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The City *of*
WORCESTER

1 LINCOLN SQUARE
WORCESTER, MA
01605

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electrical engineer:

edm
1801 6th Avenue
Suite 200
troy, ny 12180

contact: Jeremy Barnes
(518) 272-0274
(413) 443-6057 fax
jbarnes@edm-ae.com

fire alarm legend:

F YY	MANUAL PULL STATION WP = WEATHERPROOF
SD YY	SMOKE DETECTOR WP = WEATHERPROOF
HD YY	HEAT DETECTOR WP = WEATHERPROOF
FS	FLOW SWITCH
TS	SPRINKLER TAMPER SWITCH
	FIRE ALARM NOTIFICATION STROBE WALL MOUNTED AT 80-90" AFF
XXX YY	FIRE ALARM NOTIFICATION HORN/STROBE WALL MOUNTED AT 80-90" AFF (XXX - 75 OR 135 AS NOTED), WP = WEATHERPROOF
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM NOTIFICATION STROBE - CEILING MOUNTED
	FIRE ALARM NOTIFICATION HORN/STROBE - CEILING MOUNTED

fire alarm abbreviations

AFF	ABOVE FINISHED FLOOR	HP	HORSEPOWER
AV	AUDIO/VISUAL	KEC	KITCHEN EQUIPMENT CONTRACTOR
C/B	CIRCUIT BREAKER	MC	MECHANICAL CONTRACTOR
CKT	CIRCUIT	MH	MOUNTING HEIGHT
CLG	CEILING	NTS	NOT TO SCALE
DWG	DRAWING	TYP	TYPICAL
EC	ELECTRICAL CONTRACTOR	UON	UNLESS OTHERWISE NOTED
EM	EMERGENCY	WP	WEATHER PROOF
FAC	FIRE ALARM CONTRACTOR		
FLR	FLOOR		

demolition notes

1. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE INTEGRITY AND CONDITION OF THE EXISTING WIRING WHICH IS TO BE REUSED FOR NEW EQUIPMENT CIRCUITING ACCORDING TO THE NATIONAL ELECTRIC CODE. ALL DAMAGED WIRING OR WIRING FOUND TO BE NONFUNCTIONAL SHALL BE REPLACED.
2. EXISTING WIRING SHALL BE EXTENDED AND CONNECTED TO ALL EXISTING RELOCATED EQUIPMENT, AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
3. RECONNECT ALL EXISTING WIRING WHICH ORIGINATES OR PASSES THROUGH THE RENOVATED AREAS BUT SERVES OTHER AREAS NOT BEING RENOVATED. EXTEND THESE CIRCUITS AS NECESSARY TO THE HEAD END EQUIPMENT.
4. DEMOLITION WORK SHALL BE DONE BY THE FIRE ALARM CONTRACTOR. THE FIRE ALARM CONTRACTOR SHALL COORDINATE ALL WORK CONCERNING EXISTING EQUIPMENT AND SERVICES REMAINING IN THE BUILDING.
5. THE FIRE ALARM CONTRACTOR SHALL COORDINATE THE REMOVAL OF ALL EQUIPMENT AND DEVICES WITH THE OWNER AS IT PERTAINS TO RETAINING OF EQUIPMENT FOR FUTURE USE.
6. THE FIRE ALARM DEMOLITION PLANS INDICATE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL COMPONENTS AND ITEMS TO BE REMOVED OR RETAINED. THE FIRE ALARM CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMISSION OF THEIR BID TO BECOME FAMILIAR WITH THE ACTUAL WORKING CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS DESIGNATED TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE FIRE ALARM CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNERS REPRESENTATIVE AND ARCHITECT OF ANY UNANTICIPATED OR HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
7. THE FIRE ALARM CONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL WIRING WITHIN OR ASSOCIATED WITH THE DEMOLITION SCOPE, PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL DEVICES AND ASSOCIATED WIRING IDENTIFIED FOR REMOVAL SHALL BE TRACED AND FIELD LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE IS AFFECTED.
8. THE FIRE ALARM CONTRACTOR SHALL IDENTIFY ALL DEVICES AND ASSOCIATED WIRING WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT WRITTEN APPROVAL FROM THE OWNERS REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT CONDITION.
9. THE FIRE ALARM CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS WITHIN THE AREA OF DEMOLITION SCOPE TO THEIR POINT OF ORIGIN. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY OTHERS.
10. THE FIRE ALARM CONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, PARTITIONS, ETC.). CONTRACTOR SHALL TEMPORARILY SUPPORT ITEMS AND SHALL PROVIDE PERMANENT SUPPORTS WHEN FINALIZED STRUCTURES ARE IN PLACE.
11. SCOPE OF DEMO WORK IS TO REMOVE THE EXISTING FIRE ALARM SYSTEM IN THE BASEMENT WHICH INCLUDES REMOVAL OF EXISTING EQUIPMENT, DEVICES, ASSOCIATED CABLING AND CONDUIT, AND BACKBOXES.

demolition legend

LIGHT SOLID LINE DENOTES EXISTING EQUIPMENT.

DARK DASHED LINE DENOTES DEMOLITION EQUIPMENT.

X. EXISTING EQUIPMENT TO BE REMOVED AND DELIVERED TO OWNER. CIRCUIT SHALL BE PULLED BACK FROM NEXT ACTIVE OUTLET/BACK TO PANEL. REMOVE JUNCTION BOXES, AND PATCH WALL. BLANK PLATES NOT PERMITTED.

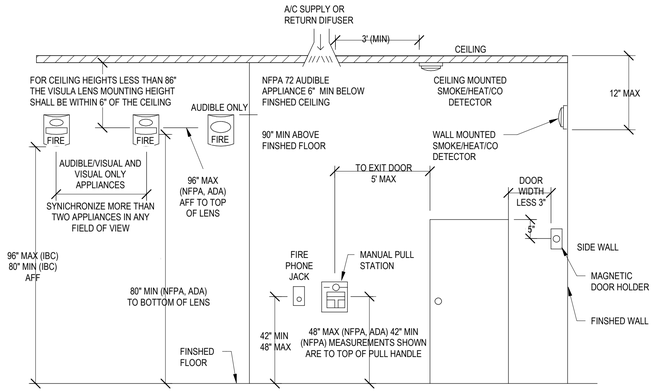
XM. EXISTING EQUIPMENT TO REMAIN.

XN. EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT AS SPECIFIED INSTALLED ON EXISTING CIRCUIT IN ORIGINAL LOCATION.

XE. EXISTING DEVICE TO BE REMOVED, OUTLET BLANKED AND CIRCUIT EXTENDED TO NEW EQUIPMENT AS SHOWN.

XR. EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED. REMOVE JUNCTION BOXES, AND PATCH WALL. BLANK PLATES NOT PERMITTED.

XL. NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.



NOTE: REFER TO PROPER INSTALLATION INSTRUCTIONS FOR BACKBOX MOUNTING HEIGHT.

