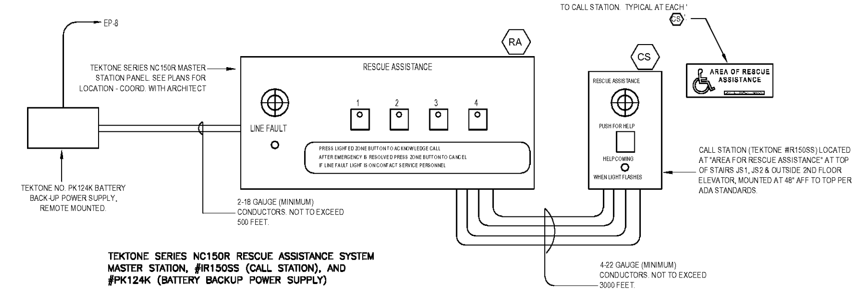
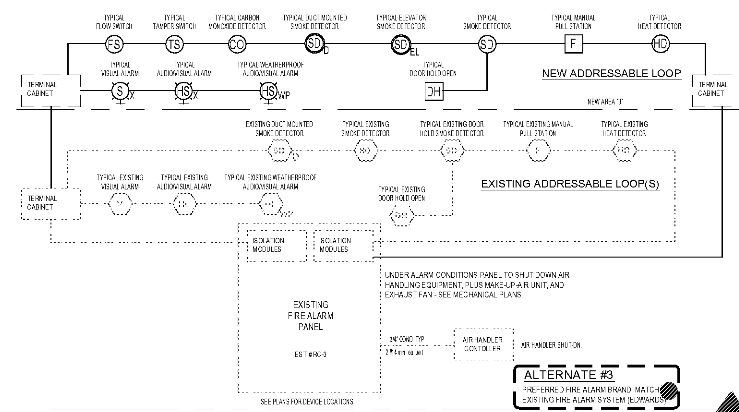

AREA OF RESCUE ASSISTANCE SIGN, TEKTONE #S1003 MOUNTED ADJACENT TO CALL STATION. TYPICAL AT EACH
TEKTONE SERIES NC150R MASTER STATION PANEL. SEE PLANS FOR LOCATION - COORD. WITH ARCHITECT
RESCUE ASSISTANCE
LINE FAULT
TEKTONE NO. PK124K BATTERY BACK-UP POWER SUPPLY, REMOTE MOUNTED.
2-18 GAUGE (MINIMUM) CONDUCTORS. NOT TO EXCEED 500 FEET.
4-22 GAUGE (MINIMUM) CONDUCTORS. NOT TO EXCEED 3000 FEET.
CALL STATION (TEKTONE #IR150SS) LOCATED AT "AREA FOR RESCUE ASSISTANCE" AT TOP OF STAIRS #S1, #S3 & OUTSIDE 2ND FLOOR ELEVATOR, MOUNTED AT 48" AFF TO TOP PER ADA STANDARDS
TEKTONE SERIES NC150R RESCUE ASSISTANCE SYSTEM MASTER STATION, #IR150SS (CALL STATION), AND #PK124K (BATTERY BACKUP POWER SUPPLY)

