

DEPARTMENT OF VETERAN'S AFFAIRS
COLUMBIA, SOUTH CAROLINA

W.J.B. DORN VA MEDICAL CENTER
B10 Permanent Pump Acquisition Package

VA PROJECT #544-21-119

05/03/2022

ISSUED FOR

BID SET

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DRAWING INDEX

CIVIL (NOT USED)

STRUCTURAL (NOT USED)

ARCHITECTURAL (NOT USED)

FIRE PROTECTION

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PLUMBING (NOT USED)

MECHANICAL (NOT USED)

ELECTRICAL (NOT USED)

FIRE ALARM GENERAL NOTES

- THE CONTRACTOR WILL BE HELD RESPONSIBLE TO HAVE EXAMINED THE EXISTING SITE CONDITIONS FOR THE WORK INCLUDED UNDER THIS CONTRACT. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON THEIR PART.
- NO FIRE ALARM DOCUMENTS/PLANS SHALL BE USED FOR DEMOLITION AND INSTALLATION OF THIS SYSTEM UNLESS THEY CONTAIN A REVIEW AND APPROVAL STAMP FROM THE VA FIRE SAFETY AND A COMPLETED REVIEW BY THE ARCHITECT/ENGINEER. THE VA FIRE SAFETY OR ARCHITECT/ENGINEER HAS THE AUTHORITY TO STOP ANY WORK UNTIL SUCH PLANS ARE ON SITE AND IN USE.
- ALL FIRE ALARM DEVICE LOCATIONS SHALL BE COORDINATED WITH PLUMBING PIPING, MECHANICAL PIPING, MECHANICAL EQUIPMENT, SIGNS, AND OTHER MEP TRADES PRIOR TO CONSTRUCTION.
- THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE LAYOUTS, DEVICES COUNTS, CONDUCTOR TYPES, WIRING DIAGRAMS, I/O MATRIX, RISER DIAGRAMS, AND BATTERY CALCULATIONS SHALL BE SEALED BY AN PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA OR A NICET LEVEL III OR LEVEL IV FIRE ALARM DESIGNER.
- FLOORWALL PENETRATIONS THROUGH RATED SEPARATIONS SHALL BE SEALED WITH AN FM APPROVED FIRE RATED MATERIAL AND METHODS.
- WALL PENETRATIONS THROUGH NON-RATED PARTITIONS SHALL BE PROVIDED WITH A NON-SHRINKING GROUT OR CAULKING MATERIAL AND APPROVED ASSEMBLY.
- THE FIRE ALARM PLANS ARE FOR COORDINATION AND BIDDING PURPOSES ONLY. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN.
- THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS AND CEILING REQUIRED FOR THE INSTALLATION OF THE NEW FIRE SUPPRESSION SYSTEM.
- THE CIRCUIT WIRING SHALL BE SIZED AS FOLLOWS:
A. NOTIFICATION APPLIANCE CIRCUITS SHALL BE A MINIMUM OF #14 AWG.
B. SIGNAL LINE CIRCUITS SHALL BE MINIMUM OF #18 AWG AND MAXIMUM OF #14 AWG.
- THE FIRE ALARM SYSTEM SHALL BE AN ADDRESSABLE SYSTEM INCLUDING INDIVIDUALLY ADDRESSED DEVICES.
- THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO CONSTRUCTION. THE EXISTING FIRE ALARM EQUIPMENT AT BUILDING B10, PROTECTED PREMISE FIRE ALARM CONTROL PANEL AND THE MAIN FIRE ALARM CONTROL PANEL AT BUILDING 100, EMERGENCY COMMUNICATION CENTER NEEDS TO BE FIELD VERIFIED TO DETERMINE INTERFACE POINTS AND IF EXISTING TWO FIRE ALARM CONTROL PANEL(S) REQUIRES TO BE EXPANDED DUE TO THIS BUILDING CONSTRUCTION. THIS CONTRACTOR SHALL INCLUDE EXPANSION AND UPGRADE OF BATTERIES, IF EXISTING CONDITIONS WILL NOT MEET NFPA 72 WITH THE NEW ADDITION INTO THIS SCOPE OF WORK.
- FURNISH AND INSTALL END-OF-LINE RESISTORS AND CLEARLY MARK THE LOCATION OF THIS DEVICE.
- ALL FIRE ALARM SYSTEM COMPONENTS SHALL BE UL LISTED.
- FIRE ALARM SYSTEM SHALL INTERFACE WITH THE FIRE SUPPRESSION SYSTEM WHERE ZONING SHALL BE ON A PER FLOOR BASIS (E.G., ONE ZONE PER FLOOR).
- NATIONALLY RECOGNIZED CODES, AND THE VA DESIGN MANUAL REQUIREMENTS MUST USE THE REQUIREMENTS OF NFPA FOR CONFLICTS AND NOT THE MOST STRINGENT CODE OR VA DESIGN MANUALS.
- FOLLOWING THE FIRE ALARM SYSTEM INSTALLATION, A 100% FIRE ALARM SYSTEM ACCEPTANCE TEST SHALL BE CONDUCTED BY THE FIRE ALARM CONTRACTOR FOR THE SCOPE OF WORK SHOWN ON THESE DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, ENGINEER, OWNER AND ALL AUTHORITIES HAVING JURISDICTION WITHIN FOUR(4) WORKING DAYS OF THE TEST FOR SCHEDULING.
- ALL FIRE ALARM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 20, NFPA 70, NFPA 72, NFPA 101, VA FIRE PROTECTION DESIGN MANUAL AND PROJECT SPECIFICATION REQUIREMENTS.
- ALL INSTALLED FIRE ALARM DEVICES SHALL BE UL LISTED AND APPROVED FOR INSTALLATION WITH THE EXISTING TWO FIRE ALARM CONTROL PANELS. E.G., ONE IN THE FIRST FLOOR VESTIBULE AREA OF BUILDING B10 AND THE OTHER MAIN FIRE ALARM CONTROL PANEL IS LOCATED IN THE EMERGENCY COMMUNICATION CENTER OF BUILDING 100.
- ALL FIRE ALARM DEVICES SHALL BE ACCESSIBLE FOR PERIODIC INSPECTIONS, MAINTENANCE AND TESTING PURPOSES.
- ALL FIRE ALARM DEVICES SUBJECT TO MECHANICAL DAMAGE SHALL BE PROTECTED BY A MANUFACTURER'S APPROVED PROTECTIVE COVER/GUARD.
- THE FIRE ALARM CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS DURING THE INSTALLATION OF THE FIRE ALARM SYSTEM.
- A FIRE ALARM SYSTEM RECORD OF COMPLETION SHALL BE PRESENTED TO THE ARCHITECT, ENGINEER, AND VA FIRE SAFETY AT THE CONCLUSION OF THIS FIRE ALARM SYSTEM INSTALLATION.
- THE CONTRACTOR SHALL PROVIDE THE VA REPRESENTATIVE WITH OPERATING, TESTING, MAINTENANCE INSTRUCTION, SITE SPECIFIC SOFTWARE CHANGES/ADDITIONS, AND AS-BUILT DRAWINGS AT THE CONCLUSION OF THIS FIRE ALARM INSTALLATION.
- THE CONTRACTOR SHALL PROVIDE THE VA REPRESENTATIVE WITH MAINTENANCE AND TESTING SCHEDULE FOR ALL EQUIPMENT FURNISHED/INSTALLED UNDER THIS SCOPE OF WORK IN ACCORDANCE WITH NFPA 72 GUIDELINES.
- ALL FIRE ALARM CABLE SHALL BE INSTALLED WITHIN A CONDUIT AND PER NFPA 70 REQUIREMENT.
- ALL FIRE ALARM CABLE SHALL BE MONITORED FOR INTEGRITY IN ACCORDANCE WITH NFPA 70 AND NFPA 72 REQUIREMENTS.
- NATIONALLY RECOGNIZED CODES, AND THE VA DESIGN MANUAL REQUIREMENTS MUST USE THE REQUIREMENTS OF NFPA FOR CONFLICTS AND NOT THE MOST STRINGENT CODE OR VA DESIGN MANUALS.
- ALL FIRE ALARM CIRCUITS SHALL BE DURABLY MARKED AND LABELED WHERE THE IDENTIFICATION SHALL BE CLEARLY VISIBLE.
- ALL FIRE ALARM CABLE SHALL BE INSTALLED IN A CONDUIT IN A NEAT, WORKMAN LIKE MANNER.
- ALL FIRE ALARM CABLES SHALL BE INSTALLED IN A CONDUIT OR METALLIC RACEWAY AND BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE. FIRE ALARM CABLE SHALL NOT BE STRAPPED, TAPED OR ATTACHED BY ANY MEANS TO THE EXTERIOR OF ANY CONDUCTOR OTHER RACEWAY AS A MEANS OF SUPPORT.
- ALL FIRE ALARM CABLE INSTALLED IN A CONDUIT SHALL BE SUPPORTED BY STRAPS, HANGERS OR SIMILAR FITTING DESIGNED AND INSTALLED SO AS NOT TO DAMAGE THE CABLE.
- ALL FIRE ALARM CABLES INSTALLED IN A CONDUIT SHALL BE ACCESSIBLE; WHERE BUILDING FEATURES DO NOT PROVIDE ACCESSIBILITY, OR THE FIRE ALARM CABLE SHALL BE INSTALLED IN AN APPROVED CONDUIT/METAL RACEWAY.
- ALL WIRING SHALL BE SECURED TO THE STRUCTURE AS SPECIFIED IN NFPA 70.
- ALL CONDUIT/RACEWAY SHALL BE SECURED TO THE STRUCTURE AS SPECIFIED IN NFPA 70.
- THE FIRE ALARM SYSTEM SHALL BE TEST FREE OF GROUNDS.
- THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR DETERMINING CABLE FILL/CONDUIT SIZING PER NFPA 70 REQUIREMENTS (ALL FIRE ALARM CONDUIT SHALL BE A MINIMUM SIZE OF 3/4" INCH).
- A VOLTAGE DROP CALCULATION SHALL BE PERFORMED AND SUBMITTED BY THE FIRE ALARM CONTRACTOR FOR POWER CONSUMING CIRCUITS; IN ORDER TO VALIDATE THAT THE SYSTEM HAS BEEN DESIGNED WITHIN NFPA TOLERABLE LIMITS. NOTIFICATION APPLIANCE DEVICE CIRCUITS VOLTAGE DROP CALCULATIONS SHALL HAVE A MAXIMUM VOLTAGE DROP OF 15% AND A PREFERRED VOLTAGE DROP OF 10% MEETING NFPA 72, SECTION 10.3.5.

FIRE ALARM GENERAL NOTES

- ALL FIRE ALARM WIRING SHALL BE INSTALLED IN A CONDUIT/RACEWAYS SEPARATE FROM ALL OTHER SYSTEMS.
- MAINTAINABILITY:
1. EXTERNAL AND INTERNAL PARTS SHALL BE ARRANGED SO THAT, WHEN INSTALLED, ALL PARTS REQUIRING MANIPULATION, OBSERVATION, AND/OR MAINTENANCE ARE READILY ACCESSIBLE AND SAFE FOR OPERATION AND MAINTENANCE PERSONNEL. SPECIFY ANY MAINTENANCE ENVELOPES AND CLEARANCES AROUND INSTALLED EQUIPMENT. WHEREVER PRACTICAL, VALVES AND INSTRUMENTS SHALL BE LOCATED SUCH THAT THEY CAN BE OPERATED AND EASILY ACCESSED FROM GRADE LEVEL.
2. MAINTAINABILITY SHALL BE INCORPORATED INTO THE DESIGN OF ALL CONTRACTOR SUPPLIED EQUIPMENT. THE PRIMARY MAINTAINABILITY OBJECTIVE SHALL BE TO MINIMIZE THE COMPLEXITY AND TIME REQUIRED FOR MAINTENANCE. THE FOLLOWING GENERAL CRITERIA SHALL BE OF A LOW MAINTENANCE DESIGN AND SHALL BE EASILY MAINTAINABLE.
A. CONTRACTOR SUPPLIED EQUIPMENT SHALL BE OF LOW MAINTENANCE DESIGN AND SHALL BE EASILY MAINTAINABLE.
B. CONTRACTOR SUPPLIED EQUIPMENT SHALL BE DESIGNED TO BE MAINTAINED IN PLACE, IF POSSIBLE, WITH MINIMUM DISASSEMBLY OF SURROUNDING EQUIPMENT AND MINIMUM USAGE OF TEMPORARY SCAFFOLDING AND HANDLING EQUIPMENT.
- WIRING INSTALLED IN METAL RACEWAYS WITHIN BUILDINGS THAT ARE PROTECTED WITH 100% COMPLETE SPRINKLER COVERAGE SHALL BE CONSIDERED TO MEET THE REQUIREMENTS FOR PATHWAY SURVIVABILITY LEVEL 2 IN ACCORDANCE WITH NFPA 72 AS A 2-HOUR PERFORMANCE ALTERNATIVE THAT HAS BEEN APPROVED BY THE AUTHORITY HAVING JURISDICTION AND SHALL BE PERMITTED FOR VOICE COMMUNICATION SYSTEMS IN VA FACILITIES.
- WIRING FOR BUILDING FIRE ALARM SYSTEMS SHALL BE SPECIFIED AS DEFINED IN NFPA 72 AND AS FOLLOWS:
1. SIGNALING LINE CIRCUITS (SLC); CLASS B
2. INITIATING DEVICE CIRCUITS (IDC); CLASS B
3. COMMUNICATION BETWEEN BUILDING FIRE ALARM CONTROL UNITS (E.G., SUCH AS BETWEEN THE FIRE PUMP HOUSE AND BUILDING B10 LOCAL FIRE ALARM CONTROL PANEL, CLASS X
1. WHERE SIGNALING LINE CIRCUITS ARE RUN BETWEEN FIRE ALARM CONTROL UNITS IN SEPARATE BUILDING, FIBER OPTIC CIRCUITS SHALL BE FURNISHED/INSTALLED.
2. WHERE CLASS X COPPER CIRCUITS ARE INSTALLED, PROVIDE ISOLATION MODULES THAT WILL ENSURE THAT ONLY ONE BUILDING, E.G., THE FIRE PUMP HOUSE, BUILDING B10 OR BUILDING 100 WILL BE LOST (E.G., WILL NOT RESPOND) DURING ANY TYPE OF FAULT. IT IS REQUIRED THAT THE INSTALLATION OF CLASS X CIRCUITS BE RUN IN SEPARATE CONDUITS FROM EACH OTHER.
- COORDINATE FIRE ALARM ZONES WITH THE SPRINKLER ZONES ON A PER FLOOR BASIS.
- THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OTHER TRADES TO ELIMINATE CONFLICT WITH OTHER TRADES. ANY WORK INSTALLED BY THIS CONTRACTOR THAT RESULTS IN CONFLICT, DUE TO LACK OF COORDINATION BETWEEN TRADES, SHALL BE CHANGED AS DIRECTED BY THE ARCHITECT/ENGINEER WITHOUT ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR PROVIDING DESIGN SHOP DRAWINGS, CALCULATIONS, ETC., INCLUDING BUT NOT LIMITED TO ALL ITEMS WHICH APPLY AS OUTLINED IN NFPA 72 SECTIONS 7.2, 7.4 AND 7.5, TITLED, "MINIMUM REQUIRED DOCUMENTATION," "SHOP DRAWINGS (INSTALLATION DOCUMENTATION)," AND "COMPLETION DOCUMENTATION".
- ALL FIRE ALARM POWER CIRCUITS SHALL BE FED TO/FROM A LIFE SAFETY PANEL MEETING THE REQUIREMENTS OF NFPA 70 SECTION 517.32(C) WHERE A DEDICATED LIFE SAFETY BRANCH CIRCUIT SHALL SUPPLY POWER FOR FIRE ALARM PANELS, EXTENDER PANELS, ETC. FIRE ALARM SYSTEM SHALL NOT BE FED FROM A NORMAL POWER PANEL.
- THE FIRE ALARM CIRCUIT BREAKER IDENTIFICATION AND ACCESSIBILITY SHALL MEET THE REQUIREMENTS OF NFPA 72, SECTION 10.6.5.2 AND FIRE ALARM CIRCUIT BREAKER LOCK REQUIREMENTS STATED IN SECTION 10.6.5.4 & 10.6.5.5.
- ALL ALARM SUPERVISORY, AND DETECTION SYSTEMS SHALL BE CONNECTED TO THE EXISTING BUILDING B10 PROTECTED PREMISE FIRE ALARM CONTROL PANEL AND INTERFACED WITH THE MAIN FIRE ALARM CONTROL PANEL LOCATED IN BUILDING 100, EMERGENCY COMMUNICATION CENTER. ALL INTERFACES BETWEEN BUILDING B10 AND BUILDING 100 ARE EXISTING.
- 12 MULTIMODE FOR FIRE ALARM SYSTEM COMMUNICATIONS, TYPE OM1 ONLY.
- DISRUPTIONS TO FIRE ALARM AND SPRINKLER SYSTEMS SHALL BE KEPT TO A MINIMUM OR AVOIDED. DELINEATE PHASING OF CONSTRUCTION TO ENSURE THAT INSTALLATIONS OF NEW SYSTEMS ARE EXPEDITED, AND EXISTING SYSTEMS ARE KEPT IN SERVICE UNTIL THE REPLACEMENT SYSTEM IS OPERATIONAL. IF FIRE PROTECTION SYSTEMS ARE TO BE DISRUPTED, PROCEDURES SHALL BE INCORPORATED INTO THE DESIGN TO MAINTAIN EQUIVALENT LEVELS OF FIRE PROTECTION AND PROVIDE FORMAL NOTIFICATION TO THE FACILITY WHILE SYSTEMS ARE DOWN. FOR EXAMPLE, THE PROVISION OF A 24 HOUR FIRE WATCH BY QUALIFIED INDIVIDUALS PROVIDED BY THE CONTRACTOR MAY PROVIDE AN EQUIVALENT LEVEL OF FIRE PROTECTION DURING SYSTEM DISRUPTION IN SOME CIRCUMSTANCES.
- ACTIVATE FIRE PROTECTION AS IT IS INSTALLED.
- FIRE ALARM SYSTEM INSTALLATION SHOULD BE COORDINATED AND PLACED IN SERVICE PRIOR TO FINAL INSPECTION.
- MEANS OF NOTIFICATION REQUIRED THROUGHOUT CONSTRUCTION AREAS (NFPA 241 REQUIREMENT)
- TEMPORARY SYSTEM MAY BE DESIRED IF NEW SYSTEM CANNOT BE INSTALLED AS CONSTRUCTION PROGRESSES ONCE INSTALLED, SYSTEM SHOULD BE ON EVEN IF PENDING ACCEPTANCE.
- EXISTING FA SYSTEM SHOULD ALWAYS STAY ONLINE FOR DURATION OF PROJECT UNLESS:
1. TEMP FA SYSTEM INSTALLED
2. FIRE WATCH IMPLEMENTED THIS ALLOWS BUILDING TO BE PROTECTED WHILE NEW SYSTEM, DEVICES, WIRING, CONDUIT AND ALARM PANEL, ETC., IS INSTALLED.
- FIRE ALARM LIFE SAFETY SYSTEM TO BE FURNISHED/INSTALLED BY THIS CONTRACTOR SHALL BE MAINTAINED AS SOON AS REASONABLY PRACTICAL. COORDINATION WITH VA FIRE MARSHAL IS REQUIRED.