NOTES:

1. HEIGHT GIVEN FOR THIS DEVICE IS THE MAXIMUM HEIGHT TO THE HIGHEST OPERABLE PART OF THE DEVICE.
2. REFER TO THE DRAWINGS FOR SPECIFIC DEVICE HEIGHTS

1 typical fire alarm device location
3/4" = 1'-0"

edm
architecture • engineering • management
pittsfield, ma
unionville, ct
troy, ny
(888) 336-6500
team@edm-ae.com

consultants:

COMMONWEALTH OF MASSACHUSETTS
ERNEST J. MALAFRONTE, JR
NO. 39899
REGISTERED PROFESSIONAL ENGINEER

design by: EJM
drawn by: TST
checked by: EJM
approved by: EJM

WORCESTER MEMORIAL AUDITORIUM

1 LINCOLN SQUARE
WORCESTER, MA
01605

keyplan:

issue / rev.:	date:	issued for:	by:

general fire alarm notes and legend

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project number: cow-5705
scale: As indicated
drawing number:

FAN-001

DIVISION 28 - GENERAL PROVISIONS FOR FIRE ALARM WORK
GENERAL PROVISIONS FOR FIRE ALARM WORK

1. REFERENCES

- THIS SECTION COVERS THE GENERAL REQUIREMENTS FOR ELECTRICAL WORK; EXAMINE ALL CONTRACT DRAWINGS AND ALL OTHER SECTIONS OF THE SPECIFICATIONS FOR ADDITIONAL WORK RELATED TO THE WORK OF THIS DIVISION.

2. DEFINITIONS

- 'PROVIDE' - TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION OF PARTICULAR WORK REFERRED TO UNLESS, SPECIFICALLY OTHERWISE NOTED.
- 'INSTALL' - TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 'WORK' - LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 'WIRING' - RACEWAY, FITTINGS, WIRE, BOXES, MOUNTING HARDWARE AND RELATED ITEMS.
- 'CONCEALED' - EMBEDDED IN MASONRY OR OTHER CONSTRUCTION CAVITY, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS.
- 'SIMILAR' OR 'EQUAL' - EQUAL MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- 'CONTRACTOR' - THE ELECTRICAL CONTRACTOR.
- 'NOTED' - AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.

3. SCOPE

- THIS WORK SHALL CONSIST OF THE FURNISHINGS OF ALL LABOR, MATERIALS AND SERVICES REQUIRED COMPLETE, READY FOR CORRECT OPERATION FOR ALL FIRE ALARM WORK CALL FOR BY THE ACCOMPANYING DRAWINGS AND SPECIFICATIONS. ALL FIRE ALARM WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.
- THE DATA INDICATED IN THESE DRAWINGS AND SPECIFICATIONS ARE AS EXACT AS COULD BE SECURED. BUT THEIR ABSOLUTE ACCURACY IS NOT GUARANTEED. DO NOT SCALE DRAWINGS. EXACT LOCATIONS, DISTANCES, LEVELS AND OTHER CONDITIONS WILL BE GOVERNED BY THE BUILDING. USE THE DRAWINGS AND SPECIFICATIONS FOR GUIDANCE AND SECURE THE ENGINEER'S APPROVAL OF CHANGES IN LOCATIONS. CIRCUITS, WHERE SHOWN ON AN ELECTRICAL DRAWINGS, ARE SO INDICATED PRIMARILY FOR THE PURPOSE OF INDICATING THE GENERAL CIRCUIT PLAN AND DO NOT NECESSARILY INDICATE THE EXACT LOCATION OF ROUTING OF THE RACEWAYS UNLESS SPECIFICALLY INDICATED. CIRCUITS SHALL BE RUN IN SUIT CONDITIONS CONSIDERING STRUCTURAL FEATURES, OTHER TRADES, CONSTRUCTION METHODS AND GOOD INSTALLATION PRACTICE.
- BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING CONDITIONS UNDER WHICH THE WORK AND WORK OF OTHER TRADES WILL BE INSTALLED. CONTRACTOR SHALL INCLUDE ANY MODIFICATIONS REQUIRED IN EXISTING ELECTRICAL EQUIPMENT FOR INSTALLATION OF NEW FIRE ALARM EQUIPMENT AND ALL NEW AND EXISTING EQUIPMENT AND SYSTEMS SHALL BE FULLY OPERATIONAL UNDER THIS CONTRACT BEFORE THE PROJECT IS CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS THAT ARE MADE, ANY OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS OF ALL TRADES.

4. CODES, REGULATIONS AND STANDARDS

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING APPROVED CODES:
  1. STATE DEMOLITION CODE
  2. STATE BUILDING CODE
  3. STATE FIRE SAFETY CODE
  4. LOCAL BUILDING CODE
  5. IBC - INTERNATIONAL BUILDING CODE
  6. NFPA - NATIONAL FIRE PROTECTION CODE
  7. ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
  8. ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS
  9. OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
  10. U.L. - UNDERWRITERS LABORATORIES
  11. NFPA 101 - LIFE SAFETY CODE
  12. NFPA 99 - HEALTH FACILITIES CODE
  13. NFPA 70 - NATIONAL ELECTRICAL CODE
  14. NFPA 72 - NATIONAL FIRE ALARM CODE
  15. EPA - ENVIRONMENTAL PROTECTION AGENCY
  16. IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
  17. NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
  18. IECC - INTERNATIONAL ENERGY CONSERVATION CODE
  19. ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

5. PERMITS, FEES AND INSPECTIONS

- THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS, PAY FOR ALL GOVERNMENT, STATE SALES TAXES AND APPLICABLE FEES. THE CONTRACTOR SHALL FILE ALL DRAWINGS, COMPLETE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS FROM THE PROPER AUTHORITY OR AGENCY HAVING JURISDICTION. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION COVERING WORK. THE CONTRACTOR SHALL SEE THAT ALL REQUIRED INSPECTIONS AND TESTS ARE MADE AND SHALL COOPERATE TO MAKE THESE TESTS AS THOROUGH AND AS READILY MADE AS POSSIBLE.

6. MATERIALS AND WORKMANSHIP

- ALL MATERIALS AND APPARATUS REQUIRED FOR THE WORK, EXCEPT AS OTHERWISE SPECIFIED, SHALL BE NEW AND OF FIRST-CLASS QUALITY. IT SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED, FINISHED IN EVERY DETAIL AND SO SELECTED AND ARRANGED AS TO FIT PROPERLY INTO THE BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY MATERIAL IS GIVEN, A FIRST-CLASS STANDARD ARTICLE AS ACCEPTED BY THE ENGINEER SHALL BE FURNISHED.
- ALL EQUIPMENT AND MATERIALS SHALL BE SPECIFICATION GRADE AND BEAR THE UNDERWRITER'S LABEL. NO SUBSTITUTE OR ALTERNATE EQUIPMENT, MATERIAL, ETC. WILL BE CONSIDERED FOR THIS PROJECT.
- ALL WORK SHALL BE OF A QUALITY CONSISTENT WITH GOOD TRADE PRACTICE AND SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. THE ENGINEER/OWNER RESERVES THE RIGHT TO REJECT ANY WORK WHICH, IN HIS OPINION, HAS BEEN INSTALLED IN A SUBSTANDARD, DANGEROUS OR IN A UNSERVICEABLE MANNER. THE CONTRACTOR SHALL REPLACE REJECTED WORK IN A SATISFACTORY MANNER AT NO EXTRA COST TO THE OWNER.

