

INTEGRATION

Promise Protect Life. Accelerate Connection.

Mission

Bring clarity and transformation to safety, security and communication through technology and radical service. Vision

To be the most valuable partner in making the spaces we inhabit safer and more connected.

Where We Work

Enterprise Government

Data Center Education

Healthcare

Retail

Our Values Integrity

Velocity

Unity

Diversity

Clarity

Our Principles

1 One Team

Safety Community

» Excellence





AUDIO VISUAL / NURSE CALL / SECURITY / LIFE SAFETY INTERCOMMUNICATIONS / TELEPHONE & DATA DESIGN

114 MACKENAN DR, SUITE 300 CARY, NC 27511 P: 919.266.9908 F: 919.266.9473 NC ELECTRICAL CONTRACTORS LICENSE # SP.FA/LV.35479 NC BURGLAR ALARM LICENSE # 835-CSA VA CLASS A CONTRACTORS LICENSE # 275 127875A

ARCH OR ENG

ADDRESS 1

ADDRESS 2

P: 555.555.1234

F: 555.555.3456

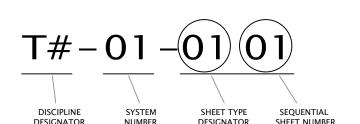
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HARNETT COUNTY SCHOOLS



	GYM EXPANSION
SPEC SECTION:	28 31 16 MULTIPLEXED FIRE DETECTION AND ALARM SYSTEM

DRAWING SERIES AND PAGE NUMBER STANDARD							
00-0001	GENERAL DRAWINGS (TITLE PAGE, DRAWING INDEX, DRAWING KEYS, AND DRAWINGS SCHEDULES)						
FACILITY DRAWINGS	THESE FACILITY DRAWINGS ARE SPECIFIC TO FLOOR PLANS, CEILING LAYOUTS, ELECTRIC/CONDUIT, POWER, MILLWORK, OR ANY GENERAL ARCHITECTURAL DRAWING DETAILS THAT WOULD AFFECT CONSTRUCTION OF ROOMS OR SPACES. FACILITY DRAWINGS SHALL ALWAYS USE A UNIQUE DRAWING NUMBER FOR EACH PRINTED PAGE OF DOCUMENTATION. NO MULTI-PAGE DRAWINGS SHALL BE FOUND IN THE FACILITY DRAWINGS.						
00-0100	FACILITY FLOOR PLAN						
00-0200	REFLECTED CEILING PLAN						
00-0300	ELEVATION DETAIL						
00-0400	LARGE SCALE VIEWS (SCALED UP REPRODUCTIONS OF PLANS, ELEVATIONS, OR SECTIONS THAT ARE NOT DETAILS).						
SYSTEM DRAWINGS	SYSTEM DRAWINGS INCLUDE FLOW DIAGRAMS, WIRING DIAGRAMS, PIN-OUT DETAILS, AND EQUIPMENT RACK ELEVATIONS.						
0X-0500	EQUIPMENT RACK ELEVATIONS, HIGH VOLTAGE/LOW VOLTAGE POWER SYSTEM DIAGRAMS, CUSTOM PLATE & PANEL DRAWINGS, PATCH BAY ELEVATIONS						
0x-0600	SIGNAL FLOWS						
0X-0700	RISER DIAGRAMS						
0X-0800	CONDUIT DRAWINGS						



