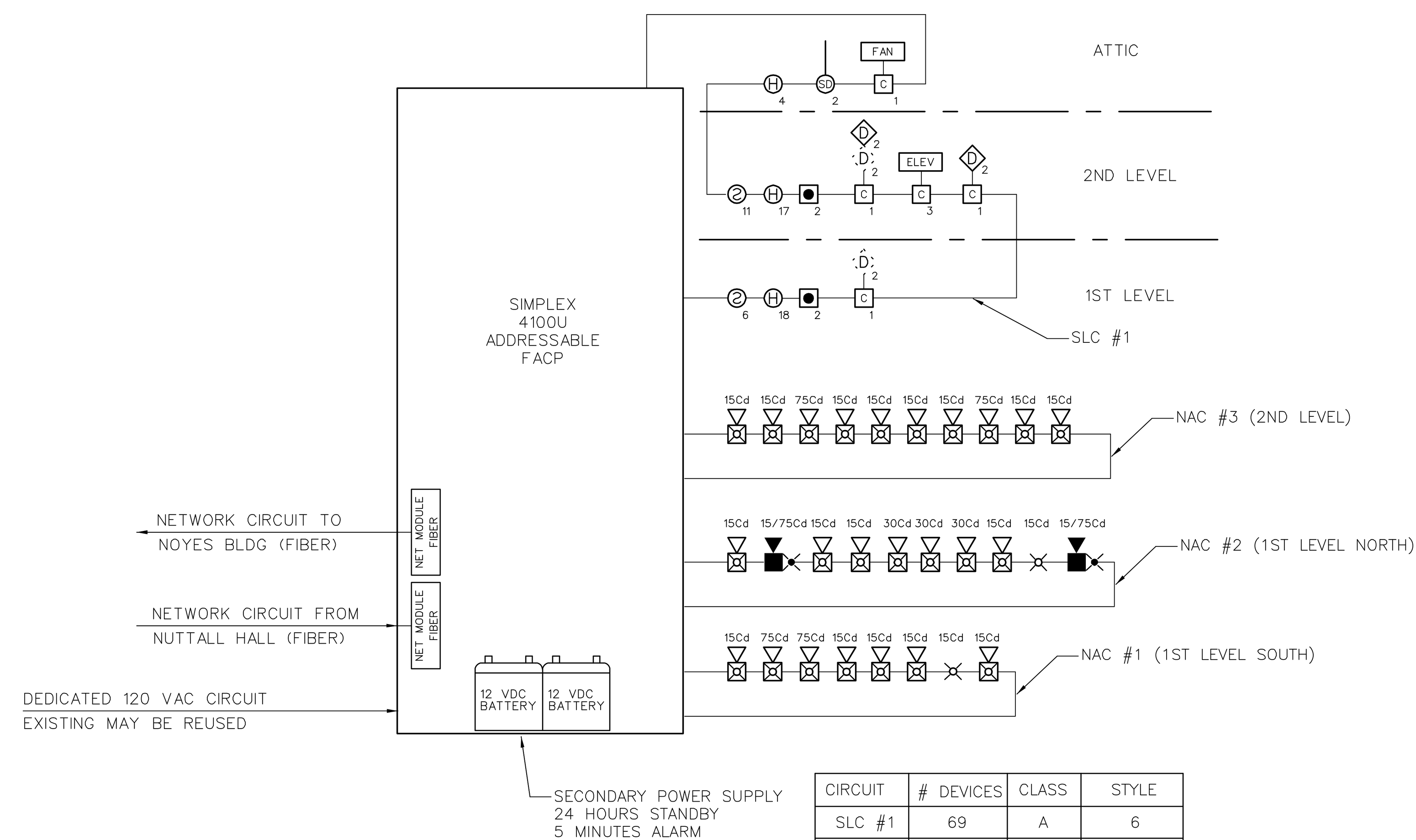
(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(05) INSTALL PROGRAMMABLE OUTPUT MODULES TO INTERFACE WITH ELEVATOR CONTROLS TO PROVIDE ELEVATOR RECALL FUNCTIONS. ELEVATOR RECALL SHALL CONFORM TO NFPA 71 AND ASME A17.1. PROGRAM RECALL FUNCTIONS AS FOLLOWS:

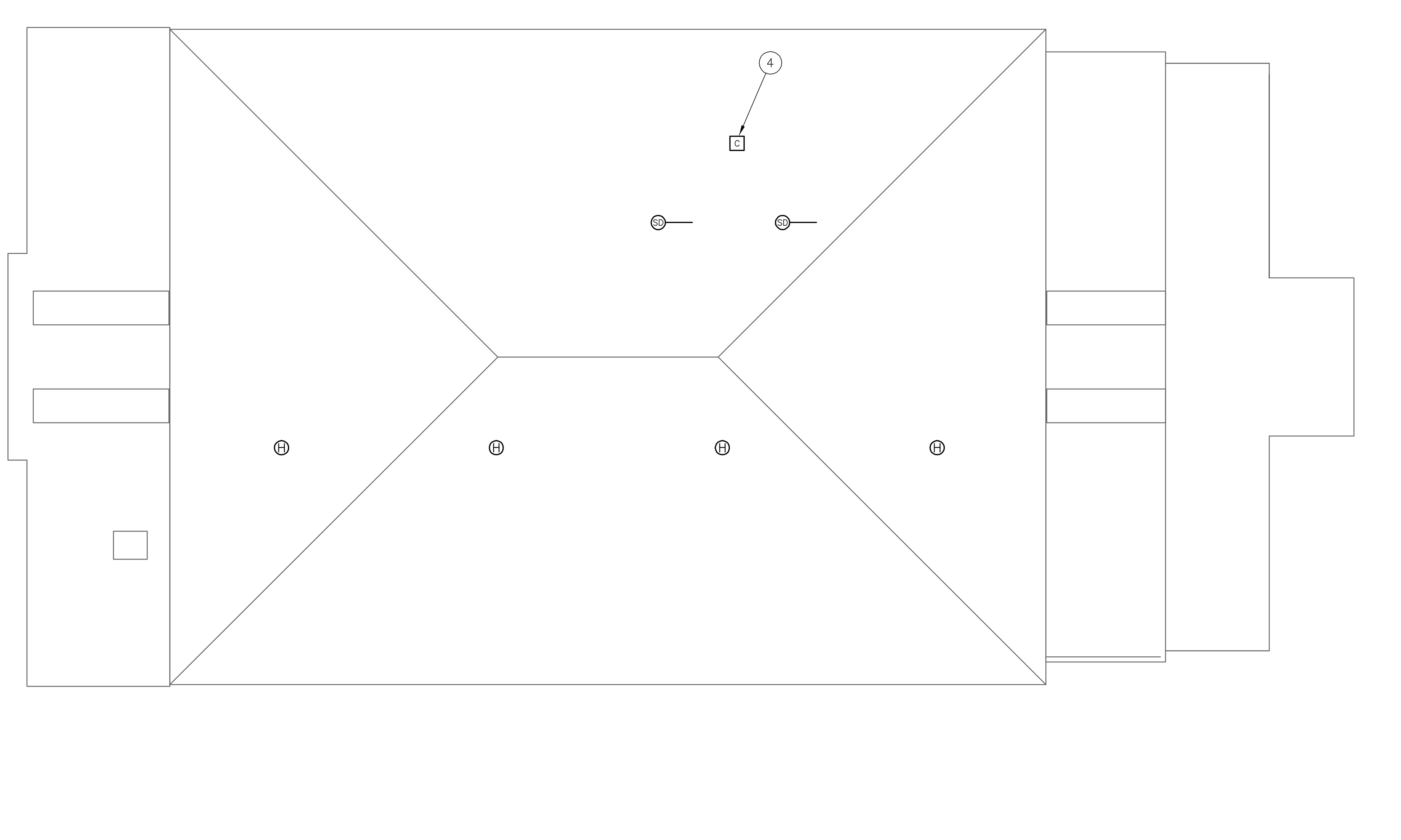
PRIMARY RECALL (TO 1ST LEVEL): ACTIVATION OF SMOKE DETECTOR IN ELEVATOR SHAFT, EQUIPMENT ROOM OR 2ND LEVEL ELEVATOR LOBBY
SECONDARY RECALL (TO 2ND LEVEL): ACTIVATION OF SMOKE DETECTOR IN 1ST FLOOR ELEVATOR LOBBY

COORDINATE CONNECTION OF OUTPUT MODULES TO ELEVATOR CONTROLS WITH ELEVATOR SERVICE CONTRACTOR. OWNER (DFCM) TO PAY COST OF ELEVATOR SERVICE CALL FROM ELEVATOR SERVICE CONTRACTOR (IF REQUIRED).



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	69	A	6
NAC #1	8	A	Z
NAC #2	10	A	Z
NAC #2	10	A	Z

2 FIRE ALARM SINGLE LINE RISER DIAGRAM SOCIAL SCIENCE
NTS



1 FIRE ALARM PLAN - SOCIAL SCIENCE (ATTIC)
1/8" = 1'-0"
0 8' 16' 32'

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR HANDLER(S)	ACTIVATE PRIMARY RECALL AT ELEVATOR CONTROLLER	ACTIVATE SECONDARY RECALL AT ELEVATOR CONTROLLER	RELEASE FIRE DOORS	
ACTIVATION OF ANY SMOKE DETECTOR	X	X			X			X	
ACTIVATION OF ANY HEAT DETECTOR	X	X			X			X	
ACTIVATION OF ANY MANUAL PULL STATION	X	X			X			X	
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X		X				
ACTIVATION OF SMOKE DETECTOR IN IST FLOOR ELEVATOR LOBBY	X	X			X		X	X	
ACTIVATION OF SMOKE DETECTOR IN 2ND FLOOR ELEVATOR LOBBY	X	X			X	X		X	
ACTIVATION OF SMOKE DETECTOR IN ELEVATOR EQUIPMENT/SHAFT	X	X			X	X		X	
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					

3 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISIONS:

DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - SOCIAL SCIENCE BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
SOCIAL SCIENCE
(ATTIC), DETAILS
& SCHEDULES
SS-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

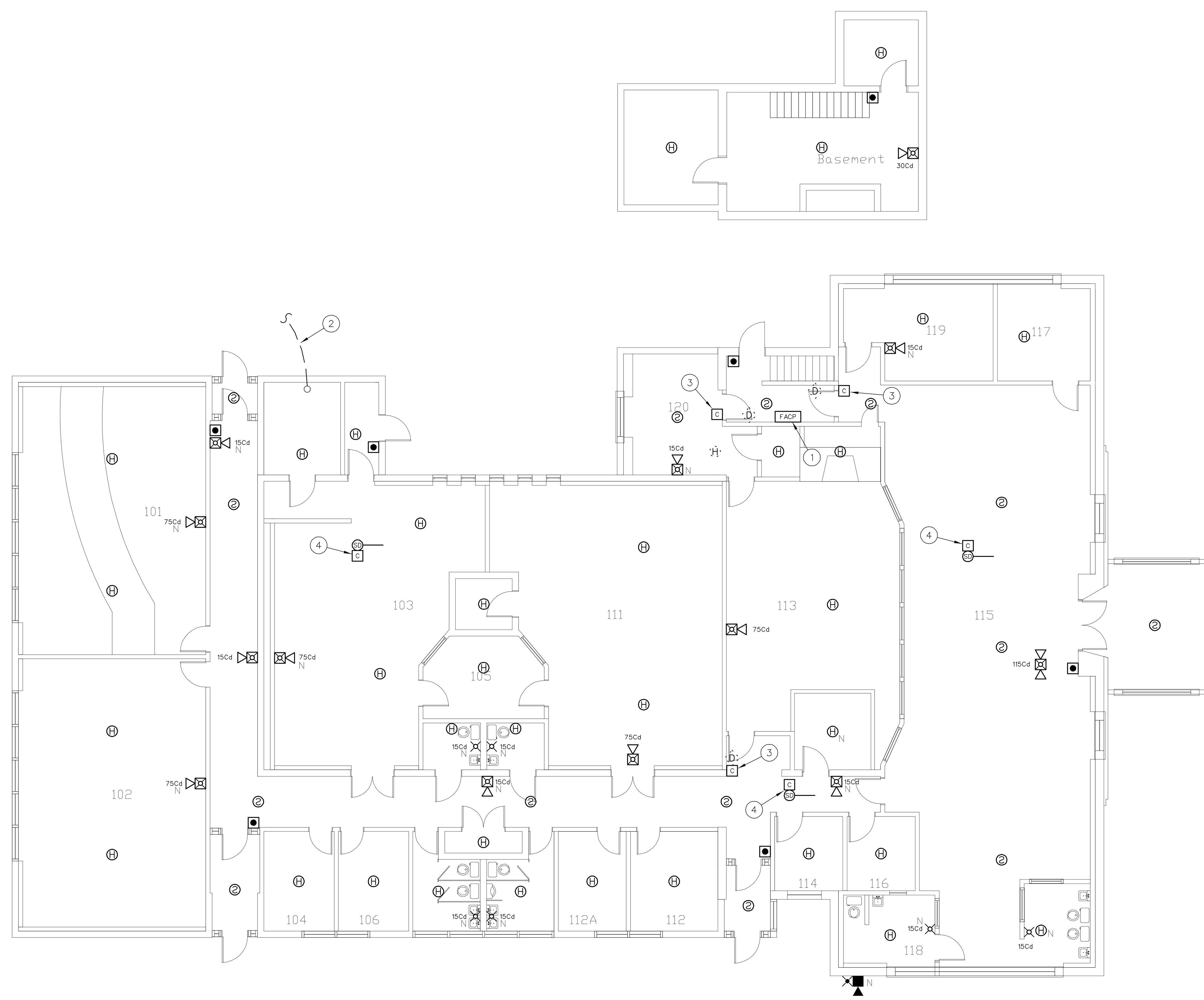
FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.



1 FIRE ALARM PLAN - FAMILY LIFE BLDG
1/8" = 1'-0"
0 8' 16' 32'

N

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
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	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
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N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DRAWN BY: BBH
CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - FAMILY LIFE BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - FAMILY LIFE

FL-FA1

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1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

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5. DEMOLITION: IT IS THE INSTALLER'S RESPONSIBILITY FOR THE DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

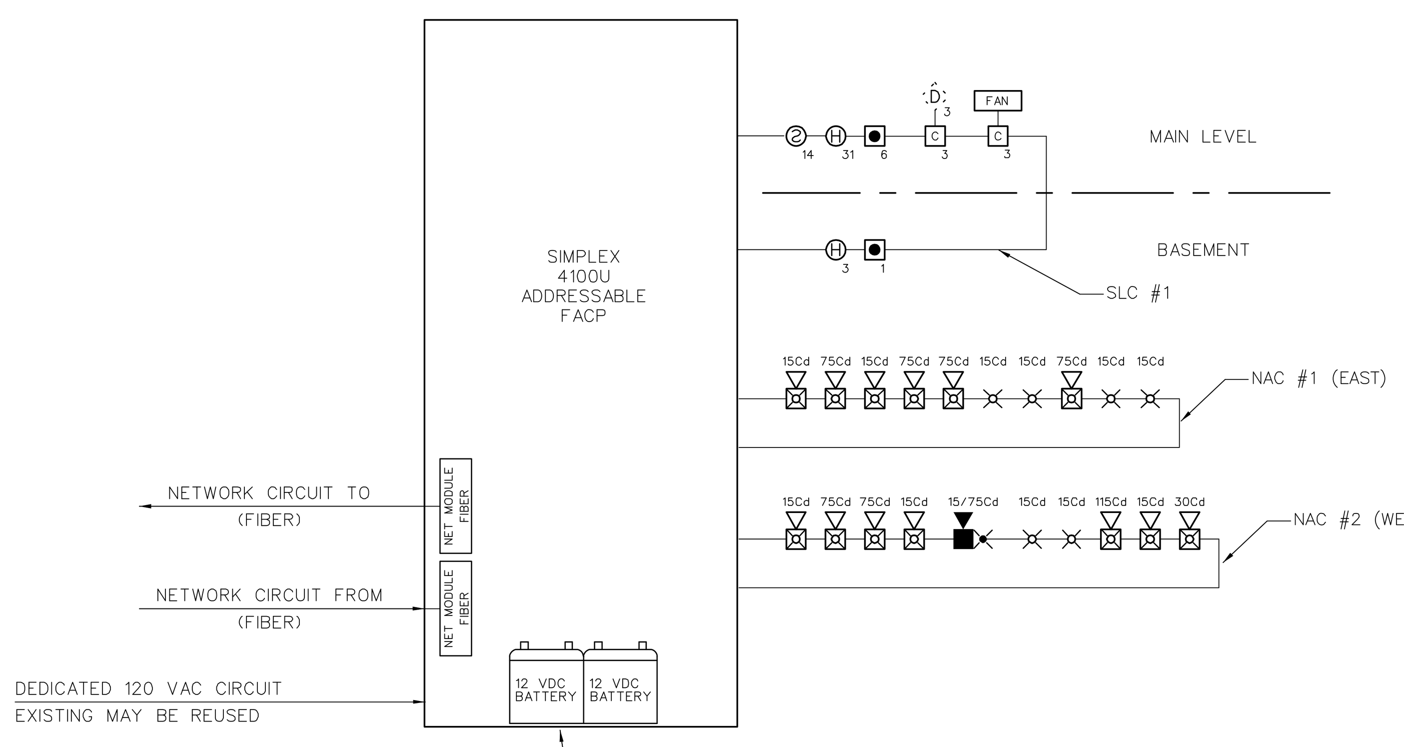
FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4002) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	64	A	6
NAC #1	10	A	Z
NAC #2	10	A	Z

1 FIRE ALARM SINGLE LINE RISER DIAGRAM FAMILY LIFE
NTS

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE LOCAL FIRE ALARM NOTIFICATION APPLIANCES (ALL CIRCUITS)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR HANDLER(S)	RELEASE FIRE DOORS			
ACTIVATION OF ANY SMOKE DETECTOR	X	X			X	X			
ACTIVATION OF ANY HEAT DETECTOR	X	X			X	X			
ACTIVATION OF ANY MANUAL PULL STATION	X	X			X	X			
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X		X				
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					

2 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - FAMILY LIFE BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM DETAILS & SCHEDULES FAMILY LIFE
FL-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
    DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
    INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

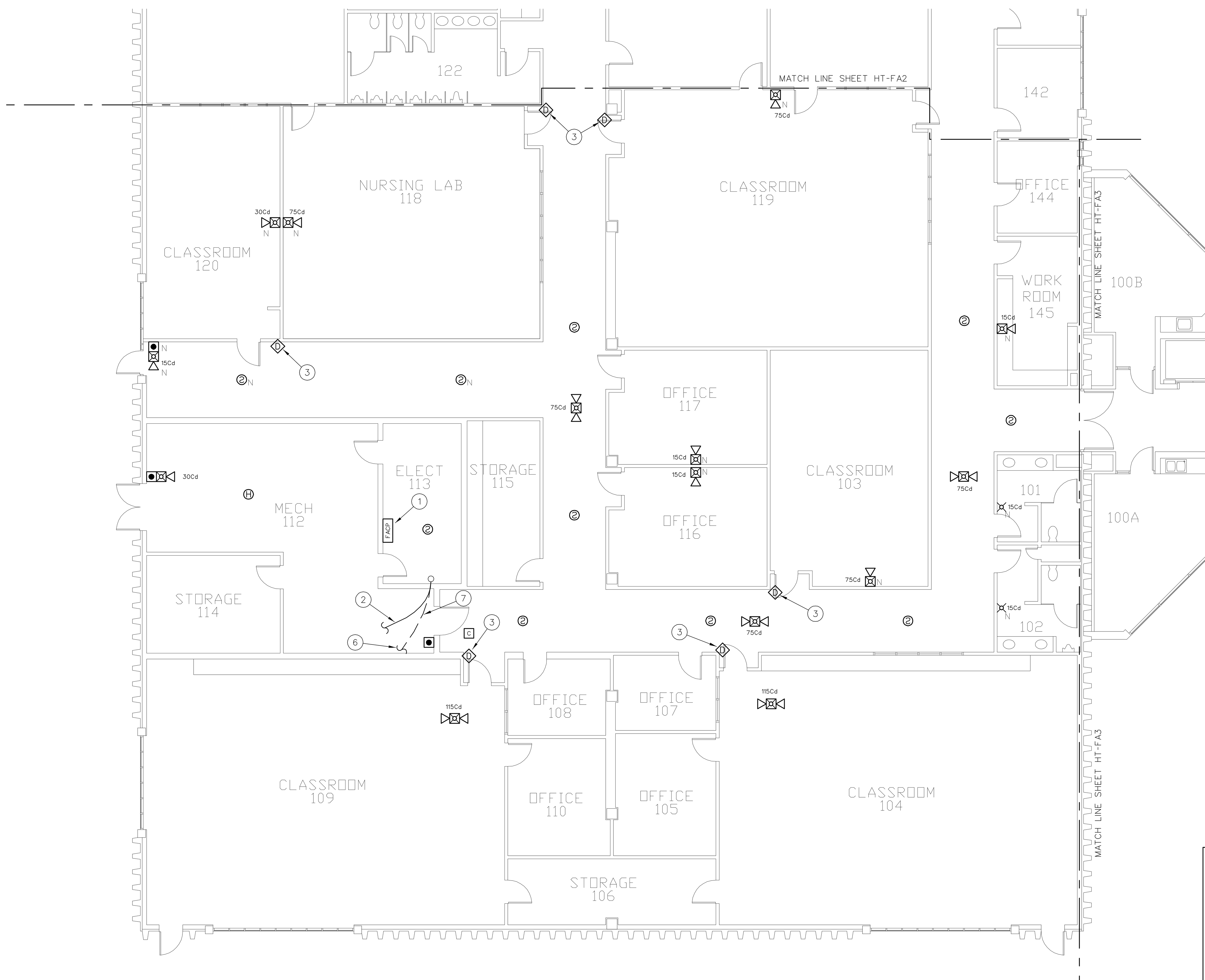
(07) INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