7. GUARANTEES

- ALL WORKMANSHIP AND MATERIALS SHALL BE FULLY GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE ENTIRE INSTALLATION COVERED BY THIS CONTRACT. SHOULD ANY DEFECTS OCCUR DURING THE GUARANTEED PERIOD, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL DEFECTIVE EQUIPMENT, MATERIAL AND/OR WORK AT NO EXTRA CHARGE TO THE OWNER.

8. RECORD DRAWINGS

- MAINTAIN, AT THE JOB SITE, A SET OF ELECTRICAL DRAWINGS INDICATING ALL CHANGES IN LOCATION OF THE EQUIPMENT, PANELS, DEVICES, ETC. FROM THE ORIGINAL LAYOUT. CLEARLY MARK IN RED ALL CHANGES ON THE DRAWINGS. AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL TURN OVER THE RECORD DRAWINGS TO THE ENGINEER/OWNER.

9. COORDINATION

- ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE.

10. SHOP DRAWINGS

- SUBMIT ELECTRONIC COPIES FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SPECIFIED. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMISSION TO THE ENGINEER FOR REVIEW. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL CONTRACTOR HAS IN THEIR POSSESSION, APPROVED SHOP DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFIC WITH ITEMS SUBMITTED FOR APPROVAL CLEARLY IDENTIFIED.
- THE FOLLOWING IS A LIST OF ELECTRICAL ITEMS THAT MUST BE SUBMITTED FOR REVIEW:
  1. FIRE ALARM CONTROL PANEL
  2. FIRE ALARM ANNUNCIATOR PANEL
  3. DEVICES (SMOKE DETECTORS, HEAT DETECTORS, PULLSTATIONS, HORN/STROBES, ETC.)
  4. WIRING
  5. CONDUIT

11. EQUIPMENT PROTECTION

- PROPERLY AND COMPLETELY PROTECT AGAINST ALL DAMAGE, ALL APPARATUS, EQUIPMENT, ETC., INCLUDED IN THIS CONTRACT. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO FURNISHED APPARATUS, EQUIPMENT, ETC., UNTIL FINAL ACCEPTANCE.

12. PROPERTY PROTECTION

- THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY AND/OR REQUIRED TO PROTECT OWNER'S PROPERTY WITHIN THE WORKING AREAS FROM DUST, DEBRIS AND OTHER MATTER GENERATED BY THE WORK. NO WORK SHALL COMMENCE IN AREAS WHERE PROTECTION IS REQUIRED UNTIL APPROVAL HAS BEEN GIVEN TO THE CONTRACTOR BY THE OWNER.

13. MANUFACTURER'S INSTRUCTION

- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS FOR PROPER OPERATION AND MAINTENANCE.

14. EQUIPMENT PAINTING AND CLEANING

- THOROUGHLY CLEAN ALL EQUIPMENT, DEVICES, AND ENCLOSURES UPON COMPLETION OF ALL WORK. REPAINT ANY EQUIPMENT WHOSE FINISH IS DAMAGED OR RUSTED. MATCH MANUFACTURER'S ORIGINAL FINISH.

15. PENETRATION SEALANT

- ALL PENETRATIONS SHALL BE SEALED WITH 3M INTUMESCENT FIRE BARRIER PENETRATION SEALANT, APPLIED PER MANUFACTURER'S AND U.L. GUIDELINES.

16. CUTTING, PATCHING, REPAIRING AND PAINTING

- THE GENERAL CONTRACTOR SHALL PERFORM ALL CUTTING, PATCHING, REPAIRING AND PAINTING FOR ALL ELECTRICAL ITEMS AND EQUIPMENT CALLED FOR UNDER THIS CONTRACT.

17. FIRE STOPS AND SEALS

- PENETRATIONS THROUGH FIRE-RATED WALLS, CEILING OR FLOORS IN WHICH CABLES OR CONDUITS PASS SHALL BE FILLED SOLIDLY BY U.L. APPROVED FIRE-STOP MATERIALS, CLASSIFIED FOR AN HOUR RATING EQUAL TO THE FIRE RATING OF THE WALL, CEILING OR FLOOR. PROVIDE TO 3M BRAND FIRE BARRIER CP25WB CAULK OR APPROVED EQUIVALENT.
- SEALING BUSHINGS SHALL BE USED ON CONDUIT AND CABLE ENDS TO EFFECTIVELY PREVENT THE INTRUSION OF WATER, A DAMP OR CORROSIVE ATMOSPHERE, DRAFT OR DUST.

18. ACCESS PANELS

- THE CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS AND DOORS AS REQUIRED FOR ACCESS TO INACCESSIBLE PULLBOXES, JUNCTION BOXES AND OTHER SPECIALTIES.
- THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ACCESS PANELS AND DOORS WITH THE GENERAL CONTRACTOR AND OTHER TRADES. FINAL LOCATIONS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

19. TEMPORARY LIGHTING

- FURNISH AND INSTALL TEMPORARY LIGHTING USE BY ALL TRADE CONTRACTORS DURING THE COURSE OF CONSTRUCTION. ALL TEMPORARY WORK SHALL BE DONE IN COMPLIANCE WITH ALL APPLICABLE ARTICLES IN THE NATIONAL ELECTRICAL CODE, O.S.H.A. AND WITH ALL REQUIREMENTS OF ANY AUTHORITY HAVING JURISDICTION OVER THE WORK.

PART 2 – PRODUCTS
PRODUCTS

DESCRIPTION

- ALL MATERIALS AND EQUIPMENT PROVIDED UNDER THIS SECTION SHALL BE NEW, FIRST GRADE, BEST OF THEIR RESPECTIVE KINDS AND IN NO WAY SHALL THEY BE LESS THAN THE QUALITY AND INTENT SET FOURTH UNDER THIS SECTION. THEY SHALL MEET THE REQUIREMENTS OF ALL STANDARDS SET UP TO GOVERN THE MANUFACTURER OF ELECTRICAL MATERIALS AND COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.

1. FIRE ALARM WIRE AND CABLE

- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
  1. COMMSCOPE, INC.
  2. SUPERIOR ESSEX INC.
  3. WEST PENN WIRE.
- GENERAL WIRE AND CABLE REQUIREMENTS: NRTL LISTED AND LABELED AS COMPLYING WITH NFPA 70, ARTICLE 760. UNHEATED ATTIC AREAS SHALL BE DAMP LISTED CABLING.
- SIGNALING LINE CIRCUITS: TWISTED, SHIELDED PAIR, NOT LESS THAN NO. 18 AWG. MC FIRE ALARM CABLING.
- NON-POWER-LIMITED CIRCUITS: SOLID-COPPER CONDUCTORS WITH 600-V RATED, 75 DEG C, COLOR-CODED INSULATION. MC FIRE ALARM CABLING.
- LOW-VOLTAGE CIRCUITS: NO. 16 AWG, MINIMUM.
- LINE-VOLTAGE CIRCUITS: NO. 12 AWG, MINIMUM.

2. WIRING METHOD
- INSTALL ALL WIRING IN METAL PATHWAYS AND WIREWAYS.
- MINIMUM CONDUIT SIZE SHALL BE 3/4 INCH (21 MM).
- INSTALL CABLE, CONCEALED IN ACCESSIBLE CEILINGS, WALLS, AND FLOORS WHEN POSSIBLE.

