

ADDENDUM NO. 1  
UNION COUNTY HIGH SCHOOL FIRE ALARM UPGRADES  
Union County, Tennessee  
April 9, 2020

To contractors and all to whom Project Manual and drawings were issued, acknowledge receipt of addendum in the space provided in the Bid Form. Failure to do so may subject bidder to disqualification. This addendum forms a part of the contract drawings dated November 22, 2019. These documents supplement and modify the contract documents, as follows:

1. Refer to attached cover sheet. Drawing index has been updated to reflect current drawings revisions.
2. Drawings E0.1, E1, E1A, E1B, E1C, E1D, E1E, E2, E2A, E2B, and E2E shall be replaced with drawings attached. All items changed or added as part of this addendum are clouded as Revision No. 2.
3. Refer to Specification Sections 283100 – Fire Alarm System.
  - A. Delete reference to a “wired Class A” system. New fire alarm system shall be a “wired Class B” system.
  - B. Refer to Section 1.8, Warranty: Warranty period for system equipment shall be one year from date of final acceptance.
  - C. The following paragraph shall be added to Section 283100:

3.5 System Service Support: The system supplier must employ factory-trained technicians and maintain a service organization within 50 miles of the jobsite. This organization must have a minimum of 10 years experience selling and servicing the installed fire alarm system.

END OF ADDENDUM

# UNION COUNTY HIGH SCHOOL FIRE ALARM UPGRADES

## UNION COUNTY, TENNESSEE

OWNER

UNION COUNTY BOARD OF EDUCATION  
3006 MAYNARDVILLE, HIGHWAY PO Box 10  
MAYNARDVILLE, TENNESSEE 37807

NOVEMBER 22, 2019

# CONSTRUCTION DOCUMENT SUBMITTAL

PROJECT DATA

PROJECT SCOPE:  
FIRE ALARM SYSTEM REPLACEMENT AND UPGRADES  
UNION COUNTY HIGH SCHOOL  
MAYNARDVILLE, TENNESSEE

PROJECT LOCATION (911 ADDRESS):  
150 MAIN STREET  
MAYNARDVILLE, TN 37807  
UNION COUNTY

OWNER'S CONTACT:  
MICHAEL JOHNSON - DIRECTOR OF MAINTENANCE AND OPERATIONS  
EMAIL: johnsonma@ucps.org

APPLICABLE CODES:  
2012 INTERNATIONAL BUILDING CODE (EXCLUDING CHAPTER 11 ACCESSIBILITY and CHAPTER 34, SECTION 9411 ACCESSIBILITY FOR EXISTING BUILDINGS)  
2012 INTERNATIONAL FIRE CODE  
2012 INTERNATIONAL MECHANICAL CODE  
2012 INTERNATIONAL FUEL GAS CODE  
2012 NFPA 101 LIFE SAFETY CODE  
TENNESSEE PUBLIC BUILDING ACCESSIBILITY ACT  
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN  
2017 NFPA 70 NATIONAL ELECTRICAL CODE  
2012 INTERNATIONAL ENERGY CONSERVATION CODE  
2012 INTERNATIONAL EXISTING BUILDING CODE

RESPONDING FIRE DEPARTMENT'S INFORMATION:  
MAYNARDVILLE VOLUNTEER FIRE DEPARTMENT  
VOLUNTEER CHIEF - DANNY SMITH  
125 JOHNSON ROAD  
MAYNARDVILLE, TN 37807  
865-567-7270  
mvfd901@aol.com

BUILDING INFORMATION

EXISTING BUILDING DATA IS PROVIDED FOR REFERENCE AND GENERAL INFORMATION ONLY AND IS NOT AFFECTED BY THIS PROJECT EXCEPT WHERE SPECIFICALLY NOTED.

NO WALLS OR DOORS ARE BEING ADDED, REMOVED OR MODIFIED..

NO CHANGE IS BEING MADE TO THE OCCUPANCY CLASSIFICATION.

NO CHANGE IS BEING MADE TO BUILDING'S SPRINKLER SYSTEM PERFORMANCE OR COVERAGE

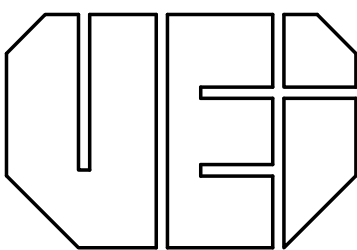
THERE IS NO CHANGE TO BUILDING SQUARE FOOTAGE

THERE IS NO CHANGE TO BUILDING OCCUPANCY

THERE IS NO CHANGE TO EXIT CAPACITY OR EXIT PATHS


EXISTING CONDITIONS MEETING ZONING REQUIREMENTS FOR HEIGHT, SETBACKS, SITE COVERAGE, PARKING, ETC. ARE NOT ALTERED BY THIS PROJECT

OCCUPANCY TYPE : IBC GROUP E  
CONSTRUCTION TYPE: IBC TYPE IIB, SPRINKLERED  
NUMBER OF STORIES: 2  
ALLOWABLE HEIGHT: PER IBC = 75 FT  
ACTUAL HEIGHT: UNKNOWN - LESS THAN 75 FT  
GROSS BUILDING AREA:  
FIRST FLOOR = 128,934 SQUARE FEET  
SECOND FLOOR = 32,488 SQUARE FEET  
TOTAL = 161,422 SQUARE FEET  
RENOVATED BUILDING FLOOR AREA: NONE



Vreeland Engineers Inc.

3107 Sutherland Ave.  
P.O. Box 10648  
Knoxville, TN 37939  
PH: (865) 637-4451  
FAX: (865) 637-1558  
WATS: 800-362-9789  
vreelandengineers.com

