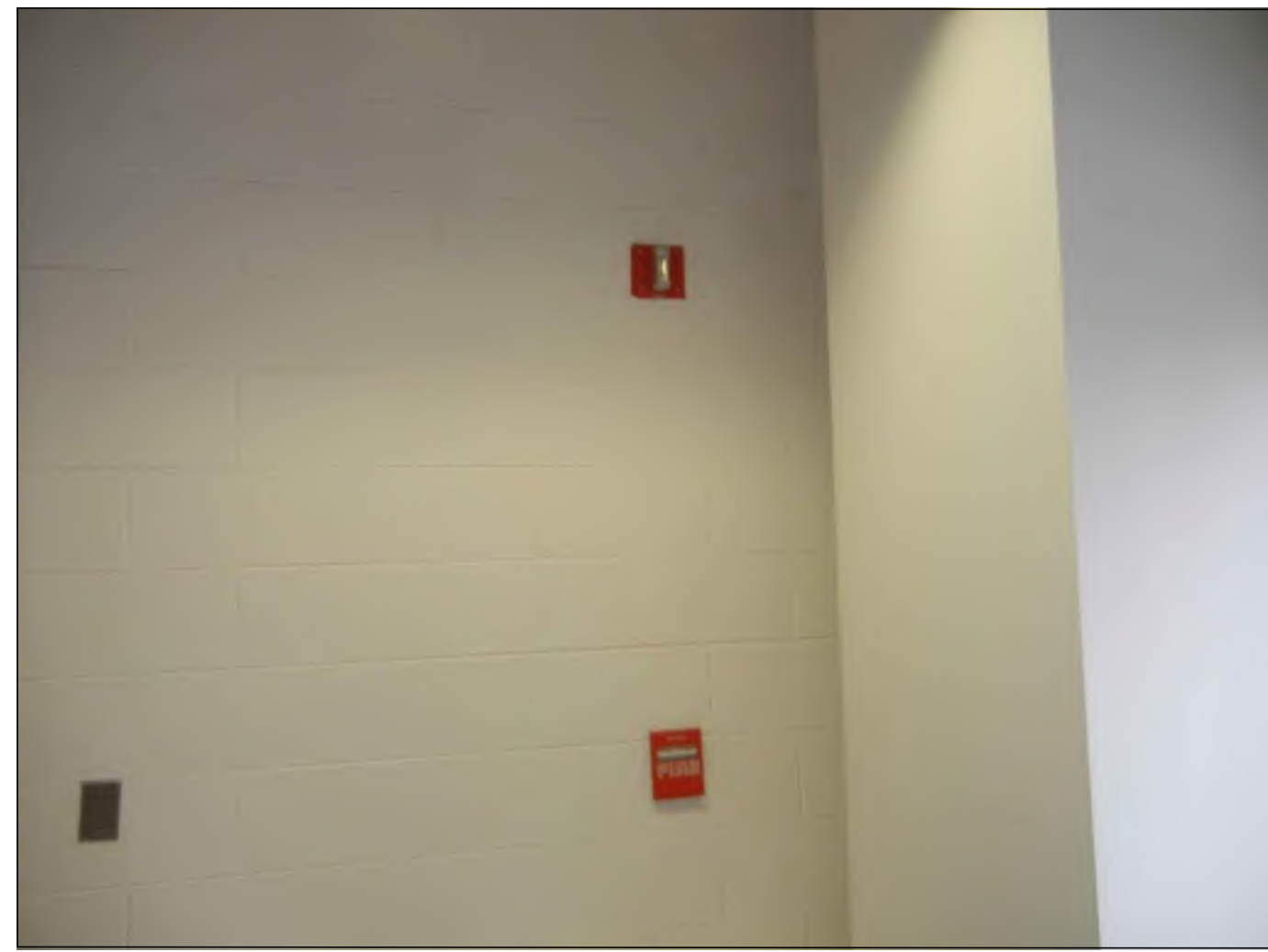


**FIRE ALARM PHOTOS**



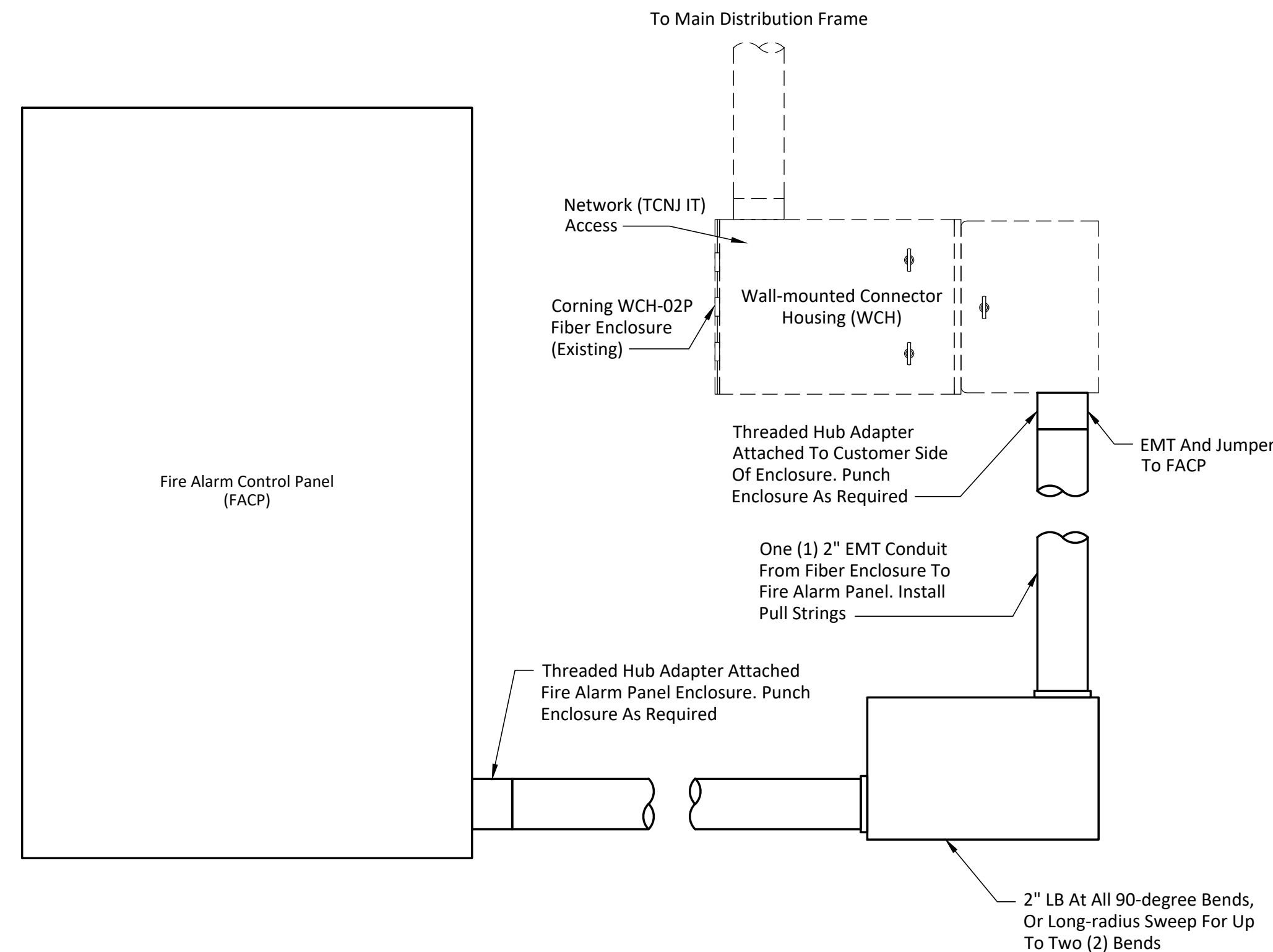
**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**

Honeywell FS90 Addressable Fire Alarm Control Panel And Honeywell Remote Fire Alarm Annunciator With Exposed Conduit Located Within Lower Level Electrical Room



**HONEYWELL FIRE ALARM DEVICES**

Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building



- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

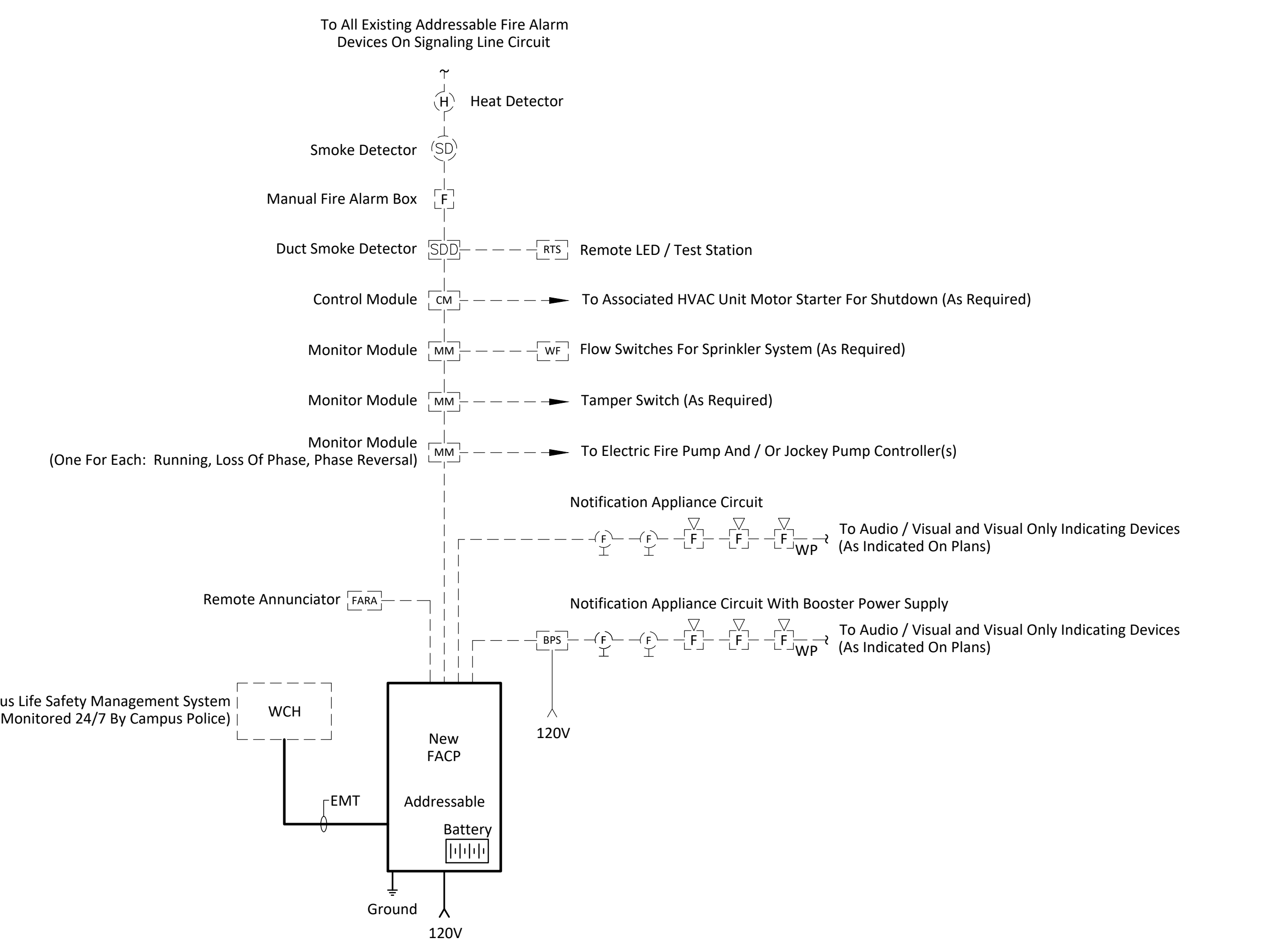
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.

**PARTIAL SYMBOLS & ABBREVIATIONS**

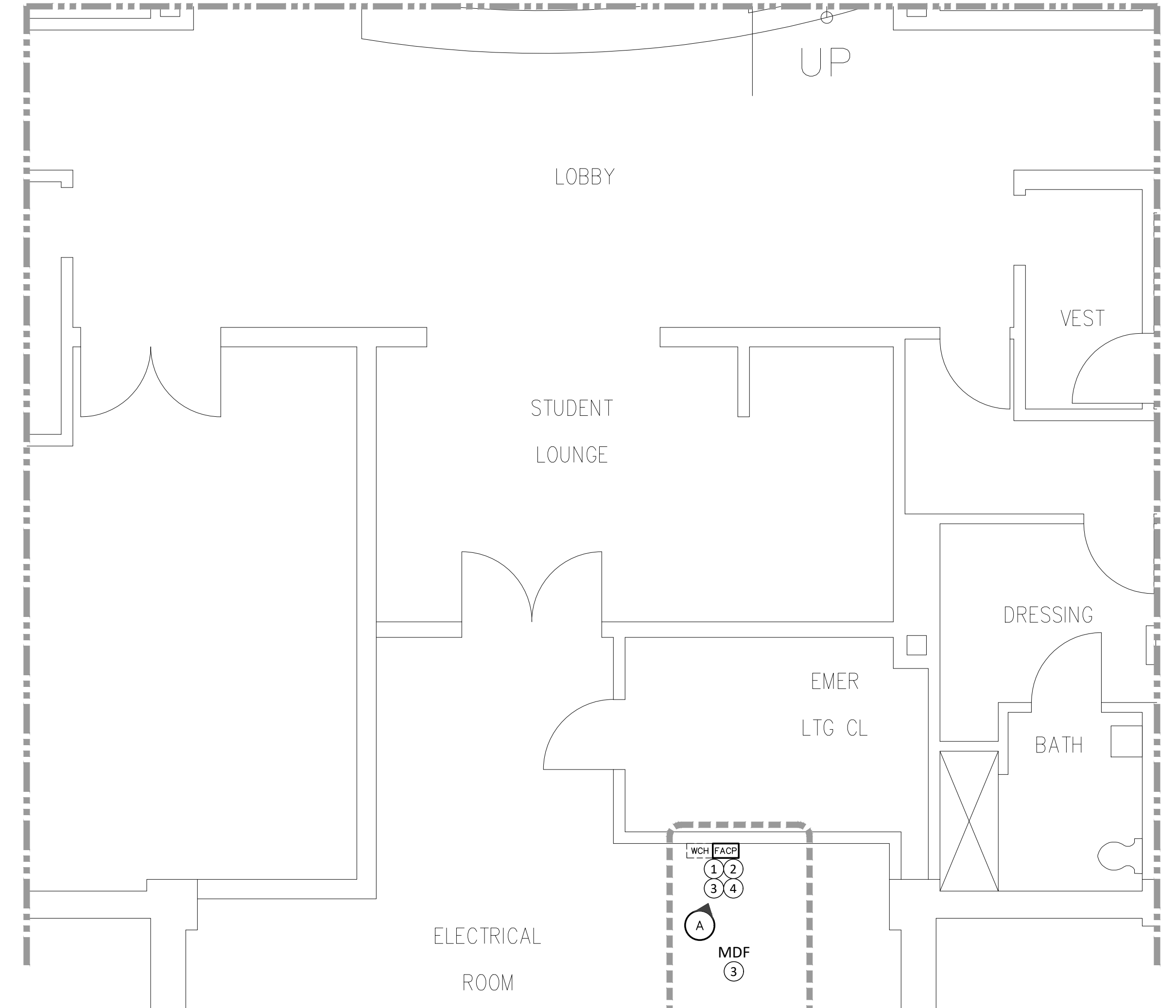
Identifier	Description	Identifier	Description
FACP	Fire Alarm Control Panel	FACP	Fire Alarm Control Panel
WCH	Existing Wall-Mounted Connector Housing	EMT	Electrical Metallic Tubing
FACP	Existing Fire Alarm Control Panel	CM	Control Module
□	New Equipment	MM	Monitor Module
□	Existing Equipment	WCH	Wall-Mounted Connector Housing
⊙	Photo Tag		
→	Connect To Existing		



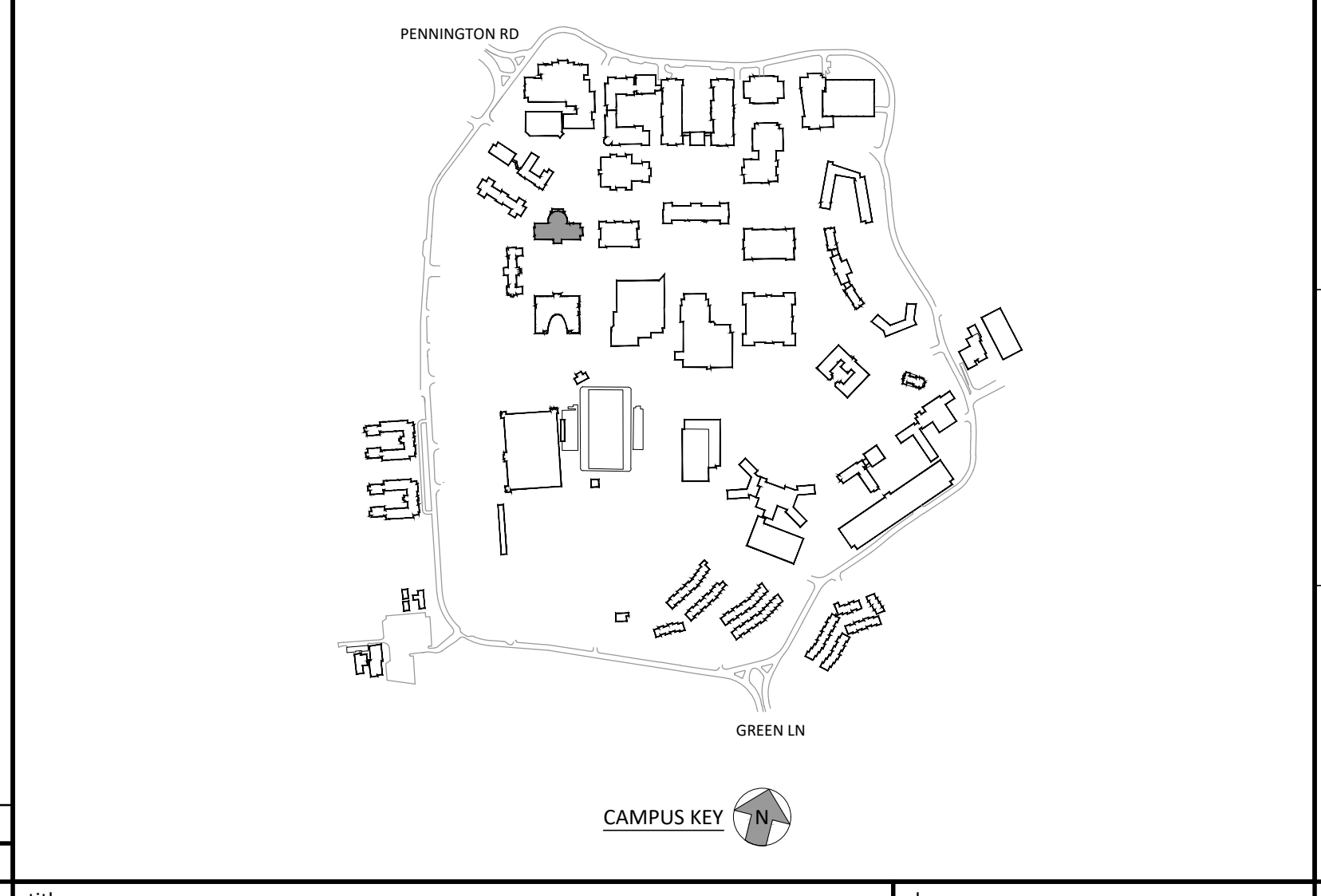
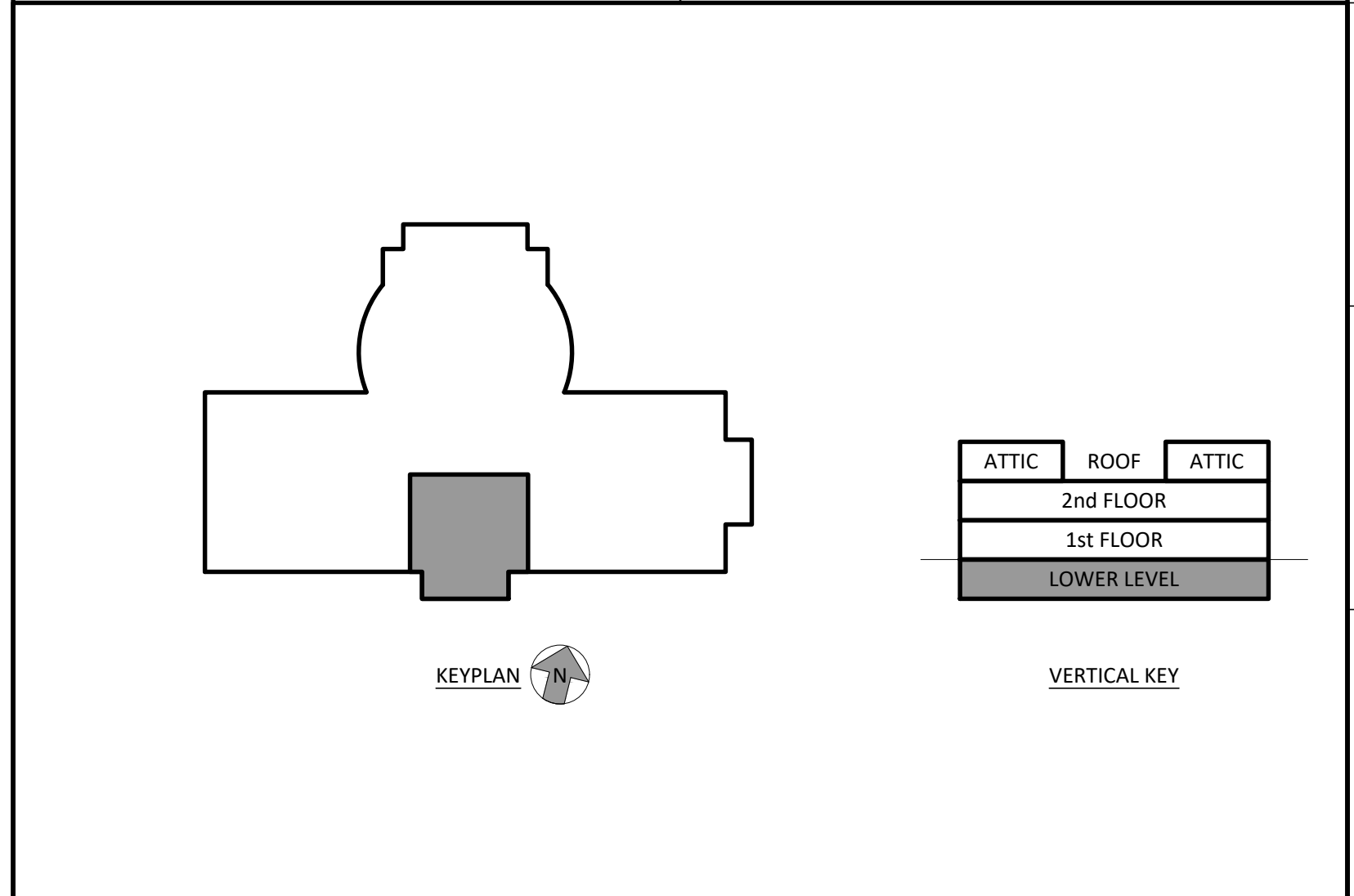
- NOTES:**
- General**
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - This Building Would Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment**
    - The Music Building Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell FS90 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring**
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing**
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - LOWER LEVEL** Scale: 1/4"=1'-0" Drawing: **E101** Detail: **03**