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GYM EST-3 EXTENSION

COVER SHEET

EDWARDS FIRE ALARM BACKBOX LEGEND TYPICAL MOUNTING, CONSULT ARCHITECT/OWNER/AHJ MANUFACTURER/MODEL(S) DESCRIPTION **DIMENSIONS** SYMBOL(S) 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL NO DIMENSION SPECIFICATIONS EDWARDS SIGA-278 PULL STATION MOUNTED FLUSH 3'-6" TO CENTER AFF CITY 521511234EW-50R WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL 4.186"W x 2.316"H MOUNTED FLUSH PER JOB SPECIFICATION AND SMOKE DETECTOR EDWARDS SIGA-OSD WITH SIGA-SB BASE CITY 521511234EW-50R APPLICATION 3.954" DIAMETER WITH QUAM SSB-15 CEILING TILE 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL 4.186"W x 2.316"H MOUNTED FLUSH PER JOB SPECIFICATION AND EDWARDS SIGA-COD CARBON MONOXIDE LIFE SAFETY DETECTOR CITY 521511234EW-50R APPLICATION 3.954" DIAMETER WITH QUAM SSB-15 CEILING TILE 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL 4.186"W x 2.316"H MOUNTED FLUSH PER JOB SPECIFICATION AND EDWARDS SIGA-HRD WITH SIGA-SB BASE HEAT DETECTOR CITY 521511234EW-50R APPLICATION 3.954" DIAMETER WITH QUAM SSB-15 CEILING TILE MOUNTED FLUSH PER JOB SPECIFICATION AND DEVICE COMES WITH IT'S OWN MOUNTING BOX EDWARDS SIGA-SD DUCT DETECTOR 5.45"W x 8.7"H x 1.9"D AND HARDWARE APPLICATION 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SD-TRK REMOTE TEST STATION CITY 521511234EW-50R APPLICATION WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SIGA-CR / SIGA-CRH / SIGA-CRR CONTROL RELAY CITY 521511234EW-50R APPLICATION WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS CT1 CITY 521511234EW-50R EDWARDS SIGA-CT1 SINGLE INPUT MODULE APPLICATION WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS CITY 521511234EW-50R EDWARDS SIGA-CT2 / SIGA-MCT2 DOUBLE INPUT MODULE APPLICATION WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL EDWARDS G4SWF W/ STI-1221E WALL MOUNTED SPEAKER MOUNTED FLUSH 96" TO TOP AFF 4.95"W x 5.78"H x 1.62"D CITY 521511234EW-50R (# INDICATES WATTAGE) WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND EDWARDS GCVWF W/ STI-1221E CEILING MOUNTED STROBE CITY 521511234EW-50R 6.8"W+H x 1.82"D (# INDICATES CANDELA) APPLICATION WITH QUAM SSB-15 CEILING TILE 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL EDWARDS G4AVWF (# INDICATES CANDELA) WALL MOUNTED HORN STROBE MOUNTED FLUSH 96" TO TOP AFF CITY 521511234EW-50R 4.95"W x 5.78"H x 1.62"D WITH RACO 778 DOUBLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND EDWARDS GCVWF CITY 521511234EW-50R CEILING MOUNTED HORN STROBE 6.8"W+H x 1.82"D WITH QUAM SSB-15 CEILING TILE 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL 4.95"W x 5.78"H x 1.62"D CITY 521511234EW-50R MOUNTED FLUSH 96" TO TOP AFF EDWARDS GWF-VMH (# INDICATES CANDELA) WALL MOUNTED SPEAKER STROBE WITH RACO 778 DOUBLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND CITY 521511234EW-50R EDWARDS GCF-VMH (# INDICATES CANDELA) CEILING MOUNTED SPEAKER STROBE 6.8"W+H x 1.82"D APPLICATION WITH QUAM SSB-15 CEILING TILE MOUNTED FLUSH PER JOB SPECIFICATION AND CEILING MOUNTED SPEAKER EDWARDS 965-1A-8RW W/960A-8RF EST 960A-8RF ROUND BACKBOX 12"W+H x 2.625"D WITH FLUSH MOUNT BACKBOX 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SIGA-IM2 ISOLATION MODULE CITY 521511234EW-50R APPLICATION AVAILABLE WITH RACO 778 DOUBLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SIGA-CT2 DUAL INPUT MODULE CITY 521511234EW-50R APPLICATION AVAILABLE WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SIGA-CT2 **DUAL INPUT MODULE** CITY 521511234EW-50R AVAILABLE WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND NO DIMENSION SPECIFICATIONS EDWARDS SIGA-CT1 SINGLE INPUT MODULE CITY 521511234EW-50R AVAILABLE WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND EDWARDS 1504-AQN5 DOOR HOLDER CITY 521511234EW-50R 2.75"W x 4.5"H x 0.81"D WITH RACO 772 SINGLE-GANG PLASTER RING 2-1/8" DEEP BACKBOX RACO 232CS OR STEEL MOUNTED FLUSH PER JOB SPECIFICATION AND STEEL CITY 52171 (OR SIMILAR) 4" SQUARE PULL BOX 4"W x 4"H x 2.125"D CITY 521511234EW-50R APPLICATION MOUNTED FLUSH PER JOB SPECIFICATION AND HOFFMAN ASE12X12X4NK (OR SIMILAR) 12" SQUARE PULL BOX HAMMOND MFG PULL BOX 12"W x 12"H x 4"D APPLICATION FATC EDWARDS TERMINAL CABINET TERMINAL CABINET SIZES MAY VARY PER CABNET SURFACE MOUNTED, OR FLUSH 54" AFF SIZES MAY VARY PER CABNET FACP EDWARDS EST-IO 1000RD CONTROL PANEL SIZES MAY VARY PER CABNET SURFACE MOUNTED, OR FLUSH 54" AFF SIZES MAY VARY PER CABNET FAAP EDWARDS EST-RLCD-C ANNUNCIATOR PANEL SIZES MAY VARY PER CABNET SURFACE MOUNTED, OR FLUSH 54" AFF SIZES MAY VARY PER CABNET APS 6A EDWARDS EST-APS6A AUXILIARY/BOOSTER POWER SUPPLY 12"W x 26"H x 5.3"D SURFACE MOUNTED, OR FLUSH 54" AFF 12"W x 26"H x 5.3"D EDWARDS EST-BPS8A BOOSTER POWER SUPPLY BPS 8A 6.5"W x 17"H x 3.375"D SURFACE MOUNTED, OR FLUSH 54" AFF 6.5"W x 17"H x 3.375"D AUXILIARY/BOOSTER POWER SUPPLY EDWARDS EST-30 WATT INTELLIGENT AMP 12"W x 26"H x 5.3"D SURFACE MOUNTED, OR FLUSH 54" AFF 12"W x 26"H x 5.3"D

ALL BACKBOXES MUST BE GROUNDED BY THE ELECTRICAL CONTRACTOR, TYPICALLY THROUGH CONDUIT.

EDWARDS FIRE ALARM CABLE LEGEND MANUFACTURER/MODEL DESCRIPTION LINETYPE WINDY CITY 727109 FA SIGA DATA WIRE: 1 PR #16 AWG RED JKT WINDY CITY 728100-S FA SIGA DATA WIRE: 1 PR #16 AWG RED JKT. W/ WHITE STRIPE WINDY CITY 728102 FA SIGA DATA WIRE: 1 PR #16 AWG RED JTK. W/ BLUE STRIPE FA SIGA DATA WIRE: 1 PR #14 AWG RED JKT WINDY CITY 729100LSZH C I CABLE WINDY CITY 729100LSZH C I CABLE FA SPEAKER WIRE: 1 PR #14 AWG RED JKT WINDY CITY 729100LSZH C I CABLE FA SPEAKER WIRE: 1 PR #14 AWG RED JKT WINDY CITY 728104 FA SPEAKER WIRE: 1 PR #16 AWG RED JKT. W/ ORANGE STRIPE WINDY CITY 728103 FA SPEAKER WIRE: 1 PR #16 AWG RED JKT. W/ YELLOW STRIPE USAWC #14 THHNST FA STROBE WIRE: THHN #14 AWG STR. 2 CON. BLUE [+] WHITE [-] USAWC #14 THHNST FA STROBE WIRE: THHN #14 AWG STR. 2 CON. BROWN [+] ORANGE [-] USAWC #14 THHNST FA STROBE WIRE : THHN #14 AWG SOLID 2 CON. RED [+] BLACK [-] USAWC #14 THHNST FA DOOR POWER WIRE: THHN #14 AWG STR. 2 CON. RED [+] BLACK [-] USAWC #14 THHNST FA DAMPER POWER WIRE: THHN #14 AWG STR. 2 CON. YELLOW [+] GREY [-] USAWC #14 THHNST FIRE EXTINGUISHER POWER WIRE: THHN #14 AWG STR. 2 CON. PURPLE [+] GREEN [-]

FA LED/KEY SW WIRE: 4 CON #18 AWG STR.