3. FIRE ALARM WIRING INSTALLATION
- COMPLY WITH NECA 1 AND NFPA 72.
- INSTALL PLENUM CABLE IN ENVIRONMENTAL AIR SPACES, INCLUDING PLENUM CEILINGS.
- FIRE ALARM CIRCUITS AND EQUIPMENT CONTROL WIRING ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN A DEDICATED PATHWAY SYSTEM. THIS SYSTEM SHALL NOT BE USED FOR ANY OTHER WIRE OR CABLE.

4. SIGNALING LINE CIRCUITS
- POWER-LIMITED FIRE ALARM CABLES MAY BE INSTALLED IN THE SAME CABLE OR PATHWAY AS SIGNALING LINE CIRCUITS, PURSUANT TO THE MANUFACTURER'S APPROVAL.
- WIRING WITHIN ENCLOSURES: SEPARATE POWER-LIMITED AND NON-POWER-LIMITED CONDUCTORS AS RECOMMENDED BY MANUFACTURER. INSTALL CONDUCTORS PARALLEL WITH OR AT RIGHT ANGLES TO SIDES AND BACK OF THE ENCLOSURE. BUNDLE, LACE, AND TRAIN CONDUCTORS TO TERMINAL POINTS WITH NO EXCESS. CONNECT CONDUCTORS THAT ARE TERMINATED, SPLICED, OR INTERRUPTED IN ANY ENCLOSURE ASSOCIATED WITH THE FIRE ALARM SYSTEM TO TERMINAL BLOCKS. MARK EACH TERMINAL ACCORDING TO THE SYSTEM'S WIRING DIAGRAMS. MAKE ALL CONNECTIONS WITH APPROVED CRIMP-ON TERMINAL SPADE LUGS, PRESSURE-TYPE TERMINAL BLOCKS, OR PLUG CONNECTORS.

5. CABLE TAPS
- USE NUMBERED TERMINAL STRIPS IN JUNCTION, PULL, AND OUTLET BOXES, CABINETS, OR EQUIPMENT ENCLOSURES WHERE CIRCUIT CONNECTIONS ARE MADE.
- COLOR CODING: COLOR CODE FIRE ALARM CONDUCTORS DIFFERENTLY FROM THE NORMAL BUILDING POWER WIRING. USE ONE COLOR CODE FOR ALARM CIRCUIT WIRING AND ANOTHER FOR SUPERVISORY CIRCUITS. COLOR CODE AUDIBLE ALARM-INDICATING CIRCUITS DIFFERENTLY FROM ALARM-INITIATING CIRCUITS. USE DIFFERENT COLORS FOR VISIBLE ALARM-INDICATING DEVICES. PAINT FIRE ALARM SYSTEM JUNCTION BOXES AND COVERS RED.
- WIRING TO REMOTE ALARM TRANSMITTING DEVICE: 1-INCH (25-MM) CONDUIT BETWEEN THE FIRE ALARM CONTROL PANEL AND THE TRANSMITTER. INSTALL NUMBER OF CONDUCTORS AND ELECTRICAL SUPERVISION FOR CONNECTING WIRING AS NEEDED TO SUIT MONITORING FUNCTION.

6. ELECTRIC METALLIC TUBING (EMT)

- ELECTRICAL METALLIC TUBING SHALL BE GALVANIZED THIN WALL STEEL CONDUIT. MANUFACTURED BY TRIANGLE WIRE AND CABLE, ALLIED TUBE AND CONDUIT, REPUBLIC OR STEELDUCT. THE CONNECTORS AND COUPLINGS SHALL BE HEAVY DUTY, STEEL-ZINC PLATED, SET SCREW TYPE
- CONDUIT BODIES FOR ELECTRICAL METALLIC TUBING (EMT) SHALL BE CAST ALUMINUM-ALUMINUM ENAMEL FINISH WITH SET SCREW HUBS AND ALUMINUM COVER.
- INSULATION BUSHINGS SHALL BE HIGH IMPACT THERMOPLASTIC PHENOLIC WITH 150 DEG. C. UL TEMPERATURE RATING.
- INSULATED GROUNDING BUSHINGS SHALL BE MALLEABLE IRON ZINC PLATED WITH MOLDED ON PHENOLIC INSULATION AND LAY-IN GROUNDING LUG.
- CONDUIT LOCKNUTS SHALL BE HEAVY NUT STOCK STEEL-ZINC PLATED.
- OFFSET NIPPLES SHALL BE MALLEABLE IRON ZINC PLATED WITH RIGID CONDUIT THREADING AND 3/4" OFFSET.
- CONNECTORS AND COUPLINGS FOR ELECTRICAL METALLIC TUBING (EMT) SHALL BE HEAVY STEEL-ZINC PLATED WITH PRE-SET/PRE-SHAKED SET SCREWS.
- CONDUIT STRAPS SHALL BE SNAP-TYPE, DOUBLE RIBBED STEEL-ZINC PLATED.
- CONDUIT FITTINGS SHALL BE MANUFACTURED BY O/Z GEDNEY, CROUSE-HINDS OR APPLETON.

SUPPORT FITTINGS

- SUPPORT CHANNEL SHALL BE ROLL-FORMED #12 GAUGE STEEL, SOLID BASE OR BOLT HOLE BASE - HOT DIP GALVANIZED FINISH. COMPLETE WITH ANGLE FITTINGS, SPRING NUTS, CONDUIT SUPPORTS, 3/8" OR 1/2" THREADED RODS (SIZE REQUIRED FOR LOAD), ETC.

CABLE TIES

- CABLE TIES SHALL BE FABRICATED OF ONE-PIECE HALLAR WITH NO METAL PARTS. MANUFACTURED BY BURNDY, T&B, PANDUIT OR BLACKBURN.

OUTLET BOXES

- SHALL BE GALVANIZED STEEL, FLUSH OR SURFACE MOUNTED AND OF PROPER TYPE AND SIZE AS REQUIRED FOR THE PARTICULAR APPLICATION. SIZE AND TYPE DICTATED BY THE NUMBER OF DEVICES, NUMBER OF CONDUCTORS AND WIRING METHOD UTILIZED. BOXES SHALL BE ADEQUATE SIZE FOR THE INSTALLATION OF CONDUCTORS WITHOUT EXCESSIVE BENDING OR CRIMPING OF THE CONDUCTORS AND DAMAGING OF CONDUCTOR INSULATION. MANUFACTURED BY STEEL CITY OR RACO.
- OUTLET BOXES SHALL BE SECURED FIRMLY IN PLACE TO THE BUILDING STRUCTURE AND SET TRUE AND SQUARE. PROVIDE SUITABLE MEANS TO SUPPORT OUTLET BOX TO TAKE THE WEIGHT OF THE LIGHTING FIXTURE OR DEVICE. OUTLET BOXED OR BOX EXTENSION RINGS SHALL BE SET FLUSH TO THE FINISHED WALL OR CEILING. BOXES MUST BE ATTACHED THAT THEY WILL NOT 'ROCK', 'SHIFT' OR 'MOVE IN AND OUT' WHEN DEVICES ARE USED. IN NO CASE SHALL BOXES BE INSTALLED BACK-TO-BACK IN A COMMON WALL DIVIDING TWO SPACES.
- WHERE MORE THAN ONE DEVICE IS SHOWN OR SPECIFIED TO BE THE SAME ELEVATION OR ONE ABOVE THE OTHER, ALIGN THEM EXACTLY ON CENTER LINES HORIZONTALLY OR VERTICALLY.