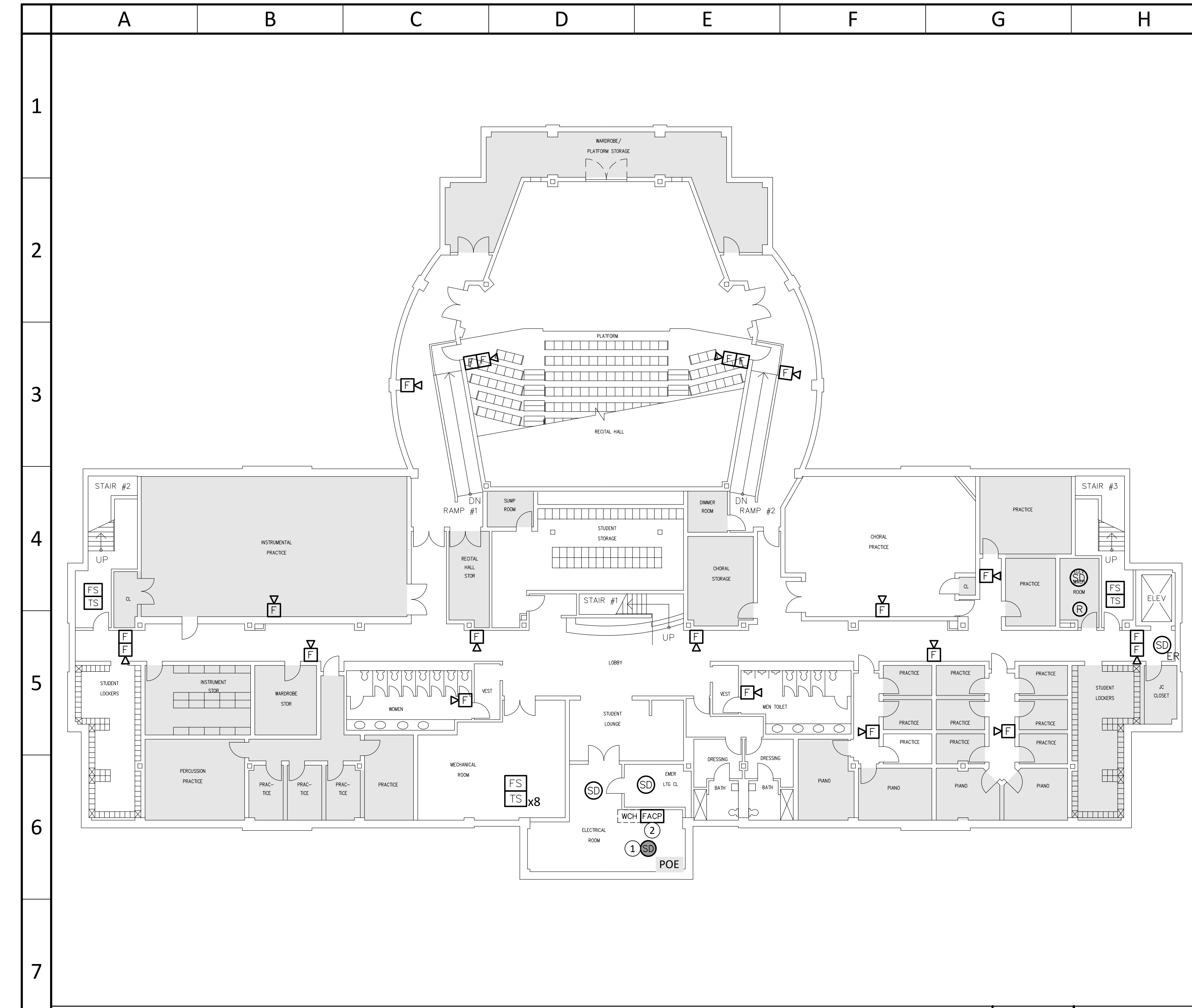


project	TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618	title	FIRE ALARM PANEL REPLACEMENT MUSIC BUILDING	dwg. no.	<b>E101-MUS</b>
scale	1/4" = 1'-0"	drawn by	SC	checked by	SF
		date	5/03/2020		

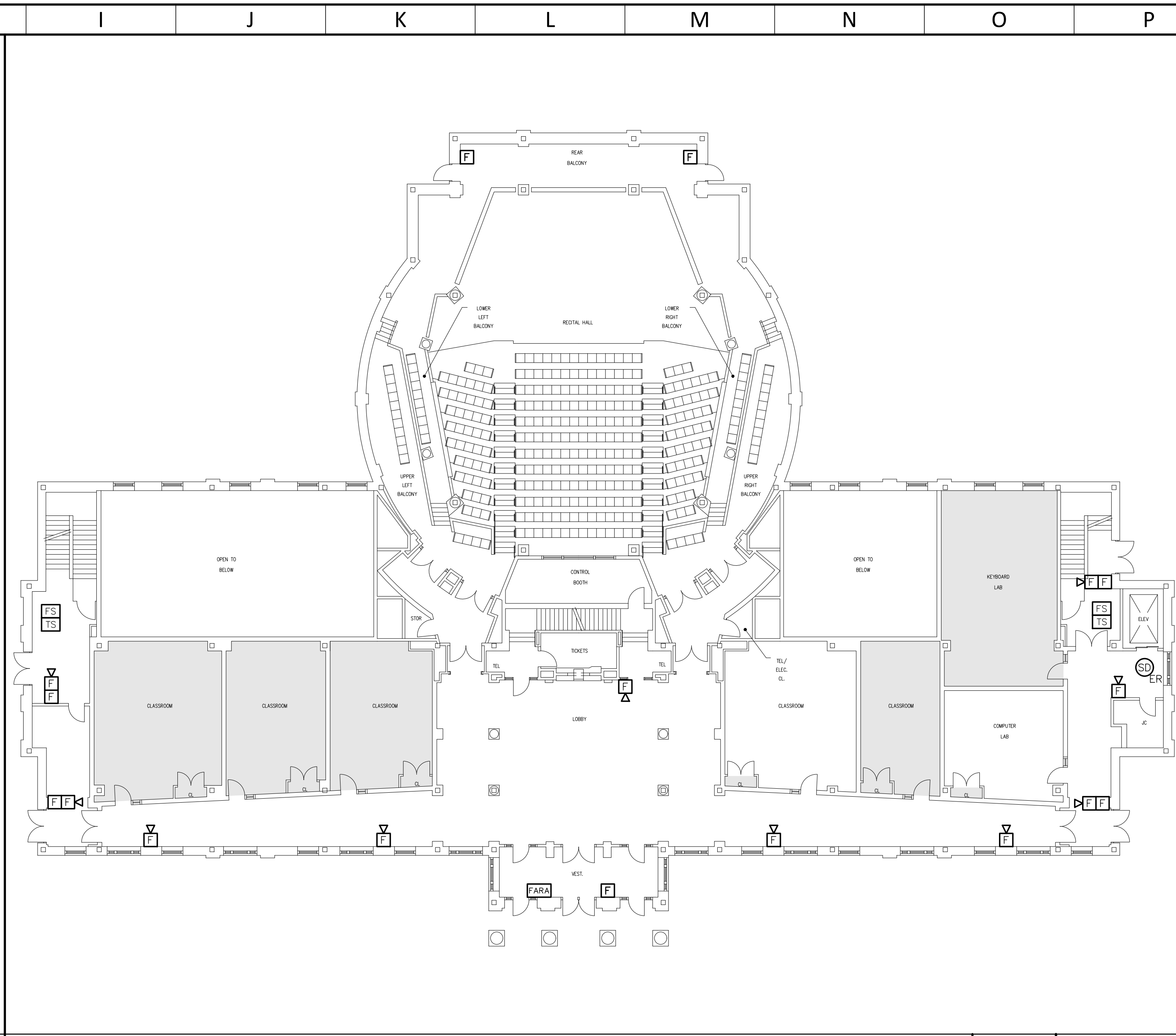
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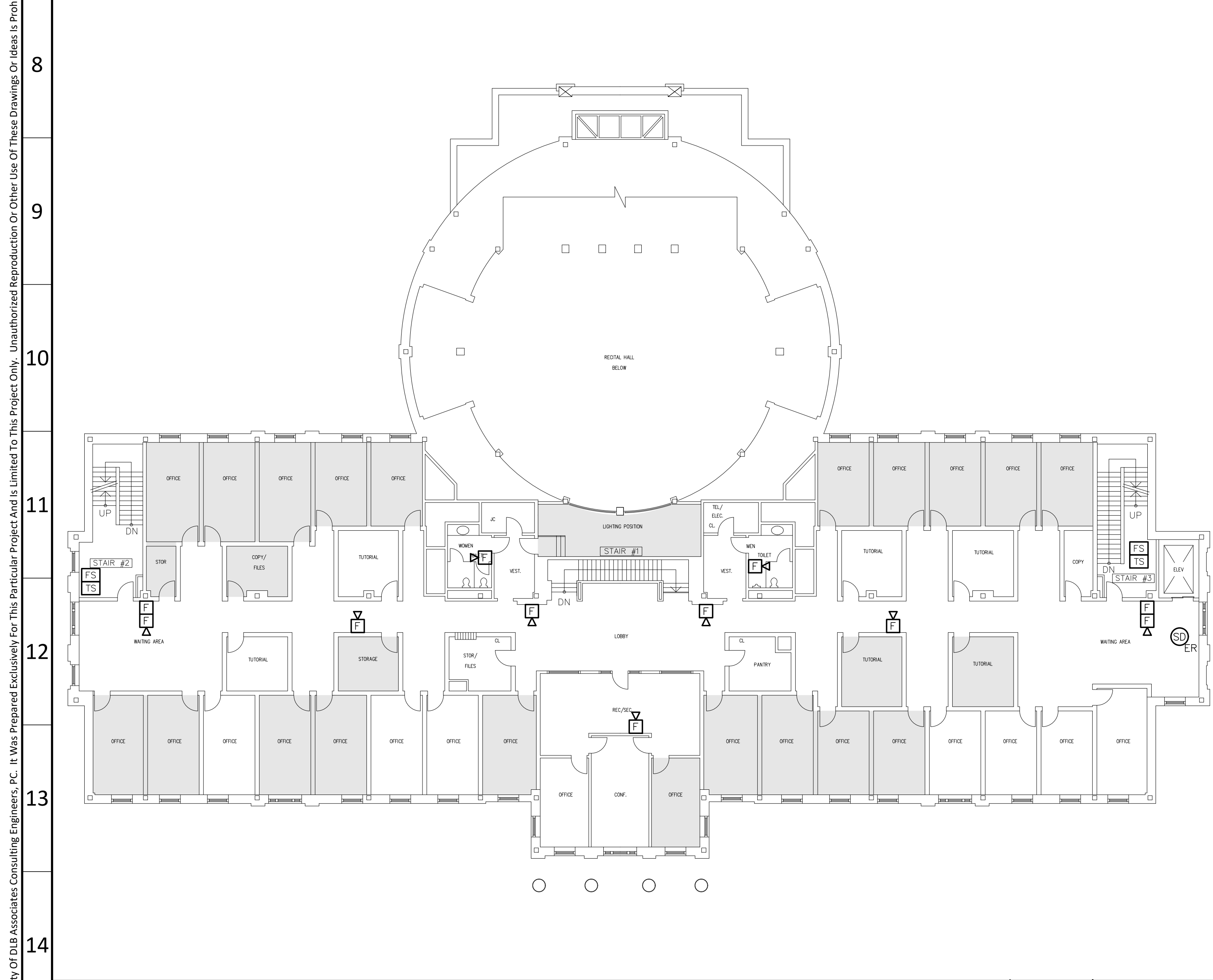
**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724  
Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038



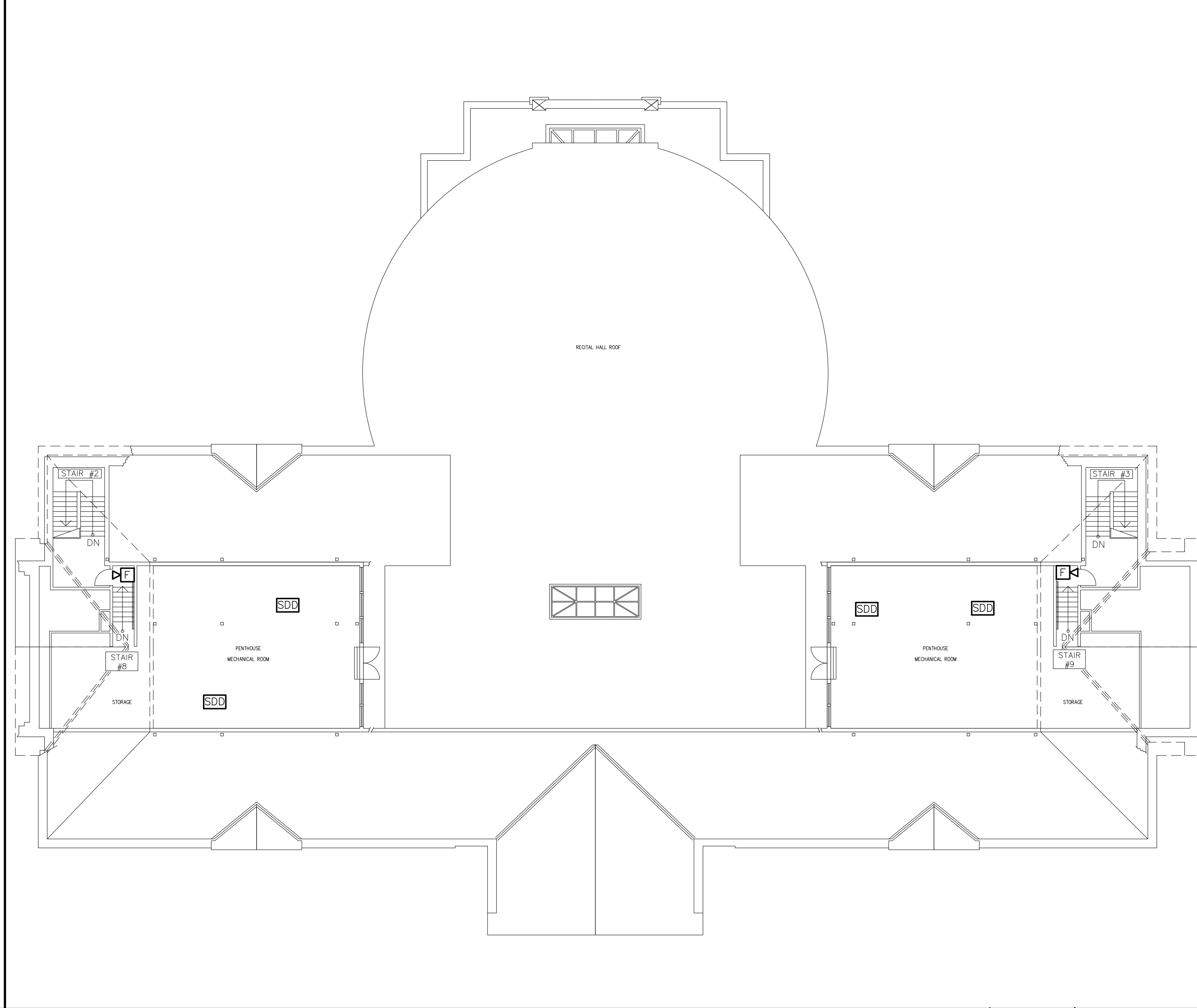
**LOWER LEVEL LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **03**



**ATTIC LAYOUT** Scale: NTS Drawing: **E102** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

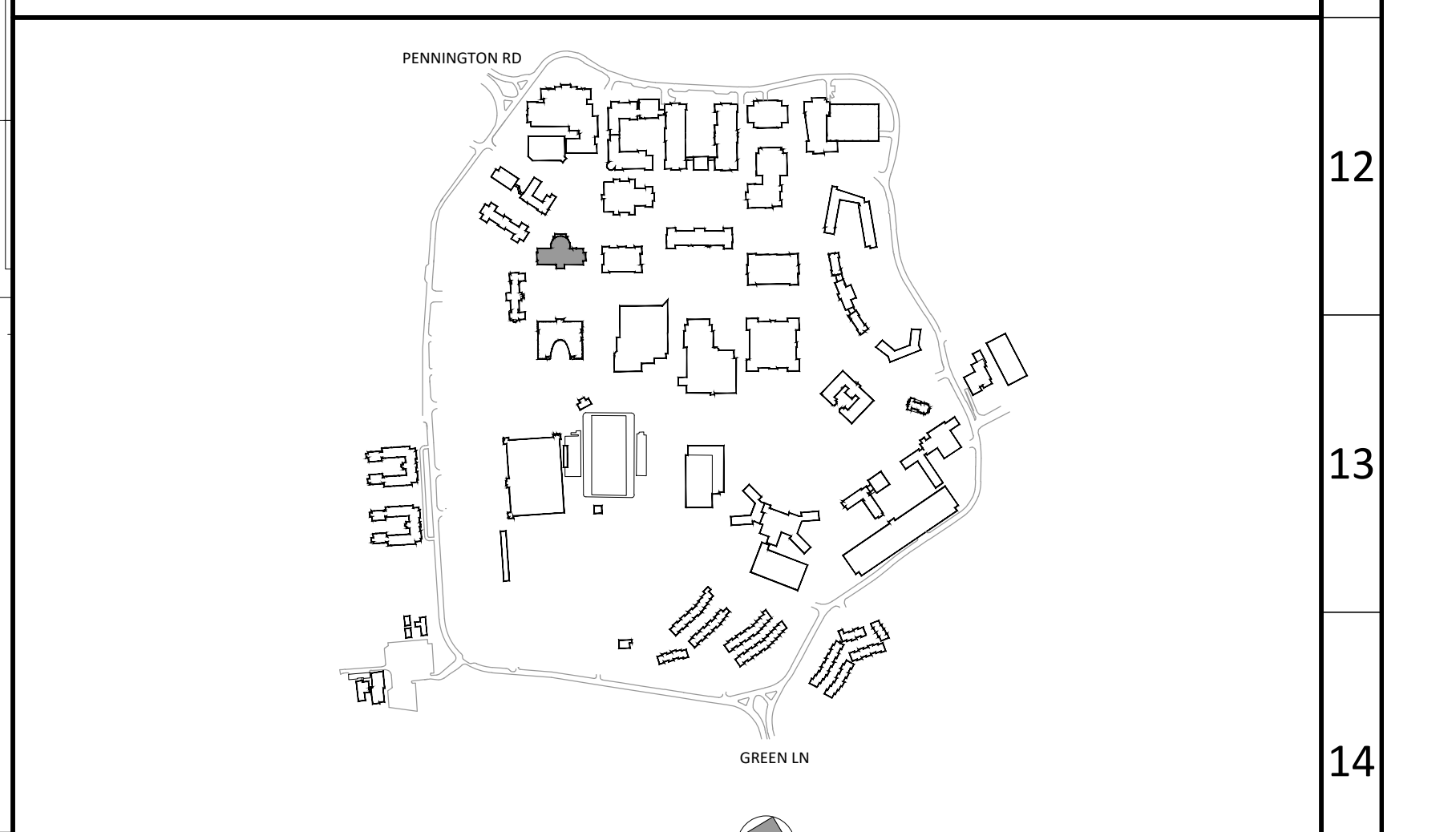
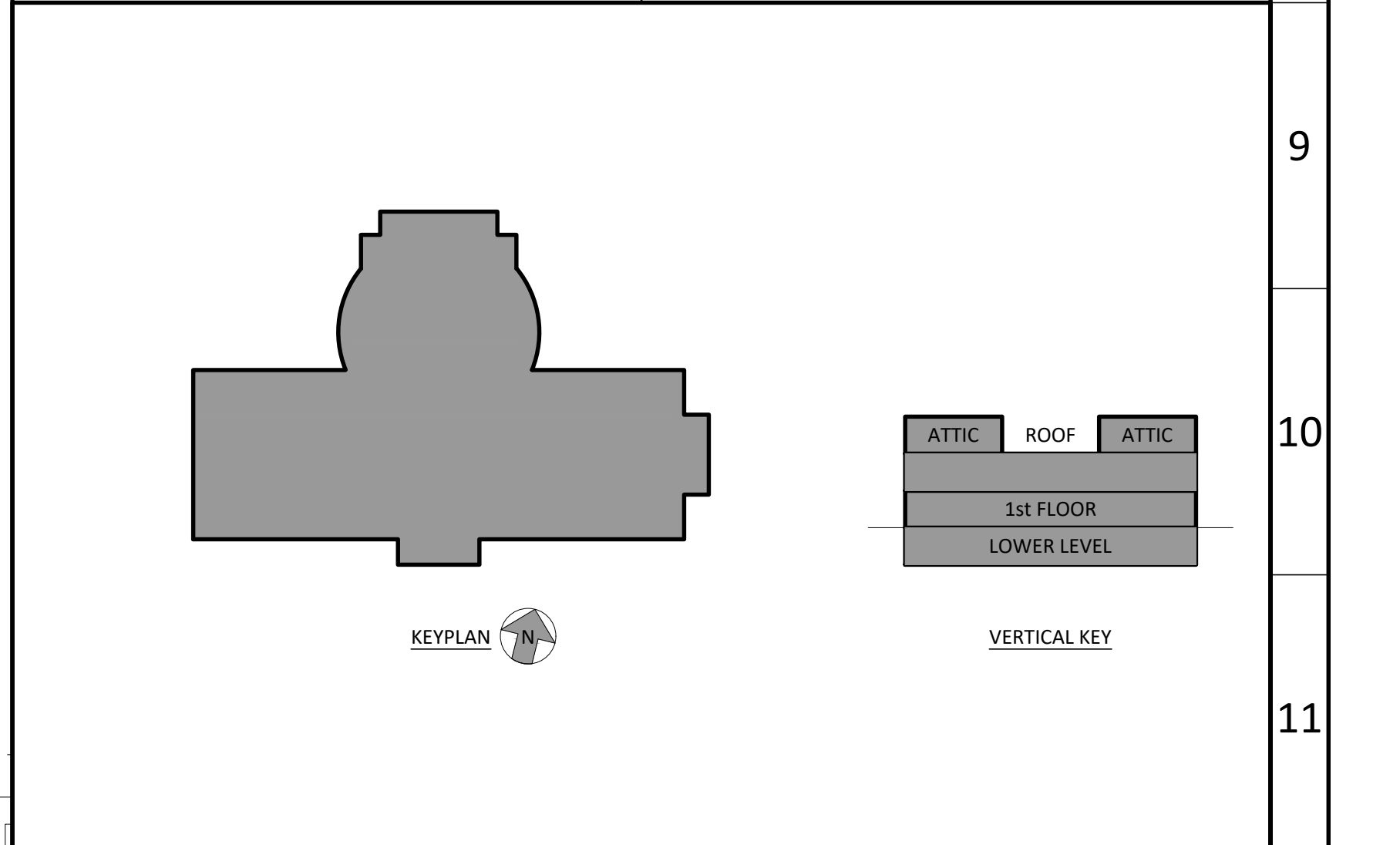
- Smoke Detector Added Above The Fire Alarm Control Panel.
- Existing Fire Alarm Control Panel.