WINDY CITY 727300

CONDUIT LEGEND							
LINETYPE	CONDUIT SIZE/TYPE						
	1" EMT						
	3/4" EMT						
	3/4" FLEX						
	1/2" FLEX						



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PAVION 114 MACKENAN DR, SUITE 300 CARY, NC 27511 P: 919.266.9908 F: 919.266.9473

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> VA DCIS LICENSE # 11-6330 ARCHITECT OR ENGINEE

ARCH OR ENG F: 555.555.3456 NAME@NAME.COM



LILLINGTON-SHAWTOWN **ELEMENTARY SCHOOL** LILLINGTON, NC 27546

DESIGN ■ BUILD □ AS-BUILT

GYM EST-3 EXTENSION

FIRE ALARM NONE

SYMBOL AND BACKBOX LEGEND



AUDIO VISUAL / NURSE CALL / SECURITY / LIFE SAFETY INTERCOMMUNICATIONS / TELEPHONE & DATA DESIGN

FEED FROM FACP

GYMNASIUM 100

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ARCHITECT OR ENGINEER

ARCH OR ENG

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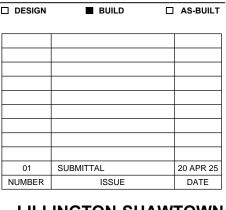
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LILLINGTON-SHAWTOWN
ELEMENTARY SCHOOL

855 OLD US HWY 421
LILLINGTON, NC 27546
OWNER

GYM EST-3 EXTENSION

FIRE ALARM SECTION 3/32" = 1'-0"

REFLECTED CEILING PLAN

FA-01-0101

PROJECT #: 24D1K21100.100 ENG: DET



AUDIO VISUAL / NURSE CALL / SECURITY / LIFE SAFETY INTERCOMMUNICATIONS / TELEPHONE & DATA DESIGN

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ARCHITECT OR ENGINEER

ARCH OR ENG

ADDRESS 1

ADDRESS 2

P: 555.555.1234

F: 555.555.3456

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HARNETT COUNTY SCHOOLS

☐ DESIGN	■ BUILD	AS-BU
01	SUBMITTAL	 20 APF
NUMBER	ISSUE	DAT

LILLINGTON-SHAWTOWN
ELEMENTARY SCHOOL

855 OLD US HWY 421
LILLINGTON, NC 27546
OWNER

GYM EST-3 EXTENSION

FIRE ALARM
SECTION
NONE
SCALE

FIRE ALARM MATRIX

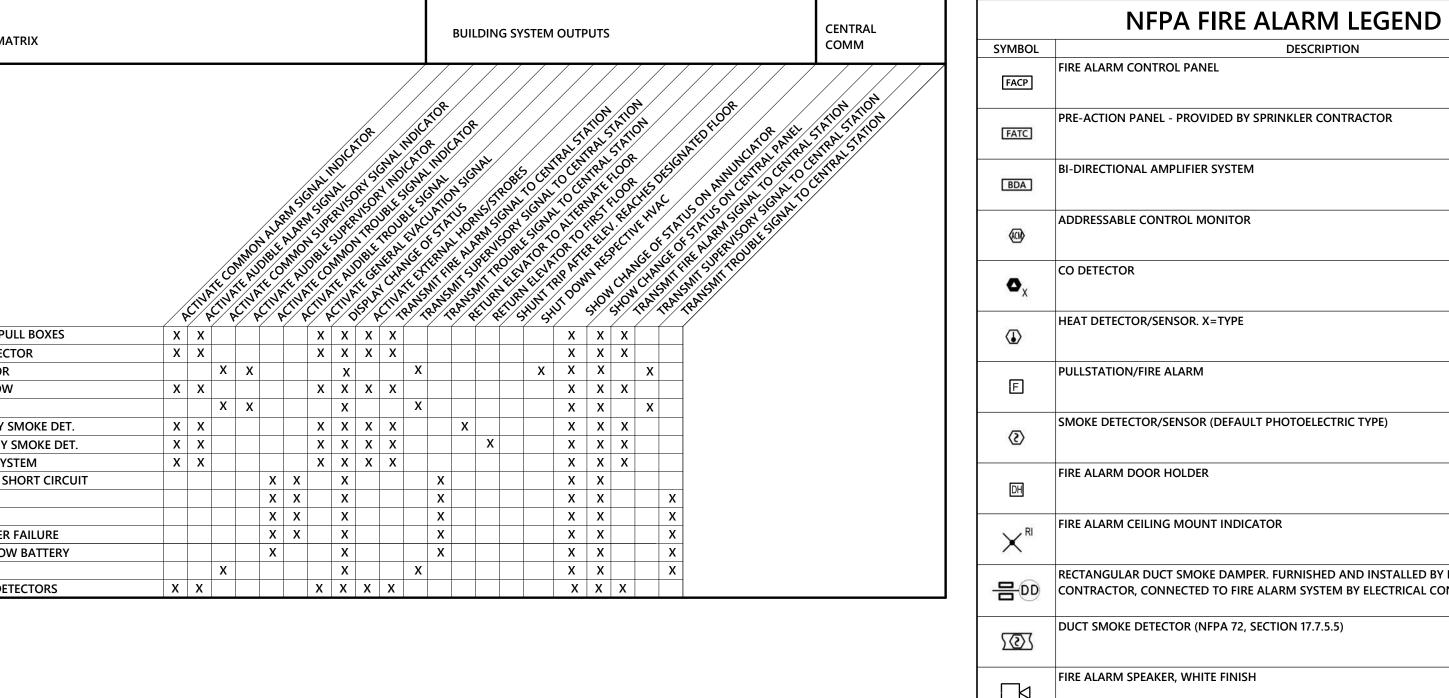
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		7/1														
MANUAL FIRE ALARM PULL BOXES	$\langle \times \rangle$, (X	<u> </u>	X			X				/ 1)/ 5	X		X	
BUILDING SMOKE DETECTOR	X	(X			X					X		X	
DUCT SMOKE DETECTOR		X	X			X		×	′			X	X	X	X	
SPRINKLER WATER FLOW	X	(X	X	X	X					X	X	X	
SPRINKLER TAMPER		X	X			X		×	(X	X	X	
1ST FLOOR ELEV. LOBBY SMOKE DET.	X	(X	Х	X	Χ	``	X			X	X	X	
UPPER FLR. ELEV. LOBBY SMOKE DET.	X	(X			X			X		X	X /	X	
HOOD SUPPRESSION SYSTEM	X				X	^	X	X					X		X	
NOTIFICATION DEVICE SHORT CIRCUIT			X			X			X				X	X		
OPEN CIRCUIT			X			X			X				X	X		X
GROUND FAULT			X			X			X				X	X		X
FIRE ALARM A.C. POWER FAILURE			X			X			X				X	X		X
FIRE ALARM SYSTEM LOW BATTERY			X			X			, X				X	X		X
BDA SYSTEM						X		<u> </u>					X	X	\ <u>\</u>	X
CARBON MONOXIDE DETECTORS	XX				X	X	X	X					X	X	X	