4 E5.3 AREA OF RESCUE ASSISTANCE DETAIL
SCALE: NO SCALE



3 E5.3 FIRE ALARM RISER DIAGRAM
SCALE: NO SCALE

FIRE ALARM SYMBOL SCHEDULE

ALL SYMBOLS MAY NOT BE USED

SYMBOL	DESCRIPTION	MOUNTING
FAP	EXISTING FIRE ALARM PANEL	WALL 6'-6" AFF TO TOP
ANN	FIRE ALARM REMOTE ANNUNCIATOR, ZONE ALARM INDICATOR, ZONE TROUBLE INDICATORS, SILENCE LAMP, AND SWITCH, RESET SWITCH, EST # RLCD-C SERIES	WALL 5'-0" AFF TO TOP
SD	SMOKE DETECTOR, PHOTO-ELECTRIC TYPE, EST # SIGA-PS w/ SIGA-SB BASE	CEILING SURFACE
CO	CARBON MONOXIDE DETECTOR, EST# SIGA2-COS, w/ SOUNDER BASE EST # SIGA-AB4G/T	CEILING SURFACE
SD EL	SMOKE DETECTOR, MULTI-SENSOR TYPE, EST # SIGA-IPHS w/ SIGA-SB BASE, PROGRAM FOR ELEVATOR RECALL	CEILING SURFACE
SD D	DUCT SMOKE DETECTOR w/ REMOTE INDICATOR, INTELLIGENT MULTISENSOR DETECTOR. COMPLETE WITH No. SIGA-SD DETECTOR HOUSING, SAMPLING TUBES (COORDINATE SIZE REQUIRED W/M.C. PRIOR TO ORDERING), & REMOTE INDICATOR/TEST SWITCH SD-TRK. DETECTOR - SUPPLIED AND CONNECTED BY E.C. - INSTALLED BY M.C.	SUPPLY or RETURN AIR DUCT PLENUM-BY M.C. REMOTE INDI.-WALL 5' AFF OR CLG.-BY E.C. [illegible]ORD. LOCATION W/OWNER
HD	HEAT DETECTOR, RATE OF RISE and/or 135°F FIXED TEMPERATURE, EST #[illegible] w/ SIGA-SB BASE	CE[illegible] SURFACE
F	MANUAL PULL STATION, EST #SIGA-278 W/PLEXIGLASS COVER [illegible]RN.	4'-0" AFF
HS (CLG MNT) / HS (WALL MNT)	SPEAKER/STROBE ALARM, FIELD CONFIGURAB[illegible]ANDELLA [illegible] SELECTABLE HIGH/LOW DB OUTPUT. GENESIS WALL SERI[illegible], G4HFWN-[illegible] SERIES [illegible]SH MOUNT BACK BOX. GENESIS CLG SERIES, EGC-HD[illegible] SERIES W/FLUS[illegible] [illegible]UNT BAC[illegible]	WALL 80"-96" AFF (6" BELOW CLG MIN.) OR CEILING
HS WP	WEATHERPROOF AUDIO(H[illegible]OBE A[illegible] w/WEATHERPR[illegible]F FLUSH MOUNT BACK BOX, EST #757-8A-HS w/[illegible]57A-WB [illegible]CK BOX.	WALL 7'-6" AFG
S (CLG MNT) / S (WALL MNT)	STROBE ALARM, FIEL[illegible] CONFIGURABLE 15, 30, 75, [illegible]. WALL-GENESIS SERIES EG1-VM SERIES W/FL[illegible] MOUNT BACK BO[illegible]. CEILING - GENESIS SERIES GCFR-VM W/ FLUSH MOUNT BACK B[illegible]	WALL 80"-96" AFF (6" BELOW CLG MIN.) OR CEILING
S WP	[illegible]THERPROOF STROBE [illegible]202-8A-001, 110 CANDALIA STROBE w/ #897 BACK [illegible].	WALL 7'-6" AFG
[illegible]	KITCHEN [illegible]XHAUS[illegible]D CONTACTS BY HOOD SUPPLIER. WIRING TO FIRE ALARM PANEL BY ELEC[illegible]ICAL CONTRACTOR	ON HOOD
FS	SPR[illegible]R RISER FLOW INDICATOR VALVE CONTACTS BY SPRINKLER CONTACTOR. [illegible]DE SIGA-CT2 WATER FLOW INTERFACE MODULE.	ON FLOW VALVE
[illegible]	SPRINKLER RISER SHUT OFF VALVE TAMPER INDICATION CONTACTS BY SPRINKLER CONT. PROVIDE SIGA-CT2 WATER FLOW INTERFACE MODULE.	ON SHUT OFF VALVE
DH	DOOR HOLDER WALL, FLUSH MOUNTED, EST LONG LATCH, EST # 1504 SERIES. EST SHORT LATCH, FLUSH MOUNTED, EST # 1505 SERIES. EST SINGLE DOOR FLOOR MOUNTED, EST #1501 SERIES. EST DOUBLE DOOR FLOOR MOUNTED, EST #1502 SERIES. EST SINGLE DOOR FLOOR MOUNTED, EST #1501 SERIES. EST DOUBLE DOOR FLOOR MOUNTED, EST #1502 SERIES.	WALL MOUNT OR WALL MOUNT, AS REQ'D.