FIRE ALARM AND DETECTION NOTE

FIRE ALARM AND DETECTION PLANS ARE SHOWN FOR BIDDING PURPOSES. FIRE ALARM AND DETECTION CONTRACTOR IS TO SUBMIT SHOP DRAWING, FIRE ALARM CALCULATIONS MEETING NFPA 72 AND VA FIRE PROTECTION DESIGN MANUAL, ALL SHOP DRAWINGS AND CALCULATION ARE TO BE SIGNED, STAMPED AND SEALED BY EITHER A LICENSED FIRE PROTECTION ENGINEER IN THE STATE WHERE WORK WILL BE PERFORMED OR A NICET LEVEL III OR IV CERTIFICATION IN FIRE ALARM SYSTEM LAYOUT. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE VA REQUIREMENTS AND APPLICABLE CODES.

FIRE ALARM SYMBOLS

-  FIRE SUPPRESSION TAMPER SWITCH TO SPRINKLER SYSTEM; FIRE ALARM INTERFACE REQUIRED
-  FIRE SUPPRESSION WATER FLOW SWITCH TO SPRINKLER SYSTEM; FIRE ALARM INTERFACE REQUIRED
-  FIRE EXTINGUISHER, DRY CHEMICAL FOR ALL TYPES OF FIRES (EXCEPT METALS) ABC TYPE
-  COMBINATION SPEAKER / VISIBLE - CEILING MOUNT. CD = CANDELA RATING/ SETTING
-  FIRE ALARM TERMINAL CABINET
-  FIRE EXTINGUISHER STATION MODULE

FIRE EXTINGUISHER SCHEDULE

-  FIRE EXTINGUISHER MUST BE ENGAGE ENABLED INTELLIGENT FIRE EXTINGUISHER WITH MONITORING CAPABILITY. THE FIRE EXTINGUISHER WILL BE A 20 LB (120B-C) DRY CHEMICAL FOR USE AT THE FIRE PUMP HOUSE FOR EXTINGUISHMENT OF ELECTRICAL AND FLAMMABLE LIQUID INCIPENT FIRES.

DESIGN CODES, STANDARDS & PARTIES OF REFERENCE

THE FOLLOWING PUBLICATIONS AND AUTHORITIES HAVING JURISDICTION SHALL BE REFERENCED FOR THE DESIGN OF THE FIRE PROTECTION SYSTEM ON THIS PROJECT:

- ANSI A117.1 STANDARD, ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, 2017 EDITION
- ASCE 7 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2022 EDITION
- ASME A17.1 - SAFETY CODE FOR ELEVATORS AND ESCALATORS INCLUDES REQUIREMENTS FOR ELEVATORS, ESCALATORS, DUMBWAITERS, MOVING WALKS, MATERIAL LIFTS AND DUMBWAITERS WITH AUTOMATIC TRANSFER SWITCHES, 2019 EDITION
- INTERNATIONAL BUILDING CODE 2021 EDITION
- NFPA 1 - FIRE CODE, 2021 EDITION
- NFPA 10 - STANDARD FOR PORTABLE FIRE EXTINGUISHERS, 2022 EDITION
- NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2022 EDITION
- NFPA 20 - STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION, 2022 EDITION
- NFPA 70 - NATIONAL ELECTRIC CODE, 2020 EDITION
- NFPA 72 - NATIONAL FIRE ALARM & SIGNALING CODE, 2022 EDITION
- NFPA 101 - LIFE SAFETY CODE, 2021 EDITION
- NFPA 241 - STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERNATION AND DEMOLITION OPERATIONS, 2019 EDITION
- VA FIRE PROTECTION DESIGN MANUAL, JUNE 1, 2021 EDITION
- VA SEISMIC DESIGN REQUIREMENTS, REVISED MAY 1, 2020 EDITION
- VA FIRE SAFETY
- ALL AUTHORITIES HAVING JURISDICTION

FIRE DETECTION - DRAWING INDEX	
SHEET NUMBER	SHEET NAME
FA-001	FIRE DETECTION - LEGEND, NOTES, AND DWG. INDEX
FA-002	FIRE DETECTION - FIRE DETECTION DETAILS
FA-003	FIRE DETECTION - FIRESTOP DETAILS
FA-004	FIRE DETECTION - RISER DIAGRAMS AND I/O MATRIX
FA-200	FIRE DETECTION - BASEMENT SPACE RENOVATION PLAN
FA-201	FIRE DETECTION - FIRST FLOOR / FIRE PUMP
FA-202	FIRE DETECTION - FIRE PUMP LOCATION EXISTING CONDITIONS
FA-203	FIRE DETECTION - FIRST, SECOND AND THIRD FLOOR PART PLANS

Rev. No.	Revisions:	Date:

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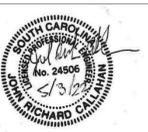


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Office of
Construction
and Facilities
Management



U.S. Department
of Veterans
Affairs

Drawing Title
**FIRE DETECTION - LEGEND,
NOTES, AND DWG. INDEX**

Approved:

Phase
**ACQUISITION
DRAWINGS**

BID SET

Project Title
W.J.B. Dorn VA Medical Center B10
Permanent Diesel Fire Pump
Acquisition Package

Location
COLUMBIA, SC

Issue Date
05/03/22

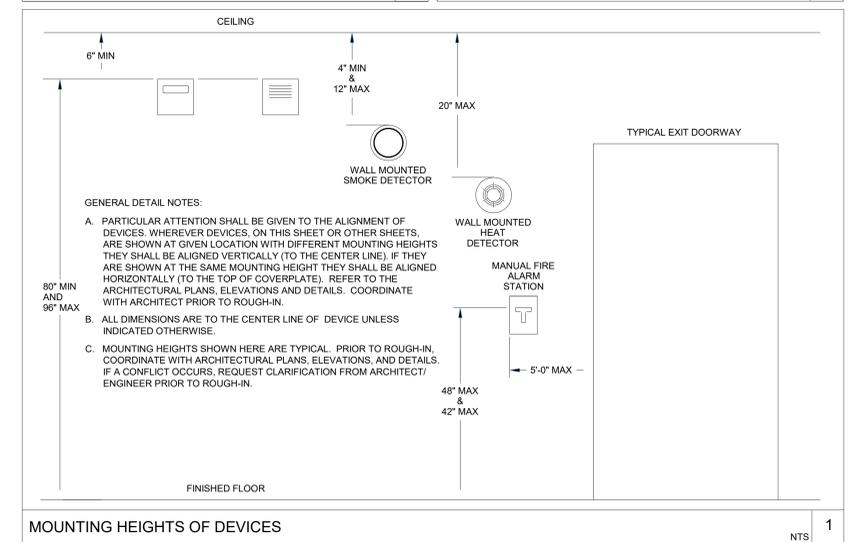
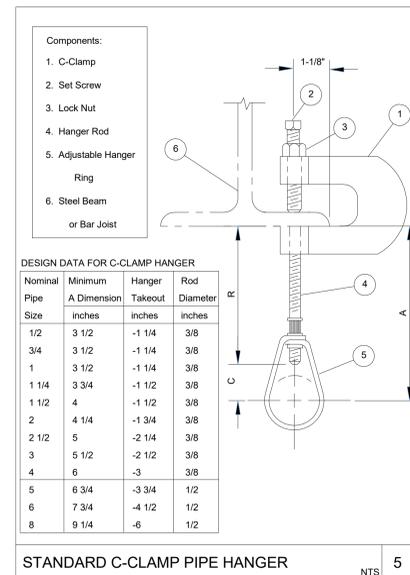
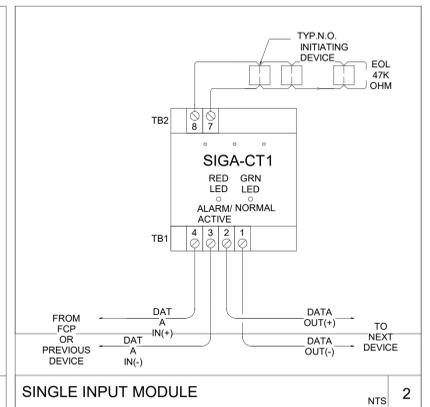
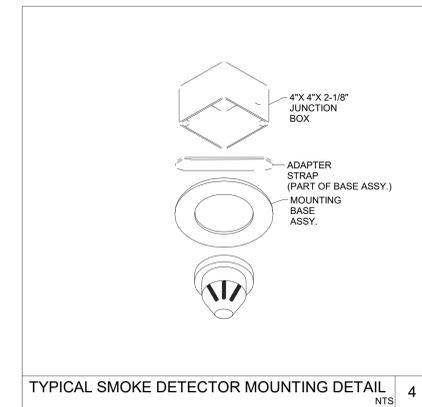
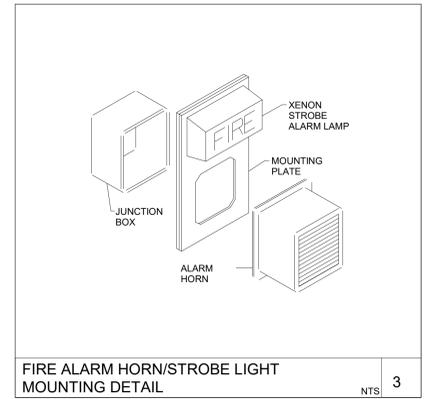
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Project Number
544-22-130

Building Number
BUILDING 10

Drawing Number
FA-001



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Office of Construction and Facilities Management
 VA U.S. Department of Veterans Affairs

Drawing Title
 FIRE DETECTION - FIRE DETECTION DETAILS

Approved:

Phase
 ACQUISITION DRAWINGS

BID SET

Project Title
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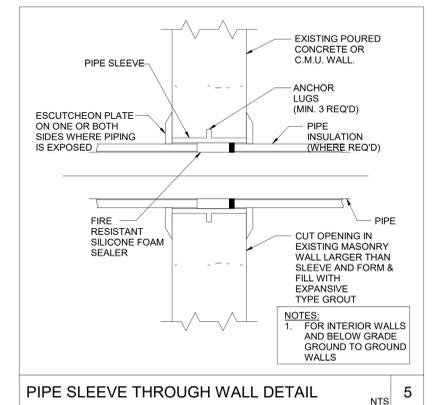
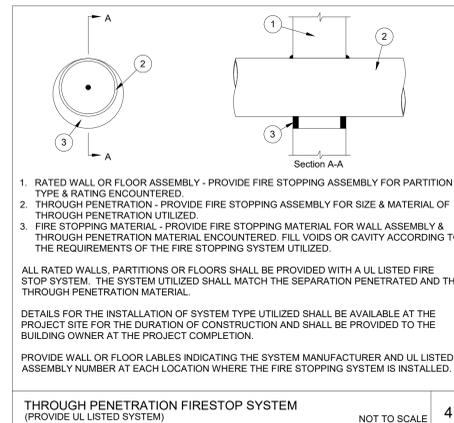
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FIRE ALARM UL NOTES

- REFER TO SECTION 078416 OF THE SPECIFICATIONS. FOR QUALITY CONTROL REQUIREMENTS, REFER TO THE QUALITY CONTROL PORTION OF THE SPECIFICATION NOTED ABOVE.
- DETAILS SHOWN ARE TYPICAL DETAILS. IF FIELD CONDITIONS DO NOT MATCH THE REQUIREMENTS OF THE TYPICAL DETAILS, APPROVED ALTERNATE DETAIL SHALL BE UTILIZED. FIELD CONDITIONS AND DIMENSIONS NEED TO BE VERIFIED FOR COMPLIANCE WITH THE DETAIL(S), INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - MINIMUM AND MAXIMUM WIDTH OF JOINTS.
 - TYPE AND THICKNESS OF FIRE-RATED CONSTRUCTION. THE MINIMUM ASSEMBLY RATING OF THE FIRE STOP ASSEMBLY SHALL MEET OR EXCEED THE HIGHEST RATING OF ADJACENT CONSTRUCTION.
- IF ALTERNATE DETAILS MATCHING THE FIELD CONDITIONS ARE NOT AVAILABLE, MANUFACTURER'S ENGINEERED JUDGEMENT DRAWINGS ARE ACCEPTABLE. DRAWINGS SHALL FOLLOW THE INTERNATIONAL FIRESTOP COUNCIL (IFC) GUIDELINES FOR EVALUATING FIRESTOP SYSTEM ENGINEERED JUDGEMENT AND THE ENGINEERED JUDGEMENT MUST BE SUBMITTED TO THE VA COR AND ENGINEER FOR REVIEW AND COMMENT PRIOR TO ITS USE.
- REFERENCES:
 - 2013 UNDERWRITER'S LABORATORIES FIRE RESISTANCE DIRECTORY, VOLUME 2
 - NFPA 101, LIFE SAFETY CODE, 2021 EDITION
 - ALL GOVERNING LOCAL AND VA FIRE PROTECTION DESIGN MANUAL
- FIRESTOP SYSTEM MUST MEET THE REQUIREMENTS OF ASTM E-814 (UL 1479) TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION BEING PENETRATED.
- ALL RATED THROUGH-PENETRATION SHALL BE PROMINENTLY LABELED WITH THE FOLLOWING INFORMATION:
 - ATTENTION: FIRE RATED ASSEMBLY
 - UL SYSTEM #
 - PRODUCT(S) USED
 - HOURLY RATING (R-RATING)
 - INSTALLATION DATE



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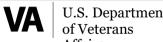
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Office of Construction and Facilities Management



Drawing Title
FIRE DETECTION - FIRESTOP DETAILS

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Phase
ACQUISITION DRAWINGS

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FA-003

FIRE ALARM GENERAL NOTES AND REQUIREMENTS:

- A. THE FIRE EXTINGUISHER MONITORING SYSTEM SHALL HAVE THE CAPABILITY TO MONITOR INDIVIDUAL HAND PORTABLE FIRE EXTINGUISHERS FOR PRESENCE, OFF NORMAL PRESSURE, LOSS OF MONITORING SYSTEM INTERFACE POWER AND ANY OBSTRUCTION THAT COULD POSSIBLY BLOCK ACCESS TO EACH INDIVIDUAL PORTABLE EXTINGUISHER.
B. REFER TO TELECOMMUNICATION DRAWINGS T4003, T4002 AND T5003 FOR ALL INTERFACED BETWEEN THE FIRE ALARM CONTROL SYSTEM DIGITAL TRANSMITTER (DACT) AT THE NEW BUILDING B10 FIRE ALARM CONTROL PANEL AND THE MAIN FIRE ALARM CONTROL PANEL LOCATED IN BUILDING 100 EMERGENCY COMMUNICATION CENTER. THE FIBER OPTICS INSTALLATIONS SHOWN ON THE TELECOMMUNICATION DRAWINGS INCLUDE ABOVE GROUND AND BELOW GROUND NETWORK INSTALLATIONS.
C. THE MAIN FIRE ALARM CONTROL PANEL LOCATED IN BUILDING 100 EMERGENCY COMMUNICATION CENTER SERVES AS THE 24-HOUR MANNED LOCATION FOR MONITORING OF THE VA CAMPUS, BUILDING 100 EMERGENCY COMMUNICATION CENTER'S FIRE ALARM CONTROL PANEL SHALL NOT NOTIFY THE COLUMBIA, SOUTH CAROLINA FIRE DEPARTMENT, AS INDICATED THIS IS THE VA COLUMBIA, SOUTH CAROLINA FIRE DEPARTMENT'S RESPONSIBILITY. BUILDING B10, FIRE ALARM CONTROL PANEL SHALL NOT UNDER ANY CIRCUMSTANCES SEND SIGNALS FROM THE BUILDING B10 TO THE COLUMBIA, SOUTH CAROLINA FIRE DEPARTMENT.
D. THE MAIN FIRE ALARM CONTROL PANEL LOCATED AT BUILDING 100 SHALL RECEIVE SPECIFIC INPUTS FROM BUILDING B10 FIRE ALARM CONTROL PANEL FOR ALARM, TROUBLE AND SUPERVISORY INDICATION. THE INPUTS RECEIVED FROM THE BUILDING B10 FIRE ALARM CONTROL PANEL SHALL PROVIDE THE LOCATION, DEVICE, FLOOR/ROOM AND AREA OF WHERE THE ALARM INDICATION HAS OCCURRED WITHIN BUILDING B10.
E. THE REQUIRED FORMAT FOR ALARM, TROUBLE AND SUPERVISORY THAT ACTIVATES AT BUILDING B10 LOCAL FIRE ALARM CONTROL PANEL SHALL BE TRANSMITTED TO BUILDING 100, EMERGENCY COMMUNICATION CENTER'S MAIN FIRE ALARM CONTROL PANEL. THE SIGNAL FORMAT AT BUILDING B10 FIRE ALARM CONTROL PANEL (MODEM COMMUNICATOR) SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM CONTROL PANEL LOCATED AT BUILDING 100, EMERGENCY COMMUNICATION CENTER'S FIRE ALARM CONTROL PANEL IS A PROJECT SCOPE OF WORK REQUIREMENT. BOTH FIRE ALARM CONTROL PANELS SHALL BE ABLE TO TRANSMIT AND RECEIPT OF SIGNALS BOTH WAYS, E.G., MULTIMODE COMMUNICATION AND BE 100% COMPATIBLE.
F. A SINGLE FAULT ON A PATHWAY CONNECTED TO THE ADDRESSABLE DEVICE SHALL NOT CAUSE THE LOSS OF DEVICES IN MORE THAN ONE ZONE/FLOOR (NFPA 72, PARAGRAPH 23.6.1.1). FOR PURPOSES ON THIS PROJECT, EACH FLOOR OF THE BUILDING SHALL BE CONSIDERED A SEPARATE ZONE (NFPA 72, PARAGRAPH 23.6.1.1).