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
	Manual Pull Station		No Access
	Strobe Only		New Smoke Detector
	Horn/Strobe		New Manual Pull Station
	Smoke Detector		New Strobe
	Smoke Detector (ER Indicates Elevator Recall)		New Horn / Strobe
	Smoke Detector With Sounder Base		Photo ID Tag
	Heat Detector, Combination Fixed Temperature And Rate Of Rise	FACP	Fire Alarm Control Panel
	CO Detector	CO	Carbon Monoxide
	Duct Mounted Smoke Detector	POE	Point Of Entry
	Fire Alarm Control Panel		
	Fire Alarm Remote Annunciator Panel		
	Fire Alarm Booster Panel		
	Fire Sprinkler Tamper Switch		
	Fire Sprinkler Flow Switch		
	Existing Wall Mounted Connector Housing		



30442

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
MUSIC BUILDING

scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E102-MUS**

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**FIRE ALARM PHOTOS**



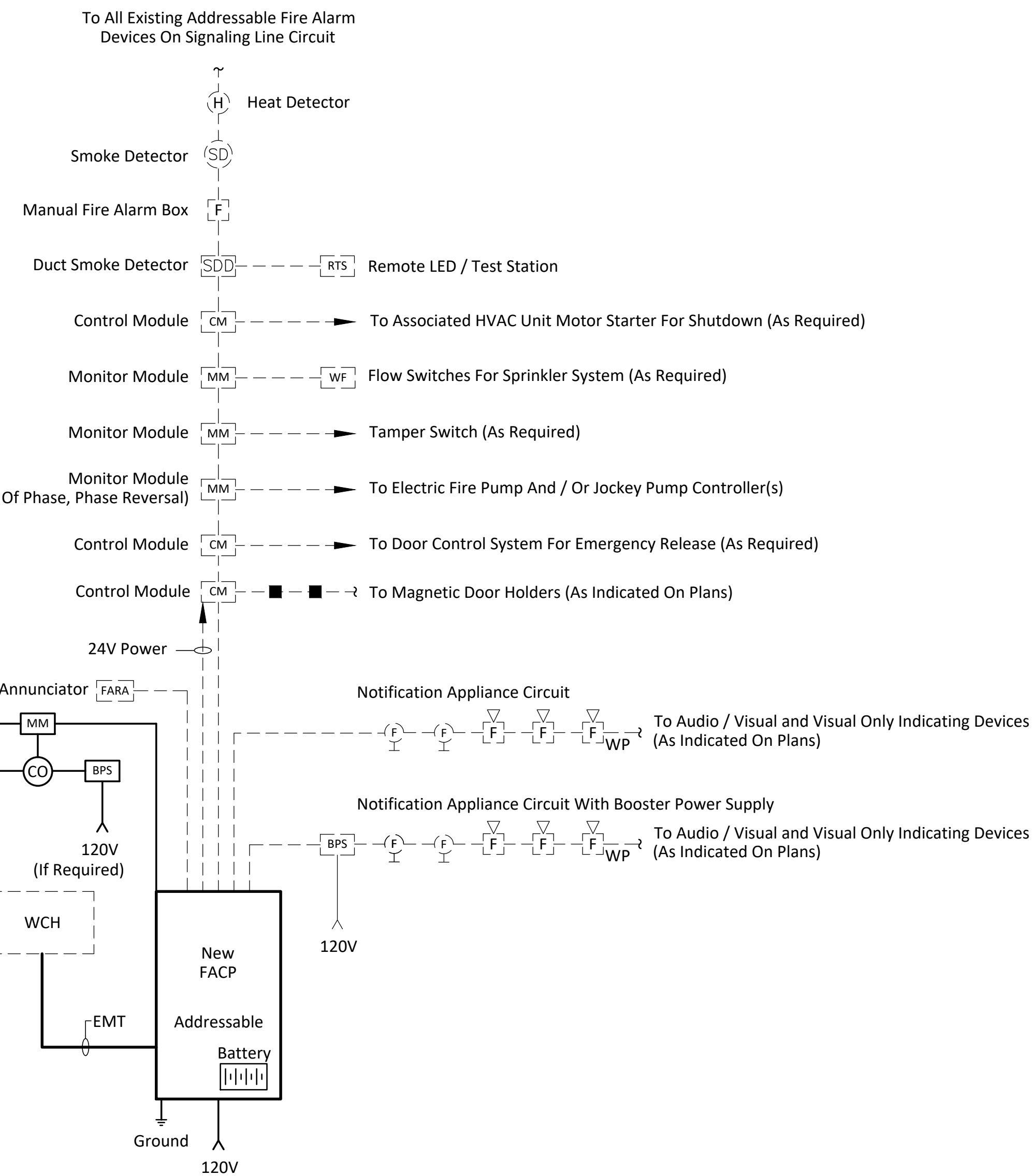
**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**  
Honeywell FS90 Addressable Fire Alarm Control Panel And Honeywell Remote Fire Alarm Annunciator With Exposed Conduit Located Within Lower Level Electrical Room



**HONEYWELL FIRE ALARM DEVICES**  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building

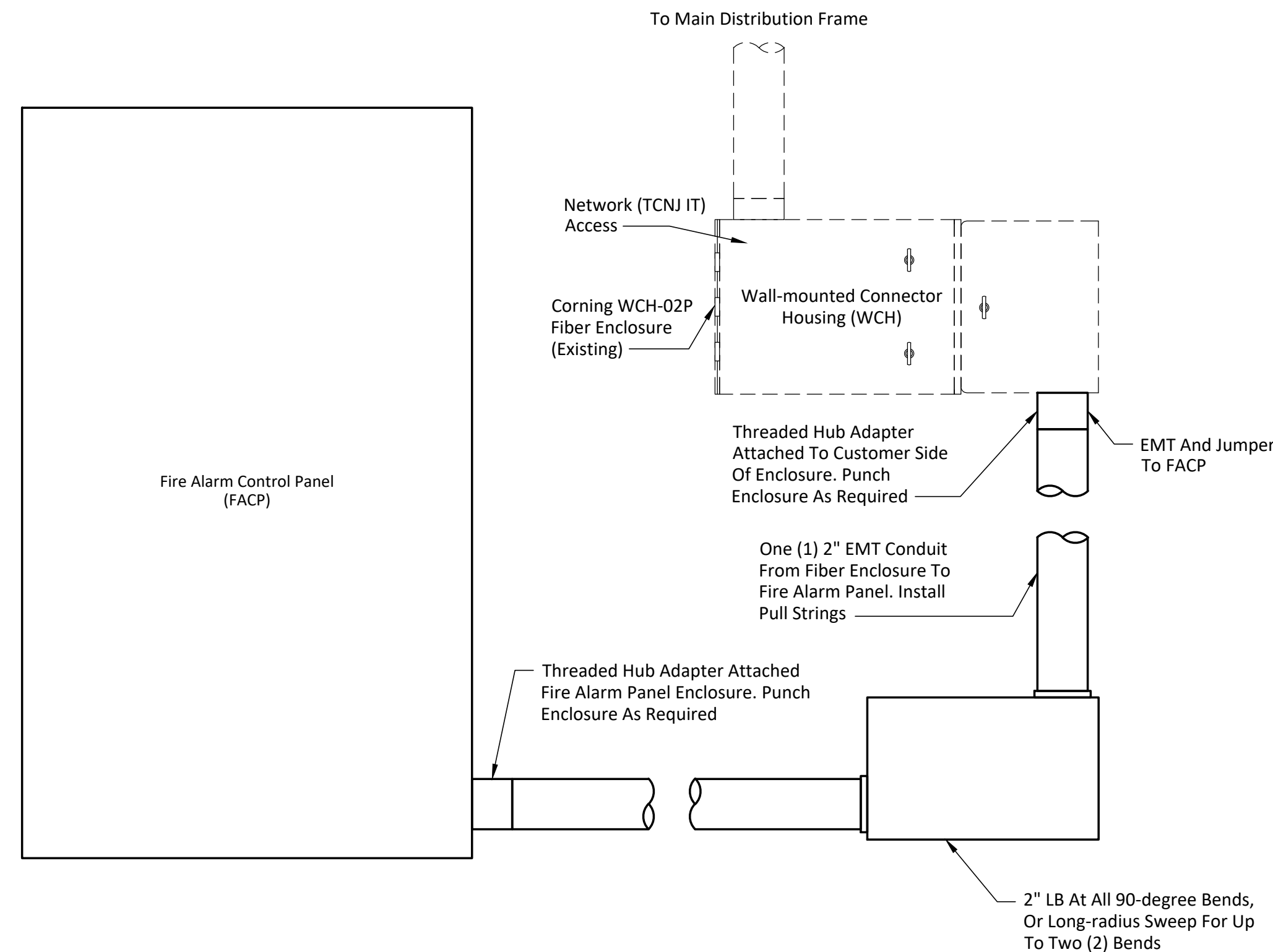
**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC.
	CO DETECTOR ( WITH LOCAL VISUAL AND AUDIO )
	FIRE ALARM MONITOR MODULE
	POWER OR SIGNALING LINE CIRCUIT
	BOOSTER POWER SUPPLY



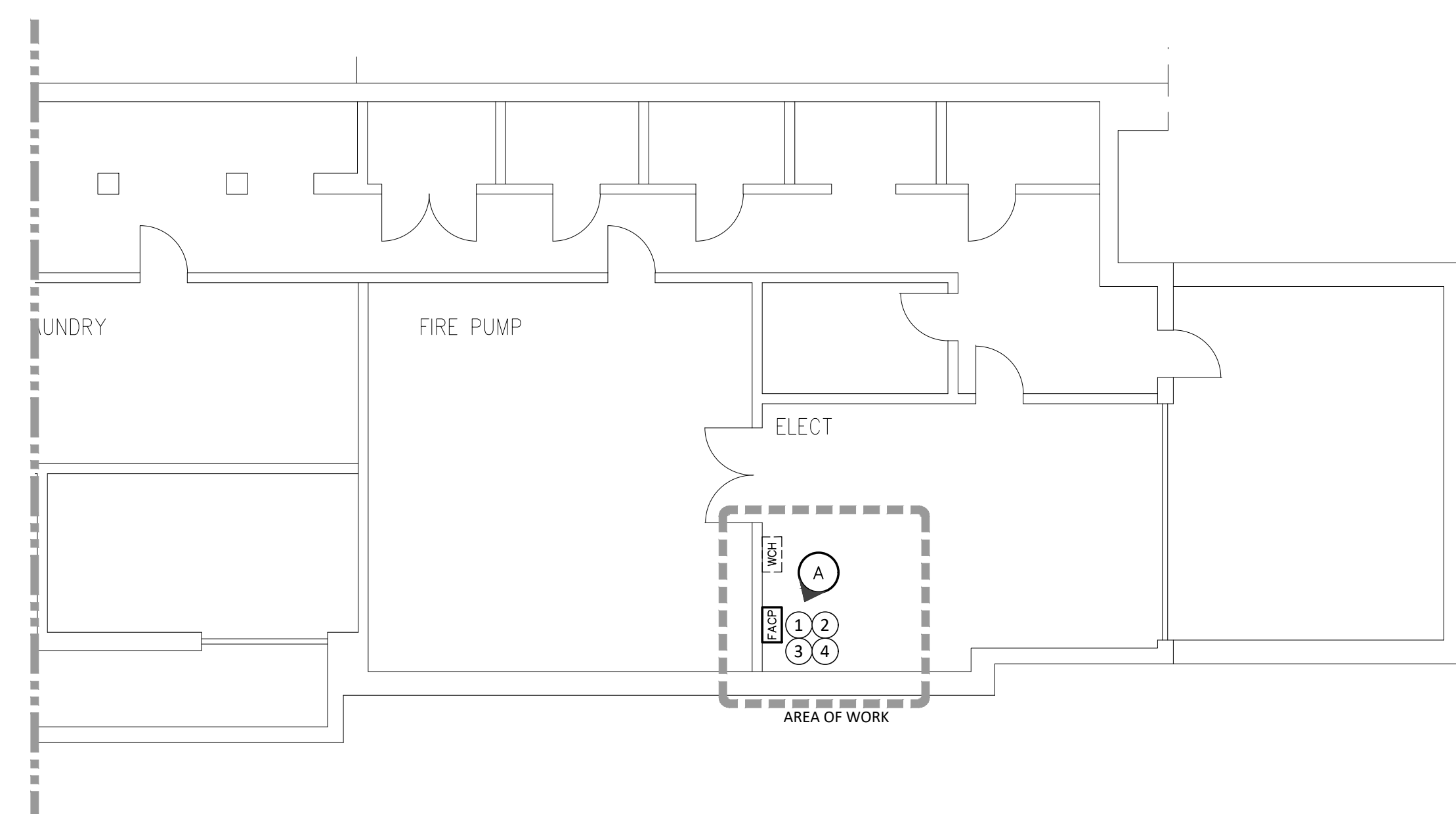
- NOTES:**
- General
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - This Building Would Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - New Residence Hall Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell FS90 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

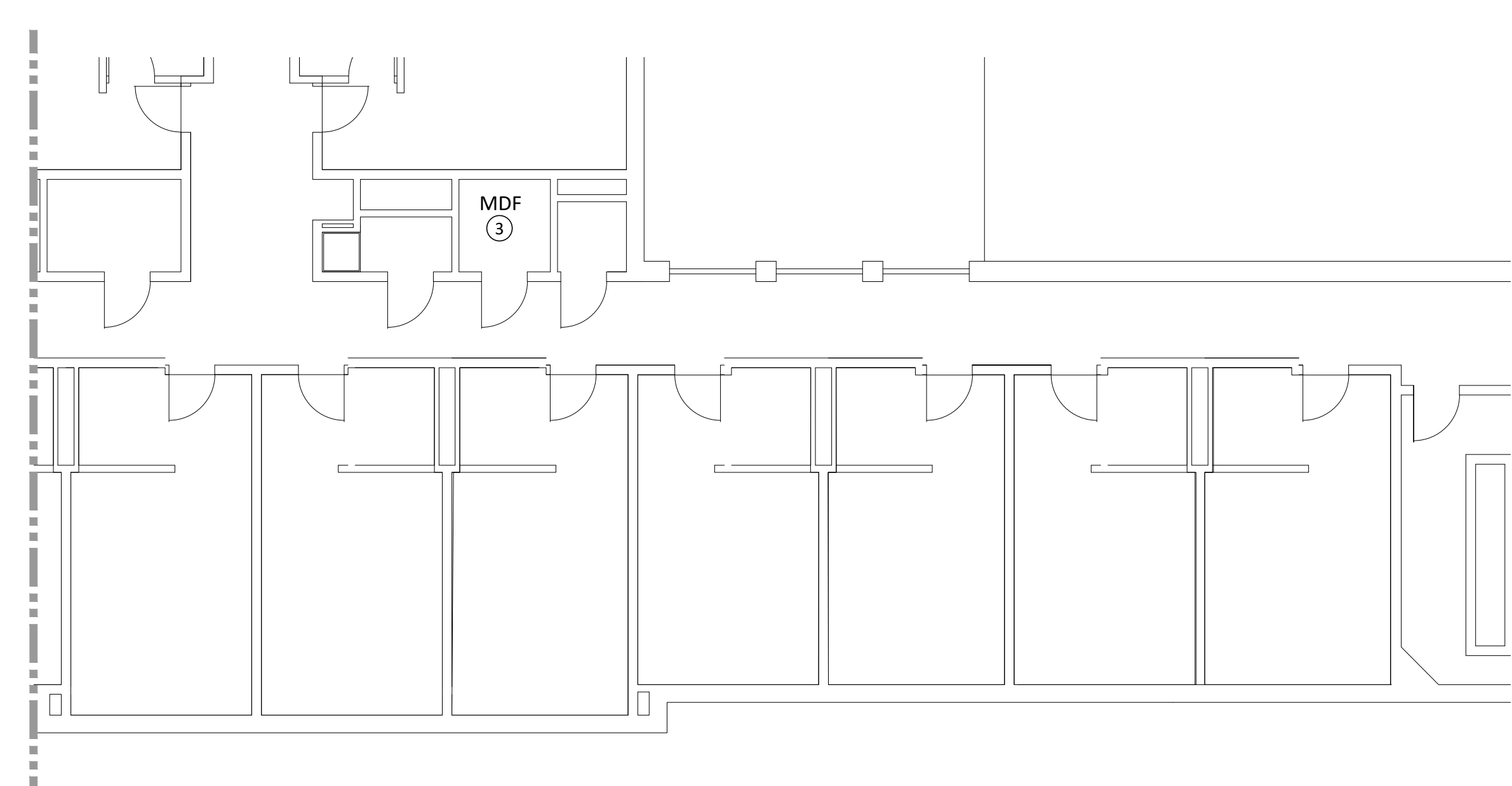


- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - LOWER LEVEL** Scale: 1/8"=1'-0" Drawing: **E101** Detail: **03**



**PARTIAL FLOOR PLAN - 3RD FLOOR** Scale: 1/8"=1'-0" Drawing: **E101** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

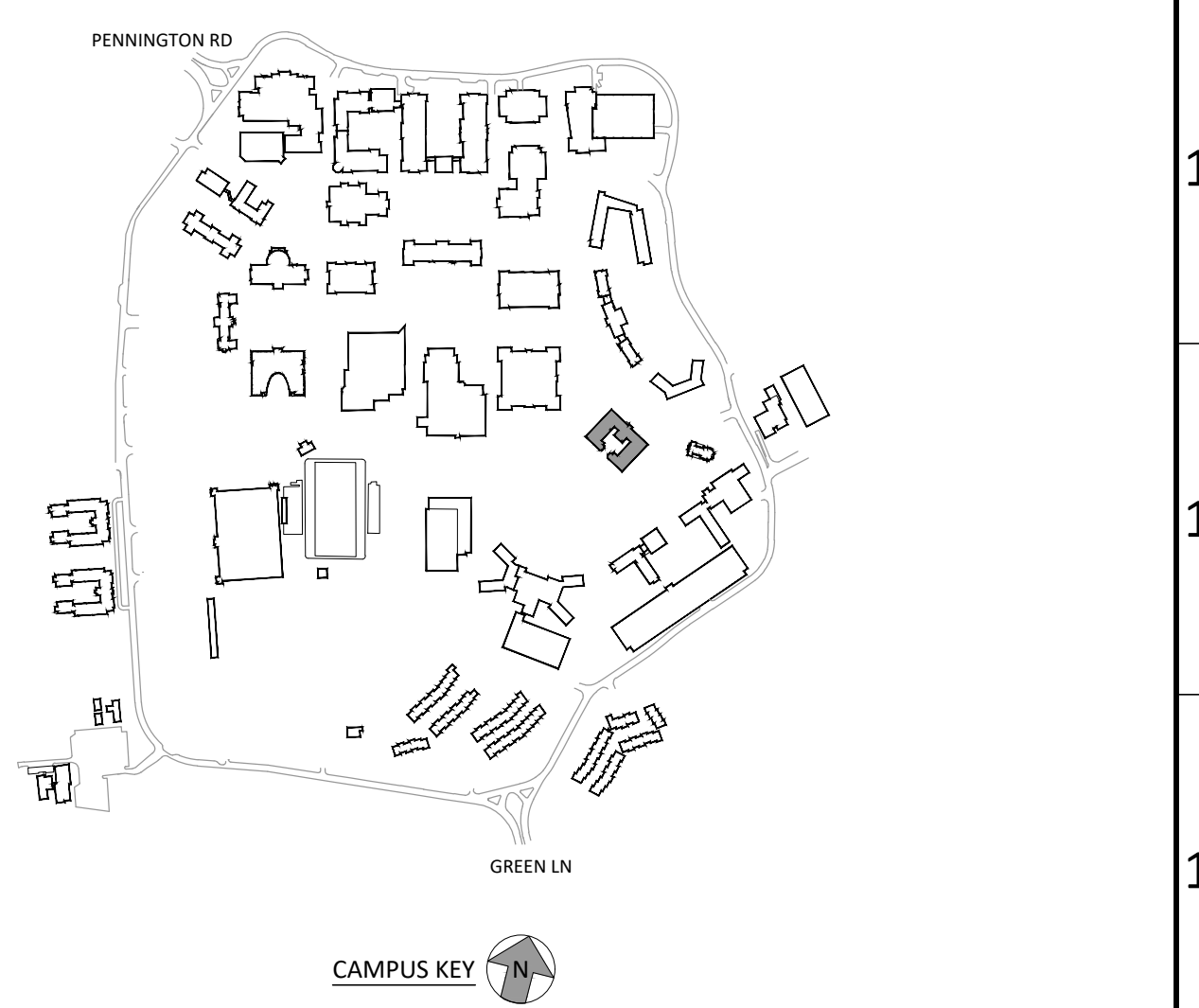
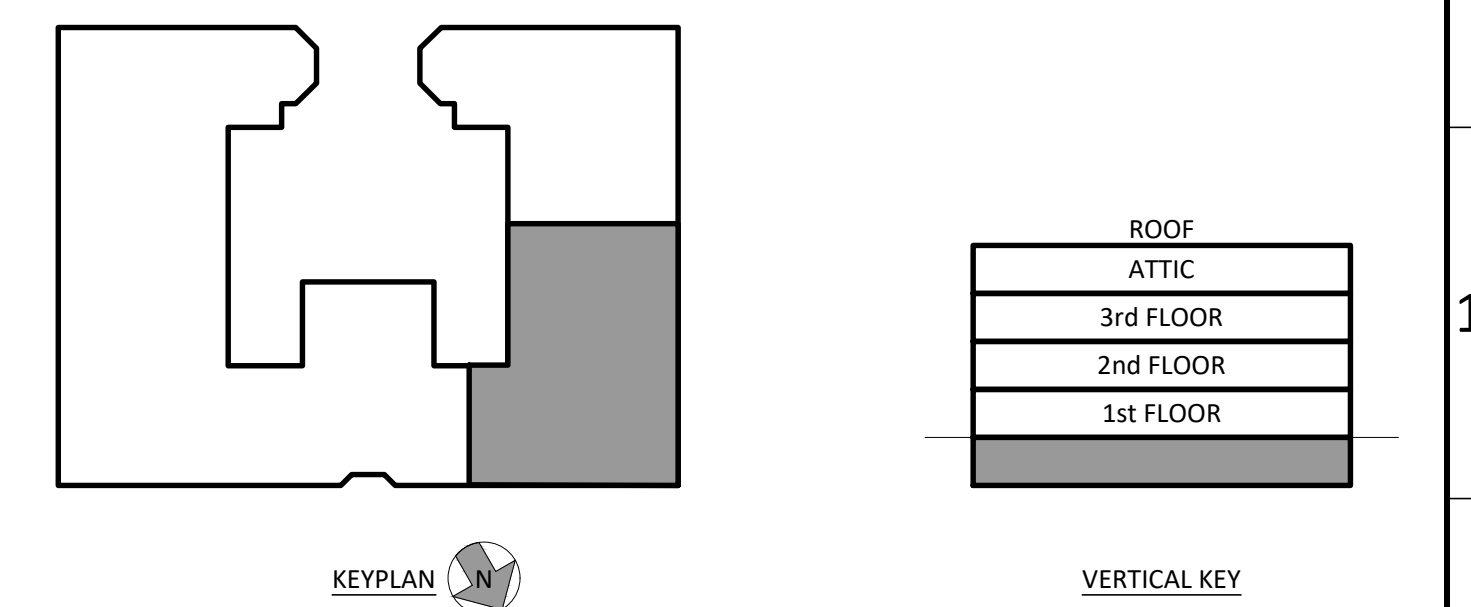
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
	Fire Alarm Control Panel		New Equipment
	Existing Wall-Mounted Connector Housing		Existing Equipment
	Existing Fire Alarm Control Panel		Photo Tag
			Connect To Existing



