

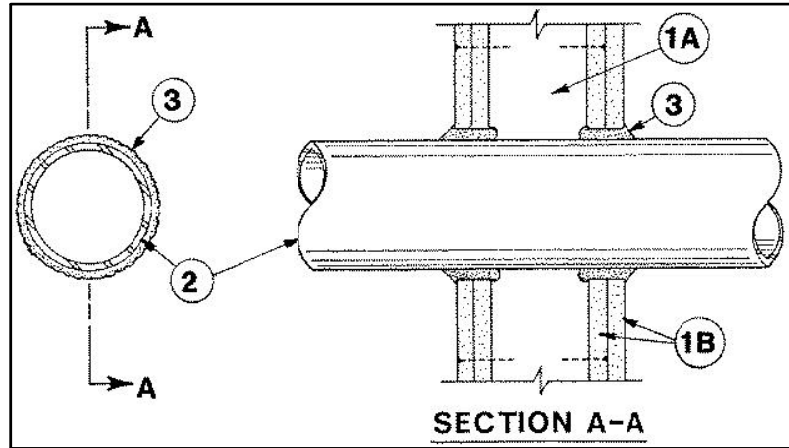
System No. W-L-1001

F Ratings --- 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings --- 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient --- less than 1 CFM/sq ft

L Rating At 400 F --- less than 1 CFM/sq ft



1. **Wall Assembly** --- The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** --- Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. **Gypsum Boards** --- Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in.

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

A. **Steel Pipe** --- Nom 24 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** --- Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

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

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

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

F. **Through Penetrating Products** --- **Flexible Metal Piping** --- The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

GASTITE, DIV OF TITFLEX

3. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG LLC

Fill, Void or Cavity Material --- **Caulk or Sealant** --- Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

| Max Pipe or Conduit Diam In | F RATING Hr | T RATING Hr |
|-----------------------------|-------------|-------------|
| 1 | 1 or 2 | 0+, 1 or 2 |
| 1 | 3 or 4 | 3 or 4 |
| 4 | 1 or 2 | 0 |
| 6 | 3 or 4 | 0 |
| 12 | 1 or 2 | 0 |

+When copper pipe is used, T Rating is 0 hr.

3M COMPANY --- CP 25NB+ or FB-3000 WT.

+Bearing the UL Classification Mark

DIVISION 16 -- FIRE ALARM

PART 1 -- GENERAL

1.1 DESCRIPTION OF THE WORK

A. Work under this section includes, but is not necessarily limited to, furnishing and installing the following:

1. Fire alarm panel, wiring and devices

B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct operation.

C. All work under this contract shall be installed in accordance with the latest edition of the following codes and standards insofar as they apply:

1. The 2017 National Electrical Code.
2. NFPA 72
3. Underwriter's Laboratories, Inc., Standards and approved listings.
4. Electrical Testing Laboratories standards.
5. North Carolina Building Code, Latest Edition and Revisions.
6. All local codes and ordinances.

D. The Fire Alarm Contractor shall be licensed in the State of North Carolina and have all local licenses required for the work

E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.

F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

1.2 INTENT

A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Fire Alarm Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost to the Owner.

1.3 COORDINATION

A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming operations.

B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any rough-in.

1.4 SHOP DRAWINGS

A. Provide complete shop drawings per NCSFC section 907.1.2 to the local fire marshal prior to start of construction including:

1. Floorplan with room names
2. Location of all FA devices
3. Location of panels
4. Power connections
5. Battery calculations
6. Conductors types and sizes
7. Voltage drop calculations
8. Equipment cut-sheets, model numbers, etc.

PART 2 -- PRODUCTS AND MATERIALS

2.1 GENERAL

A. All material shall be new and shall bear the manufacturer's name, trade name, and UL label where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.

1. Boxes installed in concealed locations shall be set flush with the finished surfaces.
2. Provide rated boxes in all fire barriers & walls installed per code.

PART 3 -- EXECUTION

3.1 FIRE ALARM SYSTEM EQUIPMENT

A. Provide a complete operable fire alarm system as shown on the drawings and as required by State, and Local codes.

B. The main control panel is existing. The unit is an addressable type. Verify spare capacity is available prior to bid. Expand as required.