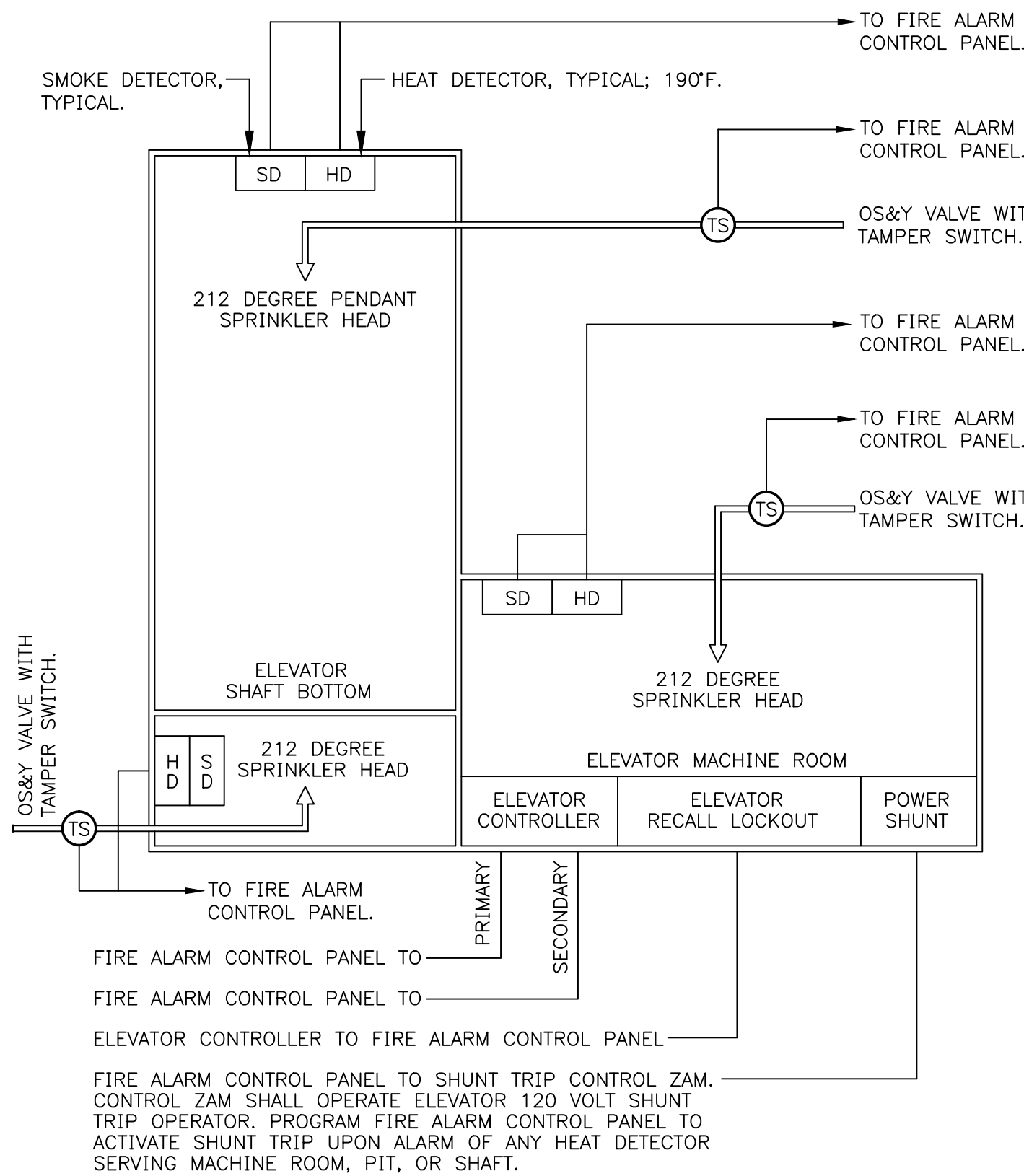


| DRAWING INDEX |   |                           |                     |                             |
|---------------|---|---------------------------|---------------------|-----------------------------|
| SHEET #       | DRAWING TITLE                           | ORIGINAL<br>ISSUE<br>DATE | CURRENT<br>REVISION | CURRENT<br>REVISION<br>DATE |
|               | COVER SHEET                             | 11/22/19                  | 1                   | 12/05/19                    |
| E0.1          | LEGEND, SCHEDULES, AND DETAILS          | 11/22/19                  | 2                   | 04/09/20                    |
| E0.2          | DETAILS                                 | 11/22/19                  | 1                   | 12/05/19                    |
| E1            | OVERALL FIRST FLOOR PLAN - ELECTRICAL   | 11/22/19                  | 2                   | 04/09/20                    |
| E1A           | FIRST FLOOR PLAN - PART A - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E1B           | FIRST FLOOR PLAN - PART B - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E1C           | FIRST FLOOR PLAN - PART C - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E1D           | FIRST FLOOR PLAN - PART D - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E1E           | FIRST FLOOR PLAN - PART E - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E2            | OVERALL SECOND FLOOR PLAN - ELECTRICAL  | 11/22/19                  | 2                   | 04/09/20                    |
| E2A           | SECOND FLOOR PLAN - PART A - ELECTRICAL | 11/22/19                  | 2                   | 04/09/20                    |
| E2B           | SECOND FLOOR PLAN - PART B - ELECTRICAL | 11/22/19                  | 2                   | 04/09/20                    |
| E2E           | SECOND FLOOR PLAN - PART E - ELECTRICAL | 11/22/19                  | 2                   | 04/09/20                    |



| FIRE ALARM SYSTEM OPERATION SCHEDULE |                |                            |                            |                      |               |                     |                    |   |  |
|--------------------------------------|----------------|----------------------------|----------------------------|----------------------|---------------|---------------------|--------------------|---|--|
|                                      | ALARM AT PANEL | SUPERVISORY ALARM AT PANEL | ACTIVATE EVACUATION SIGNAL | CALL FIRE DEPARTMENT | SHUT DOWN AHU | RELEASE SMOKE DOORS | NOTIFICATION ZONES |   |  |
|                                      |                |                            |                            |                      |               |                     | A                  | B |  |
| MANUAL STATIONS                      | •              |                            | •                          | •                    | •             | •                   | •                  | • |  |
| SPRINKLER SYSTEM FLOW SWITCH         |                |                            | •                          | •                    |               | •                   | •                  | • |  |
| DUCT SMOKE DETECTOR                  |                | •                          |                            |                      | •             |                     |                    |   |  |
| SMOKE DETECTOR                       | •              |                            |                            | •                    | •             | •                   | •                  | • |  |
| SPRINKLER SYSTEM SUPERVISORY VALVE   |                | •                          |                            |                      |               |                     |                    |   |  |
| HEAT DETECTORS                       | •              |                            | •                          | •                    | •             | •                   | •                  | • |  |
| OPEN CIRCUIT                         |                | •                          |                            |                      |               |                     |                    |   |  |
| GROUND FAULT                         |                | •                          |                            |                      |               |                     |                    |   |  |
| NOTIFICATION APPLIANCE SHORT CIRCUIT |                | •                          |                            |                      |               |                     |                    |   |  |
| FIRE ALARM LOW BATTERY               |                | •                          |                            |                      |               |                     |                    |   |  |
| FIRE ALARM AC POWER FAILURE          |                | •                          |                            |                      |               |                     |                    |   |  |