(08) EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

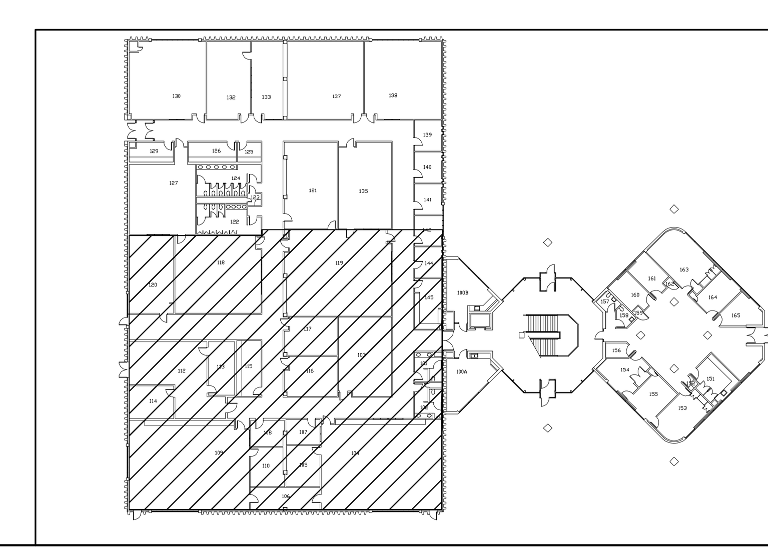
(09) REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2)N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
(2)A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2)S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H)N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.



1 FIRE ALARM PLAN - HIGH TECH (1ST LEVEL EAST)
1/8" = 1'-0"
0 8' 16' 32'



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SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HIGH TECH (AREA - A)

HT-FA1

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

04 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

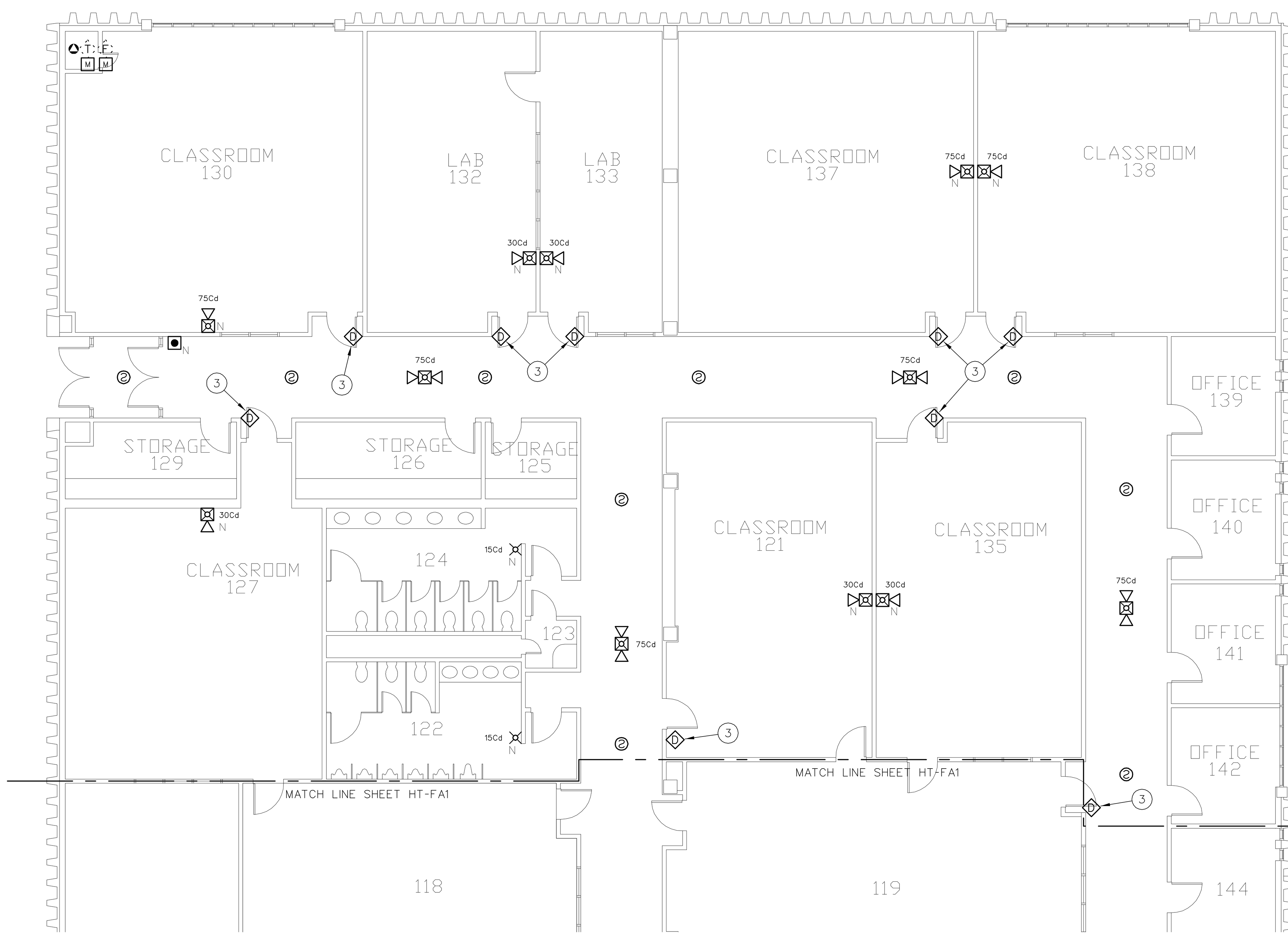
07 INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

08 EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

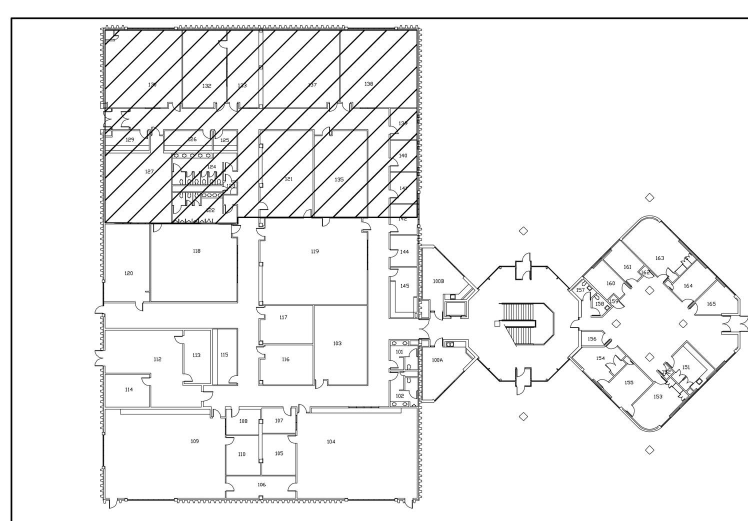
09 REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.



1 FIRE ALARM PLAN - HIGH TECH (1ST LEVEL WEST)
1/8" = 1'-0"
0 8' 16' 32'



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SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HIGH TECH (AREA - B)

HT-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

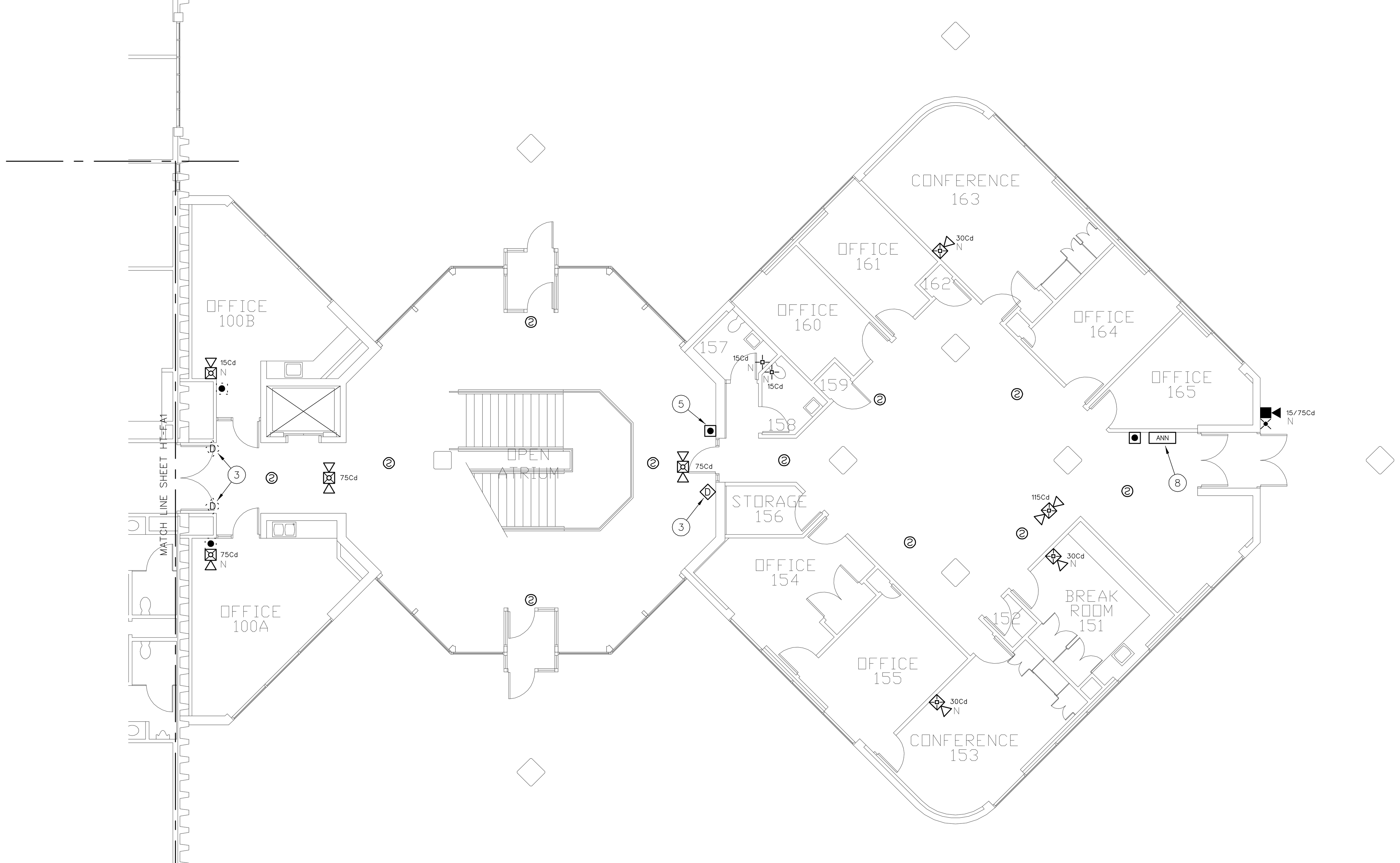
(07) INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

(08) EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

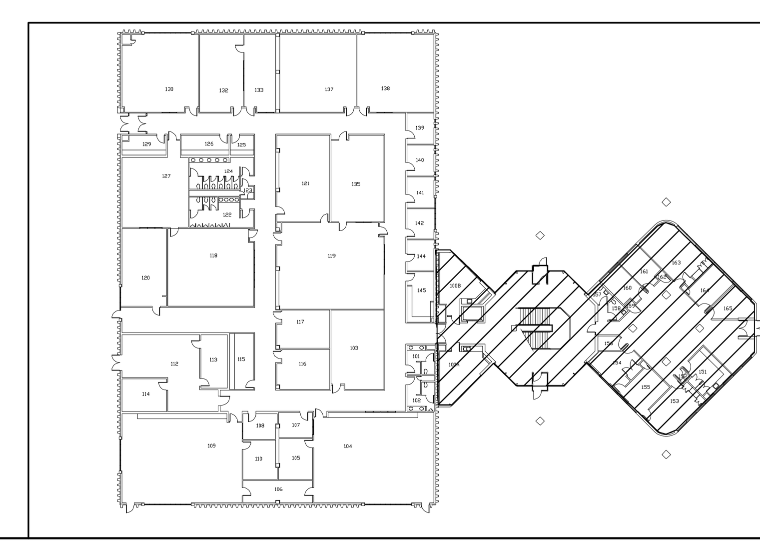
(09) REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(strobe)	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
(horn/strobe)	HORN/STROBE		
(horn/strobe, ceiling)	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
(strobe) N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
(horn/strobe) N	HORN/STROBE		
(horn/strobe, ceiling) N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
(exterior horn/strobe)	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
(exterior horn/strobe) N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
(existing notification appliance)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
(strobe) A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.



1 FIRE ALARM PLAN - HIGH TECH (1ST LEVEL NORTH)
1/8" = 1'-0"
0 8' 16' 32'



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CHECKED BY: GTJ
DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HIGH TECH (AREA - C)

HT-FA3

SHEET 34 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

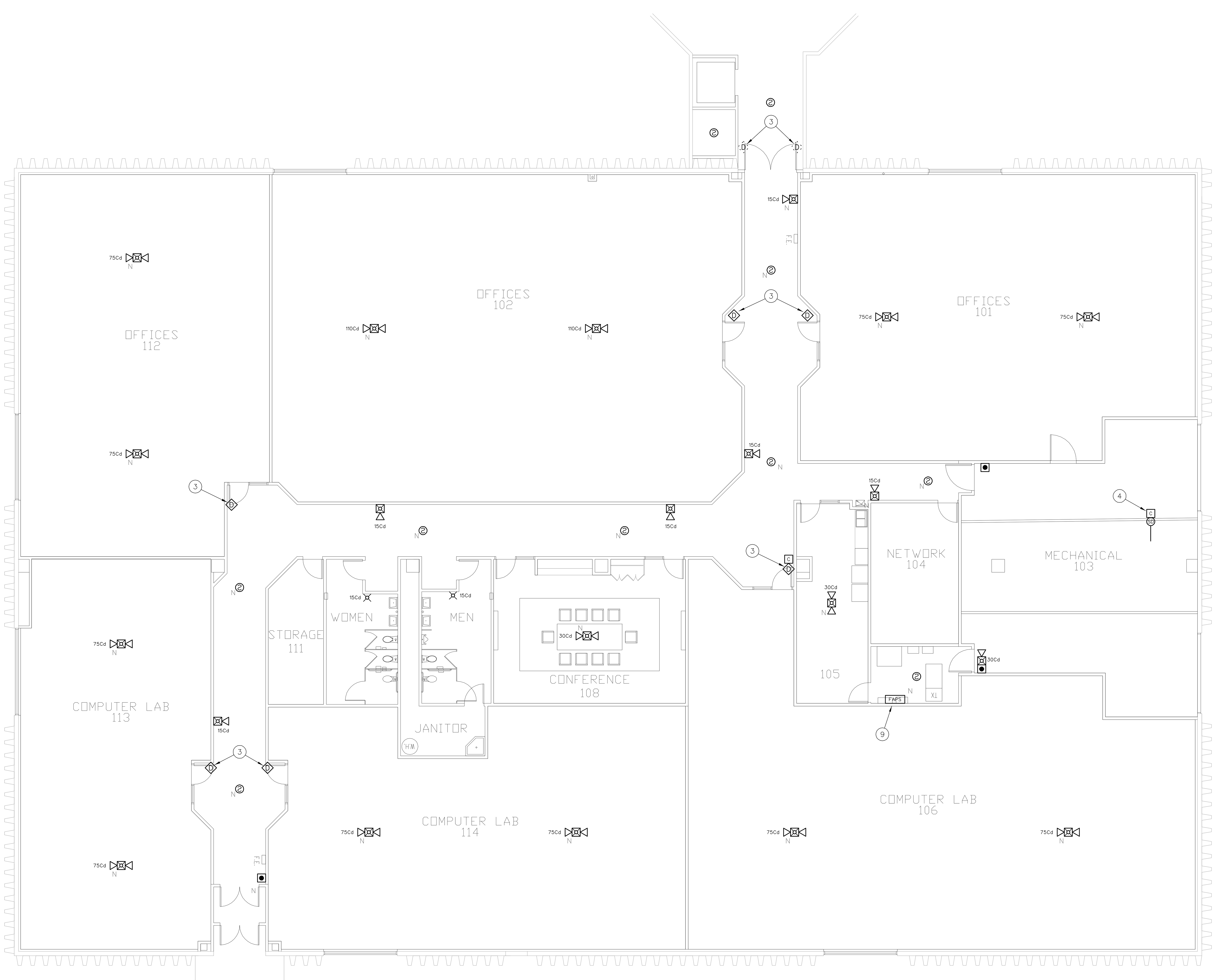
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - HIGH TECH (2ND LEVEL EAST)
1/8" = 1'-0"
FIRE ALARM PLAN - HIGH TECH (1ST LEVEL EAST)
0 8' 16' 32'

FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

(07) INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

(08) EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

(09) REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
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NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
●	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
● N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HIGH TECH (AREA - D)