C. Provide a remote key test switch for the duct detectors. Locate as directed by the local AHJ.

D. All fire alarm system cables shall be installed in conduit. Size as required by the equipment supplier. Provide a submittal of all devices and a riser diagram for approval before installation of any equipment.

E. The return air smoke detectors will be furnished by the E.C. to the HVAC contractor for installation. The HVAC contr shall be responsible for the shut down of all AHU's. The E.C. shall be responsible for all connections to the fire alarm controller.

3.2 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.3 GUARANTEE

A. Guarantee all materials and labor included in the fire alarm work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.

FIRE ALARM LEGEND

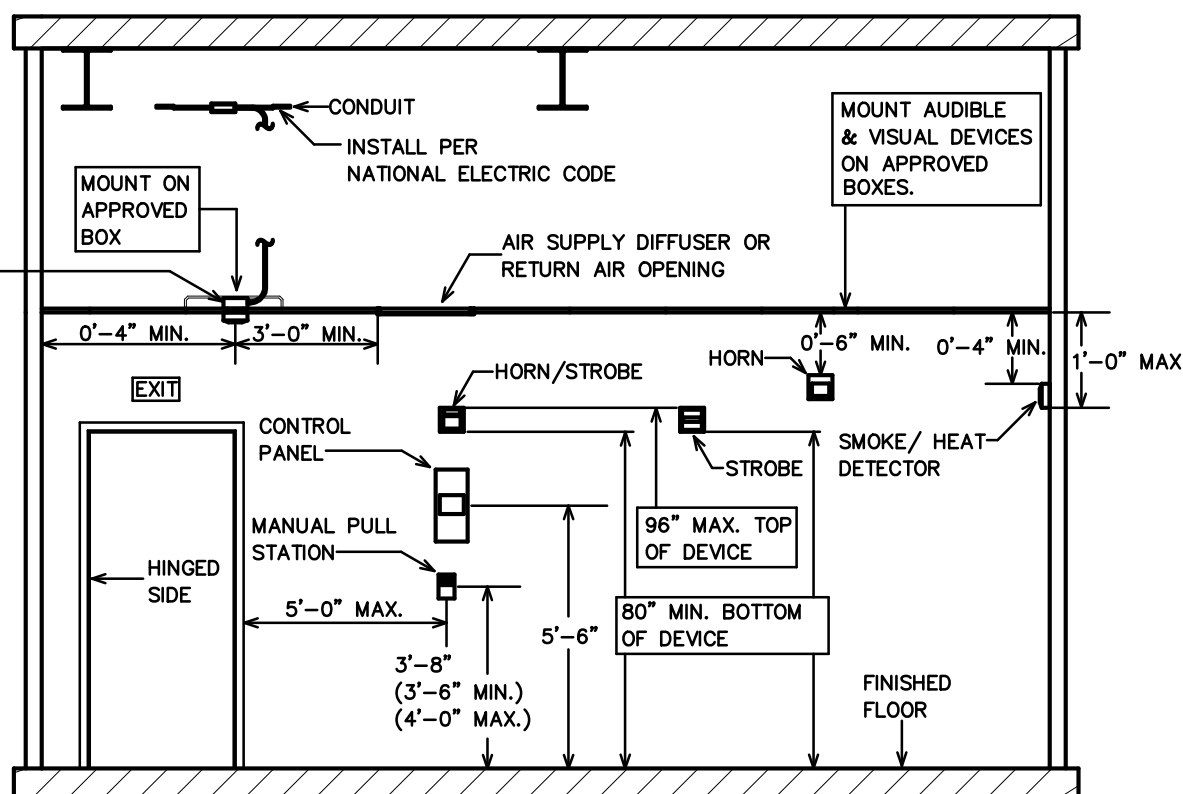
- xx HORN/STROBE SIGNALING DEVICE (XX) CANDELLA RATING; (S) INDICATES STROBE-ONLY
- PULL STATION
- SMOKE DETECTOR
- DUCT SMOKE DETECTOR
- FACP FIRE ALARM CONTROL PANEL