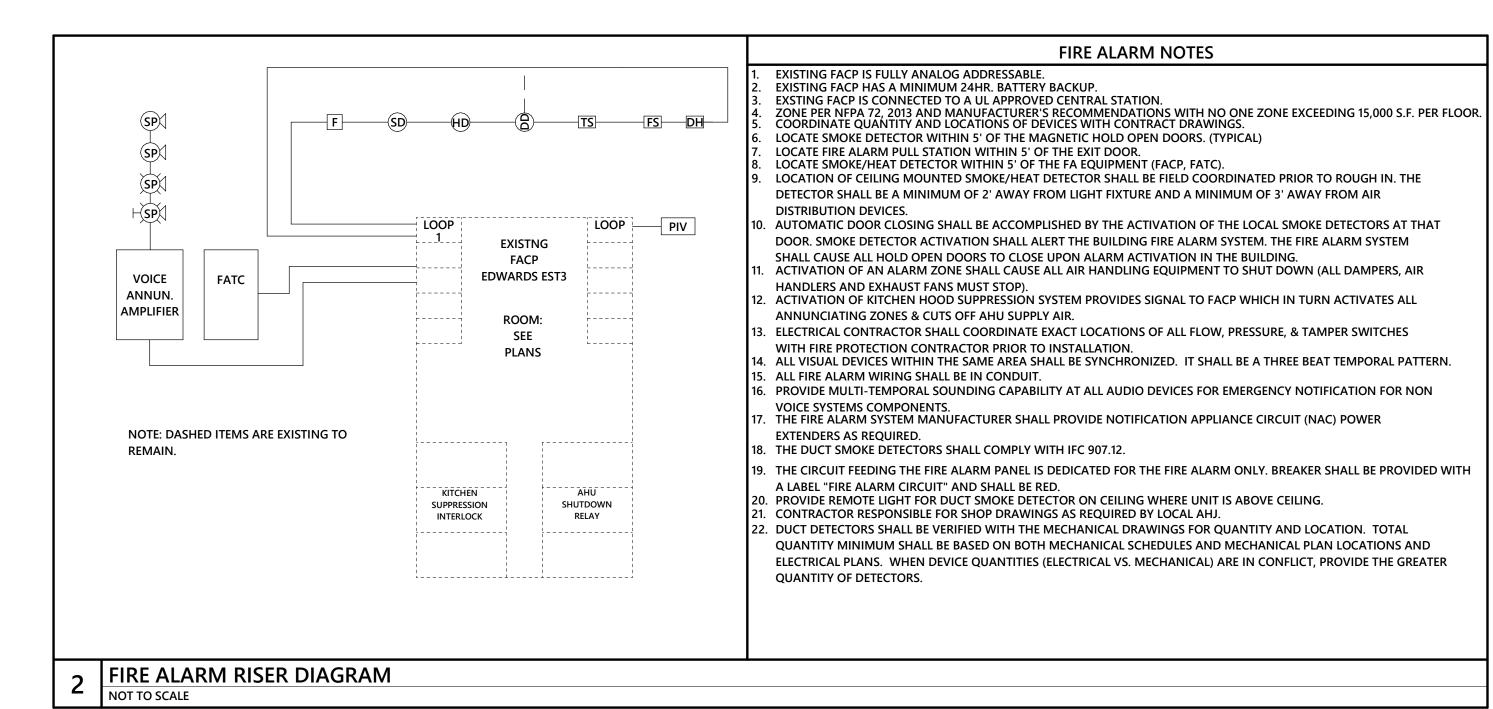
FIRE ALARM MATRIX

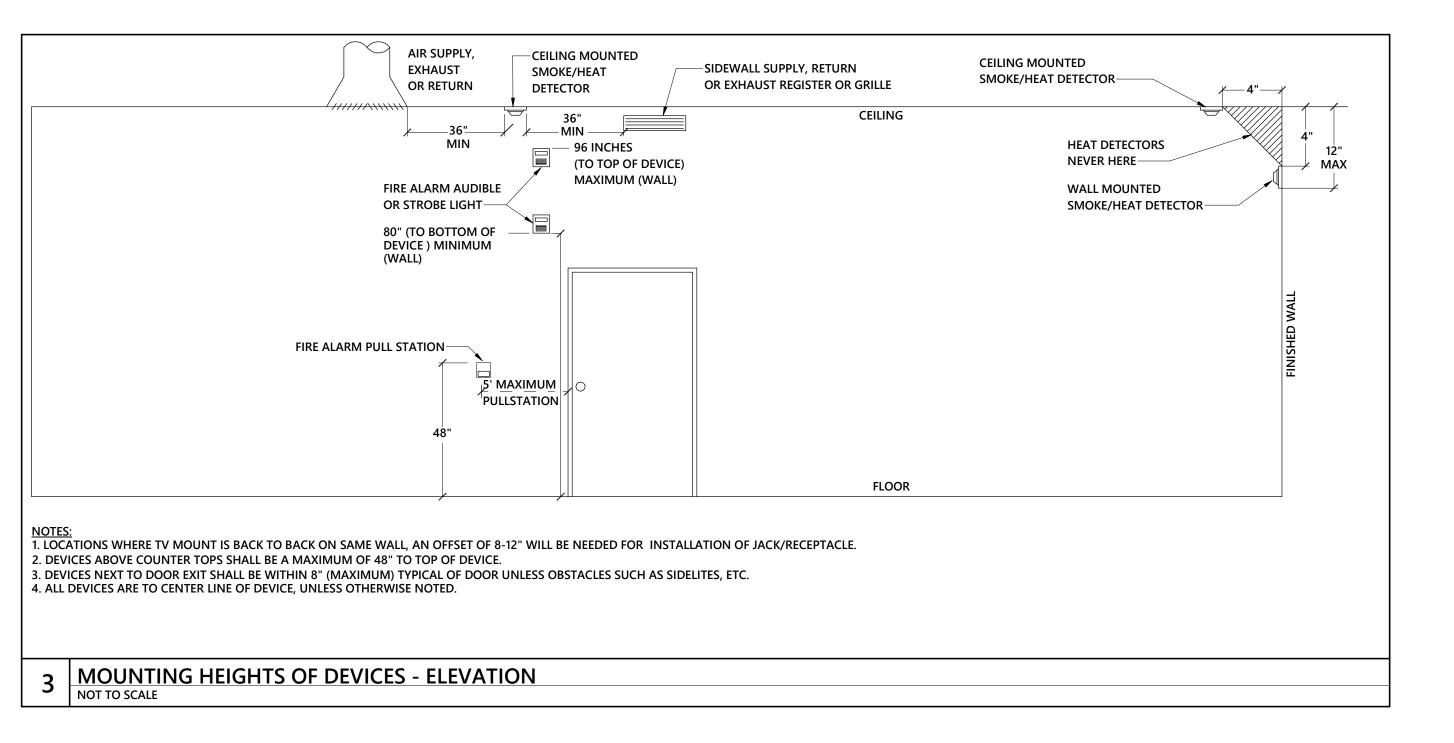
FIRE ALARM SPECIFICATIONS

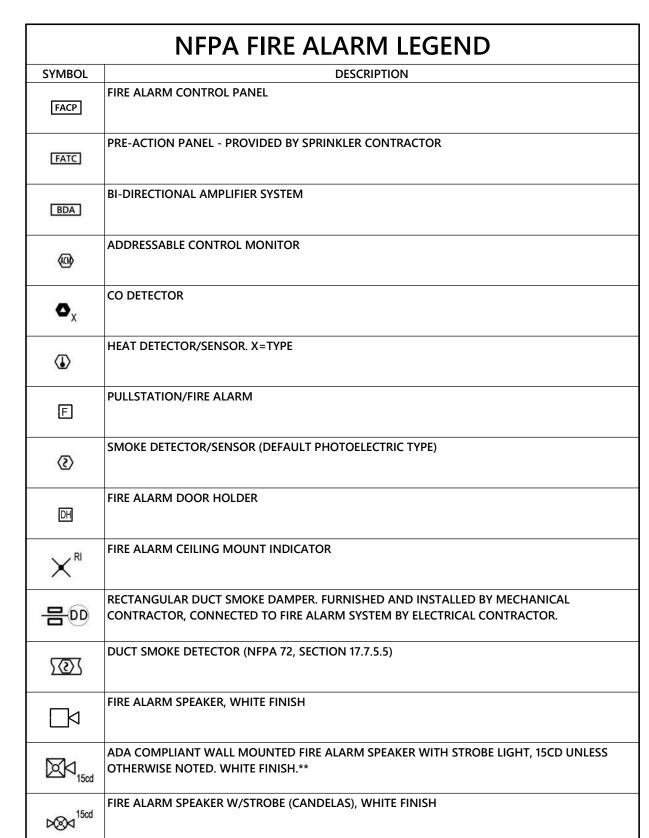
- A. SYSTEM SHALL BE A CENTRALIZED, ANALOG, ADDRESSABLE, FULLY ELECTRONICALLY SUPERVISED (INCLUDING AUXILIARY SYSTEMS INTERCONNECT WIRING) SYSTEM LISTED BY UL IN COMPLIANCE WITH ALL APPLICABLE NFPA 72 AND OTHER STANDARDS AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA). ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN AUTHORIZED FACTORY REPRESENTATIVE. SYSTEM SHALL BE SIMPLEX, NOTIFIER, SIEMENS, OR APPROVED EQUAL AS ACCEPTED BY THE ENGINEER. SYSTEM SHALL HAVE A 24HR MINIMUM BATTERY BACKUP.
- B. INITIATING DEVICE ACTIVATION SHALL CAUSE OPERATION OF THE PROPER ALARM CIRCUIT IN THE CONTROL PANEL, AND OPERATE ALL AUDIBLE AND VISUAL INDICATING ALARMS. ALL AIR HANDLING UNITS SHALL BE STOPPED UPON ANY ALARM INPUT. EACH AIR HANDLER UNIT SHALL BE PROVIDED WITH A SYSTEM CONTROLLED RELAY TO EFFECT SHUTDOWN. ALL ALARM DEVICES AND LAMPS SHALL CONTINUE TO OPERATE UNTIL THE INITIATING DEVICE IS RESET. SUBSEQUENT ALARMS SHALL RESOUND THE SYSTEM. AN AUDIBLE AND VISUAL SIGNAL SHALL INDICATE SYSTEM TROUBLE. THE CONTROL PANEL SHALL PROVIDE FOR ACTIVATING A UL LISTED CENTRAL STATION SIGNAL FOR NOTIFYING THE FIRE DEPARTMENT.
- C. MANUAL STATIONS SHALL BE NON-CODED, WITH DUAL-ACTION PULL AND KEY TYPE RESET, SEMI-FLUSH MOUNTED. COMBINATION LIGHT AND HORN SIGNALS SHALL BE FLUSH MOUNTED. WIRING SHALL BE IN CONDUIT AS PREVIOUSLY SPECIFIED, #14 AWG MINIMUM, THHN. ALL J-BOXES USED FOR