FIRE ALARM GENERAL NOTES AND REQUIREMENTS CONTINUED:

- E. THE REQUIRED FORMAT FOR ALARM, TROUBLE AND SUPERVISORY THAT ACTIVATES AT BUILDING B10 LOCAL FIRE ALARM CONTROL PANEL SHALL BE TRANSMITTED TO BUILDING 100, EMERGENCY COMMUNICATION CENTER'S MAIN FIRE ALARM CONTROL PANEL. THE SIGNAL FORMAT AT BUILDING B10 FIRE ALARM CONTROL PANEL (MODEM COMMUNICATOR) SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM CONTROL PANEL LOCATED AT BUILDING 100, EMERGENCY COMMUNICATION CENTER'S FIRE ALARM CONTROL PANEL IS A PROJECT SCOPE OF WORK REQUIREMENT. BOTH FIRE ALARM CONTROL PANELS SHALL BE ABLE TO TRANSMIT AND RECEIPT OF SIGNALS BOTH WAYS, E.G., MULTIMODE COMMUNICATION AND BE 100% COMPATIBLE.
F. A SINGLE FAULT ON A PATHWAY CONNECTED TO THE ADDRESSABLE DEVICE SHALL NOT CAUSE THE LOSS OF DEVICES IN MORE THAN ONE ZONE/FLOOR (NFPA 72, PARAGRAPH 23.6.1.1). FOR PURPOSES ON THIS PROJECT, EACH FLOOR OF THE BUILDING SHALL BE CONSIDERED A SEPARATE ZONE (NFPA 72, PARAGRAPH 23.6.1.1).
G. REFER TO DIVISION 28 SPECIFICATIONS AND FA-01 FOR CIRCUIT AND PATHWAY REQUIREMENTS COMMUNICATION CENTER SERVES AS THE 24-HOUR MANNED LOCATION FOR MONITORING OF THE VA CAMPUS, BUILDING 100 EMERGENCY COMMUNICATION CENTER'S FIRE ALARM CONTROL PANEL AS WELL AS INITIATING DEVICE CIRCUITS (IDCS), SIGNALING LINE CIRCUITS (SLCS) AND NOTIFICATION APPLIANCE CIRCUITS (NACS) BETWEEN BUILDING B10 INDIVIDUAL FIRE ALARM DEVICES AND THIS BUILDING'S ADDRESSABLE FIRE ALARM CONTROL PANEL (FACP).
H. REFER TO THE INPUT/OUTPUT MATRIX FOR ALL SIGNAL INPUTS TO BE RECEIVED AT BUILDING B10 NEW LOCAL FIRE ALARM CONTROL PANEL AND THE MAIN FIRE ALARM CONTROL PANEL AT BUILDING 100, EMERGENCY COMMUNICATION CENTER'S HAS DIRECT RESPONSIBILITY FOR THE 24-HOUR MANNED LOCATION FOR ALARM MONITORING PURPOSES TO MEET NFPA 72 REQUIREMENTS.
ELEVATOR MANUFACTURER WRITTEN ELEVATOR SMOKE DETECTION REQUIREMENTS:
A. FOR EACH ELEVATOR PROVIDE A NORMALLY CLOSED CONTACT REPRESENTING THE SMOKE DETECTOR AT THE DESIGNATED RETURN LANDING.
B. REQUIREMENTS FOR INTERMITTENTLY ILLUMINATING FIRE HAZ VISUAL SIGNAL IN THE CAR OPERATING WITH EITHER (B) OR (C) BELOW:
FOR A SINGLE UNIT OR FOR A GROUP OF ELEVATORS HAVING ONE COMMON MACHINE ROOM/MACHINE SPACE AND ONE COMMON HOISTWAY, PROVIDE ONE ADDITIONAL NORMALLY CLOSED CONTACT REPRESENTING THE MACHINE ROOM/MACHINE SPACE AND HOISTWAY SMOKE DETECTORS.
IF THE GROUP CONTAINS MORE THAN ONE HOISTWAY AND HOISTWAY SMOKE DETECTORS ARE INSTALLED, PROVIDE ONE NORMALLY CLOSED CONTACT FOR EACH ELEVATOR; THE CONTACT IS TO REPRESENT THE SMOKE DETECTOR IN THE MACHINE SPACE FOR THAT PARTICULAR ELEVATOR, AND ANY SMOKE DETECTOR IN THE HOISTWAY CONTAINING THAT PARTICULAR ELEVATOR.
FIRE SUPPRESSION (E.G., SPRINKLER PROTECTION) SHALL BE FURNISHED/INSTALLED IN THE HOISTWAY AND ELEVATOR MACHINE ROOM / MACHINE SPACE(S) AN AUTOMATIC MEANS TO DISCONNECT THE MAINLINE POWER SUPPLY TO THE AFFECTED ELEVATOR AND ANY OTHER POWER SUPPLIES USED TO MOVE THE ELEVATOR, UPON OR PRIOR TO THE APPLICATION OF WATER IS REQUIRED. SMOKE DETECTORS SHALL NOT BE USED TO ACTIVATE FIRE SUPPRESSION (E.G., SPRINKLER PROTECTION) IN THE HOISTWAYS OR MACHINE ROOMS / MACHINE SPACE OR TO DISCONNECT THE MAIN POWER LINE.

DEFINITIONS:

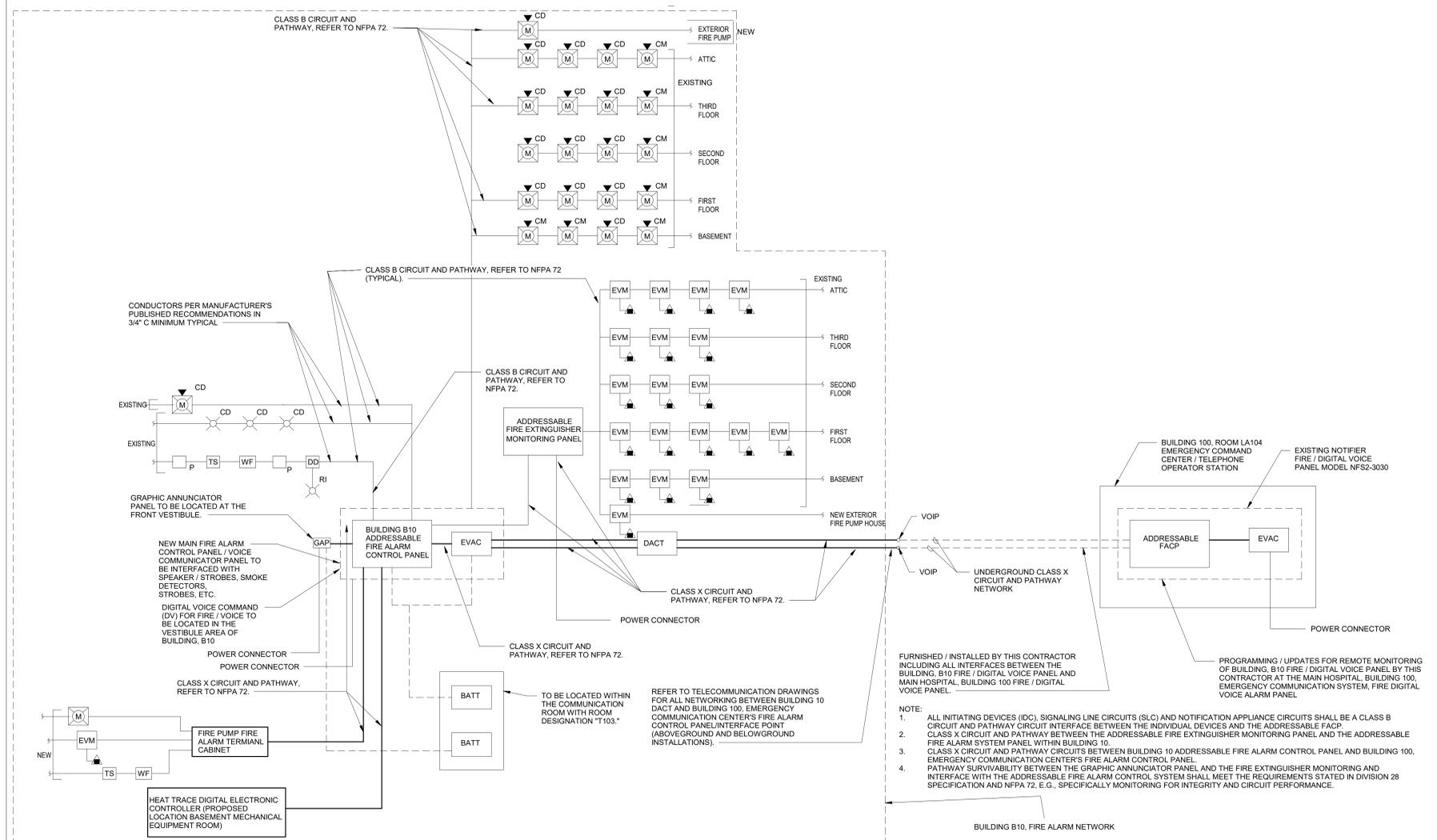
- A. ACTIVE COMMUNICATION: REFERS TO A METHOD OF SIGNAL TRANSMISSION TO A 24-HOUR MANNED EMERGENCY COMMUNICATION CENTER IN WHICH COMMUNICATION BETWEEN THE PROTECTED PREMISE FIRE ALARM COMMUNICATOR AND THE STATION RECEIVER IS CONTINUOUSLY SUPERVISED. LOSS OF COMMUNICATION WILL RESULT IN A TROUBLE CONDITION AT BOTH THE COMMUNICATOR AND THE RECEIVER AND WILL TRIGGER A PREDETERMINED RESPONSE BY PERSONNEL AT THE 24-HOUR MANNED MONITORING STATION.
B. ALARM VERIFICATION: A METHOD BY WHICH AS ALARM (OR SUPERVISORY) EVENT MUST UNDERGO ANOTHER PROCESS IN ORDER TO CONFIRM AN ACTUAL CONDITION EXISTS WHICH REQUIRES THE ACTIVATION OF AN OUTPUT DEVICE. THIS MAY INCLUDE THE REQUIREMENT FOR ANOTHER INDEPENDENT DEVICE MONITORING THE SAME PROTECTED AREA TO ENTER AN ALARM STATE. IT MAY ALSO INVOLVE PROGRAMMING SOFTWARE OR FIRMWARE THAT REQUIRES ONE EVENT TRIGGER TO FOLLOW ANOTHER WITHIN A SPECIFIED AND USUALLY PROGRAMMABLE TIMEFRAME.
C. DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT): A SYSTEM COMPONENT AT THE PROTECTED PREMISE FIRE ALARM CONTROL PANEL (E.G., NEW REHABILITATION BUILDING) TO WHICH INITIATING DEVICES, SIGNALING LINE CIRCUIT AND NOTIFICATION APPLIANCE CIRCUITS ARE CONNECTED. THE DACT SEIZES THE CONNECTED TELEPHONE LINE OR OTHER TRANSMISSION MEDIA, DIALS A PRESELECTED NUMBER TO CONNECT TO A DACTR, AND TRANSMITS SIGNALS INDICATING A STATUS CHANGE OF THE LOCAL FIRE ALARM DEVICE.
D. DIGITAL ALARM COMMUNICATOR RECEIVER (DACTR): A SYSTEM COMPONENT THAT ACCEPTS AND DISPLAYS SIGNAL FROM THE DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT) LOCATED AT A PROTECTED PREMISE THROUGH THE PUBLIC SWITCH TELEPHONE NETWORK OR A DIGITAL ALARM COMMUNICATOR RECEIVER (DACTR).
E. DIGITAL COMMUNICATOR: THIS IS AN OUTPUT DEVICE UTILIZE BY THE FIRE ALARM SYSTEM TO COMMUNICATE ALARM, TROUBLE OR SUPERVISORY SIGNAL TO A 24-HOUR MANNED EMERGENCY COMMUNICATION CENTER. IT USED THE PREMISE NORMAL TELEPHONE LINE OR OTHER COMMUNICATION MEDIA TO TRANSMIT THE SIGNAL AT THE NEW REHABILITATION BUILDING FOR ACTION BY THE MAIN HOSPITAL'S EMERGENCY COMMUNICATION CENTER.
F. ABBREVIATION EVM MEANS FIRE EXTINGUISHER STATION MODULE.
G. CLASS B CIRCUIT AND PATHWAY: REFER TO NFPA 72, SECTION 12.3 FOR DEFINITION AND REQUIREMENT OF PATHWAY DESIGNATION.
H. CLASS X CIRCUIT AND PATHWAY: REFER TO NFPA 72, SECTION 12.3 FOR DEFINITION AND REQUIREMENTS OF THE PATHWAY DESIGNATION.

Table with 2 columns: SYSTEM INPUTS and SYSTEM OUTPUTS. Rows include items like MANUAL PULL BOXES, WATER CONTROL VALVE TAMPER SWITCH, FIRE ALARM AC POWER FAILURE, AREA SMOKE DETECTOR, DUCT SMOKE DETECTOR, etc.

- NOTES:
1. DEVICES SHOWN ARE TYPICAL. REFER TO FIRE DETECTION SHEETS FOR DEVICE LOCATIONS AND QUANTITIES.
2. PROVIDE END OF LINE RESISTORS AS REQUIRED.
3. ANNUNCIATION SHALL BE THREE TEMPORAL BEEPS.
4. DUCT SMOKE DETECTORS AND DAMPERS SHALL BE PROVIDED AND WIRED TO FACP AND POWER BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL INSTALL THEM.
5. FOR LARGER DUCTS, PROVIDE ADDITIONAL DUCT DETECTORS AS REQUIRED BY NFPA 72.
6. EQUIPMENT MUST BE COMPATIBLE WITH THE FIRE ALARM CONTROL PANEL SOFTWARE.
7. ALL NOTIFICATIONS TO THE FIRE DEPARTMENT SHALL OCCUR BY THE EMERGENCY COMMUNICATION CENTER AT THE MAIN HOSPITAL, BUILDING 100; WHERE THIS BUILDING'S FIRE ALARM CONTROL PANEL SHALL REPORT ALL ALARM INDICATION.

FIRE ALARM SEQUENCE OF OPERATION
THE FIRE ALARM NOTIFICATION SYSTEM SHALL GO INTO ALARM UPON ACTIVATION OF A MANUAL PULL STATION, AREA SMOKE DETECTOR, OR FLOW SWITCH. THE ALARM SHALL BE DISPLAYED BY AUDIBLE AND VISUAL NOTIFICATION APPLIANCES. THE ELEVATOR(S) SHALL BE RECALLED UPON ACTIVATION OF EACH INDEPENDENT FLOOR ELEVATOR LOBBY SMOKE DETECTOR AND THE AIR HANDLING UNITS SHALL BE SHUT DOWN UPON ACTIVATION OF AIR HANDLER(S) DUCT SMOKE DETECTOR. THE FIRE ALARM SYSTEM SHALL DISPLAY A TROUBLE CONDITION UNDER LOSS OF POWER, OR IF A SMOKE DETECTOR IS REMOVED FROM THE BASE. THE FIRE ALARM SYSTEM SHALL DISPLAY A SUPERVISORY CONDITION UPON ACTIVATION OF A TAMPER SWITCH OR DUCT SMOKE DETECTOR.

FIRE DETECTION INPUT/OUTPUT MATRIX NTS 2



FIRE DETECTION AND FIRE EXTINGUISHER MONITORING RISER DIAGRAM NTS 1

Vertical text on the left margin: A, B, C, D, E, F, 5/26/2022 3:05 PM, BIM 360/IFB to Owner Requested Changes/078 - CE Central Model.rvt, VA FORM 08 - 6231

Table with 2 columns: Rev. No. and Revisions. Includes a date field.

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STAMP: Professional Engineer stamps for Richard C. [Name] and Charlotte Engineers, LLP, No. 24506, Registered Professional Engineer, State of South Carolina, No. C01579.