FIRE ALARM LEGEND

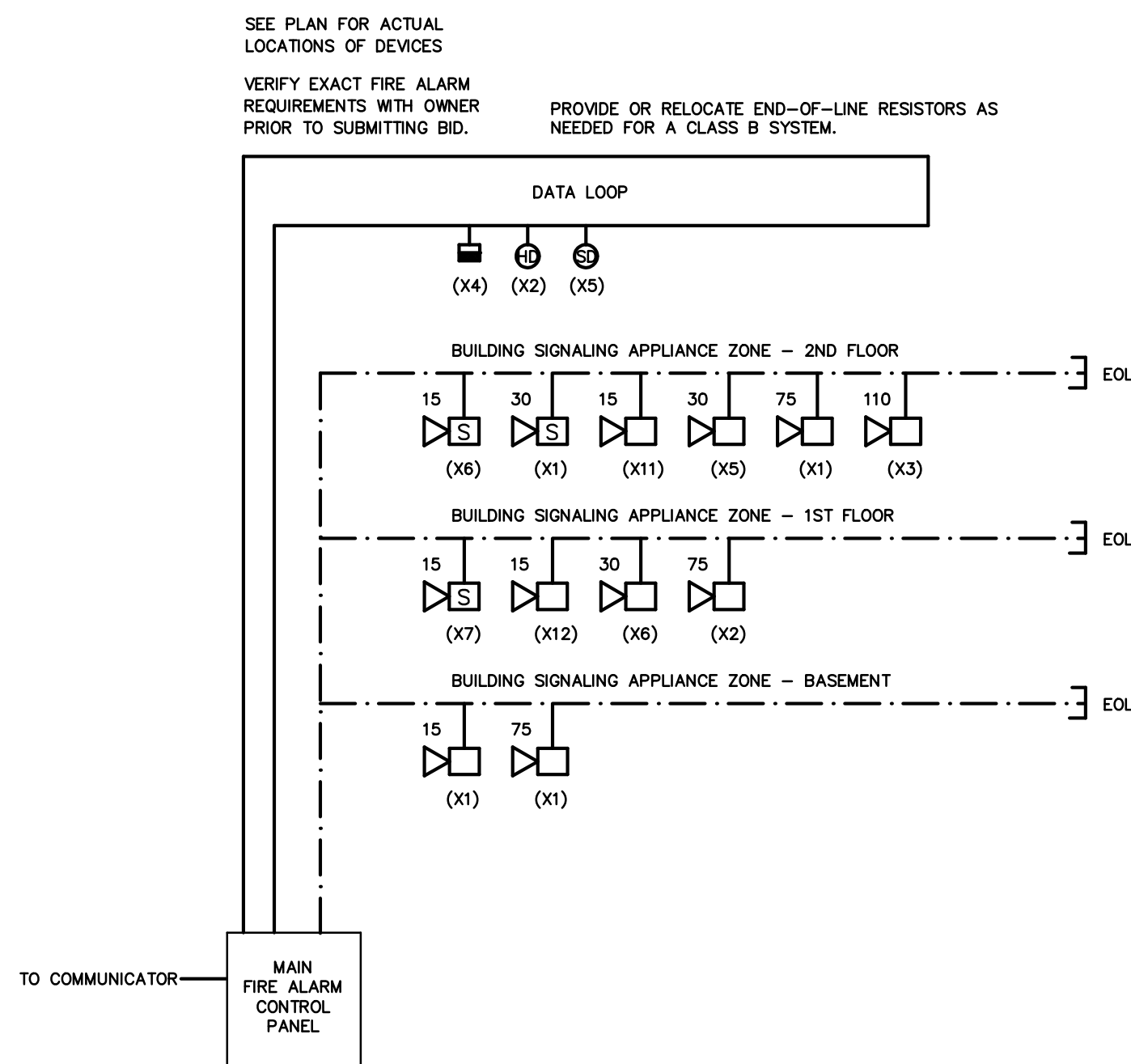
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1 FA-1 DEVICE MOUNTING DETAIL SCALE: NTS