- THE FIRE ALARM SYSTEM SHALL BE PAINTED RED. D. SPRINKLER SYSTEM TAMPER SWITCHES SHALL BE CONNECTED INTO A COMMON ZONE WHICH SHALL DISTINGUISH BETWEEN A CONDUIT FAULT AND A CLOSED VALVE. A CLOSED VALVE SHALL BE INDICATED AS AN ALARM CONDITION, BUT WILL NOT ACTIVATE THE AUDIO-VISUAL DEVICES AND
- SHALL CAUSE A SUPERVISORY SIGNAL TO BE TRANSMITTED TO THE FIRE DEPARTMENT. E. CONDUCTORS SHALL BE PLENUM-RATED AND INSTALLED IN CONDUIT AND INSTALLED IN COMPLIANCE WITH NFPA 70, ARTICLE 760; IN ADDITION TO WIRING METHODS 300.4. F. ALL FIRE ALARM WIRING SHALL BE CLASS B.
- G. PROVIDE ALL REQUIRED MODULES, POWER EXTENDERS, PROGRAMMING, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
- H. SUBMIT FIRE ALARM SHOP DRAWINGS CONSISTING OF PRODUCT DATA, TO THE ENGINEER AND FOR I. FILL OUT NFPA 72 CERTIFICATION REPORT AND SUBMIT TO ENGINEER AND AUTHORITY HAVING
- JURISDICTION. J. WARRANTY - ALL WORK PERFORMED AND ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY THE PROFESSIONAL ENGINEER AND/OR OWNER. THE FULL COST OF MAINTENANCE, LABOR, AND MATERIALS REQUIRED TO CORRECT ANY DEFECT DURING THIS TWO YEAR PERIOD SHALL BE IMMEDIATELY CORRECTED AT NO ADDITIONAL COST TO THE OWNER. ANY DEFECTS THAT RENDER THE SYSTEM INOPERATIVE SHALL BE REPAIRED WITHIN 24 HOURS OF THE OWNER NOTIFYING THE CONTRACTOR. OTHER DEFECTS SHALL BE REPAIRED WITHIN 48 HOURS OF THE
- OWNER NOTIFYING THE CONTRACTOR. K. AUDIBLE DEVICES WITHIN SLEEPING ROOMS SHALL PROVIDE A SQUARE WAVE 520HZ TONE COMPATIBLE WITH NFPA 72 18.4.5.3.