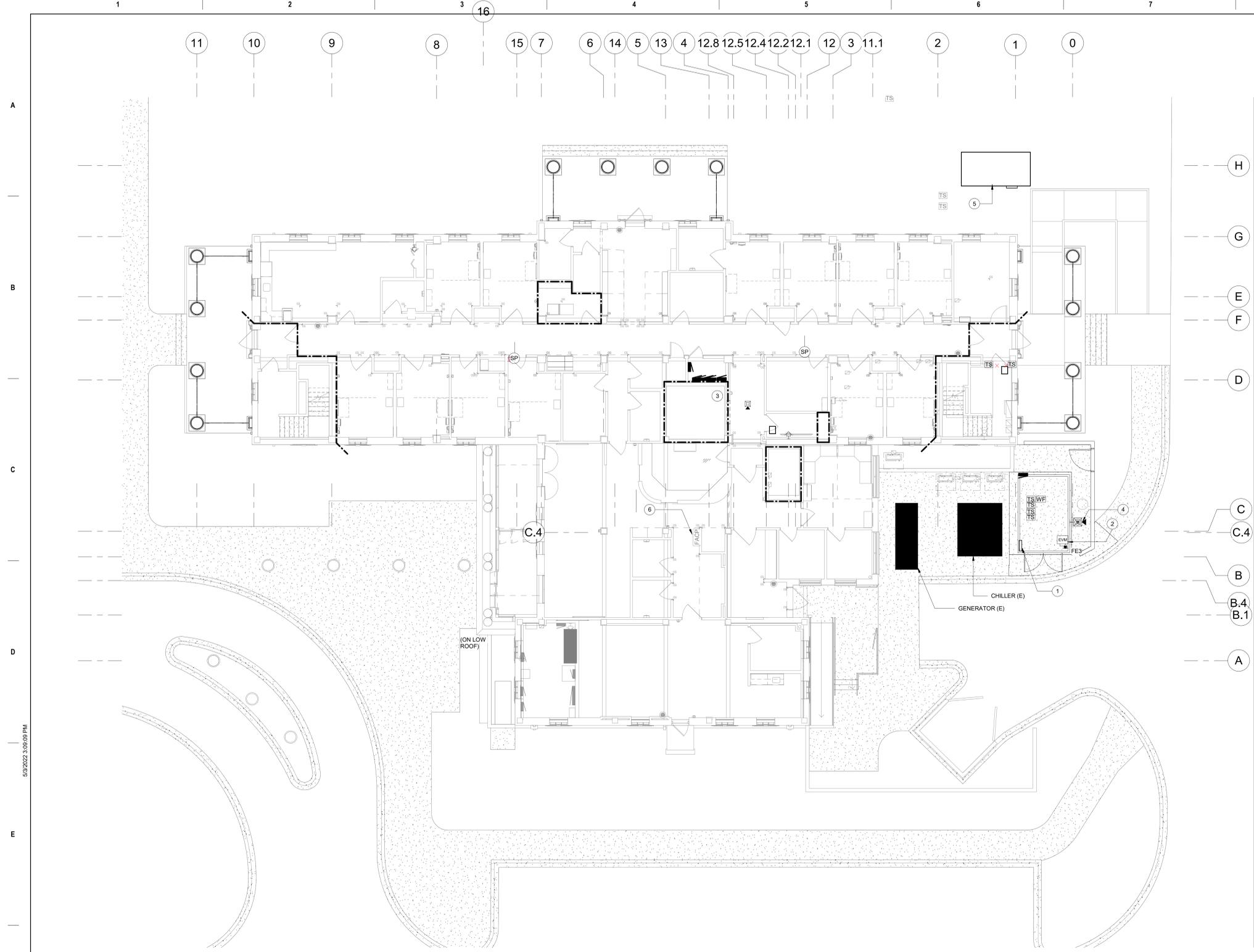
Office of Construction and Facilities Management, U.S. Department of Veterans Affairs

Drawing Title: FIRE DETECTION - RISER DIAGRAMS AND I/O MATRIX, Approved: [Signature]

Phase: ACQUISITION DRAWINGS, BID SET

Project Title: W.J.B. Dorn VA Medical Center B10 Permanent Diesel Fire Pump Acquisition Package, Location: COLUMBIA, SC, Issue Date: 05/03/22, Checked: GAT, Drawn: JRC

Project Number: 544-22-130, Building Number: BUILDING 10, Drawing Number: FA-004



KEYED NOTES

- 1 CONTRACTOR SHALL PROVIDE FIRE ALARM TERMINAL CABINET THAT SHALL INTERFACE ALL TAMPER/WATER FLOW SWITCHES, FIRE PUMP MONITORING DEVICES AND THE FIRE EXTINGUISHER MONITORING SYSTEM. THIS FIRE ALARM TERMINAL CABINET SHALL BE NETWORKED WITH THE LOCAL FIRE ALARM CONTROL PANEL LOCATED ON THE FIRST FLOOR OF BUILDING B10. THIS SCOPE OF WORK SHALL INCLUDE ALL EQUIPMENT AND PROGRAMMING AT THE LOCAL FIRE ALARM CONTROL PANEL WITHIN THE FIRE PUMP HOUSE. LOCAL FIRE ALARM CONTROL PANEL AT BUILDING B10 AND THE MAIN FIRE ALARM CONTROL PANEL LOCATED WITHIN BUILDING 100, EMERGENCY COMMUNICATION CENTER. THE DESIGN BASIS FOR THE FIRE ALARM TERMINAL CABINET WOULD BE EQUAL TO ACER BOX # SERIES FIRE ALARM TERMINAL CABINET, PART NUMBER SSU00660, 32 TERMINATION POINTS, SIZE 14" X 14" X 3-1/4" WITH KEY LOCK.
- 2 FIRE EXTINGUISHER MONITORING SYSTEM WIRING/CABLING; ROUTE CABLING FROM THE FIRE PUMP HOUSE TO ADDRESSABLE FIRE EXTINGUISHER MONITORING PANEL LOCATED ON THE FIRST FLOOR OF BUILDING B10.
- 3 FIRE DETECTION SHALL NOT BE REQUIRED IN HOISTWAYS OF TRACTION ELEVATORS COMPLYING WITH THE REQUIREMENTS OF NFPA 13, SECTION 9.3.6.3 AND THE REQUIREMENTS OF NFPA 72, SECTION 21.4
- 4 EXTERIOR SPEAKER-STROBE TO BE WEATHER PROOF MEETING NEMA 4 X REQUIREMENTS
- 5 TEMPORARY FIRE PUMP LOCATION; FINAL LOCATION TO BE COORDINATED WITH THE VA COR.
- 6 FIRE ALARM CONTROL PANEL

GENERAL NOTES

- A. REFER TO DRAWING FA-001 FOR FIRE ALARM GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
- B. REFER TO DRAWING FA-001 FOR TEMPORARY FIRE ALARM, FIRE EXTINGUISHER AND FIRE SUPPRESSION REQUIREMENTS DURING AN IMPAIRMENT TO EXISTING SYSTEM INSTALLED UNDER A PRIOR PROJECT PHASE.
- C. REFER TO FA-004 FOR FIRE ALARM INPUT / OUTPUT MATRIX. ALL NEW TAMPER SWITCHES SHALL BE INTERFACED WITH THE FIRE ALARM SYSTEM AT BOTH BUILDING B10, LOCAL FIRE ALARM CONTROL PANEL AND BUILDING 100, EMERGENCY COMMUNICATION CENTER'S MAIN FIRE ALARM CONTROL PANEL.
- D. REFER TO FA-004 FOR IMPAIRMENT AND TEMPORARY FIRE ALARM/DETECTION AND FIRE SUPPRESSION REQUIREMENTS. THE INFORMATION GIVEN HEREIN IS AS EXACT AS COULD BE SECURED FOR BIDDING PURPOSES AND ITS ACCURACY IS NOT GUARANTEED. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR EXAMINING NEW JOB CONDITIONS AND VERIFYING ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC., BEFORE STARTING THE DEMOLITION OR NEW WORK.
- E. THE DRAWING SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES. THE SCALE WHEN INDICATED FOR GENERAL REFERENCE ONLY.
- F. ALL VALVES CONTROLLING FIRE PROTECTION EQUIPMENT AND FIRE PROTECTION MAINS SHALL BE PROVIDED WITH A TAMPER/SUPERVISORY SWITCHES WIRED TO THE FIRE ALARM CONTROL PANEL.
- G. EXACT LOCATIONS AND QUANTITIES OF WATERFLOW AND TAMPER SWITCHES SHALL BE VERIFIED BY THE CONTRACTOR. ALL FIRE SPRINKLER SYSTEM SHALL HAVE THESE DEVICES. CONTRACTOR PRICING SHALL INCLUDE CONNECTION OF THESE DEVICES WHETHER SHOWN OR LOCATED ON THE DESIGN DOCUMENT DRAWINGS.
- H. FIRE DETECTION CONTRACTOR SHALL PROVIDE COVERAGE ABOVE AND BELOW ALL OBSTRUCTIONS COMPLYING WITH NFPA 72.
- I. FIRE ALARM SYSTEM WIRING/CABLING WITHIN THE FIRE PUMP HOUSE AND TO/FROM TO/FROM THE EXTERIOR FIRE PUMP HOUSE TO BUILDING B10, LOCAL FIRE ALARM CONTROL PANEL IS A NOTIFIER FIRE ALARM SYSTEM. THEREFORE, THE NEW LOCAL FIRE ALARM CONTROL PANEL WITHIN THE FIRE PUMP HOUSE SHALL BE NOTIFIER FIRE ALARM PANEL AND HAVE THE CAPACITY TO INTERFACE, SEND AND RECEIVE ALARMS, DIGITAL VOICE COMMUNICATION, ETC., FOR THIS SCOPE OF WORK. REFER TO SPECIFICATION 28 05 13, "CONDUITS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY" AND SPECIFICATION 28 05 28.33, "CONDUITS AND BACKBOXES FOR ELECTRONIC SAFETY AND SECURITY."
- J. FINAL LOCATION OF THE LOCAL FIRE ALARM TERMINAL CABINET WITHIN THE FIRE PUMP HOUSE SHALL BE LOCATED IN AN APPROVED LOCATION AND ELEVATION BY THE FIRE PUMP / PUMP HOUSE MANUFACTURER, LOCAL VA AND CITY OF COLUMBIA LOCAL JURISDICTION HAVING AUTHORITY (E.G., VA FIRE MARSHAL AND/OR LOCAL FIRE DEPARTMENT FIRE MARSHAL). REFER TO NFPA 101, PARAGRAPH 9.6.6, TITLED "LOCATION OF CONTROL."
- K. THIS CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR ON THE POURING OF THE CONCRETE PAD SINCE EXISTING CONDITIONS AT THE SITE THERE ARE TWO UTILITY BOXES, E.G., ONE ELECTRICAL BOX W/COVER AND ONE PLUMBING CLEANOUT. THE CONSTRUCTION OF THE FIRE PUMP HOUSE, FIRE PUMP ASSEMBLY AND ALL COMPONENTS MUST WITHIN THE FINAL FIRE PUMP HOUSE/EQUIPMENT DESIGN PROVIDE ACCESSIBILITY TO BOTH OF THE ABOVE UTILITY CONNECTION. NO EXCEPTIONS WILL BE ACCEPTED. THIS IS A CONDITION OF PROCUREMENT WITH THE VA DORN COR AND ENGINEER OF RECORD.
- L. FURNISH/INSTALL HEAT TRACE SYSTEM FOR PROTECTION OF THE UNDERGROUND AND ABOVEGROUND PIPING. REFER TO FX-201 FOR PIPING CONFIGURATION. THE HEAT TRACING SYSTEM SHALL BE UL LISTED AND SHALL PROTECT FIRE SUPPRESSION DISTRIBUTION LINES AS SHOWN ON FX-201 WHERE THE HEAT TRACING SYSTEM SHALL BE SPECIFICALLY LISTED FOR USE ON DISTRIBUTION LINES. ELECTRONIC SUPERVISION WITH AN INTELLIGENT ELECTRONIC CONTROLLER SHALL BE PROVIDED CAPABLE OF MONITORING THE FOLLOWING CONDITIONS WITH INTERFACE TO THE FIRE ALARM SYSTEM.
 - a. LOSS OF SUPPLY VOLTAGE
 - b. GROUND FAULT
 - c. LOSS OF CONTROL POWER
 - d. INDUCED LOW VOLTAGE
 - e. TEMPERATURE
 - f. SWITCH FAILURE

FIRE EXTINGUISHER SCHEDULE	
FE3	FIRE EXTINGUISHER, 20 LB (40B,C) CARBON DIOXIDE FOR FIRE PUMP ROOM

FIRE ALARM SYMBOLS	
TS	FIRE SUPPRESSION TAMPER SWITCH TO SPRINKLER SYSTEM; FIRE ALARM INTERFACE REQUIRED
WF	FIRE SUPPRESSION WATER FLOW SWITCH TO SPRINKLER SYSTEM; FIRE ALARM INTERFACE REQUIRED

WALL RATING LEGEND:

SMOKE TIGHT PARTITION (BUT NOT SMOKE RATED)	---
1 HOUR FIRE RESISTIVE CONSTRUCTION	=====
1 HOUR FIRE RESISTIVE CONSTRUCTION & SMOKE BARRIER	=====
2 HOUR FIRE RESISTIVE CONSTRUCTION	=====
2 HOUR FIRE RESISTIVE CONSTRUCTION & SMOKE BARRIER	=====

1 FIRST FLOOR PLAN - FIRE DETECTION PLAN
1/8" = 1'-0"

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Rev. No.	Revisions:	Date:

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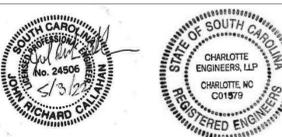


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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title
FIRE DETECTION - FIRST FLOOR / FIRE PUMP
Approved:

Phase
ACQUISITION DRAWINGS
BID SET

Project Title
W.J.B. Dorn VA Medical Center B10 Permanent Diesel Fire Pump Acquisition Package
Location
COLUMBIA, SC
Issue Date
05/03/22
Checked
GAT
Drawn
JRC

Project Number
544-22-130
Building Number
BUILDING 10
Drawing Number
FA-201



NOTE: THE FIRE PUMP PACKAGE FOOTPRINT IS FIXED AT 11' (WIDE) X 16' (LONG), NO DEVIATIONS ALLOWED.

ELECTRICAL BOX W/COVER WHERE THE FIRE PUMP HOUSE INTERNAL CONFIGURATION MUST PROVIDE ACCESS TO THIS BOX WITHIN THE FIRE PUMP HOUSE AND COORDINATE ACCESSIBILITY WITHIN THE FIRE PUMP HOUSE & EQUIPMENT

PLUMBING CLEANOUT WHERE THE FIRE PUMP HOUSE INTERNAL CONFIGURATION MUST PROVIDE ACCESS TO THIS BOX WITHIN THE FIRE PUMP HOUSE AND COORDINATE ACCESSIBILITY WITHIN THE FIRE PUMP HOUSE & EQUIPMENT.

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BM 36018 TO Owner Requested Changes1678 - CE Central Model.rvt

Rev. No.	Revisions:	Date:

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Office of Construction and Facilities Management
 VA U.S. Department of Veterans Affairs

Drawing Title
 FIRE DETECTION - FIRE PUMP LOCATION EXISTING CONDITIONS

Approved:

Phase
 ACQUISITION DRAWINGS

BID SET

Project Title
 W.J.B. Dorn VA Medical Center B10 Permanent Diesel Fire Pump Acquisition Package