HT-FA4

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

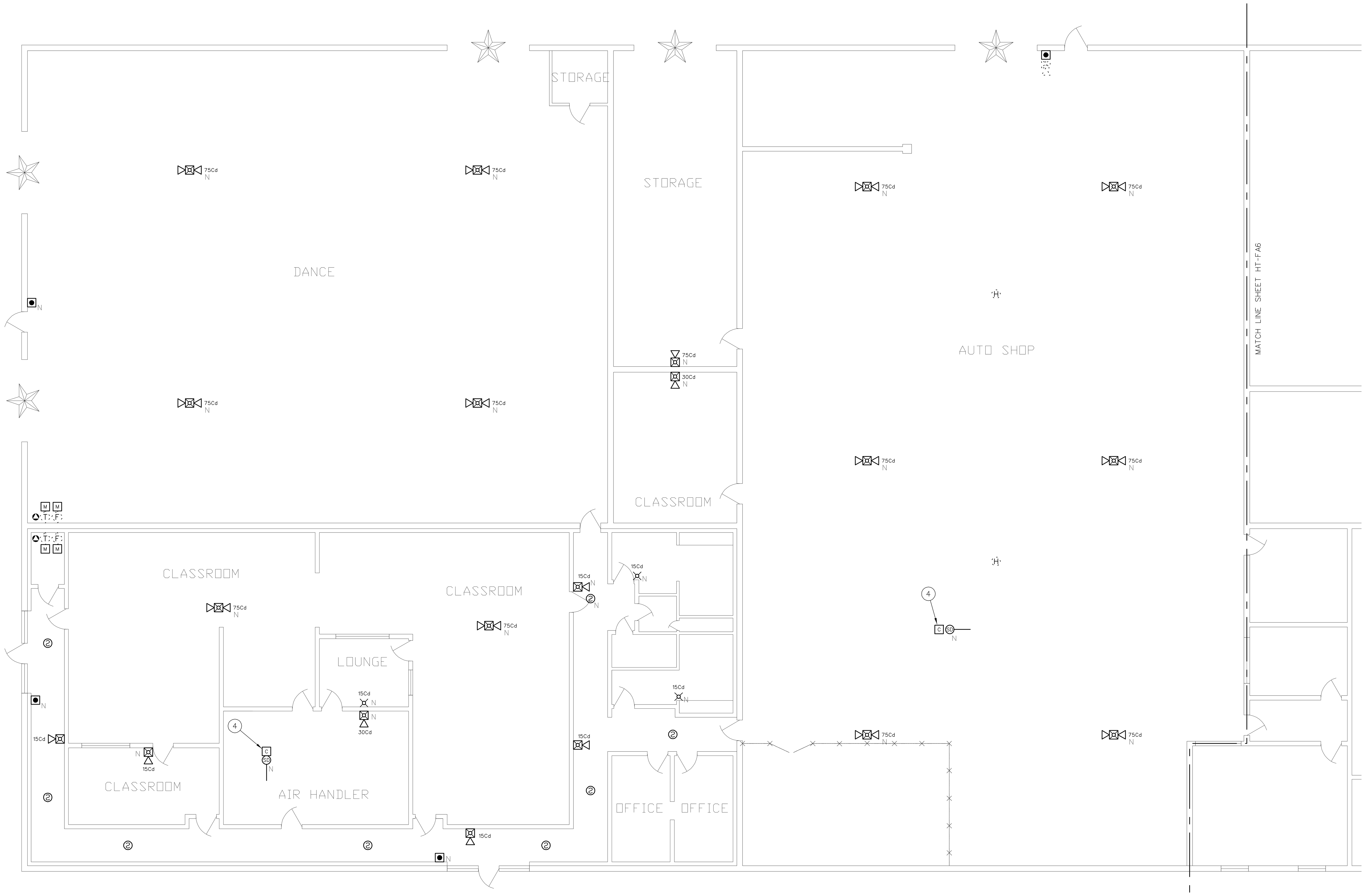
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

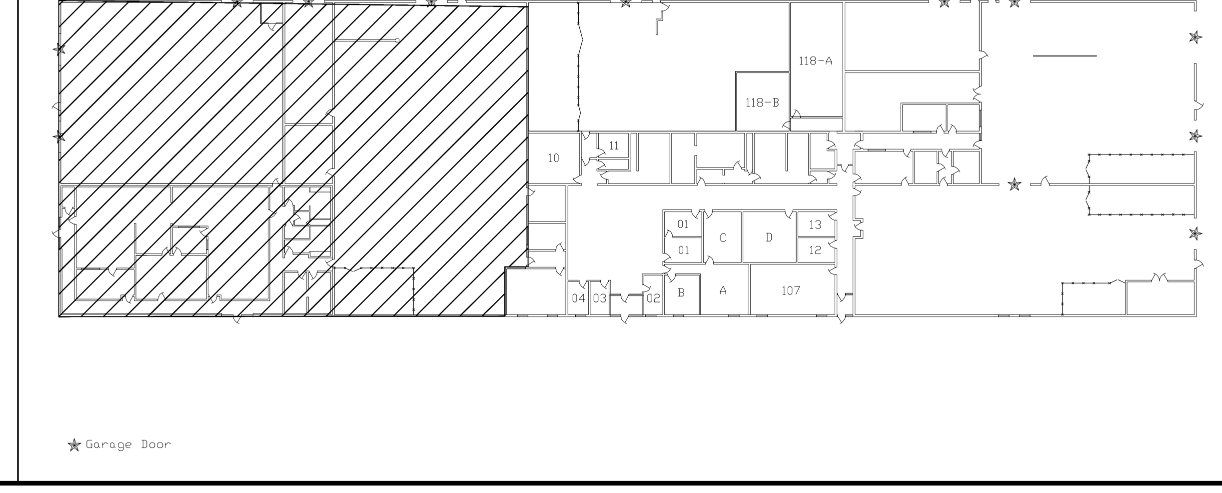
15. TESTING: SCHEDULE AND PERFORM ALL ACCEPTANCE TESTS REQUIRED BY NFPA 72. TESTING SHALL BE WITNESSED BY STATE FIRE MARSHAL'S OFFICE, PROJECT ENGINEER, DFCM AND BUILDING MAINTENANCE PERSONNEL. SUBMIT A WRITTEN TESTING PLAN DETAILING EACH TEST TO BE PERFORMED TO EACH AGENCY AT LEAST ONE DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - TRADES (NORTH)

1/8" = 1'-0"

0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

04 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

07 INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

08 EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

09 REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
② N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
(2) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
② S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
Ⓗ N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
(H)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
(H) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
(●)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
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T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
(SD)	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
(SD) A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
(D)	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
◇D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
(T)	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(F)	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

PCI PROTECTION CONSULTANTS, INC. Fire Protection Engineers -Since 1983-
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SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
TRADES (AREA -A)

HT-FA5

SHEET 36 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

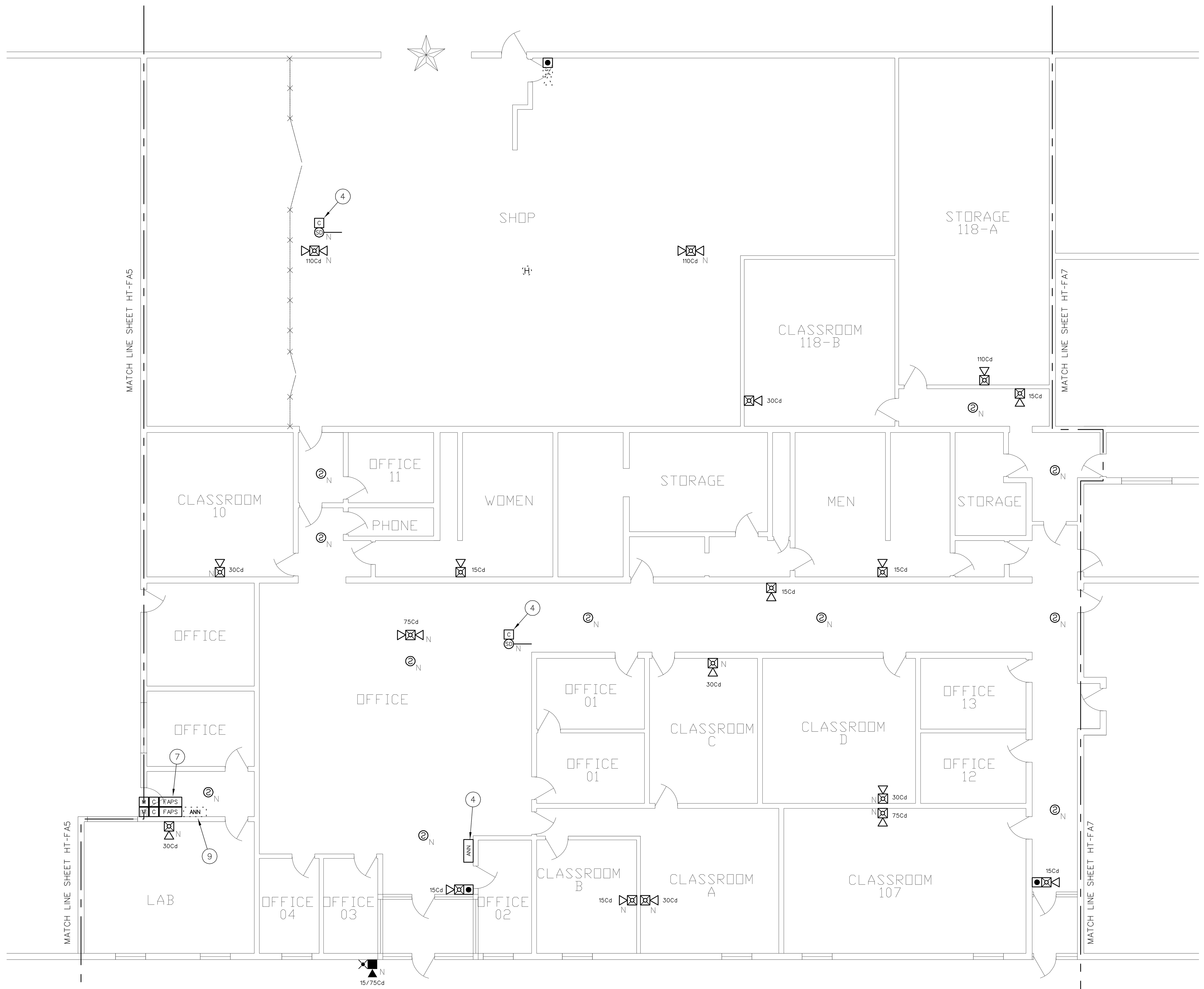
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

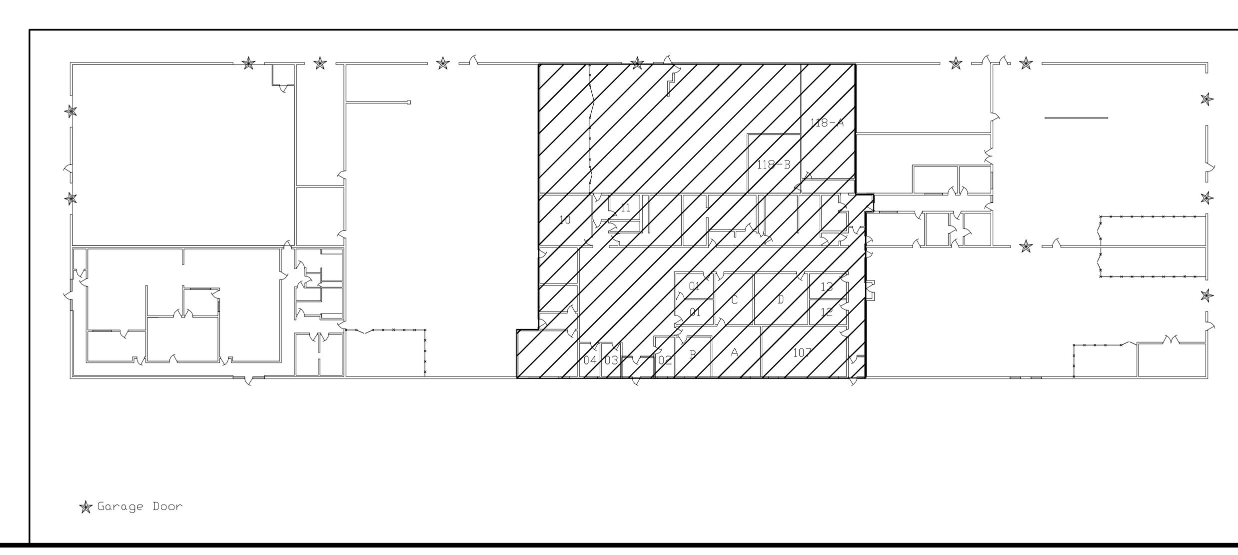
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - TRADES (CENTER)
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

(01) REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

(04) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

(05) EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

(06) EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

(07) INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

(08) EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

(09) REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DWG ISSUE: BID SET
DRAWN BY: BBH
CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
TRADES (AREA - B)

HT-FA6

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

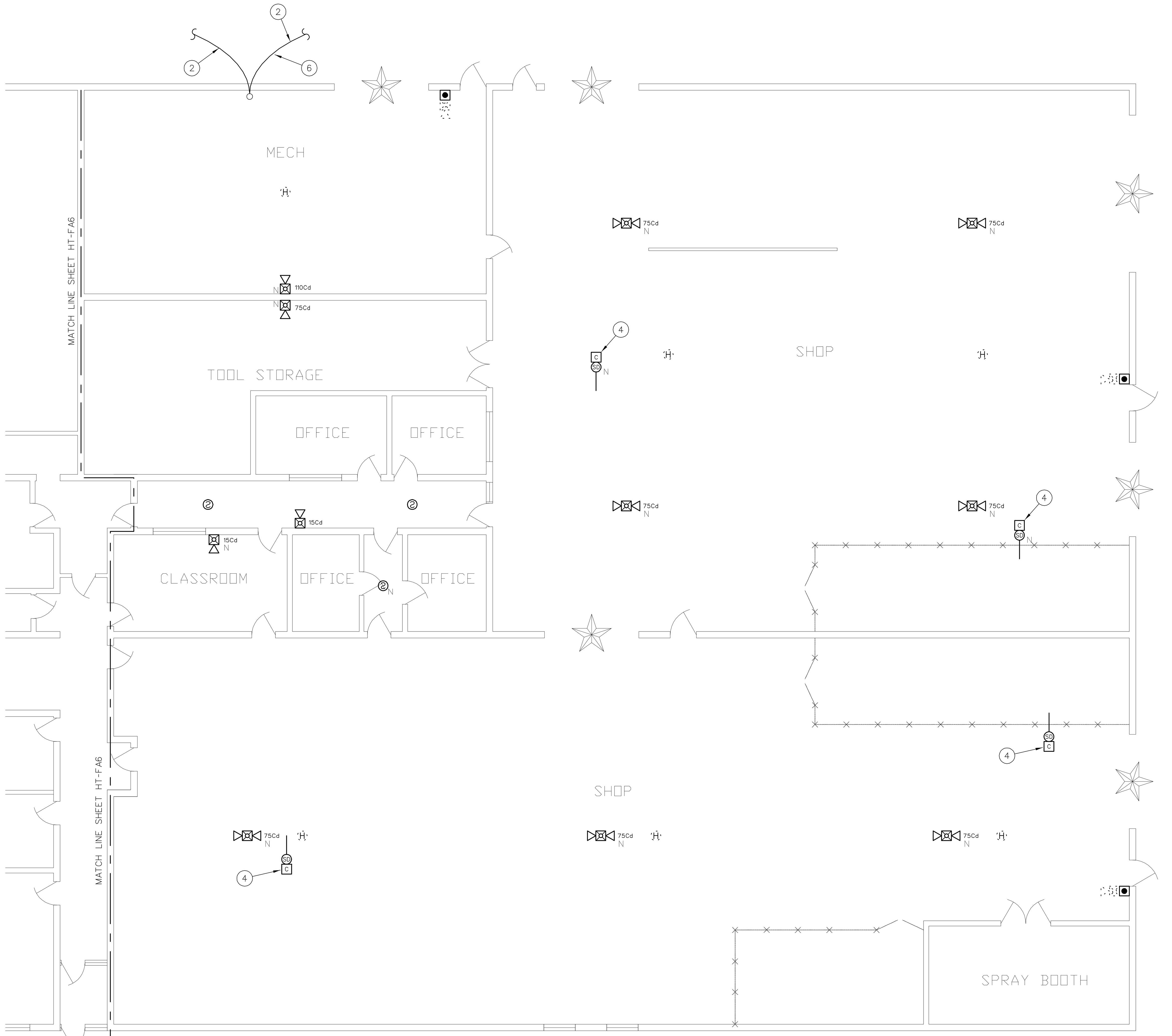
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

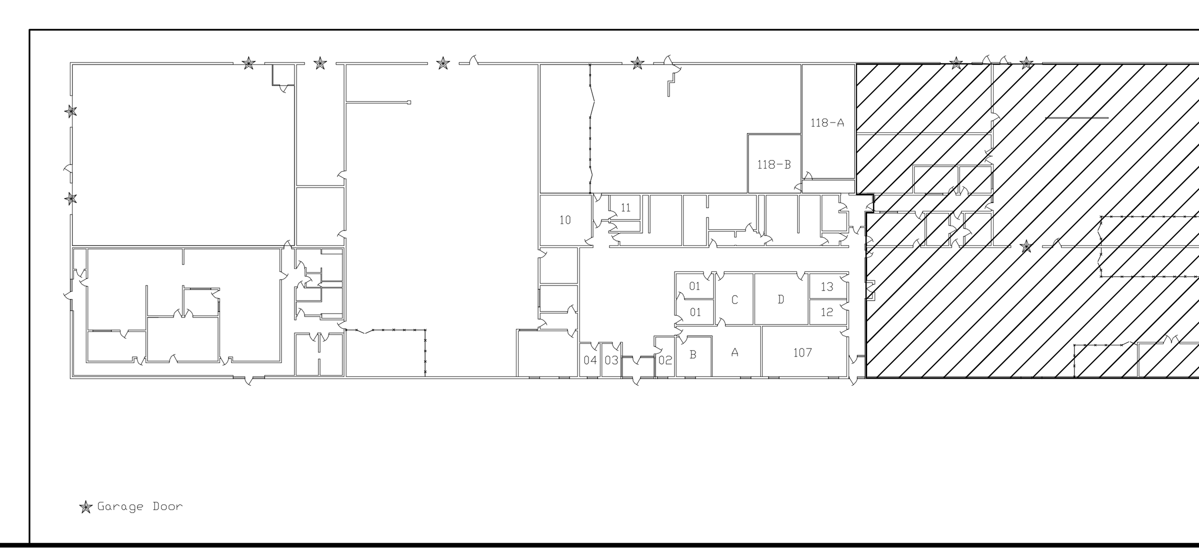
13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - TRADES (SOUTH)
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

04 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

07 INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

08 EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

09 REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
②	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
②N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
②S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
Ⓗ	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
ⒽN	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
HA	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
●A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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DWG ISSUE: BID SET

DRAWN BY: BBH
CHECKED BY: GTJ

REVISIONS:

DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
TRADES (AREA - C)

HT-FA7

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

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6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

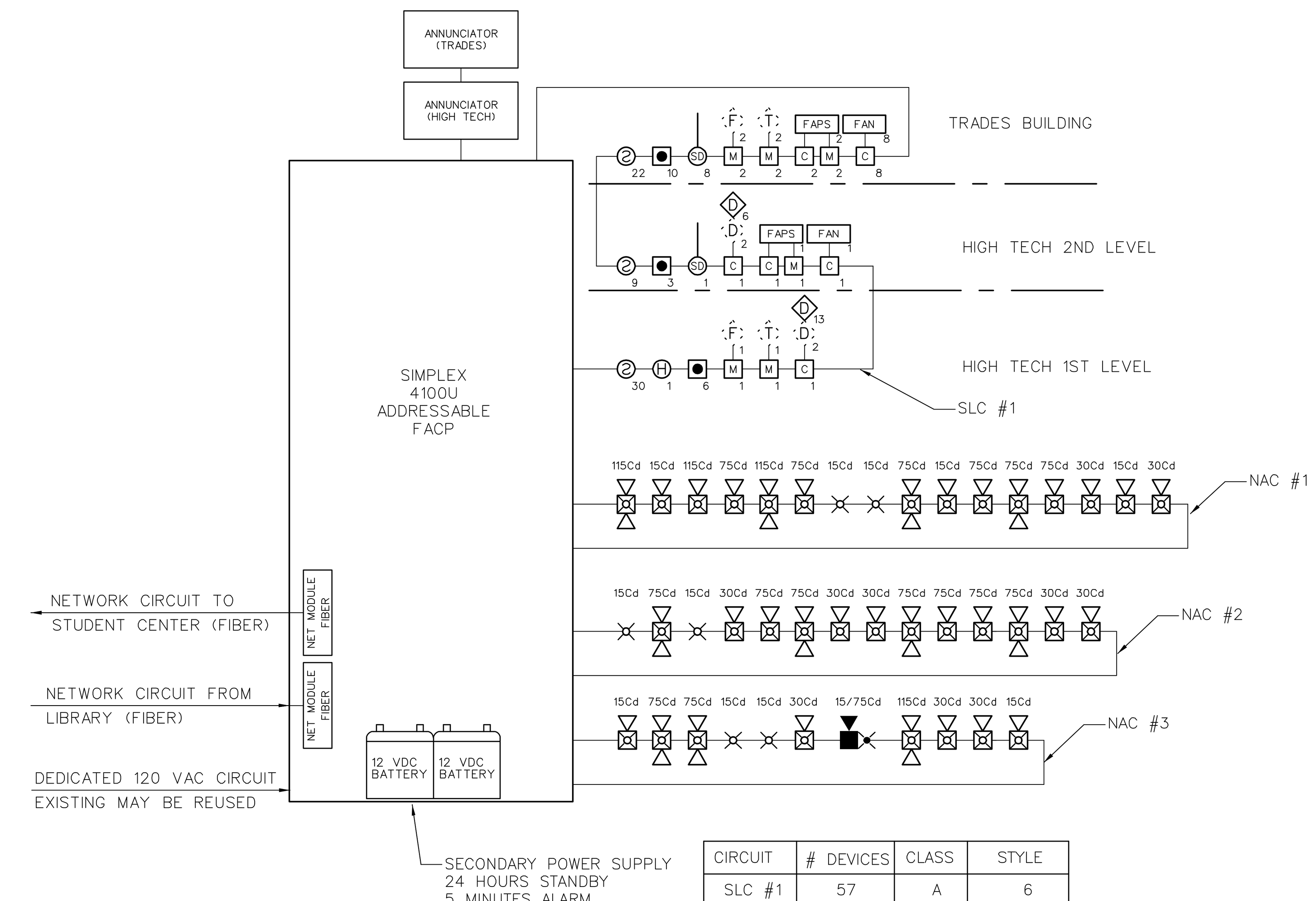
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