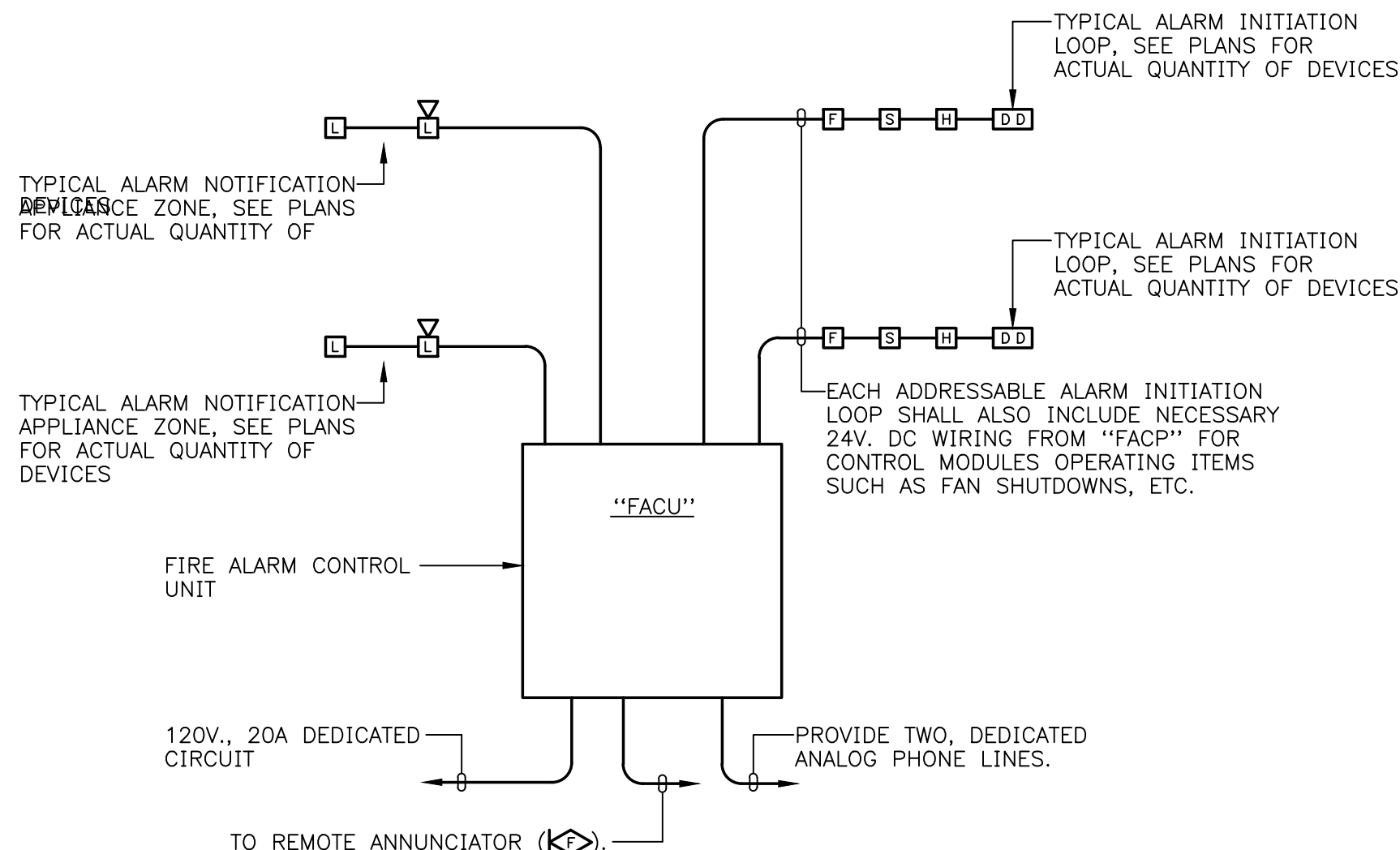
EVACUATION ZONES  
A - FIRST FLOOR  
B - SECOND FLOOR



## DETECTOR LOCATION REQUIREMENTS AT SMOKE DOORS

N.T.S.

| UL STANDARDS: |   |
|---------------|---|
| 1.            | PRODUCTS PROVIDED AS PART OF THIS PROJECT SHALL COMPLY WITH THE FOLLOWING U.L. STANDARDS: |
| U.L. 38,      | STANDARD FOR MANUAL SIGNALING BOXES FOR FIRE ALARM SYSTEMS.                               |
| U.L. 228,     | STANDARD FOR DOOR CLOSERS-HOLDERS, WITH OR WITHOUT INTEGRAL SMOKE DETECTORS.              |
| U.L. 268,     | STANDARD FOR SMOKE DETECTORS FOR FIRE ALARM SIGNALING SYSTEMS.                            |
| U.L. 268A,    | STANDARD FOR SMOKE DETECTORS FOR DUCT APPLICATIONS.                                       |
| U.L. 497B,    | STANDARD FOR PROTECTORS FOR DATA COMMUNICATIONS AND FIRE ALARM CIRCUITS.                  |
| U.L. 521,     | STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS                         |
| U.L. 864,     | STANDARD FOR CONTROL UNITS AND ACCESSORIES FOR FIRE ALARM SYSTEMS.                        |
| U.L. 1424,    | STANDARD FOR CABLES FOR POWER-LIMITED FIRE ALARM CIRCUITS.                                |
| U.L. 1480,    | STANDARD FOR SPEAKERS FOR FIRE ALARM, EMERGENCY, AND COMMERCIAL AND PROFESSIONAL USE.     |
| U.L. 1651,    | STANDARD FOR OPTICAL FIBER CABLE.   |
| U.L. 1711,    | STANDARDS FOR AMPLIFIERS FOR FIRE-PROTECTIVE SIGNALING SYSTEMS.                           |
| U.L. 1989,    | STANDARD FOR STANDBY BATTERIES.   |
| U.L. 1971,    | STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED.                                  |



## FIRE ALARM RISER DIAGRAM

N.T.S.

| FIRE ALARM SYSTEM UL LISTING STANDARDS |                       |
|--|-----------------------|
| COMPONENTS                             | UL STANDARDS          |
| CONTROL PANEL                          | UL 864,2017,1076,1730 |
| REMOTE ANNUNCIATOR                     | UL 864                |
| MANUAL STATION                         | UL 38                 |
| SMOKE DETECTOR                         | UL 268                |
| HEAT DETECTOR                          | UL 268                |
| INTELLIGENT BASES                      | UL 268                |
| DUCT DETECTORS                         | UL 268A               |
| ADDRESSABLE MODULES                    | UL 864                |
| FLASHING LIGHTS                        | UL 1971               |

FOR SPECIFICATIONS OF DEVICES SEE ELECTRICAL SPECIFICATIONS ON ES.