title: **FIRE ALARM PANEL REPLACEMENT NEW RESIDENCE HALL** dwg. no.: **E101-NRES**

scale: 1/8" = 1'-0" drawn by: SC checked by: SF date: 5/03/2020

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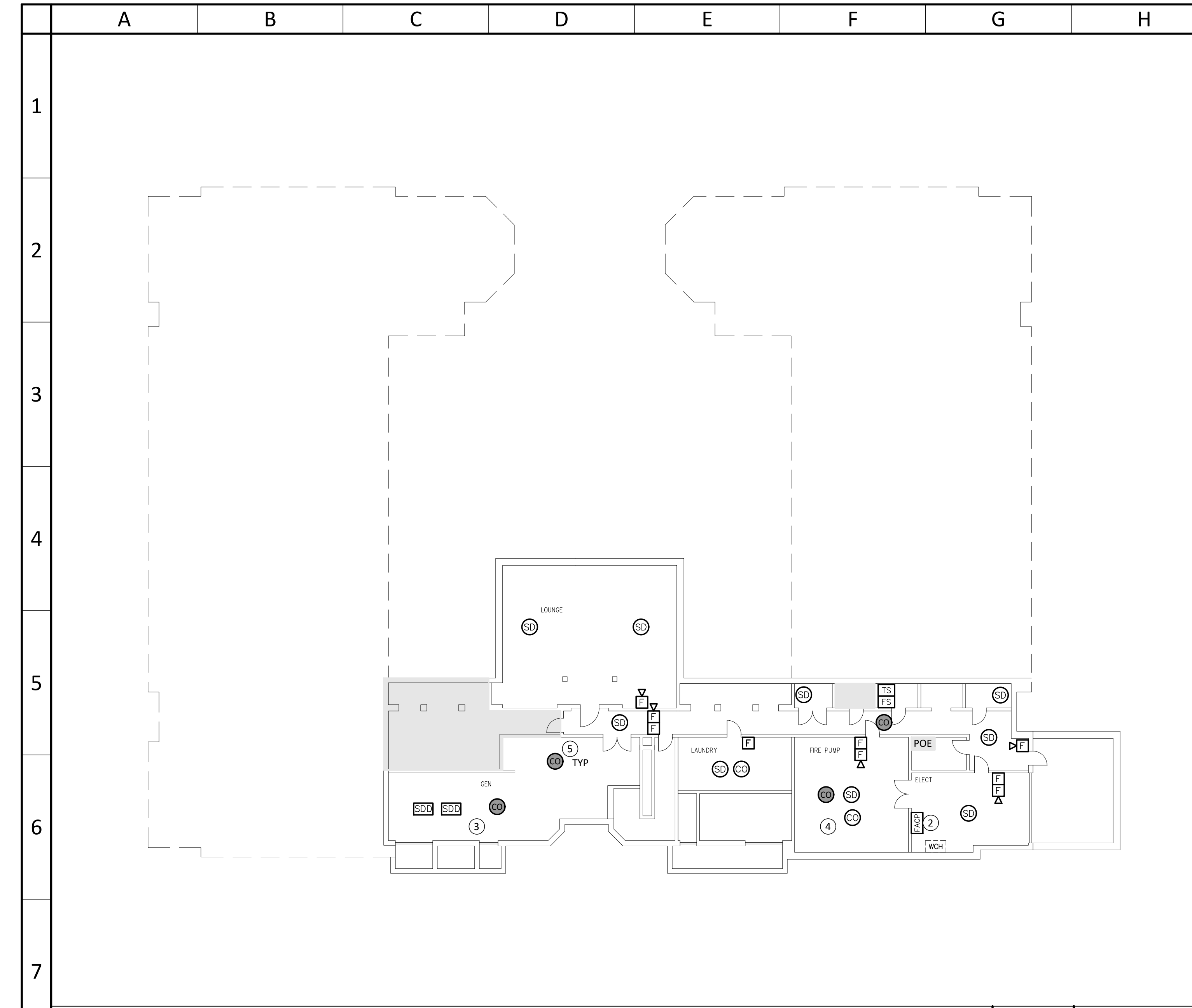
30442

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

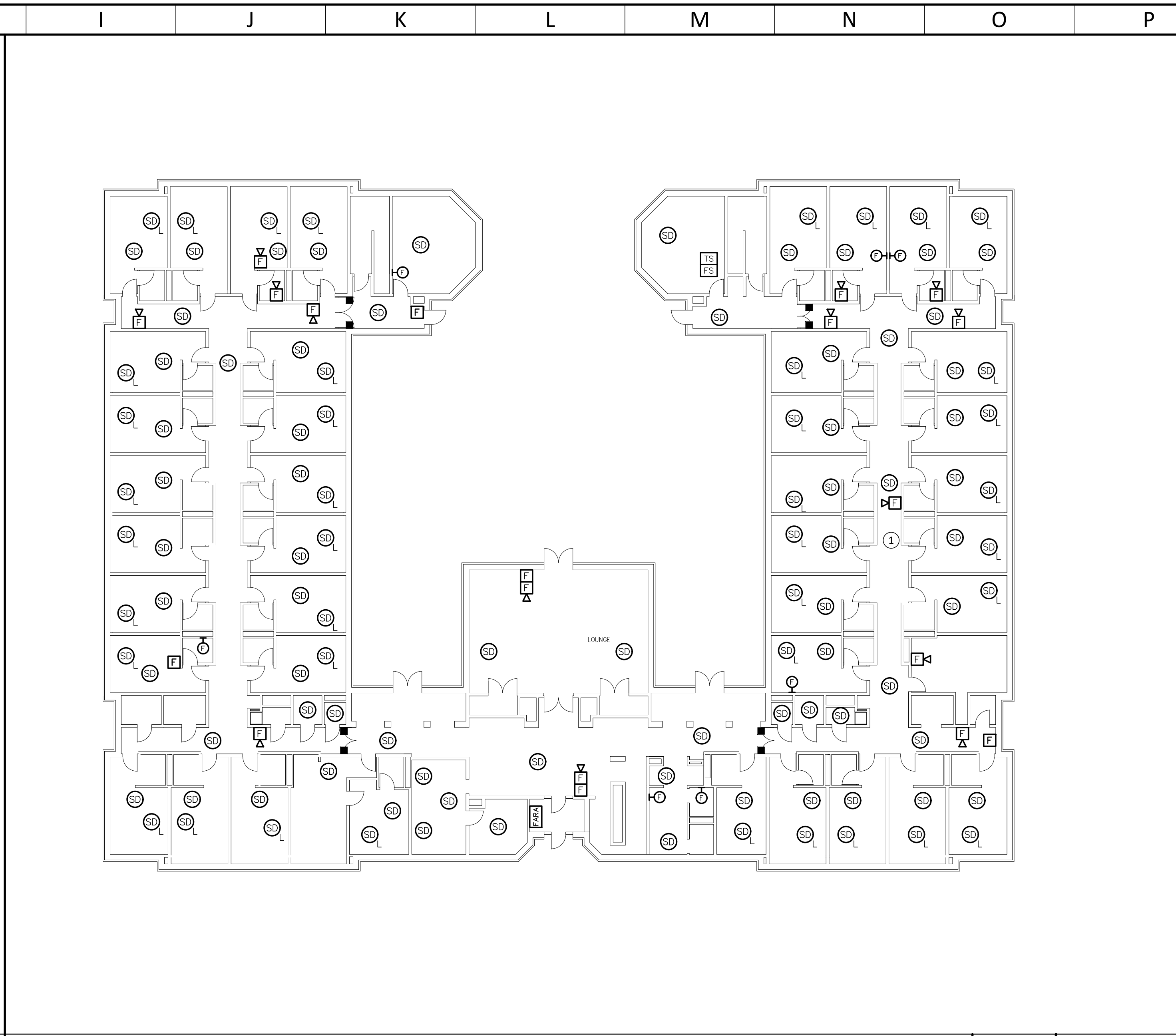
**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

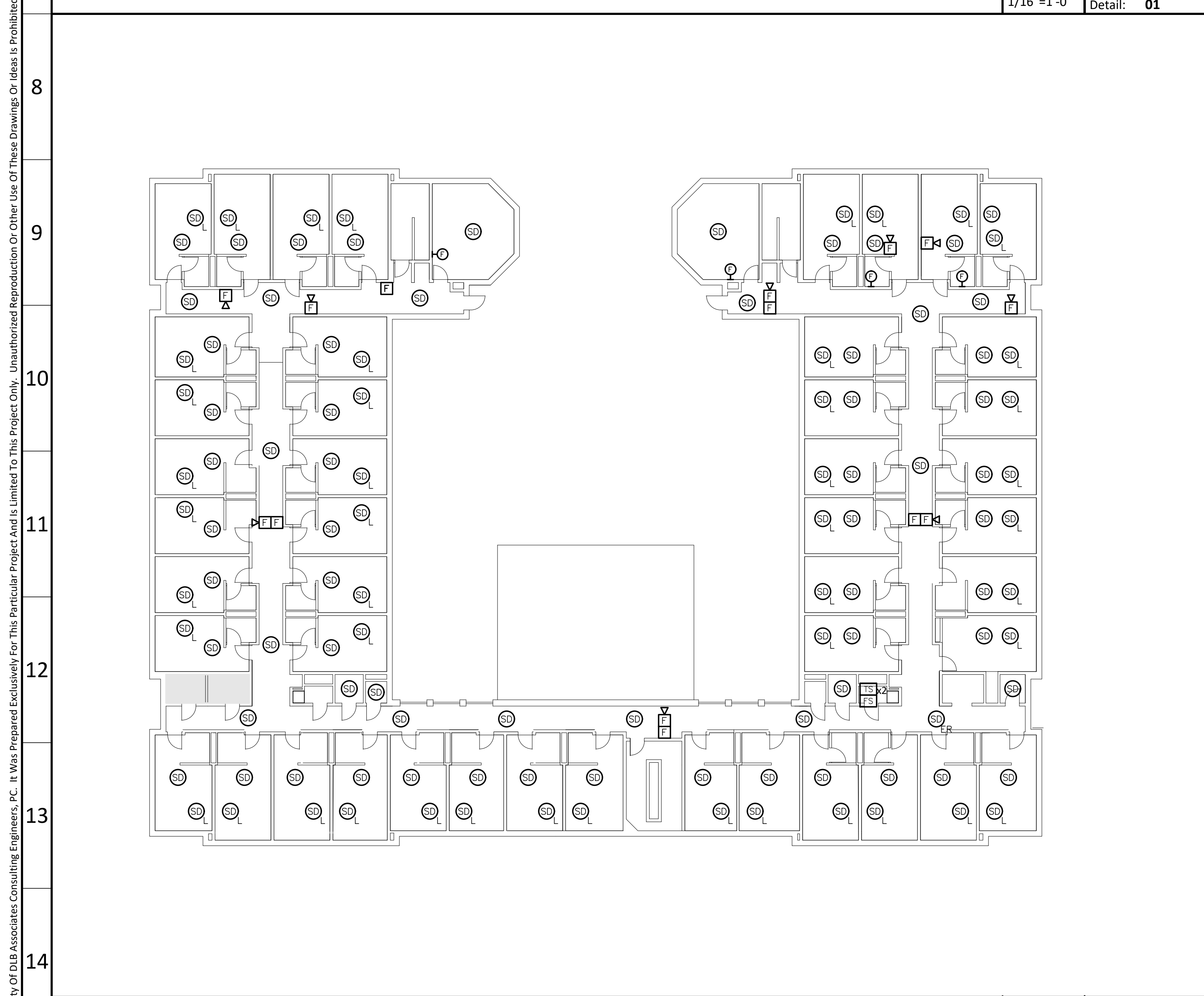
project: **TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618**



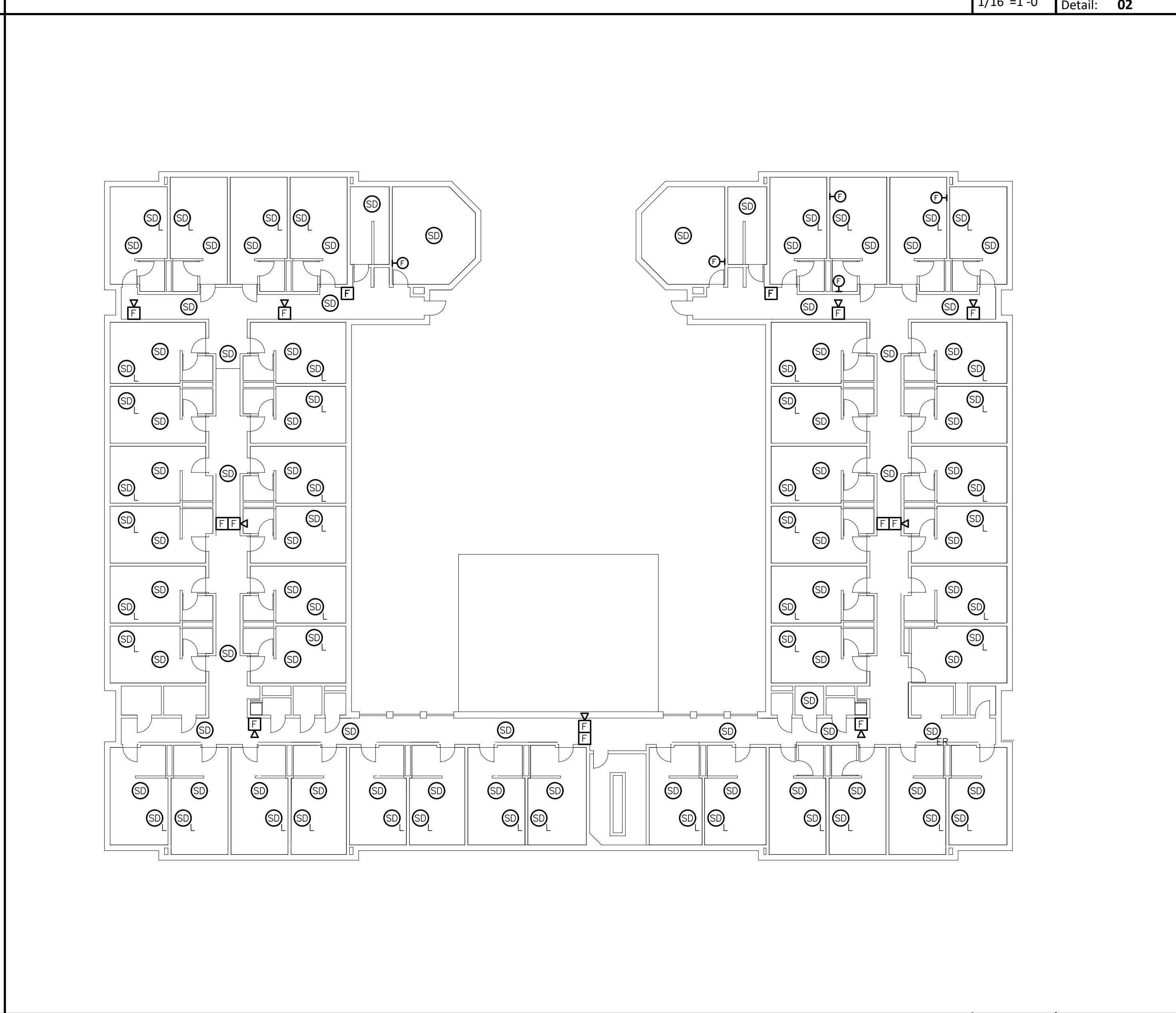
**LOWER LEVEL LAYOUT** Scale: 1/16"=1'-0" Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: 1/16"=1'-0" Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: 1/16"=1'-0" Drawing: **E102** Detail: **03**



**THIRD FLOOR LAYOUT** Scale: 1/16"=1'-0" Drawing: **E102** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

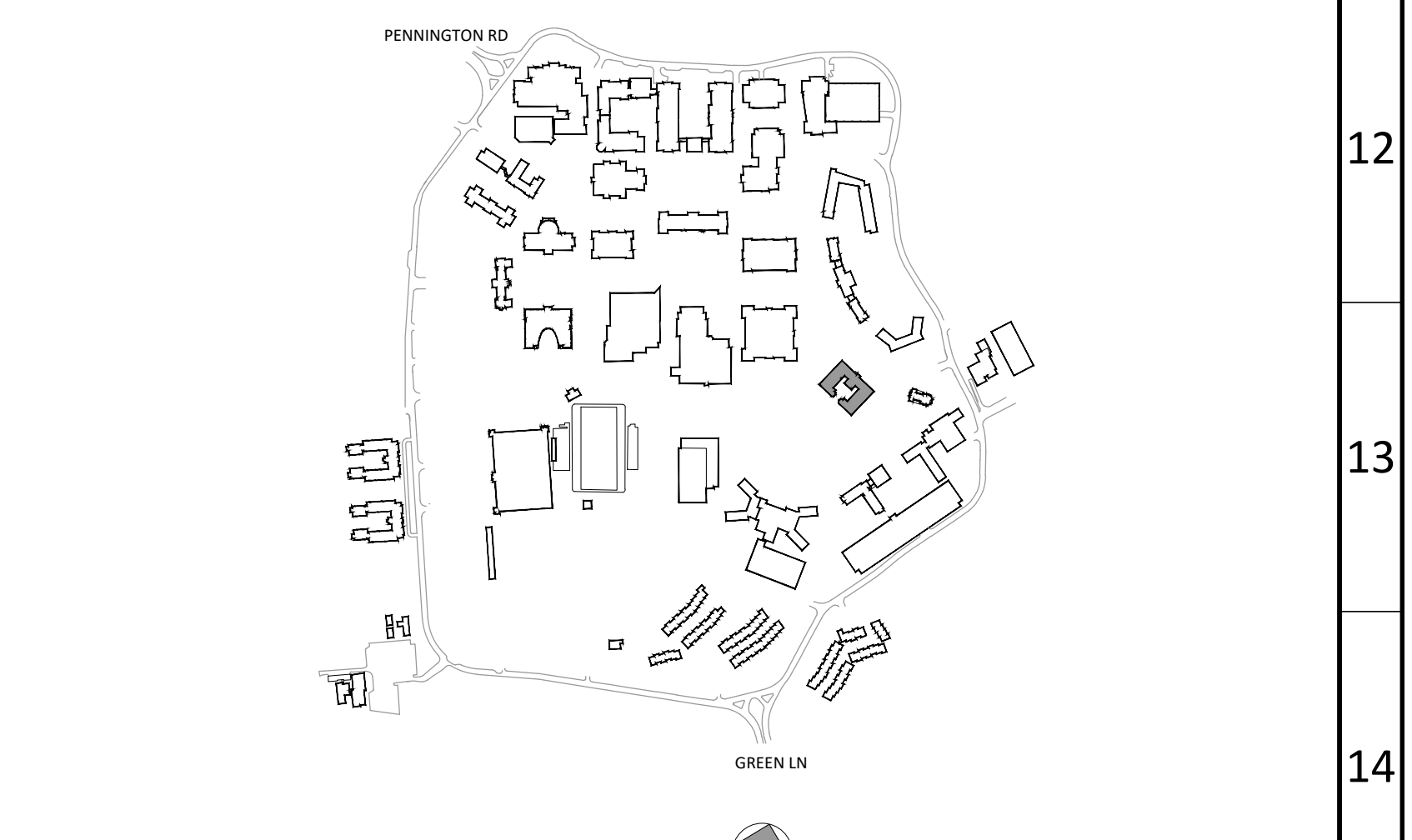
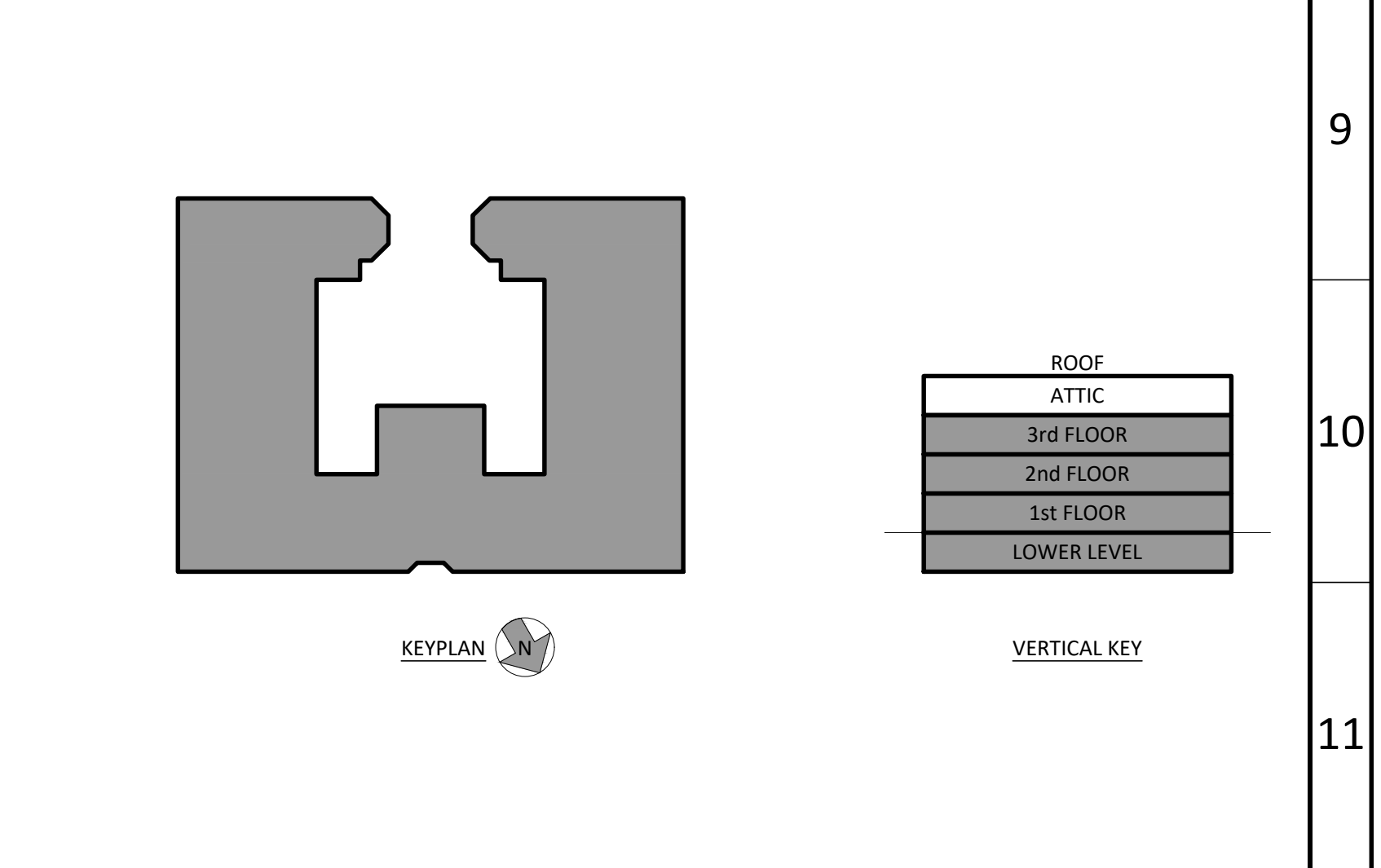
- Device To Be Added In Corridor.
- Existing Fire Alarm Control Panel.
- Gas Generator.
- Diesel Fire Pump.
- New CO Detector.