FIRE ALARM SYSTEM MATRIX													BUIL	.DIN	G SY	STEM	OUTP	UTS					CENTRAL COMM
		(thu)	Club	CIUP COURT	JAR COLLEGE	Sind Sich Ash	State Control of the	A CONTRACTION OF THE PROPERTY OF THE PARTY O	TO THE STATE OF TH	TO THE TOTAL THE	O O O O O O O O O O O O O O O O O O O	TO THE STATE OF TH	TO SOLVE SOL	A STANTANTANTANTANTANTANTANTANTANTANTANTANT	O STANTON TO STANTON T	OCH CHICK	STATE OF THE PARTY	CHON CHON	Children Charles Charl	Charles of	C Children Control of the Control of	JATEO PLOP OR AND STATE OF ANTI- JATEO PLOP OR STATE OF ANTI- JA	Station of the state of the sta
MANUAL FIRE ALARM PULL BOXES	Х	X					X	X		X						/ /	X	X	x		$\overline{}$		
BUILDING SMOKE DETECTOR	Х	Х					Х	Х	Х	Х							Х	Х	Х				
DUCT SMOKE DETECTOR			Х	Х				Х			Х					Х	Х	Х		Х			
SPRINKLER WATER FLOW	Х	Х					Х	Χ	Χ	Х							Х	Х	Х				
SPRINKLER TAMPER			Х	Х				Х			Х						Х	Х		Х			
1ST FLOOR ELEV. LOBBY SMOKE DET.	Х	Х					Х	Х	Х	Х			Х				Х	Х	Х				
UPPER FLR. ELEV. LOBBY SMOKE DET.	Х	Х					Х	Х	Х	Х				Х			Х	Х	Х				
HOOD SUPPRESSION SYSTEM	Х	Х					Х	Х	Х	Х							Х	Х	Х				
NOTIFICATION DEVICE SHORT CIRCUIT					Х	Х		Х				Х					Х	Х					
OPEN CIRCUIT					Х	Х		Х				Х					Х	Х			Х		
GROUND FAULT					Х	Х		Х				Х					Х	Х			Х		
FIRE ALARM A.C. POWER FAILURE					Х	Х		Х				Х					Х	Х			Х		
FIRE ALARM SYSTEM LOW BATTERY					Х			Х				Х					Х	Х			Х		
BDA SYSTEM			Х					Х			Х						Х	Х			Х		
CARBON MONOXIDE DETECTORS	Х	X					Х	Х	Х	Х							Х	Х	х			1	