### FIRE ALARM NOTES:

1. THE FIRE ALARM CONTRACTOR MUST BE CERTIFIED IN ACCORDANCE WITH THE TENNESSEE ALARM CONTRACTORS LICENSING ACT OF 1991, TCA TITLE 62, CHAPTER 32. CALL 615-741-9771 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL SUBMIT BATTERY CALCULATIONS FOR NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72. BATTERY CALCULATIONS SHALL BE INCLUDED AS PART OF SUBMITTALS FOR FIRE ALARM SYSTEM.
3. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS AND THE PROCEDURES FOR MAINTENANCE, INSPECTION, AND TESTING OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM. (JFC 901.6.2.1)
4. TWO OR MORE VISIBLE NOTIFICATION APPLIANCES IN THE SAME ROOM OR ADJACENT SPACE WITHIN THE FIELD OF VIEW MUST FLASH IN SYNCHRONIZATION. (NFPA 72 7.5.4.1.1 and 7.5.4.1.2(3))
5. THE FIRE ALARM CONTROL PANEL CIRCUIT DISCONNECTING MEANS SHALL HAVE A RED MARKING, SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT. (2010 NFPA 72 - 10.5.5.2.2)
6. FIRE ALARM CONTROL UNIT (FACU) ALARM/TROUBLE ACTIVITY WILL BE MONITORED REMOTELY BY A MONITORING AGENCY VIA TELEPHONE LINES CONNECTED TO THE FACU DIGITAL TO ANALOG COMMUNICATION. THE MONITORING SERVICE IS MANNED 24 HOURS A DAY, 7 DAYS A WEEK. COORDINATE WITH OWNER AND MONITORING AGENCY. REFER TO NOTE #9 BELOW.
7. FIRE ALARM SYSTEM SHALL COMPLY WITH THE ADOPTED EDITIONS OF FOLLOWING CODES AND STANDARDS:
  - NFPA 101 LIFE SAFETY CODE
  - NFPA 72
  - NFPA 70
  - NFPA 90A
  - NFPA 92A
  - NFPA 13
  - NFPA 13R
  - NFPA 13D
  - NFPA 14
  - INTERNATIONAL BUILDING CODE
  - INTERNATIONAL FIRE CODE
  - INTERNATIONAL MECHANICAL CODE
  - ADA STANDARDS FOR ACCESSIBLE DESIGN
8. PROVIDE VOICE EVACUATION FIRE ALARM SYSTEM IN ACCORDANCE WITH PROJECT MANUAL REQUIREMENTS. VOICE EVACUATION SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72(3.3.208), NFPA 101(12.3.4, 9.6.2, 9.6.3), AND IBC. VOICE ANNOUNCEMENTS SHALL BE PRE-RECORDED AND SHALL BE AUDIBLE ABOVE AMBIENT NOISE LEVEL IN ACCORDANCE WITH CODE REQUIREMENTS. STANDBY BATTERIES IN FACP SHALL BE SIZED TO SERVE REQUIRED VOICE ANNOUNCEMENTS.
9. DIGITAL ALARM COMMUNICATION SYSTEMS (DACT & DACR) WHERE APPLICABLE SHALL BE INSTALLED AS PER THE FOLLOWING:
  - A. DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT) SHALL BE CONNECTED TO THE PUBLIC SWITCHED TELEPHONE NETWORK UPSTREAM OF ANY PRIVATE TELEPHONE SYSTEM AT THE PROTECTED PREMISES. (NFPA 72 8.5.3.2.1.3)
  - 1. DACT SHALL BE CONFIGURED SO THAT IT SHALL SEIZE THE TELEPHONE LINE, DISCONNECT AN OUTGOING OR INCOMING TELEPHONE CALL, AND PREVENT USE OF THE TELEPHONE LINE FOR OTHER TELEPHONE CALLS UNTIL SIGNAL TRANSMISSION HAS BEEN COMPLETED.
  - 2. DACT SHALL HAVE THE MEANS TO SATISFACTORILY OBTAIN A DIAL TONE, DIAL THE NUMBER(S) OF THE DACR, OBTAIN VERIFICATION THAT THE DACR IS ABLE TO RECEIVE SIGNALS, TRANSMIT THE SIGNAL, AND RECEIVE ACKNOWLEDGMENT THAT THE DACR HAS ACCEPTED THAT SIGNAL WITHIN 90 SECONDS PER ATTEMPT.
  - 3. DACT SHALL HAVE MEANS TO RESET AND RETRY IF THE FIRST ATTEMPT TO COMPLETE A SIGNAL TRANSMISSION SEQUENCE IS UNSUCCESSFUL, A FAILURE TO COMPLETE CONNECTION SHALL NOT PREVENT SUBSEQUENT ATTEMPTS TO TRANSMIT AN ALARM WHERE SUCH ALARM IS GENERATED FROM ANY OTHER INITIATING DEVICE CIRCUIT OR SIGNALING LINE CIRCUIT, OR BOTH.
  - 4. IF THE MAXIMUM NUMBER OF ATTEMPTS TO COMPLETE THE SEQUENCE IS REACHED, AN INDICATION OF THE FAILURE SHALL BE MADE AT THE PREMISES.
  - 5. A SECOND MEANS OF SIGNAL TRANSMISSION SHALL BE PROVIDED.
  - B. THE DIGITAL ALARM COMMUNICATOR RECEIVER (DACR) SHALL BE LOCATED AT THE SUPERVISING OR SUBSIDIARY STATION AND SHALL BE CONNECTED TO MINIMUM OF TWO SEPARATE INCOMING TELEPHONE LINES (NUMBERS). THE LINES (NUMBERS) SHALL HAVE THE FOLLOWING CHARACTERISTICS. (NFPA 72 8.5.3.2.2)
  - 1. IF THE LINES ARE IN A SINGLE HUNT GROUP, THEY SHALL BE INDIVIDUALLY PROTECTED OTHERWISE, SEPARATE HUNT GROUPS SHALL BE REQUIRED. (NFPA 72 8.5.3.2.2.2(1))
  - 2. THE LINES SHALL BE USED FOR NO OTHER PURPOSES THAN RECEIVING SIGNALS FROM A DACT.
  - 3. THE LINES (NUMBERS) SHALL BE UNLISTED.
  - C. THE FAILURE OF ANY TELEPHONE LINE CONNECTED TO A DACR DUE TO LINE OF LINE VOLTAGE SHALL BE ANNUNCIATED VISUALLY AND AUDIBLY IN THE SUPERVISING STATION.
10. FURNISH AND INSTALL ADDRESSABLE MONITORING MODULES AT EXISTING SPRINKLER RISER, FOR FLOW AND TAMPER SWITCHES. FIELD VERIFY EXACT QUANTITY AND LOCATION.
11. ELECTRONIC COPIES OF SHOP DRAWINGS ARE TO BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION IN ACCORDANCE WITH IBC 907.