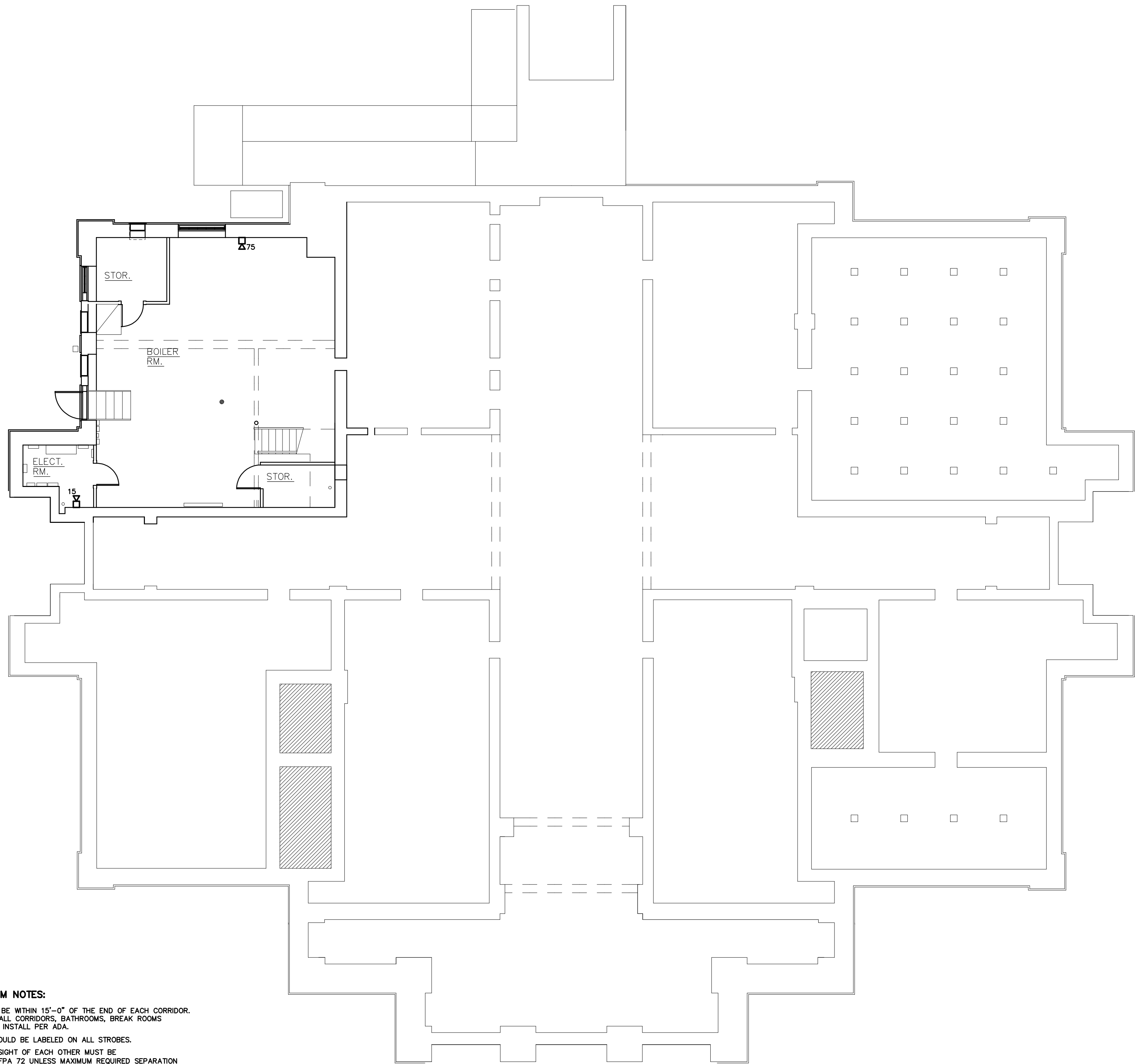


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- 2 CANDELA RATINGS SHOULD BE LABELED ON ALL STROBES.
- 3 ALL STROBES WITHIN SIGHT OF EACH OTHER MUST BE SYNCHRONIZED PER NFPA 72 UNLESS MAXIMUM REQUIRED SEPARATION IS OBTAINED.
- 4 THE MAIN FIRE ALARM PANEL IS LOCATED IN THE CLERKS OFFICE. VERIFY.
- 5 VERIFY THAT A SD IS ADJACENT TO THE FACP.
- 6 ALL EXPOSED WIRE SHALL BE IN CONDUIT. PLENUM RATED CABLE MAY BE USED WHERE CONCEALED IN ALL AREAS EXCEPT ASSEMBLY AREAS. ALL WIRING IN ASSEMBLY AREAS MUST BE IN CONDUIT.
- 7 ALL DEVICES, PANELS, ETC MUST BE BY SAME MANUFACTURER AND COMPATIBLE PROVIDE ALL ITEMS REQUIRED FOR A COMPLETE SYSTEM MEETING ALL CODES.
- 8 ALL WORK MUST MEET NFPA 72 AND APPLICABLE LOCAL CODES AND ORDINANCES. COORDINATE THE INSTALLATION WITH THE LOCAL FIRE MARSHALL.
- 9 MOUNT WALL-MOUNT HORN STROBES SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR.
- 10 MOUNT MANUAL PULL STATIONS SUCH THAT THE OPERABLE PART OF THE DEVICE IS NOT LESS THAN 42" AFF AND NOT MORE THAN 54" AFF.