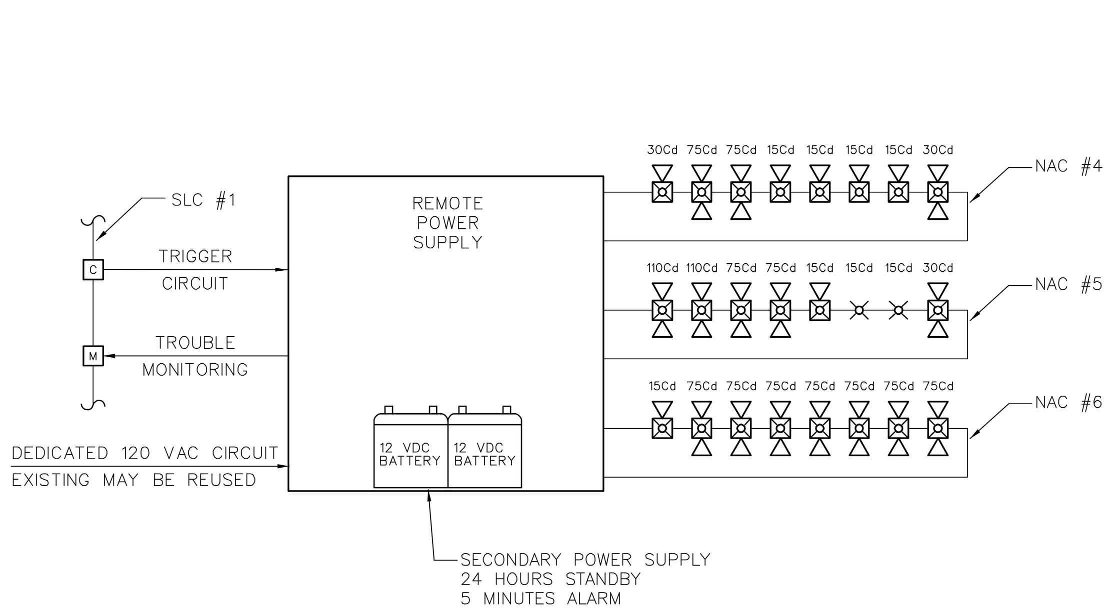
14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. IT IS THE INSTALLER'S RESPONSIBILITY TO NOTIFY PROPER AUTHORITIES AND PROVIDE A FIRE WATCH DURING INTERRUPTIONS OF FIRE DETECTION AND ALARM SERVICE IN THE BUILDING.

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 DAY PRIOR TO SCHEDULED TEST.

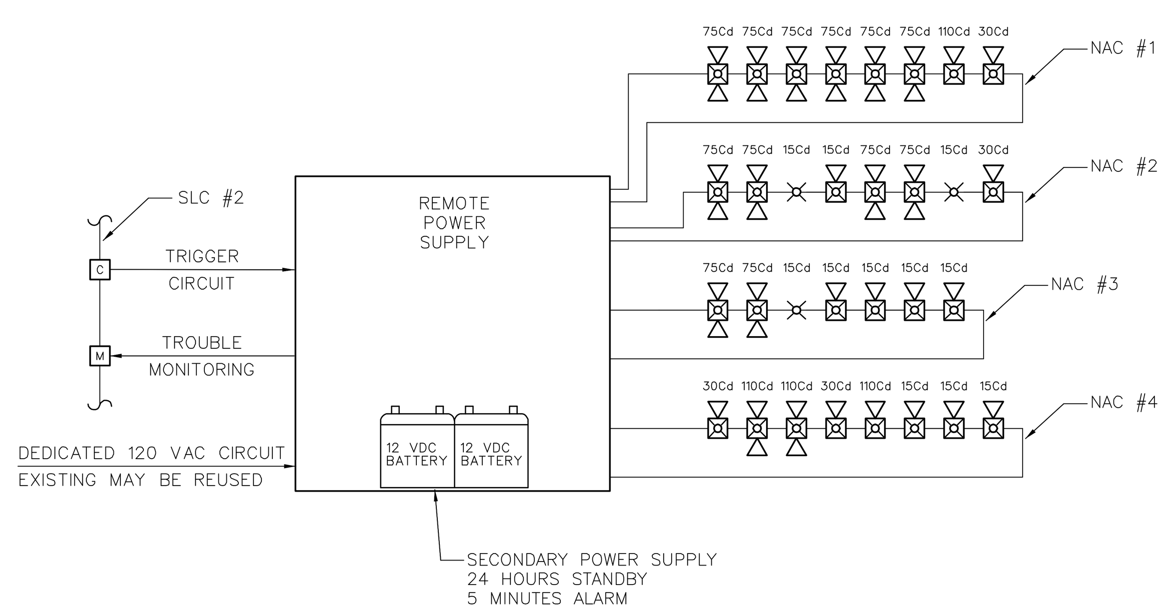


CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	57	A	6
SLC #2	56	A	6
NAC #1	16	A	Z
NAC #2	14	A	Z
NAC #3	11	A	Z

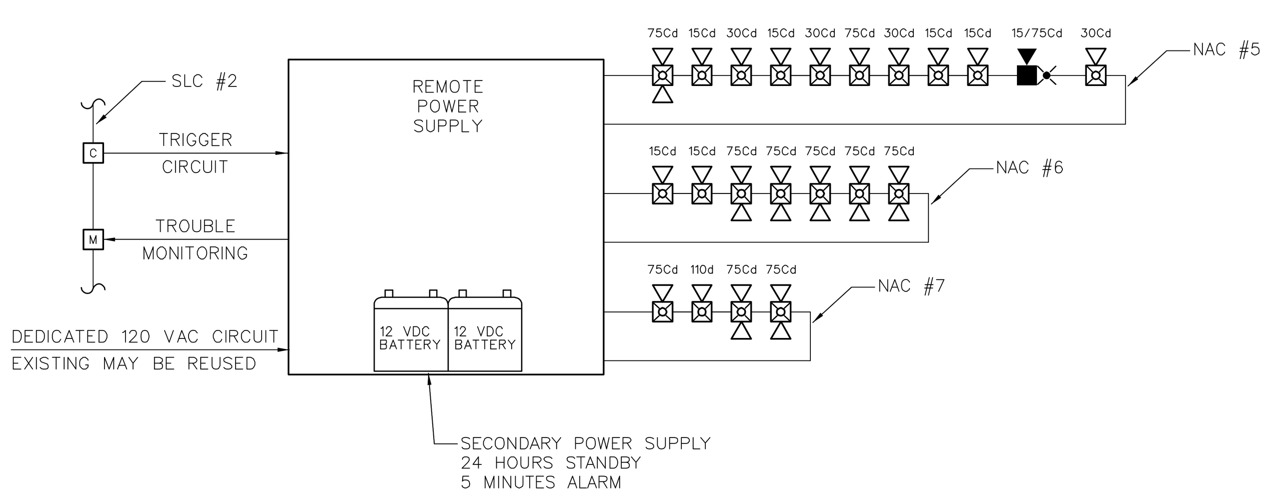
1 FIRE ALARM SINGLE LINE RISER DIAGRAM HIGH TECH/TRADES
NTS



2 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM - HIGH TECH
NTS



3 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM - TRADES (NORTH)
NTS



4 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM - TRADES BUILDING (SOUTH)
NTS

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE ALL NOTIFICATION APPLIANCES (HIGH TECH BUILDING ONLY)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR MOVEMENT SYSTEMS (HIGH TECH BUILDING ONLY)	RELEASE FIRE DOORS (HIGH TECH BUILDING ONLY)			
ACTIVATION OF ANY SMOKE DETECTOR (HIGH TECH BUILDING ONLY)	X	X			X	X			
ACTIVATION OF ANY MANUAL PULL STATION (HIGH TECH BUILDING ONLY)	X	X							
ACTIVATION OF ANY DUCT SMOKE DETECTOR (HIGH TECH BUILDING ONLY)			X		X				
REMOTE POWER SUPPLY TROUBLE (HIGH TECH BUILDING ONLY)				X					
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					
ACTIVATION OF FIRE SPRINKLER WATER FLOW SWITCH (HIGH TECH BUILDING ONLY)	X	X				X			
ACTIVATION OF FIRE SPRINKLER VALVE SUPERVISORY SWITCH (HIGH TECH BUILDING ONLY)			X						

5 SEQUENCE OF OPERATION - HIGH TECH BUILDING
NTS

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE ALL NOTIFICATION APPLIANCES (TRADES BUILDING ONLY)	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	SHUT DOWN AIR MOVEMENT AND DUST COLLECTION SYSTEMS (TRADES)				
ACTIVATION OF ANY SMOKE DETECTOR (TRADES BUILDING ONLY)	X	X			X				
ACTIVATION OF ANY MANUAL PULL STATION (TRADES BUILDING ONLY)	X	X							
ACTIVATION OF ANY DUCT SMOKE DETECTOR (TRADES BUILDING ONLY)			X		X				
REMOTE POWER SUPPLY TROUBLE (TRADES BUILDING ONLY)				X					
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					
ACTIVATION OF FIRE SPRINKLER WATER FLOW SWITCH (TRADES BUILDING ONLY)	X	X							
ACTIVATION OF FIRE SPRINKLER VALVE SUPERVISORY SWITCH (TRADES BUILDING ONLY)			X						

6 SEQUENCE OF OPERATION - TRADES BUILDING
NTS

FIRE ALARM SYSTEM KEY NOTES

01 REPLACE EXISTING CONVENTIONAL FIRE ALARM CONTROL PANEL (SIMPLEX 4100C) WITH NEW ADDRESSABLE FACP (SIMPLEX 4100U). PROVIDE ALL REQUIRED CABINETS, MODULES, INTERFACE CARDS, POWER SUPPLIES, ETC. TO PROVIDE A COMPLETE AND FUNCTIONAL LOCAL FIRE ALARM SYSTEM AS WELL AS CONNECTION TO THE CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL INITIATING DEVICES SHOWN ON THE PLANS WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. EXISTING 120VAC DEDICATED POWER CIRCUIT MAY BE REUSED BUT PROVIDE NEW BATTERIES FOR SECONDARY POWER SUPPLY. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW ADDRESSABLE INITIATING DEVICES AND NEW NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW FACP/DEVICES).

02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 PROVIDE POWER SUPPLY TO NEW AND EXISTING MAGNETIC DOOR HOLD-OPEN DEVICES FROM NEW FACP (120VAC POWER FROM BUILDING POWER SYSTEM IS ALSO ACCEPTABLE). INSTALL PROGRAMMABLE OUTPUT MODULE TO DISCONNECT POWER AND RELEASE DOORS UPON OPERATION OF FIRE ALARM SYSTEM.

04 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONELL.

05 EXISTING PROTECTIVE ENCLOSURE FOR PULL STATION TO REMAIN. INSTALL NEW PULL STATION WITHIN EXISTING ENCLOSURE. ADJUST ENCLOSURE AS REQUIRED.

06 EXTEND SIGNALING LINE CIRCUIT (SLC) FROM FACP IN HIGH TECH BUILDING TO TRADES BUILDING TO ALLOW CONNECTION OF INITIATING DEVICES IN TRADES BUILDING TO FACP IN HIGH TECH BUILDING. INSTALL SLC IN EXISTING UNDERGROUND CONDUITS BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATIONS). PROVIDE ISOLATOR MODULE ON SLC AT EACH POINT OF ENTRY/EXIT TO BUILDING.

07 INSTALL REMOTE POWER SUPPLIES TO PROVIDE POWER TO NOTIFICATION APPLIANCES ON 2ND LEVEL OF HIGH TECH BUILDING AND THROUGHOUT TRADES BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. CONTROL RELAYS SHALL BE PROGRAMMED TO PROVIDE INDEPENDENT OPERATION OF NOTIFICATION APPLIANCE IN EACH BUILDING. PROVIDE ADDRESSABLE MONITOR MODULES.

08 EXISTING ANNUNCIATOR PANEL FOR CONVENTIONAL FIRE ALARM SYSTEM TO BE REMOVED. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) FOR ADDRESSABLE FIRE ALARM. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP MAY BE RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. PATCH WALL SURFACE AS REQUIRED IF NEW ANNUNCIATOR PANEL IS SMALLER THAN THE EXISTING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE HIGH TECH BUILDING ONLY.

09 REMOVE EXISTING FIRE ALARM ANNUNCIATOR PANEL IN TRADES BUILDING AND PATCH REMAINING WALL SURFACE. INSTALL NEW REMOTE ANNUNCIATOR (SIMPLEX 4603 SERIES) WHERE INDICATED ON PLAN. MOUNT NEW ANNUNCIATOR PANEL ON RECESSED J-BOX AT 54"AFF. EXISTING DATA CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING MAY BE RELOCATED AND RE-USED IF COMPATIBLE WITH NEW FIRE ALARM SYSTEM AND COMPLETELY FUNCTIONAL. CIRCUIT FROM ANNUNCIATOR TO FACP IN HIGH TECH BUILDING SHALL BE INSTALLED IN EXISTING UNDERGROUND CONDUIT BETWEEN BUILDINGS (CONTRACTOR TO FIELD VERIFY LOCATION). INSTALL ISOLATOR MODULES/ SURGE SUPPRESSION ON CIRCUIT WHERE CIRCUIT ENTERS/EXITS EACH BUILDING. ANNUNCIATOR SHALL DISPLAY THE STATUS OF THE FIRE ALARM SYSTEM IN THE TRADES BUILDING ONLY.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - HIGH TECH/TRADES
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM DETAILS & SCHEDULES - HIGH TECH/TRADES

HT-FA8

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
CONTACT: DAVE CROFF
ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
PHONE: 801-703-2735
FAX: 801-262-9423
EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48'' AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

01 EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

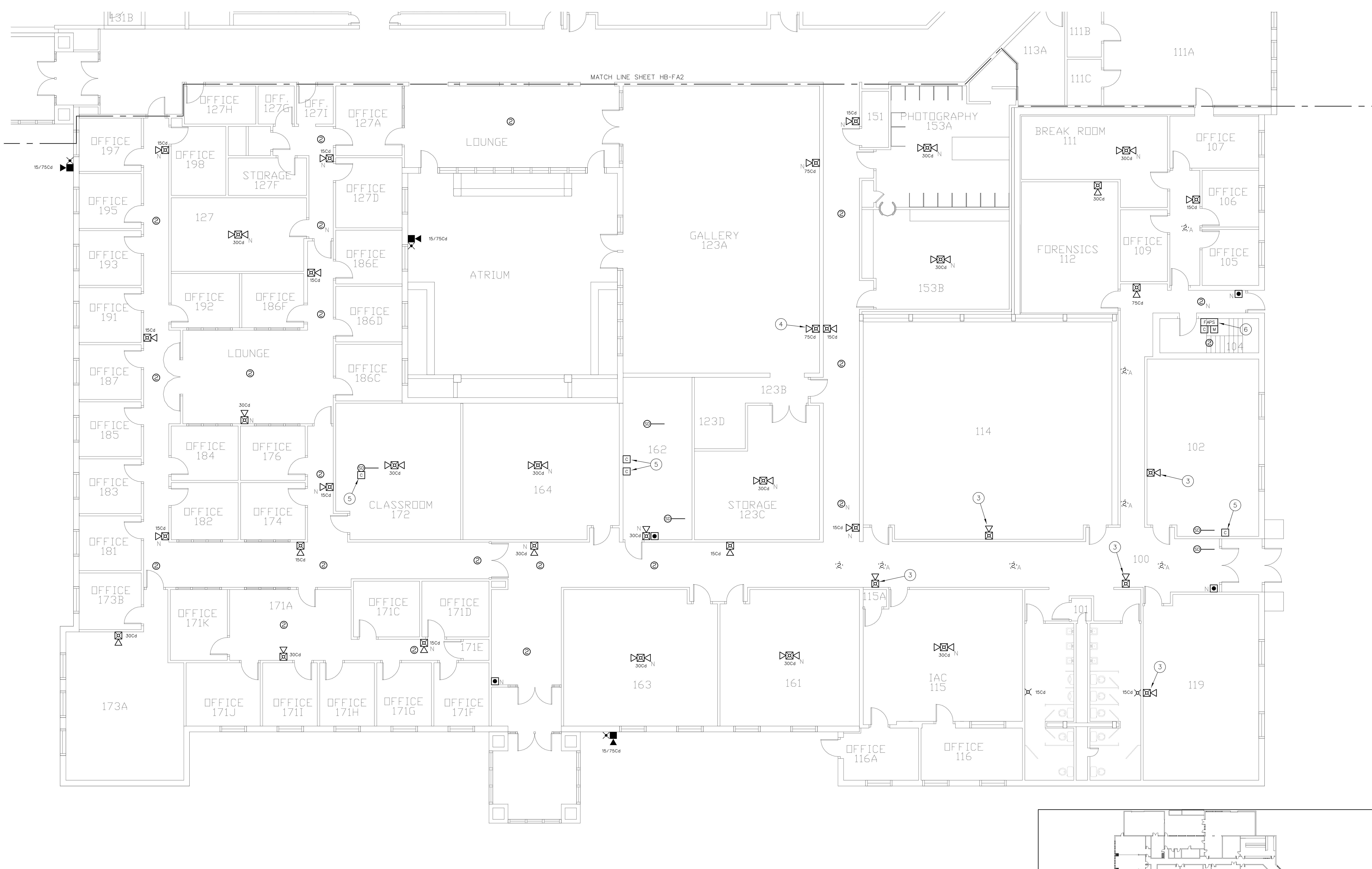
02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 EXISTING FIRE ALARM NOTIFICATION INSTALLED DURING RECENT REMODEL COMPLIES WITH VISIBLE REQUIREMENTS OF NFPA 72 AND MAY REMAIN. CONNECT TO NEW (OR EXISTING) NOTIFICATION APPLIANCE CIRCUIT FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY.