## LEGEND

| SYMBOL  | DESCRIPTION  |
|---------|--|
| ---     | WIRING IN THE FLOOR CONSTRUCTION OR UNDERGROUND SHOWN TURNING UP.  |
| ---     | WIRING IN THE WALL OR CEILING CONSTRUCTION SHOWN TURNING DOWN.   |
| □       | JUNCTION BOX, SIZE AND USE AS REQUIRED; COVERPLATE SHALL OVERLAP THE BOX EDGE BY 1/2" WHERE RECESSED IN WALL WITH CONCEALED WIRING.  |
| □       | FIRE ALARM MANUAL PULL STATION, 48" ABOVE FINISHED FLOOR (AFF).  |
| □       | WALL MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE UNIT, MULTI-CANDELA. PROVIDE BACKBOX SUCH THAT BOTTOM OF STROBE LENS IS 8" ABOVE FINISHED FLOOR. COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. UNIT TO BE SET AT 75 CANDELA, 88 db, UNLESS NOTED OTHERWISE.   |
| □       | WALL MOUNTED FIRE ALARM FLASHING STROBE UNIT, CANDELA AND DBA RATING AS NOTED ON DRAWINGS. PROVIDE BACKBOX SUCH THAT BOTTOM OF STROBE LENS IS 8" ABOVE FINISHED FLOOR. COORDINATE BACKBOX TYPE AND EXACT MOUNTING HEIGHT WITH FIRE ALARM EQUIPMENT SUPPLIER. UNIT TO BE SET AT 75 CANDELA UNLESS NOTED OTHERWISE.  |
| "C" □   | FIRE ALARM COMBINATION SPEAKER/FLASHING STROBE COMBINATION UNIT, CEILING MOUNTED. UNIT SHALL BE RATED MINIMUM 75 CANDELA UNLESS NOTED OTHERWISE. COORDINATE BACKBOX REQUIREMENTS WITH FIRE ALARM EQUIPMENT SUPPLIER.   |
| "C" □   | CEILING MOUNTED FIRE ALARM VISUAL STROBE UNIT, CANDELA RATING AS NOTED ON DRAWINGS.  |
| □       | CEILING MOUNTED FIRE ALARM AUTOMATIC SMOKE DETECTOR. LOCATE DETECTOR MINIMUM 3'-0" AWAY FROM ALL SUPPLY/RETURN AIR GRILLS. LOCATE DETECTOR MAXIMUM OF 5'-0" AWAY FROM FIRE DOORS WHERE DOOR HOLD OPEN DEVICES ARE LOCATED.   |
| □       | CEILING MOUNTED FIRE ALARM HEAT DETECTOR.  |
| □       | WALL MOUNTED FIRE ALARM REMOTE ANNUNCIATOR PANEL, TOP 48" AFF.   |
| □       | WALL MOUNTED FIRE ALARM CENTRAL CONTROL UNIT, TOP 6'-0" AFF.   |
| □       | FIRE ALARM DUCT MOUNTED SMOKE DETECTOR. CONNECT TO FIRE ALARM SYSTEM. CONNECT TO SHUT DOWN HVAC UNIT AND/OR CLOSE DAMPER UPON ALARM. FURNISH AND INSTALL "LED" REMOTE STATUS INDICATOR FOR EACH DUCT DETECTOR W.P. INDICATES WEATHERPROOF ENCLOSURE WHERE INSTALLED OUTDOORS. FIELD VERIFY LOCATION AND QUANTITY OF EXISTING DUCT MOUNTED DETECTORS AND REPLACE. |
| ■       | EXISTING PANELBOARD  |
| □       | FIRE ALARM MAGNETIC DOOR HOLD-OPEN DEVICE.   |
| EX-20/1 | HOMERUN CIRCUIT WIRING TO EXISTING PANELBOARD, NOTATION "20/1" INDICATES HOMERUN WIRING TO BE CONNECTED TO 20/1 CIRCUIT BREAKER IN EXISTING PANELBOARD. SPARE CIRCUIT BREAKERS MAY BE UTILIZED WHERE AVAILABLE. OTHERWISE, PROVIDE NEW CIRCUIT BREAKERS AS REQUIRED. EACH NEW BRANCH CIRCUIT SHALL CONSIST OF 2#12,1#12G.  |
| TS      | SPRINKLER SYSTEM TAMPER SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.  |
| FS      | SPRINKLER SYSTEM FLOW SWITCH, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.  |
| KS      | KITCHEN HOOD EXTINGUISHING SYSTEM. INSTALL FIRE ALARM SYSTEM MONITORING MODULE AND CONNECT TO FIRE ALARM SYSTEM.   |
| PIV     | SPRINKLER SYSTEM POST INDICATOR VALVE, CONNECT TO SEPARATE ZONE IN BUILDING FIRE ALARM SYSTEM.   |

### LEGEND NOTES:

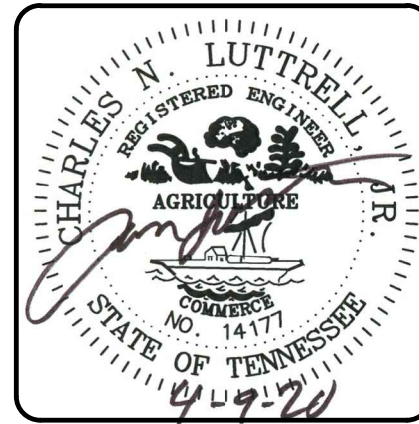
1. "RP" INDICATES APPROXIMATE LOCATION OF EXISTING DEVICE TO BE REMOVED AND REPLACED WITH NEW. REMOVE EXISTING A/V DEVICE OR VISUAL ONLY DEVICE NOTED AND INSTALL NEW DEVICE IN EXISTING LOCATION. REUSE EXISTING CONDUIT AND JUNCTION BOX IF JUNCTION IS AT CORRECT HEIGHT. INSTALL NEW JUNCTION BOX AT CORRECT HEIGHT AS DIRECTED BY FIRE ALARM EQUIPMENT SUPPLIER OR INSTALL NEW CEILING MOUNTED DEVICE AT SAME LOCATION.
2. ALL EXISTING DEVICES THAT ARE REMOVED SHALL BE TURNED OVER TO OWNER.
3. FURNISH AND INSTALL MONITORING MODULES AT KITCHEN HOOD EXTINGUISHING PANEL AND MONITOR VIA NEW FIRE ALARM SYSTEM.
4. ALL NEW FIRE ALARM SYSTEM PULL STATIONS SHALL BE LOCATED WITHIN 60 INCHES OF EXIT DOORWAY.
5. FURNISH AND INSTALL CONTROLS MODULES / RELAYS AS REQUIRED TO INTERFACE WITH EXISTING ACCESS CONTROLS. LOCKING DEVICES ALONG PATH OF BUILDING EGRESS SHALL "RELEASE" UPON INITIATION OF FIRE ALARM SYSTEM.
6. WHERE NEW CEILING MOUNTED DEVICES ARE TO BE INSTALLED, CONTRACTOR TO INSTALL 3/4" CONDUIT SLEEVE THROUGH CORRIDOR WALL TO ALLOW FOR PASSAGE OF FIRE ALARM CABLE FROM NEW DEVICE WITHIN ROOM TO DEVICE IN CORRIDOR. FURNISH AND INSTALL FIRE STOPPING OF ALL CONDUITS PENETRATING THROUGH RATED WALLS. SEE DETAILS ON SHEET 0.2.
7. IN CORRIDORS, CLASSROOMS, AND SIMILAR SPACES WHERE NEW A/V DEVICE OR NEW VISUAL ONLY DEVICE WILL NOT FIT IN EXISTING WALL BOX, CONTRACTOR MAY EXERCISE THE OPTION OF INSTALLING A NEW CEILING MOUNTED DEVICE AND INSTALLING A BLANK STAINLESS STEEL COVER OVER EXISTING WALL BOX. EXCEPTION WOULD BE IN THE GYMNASIUM WHERE A "EXTENSION RING" MAY BE UTILIZED TO ALLOW FOR INSTALLATION OF NEW WALL MOUNTED DEVICE.