Location
 COLUMBIA, SC

Issue Date
 05/03/22

Checked
 GAT

Drawn
 JRC

Project Number
 544-22-130

Building Number
 BUILDING 10

Drawing Number
 FA-202

GENERAL FIRE PROTECTION NOTES

- THE NEW FIRE PUMP ASSEMBLY COMPLETE SHALL BE SIZED IN ACCORDANCE WITH THE VA FIRE PROTECTION MANUAL AND SHALL BE HYDRAULICALLY CALCULATED TO MEET THE REQUIREMENTS OF NFPA 13 AND APPROVED BY VA FIRE SAFETY OFFICIAL HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THEIR FLOW TEST DATA FROM THE CITY OF COLUMBIA MEETING THE REQUIREMENTS OF NFPA 291 AND NFPA 13, SECTION 23.2.1 INCLUDING ANY FEES.
- THE SYSTEM SHALL BE DESIGNED AND BUILT IN A WORKMANLIKE MANNER, IN ACCORDANCE WITH DETAILED DRAWINGS TO BE SUBMITTED FOR APPROVAL. THE WORK SHALL INCLUDE ALL COMPONENTS REQUIRED TO PROVIDE A COMPLETE SYSTEM.
- THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A SET OF SHOP DRAWINGS THAT INCLUDE ALL PIPE SIZES, ELEVATIONS, HEAD LOCATIONS, DIMENSIONS, VALVES, INSPECTOR TESTS, FLOW SWITCHES, TAMPER SWITCHES, ETC.
- FIRE PROTECTION MAINBRANCH PIPING SHALL BE PROVIDED AND LOCATED IN ACCORDANCE WITH NFPA 13 AND THE VA FIRE PROTECTION DESIGN MANUAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM LOCATIONS FOR COMPLIANCE WITH THE CODE REQUIREMENTS.
- THE FIRE PROTECTION CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AT THE PROJECT SITE.
- FIRE SUPPRESSION PIPING SHOULD BE ROUTED AS HIGH AS POSSIBLE WHILE STILL COORDINATING WITH OTHER TRADES. ELEVATION OF SPRINKLER PIPING MUST BE DETERMINED BY PROPOSED SPACE IN THE BASEMENT CRAWL SPACE AND BASEMENT MECHANICAL EQUIPMENT ROOM.
- FIRE SUPPRESSION PIPING SHALL NOT BE INSTALLED IN ANY AREAS SUBJECT TO FREEZING CONDITIONS WITHOUT PROPER FREEZE PROTECTION, THAT SHALL INCLUDE INSULATION, FREEZE PROTECTION AND EXTERIOR METAL JACKET.
- ALL MATERIAL AND ITS INSTALLATION SHALL BE IN COMPLETE COMPLIANCE WITH ALL APPLICABLE SECTIONS OF THE LATEST EDITION OF NFPA FACTORY MUTUAL GUIDELINES AND VA FIRE PROTECTION DESIGN MANUAL GUIDELINES.
- THE FIRE PROTECTION CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT, AND, PERFORM ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF A COMPLETE FIRE PROTECTION SYSTEM THAT IS READY FOR USE WITHIN THE INTENT OF AND AS INDICATED ON THE DRAWINGS, SPECIFICATIONS AND AS HEREIN SPECIFIED.
- SMALL ITEMS NOT SHOWN OR SPECIFIED, BUT OBVIOUSLY REQUIRED BY GOOD GENERAL PRACTICE TO COMPLETE THE WORK SHALL BE FURNISHED AND INSTALLED THE SAME AS IF BOTH SHOWN AND SPECIFIED.
- BY SUBMITTING A PROPOSAL FOR THIS WORK, THE CONTRACTOR WILL BE HELD TO HAVE EXAMINED THE SITE AND SATISFIED THEMSELVES AS TO EXISTING CONDITIONS UNDER WHICH THEY WILL BE OBLIGED TO OPERATE OR THAT WILL IN ANY MANNER AFFECT THEIR WORK UNDER THIS CONTRACT. NO ALLOWANCES SHALL BE MADE SUBSEQUENTLY IN THIS CONTRACT IN BEHALF OF CONTRACTOR OF ANY ERROR OR NEGLIGENCE ON THEIR PART.
- FIRE PROTECTION CONTRACTOR SHALL MAKE CONNECTION INTO EXISTING FIRE SERVICE WATER SYSTEM IN THE BASEMENT CRAWL SPACE.
- THE FIRE PROTECTION CONTRACTOR SHALL NOTIFY THE VA FIRE MARSHAL, THE ENGINEER, ARCHITECT, CONTRACTOR AND GENERAL CONTRACTOR ONE WEEK PRIOR TO ANY SHUTDOWN OR INTERRUPTION OF SERVICE.
- THE FIRE PROTECTION CONTRACTOR SHALL SCHEDULE WITH THE OWNER ALL TIE-INS TO NEW SYSTEMS AND PERFORM REQUIRED SHUTDOWN AND INITIALIZATION OF THE NEW FIRE SPRINKLER SYSTEM. THESE SERVICES WILL INCLUDE DRAIN AND FILL OF THE FIRE SPRINKLER SYSTEMS IN THE AFFECTED AREAS OF THIS PROJECT WORK SCOPE.
- ALL MATERIALS, PIPING, FITTINGS, VALVES, AND APPLIANCES HEREINAFTER SPECIFIED AND THOSE WHICH ARE ESSENTIAL BUT HAVE NOT BEEN SPECIFIED SHALL BE NEW AND OF THE HIGHEST GRADE AND QUALITY, FREE FROM DEFECTS AND SUCH AS BREAKS, FLAWS, AND IMPERFECTIONS.
- CORE DRILL MASONRY WALLS FOR NEW PIPING. SEAL PENETRATIONS AS NECESSARY TO MAINTAIN INTEGRITY OF EXISTING WALLS.
- THROUGH PENETRATION ASSEMBLIES SHALL BE PROVIDED AT EACH OPENING WHERE EXPOSED FIRE SUPPRESSION PIPING PASSES THROUGH RATED WALLS, FLOORS AND PARTITIONS. ALL PIPING PENETRATIONS MUST BE SEALED IN ACCORDANCE WITH "UL" LISTING SEALING METHOD AND/OR AS DETAILED IN THESE CONTRACT DRAWINGS OR SPECIFICATIONS.
- ALL APPLIANCES AND APPURTENANCES SHALL BEAR LABEL OF UL/FM APPROVED AND LABELED FOR ITS INTENDED USE.
- ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AND COMPLETED IN A FIRST-CLASS WORKMANLIKE MANNER AND IN ACCORDANCE WITH THE BEST MODERN METHODS AND PRACTICES. ANY MATERIALS WHICH SHALL NOT PRESENT AN ORDERLY AND REASONABLY NEAT AND/OR WORKMANLIKE APPEARANCE SHALL BE REMOVED AND REPLACED WHEN SO DIRECTED BY THE ARCHITECT. THE REMOVAL AND REPLACEMENT OF THIS WORK SHALL BE DONE WHEN DIRECTED IN WRITING BY THE ARCHITECT AT THE CONTRACTOR'S EXPENSE.
- ALL HANGERS SHALL BE FASTENED BY MEANS OF BEAM CLAMPS, CONCRETE INSERTS OR OTHER APPROVED DEVICES INSTALLED BY THIS CONTRACTOR.
- LONG RUNS OF PIPE SHALL BE PROVIDED WITH A SUITABLE MEANS TO PERMIT FREE MOVEMENT RESULTING FROM EXPANSION AND CONTRACTION OF PIPE. REDUCTION IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCTION FITTINGS.
- THE FIRE PROTECTION CONTRACTOR WILL BE REQUIRED TO COORDINATE ACCEPTANCE FOR VARIATION OF EQUIPMENT LOCATIONS AND CONFIGURATIONS WITH THE VA FIRE MARSHAL, THE ARCHITECT, THE ENGINEER AND THE GENERAL CONTRACTOR.
- THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR COORDINATING CHANGES IN ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
- VARIATION FROM SPECIFIED PHYSICAL EQUIPMENT APPEARANCE WILL NEED TO BE APPROVED THROUGH THE VA FIRE MARSHAL, THE ARCHITECT AND THE ENGINEER.
- THE FIRE PROTECTION CONTRACTOR IS TO MAINTAIN A SET OF UP TO DATE CONSTRUCTION DOCUMENTS AVAILABLE AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION. THE FIRE PROTECTION CONTRACTOR IS TO INSTRUCT THE VA REPRESENTATIVE(S) IN THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE COMPLETED BUILDING FIRE PROTECTION SYSTEM AT A TIME AGREED ON BY THE OWNER. THE OWNER'S REPRESENTATIVE(S) SHALL BE PROVIDED WITH AN UP TO DATE CONSTRUCTION DOCUMENTS AND A COPY OF NFPA 25 PRIOR TO INSTRUCTION BY THIS CONTRACTOR.
- COORDINATE WITH OTHER WORK, INCLUDING HVAC, PLUMBING PIPING, ELECTRICAL AS NECESSARY TO INTERFACE COMPONENTS OF FIRE SPRINKLER PIPING PROPERLY WITH OTHER WORK. SYSTEM PIPING WILL BE SUPPORTED AND BRACED WITH HANGERS AND LISTED HANGERS AND BRACE ASSEMBLIES IN ACCORDANCE WITH THE VA SEISMIC DESIGN REQUIREMENTS AND NFPA 13.
- THE FIRE SUPPRESSION SYSTEM AREA OF PROTECTION INDICATED ON THE PLANS IS FOR COORDINATION AND BIDDING PURPOSES ONLY. THE FIRE SUPPRESSION CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS AND CEILING AS MAY
- PIPE SUPPORTS:
 - ALL HANGERS MUST BE FM APPROVED, UL LISTED AND FM APPROVED TYPE BY NFPA 13. NO FIRE SUPPRESSION PIPING IS TO BE SUPPORTED FROM ANY MECHANICAL OR ELECTRICAL DEVICES.
 - ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. VERTICAL RISERS SHOULD BE SUPPORTED AT EACH FLOOR LEVEL WITH STEEL PIPE CLAMPS. THE USE OF WIRE OR STRAP METAL HANGER TO SUPPORT PIPES WILL BE NOT PERMITTED. HANGING PIPES FROM OTHER PIPES WILL BE NOT PERMITTED. PIPING SHALL BE CAREFULLY COORDINATED BEFORE INSTALLATION WITH OTHER SYSTEMS AND EQUIPMENT IN CHASES AND OTHER CONGESTED AREAS.
 - MAXIMUM DISTANCES BETWEEN PIPE SUPPORTS SHALL MEET THE REQUIREMENT STATED IN NFPA 13, SECTION 17.4.2 AND TABLE 17.4.2-1(a), TITLED "MAXIMUM DISTANCE BETWEEN HANGERS (ft-IN)."
- EACH FIRE DEPARTMENT CONNECTION TO EACH SPRINKLER SYSTEM SHALL BE DESIGNATED BY A SIGN HAVING RAISED OR ENGRAVED LETTERS AT LEAST 1 INCH IN HEIGHT ON PLATE OR FITTING REACHING SERVICE DESIGN. E.G., "AUTO SPKR.", "OPEN SPKR. AND STANDPIPE." A SIGN SHALL ALSO INDICATE THE PRESSURE REQUIRE AT THE INLET TO DELIVER THE GREATEST SYSTEM DEMAND.
- ELECTRICAL WIRING VERIFY THAT ALL TAMPER SWITCHES AND FLOW SWITCHES ARE CONNECTED TO A UL APPROVED FACP BY THE FIRE DETECTION CONTRACTOR.
- ALL VALVES SHALL BE MADE TAMPER RESISTANT. ELECTRICAL SUPERVISION SHALL BE REQUIRED ON ALL SPRINKLER CONTROL VALVES. INDICATOR VALVES SHALL BE MADE EASILY READABLE AND READILY ACCESSIBLE.
- TAMPER SWITCHES ON OS&Y TYPE VALVES MUST NOT DISTORT OR CHANGE SWITCH SETTINGS AS THEIR BOLTS ARE SECURELY FASTENED. NO "J-BOLT" MOUNTS WILL BE PERMITTED.
- NATIONALLY RECOGNIZED CODES, AND THE VA DESIGN MANUAL REQUIREMENTS MUST USE THE REQUIREMENTS OF NFPA FOR CONFLICTS AND NOT THE MOST STRINGENT CODE OR VA DESIGN MANUALS.
- THE FIRE PUMP ASSEMBLY COMPLETE SHALL BE SUPERVISED AND INTERFACE WITH EXISTING PROTECTED PREMISE FIRE ALARM CONTROL PANEL.
- FIRE PROTECTION SYSTEMS SHALL BE INSTALLED BY A CONTRACTOR LICENSED TO PERFORM SUCH WORK IN THE PROJECT JURISDICTION.
- AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT AND ASSOCIATED MATERIALS FROM THE SITE. REPAIR ANY DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO THE OWNER.

GENERAL FIRE PROTECTION NOTES

- ALL WALL AND FLOOR PENETRATIONS SHALL BE CORE-DRILLED AND SLEEVED THIS IS A PROJECT REQUIREMENT TO BE MET BY THE FIRE SUPPRESSION CONTRACTOR.
- MAINTAINABILITY:
 - EXTERNAL AND INTERNAL PARTS SHALL BE ARRANGED SO THAT, WHEN INSTALLED, ALL PARTS REQUIRING MANIPULATION, OBSERVATION, AND/OR MAINTENANCE ARE READILY ACCESSIBLE AND SAFE FOR OPERATION AND MAINTENANCE PERSONNEL. SPECIFY ANY MAINTENANCE ENVELOPES AND CLEARANCES AROUND INSTALLED EQUIPMENT. WHEREVER PRACTICAL, VALVES AND INSTRUMENTS SHALL BE LOCATED SUCH THAT THEY CAN BE OPERATED AND EASILY ACCESSED FROM GRADE LEVEL.
 - MAINTAINABILITY SHALL BE INCORPORATED INTO THE DESIGN OF ALL CONTRACTOR SUPPLIED EQUIPMENT. THE PRIMARY MAINTAINABILITY OBJECTIVE SHALL BE TO MINIMIZE THE COMPLEXITY AND TIME REQUIRED FOR MAINTENANCE. THE FOLLOWING GENERAL CRITERIA SHALL BE OF A LOW MAINTENANCE DESIGN AND SHALL BE EASILY MAINTAINABLE.
 - CONTRACTOR SUPPLIED EQUIPMENT SHALL BE OF LOW MAINTENANCE DESIGN AND SHALL BE EASILY MAINTAINABLE.
 - CONTRACTOR SUPPLIED EQUIPMENT SHALL BE DESIGNED TO BE MAINTAINED IN PLACE, IF POSSIBLE, WITH MINIMUM DISASSEMBLY OF SURROUNDING EQUIPMENT AND MINIMUM USAGE OF TEMPORARY SCAFFOLDING AND HANDLING EQUIPMENT.
- THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH OTHER TRADES TO ELIMINATE CONFLICT WITH OTHER TRADES. ANY WORK INSTALLED BY THIS CONTRACTOR THAT RESULTS IN CONFLICT, DUE TO LACK OF COORDINATION BETWEEN TRADES, SHALL BE CHANGED AS DIRECTED BY THE ARCHITECT/ENGINEER WITHOUT ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- PROVIDE CUTTING AND PATCHING OF BUILDING AS REQUIRED TO INSTALL NEW WORK.
- FIRE SUPPRESSION PUMPING SYSTEM COMPLETE SHALL BE SUPERVISED AND INTERFACE WITH EXISTING FIRE ALARM SYSTEMS.
- ONE SET OF STAMPED, APPROVED DRAWINGS SHALL BE ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE INSPECTOR AND/OR ARCHITECT UPON DEMAND.
- REPAIR FIRE RATED PARTITIONS SURROUNDING FIRE SUPPRESSION WORK AS SPECIFIED. REFER TO ARCHITECTURE PLANS FOR LOCATIONS OF FIRE PARTITIONS.
- ALL SPRINKLER HEADS WITHIN THE FIRE PUMP HOUSE SHALL BE QUICK RESPONSE PENDENT TYPE HEADS.
- IT IS THE INTENTION OF THE SPECIFICATION AND DRAWINGS TO CALL FOR A COMPLETE AND FUNCTIONAL SYSTEM, INSTALLED AS PER THE APPLICABLE CODES WITH ALL FINISHED WORK TESTED AND READY FOR OPERATION.
- THE FIRE PROTECTION CONTRACTOR SHALL NOTIFY THE OWNER, OWNER'S REPRESENTATIVE, FIRE ALARM CONTRACTOR, ARCHITECT AND GENERAL CONTRACTOR ONE WEEK PRIOR TO ANY SHUTDOWN OR INTERRUPTION OF SERVICE.
- ALL MATERIALS, PIPING, FITTINGS, VALVES, AND APPLIANCES HEREINAFTER SPECIFIED AND THOSE WHICH ARE ESSENTIAL BUT HAVE NOT BEEN SPECIFIED SHALL BE NEW AND OF THE HIGHEST GRADE AND QUALITY, FREE FROM DEFECTS AND SUCH AS BREAKS, FLAWS, AND IMPERFECTIONS.
- CORE DRILL MASONRY WALLS FOR NEW PIPING. SEAL PENETRATIONS AS NECESSARY TO MAINTAIN INTEGRITY OF EXISTING WALLS.
- ALL APPLIANCES AND APPURTENANCES SHALL BEAR LABEL OF UL/FM APPROVED AND LABELED FOR ITS INTENDED USE.
- BEFORE SUBMITTING A PROPOSAL FOR THE WORK, EACH BIDDER WILL BE HELD RESPONSIBLE TO HAVE EXAMINED THE EXISTING SITE CONDITIONS FOR THE WORK HEIGHT UNDER THIS CONTRACT. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
- THE FIRE SUPPRESSION CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE FIRE PROTECTION SYSTEM AND SHALL PROVIDE SEALED SHOP DRAWINGS. SPRINKLER SYSTEM PLANS AND CALCULATIONS SHALL BE SEALED BY AN EXPERIENCED TRADESMAN REGISTERED IN THE STATE OF SOUTH CAROLINA OR A NICET LEVEL III OR LEVEL IV SPRINKLER DESIGNER.
- DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EACH AND EVERY SPRINKLER HEAD, BRANCH PIPING, DEVICES, FITTINGS, VALVES OR COMPLETE DETAIL OF ALL THE WORK TO BE PERFORMED, BUT ARE FOR THE PURPOSES OF ILLUSTRATING THE TYPE OF SYSTEM AND CONDITIONS NECESSARY FOR AN EXPERIENCED TRADESMAN TO LAYOUT HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SUCH SITE OBSERVATIONS AND MEASUREMENTS AS NECESSARY TO PROPERLY COMPLETE THE WORK.
- UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PRESENT THE OWNER WITH A REPORT CONFIRMING PROPER TESTING OF ALL NEW FIRE PROTECTION PIPING, ALONG WITH APPROPRIATE SELECTED TESTING OF THE MAIN FIRE SUPPRESSION SYSTEM TO CONFIRM CONTINUED PROPER OPERATION. A CERTIFICATE OF APPROVAL FROM THE APPROPRIATE AGENCY INSPECTION AGENT WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE PIPING SCHEMATIC INDICATED BY THE DRAWINGS REPRESENTS THE SCOPE AND INTENT OF THE FIRE PROTECTION SYSTEM. HOWEVER THE SPRINKLER CONTRACTOR SHALL PROVIDE A COMPLETE SPRINKLER SYSTEM PER NFPA 13 AND LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS.
- ALL PIPE ROUTING AND ELEVATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO THE FOLLOWING: BASEMENT CRAWL SPACE HEIGHT AVAILABILITY, STRUCTURAL STEEL AND SUPPORTS, HVAC DUCTWORK, ELECTRICAL CONDUIT, FIRE ALARM SYSTEMS, CONTROLS, ETC.
- HYDRAULIC CALCULATIONS SHALL BE ORIGINATED AT THE LOCATION OF FIRE HYDRANT FLOW TEST TO BE PERFORMED BY THIS CONTRACTOR FOR DESIGN INPUTS INTO THEIR HYDRAULIC CALCULATIONS.
- THE FIRE SUPPRESSION CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, RISES AND DROPS IN PIPING, IN COMPLIANCE WITH THE VA FIRE PROTECTION DESIGN MANUAL AND NFPA 13, WHETHER SHOWN ON PLANS OR NOT.
- THE DRAWING SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES. THE SCALE WHEN INDICATED IS INTENDED FOR "GENERAL REFERENCE ONLY."
- ALL SHUTDOWNS SHALL BE COORDINATED AND APPROVED THROUGH THE OWNER'S REPRESENTATIVE AND WILL REQUIRE A MINIMUM OF 10 DAYS ADVANCE NOTICE. THIS TIME LENGTH MAY BE LONGER OR SHORTER FOR SOME SHUT DOWNS AND SHALL BE AT THE OWNER'S DISCRETION. DRAWINGS AND REFILLING OF THE EXISTING SYSTEM IS A RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE.
- CUTTING AND PATCHING OF ANY EXISTING CONDITIONS INCLUDING FLOORS, WALLS, AND CEILINGS REQUIRED FOR THE INSTALLATION OF THE FIRE PROTECTION SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL WORK SHALL BE COORDINATED WITH THE G.C. AND ALL OTHER TRADES.