BASEMENT FA PLAN

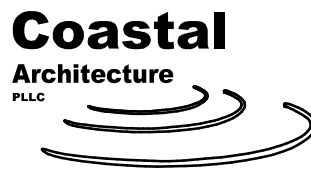
SCALE: 1/8"=1'-0"

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FIRST FLOOR
FIRE ALARM PLAN

19035

ISSUED: 8/15/2022

DWG BY: RM

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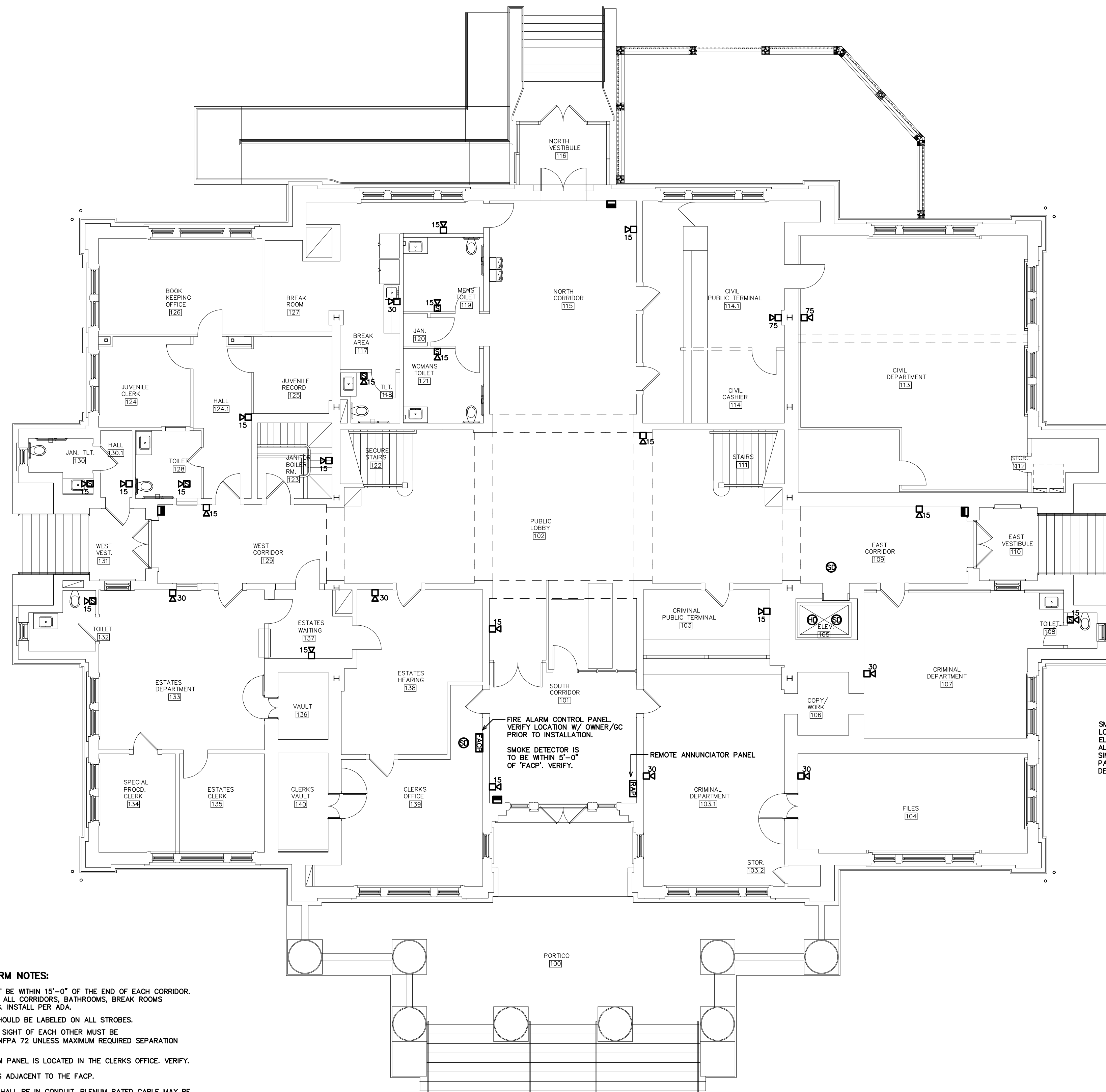
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NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.