NOTES:

1. CONTRACTOR IS TO SELECT CANDELA SETTINGS FOR STROBES PER NFPA-72 REQUIREMENTS. INDICATE SETTINGS ON WIRING DIAGRAM SUBMITTALS, AND INCLUDE IN REQUIRED BATTERY CALCULATIONS. ENSURE ALL AUDIBLE DEVICES ARE SET TO A MINIMUM OF 60db.
2. PROVIDE (4) EACH, ADDITIONAL SMOKE DETECTORS, PULL STATIONS, HORN STROBES, & STROBE DEVICES, TO BE INSTALLED AT THE DISCRETION OF THE AHJ.
3. SUBSCRIPT INDICATES CD LEVEL SETTING. ALL AUDIBLE DEVICES TO BE SET AT 60DB MINIMUM.

DETAILS ARE FOR REFERENCE ONLY. PENETRATIONS ARE TO BE INSTALLED PER MANUFACTURER'S UL APPROVED INSTALLATION INSTRUCTIONS.

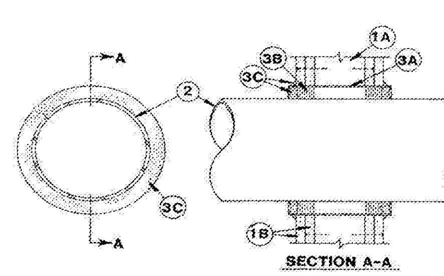
System No. W-L-1003

September 03, 2004

(Formerly System No. 147)

F Ratings — 1 and 2 Hr (See Item 1)

T Rating — 0 Hr



1. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-1/2 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. **Gypsum Board*** — Nom 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 15 in.

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. **Through-Penetrant** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The space between pipes, conduits or tubing and the steel sleeve (Item 3A) shall be min of 0 in. (point contact) to max 2-3/8 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** --- Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 12 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. **Conduit** — Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.

D. **Copper Tubing** — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.

3. **Firestop System** — Installed symmetrically on both sides of wall assembly. The details of the firestop system shall be as follows.

A. **Steel Sleeve** — Cylindrical sleeve fabricated from min 0.019 in. thick (No. 28 gauge) gal[illegible] sheet steel and having a min 2 in. lap along the longitudinal seam. Length of steel sleeve to [illegible] equal to thickness of wall plus 1 to 4 in. such that, when installed, the ends of the [illegible] will project approximately 1/2 to 2 in. beyond the surface of the wall [illegible] both sides of [illegible] assembly.

Sleeve installed by coiling the sheet steel to a diam smaller than the [illegible] op[illegible]ing, inserting the coil through the openings and releasing the coil to [illegible] aga[illegible] the circular cutouts in the gypsum wallboard layers.

B. **Packing Material** — Min 1 in. thickness of mi[illegible] insulation [illegible] packed into steel sleeve on both sides [illegible] assemb[illegible] permane[illegible]. Pac[illegible] material to be recessed min 1/2 in. from [illegible] with or re[illegible] gypsum wallboard surface) on both sides of [illegible]ll assembly.