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[F]	Manual Pull Station	[ ]	No Access
[S]	Strobe Only	[SD]	New Smoke Detector
[H]	Horn/Strobe	[MPS]	New Manual Pull Station
[SD]	Smoke Detector	[S]	New Strobe
[SD-ER]	Smoke Detector (ER Indicates Elevator Recall)	[HNS]	New Horn / Strobe
[SD-SB]	Smoke Detector With Sounder Base	[C]	New Carbon Monoxide Detector With Local Audio And Visual Notification.
[HTR]	Heat Detector, Combination Fixed Temperature And Rate Of Rise	[CPI]	Photo Location Indicator
[CO]	CO Detector	[FACP]	Fire Alarm Control Panel
[SDS]	Duct Mounted Smoke Detector	[CO]	Carbon Monoxide
[FACP]	Fire Alarm Control Panel	[POE]	Point Of Entry
[FARAP]	Fire Alarm Remote Annunciator Panel		
[FABP]	Fire Alarm Booster Panel		
[FSTS]	Fire Sprinkler Tamper Switch		
[FSS]	Fire Sprinkler Flow Switch		
[WCH]	Existing Wall Mounted Connector Housing		



30x42

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

Scale: 1/16"=1'-0" Drawing: **E102** Detail: **03**

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
NEW RESIDENCE HALL

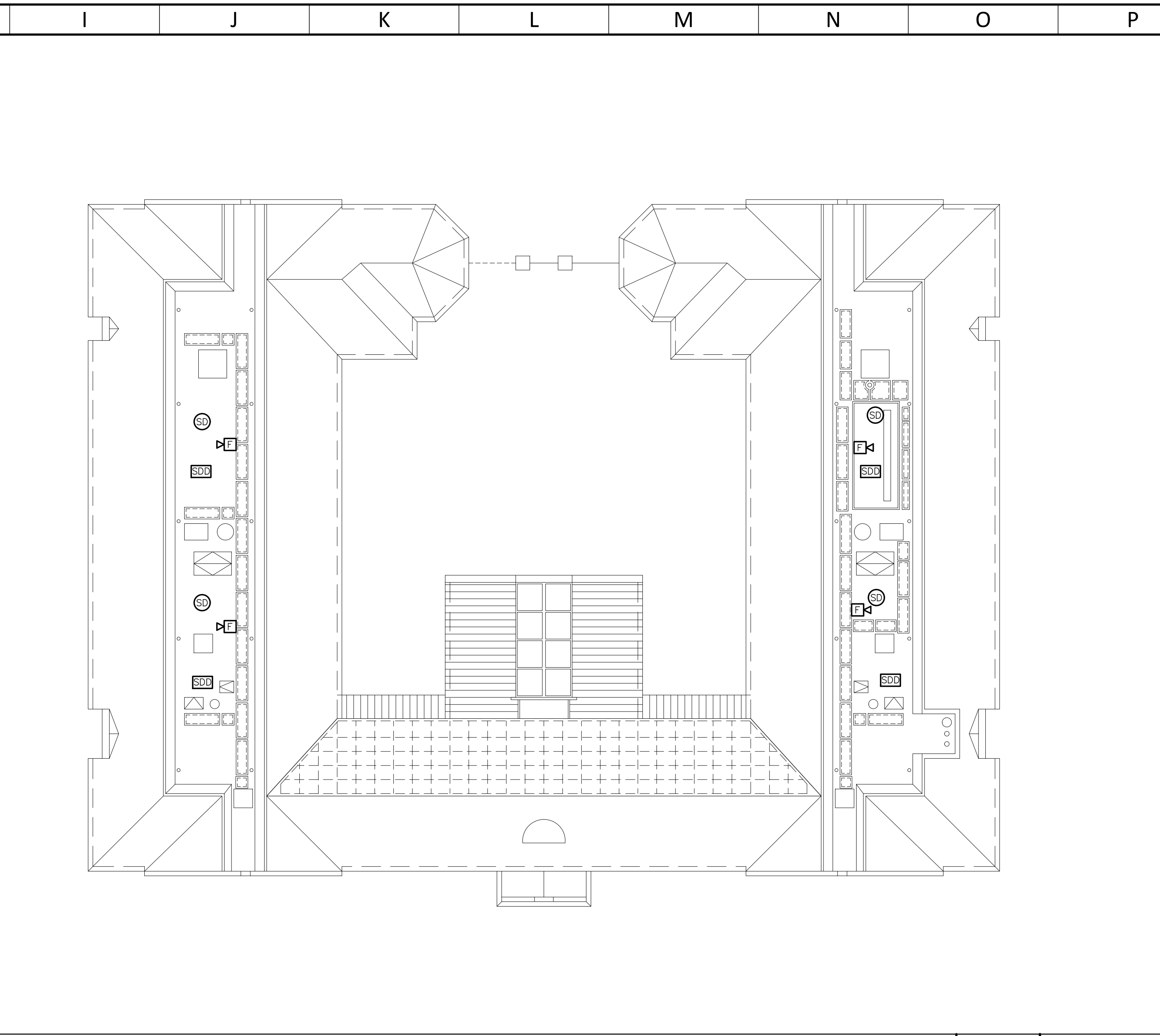
scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E102-NRES**

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**GENERAL NOTES**

1. This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

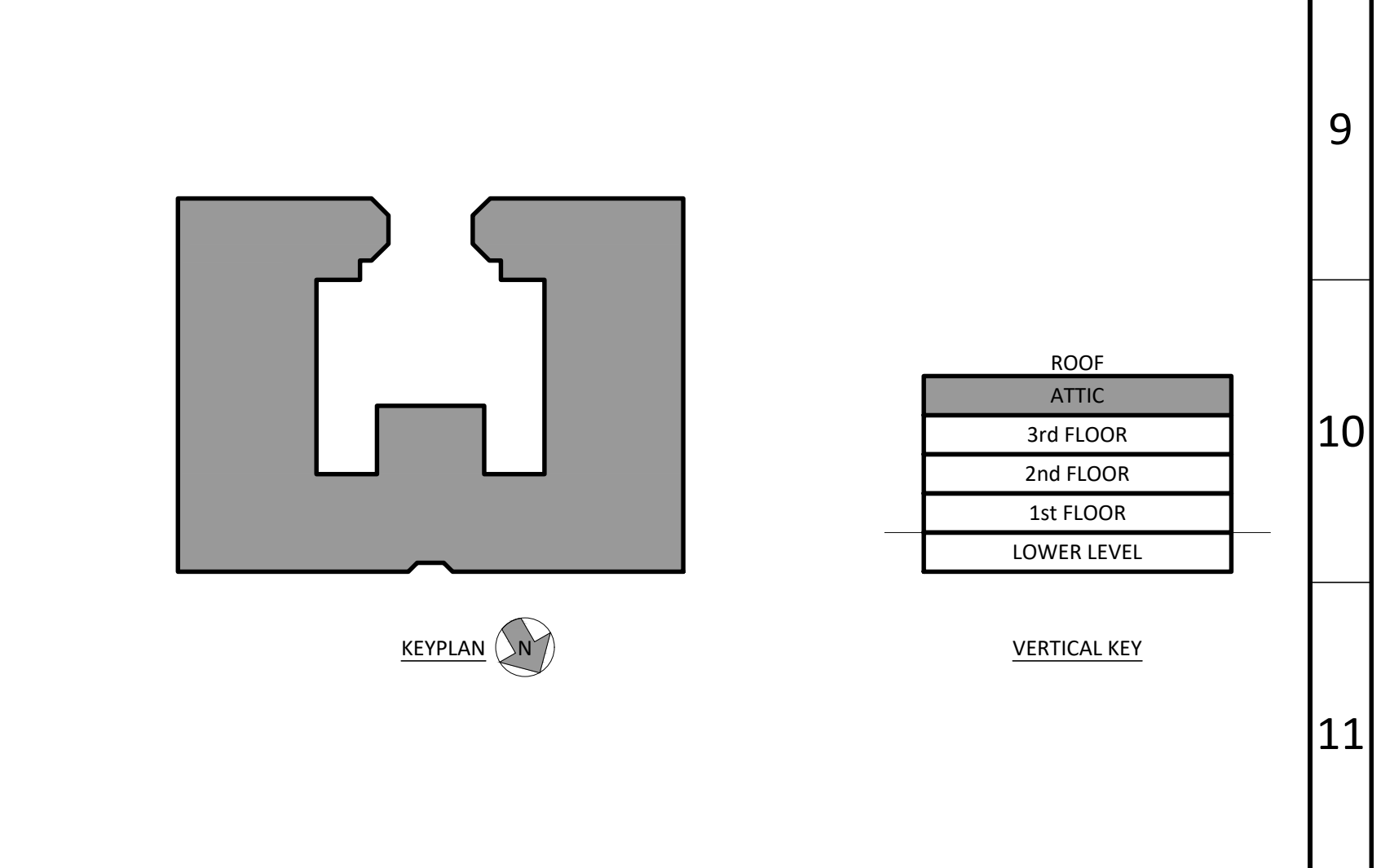
**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[F]	Manual Pull Station	[ ]	No Access
[S]	Strobe Only	[SD]	New Smoke Detector
[F/S]	Horn/Strobe	[MPS]	New Manual Pull Station
[SD]	Smoke Detector	[S]	New Strobe
[SD-ER]	Smoke Detector (ER Indicates Elevator Recall)	[H/S]	New Horn / Strobe
[SD-SB]	Smoke Detector With Sounder Base	[PIT]	Photo ID Tag
[H]	Heat Detector, Combination Fixed Temperature And Rate Of Rise	FACP	Fire Alarm Control Panel
[CO]	CO Detector	CO	Carbon Monoxide
[SD-D]	Duct Mounted Smoke Detector	POE	Point Of Entry
[FACP]	Fire Alarm Control Panel		
[FARA]	Fire Alarm Remote Annunciator Panel		
[FABP]	Fire Alarm Booster Panel		
[TS]	Fire Sprinkler Tamper Switch		
[FS]	Fire Sprinkler Flow Switch		

**KEYPLAN**

**VERTICAL KEY**

ROOF
ATTIC
3rd FLOOR
2nd FLOOR
1st FLOOR
LOWER LEVEL



Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

**dlb associates**  
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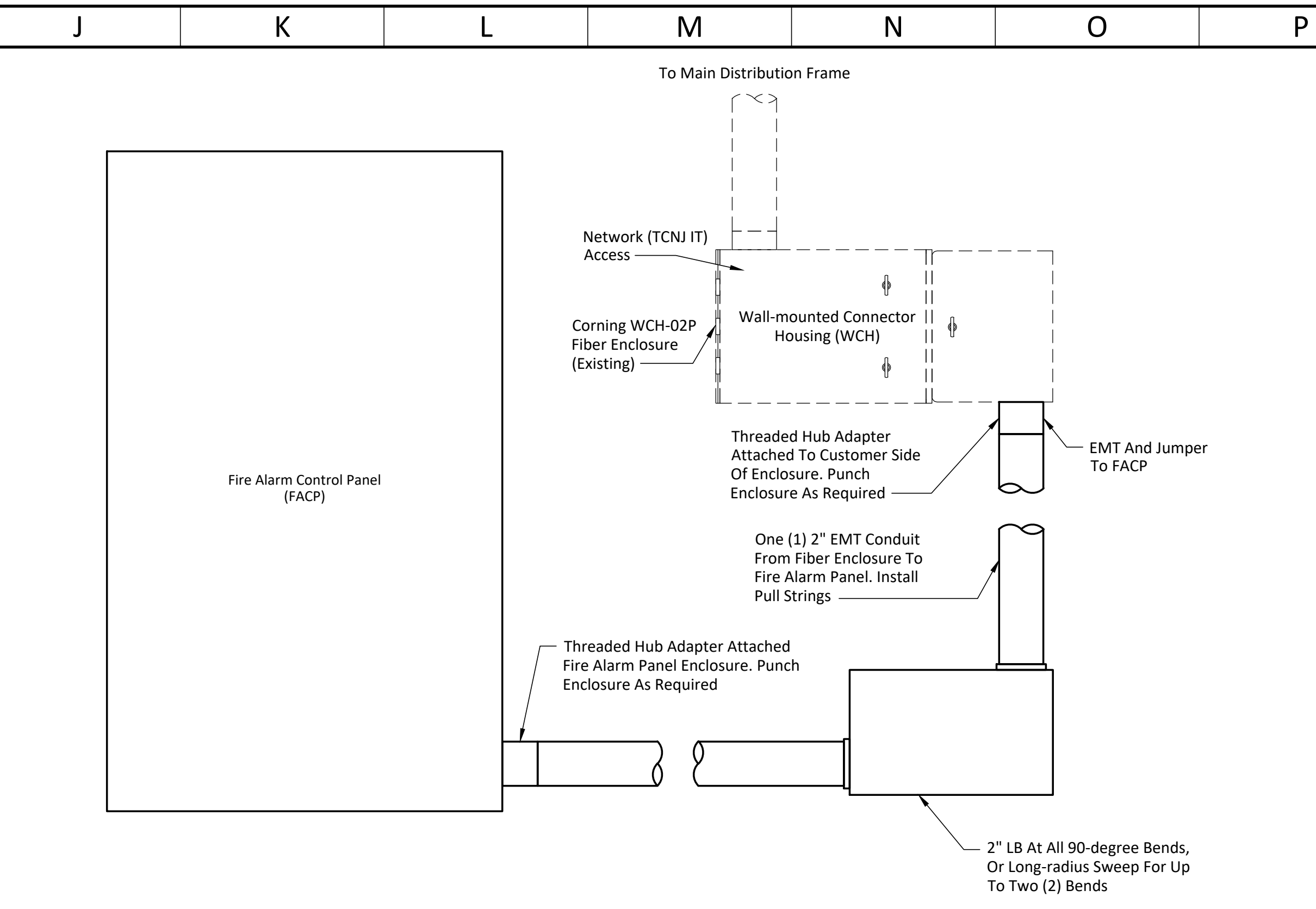
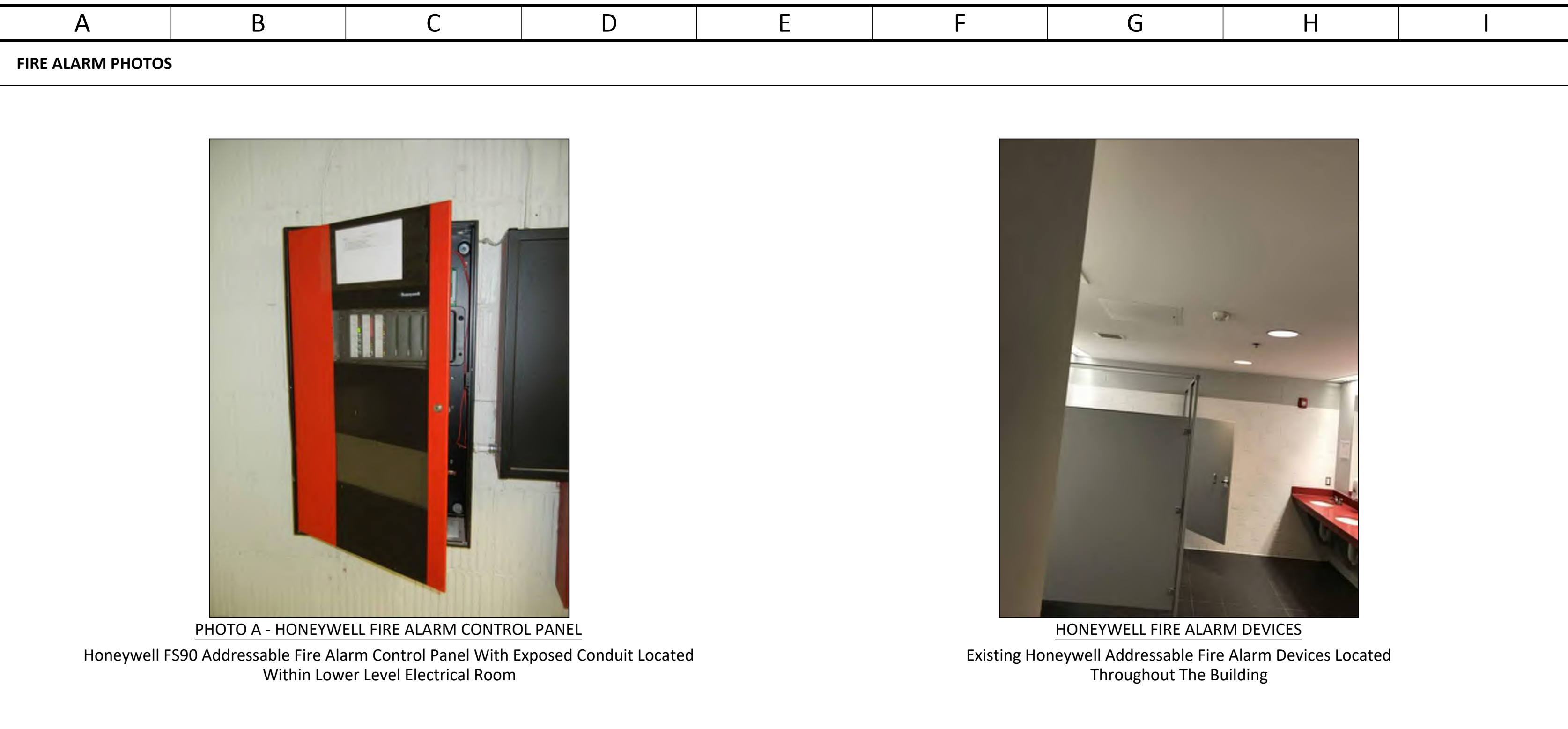
Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

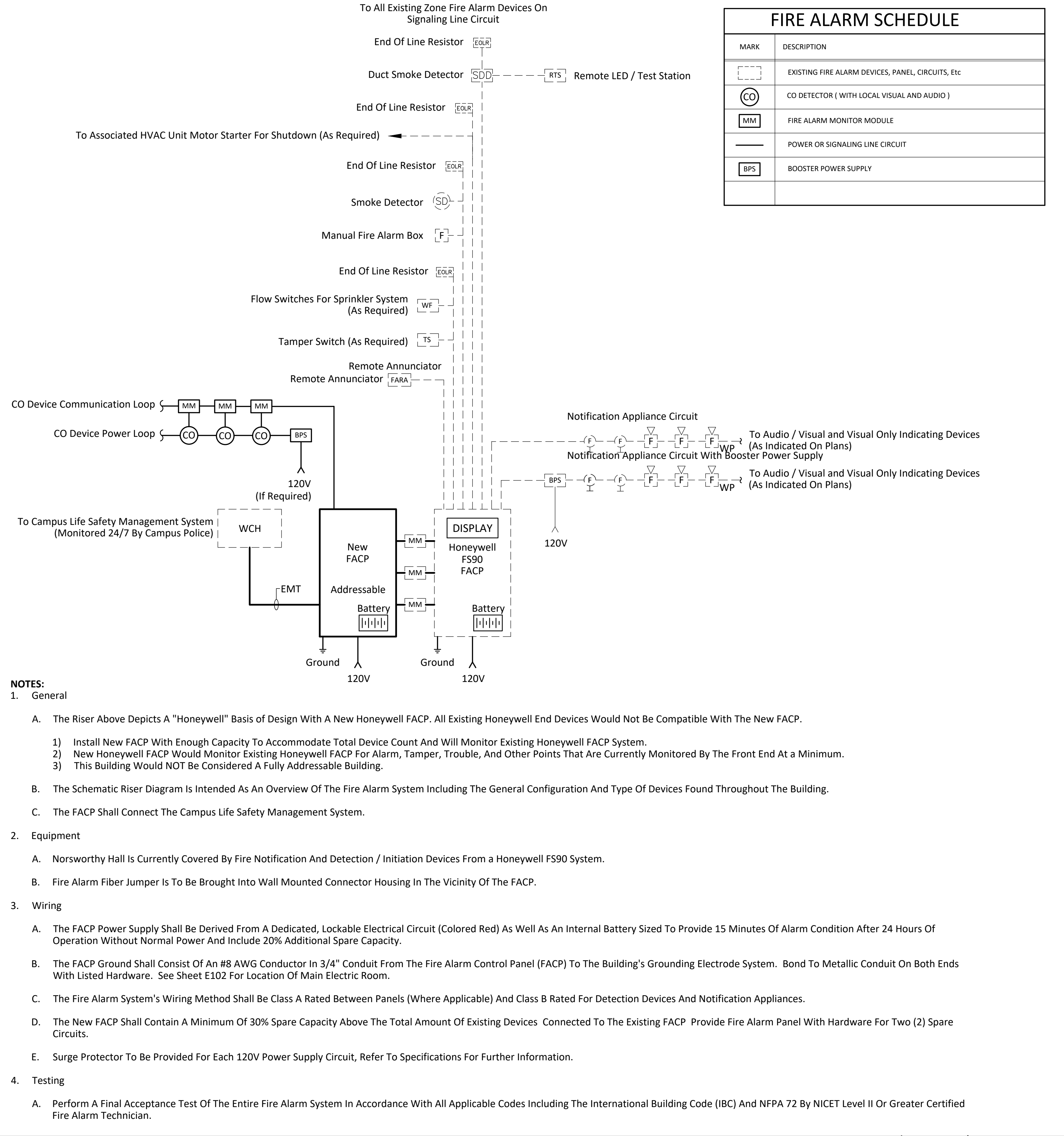
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FIRE ALARM - EXISTING LAYOUT  
NEW RESIDENCE HALL

scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E103-NRES**

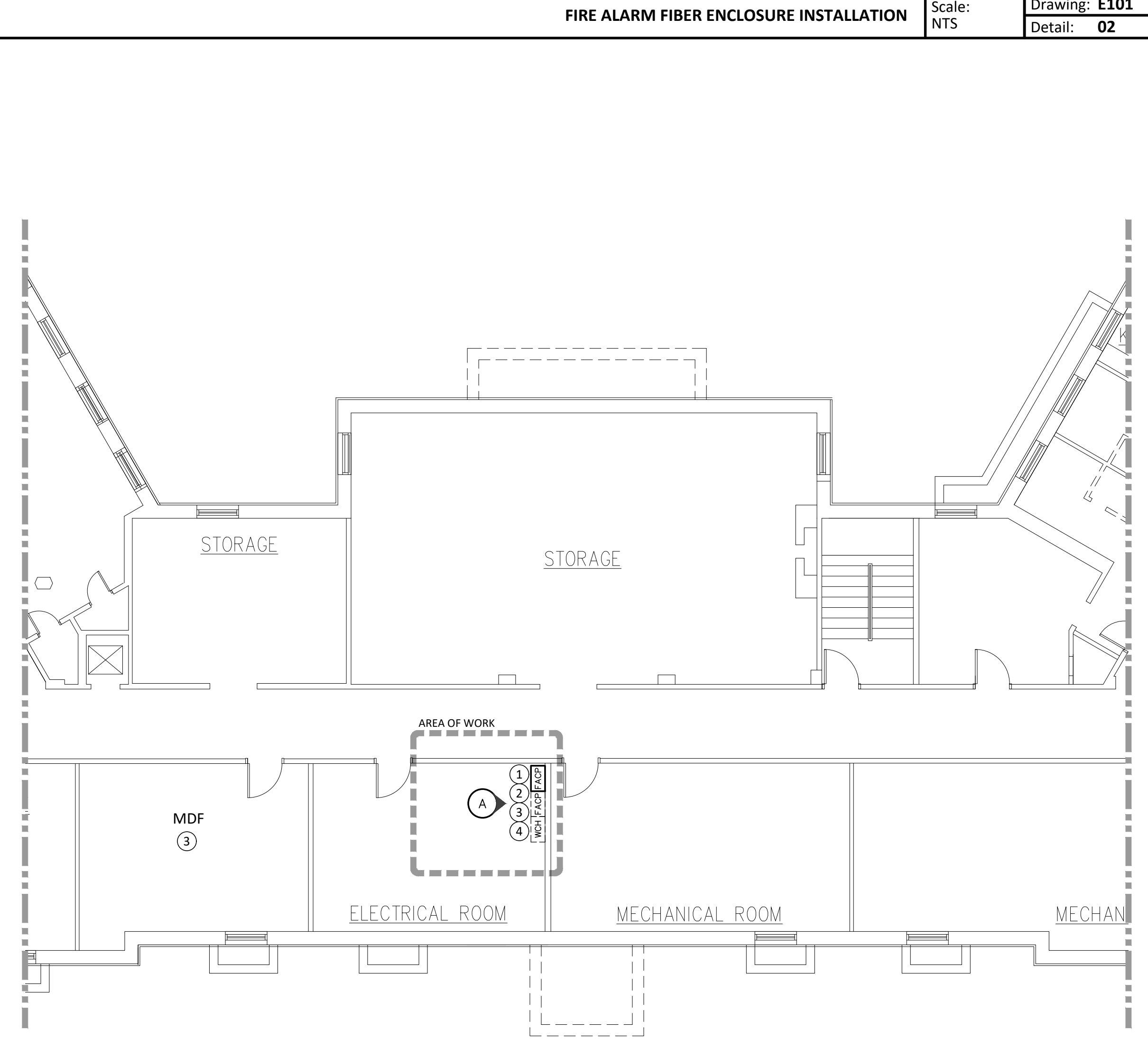


- KEY NOTES (SYMBOLS ①, ②, ETC.)**
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
  - Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
  - Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
  - Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
  - Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.
- GENERAL NOTES**
- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
  - The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
  - Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
  - Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
  - When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
  - CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.