JUNCTION BOXES, PULLBOXES AND WIREWAYS

- JUNCTION BOXES, PULLBOXES AND WIREWAYS SHALL BE OF PROPER TYPE AND SIZES AS REQUIRED. CODE GAUGE, GALVANIZED STEEL WITH KNOCKOUTS AND FLANGES TO RECEIVE THE COVERS. COVERS SHALL BE FLAT, OF THE SAME MATERIAL AS THE BOX AND FASTENED TO THE BOX WITH MACHINE SCREWS. MANUFACTURED BY HOFFMAN, SQUARE 'D', OR LEE PRODUCTS.

NOTIFICATION APPLIANCES:

- MANUFACTURERS: COMPATIBLE WITH CONTROL PANEL, SUBJECT TO THE FOLLOWING REQUIREMENTS:
- GENERAL REQUIREMENTS FOR NOTIFICATION APPLIANCES: CONNECTED TO NOTIFICATION-APPLIANCE SIGNAL CIRCUITS, ZONED AS INDICATED, EQUIPPED FOR MOUNTING AS INDICATED, AND WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS.
- COMBINATION DEVICES: FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY, EQUIPPED FOR MOUNTING AS INDICATED, AND WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS.
- HORNS: ELECTRIC-VIBRATING-POLARIZED TYPE, 24-V DC; WITH PROVISION FOR HOUSING THE OPERATING MECHANISM BEHIND A GRILLE. COMPLY WITH UL 464. HORNS SHALL PRODUCE A SOUND-PRESSURE LEVEL OF 90 DBA, MEASURED 10 FEET (3 M) FROM THE HORN, USING THE CODED SIGNAL PRESCRIBED IN UL 464 TEST PROTOCOL.
- VISIBLE NOTIFICATION APPLIANCES: XENON STROBE LIGHTS COMPLYING WITH UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH- (25-MM-) HIGH LETTERS ON THE LENS.
- RATED LIGHT OUTPUT:
  1. 15/30/75/110 CD, SELECTABLE IN THE FIELD.
  2. MOUNTING: WALL MOUNTED UNLESS OTHERWISE INDICATED.
- FOR UNITS WITH GUARDS TO PREVENT PHYSICAL DAMAGE, LIGHT OUTPUT RATINGS SHALL BE DETERMINED WITH GUARDS IN PLACE.
- FLASHING SHALL BE IN A TEMPORAL PATTERN, SYNCHRONIZED WITH OTHER UNITS.
- STROBE LEADS: FACTORY CONNECTED TO SCREW TERMINALS.
- MOUNTING FACEPLATE: FACTORY FINISHED, COLOR SHALL BE RED.

MANUAL FIRE-ALARM BOXES (PULL STATIONS)

- MANUFACTURERS: COMPATIBLE WITH CONTROL PANEL, SUBJECT TO THE FOLLOWING REQUIREMENTS:
- GENERAL REQUIREMENTS FOR MANUAL FIRE-ALARM BOXES: COMPLY WITH UL 38. BOXES SHALL BE FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS IN CONTRASTING COLOR; SHALL SHOW VISIBLE INDICATION OF OPERATION; AND SHALL BE MOUNTED ON RECESSED OUTLET BOX. IF INDICATED AS SURFACE MOUNTED, PROVIDE MANUFACTURER'S SURFACE BACK BOX.
- DOUBLE-ACTION MECHANISM REQUIRING TWO ACTIONS TO INITIATE AN ALARM, PULL-LEVER TYPE; WITH INTEGRAL ADDRESSABLE MODULE ARRANGED TO COMMUNICATE MANUAL-STATION STATUS (NORMAL, ALARM, OR TROUBLE) TO FIRE-ALARM CONTROL UNIT.
- STATION RESET: KEY- OR WRENCH-OPERATED SWITCH.

SYSTEM SMOKE DETECTORS

- MANUFACTURERS: COMPATIBLE WITH CONTROL PANEL, SUBJECT TO THE FOLLOWING REQUIREMENTS:
- GENERAL REQUIREMENTS FOR SYSTEM SMOKE DETECTORS:
- COMPLY WITH UL 268; OPERATING AT 24-V DC, NOMINAL.
- DETECTORS SHALL BE TWO-WIRE TYPE.
- BASE MOUNTING: DETECTOR AND ASSOCIATED ELECTRONIC COMPONENTS SHALL BE MOUNTED IN A TWIST-LOCK MODULE THAT CONNECTS TO A FIXED BASE. PROVIDE TERMINALS IN THE FIXED BASE FOR CONNECTION TO BUILDING WIRING.
- SELF-RESTORING: DETECTORS DO NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.
- INTEGRAL VISUAL-INDICATING LIGHT: LED TYPE, INDICATING DETECTOR HAS OPERATED AND POWER-ON STATUS.
- REMOTE CONTROL: UNLESS OTHERWISE INDICATED, DETECTORS SHALL BE DIGITAL-ADDRESSABLE TYPE, INDIVIDUALLY MONITORED AT FIRE-ALARM CONTROL UNIT FOR CALIBRATION, SENSITIVITY, AND ALARM CONDITION.
- DETECTOR ADDRESS SHALL BE ACCESSIBLE FROM FIRE-ALARM CONTROL UNIT AND SHALL BE ABLE TO IDENTIFY THE DETECTOR'S LOCATION WITHIN THE SYSTEM AND ITS SENSITIVITY SETTING.
- AN OPERATOR AT FIRE-ALARM CONTROL UNIT, HAVING THE DESIGNATED ACCESS LEVEL, SHALL BE ABLE TO MANUALLY ACCESS THE FOLLOWING FOR EACH DETECTOR:
  1. PRIMARY STATUS.
  2. DEVICE TYPE.
  3. PRESENT AVERAGE VALUE.
  4. SENSOR RANGE (NORMAL, DIRTY, ETC

CARBON MONOXIDE DETECTORS

- GENERAL: CARBON MONOXIDE DETECTOR LISTED FOR CONNECTION TO FIRE-ALARM SYSTEM.
- MOUNTING: ADAPTER PLATE FOR OUTLET BOX MOUNTING.
- TESTABLE BY INTRODUCING TEST CARBON MONOXIDE INTO THE SENSING CELL.
- DETECTOR SHALL PROVIDE ALARM CONTACTS AND TROUBLE CONTACTS.
- DETECTOR SHALL SEND TROUBLE ALARM WHEN NEARING END-OF-LIFE, POWER SUPPLY PROBLEMS, OR INTERNAL FAULTS.
- COMPLY WITH UL 2075.
- LOCATE, MOUNT, AND WIRE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PROVIDE MEANS FOR ADDRESSABLE CONNECTION TO FIRE-ALARM SYSTEM.
- TEST BUTTON SIMULATES AN ALARM CONDITION