DESIGN CODES, STANDARDS & PARTIES OF REFERENCE

THE FOLLOWING PUBLICATIONS AND AUTHORITIES HAVING JURISDICTION SHALL BE REFERENCED FOR THE DESIGN OF THE FIRE PROTECTION SYSTEM ON THIS PROJECT.

- ANSI A117.1 STANDARD, ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES. 2017 EDITION
- ASCE 7 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES. 2022 EDITION
- ASTM A-615 - STANDARD SPECIFICATION FOR DEFORMED AND PLAIN CARBON-STEEL BARS FOR CONCRETE REINFORCEMENT. 2020 EDITION
- INTERNATIONAL BUILDING CODE 2021 EDITION
- NFPA 1 - FIRE CODE. 2021 EDITION
- NFPA 10 - STANDARD FOR PORTABLE FIRE EXTINGUISHERS. 2022 EDITION
- NFPA 20 - STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION. 2022 EDITION
- NFPA 70 - NATIONAL ELECTRIC CODE. 2020 EDITION
- NFPA 72 - NATIONAL FIRE ALARM & SIGNALING CODE. 2022 EDITION
- NFPA 101 - LIFE SAFETY CODE. 2021 EDITION
- NFPA 241 - STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERNATION AND DEMOLITION OPERATIONS. 2019 EDITION
- VA FIRE PROTECTION DESIGN MANUAL. JUNE 1, 2021 EDITION
- VA SEISMIC DESIGN REQUIREMENTS, REVISED MAY 1, 2020 EDITION
- VA FIRE SAFETY
- ALL AUTHORITIES HAVING JURISDICTION

FIRE PROTECTION DESIGN CRITERIA

ORDINARY HAZARD GROUP 2 - FIRE PUMP HOUSE; NFPA 13, SECTION 26.27.1.8	DESIGN DENSITY: 0.25GPM/SQ.FT.
HYDRAULICALLY MOST DEMANDING AREA/OVER ENTIRE ROOM AREA	3/4 INCH
SPRINKLER ORIFICE:	130SQ.FT.
MAXIMUM COVERAGE/SPRINKLER HEAD:	250GPM
HOSE STREAM ALLOWANCE INSIDE/OUTSIDE:	8.0GPM/(PSI) ^{1/2}
K FACTOR:	

FIRE SUPPRESSION PIPING NOTE:

FIRE SUPPRESSION PIPING PLANS AS SHOWN ARE FOR BIDDING PURPOSES ONLY. FIRE SUPPRESSION CONTRACTOR IS TO OBTAIN CURRENT HYDRANT TEST DATA AND PROVIDE HYDRAULIC CALCULATIONS FOR SYSTEM PIPE SIZING IN ACCORDANCE WITH THE VA FIRE PROTECTION DESIGN MANUAL AND NFPA 13. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS INDICATING HYDRAULIC CALCULATIONS, PIPING LAYOUT & SIZING. SHOP DRAWINGS AND CALCULATIONS ARE TO BE SIGNED & SEALED BY A FIRE PROTECTION PROFESSIONAL ENGINEER OR NICET LEVEL III OR IV. ALL WORK IS TO BE DONE IN ACCORDANCE WITH ALL STATE, LOCAL, GOVERNING AND APPLICABLE CODES.

PERMANENT FIRE SUPPRESSION - DRAWING INDEX NEW	
SHEET NUMBER	SHEET NAME
FX-001	PERMANENT FIRE SUPPRESSION - LEGEND, NOTES, & DWG. INDEX
FX-002	PERMANENT FIRE SUPPRESSION - FIRESTOP DETAILS
FX-003	PERMANENT FIRE SUPPRESSION - DETAILS
FX-004	PERMANENT FIRE SUPPRESSION - IMPAIRMENT REQUIREMENTS
FX-005	PERMANENT FIRE SUPPRESSION - FIRE/JOCKEY PUMP SCHEDULE
FX-006	PERMANENT FIRE SUPPRESSION - FIRE PUMP PAD REQUIREMENTS
FX-200	PERMANENT FIRE SUPPRESSION - BASEMENT PIPING RENOVATION FLOOR PLAN
FX-201	PERMANENT FIRE SUPPRESSION - FIRE PUMP HOUSE PLAN
FX-202	PERMANENT FIRE SUPPRESSION - EXISTING CONDITION
FX-203	PERMANENT FIRE SUPPRESSION - SECTIONS

Rev. No.	Revisions:	Date:

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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title
PERMANENT FIRE SUPPRESSION - LEGEND, NOTES, & DWG. INDEX

Approved:

Phase
ACQUISITION DRAWINGS

BID SET

Project Title
W.J.B. Dorn VA Medical Center B10
Permanent Diesel Fire Pump
Acquisition Package

Project Number
544-22-130

Building Number
BUILDING 10

Drawing Number
FX-001

Location
COLUMBIA, SC

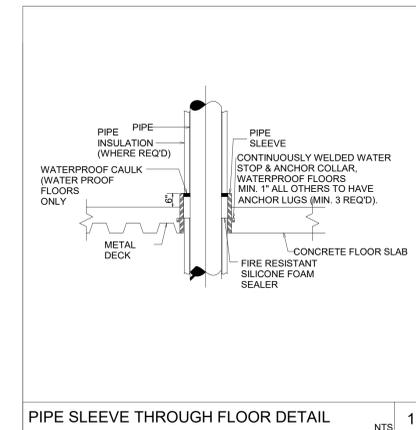
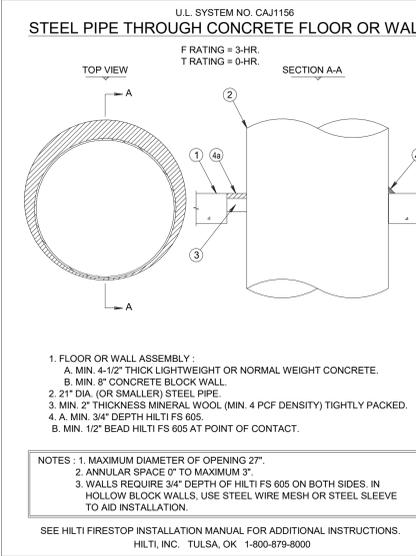
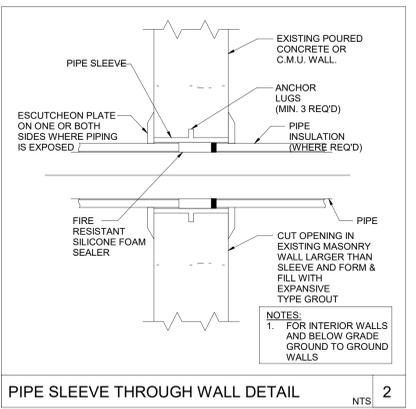
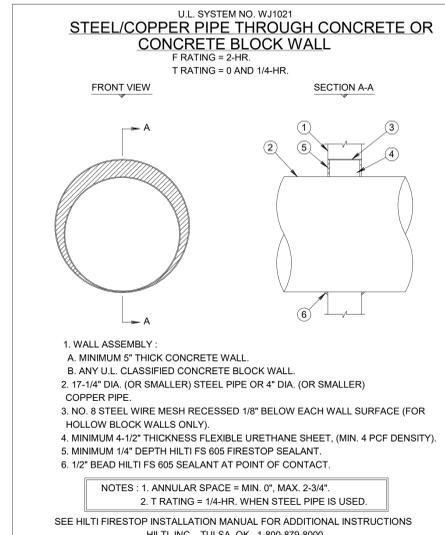
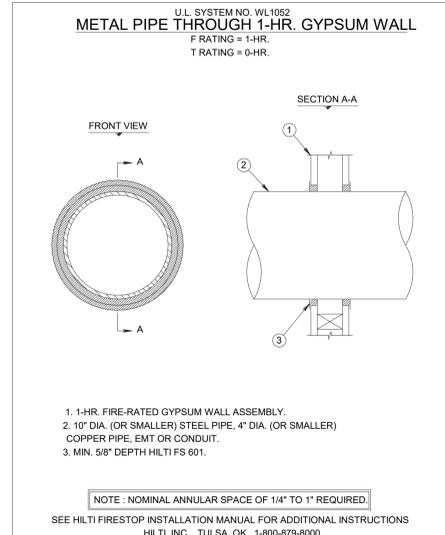
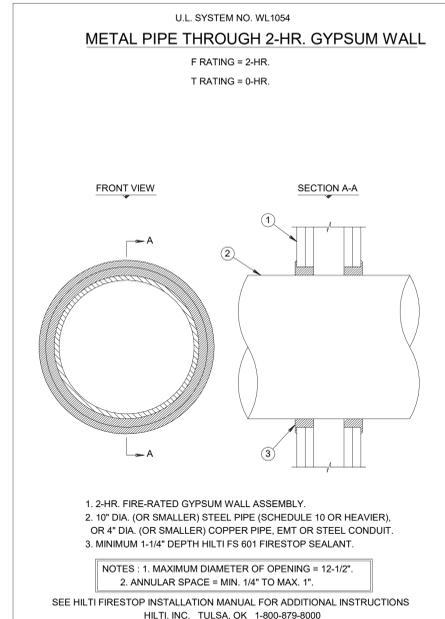
Issue Date
05/03/22

Checked
GAT

Drawn
JRC

NOTES:

1. REFER TO SECTION 078413 OF THE SPECIFICATIONS FOR QUALITY CONTROL REQUIREMENTS. REFER TO THE QUALITY CONTROL PORTION OF THE SPECIFICATION NOTES ABOVE.
2. DETAILS SHOWN ARE TYPICAL DETAILS. IF FIELD CONDITIONS DO NOT MATCH THE REQUIREMENTS OF THE TYPICAL DETAILS, APPROVED ALTERNATE DETAILS SHALL BE UTILIZED. FIELD CONDITIONS AND DIMENSION NEED TO BE VERIFIED FOR COMPLIANCE WITH THE DETAILS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - A. MINIMUM AND MAXIMUM WIDTH OF JOINTS.
 - B. TYPE AND THICKNESS OF FIRE-RATED CONSTRUCTION. THE MINIMUM ASSEMBLY RATING OF THE FIRE STOP ASSEMBLY SHALL MEET OR EXCEED THE HIGHEST RATING OF THE ADJACENT CONSTRUCTION.
3. IF ALTERNATE DETAILS MATCHING THE FIELD CONDITIONS ARE NOT AVAILABLE, MANUFACTURER'S ENGINEERING JUDGEMENT DRAWINGS ARE ACCEPTABLE. DRAWINGS SHALL FOLLOW THE INTERNATIONAL FIRESTOP COUNCIL (IFC) GUIDELINES FOR EVALUATING FIRESTOP SYSTEM ENGINEERING JUDGEMENTS.
4. REFERENCES:
 - A. 2013 UNDERWRITER'S LABORATORIES FIRE RESISTANCE DIRECTORY, VOLUME 2
 - B. NFPA 101, LIFE SAFETY CODE
5. FIRESTOP SYSTEM INSTALLATION MUST MEET THE REQUIREMENTS OF ASTM E-814 (UL 1479) TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION BEING PENETRATED.
6. ALL RATED THROUGH-PENETRATIONS SHALL BE PROMINENTLY LABELED WITH THE FOLLOWING INFORMATION:
 - A. ATTENTION: FIRE RATED ASSEMBLY
 - B. UL SYSTEM #
 - C. PRODUCT(S) USED
 - D. HOURLY RATING (F-RATING)
 - E. INSTALLATION DATE



A
 B
 C
 D
 E
 F
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 BIM 360://B TO Owner Requested Changes/678 - CE Central Model.rvt

Rev. No.	Revisions:	Date:

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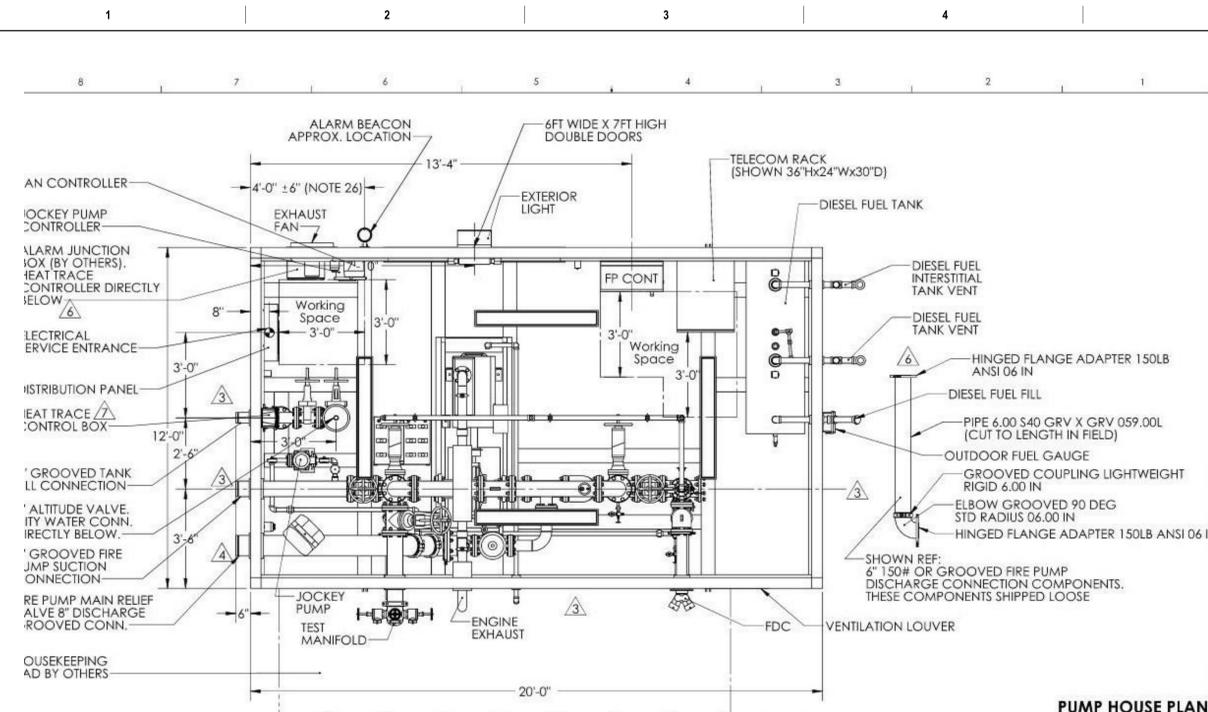
Office of Construction and Facilities Management
 VA U.S. Department of Veterans Affairs

Drawing Title
PERMANENT FIRE SUPPRESSION - FIRESTOP DETAILS
 Approved:

Phase
ACQUISITION DRAWINGS
BID SET

Project Title
W.J.B. Dorn VA Medical Center B10 Permanent Diesel Fire Pump Acquisition Package
 Location
COLUMBIA, SC
 Issue Date
05/03/22
 Checked
GAT
 Drawn
JRC

Project Number
544-22-130
 Building Number
BUILDING 10
 Drawing Number
FX-002



PUMP HOUSE PLAN

REV	DATE	BY	DESCRIPTION
1	3/19/2020	B5H	Location Dimensions added for JP Panel, Double Doors, Alarm Beacon, Diesel Controller, Distribution Panel and Cust. supplied Alarm JB.
2	4/30/2020	B5H	1. Risk Mitigation and Valves changed to 4" NPS ("Location change"); Main Relief Discharge moved to inside building, turned down to underground. Telecom enclosure added (panels rearranged to accommodate). Outside fuel gauge, sprinkler system, FP drip pan, lighting, jockey pump piping, main relief valve, engine exhaust system, fan and heater disconnects and fan controller added. Project Notes updated/connected JP and Sprinkler piping changed to Black Pipe.
3	7/1/2020	B5H	Connections from redirected through wall: Fire Pump Suction and Discharge, Main Relief Valve Discharge and Tank Fill.
4	8/21/2020	B5H	Main Relief discharge rerouted to wall adjacent to firewater tank, Jockey pump moved to accommodate.
5	9/2/2020	B5H	Main Relief discharge through wall toward tank elevated to 3'-1" to match firewater tank connection.
6	10/19/2020	B5H	Heat Trace Controller (below Alarm Junction Box) Added. Discharge piping shown loose for conn. to LUG.
7	10/28/2020	B5H	Heat Trace Controller moved to wall on FP Suction side above Tank Fill valves.