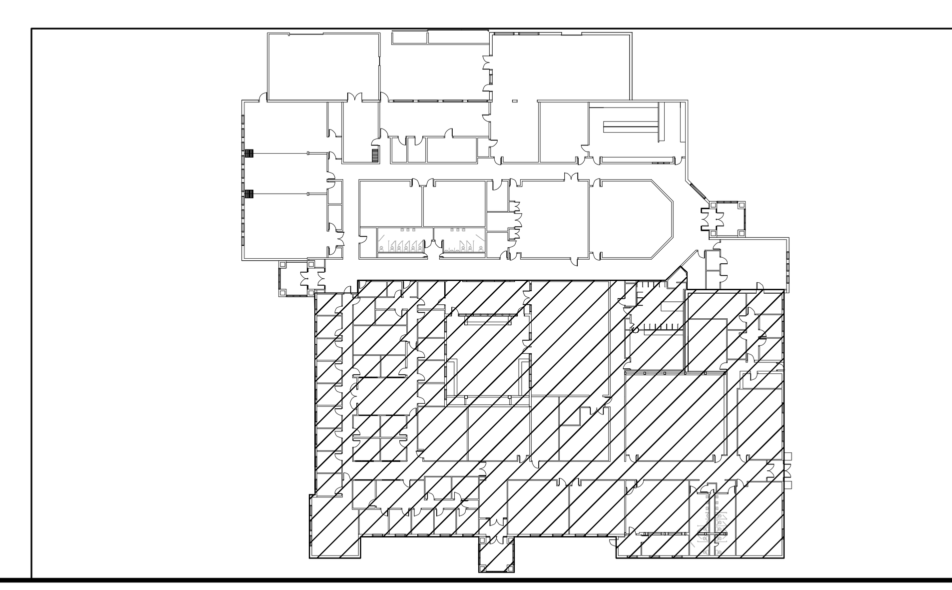
04 EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96'' AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80'' AND 96'' AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

05 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

06 INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).



1 FIRE ALARM PLAN - HUMANITIES (WEST)
1/8'' = 1'-0''
0 8' 16' 32'



FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
(2)	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(2) A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
(H)	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
(H) A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
■	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
■ N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
☒	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
☒	HORN/STROBE		
☒	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
☒ N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
☒ N	HORN/STROBE		
☒ N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
■	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
■ N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
☒ A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - HUMANITIES BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HUMANITIES
(AREA - A)

HB-FA1

SHEET 40 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPEARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
    SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
    SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
    HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
    MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
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    BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
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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.

FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

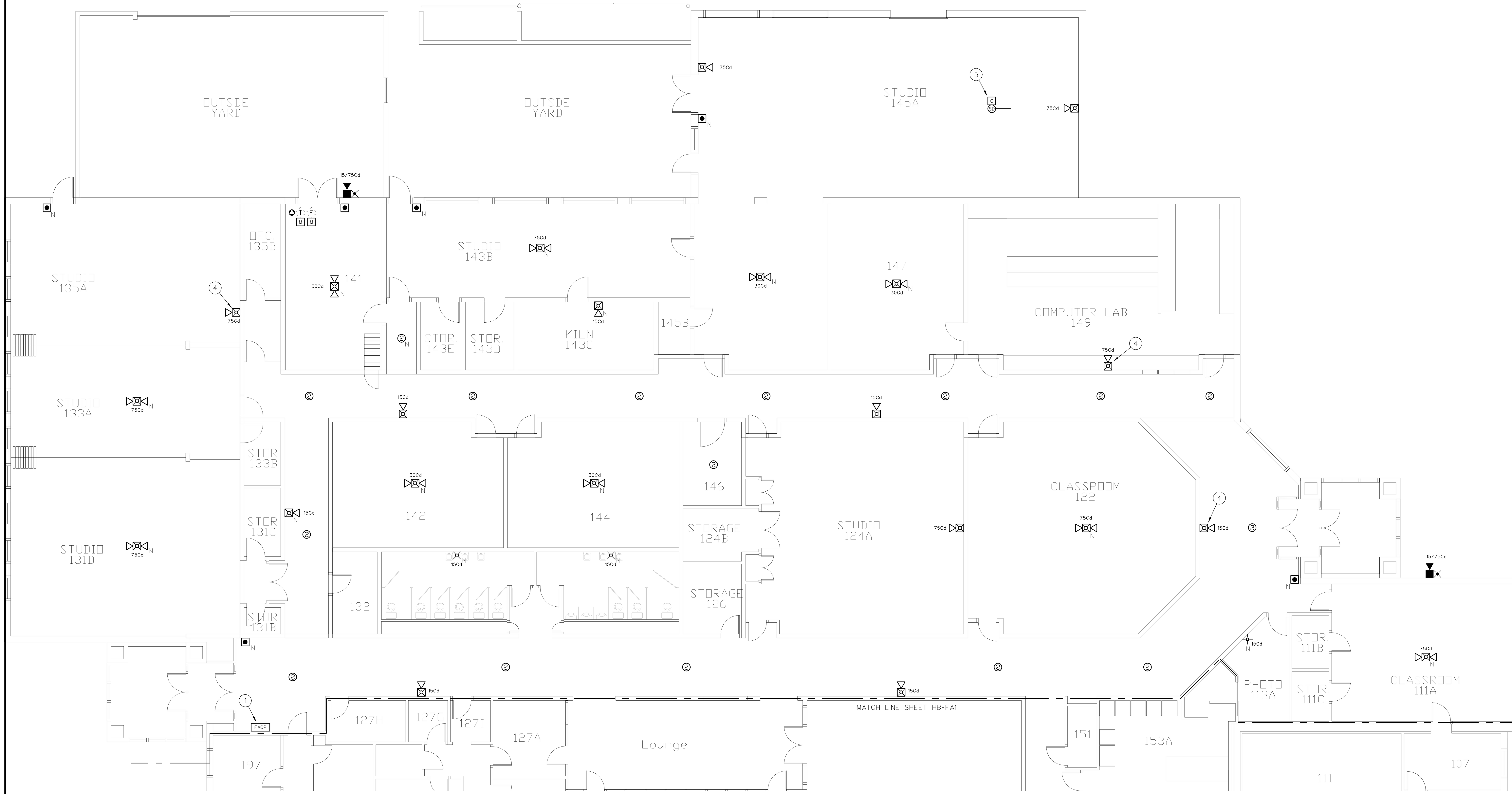
(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING FIRE ALARM NOTIFICATION INSTALLED DURING RECENT REMODEL COMPLIES WITH VISIBLE REQUIREMENTS OF NFPA 72 AND MAY REMAIN. CONNECT TO NEW (OR EXISTING) NOTIFICATION APPLIANCE CIRCUIT FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY.

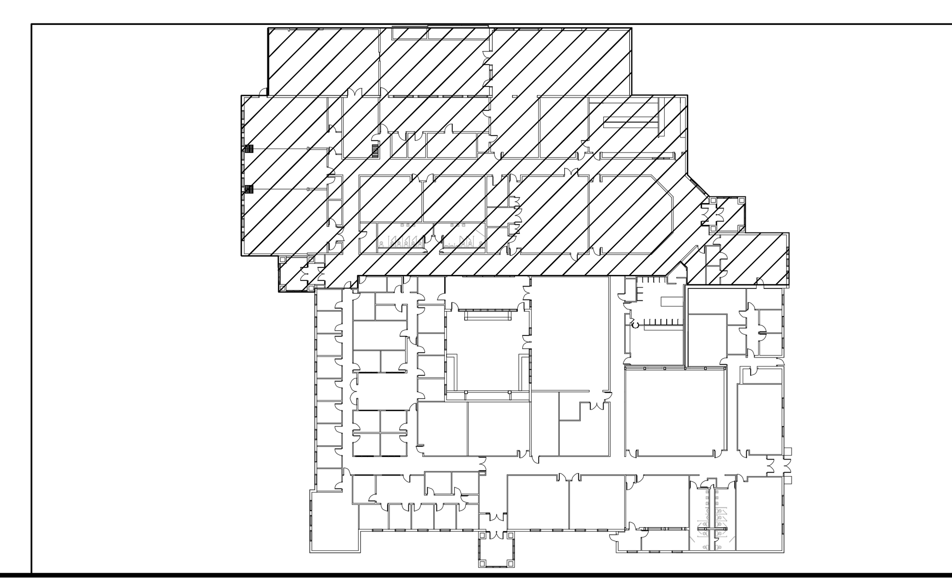
(04) EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

(05) INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

(06) INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).



1 FIRE ALARM PLAN - HUMANITIES (EAST)
1/8" = 1'-0"
0 8' 16' 32'



FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
●	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
● N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - HUMANITIES BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN
HUMANITIES
(AREA - B)

HB-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
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14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

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01 EXISTING ADDRESSABLE FIRE ALARM CONTROL PANEL (SIMPLEX 4100 U) TO REMAIN. PROVIDE ALL MODULES, CABINETS, INTERFACE CARDS, POWER SUPPLIES, ETC. TO ALLOW CONVERSION OF ALL INITIATING DEVICES IN BUILDING AND CONNECTION TO NEW CAMPUS FIRE ALARM NETWORK. FACP SHALL HAVE SUFFICIENT CAPACITY TO MONITOR ALL NEW AND EXISTING ADDRESSABLE INITIATING DEVICES IN THE BUILDING WITH AN ADDITIONAL SPARE CAPACITY OF 20% FOR FUTURE EXPANSION. PERFORM BATTERY CALCULATIONS WITH NEW LOAD AND UPGRADE/REPLACE BATTERIES AS REQUIRED TO PROVIDE 24 HOURS STANDBY (PLUS 5 MINUTES ALARM) POWER. PROVIDE NEW SIGNALING LINE AND NOTIFICATION APPLIANCE CIRCUITS FROM FACP TO NEW AND EXISTING INITIATING DEVICES AND NOTIFICATION APPLIANCES (EXISTING CIRCUITS MAY BE RECONFIGURED AND REUSED IF COMPATIBLE WITH NEW DEVICES).

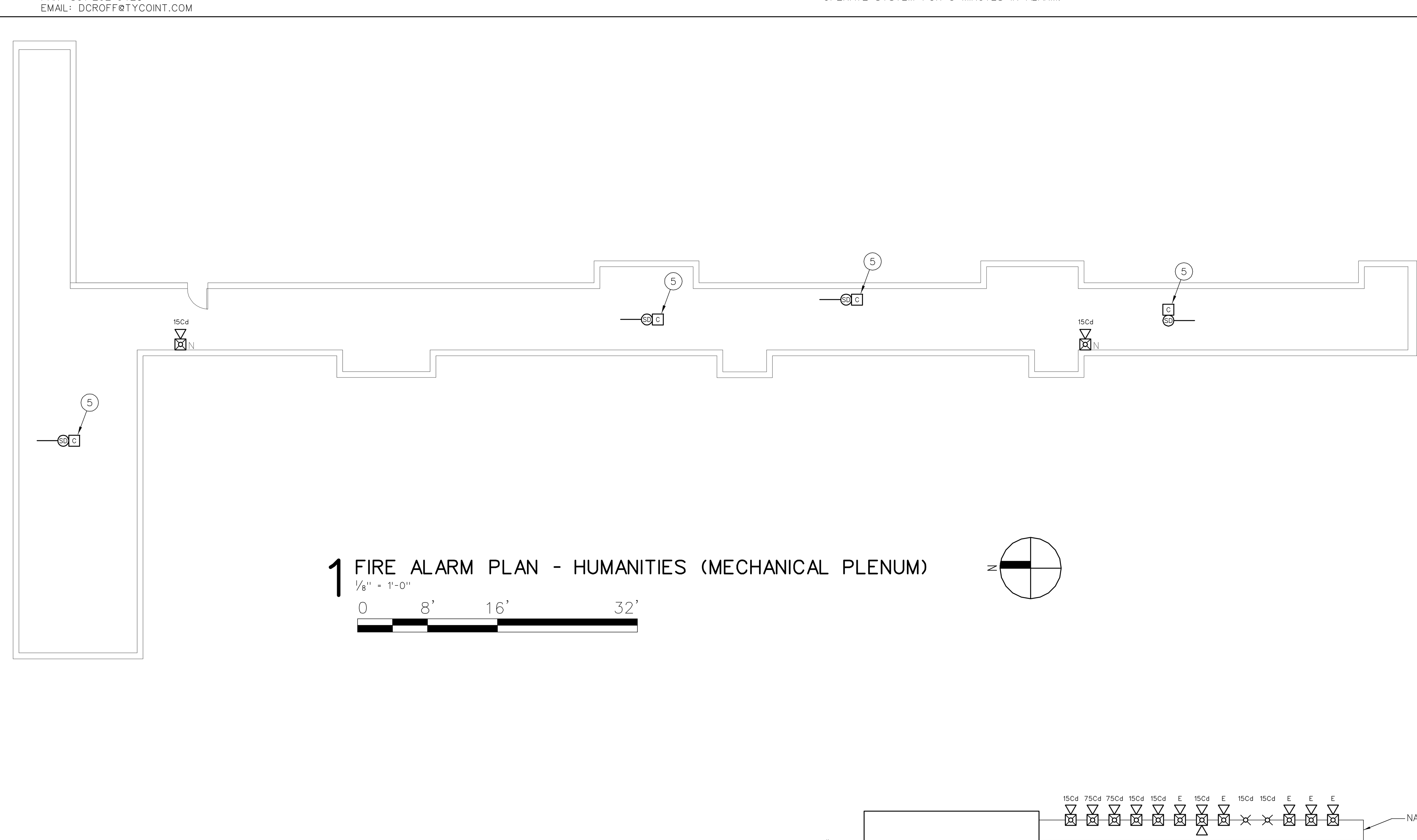
02 INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

03 EXISTING FIRE ALARM NOTIFICATION INSTALLED DURING RECENT REMODEL COMPLIES WITH VISIBLE REQUIREMENTS OF NFPA 72 AND MAY REMAIN. CONNECT TO NEW (OR EXISTING) NOTIFICATION APPLIANCE CIRCUIT FROM FACP OR REMOTE NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY.

04 EXISTING NOTIFICATION APPLIANCE LOCATED ABOVE MAXIMUM HEIGHT OF 96" AFF ALLOWED BY NFPA 72. REMOVE EXISTING APPLIANCE AND RELOCATE J-BOX TO BE BETWEEN 80" AND 96" AFF. INSTALL NEW NOTIFICATION APPLIANCE ON RECESSED J-BOX.

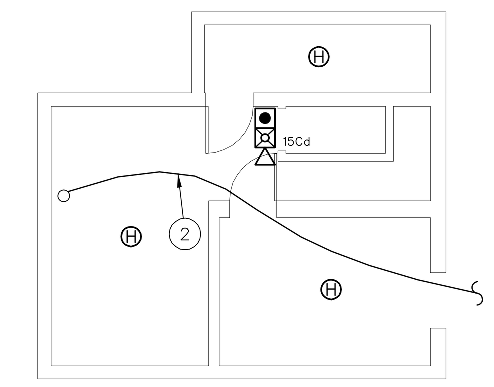
05 INSTALL PROGRAMMABLE OUTPUT MODULE TO SHUT DOWN BUILDING AIR HANDLER UPON OPERATION OF DUCT SMOKE DETECTORS OR GENERAL FIRE ALARM. RELAY SHALL BE NORMALLY ENERGIZED AND FAN CONTROLS SHALL BE CONNECTED TO NORMALLY CLOSED CONTACTS ON THE RELAY. RELAY SHALL NOT RESTORE UNTIL FACP HAS BEEN RESET. CONTRACTOR SHALL FIELD VERIFY LOCATION OF HVAC CONTROLS AND COORDINATE WITH CAMPUS HVAC MAINTENANCE PERSONNEL.

06 INSTALL NEW REMOTE POWER TO POWER NEW AND EXISTING NOTIFICATION APPLIANCES IN SOUTHWEST PORTION OF BUILDING. PROVIDE ADDRESSABLE CONTROL RELAY (CONNECTED TO SLC) TO PROVIDE ACTIVATION TRIGGER FOR NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ADDRESSABLE MONITOR MODULE TO SYNCHRONIZE THE STROBE FLASHES AND HORNS WITH ALL OTHER NOTIFICATION APPLIANCES IN THE BUILDING. PROVIDE NEW 120 VAC DEDICATED POWER CIRCUIT TO POWER SUPPLY FROM NEARBY POWER DISTRIBUTION PANEL TO PROVIDE PRIMARY POWER. INSTALL BATTERY BACKUP TO PROVIDE SECONDARY POWER (24 HOURS STANDBY PLUS 5 MINUTES OF ALARM).

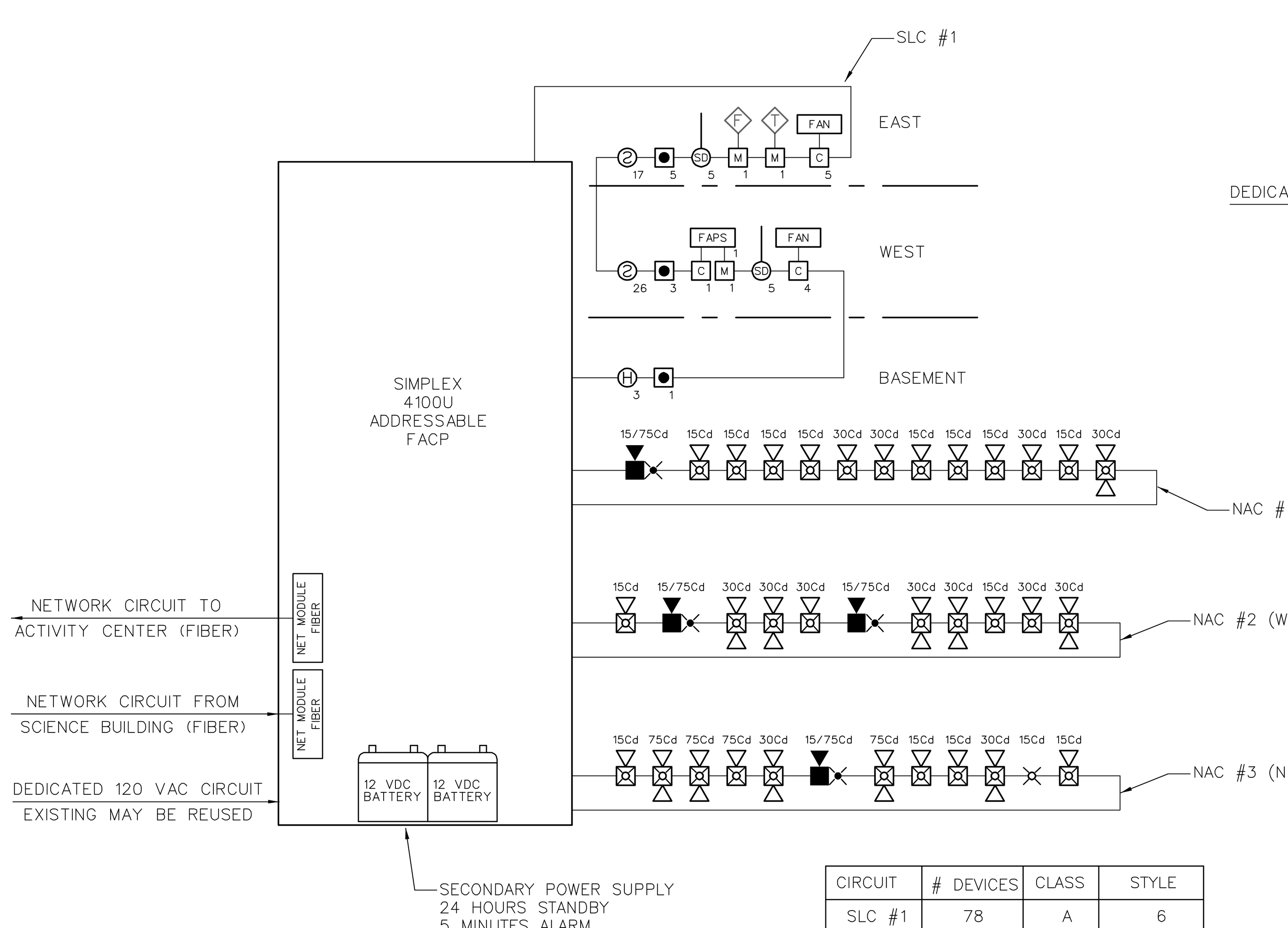


1 FIRE ALARM PLAN - HUMANITIES (MECHANICAL PLENUM)
1/8" = 1'-0"
0 8' 16' 32'

NOTE: DEVICE COUNT FOR BASEMENT ACCURATE. FLOOR PLAN TO BE PROVIDED AT A LATER DATE.