### BASE BID - DEDUCT ALTERNATE:

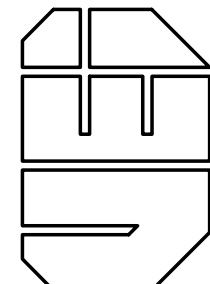
CONTRACTOR'S BID SHALL INCLUDE A "BASE BID" PRICE WHICH SHALL INCLUDE INSTALLATION OF NEW WIRING TO SERVE ALL NEW AND REPLACEMENT DEVICES. CONTRACTOR'S BID SHALL LIST A SEPARATE "DEDUCT ALTERNATE" PRICE TO REUSE EXISTING WIRING TO SERVE NEW DEVICES THAT ARE REPLACING EXISTING DEVICES. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONFIRM THAT EXISTING WIRING IS COMPATIBLE WITH NEW FIRE ALARM DEVICE. IN ADDITION TO PROVIDING A WARRANTY TO COVER THE NEW DEVICES CONTRACTOR'S WARRANTY SHALL ALSO BE EXTENDED TO COVER THE EXISTING WIRING THAT WAS REUSED.

## ELECTRICAL SPECIFICATIONS AND NOTES

1. GENERAL DESIGN APPROACH:  
THE DESIGN INTENT OF THIS PROJECT IS TO UPGRADE AND REPLACE THE EXISTING FIRE ALARM SYSTEM WITHIN THE EXISTING BUILDING. THE DESIGN AND REUSE OF EXISTING FIRE ALARM SYSTEM WITHIN THE EXISTING BUILDING BEING SUFFICIENT EGRESS OF ALL OCCUPANTS TO OUTSIDE IN THE EVENT OF ALARM CONDITION IN BUILDING. THE SYSTEM WILL BE AN ADDRESSABLE SYSTEM WITH VOICE EVACUATION ALARM CAPABILITY. PRE-RECORDED VOICE EVACUATION SIGNALS WILL BE COMMUNICATED OVER FIRE ALARM SPEAKER SYSTEM IN THE EVENT OF ALARM CONDITION. THE FIRE ALARM SYSTEM WILL ALSO HAVE CAPABILITY FOR MANUAL VOICE ANNOUNCEMENTS UTILIZING MICROPHONE AT VOICE FIRE ALARM PANEL AND REMOTE ANNUNCIATOR PANEL. VISUAL ALARM NOTIFICATION WILL ALSO BE PROVIDED VIA VISUAL STROBES IN ACCORDANCE WITH CODE REQUIREMENTS. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH CODE. DUCT-TYPE SMOKE DETECTORS WILL BE INSTALLED IN SUPPLY AND RETURN DUCTWORK TO REPLACE EXISTING DUCT-TYPE SMOKE DETECTORS. SHUTDOWN OF HVAC SYSTEM SHALL BE ACCOMPLISHED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72, NFPA 90A, AND IBC. MANUAL PULL STATIONS SHALL BE INSTALLED AT EXIT DOOR LOCATIONS AND AT LOCATIONS IN ACCORDANCE WITH CODE. EXISTING SPRINKLER SYSTEMS WILL BE MONITORED BY THE FIRE ALARM SYSTEM.
2. A NEW FIRE ALARM CONTROL UNIT (FACU) SHALL BE INSTALLED IN THE FIRST FLOOR ELECTRICAL ROOM. EXTENDER PANELS WILL BE INSTALLED AS REQUIRED. ALARM/TROUBLE ACTIVITY WILL BE MONITORED LOCALLY AT FACU. ADDITIONALLY, ALL ALARM / TROUBLE SIGNALS WILL BE DISPLAYED AT THE REMOTE ANNUNCIATOR PANEL LOCATED IN THE BUILDING'S ADMINISTRATION / RECEPTION AREA. LOCATION OF THE REMOTE ANNUNCIATOR PANEL WILL BE COORDINATED WITH LOCAL FIRE AND WILL UTILIZED BY FIRE DEPARTMENT FOR ACCESS IN THE EVENT OF BUILDING ALARM. THE NEW ALARM SYSTEM WILL BE REMOTELY MONITORED BY A LICENSED MONITORING AGENCY.
3. SEPARATE SIGNALING AND NOTIFICATION ZONES SHALL BE PROVIDED FOR THE SYSTEM. THE ADDRESSABLE FIRE ALARM CONTROL UNIT AND REMOTE ANNUNCIATOR WILL PROVIDE PINPOINT LOCATION OF ALARM/TROUBLE CONDITION FOR EACH ADDRESSABLE ALARM INITIATION DEVICE IN THE SYSTEM. MULTIPLE NOTIFICATION EVACUATION SIGNAL ZONES SHALL BE PROVIDED WITHIN THE BUILDING. EACH FLOOR NOTIFICATION EVACUATION SIGNAL ZONES SHALL BE PROVIDED IN THE BUILDING. EACH FLOOR IN EACH BUILDING SHALL BE ON A SEPARATE EVACUATION SIGNAL ZONE.
4. SCOPE:  
CONTRACTOR SHALL FURNISH PLANT, LABOR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR AND REASONABLY INCIDENTAL TO THE INSTALLATION OF EXISTING DEVICES AND NEW FIRE ALARM SYSTEM. UPGRADE AND VISUAL/ AUDIBLE NOTIFICATION SYSTEM AS INDICATED ON THE DRAWINGS AND CALLED FOR HEREINAFTER.
5. CODES AND PERMITS:  
SECURE NECESSARY PERMITS, PAY NECESSARY FEES, CONFORM TO THE NATIONAL ELECTRICAL CODE AND ALL STATE/ LOCAL CODES.
6. GENERAL CONDITIONS:  
DRAWINGS AND SPECIFICATIONS SET FORTH REQUIREMENTS FOR INSTALLATION OF THE NEW FIRE ALARM COMPONENTS AND REMOVAL OF EXISTING DEVICES AS NOTED. IN THE BUILDING, CONTRACTOR SHALL MAINTAIN EXISTING FIRE ALARM SYSTEM IN ITS PRE-CONSTRUCTION STATE OF OPERATION THROUGHOUT ALL PHASES OF THE PROJECT UNTIL THE NEW SYSTEM HAS BEEN COMPLETELY INSTALLED, TESTED, AND APPROVED BY ENGINEER. OWNER, AND AUTHORITY HAVING JURISDICTION. THE NEW SYSTEM HAS BEEN ACCEPTED. CONTRACTOR SHALL REMOVE ALL EXISTING/ ABANDONED FIRE ALARM DEVICES, EQUIPMENT, WIRING, ETC. REMOVE ALL EXPOSED CONDUIT AND BOXES ASSOCIATED WITH FIRE ALARM SYSTEMS BEING REMOVED. FURNISH AND INSTALL PROVIDE BLANK STAINLESS STEEL COVER PLATES OVER ALL ABANDONED RECESSED BOXES.