FIRE ALARM SHEET INDEX								
SHEET NUMBER	SHEET NAME							
FA-001	FIRE ALARM LEGEND AND NOTES							
FA-101	ADDITION FIRE ALARM PLAN							
FA-601	FIRE ALARM DETAILS							

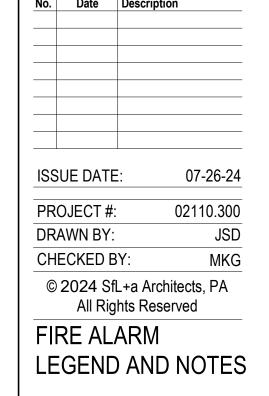




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ARCHITECTS



CONSTRUCTION

DRAWINGS



LILLINGTON-SHAWTOWN ELEMENTARY ADDITION

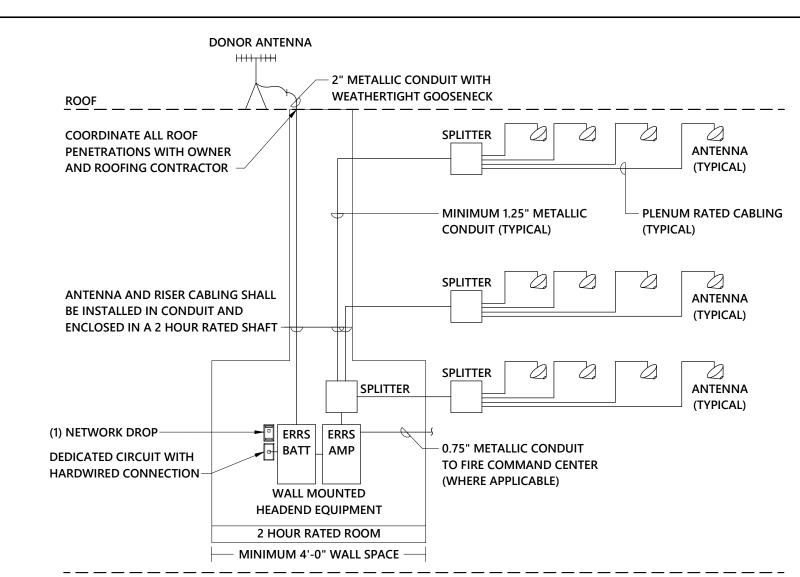
855 Old US Highway 421

ENERGY STAR PARTNER

PROJECT #: 02110.300
DRAWN BY: JSD
CHECKED BY: MKG
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ADDITION FIRE
ALARM PLAN

FA-101





GENERAL NOTES:

- A. <u>ELECTRICAL CONTRACTOR SHALL PROVIDE THE COMPLETE SYSTEM COVERING 100% OF THE BUILDING.</u>
- B. EMERGENCY RESPONDER RADIO SYSTEM (ERRS) MAY ALSO BE REFERRED TO AS BI-DIRECTIONAL ANTENNA SYSTEM (BDA) OR FIRST RESPONDER DISTRIBUTED ANTENNA SYSTEM.
- C. ERRS SYSTEM SURVEY SHALL CONSIST OF TWO PARTS. PART ONE SHALL BE ADMINISTERED AT THE START OF CONSTRUCTION TO DOCUMENT THE AVAILABLE SIGNAL AT THE SITE. PART TWO SHALL BE ADMINISTERED WHEN ALL STEEL, GYPBOARD, AND WINDOWS HAVE BEEN INSTALLED.
- D. DETAIL IS DIAGRAMATIC AND ONLY INDICATES MAIN COMPONENTS AND APPROXIMATE LOCATIONS. QUANTITY AND LOCATIONS OF EQUIPMENT ARE DETERMINED BY THE 3RD PARTY DELIGATED DESIGN. SYSTEM DESIGN SHALL BE BASED ON THE ACTUAL CONSTRUCTION OF THE BUILDING. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS WITH VENDOR.

SPECIFICATIONS:

- A. ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL, AND TEST A COMPLETE AND OPERATING EMERGENCY RESPONDER RADIO SYSTEM ("SYSTEM"). THE SYSTEM SHALL BE PROVIDED FOR THE PURPOSE OF ASSURING RELIABLE EMERGENCY COMMUNICATIONS.
- B. THE REQUIREMENTS ESTABLISHED BY THE AHJ IN EFFECT AT THE TIME OF SYSTEM INSTALLATION SUPERSEDE THE SPECIFICATIONS IN THIS SECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THE INSTALLED SYSTEM COMPLIES WITH ALL CURRENTLY APPLICABLE LOCAL, NATIONAL AND
- C. TWO SETS OF FREQUENCIES ARE TO BE UTILIZED ON THE SYSTEM. THE FOLLOWING FCC-LICENSED FACILITIES ARE TO BE CARRIED ON THE SYSTEM: FCC CALL SIGN, DOWNSTREAM/BASE TO MOBILE FREQUENCY, UPSTREAM/MOBILE TO BASE FREQUENCY AND CHANNEL BANDWIDTH. TRANSMISSIONS ON EACH SET OF FREQUENCIES MUST INDIVIDUALLY MEET THE COVERAGE, MINIMUM SIGNAL AND MINIMUM VOICE QUALITY REQUIREMENTS OF THE AHJ. EQUIPMENT SELECTED FOR THIS SYSTEM MUST BE CAPABLE OF BEING CONFIGURED TO DIFFERENT FREQUENCY PAIRS IN THE 700-800 Mhz PUBLIC SAFETY FREQUENCY BANDS. THESE CHANGES MAY LATER BE NECESSARY DUE TO FUTURE ADDITIONS OR OPTIMIZATION OF RADIO SYSTEMS MAINTAINED BY THE AHJ. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE FREQUENCIES IN USE WITH THE AHJ BEFORE PROCEEDING WITH THE SYSTEM INSTALLATION. ALL CABLE AND PASSIVE ELECTRONIC COMPONENTS SHALL HAVE A MINIMUM PASS BAND OF 400-2700 Mhz.