HEAT DETECTORS
- MANUFACTURERS: COMPATIBLE WITH CONTROL PANEL, SUBJECT TO THE FOLLOWING REQUIREMENTS:
- GENERAL REQUIREMENTS FOR HEAT DETECTORS: COMPLY WITH UL 521.
- TEMPERATURE SENSORS SHALL TEST FOR AND COMMUNICATE THE SENSITIVITY RANGE OF THE DEVICE.
- HEAT DETECTOR, COMBINATION TYPE: ACTUATED BY EITHER A FIXED TEMPERATURE OF 135 DEG F (57 DEG C) OR A RATE OF RISE THAT EXCEEDS PER MINUTE UNLESS OTHERWISE INDICATED.
- MOUNTING: ADAPTER PLATE FOR OUTLET BOX MOUNTING.
- INTEGRAL ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO FIRE-ALARM CONTROL UNIT.
- HEAT DETECTOR, FIXED-TEMPERATURE TYPE: ACTUATED BY TEMPERATURE THAT EXCEEDS A FIXED TEMPERATURE OF 194 DEG F (89 DEG C).
- MOUNTING: ADAPTER PLATE FOR OUTLET BOX MOUNTING.
- REMOTE ADDRESSABLE MODULE: ARRANGED TO COMMUNICATE DETECTOR STATUS (NORMAL, ALARM, OR TROUBLE) TO FIRE-ALARM CONTROL UNIT.

FIRE ALARM CONTOL PANEL

- MANUFACTURERS: SUBJECT TO THE FOLLOWING REQUIREMENTS, APPROVED MANUFACTURERS ARE:
  1. FIRE-LITE
  2. HONEYWELL
- DIGITAL, FULLY-ADDRESSABLE SYSTEM
- CONNECT UP TO 17 PANELS WITH CONVENIENT SINGLE POINT VIABILITY. COPPER WIRE OR FIBER OPTIC CABLE PANEL CONNECTIVITY CAN BE USED WITHIN THE SAME LINKED SYSTEM. COMPATIBLE FACPS CAN BE LINKED WITHIN ONE SYSTEM
- BUILT-IN DUAL PATH IP AND POTS COMMUNICATION FOR RELIABLE DUAL PATH BACKUP
- BUILT-IN USB INTERFACE FOR CONVENIENT AND SPEEDY PROGRAMMING
- SWIFT® CAPABLE FOR WIRELESS DETECTION -- PERFECT FOR HARD-TO-WIRE INSTALLS
- FIELD-UPGRADEABLE FIRMWARE SAVES TIME AND MONEY - NO NEED TO RETURN PANELS FOR UPDATES
- SUPPORTS UP TO 12 REMOTE ANNUNCIATORS FOR CONVENIENT AND EFFICIENT SYSTEM STATUS REPORTING
- LARGE EASY-USE KEYPAD AND 4 X 20 - 80 CHARACTER DISPLAY
- INCLUDES ACCESS TO JUMPSTART™, HFSS PROGRAMMING SOFTWARE AND THE SKST SELECTION TOOL
- NAC CIRCUITS: 4; 6 AMPS POWER SUPPLY
- SUPPORTS CLASS B (STYLE 4) AND CLASS A (STYLE 6) CONFIGURATION FOR SLC, SBUS, AND FLEXPUT CIRCUIT

FIRE ALARM REMOTE ANNUNICATOR

- MANUFACTURERS: SUBJECT TO THE FOLLOWING REQUIREMENTS, APPROVED MANUFACTURERS ARE:
  1. FIRE-LITE
  2. HONEYWELL
- 80 CHARACTER DISPLAY, MIMIC SAME FUNCTION AS FACP

PART 3 - EXECUTION
EXECUTION

1. INSTALLATION

- ALL WORK, MATERIALS AND MANNER OF INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.
- ALL CONDUIT AND WIRING SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED.
- EXPOSED WIRING SHALL BE INSTALLED USING EMT.

2. RACEWAYS

- RACEWAYS, ENCLOSURES AND BOXES SHALL BE MECHANICALLY JOINED TO FORM A CONTINUOUS ELECTRICAL PATH.
- THE CONTRACTOR SHALL PROVIDE APPROVED TYPE PULL BOXES AS REQUIRED.
- MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- FURNISH NYLON PULL STRINGS IN ALL EMPTY CONDUIT RUNS.
- FURNISH LOCKNUTS AND BUSHINGS FOR ALL CONDUIT TERMINATIONS IN ALL OUTLET BOXES, PANELS, PULL BOXES, CONDUIT STUBS, ETC.
- ALL CONDUIT SHALL BE INSTALLED IN PARALLEL AND PERPENDICULAR TO THE BUILDING LINES.
- ALL CONDUIT SHALL BE SUPPORTED USING CADMIUM PLATED CONDUIT STRAPS AND HANGERS.

3. WIRING

- PROVIDE WIRING TO ALL OUTLETS, EQUIPMENT, APPARATUS AND OTHER SPECIALTIES UNDER THIS DIVISION THAT WHICH FURNISHED OR PROVIDED UNDER OTHER DIVISIONS OR BY THE OWNER.
- CONDUCTOR WITHIN PANELBOARDS, JUNCTION BOXES, TROUGHS AND OTHER EQUIPMENT WHERE CONCENTRATIONS OF CONDUCTORS ARE ENCLOSED, SHALL BE NEATLY ARRANGED AND TIED WITH CABLE TIES.
- WIRING FOR DEVICES IN DRYWALL CONSTRUCTION AND ACCESSIBLE HUNG CEILING SPACE, MAY BE INSTALLED IN A METAL SHEATHED 'MC' TYPE CABLE WHERE APPROVED BY THE NEC AND THE AUTHORITY HAVING JURISDICTION. CABLE SHALL BE SUPPORTED FROM STRUCTURE 4" O.C. WITH APPROVED CABLE SUPPORTS. PROVIDE APPROPRIATE GROMMETS FOR HORIZONTAL RUNS IN METAL STUD PARTITIONS. CABLE SHALL NOT LAY ON CEILING STRUCTURE OR TILES. PROVIDE ANTI-SHORT BUSHINGS (RED HEAD) UNDER ARMOR JACKET AT TERMINATIONS.
- WIRING IN OUTLET BOXES, JUNCTION BOXES, OR EQUIPMENT SHALL HAVE A MINIMUM OF EIGHT (8") INCHES LENGTH LEADS FOR CONNECTING WIRING DEVICES TO MAKE UP CIRCUIT SPLICES.
- INSTALL COPPER GREEN INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS AND RACEWAYS.

4. SPLICING

- SPLICING SHALL BE DONE WITH INSULATED OR NON-INSULATED CONNECTORS OF APPROPRIATE TYPES AND CURRENT-CARRYING CAPACITY. NON-INSULATED CONNECTORS SHALL BE WRAPPED WITH INSULATING TAPE TO THE THICKNESS OF THE INSULATION OF THE CONDUCTORS BEING SPLICED. ELECTRICAL TAPE SHALL BE 3M OR SUPER 88 SCOTCH VINYL FLAME-RETARDANT , COLD AND WEATHER RESISTANT.
- SPLICES FOR CONDUCTORS, SIZES #10 AWG OR SMALLER SHALL BE MADE WITH U.L. LISTED SPRING-TYPE CONNECTORS OR APPROPRIATE CURRENT CARRYING CAPACITY.
- SPLICES, TAPS AND TERMINALS FOR CONDUCTORS #8 AWG OR LARGER SHALL BE MADE WITH U.L. LISTED BOLTED PRESSURE CONNECTORS OF BRONZE OR COPPER CONSTRUCTION, OF APPROPRIATE CURRENT CARRYING CAPACITY. EQUAL TO O/Z GEDENY, BURNDY OR BLACKBURN.