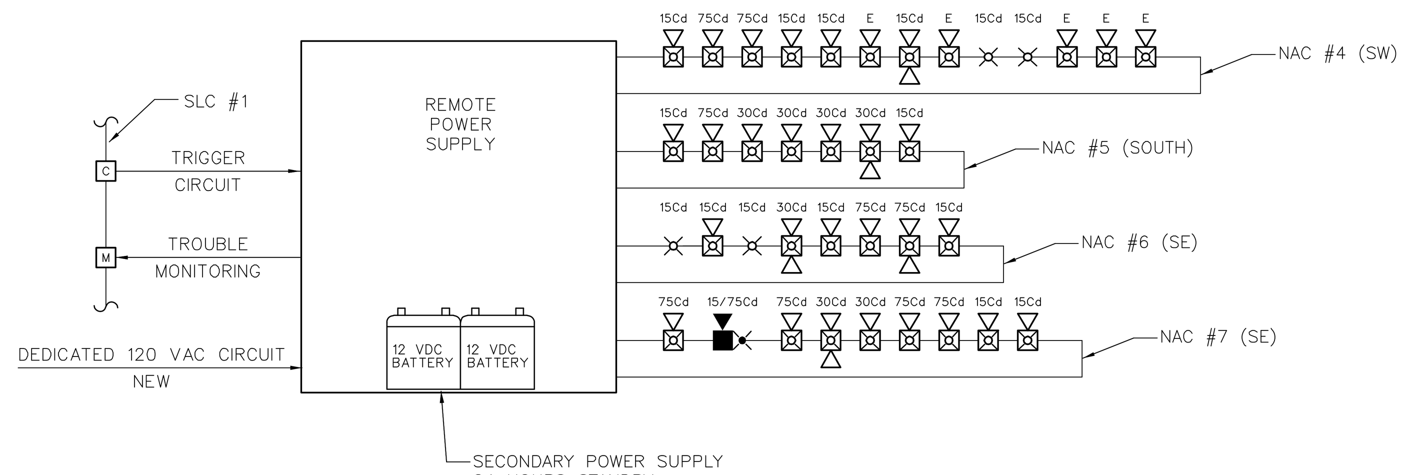


2 FIRE ALARM PLAN - HUMANITIES (BASEMENT)
1/8" = 1'-0"
0 8' 16' 32'



CIRCUIT	# DEVICES	CLASS	STYLE
SLC #1	78	A	6
NAC #1	12	A	Z
NAC #2	11	A	Z
NAC #3	12	A	Z

3 FIRE ALARM SINGLE LINE RISER DIAGRAM SOCIAL SCIENCE
NTS



4 REMOTE POWER SUPPLY SINGLE LINE RISER DIAGRAM
NTS

OUTPUT ACTIONS

SYSTEM INPUTS	ACTIVATE ALL LOCAL FIRE ALARM NOTIFICATION APPLIANCES	TRANSMIT FIRE ALARM SIGNAL TO NDU	TRANSMIT SUPERVISORY SIGNAL TO NDU	TRANSMIT TROUBLE SIGNAL TO NDU	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							
ACTIVATION OF FIRE SPRINKLER FLOW SWITCH	X	X							
ACTIVATION OF FIRE SPRINKLER VALVE SUPERVISORY SWITCH			X						
ACTIVATION OF ANY DUCT SMOKE DETECTOR			X		X				
DUCT SMOKE DETECTOR TROUBLE				X					
REMOTE POWER SULLY TROUBLE				X					
CIRCUIT TROUBLE				X					
LOSS OF AC POWER			X						
LOW BATTERY VOLTAGE				X					
SYSTEM TROUBLE				X					

5 SEQUENCE OF OPERATION
NTS

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISION DATE: XX/XX/XX

SNOW COLLEGE - HUMANITIES BLDG
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM DETAILS & SCHEDULES HUMANITIES

HB-FA3

SHEET 42 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2''. CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

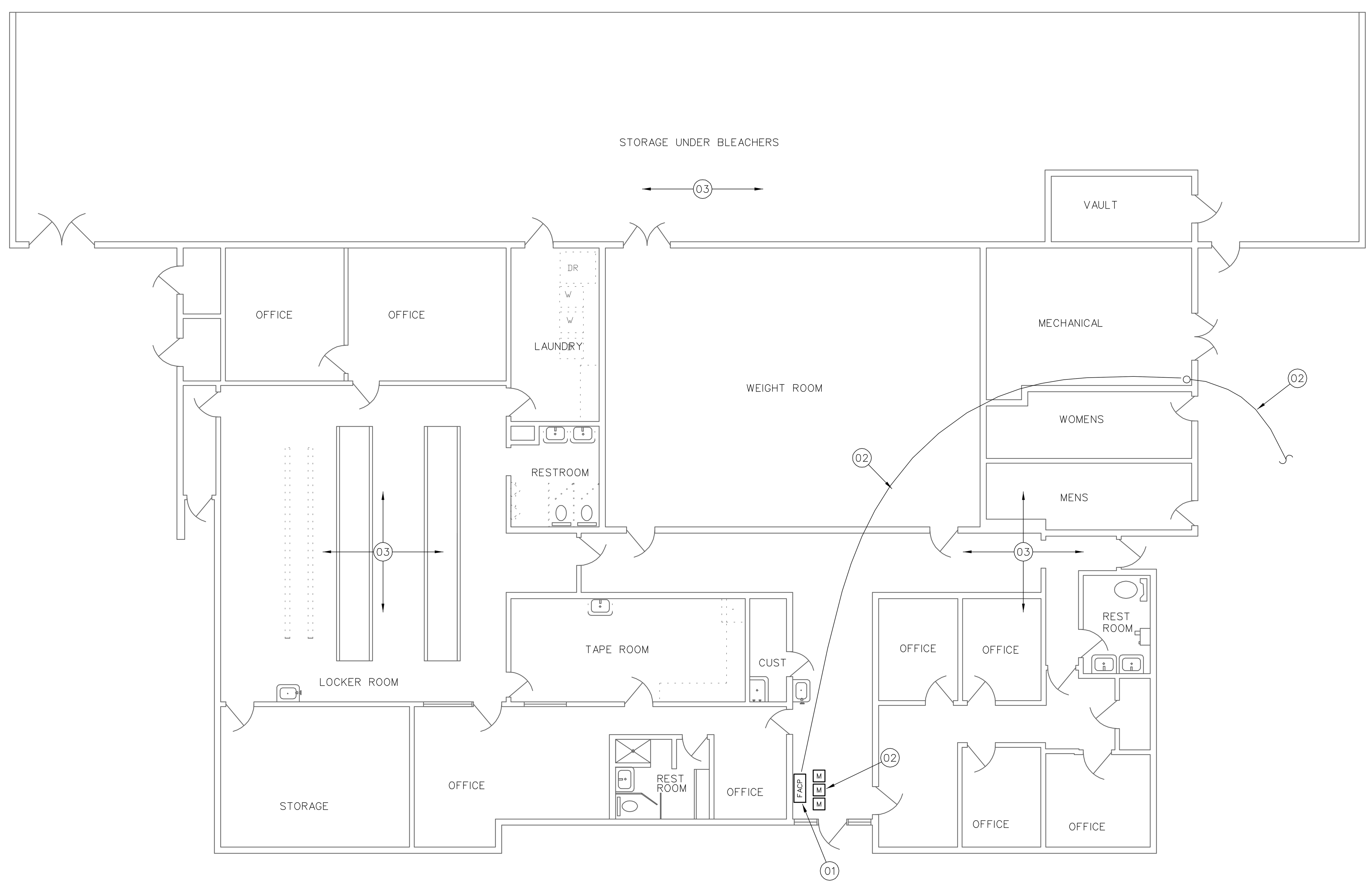
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48'' AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36'' OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



1 FIRE ALARM PLAN - STADIUM
1/8'' = 1'-0''

0 8' 16' 32'

N

FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING SIMPLEX 4002 CONVENTIONAL FIRE ALARM CONTROL PANEL TO REMAIN. EXISTING FIRE ALARM PANEL, INITIATING DEVICES AND NOTIFICATION APPLIANCES IN BUILDING WILL NOT BE UPGRADED UNDER THIS CONTRACT DUE TO PROJECTED FUTURE RENOVATION OF BUILDING. INSTALL NEW NETWORK CIRCUIT INTERFACE CARD TO FACILITATE CONNECTION OF EXISTING FIRE ALARM SYSTEM TO NEW CAMPUS FIRE ALARM NETWORK.

(02) FACP IN STADIUM IS NOT COMPATIBLE WITH NEW FIRE ALARM NETWORK AND NOT SCHEDULED TO BE UPGRADED UNDER THIS CONTRACT. EXTEND EXISTING ID-NET LOOP FROM ADJACENT PERFORMING ARTS BUILDING THROUGH UTILITY TUNNEL AND/OR BURIED CONDUIT TO STADIUM FACP. PROVIDE MONITOR MODULES ON EXTENDED ID-NET LOOP FOR ALARM, SUPERVISORY AND TROUBLE RELAYS OF STADIUM FACP. CONNECT MONITOR MODULES TO STADIUM FACP TO ALLOW NETWORK REPORTING OF STADIUM FACP EVENTS THROUGH PERFORMING ARTS FACP.

(03) EXISTING CONVENTIONAL INITIATING DEVICES AND NOTIFICATION APPLIANCES THROUGHOUT BUILDING TO REMAIN. FIRE ALARM SYSTEM IN BUILDING WILL NOT BE UPGRADED UNDER THIS CONTRACT DUE TO PROJECTED FUTURE RENOVATION OF BUILDING.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - STADIUM
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - STADIUM

SD-FA1

SHEET 43 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

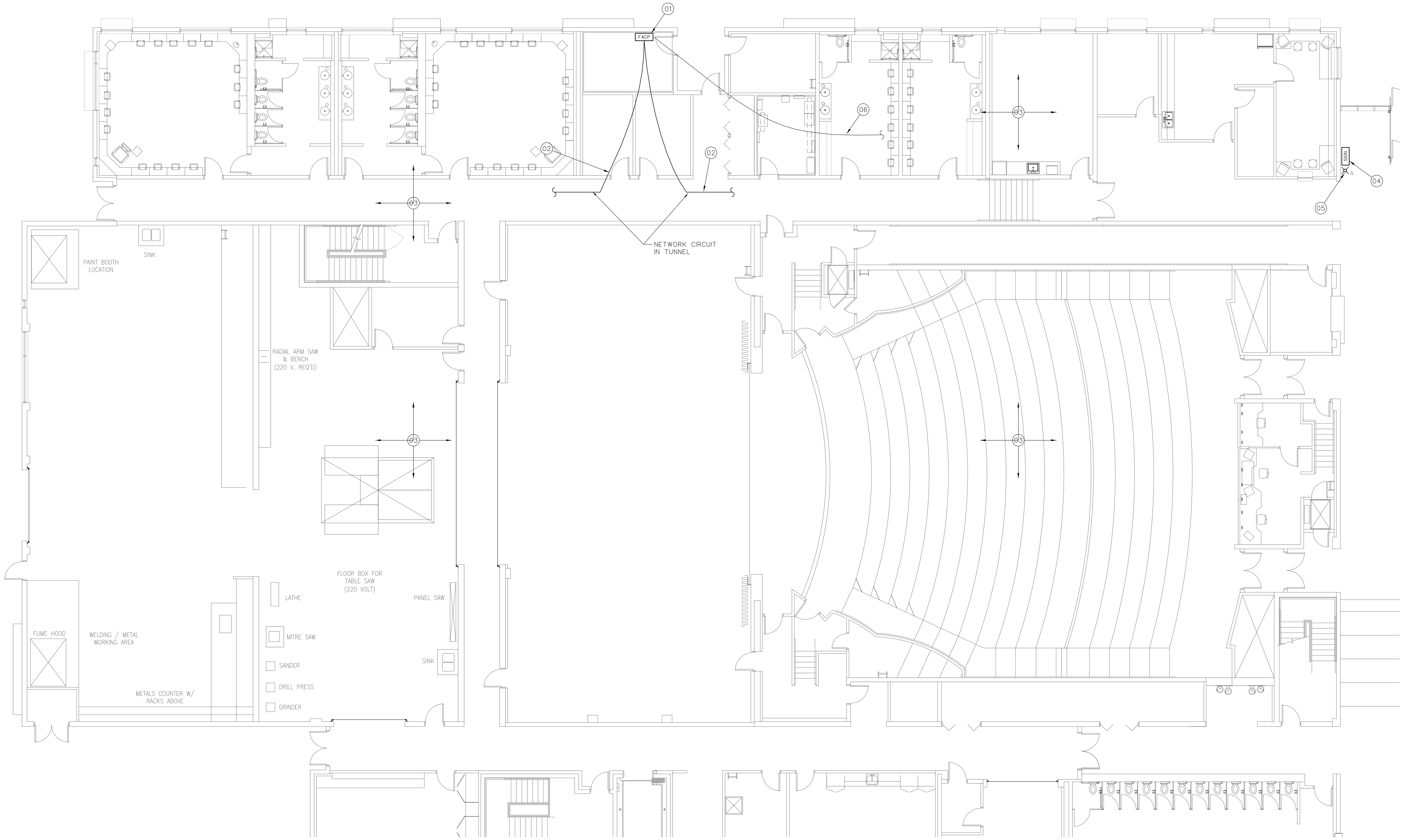
11. INITIATING DEVICES:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.



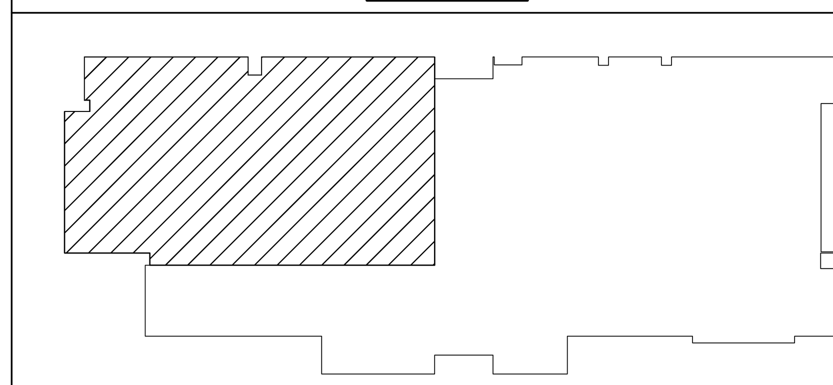
1 FIRE ALARM PLAN - PERFORMING ARTS

1/8" = 1'-0"

0 8' 16' 32'

N

KEYPLAN



FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING SIMPLEX 4100U, FULLY ADDRESSABLE FIRE ALARM CONTROL PANEL TO REMAIN. EXISTING INITIATING DEVICES THROUGHOUT BUILDING ARE ADDRESSABLE AND SHALL REMAIN EXISTING NOTIFICATION APPLIANCE CIRCUITS AND DEVICES IN BUILDING COMPLY WITH CURRENT CODES ADN SHALL REMAIN. INSTALL NEW NETWORK CIRCUIT AND INTERFACE CARD FOR EXISTING FACP TO FACILITATE CONNECTION OF EXISTING FIRE ALARM SYSTEM TO NEW CAMPUS FIRE ALARM NETWORK.

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING ADDRESSABLE INITIATING DEVICES ARE PRESENT THROUGHOUT BUILDING AND SHALL REMAIN. EXISTING NOTIFICATION APPLIANCE CIRCUITS AND DEVICES ARE PRESENT THROUGHOUT BUILDING AND SHALL REMAIN.

(04) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

(05) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.

(06) FACP IN STADIUM IS NOT COMPATIBLE WITH NEW FIRE ALARM NETWORK AND NOT SCHEDULED TO BE UPGRADED UNDER THIS CONTRACT. EXTEND EXISTING ID-NET LOOP FROM ADJACENT PERFORMING ARTS BUILDING THROUGH UTILITY TUNNEL AND/OR BURIED CONDUIT TO STADIUM FACP. PROVIDE MONITOR MODULES ON EXTENDED ID-NET LOOP FOR ALARM, SUPERVISORY AND TROUBLE RELAYS OF STADIUM FACP. CONNECT MONITOR MODULES TO STADIUM FACP TO ALLOW NETWORK REPORTING OF STADIUM FACP EVENTS THROUGH PERFORMING ARTS FACP.

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
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H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J–BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J–BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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REVISIONS:

DRAWING DATE: 04/30/09

REVISION DATE: XX/XX/XX

SNOW COLLEGE - PERFORMING ARTS
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - PERFORMING ARTS

PA-FA1

SHEET 44 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

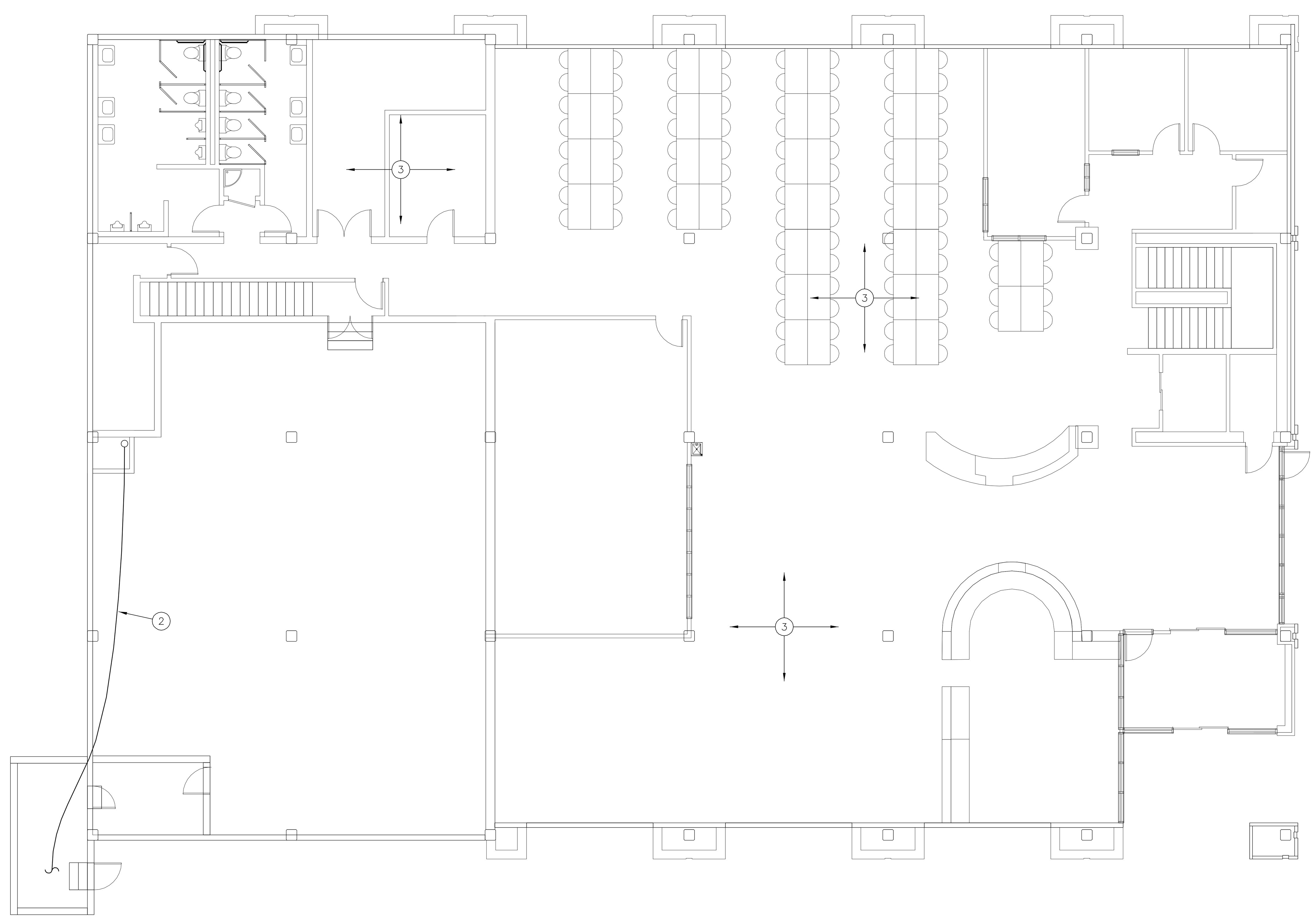
15. TESTING: SCHEDULE AND PERFORM ALL ACCEPTANCE TESTS REQUIRED BY NFPA 72. TESTING SHALL BE WITNESSED BY STATE FIRE MARSHAL'S OFFICE, PROJECT ENGINEER, DFCM AND BUILDING MAINTENANCE PERSONNEL. SUBMIT A WRITTEN TESTING PLAN DETAILING EACH TEST TO BE PERFORMED TO EACH AGENCY AT LEAST ONE DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING SIMPLEX 4100+ FIRE ALARM CONTROL PANEL TO BE UPGRADED TO BE A 4100U. REPLACE ALL REQUIRED MODULES, DEVICES, CABINETS, ETC. REQUIRED TO PERFORM THE UPGRADE. INSTALL NEW NETWORK CIRCUITS AND INTERFACE CARDS TO FACILITATE CONNECTION OF FACP TO NEW CAMPUS FIRE ALARM NETWORK. EXISTING ID-NET CIRCUITS, INITIATING DEVICE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS TO REMAIN.