7. NEW DUCT TYPE SMOKE DETECTORS ARE BEING INSTALLED TO REPLACE THOSE THAT EXIST IN EXISTING AIR HANDLING UNITS. INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 90A, SMC, SBC, AND NFPA 72. SINCE EXACT ROUTING OF DUCTWORK THROUGHOUT BUILDING IS UNKNOWN, LOCATION AND QUANTITY OF DUCT TYPE SMOKE DETECTORS ARE BEING ILLUSTRATED BASED ON EXISTING DRAWINGS. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND QUANTITY OF DETECTORS REQUIRED. FURNISH AND INSTALL DUCT TYPE DETECTORS IN ANY EXISTING AIR HANDLING UNITS THAT ARE NOT EQUIPPED WITH CODE REQUIRED DETECTORS.
8. CONTRACTOR SHALL RE-INSTALL ALL EXISTING ELECTRICAL DEVICES, SPEAKERS, ETC. IN AREAS WHERE REMOVED FOR INSTALLATION OF NEW FIRE ALARM DEVICES, WIRING, ETC.
9. VISIT THE SITE OF EACH BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH EXISTING CONDITIONS THAT COULD IMPACT FIRE ALARM SYSTEM INSTALLATION. MAKE DUE ALLOWANCE FOR SAME IN BID PRICE.
10. FIRE ALARM SYSTEM; ALL COMPONENTS SHALL BE MANUFACTURED BY SINGLE MANUFACTURER.
11. A. NEW CONTROL UNIT SHALL BE ANALOG ADDRESSABLE WITH BATTERY SUPPLY, INCLUDING CHARGER, POWER SUPPLIES, DISPLAY MODULES, ETC.  
B. REMOTE ANNUNCIATOR SHALL BE LCD.  
C. MANUAL STATION SHALL BE ADDRESSABLE, SINGLE ACTION  
D. CEILING-MOUNTED SMOKE DETECTORS SHALL BE ADDRESSABLE, PHOTOELECTRIC TYPE  
E. HEAT DETECTORS SHALL BE ADDRESSABLE RATE-OF-RISE TYPE, ANALOG FIXED AND INTELLIGENT,  
F. BASES FOR INTELLIGENT DETECTORS SHALL BE ADDRESSABLE.  
G. DUCT DETECTORS SHALL BE ADDRESSABLE, PHOTOELECTRIC TYPE, WITH SAMPLING TUBES.  
H. ADDRESSABLE MODULES SHALL BE INSTALLED WHERE REQUIRED.  
I. AUDIO-VISUAL UNITS SHALL BE MULTI-CANDELA, AND SET TO VALUE NOTED ON DRAWINGS.  
J. WHERE FLASHING LIGHTS ONLY ARE ILLUSTRATED, PROVIDE MODEL MULTI-CANDELA RATED UNITS, ALL FLASHING LIGHTS SHALL BE SYNCHRONIZED.  
K. MAGNETIC DOOR HOLDERS SHALL BE INSTALLED WHERE NOTED.  
L. ADDRESSABLE MONITOR MODULES SHALL BE INSTALLED AS REQUIRED.  
M. FURNISH AND INSTALL MAIN FIRE ALARM CONTROL UNIT WITH A DIGITAL COMMUNICATION, DUAL CHANNEL TYPE, PROVIDE TELEPHONE OUTLET AT FIRE ALARM CONTROL PANEL FOR TIE-IN TO REMOTE LOCATION.  
N. FURNISH AND INSTALL TRANSMITTER MODULE, BATTERIES, ADDRESSABLE RELAYS, POWER SUPPLIES, ETC. AS REQUIRED.
12. INSTALLATION AND EXECUTION:  
A. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL APPLICABLE NATIONAL AND LOCAL CODES, WIRING CRITERIA, AND THE MANUFACTURER'S RECOMMENDATIONS. ALL WIRING SHALL BE COLOR CODED, TAGGED, AND CHECKED RECOMMENDATIONS. ALL WIRING SHALL BE COLOR CODED, TAGGED, AND CHECKED TO ASSURE THAT IT IS FREE FROM SHORTS AND GROUNDING.  
B. RECESSED JUNCTION BOXES SHALL BE INSTALLED IN WALLS FOR INSTALLATION OF NEW DEVICES. FROM WALL BOX, EXTEND 3/4" CONDUIT TO ABOVE CEILING AND TERMINATE WITH BUSHING.  
C. WHERE EXISTING WALL CONSTRUCTION DOES NOT ALLOW FOR BOXES TO BE RECESSED, SURFACE MOUNTED BOXES AND "EMT" CONDUIT MAY BE UTILIZED. PAINT ALL EXPOSED RACEWAYS TO MATCH EXISTING CONDITIONS. SURFACE MOUNTED WALL BOXES FOR NEW FIRE ALARM EQUIPMENT SHALL BE SUPPLIED BY FIRE ALARM SYSTEM MANUFACTURER. STANDARD WALL BOXES SHALL NOT BE PERMITTED.  
D. ALL COMPONENTS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. CONDUIT RUNS SHALL BE PARALLEL OR PERPENDICULAR TO EXISTING BUILDING STRUCTURAL ELEMENTS. NO DIAGONAL RUNS WILL BE PERMITTED.  
E. NEW FIRE ALARM WIRING SHALL BE RUN CONCEALED ABOVE EXISTING LAY-IN CEILINGS TO THE MAXIMUM EXTENT POSSIBLE. POSSIBLE PLUMBING OR MECHANICAL RACEWAYS SHALL BE PERMITTED ABOVE LAY-IN CEILINGS. PROVIDE LOW VOLTAGE CABLEING SUPPORT SYSTEM ABOVE ENTIRE LENGTH OF ALL NEW FIRE ALARM WIRING RUNS ABOVE LAY-IN CEILINGS. SEE SPECIFICATION SECTION 28 05 29, "LOW-VOLTAGE CABLEING SUPPORT SYSTEM" FOR ADDITIONAL INFORMATION.  
F. NEW FIRE ALARM WIRING SHOWN ON "HARD" CEILINGS SHALL BE INSTALLED IN SURFACE MOUNTED CONDUIT (ELECTRIC-METALLIC TUBING).  