5. CONDUCTOR IDENTIFICATION

- CONDUCTORS SHALL HAVE A COLOR-CODED INSULATION.

6. IDENTIFICATION

- FURNISH AND INSTALL NAMEPLATES FOR ALL FIRE ALARM CONTROL PANELS AND DEVICES, IDENTIFYING ITEMS BY NAME, FUNCTION AND/OR CONTROL.
- USE PLASTIC-COATED WIRE MARKERS OF THE SELF-ADHESIVE. WRAPAROUND TYPE WITH PERMANENT FACTORY-PRINTED NUMBER, LETTERS AND SYMBOLS.
- WIRE MARKERS SHALL BE SECURELY ATTACHED AT BOTH ENDS, IDENTIFYING PANEL AND CIRCUIT BREAKER NUMBERS.
- ALL CONDUCTORS SHALL BE PERMANENTLY TAGGED AT TIME OF INSTALLATION. LABELS SHALL BE EQUAL TO T&B, PANDUIT OR IDEAL.

7. GROUNDING

- ALL WORK SHALL BE GROUNDED AND BONDED IN FULL CONFORMANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE AND LOCAL REQUIREMENTS.

END OF ELECTRICAL SPECIFICATIONS

edm

architecture • engineering • management

pittsfield, ma
unionville, ct
troy, ny

(888) 336-6500
team@edm-ae.com

consultants:

design by: EJM
drawn by: TST
checked by: EJM
approved by: EJM

WORCESTER MEMORIAL AUDITORIUM

1 LINCOLN SQUARE
WORCESTER, MA
01605

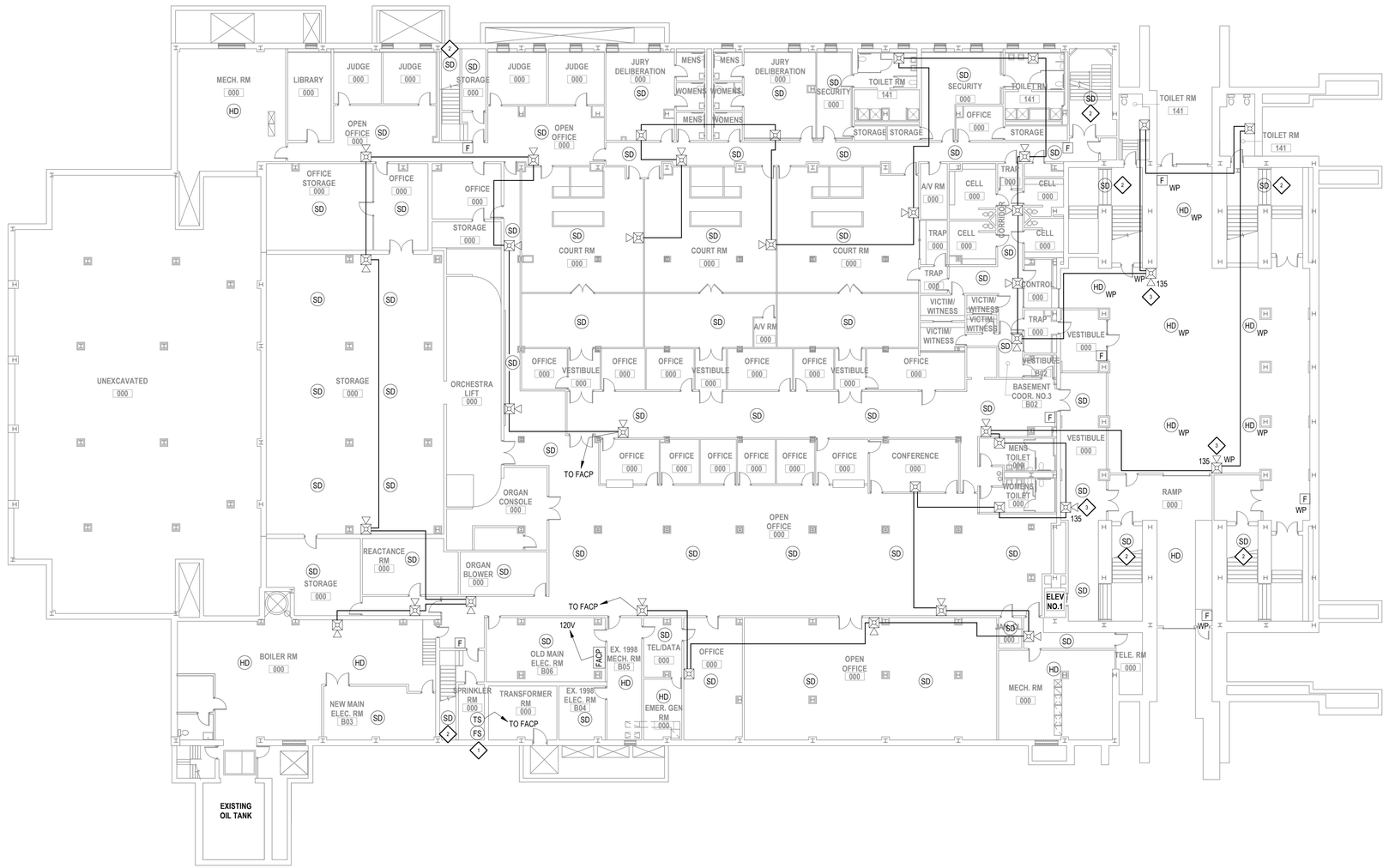
keyplan:

issue / rev.:	date:	issued for:	by:

fire alarm specifications

date: june 8, 2021
project number: cow-5705
scale: 12" = 1'-0"
drawing number:

FA-002



1 basement - fire alarm plan

1/16" = 1'-0"

fire alarm general notes

1. LOCATE FA ANNUNCIATOR ON 1ST FLOOR PER FIRE MARSHALS DIRECTION.
2. ALL INITIATING CIRCUIT (SLC LOOP) WIRING TO BE 2-#14, TWISTED SHIELDED PAIR IN CONDUIT.
3. ALL NOTIFICATION APPLIANCE CIRCUIT WIRING TO BE 2-#14 MINIMUM IN CONDUIT.
4. PROVIDE WEATHERPROOF HORN & STROBE OUTSIDE AT ENTRANCE WHERE FA ANNUNCIATOR IS LOCATED.
5. ALL STROBES ARE RATED AT 75 CANDELA, UNLESS NOTED OTHERWISE.
6. PROVIDE WIRING FROM FACP TO ANNUNCIATOR.
7. PROVIDE PANEL PROGRAMMING AS REQUIRED.
8. SHOP DRAWINGS SHALL INDICATED BATTERY CALCULATIONS & WIRING DETAILS.
9. PROVIDE TWO TELEPHONE LINES TO FACP FOR COMMUNICATION.