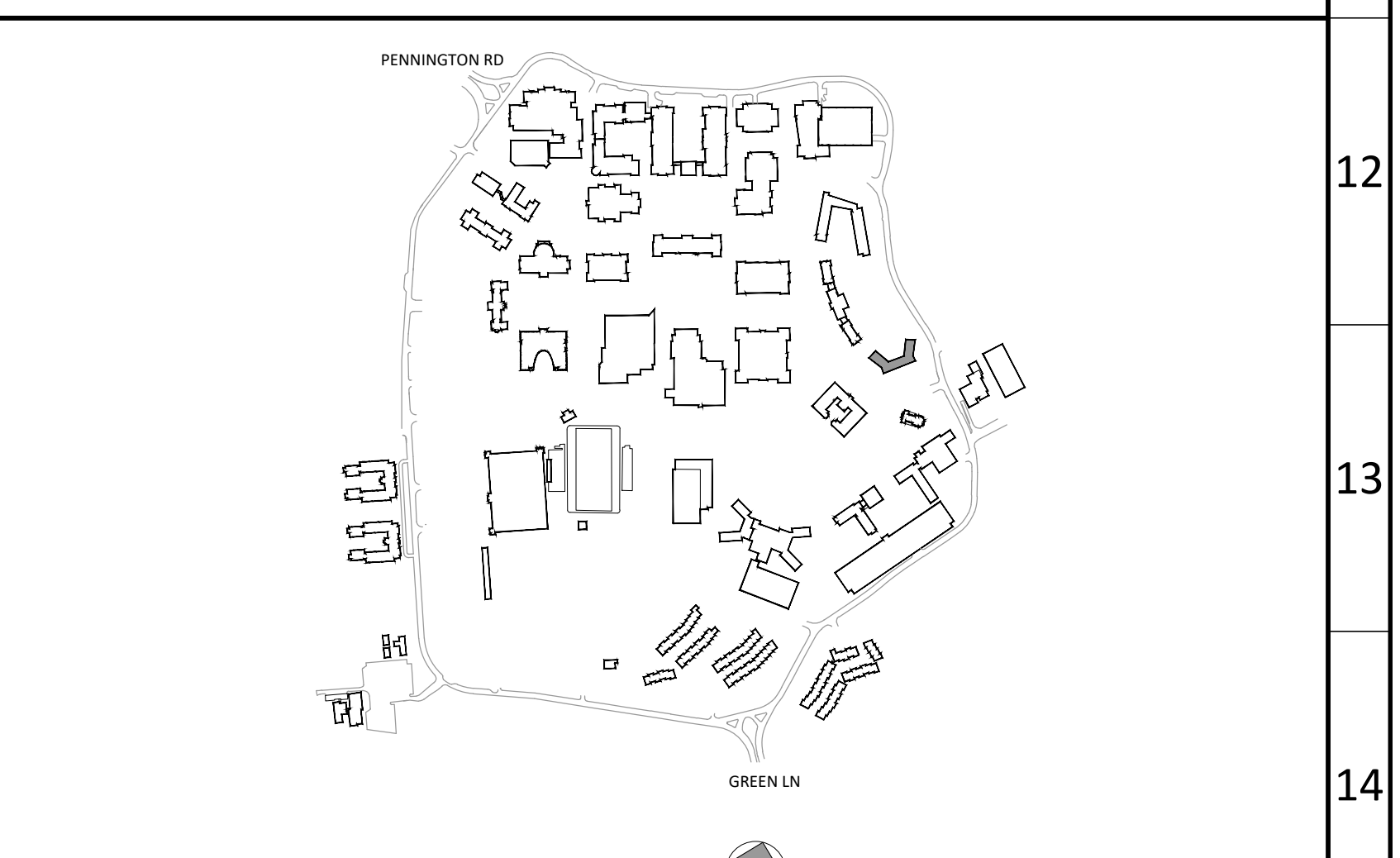
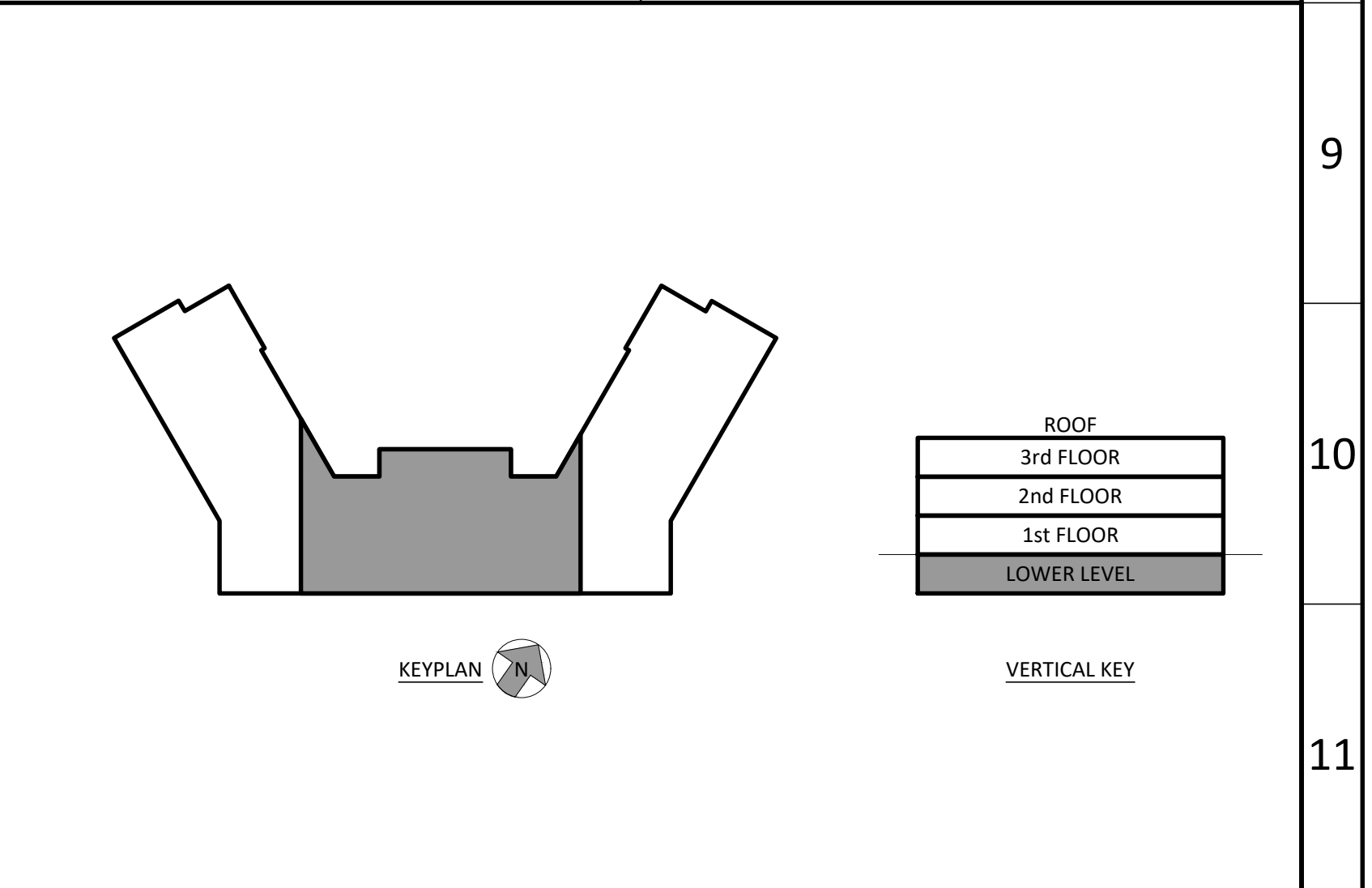
**NOTES:**

- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
- Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
- Install Fiber Jumpers Between WCH And FACP.



**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
FACP	Fire Alarm Control Panel	□	New Equipment
WCH	Existing Wall-Mounted Connector Housing	□	Existing Equipment
FACP	Existing Fire Alarm Control Panel	⊙	Photo Tag
		→	Connect To Existing



<b>FIRE ALARM RISER</b>	Scale: NTS	Drawing: E101
		Detail: 01

<b>PARTIAL FLOOR PLAN - LOWER LEVEL</b>	Scale: 1/8"=1'-0"	Drawing: E101
		Detail: 03

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Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

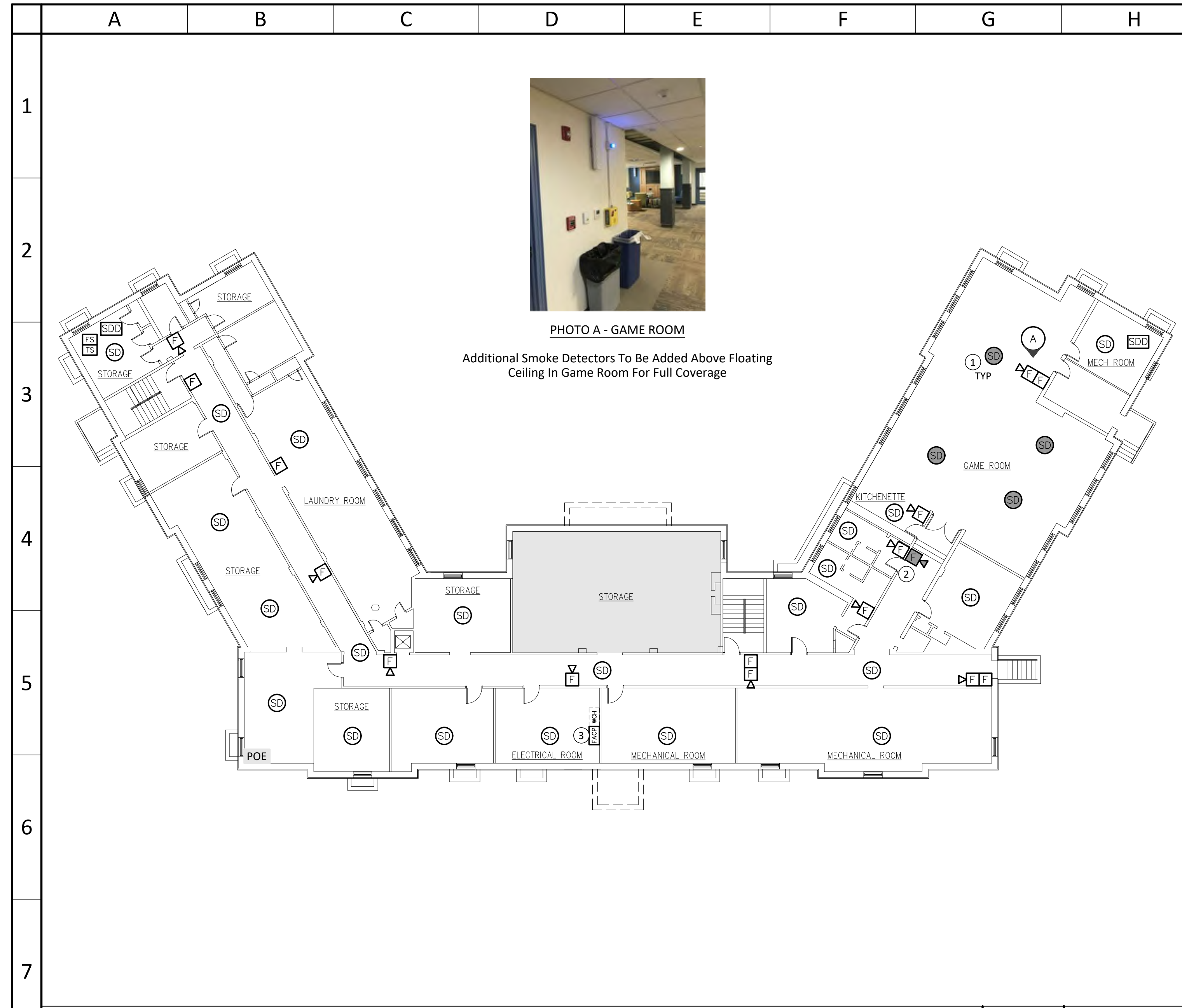
project  
**TCNJ - CAMPUS FIRE ALARM PROJECT**  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
**FIRE ALARM PANEL REPLACEMENT**  
NORSWORTHY HALL

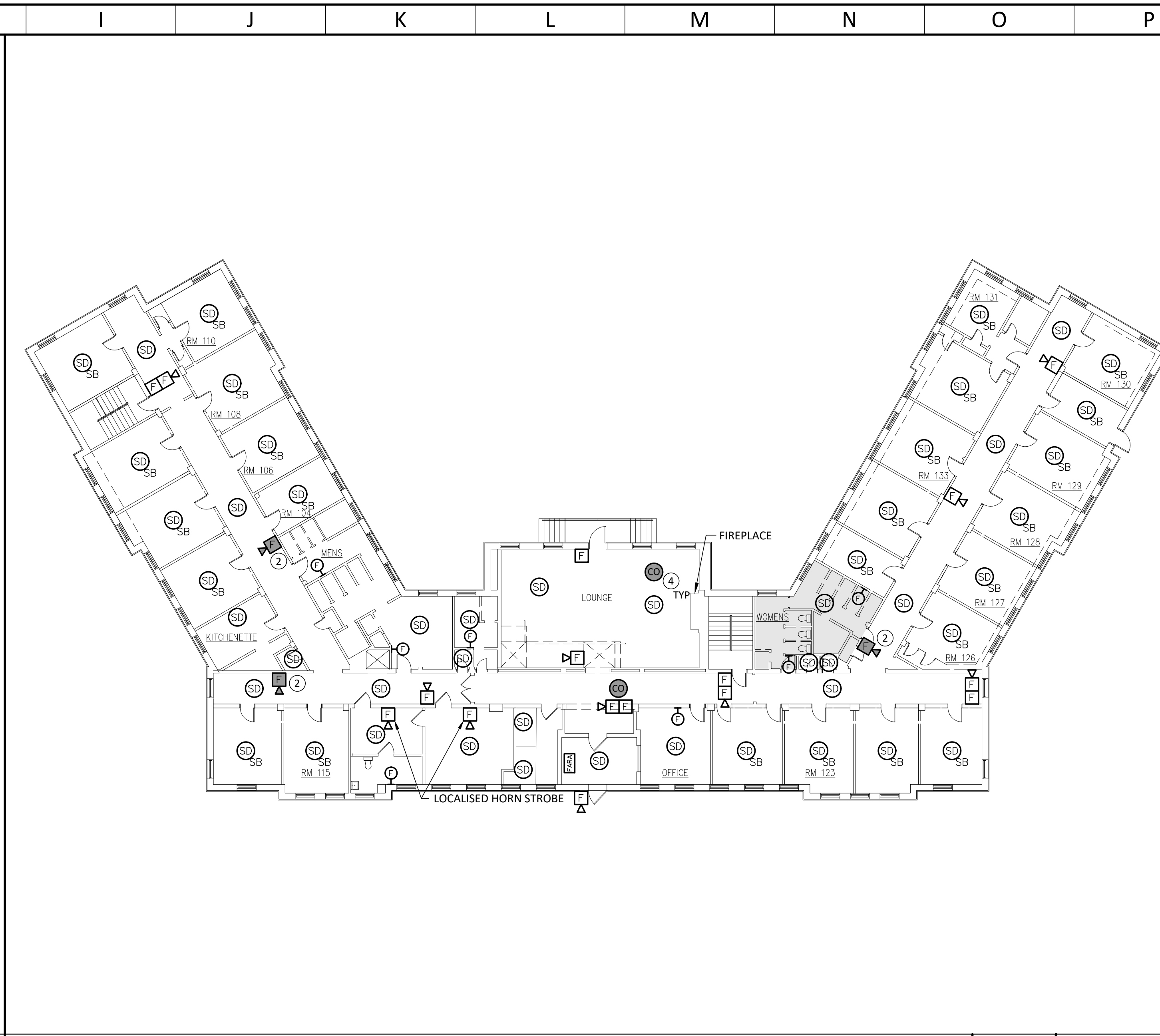
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**E101-NORS**

scale 1/8" = 1'-0" drawn by SC checked by SF date 5/03/2020

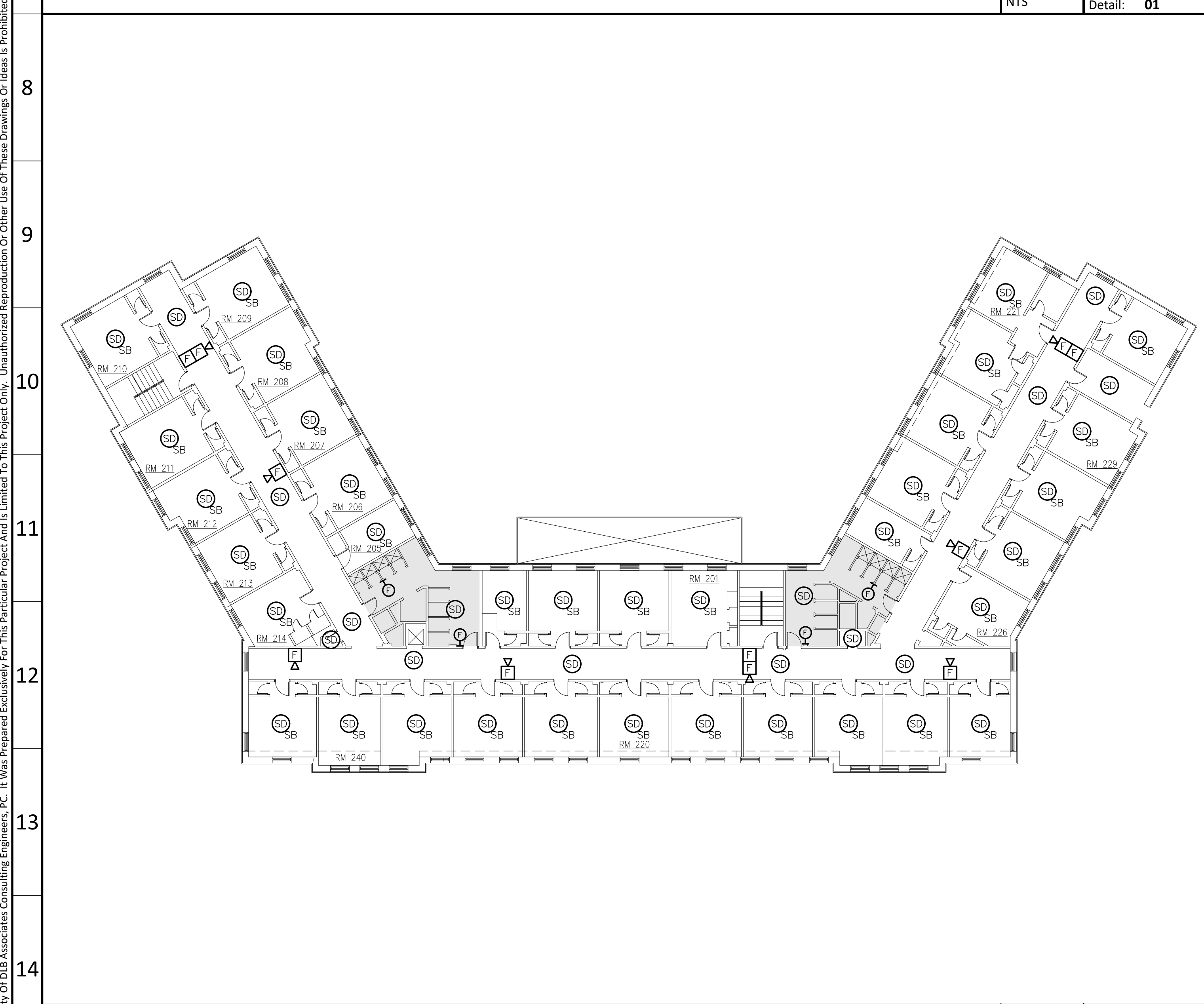
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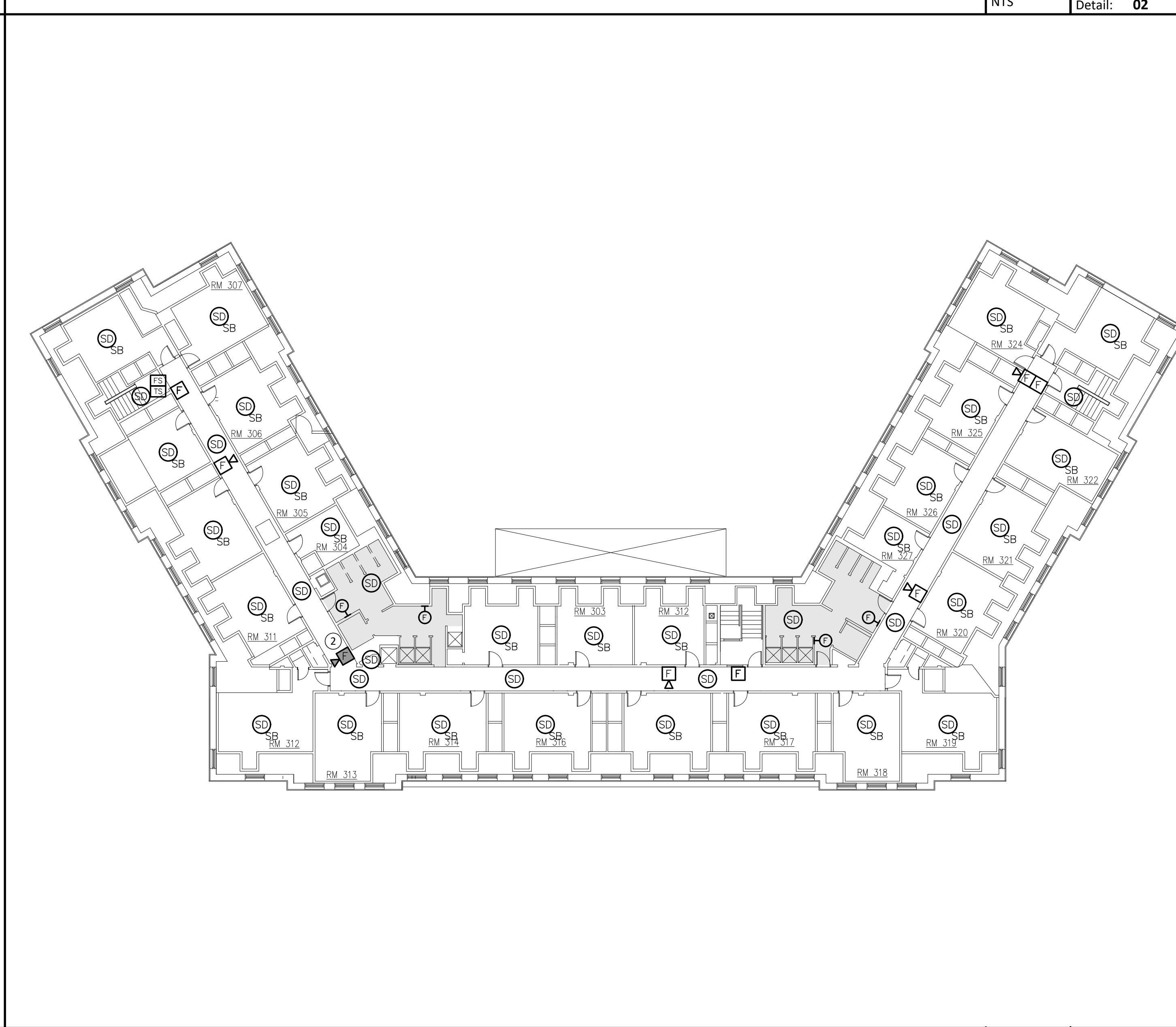
LOWER LEVEL LAYOUT Scale: NTS Drawing: E102 Detail: 01