GENERAL FIRE ALARM NOTES:

- 1 HORN/STROBES MUST BE WITHIN 15'-0" OF THE END OF EACH CORRIDOR. PROVIDE STROBES IN ALL CORRIDORS, BATHROOMS, BREAK ROOMS AND STORAGE AREAS. INSTALL PER ADA.
- 2 CANDELA RATINGS SHOULD BE LABELED ON ALL STROBES.
- 3 ALL STROBES WITHIN SIGHT OF EACH OTHER MUST BE SYNCHRONIZED PER NFPA 72 UNLESS MAXIMUM REQUIRED SEPARATION IS OBTAINED.
- 4 THE MAIN FIRE ALARM PANEL IS LOCATED IN THE CLERKS OFFICE. VERIFY.
- 5 VERIFY THAT A SD IS ADJACENT TO THE FACP.
- 6 ALL EXPOSED WIRE SHALL BE IN CONDUIT. PLENUM RATED CABLE MAY BE USED WHERE CONCEALED IN ALL AREAS EXCEPT ASSEMBLY AREAS. ALL WIRING IN ASSEMBLY AREAS MUST BE IN CONDUIT.
- 7 ALL DEVICES, PANELS, ETC MUST BE BY SAME MANUFACTURER AND COMPATIBLE PROVIDE ALL ITEMS REQUIRED FOR A COMPLETE SYSTEM MEETING ALL CODES.
- 8 ALL WORK MUST MEET NFPA 72 AND APPLICABLE LOCAL CODES AND ORDINANCES. COORDINATE THE INSTALLATION WITH THE LOCAL FIRE MARSHALL.
- 9 MOUNT WALL-MOUNT HORN STROBES SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR.
- 10 MOUNT MANUAL PULL STATIONS SUCH THAT THE OPERABLE PART OF THE DEVICE IS NOT LESS THAN 42" AFF AND NOT MORE THAN 54" AFF.

1
FA-2.1
SCALE: 1/8"=1'-0"

FIRST FLOOR FA PLAN

NOTE:
VERIFY HEIGHT/LOCATION OF ALL
DEVICES PRIOR TO INSTALLATION.
PROVIDE DUCT SMOKE DETECTORS
WITH ALL HVAC EQUIP OVER
5 TONS IN SIZE (EXISTING & NEW).

ENGINEER

BURKE DESIGN GROUP
3305-109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771-1916
FAX: (919) 779-0826
email: ben@bdg-nc.com
Corp. License # C-2682