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1). NETWORK CIRCUITS IN LIBRARY INCLUDE:
PERFORMING ARTS TO LIBRARY
LIBRARTY TO HIGH TECH/TRADES
HIGH TECH/TRADES TO STUDENT CENTER (SPLICE AS REQUIRED)

(03) EXISTING INITIATING DEVICES (CONVENTIONAL AND ADDRESSABLE) AND NOTIFICATION APPLIANCES THROUGHOUT BUILDING TO REMAIN. FIRE ALARM SYSTEM IN BUILDING WILL NOT BE UPGRADED DUE TO PROJECTED FUTURE RENOVATION OF BUILDING.



1 FIRE ALARM PLAN - LIBRARY (FIRST FLOOR)
1/8" = 1'-0"
0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(2)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
(2) N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
(2) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
(H)	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(H) N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
[●]	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
[●] N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
●	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
● A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
(SD)	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
(SD) N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
☒	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
▽☒	HORN/STROBE		
▷☒◁	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
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SNOW COLLEGE - LIBRARY
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FIRE ALARM SYSTEM UPGRADE
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FIRE ALARM PLAN - LIBRARY

LI-FA1

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8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

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10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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.

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SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

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13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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.

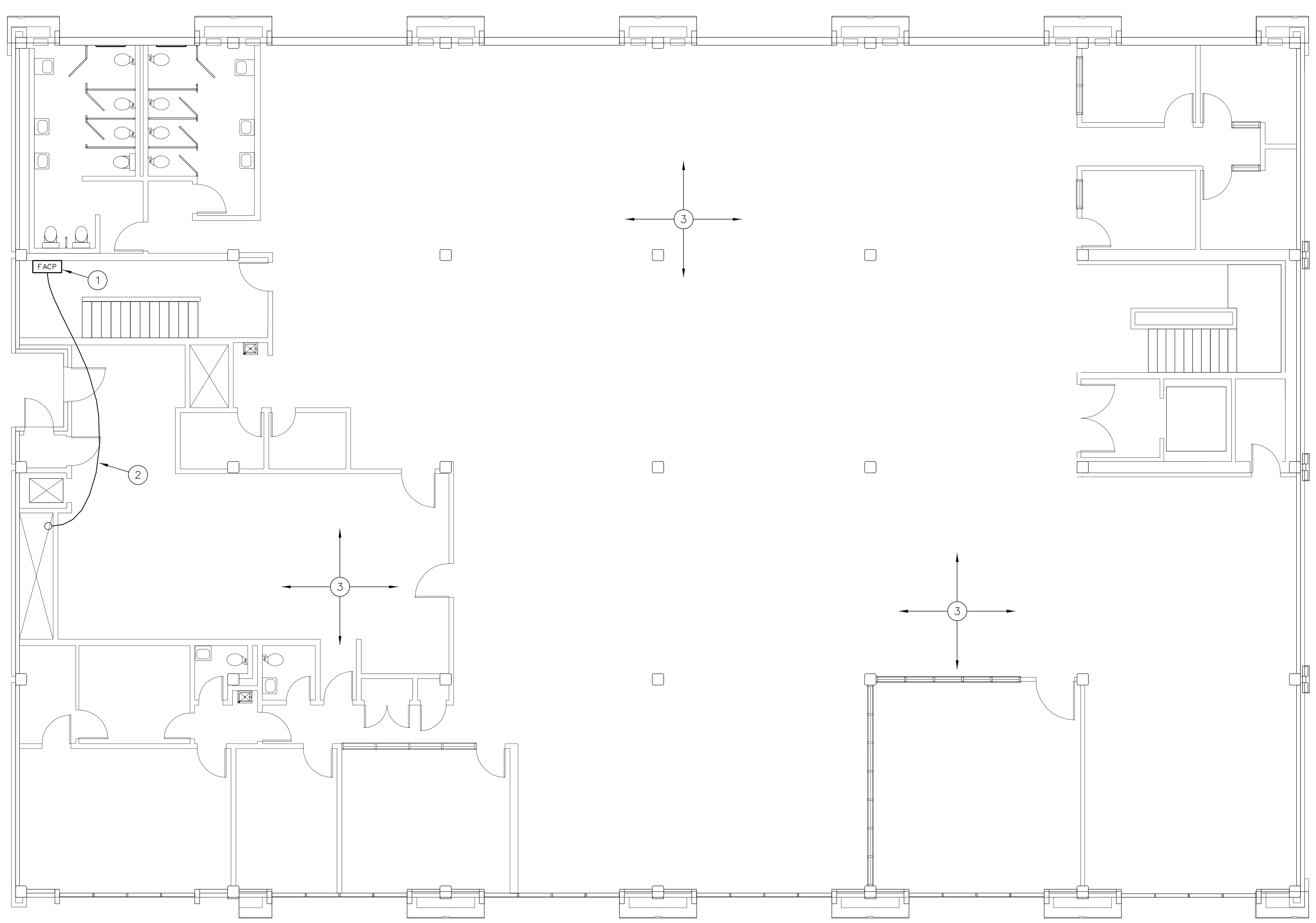
15. TESTING: SCHEDULE AND PERFORM ALL ACCEPTANCE TESTS REQUIRED BY NFPA 72. TESTING SHALL BE WITNESSED BY STATE FIRE MARSHAL'S OFFICE, PROJECT ENGINEER, DFCM AND BUILDING MAINTENANCE PERSONNEL. SUBMIT A WRITTEN TESTING PLAN DETAILING EACH TEST TO BE PERFORMED TO EACH AGENCY AT LEAST ONE DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

(01) EXISTING SIMPLEX 4100+ FIRE ALARM CONTROL PANEL TO BE UPGRADED TO BE A 4100U. REPLACE ALL REQUIRED MODULES, DEVICES, CABINETS, ETC. REQUIRED TO PERFORM THE UPGRADE. INSTALL NEW NETWORK CIRCUITS AND INTERFACE CARDS TO FACILITATE CONNECTION OF FACP TO NEW CAMPUS FIRE ALARM NETWORK. EXISTING ID-NET CIRCUITS, INITIATING DEVICE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS TO REMAIN.

(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1). NETWORK CIRCUITS IN LIBRARY INCLUDE:
PERFORMING ARTS TO LIBRARY
LIBRARTY TO HIGH TECH/TRADES
HIGH TECH/TRADES TO STUDENT CENTER (SPLICE AS REQUIRED)

(03) EXISTING INITIATING DEVICES (CONVENTIONAL AND ADDRESSABLE) AND NOTIFICATION APPLIANCES THROUGHOUT BUILDING TO REMAIN. FIRE ALARM SYSTEM IN BUILDING WILL NOT BE UPGRADED DUE TO PROJECTED FUTURE RENOVATION OF BUILDING.



1 FIRE ALARM PLAN - LIBRARY (2ND LEVEL)
1/8" = 1'-0"
0 8' 16' 32'
N

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
2	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
2 N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
2	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
2 A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
2 S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

PCI PROTECTION CONSULTANTS, INC.
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-Since 1983-
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FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM
PLAN - LIBRARY
(2ND FLOOR)

LI-FA2

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W # 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

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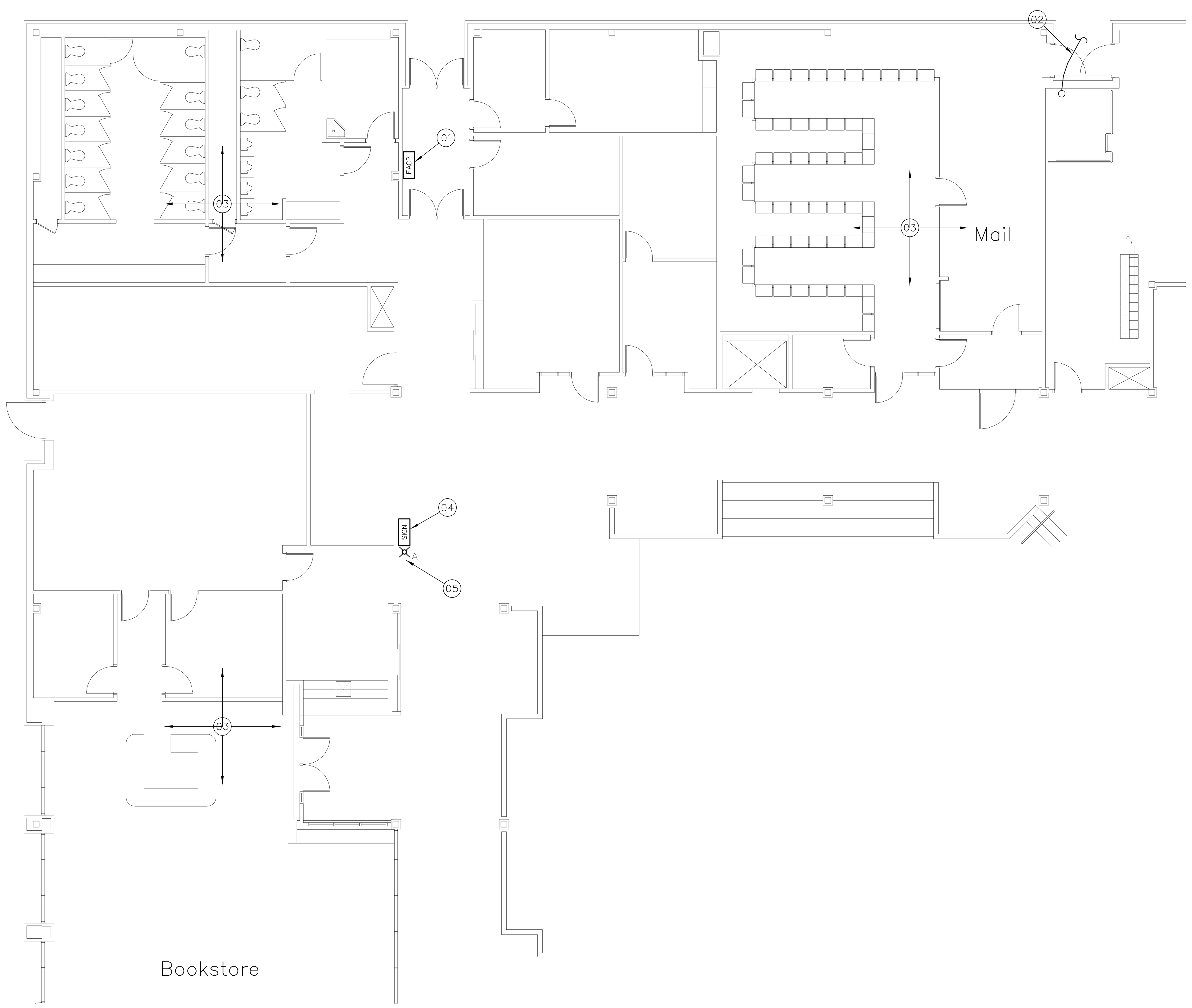
(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

(03) EXISTING ADDRESSABLE INITIATING DEVICES ARE PRESENT THROUGHOUT BUILDING AND SHALL REMAIN. EXISTING NOTIFICATION APPLIANCE CIRCUITS AND DEVICES ARE PRESENT THROUGHOUT BUILDING AND SHALL REMAIN.

(04) INSTALL SIMPLEX TRUEALARM SIGN BOARD WHERE INDICATED ON PLAN. CONNECT SIGN BOARD TO ID-NET CIRCUIT OF FIRE ALARM SYSTEM FOR CONTROL. PROVIDE 24 VDC POWER TO BOARD FROM FACP. COORDINATE MOUNTING HEIGHT, LOCATION AND EMERGENCY MESSAGES TO BE DISPLAYED WITH OWNER. OWNER TO PROVIDE LAN CONNECTION (FUTURE) TO SIGN BOARD TO ALLOW OFF-SITE CONTROL VIA IP NETWORK.

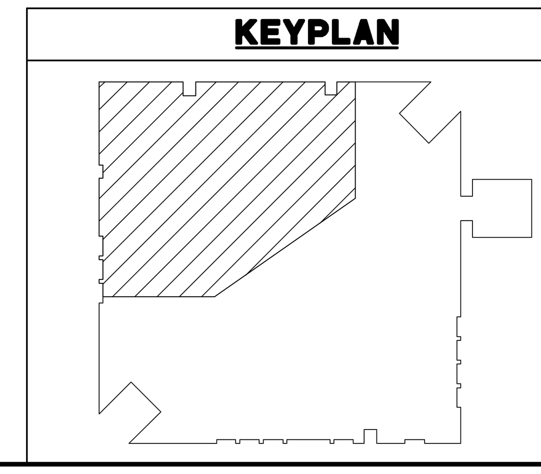
(05) INSTALL AMBER STROBE ADJACENT TO TEXT MESSAGE BOARD. DEVICE SHALL BE CONNECTED TO SPACE NAC CIRCUIT OF FACP AND SHALL BE PROGRAMMED TO FLASH CONTINUOUSLY WHEN AN EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT MESSAGE BOARD.



1 FIRE ALARM PLAN - STUDENT CENTER
1/8" = 1'-0"
0 8' 16' 32'

N

KEYPLAN



FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J-BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA-NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE-PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW SMOKE DETECTOR WHERE INDICATED
	EXISTING SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE SMOKE DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
H	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
H N	ADDRESSABLE FIXED TEMP. TYPE HEAT DETECTOR	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	ADD NEW HEAT DETECTOR WHERE INDICATED
H	EXISTING HEAT DETECTOR	EXISTING	REMOVE EXISTING DETECTOR AND INSTALL COVER PLATE ON REMAINING J-BOX
H A	EXISTING ADDRESSABLE HEAT DETECTOR	EXISTING	EXISTING DETECTOR TO REMAIN. CONNECT TO NEW FACP
	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
N	ADDRESSABLE MANUAL PULL STATION	WALL MOUNT ON EXISTING OR RELOCATED J-BOX AT 48" AFF	ADD NEW PULL STATION WHERE INDICATED ON PLAN.
	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J-BOX
A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J-BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J-BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J-BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD-OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD-OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J-BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J-BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
	HORN/STROBE		
	HORN/STROBE	CEILING MOUNT ON EXISTING J-BOX	
N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX BETWEEN 80" AND 96" AFF	
N	HORN/STROBE		
N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J-BOX	
	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J-BOX	
N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J-BOX	
	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J-BOX
A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

PROTECTION CONSULTANTS, INC.
Fire Protection Engineers
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REVISIONS:

DRAWING DATE: 04/30/09
REVISION DATE: XX/XX/XX

SNOW COLLEGE - STUDENT CENTER
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - STUDENT CENTER

SC-FA1

SHEET 47 OF 48

FIRE ALARM SYSTEM GENERAL NOTES

1. SCOPE OF WORK: WORK SHALL INCLUDE UPGRADING ALL EXISTING CONVENTIONAL FIRE ALARM SYSTEMS (CONTROL EQUIPMENT AND INITIATING DEVICES) TO NEW ADDRESSABLE FIRE ALARM SYSTEMS. EXISTING OCCUPANT NOTIFICATION SHALL BE UPGRADED TO COMPLY WITH CURRENT IBC, NFPA 72 AD ADA REQUIREMENTS. EXISTING CONDUIT, J-BOXES AND WIRING MAY BE RECONFIGURED AND REUSED WHERE COMPATIBLE WITH NEW EQUIPMENT/CIRCUITS. INSTALL NEW CIRCUITS WHERE REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM. A NEW CAMPUS FIRE ALARM NETWORK SHALL BE INSTALLED TO LINK ALL CONTROL PANELS ON CAMPUS TOGETHER AND TO A NEW NETWORK DISPLAY UNIT IN THE PHYSICAL PLANT. FIRE ALARM SYSTEMS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE IBC, IFC NFPA 72, EQUIPMENT MANUFACTURER (SIMPLEX), THESE DRAWINGS AND THE PROJECT 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). FIRE ALARM EQUIP. (INCLUDING PROGRAMMING/COMMISSIONING) SHALL BE PROVIDED BY SIMPLEX-GRINNELL UNDER SOLE SOURCE ARRANGEMENT APPROVED BY DFCM FOR SNOW COLLEGE. CONTRACTOR SHALL CONTACT SIMPLEX-GRINNELL FOR EQUIPMENT QUOTE:
   CONTACT: DAVE CROFF
   ADDRESS: 2702 S 1030 W * 60 SALT LAKE CITY, UT 84119
   PHONE: 801-703-2735
   FAX: 801-262-9423
   EMAIL: DCROFF@TYCOINT.COM

4. SUBMITTALS: CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR EACH SYSTEM TO STATE FIRE MARSAHL, 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. NEW DEVICES WILL REPLACE THE OLD AND GENERALLY REUSE THE EXISTING LOCATIONS. ANY EXISTING DEVICES AND CONDUIT NOT BEING REUSED THAT ARE VISIBLE, SUCH AS CABINETS, NOTIFICATION APPLIANCES, INITIATING DEVICES, ETC. 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 EQUIV. TILE.

6. SYSTEM TYPE: FIRE ALARM SYSTEM SHALL MEET THE RQMNTS FOR PROTECTED PREMISE FIRE ALARM SYSTEMS (AS DEFINED BY NFPA 72). 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, EACH BUILDING SHALL BE CONSIDERED AS A SINGLE ZONE.

8. WIRING/CONDUIT: ALL WIRING SHALL BE INSTALLED IN CONDUIT (EMT, RIGID, WIRE MOLD, ETC.). EXISTING CONDUIT AND J-BOXES MAY BE USED FOR NEW FIRE ALARM SYSTEM. INSTALL NEW CONDUIT AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. MINIMUM CONDUIT SIZE FOR NEW CONDUIT SHALL BE 1/2". CONDUIT MAY BE INSTALLED CONCEALED OR EXPOSED BUT SHALL MATCH (TYPE, COLOR, APPREARANCE) OF EXISTING. EXPOSED CONDUIT IN UNFINISHED AREAS MAY BE UNPAINTED BUT SHALL BE PERIODICALLY MARKED WITH RED TAPE OR PAINT. EXPOSED CONDUIT IN FINISHED AREAS SHALL BE PAINTED TO MATCH SURROUNDINGS. FLEXIBLE CONDUIT MAY BE USED FOR DROPS TO SINGLE DEVICES. ALL PENETRATIONS THROUGH RATED PARTITIONS SHALL BE FIRE STOPPED WITH A SUITABLE CAULKING COMPOUND. EXISTING WIRING MAY BE REUSED IN NEW FIRE ALARM SYSTEM WHERE COMPATIBLE WITH NEW FIRE ALARM CIRCUITS/DEVICES, FREE OF OPENS SHORTS AND GROUND FAULTS. INSTALL NEW WIRING AS REQUIRED FOR NEW OR RECONFIGURED CIRCUITS. NEW WIIRNG SHALL MEET THE REQUIREMENTS OF FIRE ALARM EQUIPMENT MANUFACTURER (SIMPLEX) AND BE FREE OF OPENS, SHORTS AND GROUND FAULTS. ALL WIRING USED IN THE FIRE ALARM SYSTEM SHALL BE FPL (FIRE POWER LIMITED) WITH MINIMUM 300V INSULATION OR EQUIVALENT AS PER ARTICLE 760 OF NFPA 70.

9. WIRING STYLES(PER NFPA 72): INITIATING DEVICE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE D CIRCUITS. SIGNALING LINE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE 6 CIRCUITS. NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE REQUIREMENTS FOR CLASS A STYLE Z.