FIRST FLOOR LAYOUT Scale: NTS Drawing: E102 Detail: 02



SECOND FLOOR LAYOUT Scale: NTS Drawing: E102 Detail: 03



**FIRE ALARM PHOTOS**



PHOTO A - SIMPLEX FIRE ALARM CONTROL PANEL

Simplex 4020 Addressable Fire Alarm Control Panel, Honeywell FS90 Addressable Fire Alarm Control Panel And Simplex Fire Alarm Remote Annunciator With Exposed Conduit Located Within First Floor Electrical Room

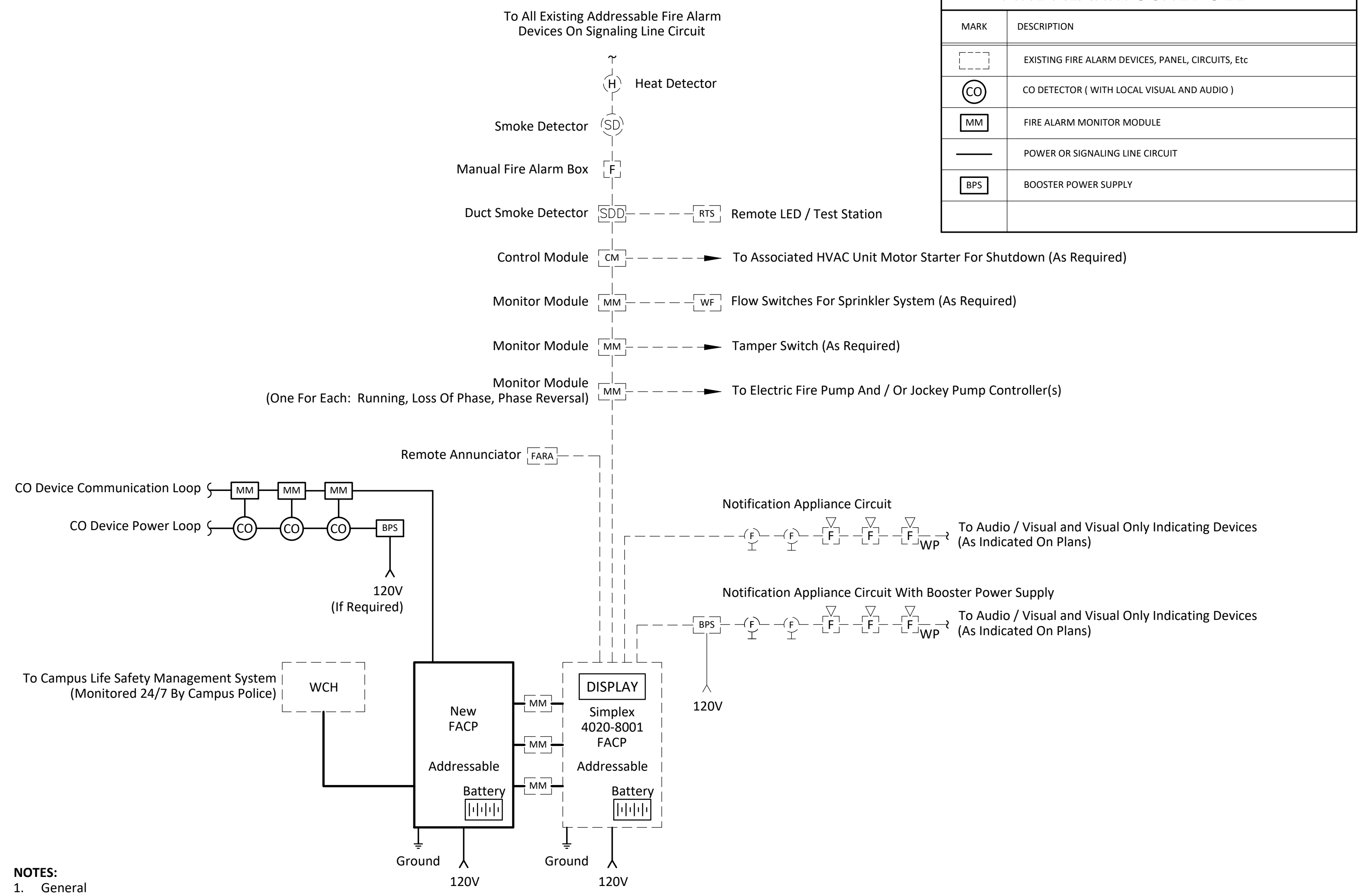


SIMPLEX FIRE ALARM DEVICES

Existing Simplex Addressable Fire Alarm Devices Located Throughout The Building

**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
[Symbol]	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC
[Symbol]	CO DETECTOR ( WITH LOCAL VISUAL AND AUDIO )
[Symbol]	FIRE ALARM MONITOR MODULE
[Symbol]	POWER OR SIGNALING LINE CIRCUIT
[Symbol]	BOOSTER POWER SUPPLY

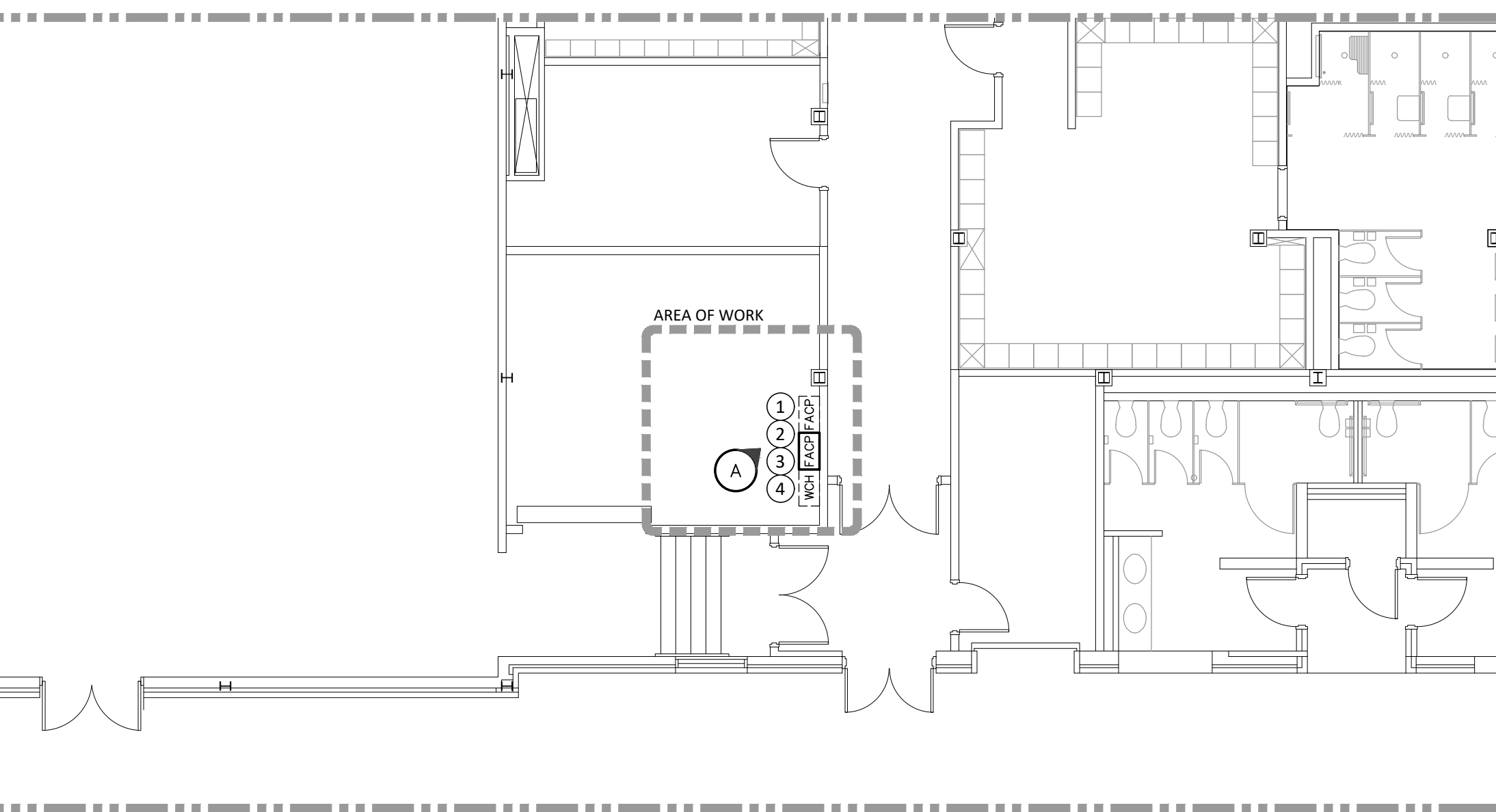


- NOTES:**
- General
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Simplex End Devices Would Not Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Monitor Existing Simplex FACP For Alarm, Tamper, Trouble, And Other Points That Are Currently Monitored By The Front End At A Minimum.
      - This Building Would NOT Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - Packer Hall Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Simplex 4020-8001 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

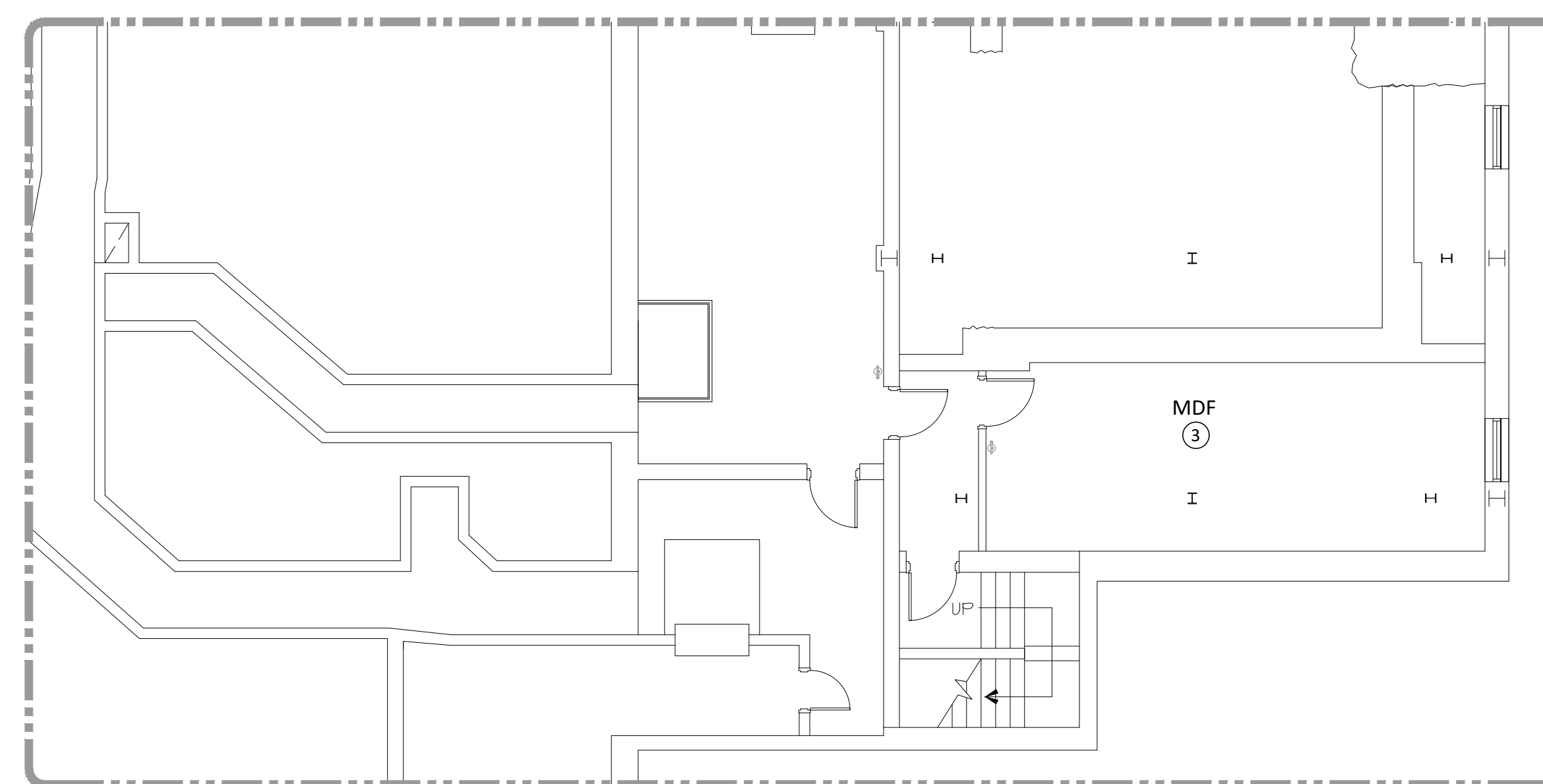
**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNU/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - FIRST FLOOR** Scale: 1/8"=1'-0" Drawing: **E101** Detail: **03**



**PARTIAL FLOOR PLAN - BASEMENT** Scale: 1/8"=1'-0" Drawing: **E101** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

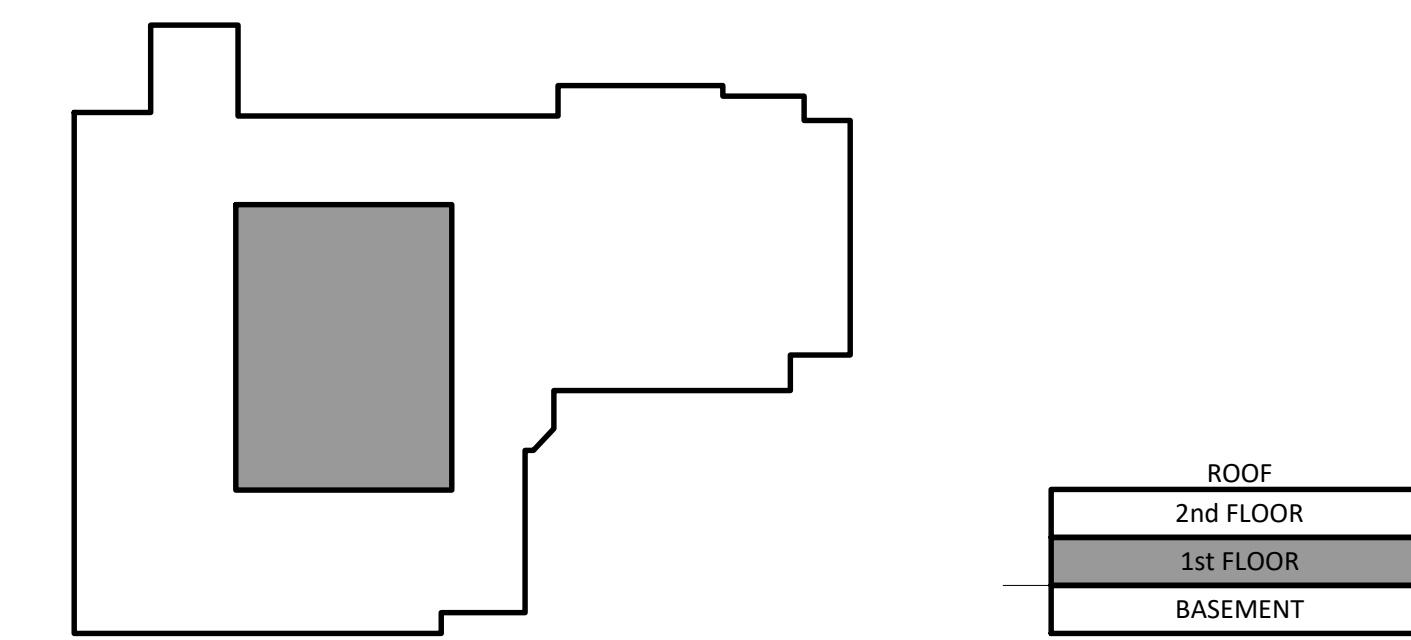
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, BETWEEN THE EXISTING WCH AND FIRE ALARM CONTROL PANEL AS PER DETAIL 2. ALSO PROVIDE DUPLEX FIBER JUMPER CABLES PRE-TERMINATED ON BOTH ENDS AT THE MDF BETWEEN REQUIRED INTERCONNECTION POINTS. CONTRACTOR SHALL COORDINATE AND CONFIRM JUMPER CONNECTION TYPES, FIBER TYPE, LENGTH, ROUTING CONDITIONS, ETC WITH FIELD CONDITIONS. COORDINATE WITH TCNU/IT DEPARTMENT FOR FIBER CONNECTION AND LABELING INFORMATION.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[Symbol]	Fire Alarm Control Panel	[Symbol]	New Equipment
[Symbol]	Existing Wall-Mounted Connector Housing	[Symbol]	Existing Equipment
[Symbol]	Existing Fire Alarm Control Panel	[Symbol]	Photo Tag
		[Symbol]	Connect To Existing



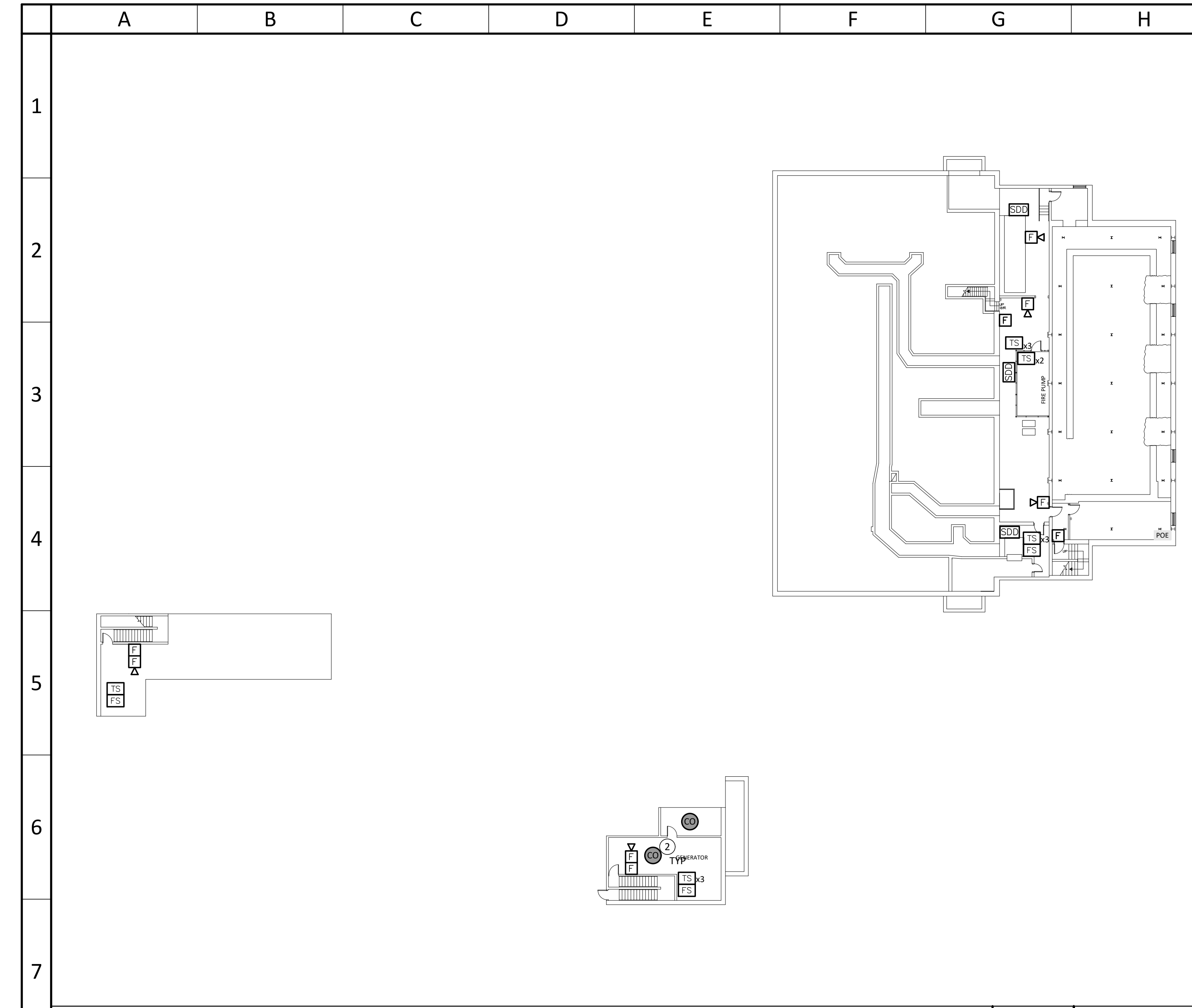
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 title: **FIRE ALARM PANEL REPLACEMENT PACKER HALL**  
 scale: 1/8" = 1'-0" drawn by: SC checked by: SF date: 5/03/2020  
 dwg. no.: **E101-PACK**