MECHANICAL EQUIPMENT CO.

UNLESS OTHERWISE SPECIFIED:

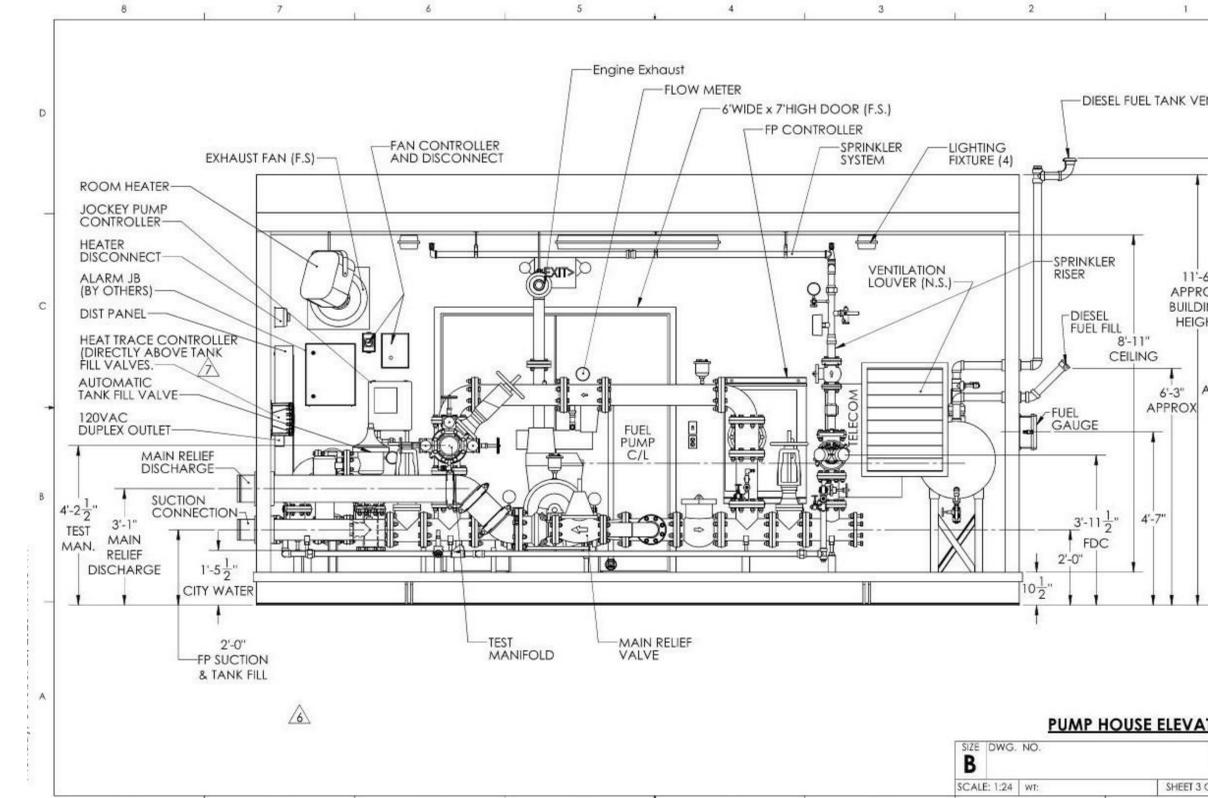
DIMENSIONAL TOLERANCES: Steel and Pipe: ±1/16" Customer Pipe Conns.: ±1/2" Pipe Spools: ±1/8" Structural Steel: ±1/16"

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DO NOT SCALE DRAWING

SCALE: 1/32" = 1'-0" WT: 15242.43

SHEET 3 OF 3



PUMP HOUSE ELEVATION

SIZE DWG. NO. **B** REV **7**

SCALE: 1/24" = 1'-0" WT: 15242.43

SHEET 3 OF 3

HYDRAULIC - SYSTEM

THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED SPRINKLER SYSTEM.

LOCATION

NO. OF SPRINKLERS

BASIS OF DESIGN

- DENSITY
- DESIGNED AREA OF DISCHARGE

HOSE STREAMS

- INSIDE
- OUTSIDE

SAFETY MARGIN

SYSTEM DEMAND

- GPM DISCHARGE
- RESIDUAL PRESSURE AT THE BASE OF THE RISER

ITEM NO.	DESCRIPTION	LOCATION	TYPE	SERVICE	GPM	PSI(FT)	MOTOR DATA			LISTING		COMMENT		
							RPM	HP	PHASE	VOLTS	UL		FM	
FP-1	DIESEL DRIVE FIRE PUMP	FIRE PUMP HOUSE	SKID MOUNTED DIESEL DRIVEN HORIZONTAL SPLIT CASE CENTRIFUGAL FIRE PUMP PACKAGE	FIRE SPRINKLER	500	55(127.05FT)	1770	37	N/A	N/A	N/A	YES	YES	XYLEM AC PUMP HORIZONTAL SPLIT CASE MODEL 6X4X12F-M CLARK DIESEL ENGINE MODEL JU4H-UFAEO
JP-1	JOCKEY PUMP	FIRE PUMP HOUSE	VERTICAL PUMP	FIRE SPRINKLER	60	103(237.95FT)	3500	10	3	60	208	YES	YES	ITT GOULDS MODEL 155V4
ATS-1	DIESEL AUTOMATIC TRANSFER SWITCH FOR FIRE PUMP	FIRE PUMP HOUSE	DIESEL DRIVEN	FIRE PUMP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	YES	YES	FIRETROL MODEL FTA1100 DIESEL CONTROLLER
ATS-2	JOCKEY PUMP AUTOMATIC TRANSFER SWITCH	FIRE PUMP HOUSE	ELECTRIC DRIVEN	FIRE SPRINKLER	N/A	N/A	N/A	1.5	3	60	208	YES	YES	FIRETROL MODEL FTA1560 JOCKEY PUMP CONTROLLER

- NOTES**
- APPROVED EQUIVALENTS: MECHANICAL EQUIPMENT COMPANY (MECO), PATTERSON PUMP COMPANY, AND PEERLESS PUMP COMPANY.
 - PROVIDE 250 POUND SUCTION AND DISCHARGE FLANGES.
 - ENCLOSURE - OPEN DRIP PROOF (O.D.P.) ELECTRICAL ENCLOSURE
 - BOTH SUCTION AND DISCHARGE PIPES MUST BE SUPPORTED INDEPENDENTLY NEAR THE FIRE/JOCKEY PUMP AND PART OF THE SKID MOUNTED FIRE PUMP PACKAGE.
 - COUPLING GUARD TO MEET ANSI/OSHA REQUIREMENTS.
 - FIRE AND JOCKEY PUMPS SKID MOUNTED ASSEMBLY BE PROVIDED COMPLETE WITH NEMA 4X ENCLOSURES AND OUTPUT ALARM, FAIL TO START, PHASE FAILURE/REVERSE, PUMP OVER LOAD, CONTROLLER NOT IN AUTO, COMMON ALARM, LOW SYSTEM PRESSURE AND ALARM AUDIBLE. REFER TO SPECIFICATION 21 30 16, "DIESEL FIRE PUMP WITH HOUSE" FOR ADDITIONAL INFORMATION.
 - BASE PLATE SETTINGS (BEFORE PIPING), GROUTING PROCEDURES AND FINAL ALIGNMENT MUST BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS ASSOCIATED WITH FIRE PUMP.
 - FOR SELECTION OF BOTH FIRE AND JOCKEY PUMPS THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM AND SUBMIT TO THE ARCHITECT/ENGINEER THEIR OWN FLOW TEST. CONTRACTOR SHALL CONFIRM WITH THOSE TEST RESULTS THE ACTUAL SIZE OF BOTH PUMPS, E.G., JOCKEY AND FIRE PUMP. ACTUAL SKID MOUNTED FIRE PUMP PACKAGE SHALL BE COORDINATED WITH THE SITE UTILITY CONTRACTOR AND THE ELECTRICAL CONTRACTOR.
 - DIESEL PUMP CONTROLLER SHALL BE PROVIDED WITH BOOST CHARGER THAT PER MANUFACTURER WRITTEN INSTRUCTION HAS AN ELECTRICAL LOAD OF 9 AMP @ 120VAC.
 - JOCKEY PUMP CONTROLLER SHALL BE PROVIDED WITH CONTACTS FOR FAIL TO START, CONTROLLER NOT IN AUTO, AUDIBLE ALARM, COMMON ALARM AND LOW SYSTEM PRESSURE.
 - DIESEL FUEL TANK SHALL HAVE A LOW LEVEL GAUGE, LEVEL INDICATION ON THE EXTERIOR OF THE PUMP ENCLOSURE NEAR THE FILL CONNECTION, LEAK SENSOR, REMOTE LOW LEVEL ALARM, REMOTE HIGH LEVEL ALARM, EXTERNAL FILL PIPED CONNECTION, HORIZONTAL FIVE GALLON SPILL-PROOF CONTAINER SHALL BE RECESSED IN THE OUTSIDE WALL TERMINATION POINT FOR FUEL OIL STORAGE FILL LINES. THE SPILL PROOF CONTAINER / ENCLOSURE WILL CONTAIN ANY OIL SPILLED WHEN CONNECTING AND DISCONNECTING THE DELIVERY FITTINGS THAT MAY OCCUR DURING NORMAL FILLING OF THE DIESEL FUEL OIL TANK. THE SPILL PROOF CONTAINER SHALL MEET NFPA 31 AND SHALL PROTECT THE FILL LINE FROM DAMAGE, VANDALISM OR UNAUTHORIZED ACCESS. THE CONTAINER SHALL BE FITTED WITH A 1/2" NPT DRAIN PLUS TO FACILITATE DRAINING OF THE FILL AREA SHOULD A SPILL OCCUR. INCLUDED SHALL BE A STANDARD 2" DRY NOZZLE FILL DISCONNECT AND DUST COVER TO PROTECT THE MECHANICAL COUPLING FROM POTENTIALLY HARMFUL BUILDUP OF DIRT AND DEBRIS. THE CONTAINER SHALL BE NEMA 4 MOISTURE PROOF ENCLOSURE.
 - DIESEL FIRE PUMP SHALL BE PROVIDED WITH RUN STATUS INDICATION FOR OWNER USE, FAIL TO START/RUN CONTACTS, LOW PRESSURE ALARM AND LOCAL ANNUNCIATORS WHICH SHALL BE INTERFACED WITH THE FIRE ALARM CONTROL PANEL.
 - RELIEF VALVES MANUFACTURERS: BERMAID CONTROL VALVES, CLA-VALVE AUTOMATIC CONTROL VALVES, KUNKLE VALVE
 - FIRE PUMP CONTROLLER MANUFACTURERS: ASCO, A BRAND OF VERTIV, EATON, HUBBELL INCORPORATED, JOSLYN CLARK CORPORATION AND METRON CONTROL PRODUCTS, DIVISION OF HUBBELL INDUSTRIAL CONTROLS
 - JOCKEY PUMP MANUFACTURERS: A-C FIRE PUMP; AXYLEM BRAND; GRUNDFOS MANAGEMENT A/S; PACO PUMPS; PEERLESS; GRUNDFOS PUMPS CORPORATION USA; TACO COMFORT SOLUTIONS, INC.
 - GAUGES MANUFACTURERS: AGF MANUFACTURING CO., AMETEK, INC.; U.S. GAUGE, BRECCO CORPORATION, DRESSER EQUIPMENT GROUP, INSTRUMENTS DIV., MARSH BELLORAM, WIKA INSTRUMENT CORPORATION.
 - THE DIESEL ENGINE SHALL BE PROVIDED WITH A:
 - INLET SILENCER SHALL BE PROVIDED WITH A DRY TYPE AIR FILTER AND AIR INLET SHUTOFF.
 - SELF CONTAINED COOLING SYSTEM.
 - ENGINE MOUNTED INSTRUMENT GAUGE BOARD AND INSTRUMENTS.
 - LUBE OIL PUMP AND FILTER.
 - PREPOST LUBE OIL PRIMING PUMP, IF REQUIRED.
 - ELECTRIC START FROM FLOOR MOUNTED SEALED LEAD ACID BATTERY SYSTEM WITH REQUIRED STORAGE RACKS AND CABLES.
 - POWERED BATTERY CHARGER.
 - OVER-SPEED SHUTDOWN DEVICE.
 - TACHOMETER TO INDICATE RPM OF ENGINE.
 - GOVERNOR TO REGULATE ENGINE SPEED.
 - FUEL LINES.
 - DIESEL FUEL DAY TANK, PIPING AND ACCESSORIES.
 - EXIT OF THE EXHAUST STACK FOR THE DIESEL DRIVEN FIRE PUMP SHALL BE A MINIMUM OF 14 FT MINIMUM ABOVE GRADE.
 - EXTERNAL FILL CONNECTION WITH SPILL CONTAINMENT, E.G., REFER TO ABOVE ITEM FOR REQUIREMENTS.
 - STANDARD EXTERNAL 2" FLANGED FLAT FACE CARBON STEEL PIPE CONNECTION FOR INTERFACE WITH SELLER DIESEL FUEL OIL PIPING SYSTEM.
 - ELECTRIC START BY REMOTE CONTACT.
 - BATTERY LOW VOLTAGE ALARM.
 - BATTERY CHARGER ALARM.
 - LOW PRESSURE ALARM.
 - RUN STATUS INDICATION/CONTACT FOR OWNERS USE.
 - THE FIRE PUMP PACKAGE FOOTPRINT IS FIXED AT 11' (WIDE) X 16' (LONG), NO DEVIATIONS ALLOWED.

Rev. No.	Revisions:	Date:

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U.S. Department of Veterans Affairs

Drawing Title
PERMANENT FIRE SUPPRESSION - FIRE/JOCKEY PUMP SCHEDULE

Approved:

Phase
ACQUISITION DRAWINGS

BID SET

Project Title
W.J.B. Dorn VA Medical Center B10
Permanent Diesel Fire Pump
Acquisition Package

Location
COLUMBIA, SC

Issue Date
05/03/22

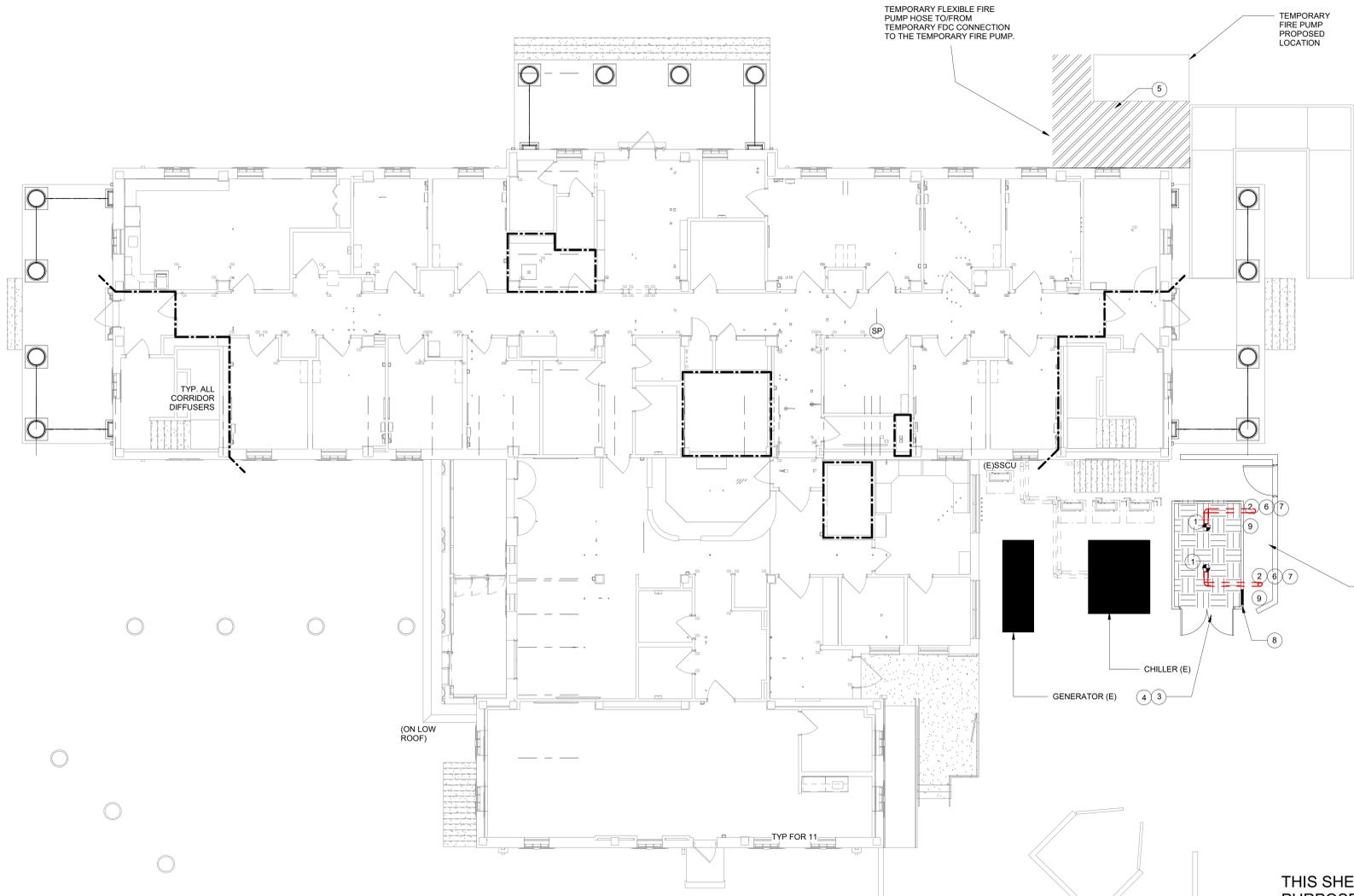
Checked
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Drawn
JRC