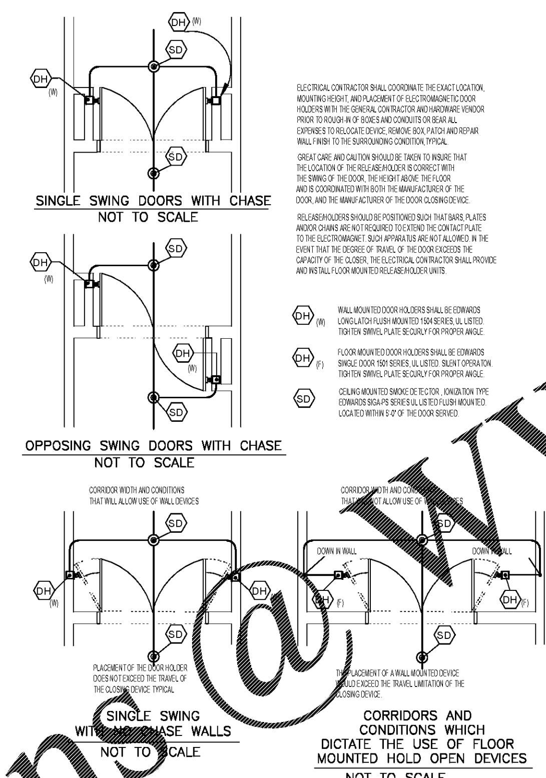
B1. **Packing Material** [illegible] (Not shown) — A[illegible] alterna[illegible] item B, nom 1 in. thick polyethylene backer rod [illegible] be used. The bac[illegible] rod is [illegible] recessed within the steel sleeve a min of 1 in. from each [illegible]ace of wall.

C. **Fill, Void or Cavity M[illegible]ls*** — **Caulk [illegible] Sealant** — When mineral wool batt insulation is used, applied [illegible] steel sl[illegible] to a min depth of 1/2 in. on both sides of wall assembly. When backer rod is u[illegible] thickness of 1 in. of CP-25WB+ caulk is required flush with surface of wall. A nom 1/4 in. diam continuous bead of caulk shall be applied around the circumference of the steel sleeve at its egress from the gypsum wallboard layers on both sides of the wall assembly.

3M COMPANY — CP 25WB+ or FB-3000 WT

*Bearing the UL Classification Mark

FIRE PENETRATION DETAIL



ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION, MOUNTING HEIGHT, AND PLACEMENT OF ELECTROMAGNETIC DOOR HOLDERS WITH THE GENERAL CONTRACTOR AND HARDWARE VENDOR PRIOR TO ROUGH-IN OF BOXES AND CONDUITS OR BEAR ALL EXPENSES TO RELOCATE DEVICE, REMOVE BOX, PATCH AND REPAIR WALL FINISH TO THE SURROUNDING CONDITION, TYPICAL.

GREAT CARE AND CAUTION SHOULD BE TAKEN TO INSURE THAT THE LOCATION OF THE RELEASE/HOLDER IS CORRECT WITH THE SWING OF THE DOOR, THE HEIGHT ABOVE THE FLOOR AND IS COORDINATED WITH BOTH THE MANUFACTURER OF THE DOOR, AND THE MANUFACTURER OF THE DOOR CLOSING DEVICE.

RELEASE/HOLDERS SHOULD BE POSITIONED SUCH THAT BARS, PLATES AND/OR CHAINS ARE NOT REQUIRED TO EXTEND THE CONTACT PLATE TO THE ELECTROMAGNET. SUCH APPARATUS ARE NOT ALLOWED. IN THE EVENT THAT THE DEGREE OF TRAVEL OF THE DOOR EXCEEDS THE CAPACITY OF THE CLOSER, THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL FLOOR MOUNTED RELEASE/HOLDER UNITS.

DH (W) WALL MOUNTED DOOR HOLDERS SHALL BE EDWARDS LONG LATCH FLUSH MOUNTED 1504 SERIES, UL LISTED. TIGHTEN SWIVEL PLATE SECURLY FOR PROPER ANGLE.