fire alarm keyed notes

1. TIE IN (2) WATER FLOW SWITCHES AND (3) TAMPER SWITCHES LOCATED IN THE SPRINKLER ROOM TO THE NEW FIRE ALARM CONTROL PANEL..
2. SMOKE DETECTOR LOCATED AT 1ST FLOOR LANDING.
3. 135 CANDELA RATED STROBE.

edm
architecture • engineering • management
pittsfield, ma
unionville, ct
troy, ny
(888) 336-6500
team@edm-ae.com

consultants:

COMMONWEALTH OF MASSACHUSETTS
ERNEST J. MALAFRONTE, JR
NO. 39899
REGISTERED PROFESSIONAL ENGINEER

design by: EJM | drawn by: TST
checked by: EJM
approved by: EJM

WORCESTER MEMORIAL AUDITORIUM

1 LINCOLN SQUARE
WORCESTER, MA
01605

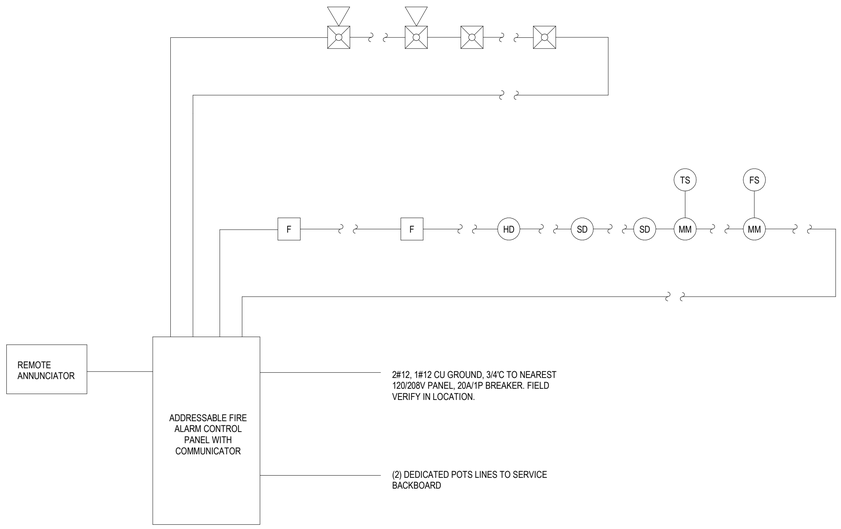
keyplan:

issue / rev.:	date:	issued for:	by:

basement fire alarm plan

date: june 8, 2021
project number: cow-5705
scale: 1/16" = 1'-0"
drawing number:

FA-101



1 fire alarm riser diagram
3/4" = 1'-0"

fire alarm device schedule

SYMBOL	DESCRIPTION	MANUFACTURER	NOTES
FACP	FIRE ALARM CONTROL PANEL - ADDRESSABLE WITH COMMUNICATOR	FIRE LITE #FL-ES200X	
ANN	ANNUNCIATOR - 80 CHARACTER DISPLAY	FIRELITE #ANN-80	
SD	SMOKE DETECTOR, ADDRESSABLE	FIRELITE #SD355	
HD	HEAT DETECTOR, ADDRESSABLE	FIRELITE #HD355	
F	MANUAL PULL STATION, DUAL ACTION, ADDRESSABLE	FIRELITE #BG-12LX	
XXX	HORN/STROBE COMBINATION	FIRELITE #SR-P-75 CANDELA #SRH-P-135 CANDELA	
	STROBE LIGHT, WALL MOUNT	FIRELITE #P2R	

NOTES:
1. REFER TO FIRE ALARM LEGEND DRAWING FAN-001 FOR ANY DEVICES NOT INDICATED ON THIS SCHEDULE

fire alarm riser notes

1. FIRE ALARM PARTIAL RISER DIAGRAM IS DIAGRAMMATIC - THE ELECTRICAL CONTRACTOR SHALL REFER TO PROJECT DRAWINGS FOR QUANTITY AND LOCATION OF DEVICES.
2. REFER TO SYMBOL LEGEND FOR FIRE ALARM DEVICE INFORMATION.
3. SECONDARY POWER SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72 TO PROVIDE POWER FOR A MINIMUM OF 24 HOURS STAND-BY AND 5 MINUTES ALARM.
4. ALL INSTALLATION WORK SHALL CONFORM WITH THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA 72, NATIONAL FIRE ALARM CODE AND THE 2015 INTERNATIONAL BUILDING CODE.
5. ALL INITIATING DEVICES, CONTROL MODULES, MONITOR MODULES, NOTIFICATION APPLIANCES AND ALL OTHER EQUIPMENT SHALL BE INSTALLED ON STANDARD ELECTRICAL NBACK BOXES THAT ARE SECURED TO THE BUILDING STRUCTURE.
6. AUDIBLE AND/OR VISUAL NOTIFICATION APPLIANCES SHALL HAVE THE SAME STYLE ACK BOX AND BE INTERCHANGEABLE.
7. FIRE ALARM LAYOUT SHOWN ON CONTRACT DOCUMENTS IS TO SHOW DESIGN INTENT ONLY.
8. ALL INITIATING DEVICES AND NOTIFICATION APPLIANCES SHALL BE UL/FM LISTED FOR THEIR INTENDED USE AND SHALL BE COMAPATIBLE WITH THE FIRE ALARM CONTROL PANEL.
9. FIRE ALARM SIGNALING SYSTEM NOTIFYING AUDIO STROBE COVERAGE IS PER NFPA-72 PUBLIC MODE, THE AMERICANS WITH DISABILITIES ACT(ADA) AND FIRE CODE FOR SPACING , CANDELA AND AUDIO ALARM AMPLITUDE.
10. WHEN FIRE ALARM SYSTEM IS ACTIVATED, ALL AUDIO STROBES SHALL COOPERATE IN A SYNCHRONIZED MANNER. ALARM FOR BUILDING EVACUATION AS DESCRIBED PER MASSACHUSSETTS BUILDING AND FIRE CODES, AND NFPA-72. ALL AUDIO/STROBES SHALL BE ADA APPROVED AND SYNCHRONIZED.
11. CLASS A WIRING IS REQUIRED FOR ALL DETECTION DEVICES AND NOTIFICATION APPLIANCES.
12. SYSTEM SHALL BE INSTALLED AND PROGRAMMED SO THAT UPON ACTIVATIONOF AN ALARM, TROUBLE OR SUPERVISORY SIGNAL AT THE FIRE ALARM CONTROL PANEL, A CORRESPONDING SIGNAL SHALL BE REPORTED TO A LISTED CENTRAL STATION MONITORING SERVICE OR THE MUNICIPLE FIRE DEPARTMENT.
13. REMOTE ANNUNCIATOR FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. MANUAL SWITCHING FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT, INCLUDING ACKNOWLEDGING, SILENCING, RESETTING, AND TESTING. DISPLAY TYPE AND FUNCTIONAL PERFORMANCE: ALPHANUMERIC DISPLAY AND LED INDICATING LIGHTS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT. PROVIDE CONTROLS TO ACKNOWLEDGE, SILENCE, RESET, AND TEST FUNCTIONS FOR ALARM, SUPERVISORY, AND TROUBLE SIGNALS.

edm
architecture
•
engineering
•
management
pittsfield, ma
unionville, ct
troy, ny
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fire alarm riser diagram

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FA-401