Project Number
544-22-130

Building Number
BUILDING 10

Drawing Number
FX-005



- FIRE SUPPRESSION KEYED SHEET NOTES:**
- INTERFACE WITH THE UNDERGROUND CIVIL ONE (1) SIX INCH MAIN FOR THE INTERFACE TO THE FIRE PUMP SUCTION AND DISCHARGE CONNECTIONS.
 - PROVIDE THRUST BLOCKS RESTRAINTS MEETING NFPA 24 FOR INTERFACES FROM THE 6-INCH MAIN AFTER THE DOUBLE CHECK VALVE ASSEMBLY TO/FROM THE FIRE PUMP SUCTION AND DISCHARGE INTERFACE POINTS THAT SHALL BE ROUTED UNDERGROUND AND IN BUILDING B10 CRAWL SPACE.
 - COORDINATE LOCATION OF THE FIRE PUMP HOUSE AND INTERIOR COMPONENTS TWO GROUND UTILITY ACCESS THAT REQUIRE ACCESSIBILITY WITHIN THE FIRE PUMP HOUSE. FOR ONE (1) 14 INCH X 14 INCH PLUMBING CLEANOUT AND ONE (1) 12 INCH ELECTRICAL ACCESS POINT. FINAL DOOR AND ACCESS POINT LAYOUT SHALL BE DETERMINED BY FINAL FIELD CONDITIONS AND OPTIMIZED FOR MAXIMUM ACCESS. A MINIMUM OF TWO (2) DOORS SHALL BE PROVIDED.
 - CONCRETE HOUSEKEEPING PAD SHALL BE PROVIDED TO LOCATE THE FIRE PUMP HOUSE. SHALL BE A MINIMUM OF 8" ABOVE EXTERIOR BUILDING FLOOR LEVEL. HOUSEKEEPING PAD SHALL BE 6" WIDER THAN THE FIRE PUMP HOUSE. REFER TO STRUCTURAL SPECIFICATIONS AND DRAWINGS FOR DESIGN REQUIREMENTS OF THE CONCRETE HOUSEKEEPING PAD. REFER TO DRAWING FX-004 FOR HOUSEKEEPING PAD DETAIL AND TECHNICAL REQUIREMENTS.
 - TEMPORARY FIRE PUMP. FINAL LOCATION TO BE COORDINATED WITH VA REPRESENTATIVE. FIRE SUPPRESSION CONTRACTOR SHALL PROVIDE TEMPORARY 6-INCH HOSES THAT MEETS THE BELOW REQUIREMENTS:
 - HOSE SHALL BE RATED FOR 175-PSIG MINIMUM WORKING PRESSURE.
 - FIRE HOSE SHALL COMPLY WITH NFPA 1961 AND UL 219.
 - LINE FIRE HOSE WITH SWIVEL INLET, COUPLING, GASKET AND NOZZLE. LENGTH SHALL BE OF LENGTH TO SAFELY INTERFACE BETWEEN THE TEMPORARY FIRE PUMP CONNECTION ON BUILDING B10 AND THE TEMPORARY FIRE PUMP SUCTION AND DISCHARGE CONNECTION. THE FIRE HOSE JACKET SHALL BE A COMBINATION OF NATURAL AND SYNTHETIC THREADS.
 - THE LINING AND COVER SHALL BE RUBBER, PLASTIC, OR COMBINATION OF RUBBER AND PLASTIC PRODUCTS.
 - THE NOZZLE SHALL BE A UL 401 SPRAY NOZZLE MADE OF BRASS, POLISHED BRASS, ROUGH CHROME PLATED BRASS OR POLISHED CHROME PLATED BRASS.
 - FINAL INTERFACE POINTS OF THE BELOW GRADE AND ABOVE GRADE FIRE SUPPRESSION PIPING TO THE FIRE PUMP SUCTION AND DISCHARGE LOCATIONS SHALL BE INTERFACED WITH MANUFACTURER/FABRICATORS APPROVED ENGINEERED SHOP DRAWINGS.
 - PROVIDE HEAT TRACE FOR ALL EXTERIOR ABOVEGROUND OF FIRE PROTECTION PIPING THAT IS OUTSIDE THE PERIMETER OF THE FIRE PUMP HOUSE. REFER TO DIVISION 22, SECTION 21 06 33, "HEAT TRACING FOR PLUMBING PIPING AND REFER TO THE ELECTRICAL DESIGN DOCUMENTS FOR CIRCUITING AND INTERFACE WITH INTERFACING ELECTRICAL PANEL.
 - A HORIZONTAL SEVEN-GALLON SPILL-PROOF CONTAINER SHALL BE PROVIDED RECESSED ON THE OUTSIDE WALL TERMINATION POINT FOR FUEL OIL STORAGE TANK FILL LINES.
 - PROVIDE PIPE STANDS FOR ALL FIRE SUPPRESSION PIPING THAT IS EXTERIOR ABOVEGROUND PIPING.
- FIRE PROTECTION DESIGN CRITERIA**
- | | | |
|---|---|-----------------------------|
| ORDINARY HAZARD GROUP 2 - FIRE PUMP HOUSE, NFPA 13, SECTION 26.27.1.8 | DESIGN DENSITY: | 0.25GPM/SQ.FT |
| | HYDRAULICALLY MOST DEMANDING AREA OVER ENTIRE ROOM AREA | 34INCH |
| | SPRINKLER ORIFICE | 130SQ.FT. |
| | MAXIMUM COVERAGE/SPRINKLER HEAD: | 250GPM |
| | HOSE STREAM ALLOWANCE INSIDE/OUTSIDE: | 8.0GPM/(PSI) ^{1/2} |
| | K FACTOR: | |
- GENERAL NOTES:**
- REFER TO DRAWING FX-001 FOR FIRE PROTECTION GENERAL NOTES, ABBREVIATIONS AND SYMBOLS.
 - REFER TO DRAWING FX-004 FOR FIRE SUPPRESSION IMPAIRMENT PROCEDURES FOR FIRE SUPPRESSION AND FIRE ALARM SYSTEMS.
 - REFER TO DRAWING FX-004 FOR FIRE PUMP MANUFACTURERS SCHEMATIC DESIGN AND HOUSEKEEPING PAD DETAIL & TECHNICAL REQUIREMENTS.
 - REFER TO FX-005 FOR TEMPORARY FIRE PUMP SCOPE OF WORK TO BE PERFORMED BY THIS CONTRACTOR.
 - SHUTDOWN OF EXISTING FIRE SUPPRESSION SYSTEM TO BUILDING B10 SHALL BE COORDINATED WITH THE VA DESIGN ENGINEER AND THE VA CONSTRUCTION REPRESENTATIVE.
 - REFER TO STRUCTURAL PLANS FOR ALL SITE SEISMIC DESIGN INFORMATION.
 - ALL FIRE PUMP SECTIONAL CONTROL VALVES, INCLUDING WATER SUPPLY CONTROL VALVES, SHALL HAVE A SIGN INDICATING THE PORTION OF THE SYSTEM THAT IS CONTROLLED BY THE VALVE AND VALVES SHALL HAVE IDENTIFICATION/VALVE TAG NUMBER. ALL ISOLATION VALVES SHALL BE ELECTRONICALLY SUPERVISED BY TAMPER/WATERFLOW SWITCHES.
 - PIPE ROUTING SHOWN ON THESE CONTRACT DOCUMENTS ARE SUGGESTED AND THE FIRE PROTECTION CONTRACTOR SHALL BE ALLOWED TO MODIFY AS PER THEIR COMPANY DESIGN STANDARDS, EXCEPT NO PIPING SHALL BE ROUTED OVER ANY ELECTRICAL PANELS OR ELECTRICAL EQUIPMENT. WHERE THE FIRE PROTECTION PIPING BECOMES AN OBSTRUCTION, VIOLATES NEC CODE OR INHIBITS THE OPERATION OF THE SPECIFIC PIECE OF EQUIPMENT.
 - ALL DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR TO PROVIDE COORDINATION DOCUMENTS IN ACCORDANCE WITH THE SPECIFICATIONS. ADDITIONAL TRANSITIONS REQUIRED DUE TO FIELD CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THRUST RESTRAINTS, USING THRUST BLOCKS AND/OR RESTRAINED LENGTH, ARE SHOWN ON SHEET FX-005, DETAILS 6 AND 10. THRUST BLOCKS, RESTRAINED JOINTS USING THE RODS OR RETAINER GLANDS, SHALL BE PROVIDED AND MEET THE AUTHORITY HAVING JURISDICTION (A.H.J.) REQUIREMENT. ALL THRUST BLOCK RESTRAINING METHODS SELECTED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER AND THE AUTHORITY HAVING JURISDICTION. THIS CONTRACTOR IS RESPONSIBLE FOR SUBMITTING TO THE VA COR AND ENGINEER AN APPROVAL LETTER FROM THE A.H.J. THAT THE INSTALLED THRUST RESTRAINT SYSTEM MEETS NFPA 24, SECTION 10.6, "RESTRAINTS" AND ANY LOCAL JURISDICTIONAL REQUIREMENTS.
 - SPRINKLER HEAD GUARDS SHALL BE PROVIDED IN THE FIRE PUMP HOUSE FOR PROTECTION OF THE INDIVIDUAL SPRINKLER HEADS SINCE THEY MAY BE SUBJECT TO MECHANICAL DAMAGE.
 - EXACT LOCATION AND QUANTITIES OF WATER FLOW AND TAMPER/SUPERVISORY SHALL BE VERIFIED BY THE CONTRACTOR. ALL FIRE SPRINKLER SYSTEM SHALL HAVE THESE DEVICES. CONTRACTOR PRICING SHALL INCLUDE CONNECTION OF THESE DEVICES WHETHER SHOWN OR LOCATED ON THE DESIGN DOCUMENT DRAWINGS.
 - THE INFORMATION GIVEN HEREIN IS AS EXACT AS COULD BE SECURED FOR BIDDING PURPOSES AND ITS ACCURACY IS NOT GUARANTEED. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR EXAMINING NEW JOB CONDITIONS AND VERIFYING ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC., BEFORE STARTING THE DEMOLITION OR NEW WORK.
 - THE DRAWING SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES. THE SCALE WHEN INDICATED FOR GENERAL REFERENCE ONLY.
 - ALL VALVES CONTROLLING FIRE PROTECTION EQUIPMENT AND FIRE PROTECTION MAINS SHALL BE PROVIDED WITH A TAMPER/SUPERVISORY SWITCHES WIRED TO THE FIRE ALARM CONTROL PANEL.
 - EXACT LOCATIONS AND QUANTITIES OF WATER FLOW AND TAMPER SWITCHES SHALL BE VERIFIED BY THE CONTRACTOR. ALL FIRE SPRINKLER SYSTEM SHALL HAVE THESE DEVICES. CONTRACTOR PRICING SHALL INCLUDE CONNECTION OF THESE DEVICES WHETHER SHOWN OR LOCATED ON THE DESIGN DOCUMENT DRAWINGS.
 - AIR VENT SHALL BE IN AN ACCESSIBLE LOCATION NEAR A HIGH POINT IN THE FIRE PUMP SUPPRESSION SYSTEM TO ALLOW AIR TO BE REMOVED FROM THE WET PIPE FIRE SUPPRESSION SYSTEM. THE DISCHARGE FROM THE AIR VENT SHALL BE ROUTED TO GRADE WITHIN THE FIRE PUMP HOUSE WITH AN APPROVED AIR CAP OF NOT LESS THAN 4 INCHES IN INVERT ELEVATION BETWEEN THE END OF THE DISCHARGE PIPING AND THE FLOOR DRAIN. THE DISCHARGE SHALL NOT BE DIRECTLY CONNECTED TO THE FLOOR DRAINAGE SYSTEM.
 - DRY PIPE SYSTEM FOR THE FIRE PUMP HOUSE BRANCH AND MAIN LINES SLOPE REQUIREMENTS ARE:
 - BRANCH LINES SHALL BE PITCHED AT LEAST 1/2-INCH PER 10 FEET.
 - MAINS SHALL BE PITCHED AT LEAST 1/2 INCH PER 10 FEET.
 - BRANCH AND MAIN LINES SLOPES SHALL MEET ABOVE AND MEET THE REQUIREMENTS OF NFPA 13, 2022 EDITION, SECTION 16.10.3, NO EXCEPTIONS.
 - REFER TO THE FOLLOWING SPECIFICATIONS RELATIVE TO THE COMPLETE ASSEMBLY OF THE FIRE PUMP AND FIRE PUMP HOUSE PACKAGE AS THEY RELATE TO DIVISION 21 AND DIVISION 28 IN INTERFACING DIVISION OF RESPONSIBILITY:
 - SPECIFICATION 21 08 00, "COMMISSIONING OF FIRE SUPPRESSION SYSTEMS."
 - SPECIFICATION 21 07 44, "FIRE SUPPRESSION INSULATION."
 - SPECIFICATION 21 13 13, "WET PIPE SPRINKLER SYSTEM."
 - SPECIFICATION 21 13 16, "DRY PIPE SPRINKLER SYSTEM."
 - SPECIFICATION 21 30 16, "DIESEL DRIVEN FIRE PUMP WITH HOUSE."
 - SPECIFICATION 28 05 00, "COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY."
 - SPECIFICATION 28 05 26, "GROUNDING AND BONDING FOR ELECTRONIC SAFETY AND SECURITY."
 - SPECIFICATION 28 05 28.33, "CONDUITS AND BACK BOXERS FOR ELECTRONIC SAFETY AND SECURITY."
 - SPECIFICATION 28 08 00, "COMMISSIONING OF ELECTRONIC SAFETY AND SECURITY SYSTEMS."
 - SPECIFICATION 28 31 00, "FIRE DETECTION AND ALARM."
 - CONTRACTOR SHALL SUBMIT FIRE SUPPRESSION & FIRE DETECTION SHOP DRAWING, PLANS, CALCULATIONS AND MATERIAL DATA "OUT SHEETS" TO THE DESIGN CONSULTANT AND VA FIRE OFFICIAL FOR REVIEW AND APPROVAL PRIOR TO NEW INSTALLATION OF ANY FIRE SUPPRESSION AND FIRE ALARM/DETECTION SYSTEMS.
 - THE LOCATION OF 6-INCH TEMPORARY FIRE DEPARTMENT CONNECTIONS ARE SHOWN ON DRAWING FX-200.
 - THE FIRE PUMP PACKAGE FOOTPRINT IS FIXED AT 11' (WIDE) X 16' (LONG), NO DEVIATIONS ALLOWED.

THIS SHEET IS BEING PROVIDED FOR INFORMATION PURPOSES FOR THE PROCUREMENT OF THE FIRE PUMP HOUSE/PACKAGE COMPLETE.

WALL RATING LEGEND:

SMOKE TIGHT PARTITION (BUT NOT SMOKE RATED)	---
1 HOUR FIRE RESISTIVE CONSTRUCTION	=====
1 HOUR FIRE RESISTIVE CONSTRUCTION & SMOKE BARRIER	=====
2 HOUR FIRE RESISTIVE CONSTRUCTION	=====
2 HOUR FIRE RESISTIVE CONSTRUCTION & SMOKE BARRIER	=====

1 FIRST FLOOR PLAN - FIRE PROTECTION PLAN
1/8" = 1'-0"

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Rev. No.	Revisions:	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title
PERMANENT FIRE SUPPRESSION - FIRE PUMP HOUSE PLAN
Approved:

Phase
ACQUISITION DRAWINGS
BID SET

Project Title W.J.B. Dorn VA Medical Center B10 Permanent Diesel Fire Pump Acquisition Package		Project Number 544-22-130	
Location COLUMBIA, SC		Building Number BUILDING 10	
Issue Date 05/03/22	Checked GAT	Drawn JRC	Drawing Number FX-201

A
B
C
D
E
F



NOTE: THE FIRE PUMP PACKAGE FOOTPRINT IS FIXED AT 11' (WIDE) X 16' (LONG), NO DEVIATIONS ALLOWED.

ELECTRICAL FLOOR BOX WITH COVER WHERE THE FIRE PUMP HOUSE INTERNAL CONFIGURATION MUST PROVIDE ACCESS TO THIS BOX WITHIN THE FIRE PUMP HOUSE AND COORDINATE ACCESSIBILITY WITHIN THE FIRE PUMP HOUSE & EQUIPMENT

PLUMBING CLEANOUT WHERE THE FIRE PUMP HOUSE INTERNAL CONFIGURATION MUST PROVIDE ACCESS TO THIS BOX WITHIN THE FIRE PUMP HOUSE AND COORDINATE ACCESSIBILITY WITHIN THE FIRE PUMP HOUSE & EQUIPMENT

Rev. No.	Revisions:	Date:

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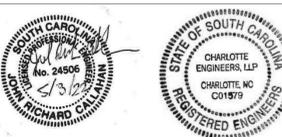


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Construction
and Facilities
Management



U.S. Department
of Veterans
Affairs

Drawing Title
**PERMANENT FIRE SUPPRESSION
-EXISTING CONDITION**

Approved:

Phase
**ACQUISITION
DRAWINGS**

BID SET

Project Title
W.J.B. Dorn VA Medical Center B10
Permanent Diesel Fire Pump
Acquisition Package

Location
COLUMBIA, SC

Issue Date
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Checked
GAT

Drawn
JRC

Project Number
544-22-130

Building Number
BUILDING 10

Drawing Number
FX-202

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