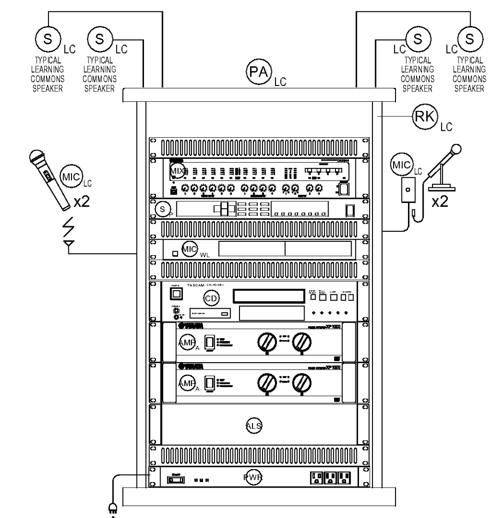
DH (F) FLOOR MOUNTED DOOR HOLDERS SHALL BE EDWARDS SINGLE DOOR 1501 SERIES, UL LISTED. SILENT OPERATON. TIGHTEN SWIVEL PLATE SECURLY FOR PROPER ANGLE.

SD CEILING MOUNTED SMOKE DETECTOR, IONIZATION TYPE EDWARDS SIGA-PS SERIES UL LISTED FLUSH MOUNTED. LOCATED WITHIN 5'-0" OF THE DOOR SERVED.

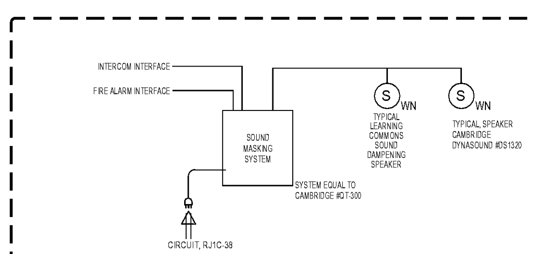
5 E5.3 SMOKE DOOR DETAILS
SCALE: NO SCALE

LEARNING COMMONS PA SYMBOL SCHEDULE

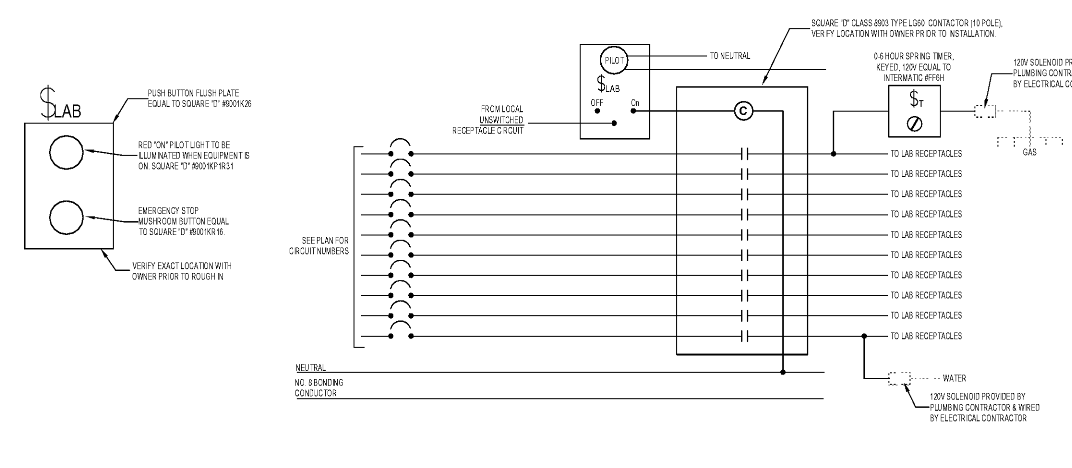
SYMBOL	DESCRIPTION
MIX	MIXER - [illegible]A #EMX512SC
CD	[illegible]D PLAYER WITH BLUETOOTH. TASCAM #CD200BT
S LC	SPEAKER - YAMAHA VXS8
RK LC	EQUIPMENT RACK W/ LOCKING PERFORATED DOOR RAXXESS #SWR10-17/SWRD10
PWR	RACK MOUNTED A/C POWER MANAGEMENT LOWELL #ACSPR-SCS4-1509
CD	CD PLAYER WITH IPOD DOCK. TASCAM #CD200i
AMP A	AMPLIFIER - YAMAHA #XP1000
S P	SPEAKER PROCESSOR - YAMAHA SP2060
MIC WL	WIRELESS MICROPHONE RECEIVER. SHURE #SLX24/SM58 WITH RACK MTD ANTENNA DIST.
MIC LC	MICROPHONE OUTLET, SOUNDILIER #501-13C WITH SHURE #SM86 MICROPHONE, 25' OF CORD AND WITH ATLAS MS-12s FLOOR STAND
RK	EQUIPMENT RACK W/LOCKING PERFORATED DOOR RAXXESS #SWR24-17/SWRD24
ALS	E.C. TO PROVIDE & INCORPORATE AN ASSISTED LISTENING SYSTEM INTO THE LEARNING COMMONS P.A. SYSTEM EQUAL TO GENTNER ASSISTIVE LISTENING SYSTEM, DIGITAL DATA PACKAGE, PART #930-402-001. PACKAGE TO INCLUDE (1) RECEIVER, (7) TELECOILS, (1) PLAQUE, (1) WINDOW STICKER, TRANSMITTER ANTENNA, 50' FLEXIBLE COAX, GROUND PLANE ANTENNA MOUNTING PLATE & (1) RACK MOUNT KIT.