COLUMBUS COUNTY COURTHOUSE
113 COURTHOUSE SQ.
WHITEVILLE, NORTH CAROLINA



SECOND FLOOR
FIRE ALARM PLAN

19035

ISSUED: 8/15/2022

DWG BY: RM

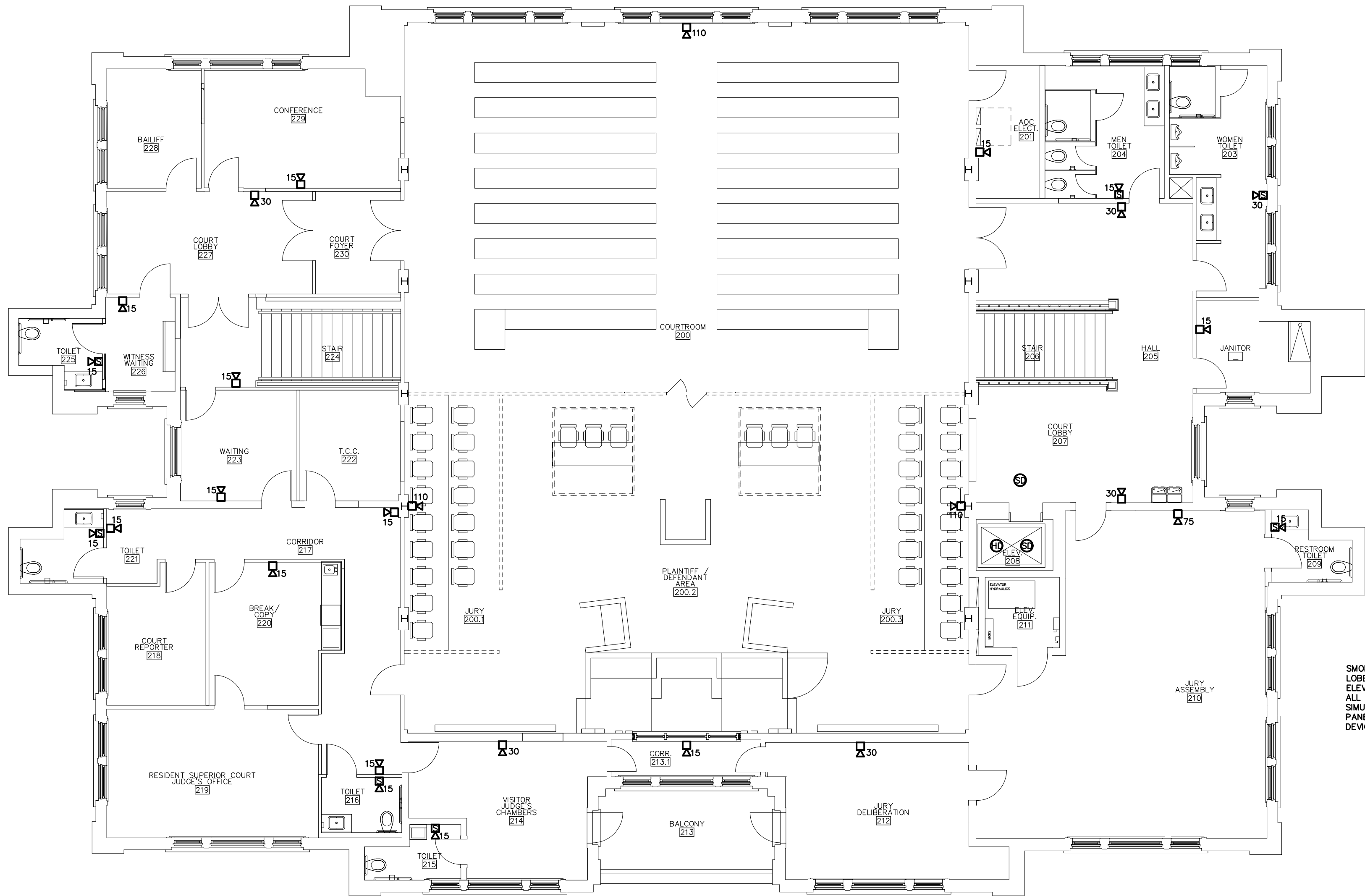
CKD BY: BEB

REVISIONS

SHEET NO.

FA-2.2

NOTE:
THE EXISTING INFORMATION SHOWN ON THIS SHEET IS FROM SHELL PERMIT DRAWINGS.
THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION.
THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS.
NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.



SMOKE DETECTORS ARE REQUIRED IN EACH ELEVATOR LOBBY WHEN ACTIVATED THEY SHALL PUT ELEVATOR IN THE FIREMAN'S RECALL OPERATION. ALL DETECTORS SHALL BE TIED TOGETHER TO ALARM SIMULTANEOUSLY. THE CONTRACTOR SHALL PROVIDE A SMALL PANEL IF REQUIRED FOR PROPER OPERATION. PROVIDE ALL DEVICES REQUIRED FOR A COMPLETE SYSTEM.

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1
FA-2.2
SCALE: 1/8"=1'-0"

NOTE:
VERIFY HEIGHT/LOCATION OF ALL DEVICES PRIOR TO INSTALLATION.
PROVIDE DUCT SMOKE DETECTORS WITH ALL HVAC EQUIP OVER 5 TONS IN SIZE (EXISTING & NEW).

ENGINEER

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