G. FIRE ALARM WIRING SHOWN ON WALLS SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 28 05 33, "CONDUIT AND RACEWAYS SYSTEM, PART 3, EXECUTION PARAGRAPH C.  
H. SURFACE MOUNTED WALL BOXES FOR NEW FIRE ALARM EQUIPMENT SHALL BE SUPPLIED BY FIRE ALARM SYSTEM MANUFACTURER. STANDARD WALL BOXES SHALL NOT BE PERMITTED. REFER TO SPECIFICATION SECTION 28 05 33, BOXES FOR ADDITIONAL INFORMATION.  
I. PAINT ALL EXPOSED RACEWAYS TO MATCH EXISTING CONDITIONS. PAINT ALL FIRESTOPPING SEALANTS TO MATCH EXISTING CONDITIONS.  
J. VISIT THE SITE OF EACH BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH EXISTING CONDITIONS THAT COULD IMPACT FIRE ALARM SYSTEM INSTALLATION. MAKE DUE ALLOWANCE FOR SAME IN BID PRICE.  
K. DUCT TYPE SMOKE DETECTORS ARE BEING REPLACED AS PART OF THIS PROJECT IN ALL AIR HANDLING UNITS IN ACCORDANCE WITH NFPA 90A, SMC, IBC, AND NFPA 72. SINCE EXACT ROUTING OF DUCTWORK THROUGHOUT THE EXISTING BUILDING IS UNKNOWN, CONTRACTOR SHALL FIELD DETERMINE EXACT QUANTITY AND LOCATION OF EACH DUCT MOUNTED SMOKE DETECTOR AND REPLACE ALL DETECTORS REGARDLESS OF WHETHER ALL DUCT DETECTORS ARE ILLUSTRATED ON CONSTRUCTION DRAWINGS OR NOT.  
L. FIRE ALARM VENDOR SHALL SUBMIT BATTERY CALCULATIONS FOR EACH NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72. BATTERY CALCULATIONS SHALL BE INCLUDED AS PART OF FIRE ALARM SUBMITTAL PACKAGE.  
M. ALL JUNCTION BOXES AND CONDUIT RAN ABOVE LAY-IN CEILING SHALL BE SPRAY PAINTED RED AND LABELED "FIRE ALARM", WHERE INSTALLED ABOVE LAY-IN CEILING, WIRING SHALL BE INSTALLED UTILIZING A SYSTEM "J-HOOK" SPACING NO MORE THAN 5-FEET APART. WIRING NOT ABOVE LAY-IN CEILINGS SHALL BE INSTALLED IN "EMT" CONDUIT.  
N. THE FIRE ALARM CONTRACTOR MUST BE CERTIFIED IN ACCORDANCE WITH THE TENNESSEE ALARM CONTRACTORS LICENSING ACT OF 1991, TCA TITLE 62, CHAPTER 32.  
O. THE COMPLETED SYSTEM SHALL BE FULLY TESTED BY THE CONTRACTOR AND THE MANUFACTURER'S NICET CERTIFIED TECHNICAL REPRESENTATIVE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITY HAVING JURISDICTION. UPON COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO VERIFY IN WRITING TO THE OWNER, ARCHITECT, AND GENERAL CONTRACTOR.  
P. NEW EQUIPMENT AND WIRING SHALL BE WARRANTED TO BE FREE FROM ELECTRICAL AND MECHANICAL DEFECTS FOR A PERIOD OF ONE YEAR AFTER TESTING / FINAL APPROVAL. WARRANTY SHALL INCLUDE ALL LABOR, TRAVEL TIME, MATERIAL, PARTS, ETC.  
Q. EACH INITIATION DEVICE SHALL BE AFFIXED WITH A MASTIC LABEL INDICATING IT'S ASSIGNED ADDRESS. ALL REPLACEMENT DEVICES SHALL BE LABELED TO BE CONSISTENT WITH CURRENT NOMENCLATURE CURRENTLY ASSIGNED / PROGRAMMED INTO THE EGM SYSTEM. NOMENCLATURE ASSIGNED TO NEW DEVICES SHALL REFLECT ACTUAL ROOM NAMES AND NUMBER LISTED AT ENTRANCE DOOR TO EACH SPACE. ALL NEW NAMES USED SHALL BE COORDINATED WITH OWNER PRIOR TO PROGRAMMING.
13. SHOP DRAWINGS AND SUBMITTALS: PROVIDE ELECTRONIC SUBMITTALS, IN PDF FORMAT, FOR REVIEW BY ARCHITECT AND ENGINEER. SUBMITTALS SHALL INCLUDE MANUFACTURER'S CUTSHEET WITH SPECIFIC MODEL NUMBERS IDENTIFIED AS THEY APPLY TO THIS PROJECT. ALONG WITH CUTSHEETS FIRE ALARM SUBMITTAL SHALL INCLUDE CAD DRAWINGS OF THE PROPOSED SYSTEM INCLUDING CONDUIT AND WIRING LAYOUT, WIRING LAYOUT, AND DEVICE LAYOUT. ALSO INCLUDED SHALL BE BATTERY CALCULATIONS FOR NEW FIRE ALARM SYSTEM IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72.
14. GUARANTY: GUARANTEE ALL WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.



Vreeland Engineers Inc.  
3107 Sutherland Ave.  
P.O. Box 10646  
Knoxville, TN 37939  
865-637-4451  
vreelandengineers.com



UNION COUNTY HIGH SCHOOL  
FIRE ALARM UPGRADES  
UNION COUNTY, TENNESSEE  
T.F.M. #09158 / PROJECT # 2019-11-26-03

DRAWING DESCRIPTION:  
LEGENDS, NOTES, AND  
DETAILS

|            |                       |
|------------|-----------------------|
| DATE       | 11-22-2019            |
| REVISIONS: |                       |
| 1          | ITEM COMMENTS 12-5-19 |
| 2          | ADDENDUM #1 04-09-20  |

SHEET NUMBER

E0.1