10. POWER: PROVIDE 120VAC (15 AMP MIN.) CIRCUIT FROM EXISTING POWER DISTRIBUTION PANELS TO EACH FACP AND POWER SUPPLY. EXISTING BRANCH CIRCUITS MAY BE REUSED TO PROVIDE PRIMARY POWER TO NEW CONTROL PANELS AND REMOTE POWER SUPPLIES. FURNISH A BATTERY BACKUP TO PROVIDE SECONDARY POWER SUPPLY TO FIRE ALARM PANELS AND REMOTE 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:
   SLC CIRCUITS: SLC LOOP DEVICE ADDRESSING SHALL NOT EXCEED 250 DEVICES (DETECTORS AND MODULES) PER LOOP. AT LEAST 50 ADDRESSES (20%) SHALL BE LEFT VACANT ON EACH SLC LOOP IN ORDER TO ALLOW SPACE FOR ADJUSTMENTS/EXPANSION.
   SMOKE DETECTORS: INSTALL SMOKE DETECTORS AS SHOWN ON PLANS IN ALL CORRIDORS AND LOBBIES AND ABOVE CONTROL EQUIP. MAXIMUM SPACING OF DETECTORS SHALL BE 30' BETWEEN DETECTORS OR 15' FROM FURTHEST WALL. INSTALL DETECTORS ON RECESSED OR OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK.
   HEAT DETECTORS: INSTALL HEAT DETECTORS AS SHOWN ON PLANS IN AREAS WITH FIRE SPRINKLERS OR SMOKE DETECTORS AND IN MECHANICAL/EQUIPMENT AREAS. MAXIMUM SPACING OF DETECTORS SHALL BE 50' BETWEEN DETECTORS OR 25' FROM FURTHEST WALL. REDUCE SPACING PER NFPA 72 FOR INSTALLATION IN HIGH CEILING AREAS. INSTALL DETECTORS ON RECESSED OR SURFACE MOUNT J-BOXES TIGHT TO CEILING/DECK. FOLLOW REQUIREMENTS OF NFPA 72 FOR INSTALLATION UNDER BEAMED CEILINGS.
   MANUAL PULL STATIONS: INSTALL NEW PULL STATIONS AS SHOWN ON PLANS AT EACH BUILDING EXIT AND IN BOILER ROOMS. INSTALL PULL STATIONS ON RECESSED OR SURFACE MOUNT J-BOXES WITH THE OPERATING ELEMENT AT 48" AFF. ADJUST HEIGHT OF EXISTING J-BOXES AS REQUIRED.
   DUCT SMOKE DETECTORS: INSTALL DUCT SMOKE DETECTORS (SAMPLING TUBE TYPE) IN SUPPLY AND/OR RETURN DUCTS OF ALL AIR MOVEMENT SYSTEMS WITH A CAPACITY IN EXCESS OF 2,000 CFM. INSTALL NEW DETECTORS AT SAME LOCATION AS EXISTING DETECTORS WHERE PRESENT. INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   BEAM DETECTORS: INSTALL PROJECTED BEAM TYPE SMOKE DETECTORS AS INDICATED ON PLANS FOR LARGE OPEN AREAS WITH HIGH CEILINGS. DETECTORS SHALL BE SINGLE-ENDED, REFLECTIVE TYPE WITH ADJUSTABLE SENSITIVITY AND BUILT-IN SENSITIVITY TEST FEATURE (INSTALL REMOTE TEST SWITCH). INSTALL PER NFPA 72 AND MANUFACTURER'S REQUIREMENTS.
   INPUT MODULES: PROVIDE ADDRESSABLE MODULES TO MONITOR NEW OR EXISTING CONVENTIONAL INITIATING DEVICES (FIRE SPKR SWITCHES, BEAM DETECTORS, ETC.). LOCATE MODULES ADJACENT TO DEVICE MONITORED IN AN ACCESSIBLE LOCATION OR ABOVE REMOVABLE CEILING TILE. MODULE SHALL HAVE EXTERNALLY VISIBLE LED TO INDICATE STATUS. LABEL MODULE WITH THE TYPE AND ADDRESS OF THE DEVICE MONITORED.

12. NOTIFICATION APPLIANCES: PROVIDE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT BUILDING. 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 AS REQURIED BY THE IBC AND ADA GUIDELINES. STROBES SHALL FLASH IN SYNCHRONIZATION. CONFIGURE CIRCUITS TO ALLOW HORNS TO BE SILENCED WHILE STROBES CONTINUE TO FLASH.

13. PROTECTED PREMISE FIRE SAFETY FUNCTIONS: INSTALL PROGRAMMABLE OUTPUT MODULES WITH RELAY CONTACTS TO INITIATE REQUIRED FIRE SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, SAFETY FUNCTIONS (DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTUATION, ELEVATOR RECALL, ETC.). OUTPUT MODULES SHALL BE INSTALLED WITHIN 36" OF DEVICE OR CIRCUIT CONTROLLED. ALL EXISTING PROTECTED PREMISE FIRE SAFETY FUNCTIONS CONTROLLED BY EXISTING FIRE ALARM SYSTEM SHALL BE MIGRATED TO NEW SYSTEM AND TESTED TO VERIFY PROPER FUNCTION.

14. PHASING: PLAN SEQUENCE OF WORK TO MINIMIZE DOWN TIME OF FIRE ALARM SYSTEM AND EXISTING FIRE ALARM NETWORK. 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 DAY PRIOR TO SCHEDULED TEST.

FIRE ALARM SYSTEM KEY NOTES

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(02) INSTALL NEW FIBER OPTIC CABLE FOR FIRE ALARM NETWORK COMMUNICATION BETWEEN EACH FACP ON CAMPUS. CABLE MAY BE RUN OVERHEAD IN BUILDINGS (IN CONDUIT) BUT SHALL BE INSTALLED IN EXISTING UNDERGROUND COMMUNICATIONS CONDUIT OR TUNNELS BETWEEN BUILDINGS. SEE NETWORK PLAN (SHEET FA-0.1).

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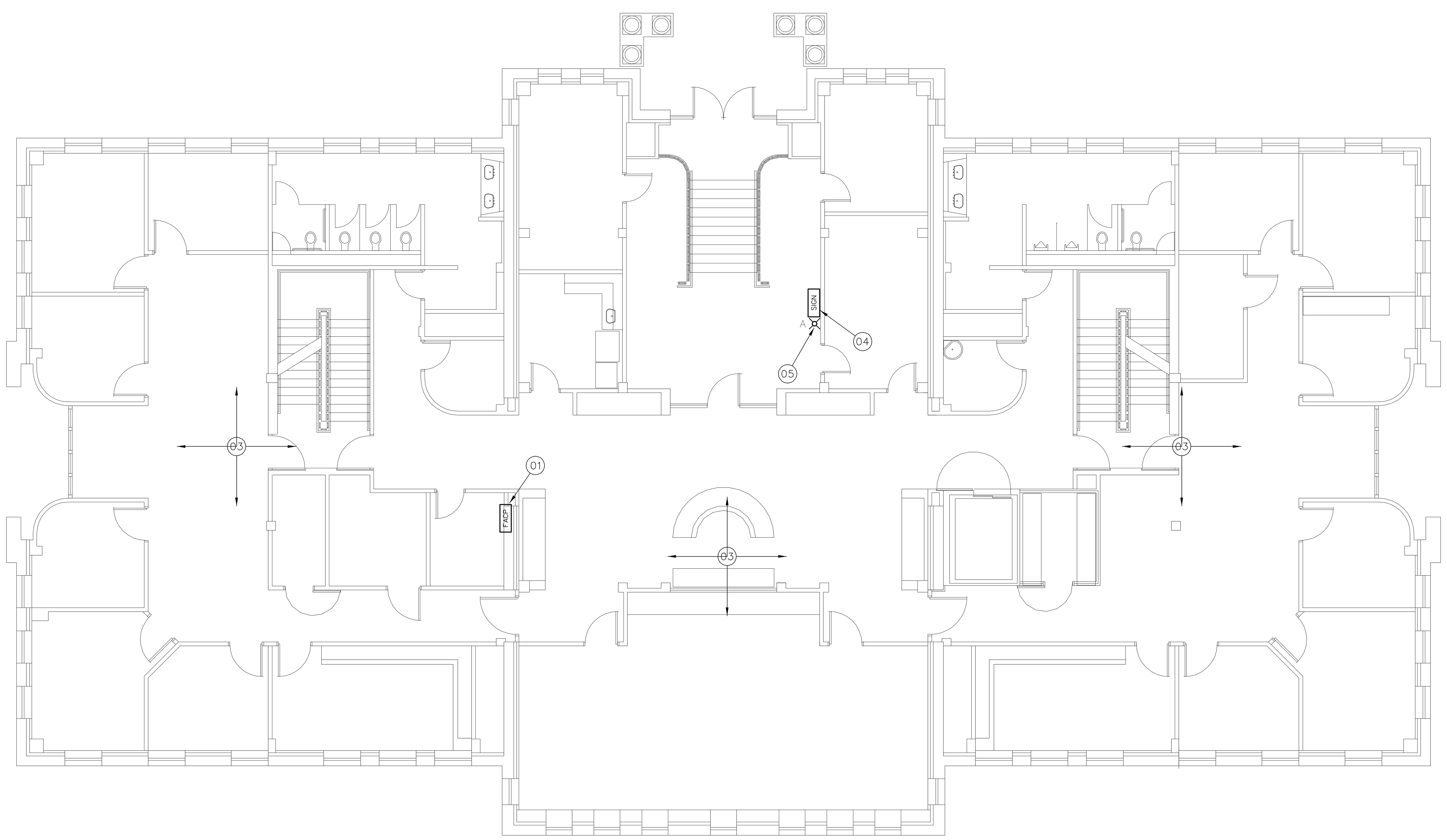
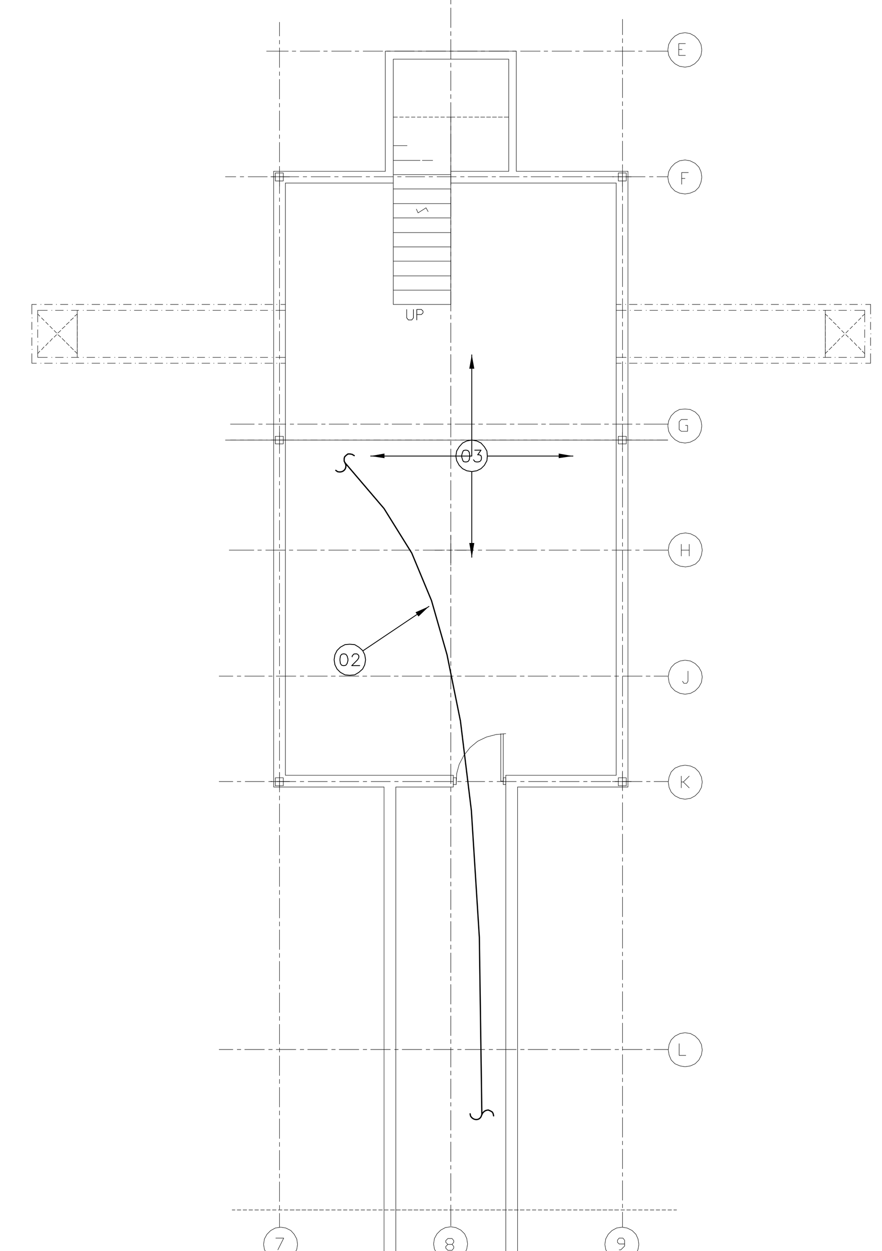


1 FIRE ALARM PLAN - NOYES BUILDING (MAIN LEVEL)
1/8" = 1'-0"
0 8' 16' 32'



2 FIRE ALARM PLAN - NOYES BUILDING (PARTIAL BASEMENT)
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0 8' 16' 32'

FIRE ALARM EQUIPMENT LEGEND

DEVICE	DESCRIPTION	MOUNTING	REMARKS
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING FACP WITH NEW SIMPLEX 4100 U
NDU	FIRE ALARM NETWORK DISPLAY UNIT	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	REPLACE EXISTING NETWORK CONTROL PANEL WITH NEW SIMPLEX NDU
ANN	FIRE ALARM ANNUNCIATOR PANEL	SURFACE MOUNT OR MOUNT ON RECESSED J–BOX AT 54" AFF	TO DISPLAY STATUS OF FIRE ALARM SYSTEM. ANNUNCIATOR SHALL HAVE ALPHA–NUMERIC READOUT AND KEYPAD TO ALLOW SYSTEM SILENCE AND RESET.
FAPS	REMOTE POWER SUPPLY	SURFACE MOUNT AT 54" AFF	TO PROVIDE POWER TO NOTIFICATION APPLIANCES, DOOR HOLDERS, INITIATING DEVICES, ETC.
DACT	DIGITAL ALARM COMMUNICATOR/ TRANSMITTER	SURFACE MOUNT AT SAME HEIGHT AS EXISTING	TO RELAY FIRE ALARM, SUPERVISORY AND TROUBLE SIGNALS FROM NDU TO CENTRAL STATION
SIGN	TRUEALERT TEXT MESSAGE BOARD	WALL MOUNT WHERE INDICATED ON PLANS. COORDINATE HEIGHT WITH OWNER	TO DISPLAY TEXT MESSAGES (PRE–PROGRAMMED OR THROUGH FUTURE LAN INTERFACE) TO PROVIDE EMERGENCY INSTRUCTIONS
(symbol)	ADDRESSABLE PHOTOELECTRIC TYPE SMOKE DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW ADDRESSABLE DEVICE
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(symbol) S	SLEEPING AREA SMOKE ALARM WITH INTEGRAL HEAT DETECTOR	CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING SMOKE DETECTOR WITH NEW COMBINATION SMOKE/HEAT DETECTOR WITH SOUNDER BASE TO FUNCTION AS A SINGLE/MULTIPLE STATION SMOKE ALARM. PROGRAM ACTIVATION OF SMOKE DETECTOR AS A SUPERVISORY SIGNAL ACTIVATING ALL SOUNDER BASES WITHIN THE DWELLING UNIT. PROGRAM ACTIVATION OF HEAT DETECTOR AS A FIRE ALARM SIGNAL ACTIVATING ALL SOUNDER BASES AND AUBILBE/VISUAL ALARMS IN THE BUILDING.
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(symbol)	EXISTING MANUAL PULL STATION	EXISTING	REMOVE EXISTING PULL STATION AND INSTALL COVER PLATE ON REMAINING J–BOX
(symbol) A	EXISTING ADDRESSABLE MANUAL PULL STATION	EXISTING	EXISTING PULL STATION TO REMAIN. CONNECT TO NEW FACP
(symbol) T/R	PROJECTED BEAM TYPE SMOKE DETECTOR	WALL OR CEILING MOUNT ON EXISTING J–BOX	REPLACE EXISTING BEAM DETECTOR WITH NEW SINGLE ENDED REFLECTED TYPE BEAM DETECTOR (SYSTEM SENSOR BEAM 1224S OR EQUAL)
SD	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	REPLACE EXISTING CONVENTIONAL DEVICE WITH NEW ADDRESSABLE DEVICE
SD N	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	MOUNT ON EXISTING SUPPLY AND/OR RETURN DUCT	ADD NEW DUCT MOUNTED SMOKE DETECTOR (WITH SAMPLING TUBES) WHERE INDICATED
SD	EXISTING DUCT MOUNTED SMOKE DETECTOR	EXISTING	REMOVE EXISTING DETECTOR, HOUSING AND SAMPLING TUBES. PATCH HOLE IN DUCT
SD A	EXISTING ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR	EXISTING	EXISTING DUCT SMOKE DETECTOR TO REMAIN. CONNECT TO NEW FACP
M	ADDRESSABLE INPUT MODULE	SURFACE MOUNT ON J–BOX NEAR CONVENTIONAL DEVICE TO BE MONITORED	CONNECT TO CONTACTS OF CONVENTIONAL DEVICE TO FACILITATE MONITORING AS AN ADDRESSABLE POINT.
C	ADDRESSABLE OUTPUT MODULE	SURFACE MOUNT ON J–BOX WITHIN 3" OF DEVICE OR CIRCUIT CONTROLLED	TO PROVIDE PROTECTED PREMISE FIRE SAFETY FUNCTIONS SUCH AS DOOR RELEASE, FAN SHUTDOWN, DAMPER ACTIVATION, ELEVATOR RECALL, NOTIFICATION CIRCUIT ACTIVATION, ETC.
D	MAGNETIC DOOR HOLD–OPEN DEVICE (EXISTING)	EXISTING	EXISTING DEVICE TO REMAIN. CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
D N	MAGNETIC DOOR HOLD–OPEN DEVICE (NEW)	WALL MOUNT AT TOP EDGE OF DOOR ON RECESSED OR SURFACE MOUNT J–BOX	CONNECT TO NEW FACP TO PROVIDE POWER AND CONTROL
T	FIRE SPRINKLER VALVE TAMPER SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
F	FIRE SPRINKLER WATER FLOW SWITCH	EXISTING	PROVIDE INPUT MODULE AND CONNECT TO NEW FACP
(symbol)	STROBE	WALL MOUNT ON EXISTING OR RELOCATED J–BOX BETWEEN 80" AND 96" AFF	INSTALL NEW NOTIFICATION APPLIANCE TO REPLACE EXISTING. CANDELA RATING AS INDICATED ON DWGS. STROBES SHALL BE SYNCHRONIZED. DEVICES COLOR SHALL BE RED
(symbol)	HORN/STROBE		
(symbol)	HORN/STROBE	CEILING MOUNT ON EXISTING J–BOX	
(symbol) N	STROBE	WALL MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX BETWEEN 80" AND 96" AFF	
(symbol) N	HORN/STROBE		
(symbol) N	HORN/STROBE	CEILING MOUNT ON NEW RECESSED OR SURFACE MOUNT J–BOX	
(symbol)	EXTERIOR HORN/STROBE	WALL MOUNT ON EXISTING WEATHERPROOF J–BOX	
(symbol) N	EXTERIOR HORN/STROBE	WALL MOUNT AT 10' AFF ON NEW SURFACE MOUNT WEATHERPROOF J–BOX	
(symbol)	EXISTING NOTIFICATION APPLIANCE	EXISTING	REMOVE EXISTING BELL, HORN, STROBE OR HORN/STROBE AND PROVIDE COVER PLATE ON RECESSED J–BOX
(symbol) A	AMBER STROBE	WALL MOUNT ADJACENT TO TEXT MESSAGE BOARD	AMBER STROBE TO FLASH CONTINUOUSLY WHILE EMERGENCY MESSAGE IS DISPLAYED ON ADJACENT TEXT MESSAGE BOARD. PROVIDE 24 VDC SUPERVISED POWER FROM FACP.

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SNOW COLLEGE - NOYES BUILDING
EPHRAIM, UTAH

FIRE ALARM SYSTEM UPGRADE
DFCM PROJECT # 07159700

FIRE ALARM PLAN - NOYES BUILDING

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