SPECIFICATIONS (CONTINUED):

- D. SIGNALS AT OR ABOVE THE MINIMUM LEVELS ARE TO BE RECEIVABLE TO AND FROM 95% OF ALL AREAS WITHIN THE BUILDING. SPACES OR ROOMS DEFINED AS CRITICAL AREAS REQUIRE 99% COVERAGE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SYSTEM DESIGN AND INSTALLATION THAT PROVIDES ENHANCEMENT ONLY TO THOSE AREAS OF THE BUILDING WHERE EXISTING OFF-AIR SERVICE DOES NOT MEET THE MINIMUM LEVELS AS DESCRIBED IN THE LATEST VERSIONS OF NFPA 72 AND IFC. CARE MUST BE TAKEN IN ENGINEERING A SYSTEM THAT WILL NOT CAUSE INTERFERENCE TO THE AUTHORITY'S RADIO SYSTEM OUTSIDE THE BUILDING AND SHALL NOT CAUSE HARMFUL INTERFERENCE TO OTHER RF SYSTEMS INSIDE THE BUILDING.
- E. THE SYSTEM SHALL BE DESIGNED FOR CONTINUOUS, ALWAYS-ON SERVICE. SIX (6) MALFUNCTION ALARMS FOR THE SYSTEM SHALL BE PROVIDED AND CONNECTED TO THE BUILDING FIRE ALARM SYSTEM. CONTRACTOR SHALL PROVIDE 24 HOUR BATTERY BACKUP. BATTERIES SHALL BE CONTAINED IN A NEMA 4 TYPE WATERPROOF CABINET.
- F. ALL CABLING, WITH THE EXCEPTION OF RADIATING CABLE AND ANTENNA JUMPER CABLES MEASURING LESS THAN 2 FEET IN LENGTH, SHALL BE INSTALLED IN CONDUIT. ALL EXPOSED CABLE, INCLUDING FLEXIBLE JUMPER CABLES, SHALL BE PLENUM RATED, UTILIZING A JACKET OF NON-HALOGENATED, FIRE RETARDANT POLYOLEFIN.
- G. GROUND AND BOND CABLE SHIELDS AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS AND LATEST NFPA 70 NEC REQUIREMENTS. THE DONOR ANTENNA MAST SHALL BE GROUNDED PER LATEST NFPA 70 NEC REQUIREMENTS. GROUNDING BLOCKS AND SURGE PROTECTION SHALL BE PROVIDED FOR OUTSIDE CABLING.
- H. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER AND AHJ PRIOR TO INSTALLATION. PROVIDE A SYSTEM BLOCK DIAGRAM INDICATING THE DONOR ANTENNA(S), HEADEND EQUIPMENT, PASSIVE COMPONENTS AND IN-BUILDING ANTENNAS. INCLUDE THE RF LINK BUDGET. PROVIDE A OVERLAY OF THE SYSTEM DESIGN ON BUILDING FLOOR PLAN DRAWINGS AND OVERLAY ON FLOOR PLAN DRAWINGS OF THE PREDICTED SIGNAL STRENGTH WITHIN THE COVERAGE AREA INDICATING, AT A MINIMUM, THE -95 DBM DOWNLINK (BASE TO MOBILE) SIGNAL STRENGTH FOR ALL
- I. CONTRACTOR SHALL PROVIDE THE FOLLOWING DOCUMENTS AT PROJECT CLOSEOUT: AS-BUILT DRAWINGS IN PDF AND AUTOCAD FORMATS, COVERAGE/ACCEPTANCE TEST RESULTS, DONOR ANTENNA ISOLATION, SPECTRUM ANALYSIS DEMONSTRATING ONLY THE INTENDED FREQUENCIES ARE BEING CARRIED ON THE SYSTEM, SPECTRUM ANALYSIS DEMONSTRATING NO SPURIOUS OSCILLATIONS, PIM OR OTHER INTERMODULATION DISTURBANCES ARE BEING CARRIED ON THE SYSTEM, SIGNAL LEVELS RECEIVED AT THE DONOR ANTENNA, SIGNAL LEVELS AT THE INPUT AND OUTPUT OF THE HEADEND EQUIPMENT, GAIN SETTINGS, OPERATION AND MAINTENANCE MANUAL IN HARDCOPY AND PDF FORMAT AND WARRANTY DOCUMENTS.
- J. CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY ON PARTS AND LABOR AND PROVIDE A ONE YEAR MAINTENANCE AGREEMENT. MAINTENANCE AGREEMENT SHALL INCLUDE 24/7 EMERGENCY RESPONSE WITHIN TWO HOURS OF NOTIFICATION AND ANNUAL TESTING.

EMERGENCY RESPONDER RADIO SYSTEM (ERRS) - DIAGRAMATIC ONLY NOT TO SCALE

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CONSTRUCTION **DRAWINGS**



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ISSUE DATE:	07-26-2
PROJECT #:	02110.30
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DETAILS	