2 E5.3 LEARNING COMMONS P.A. SYSTEM DETAIL
SCALE: NO SCALE



6 E5.3 SOUND DAMPER SYSTEM
SCALE: NO SCALE
ALTERNATE #1


$LAB
PUSH BUTTON FLUSH PLATE EQUAL TO SQUARE "D" #9001K26
RED "ON" PILOT LIGHT TO BE ILLUMINATED WHEN EQUIPMENT IS ON. SQUARE "D" #9001KP1R31
EMERGENCY STOP MUSHROOM BUTTON EQUAL TO SQUARE "D" #9001KR16
VERIFY EXACT LOCATION WITH OWNER PRIOR TO ROUGH IN
SQUARE "D" CLASS 8903 TYPE LG60 CONTACTOR (10 POLE), VERIFY LOCATION WITH OWNER PRIOR TO INSTALLATION
TO NEUTRAL
FROM LOCAL UNSWITCHED RECEPTACLE CIRCUIT
SEE PLAN FOR CIRCUIT NUMBERS
TO LAB RECEPTACLES
NEUTRAL
NO. 8 BONDING CONDUCTOR
WATER
GAS
120V SOLENOID PROVIDED BY PLUMBING CONTRACTOR & WIRED BY ELECTRICAL CONTRACTOR

1 E5.3 SCIENCE LAB EMERGENCY SHUTOFF DETAIL
SCALE: NO SCALE

cra
222 cloister court
chapel hill, nc 27514
919.401.8586
www.cra-ae.com

RN&M ENGINEERS
Reece, Noland & McElrath, Inc.
94 Main Street
Canton, North Carolina 28716
PHONE: 828-492-0677 NC CERT. NO. C-0149 FAX: 828-492-1054
MAIL@RNM-ENGINEERS.COM ©2019 WWW.RNM-ENGINEERS.COM

NORTH CAROLINA PROFESSIONAL SEAL 035235 ENGINEER JASON S. DENTON 4/25/19

Cedar Ridge High School
Classroom Addition
Orange County Schools
1125 New Grady Brown School Road
Hillsborough, North Carolina

no. revisions

drawn	checked
JWC	JSD

Electrical Details

sheet
E5.3

project no. 1716

date 4/25/19

Construction Document Bid Set