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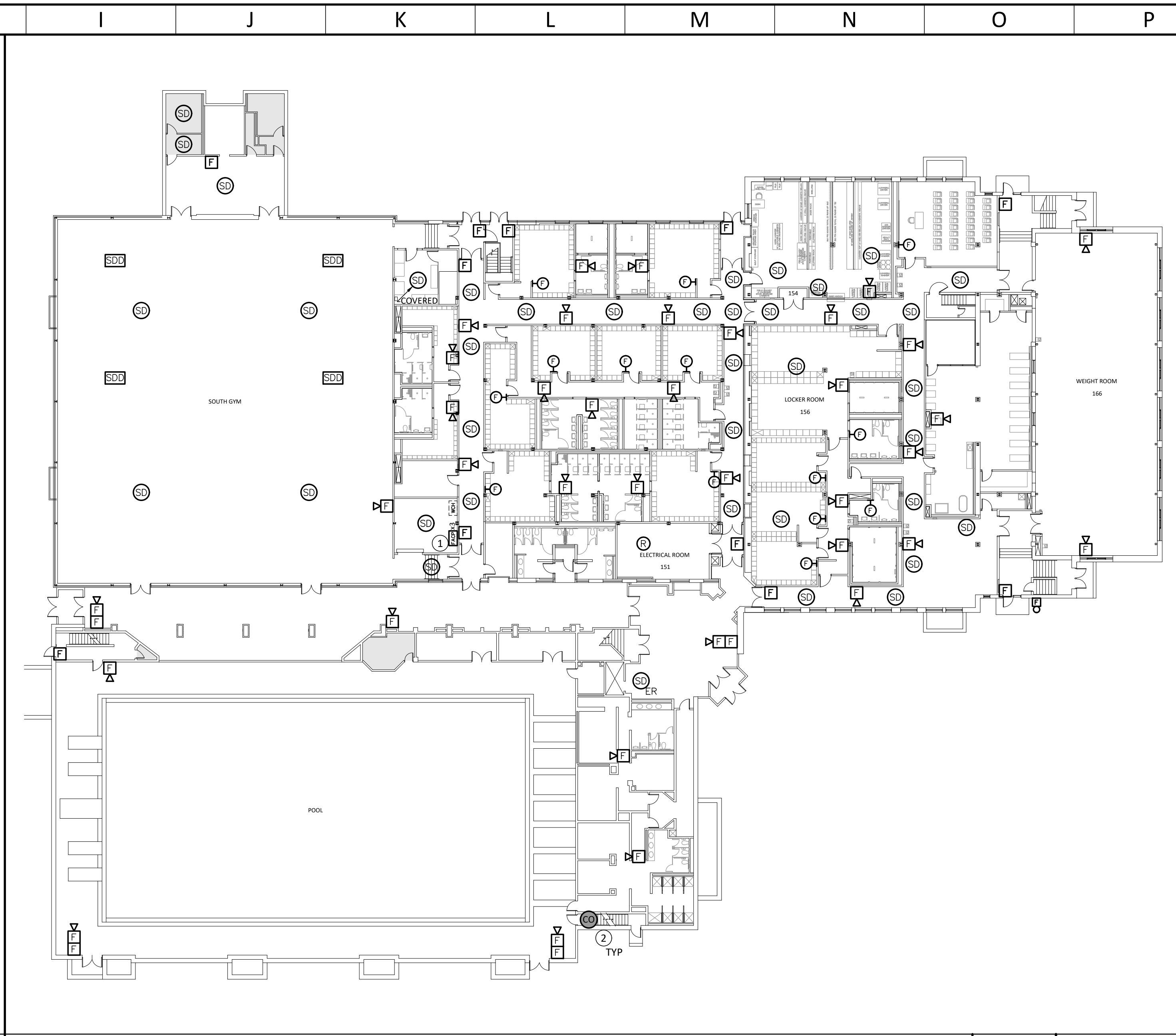
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 265 Industrial Way West, Eatontown, N.J. 07724  
 Questions For DLB Call: Anthony Laskosky Phone: 732-927-5038

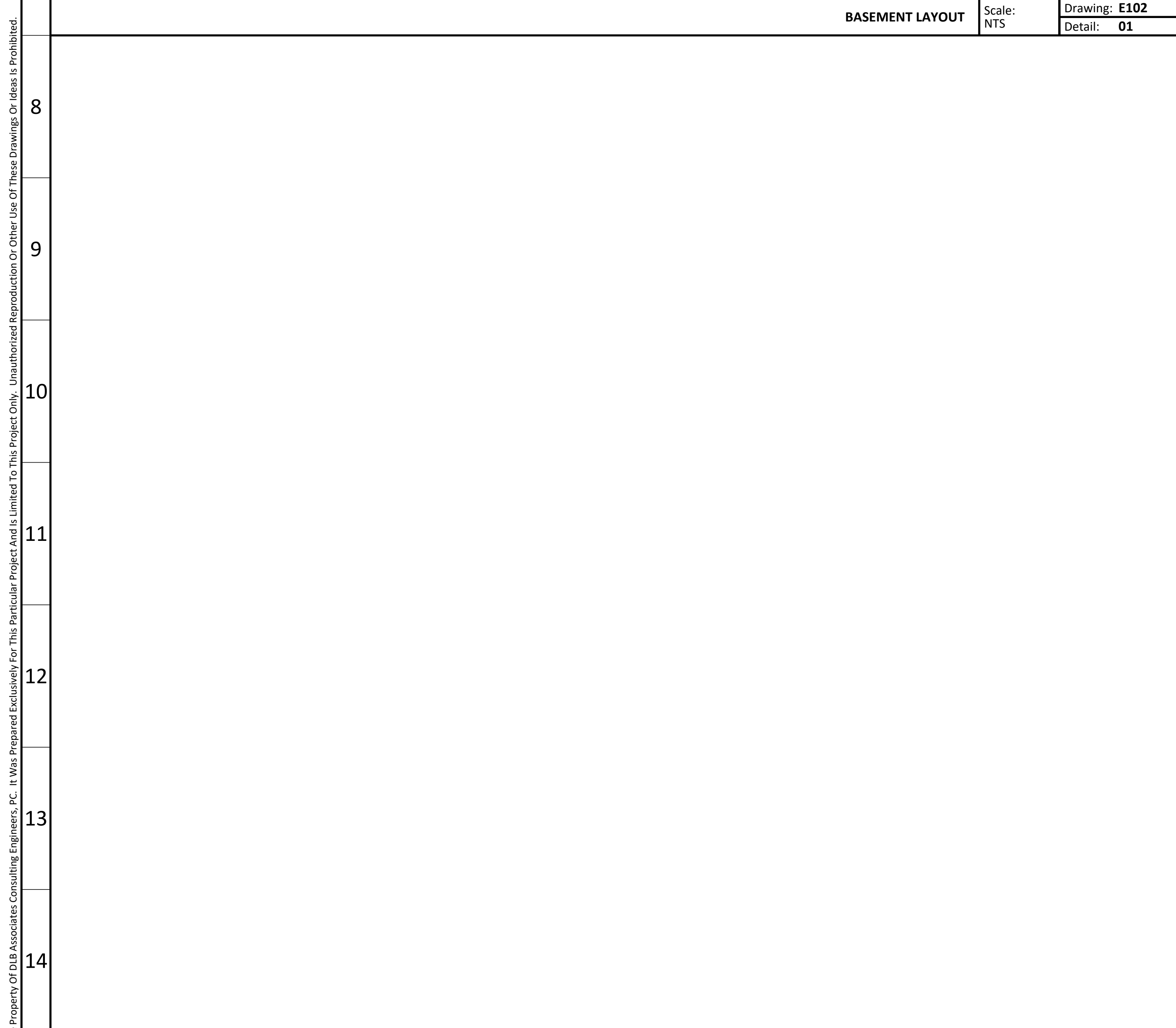




**BASEMENT LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **03**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

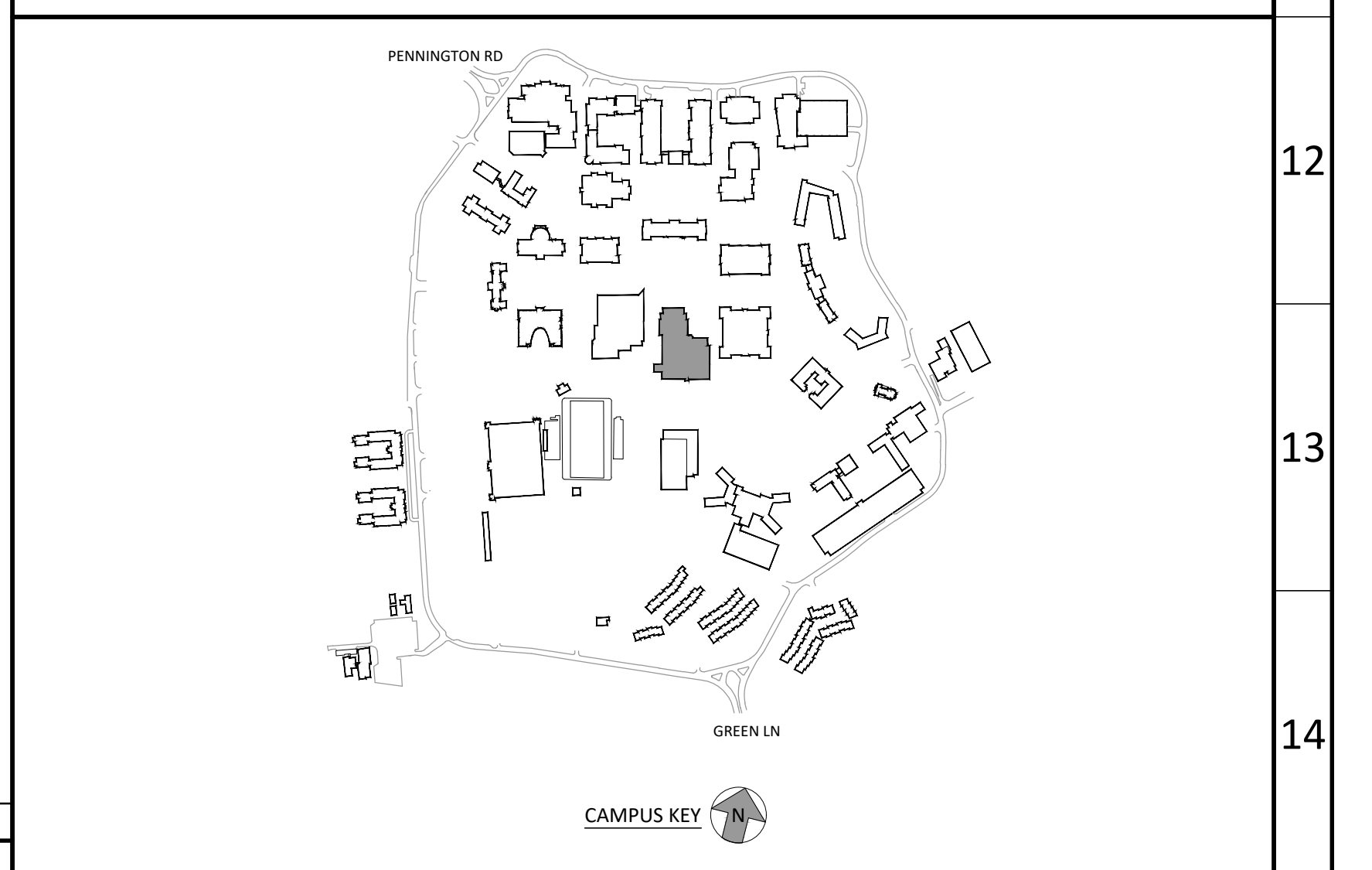
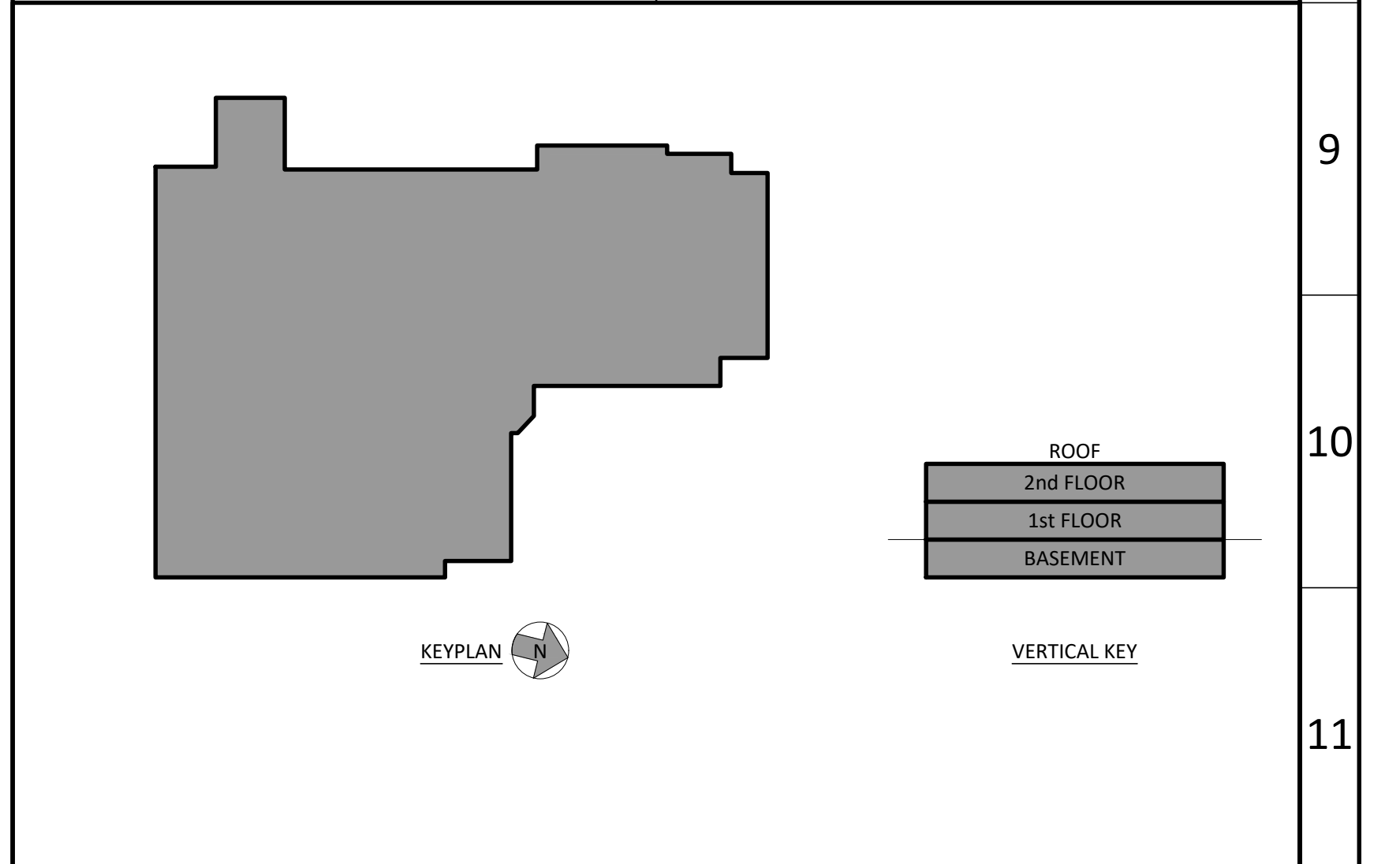
- Existing Fire Alarm Control Panel.
- New CO Detectors.

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
Ⓛ	Manual Pull Station	□	No Access
Ⓢ	Strobe Only	Ⓢ	New Smoke Detector
Ⓜ	Horn/Strobe	Ⓛ	New Manual Pull Station
Ⓢ	Smoke Detector	Ⓢ	New Strobe
Ⓢ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	Ⓜ	New Horn / Strobe
Ⓢ <sub>SB</sub>	Smoke Detector With Sounder Base	Ⓢ	New Carbon Monoxide Detector With Local Audio And Visual Notification.
Ⓢ	Heat Detector, Combination Fixed Temperature And Rate Of Rise	Ⓛ	Photo Location Indicator
Ⓢ	CO Detector	FACP	Fire Alarm Control Panel
Ⓢ <sub>DC</sub>	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARA	Fire Alarm Remote Annunciator Panel		
FABP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



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Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

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Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
PACKER HALL  
scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E102-PACK**

**FIRE ALARM PHOTOS**



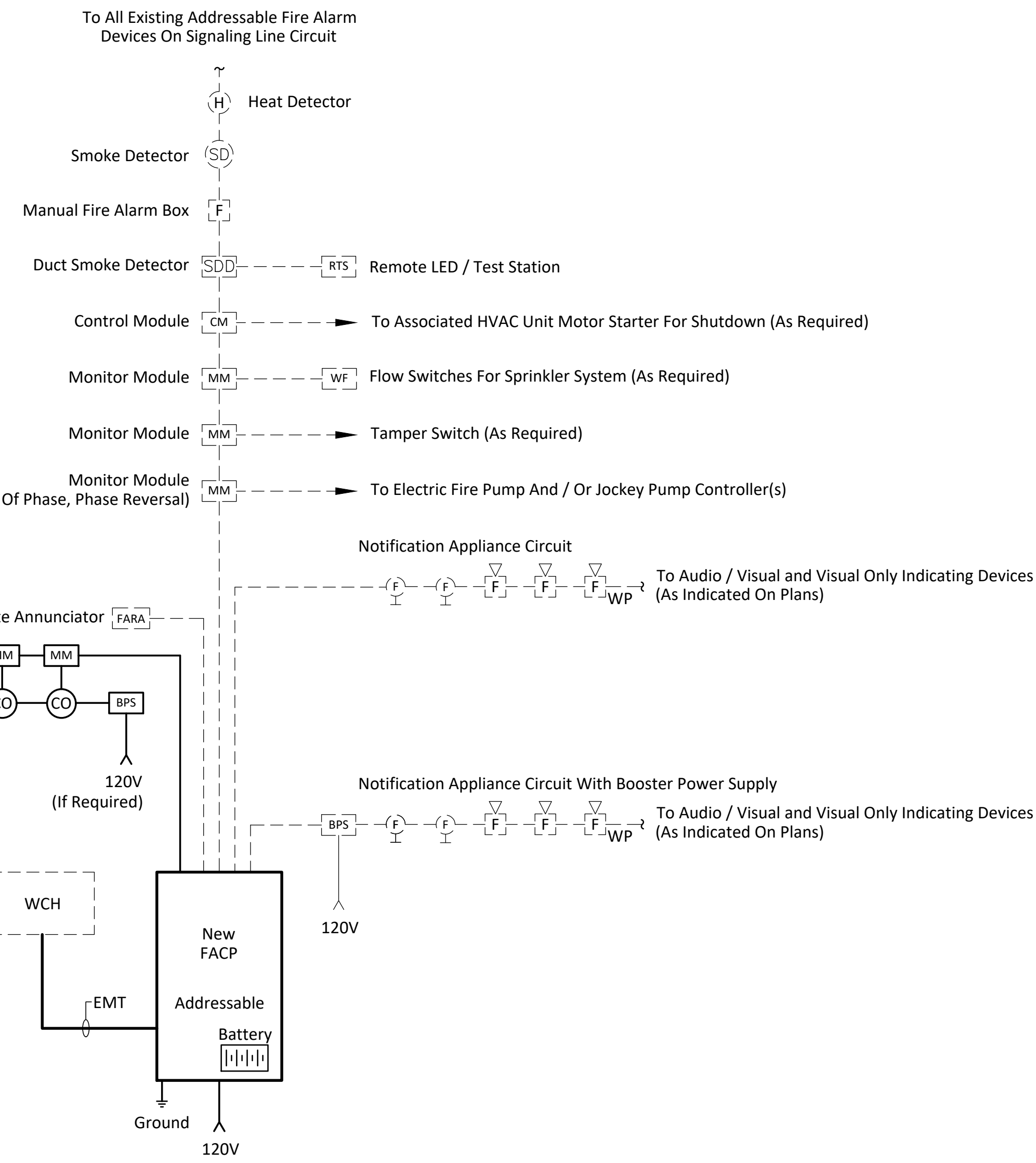
**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**  
Honeywell XLS 1000 Addressable Fire Alarm Control Panel With Exposed Conduit Located Within First Floor Electrical Room



**HONEYWELL FIRE ALARM DEVICES**  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building

**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
[Symbol]	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC
[Symbol]	CO DETECTOR ( WITH LOCAL VISUAL AND AUDIO )
[Symbol]	FIRE ALARM MONITOR MODULE
[Symbol]	POWER OR SIGNALING LINE CIRCUIT
[Symbol]	BOOSTER POWER SUPPLY

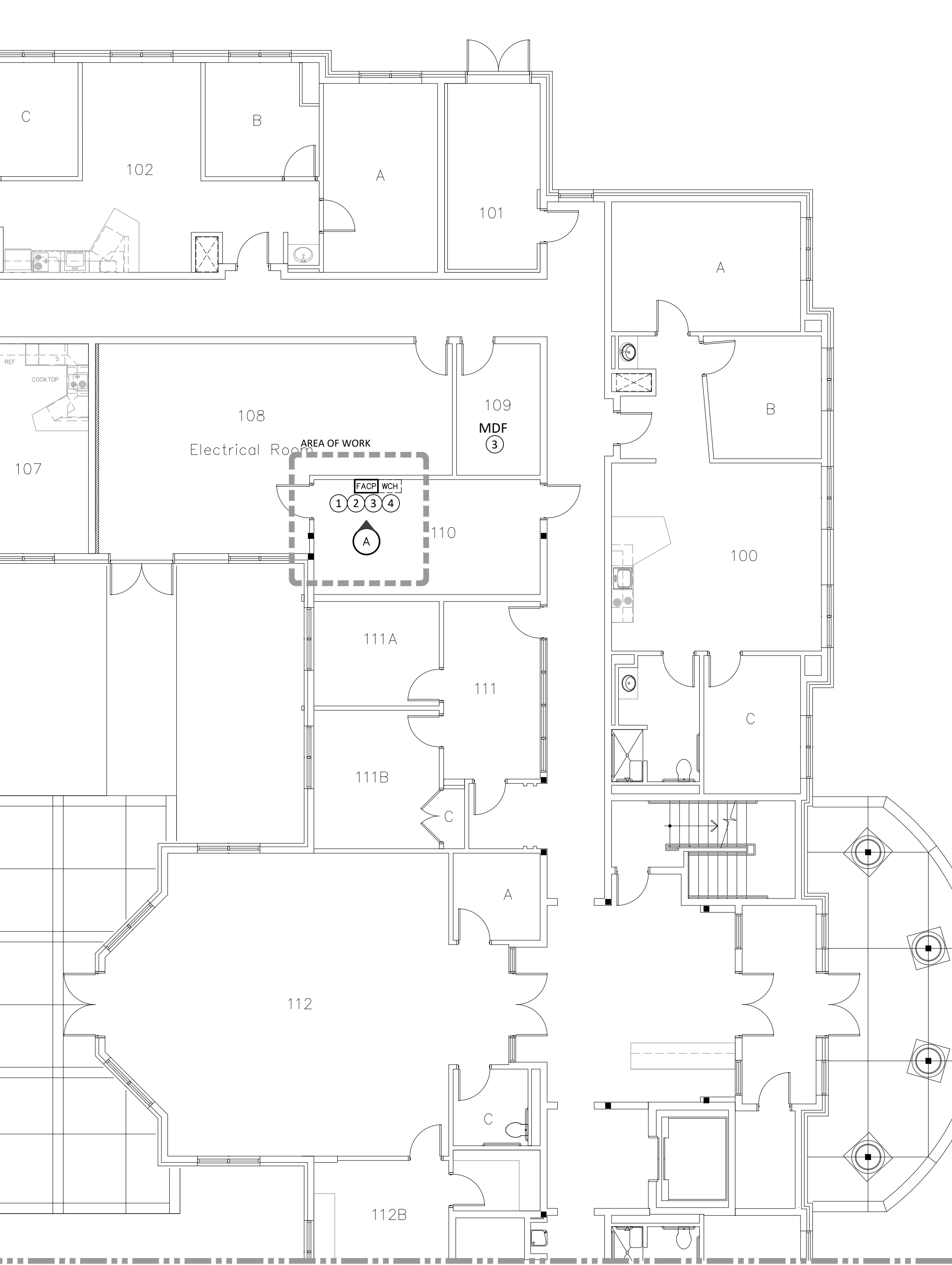


- NOTES:**
- General**
    - The Riser Above Depicts A "Honeywell" Basis of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - This Building Would Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment**
    - Phelps Hall Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell XLS 1000 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring**
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing**
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**KEY NOTES (SYMBOLS ①, ②, ETC.)**

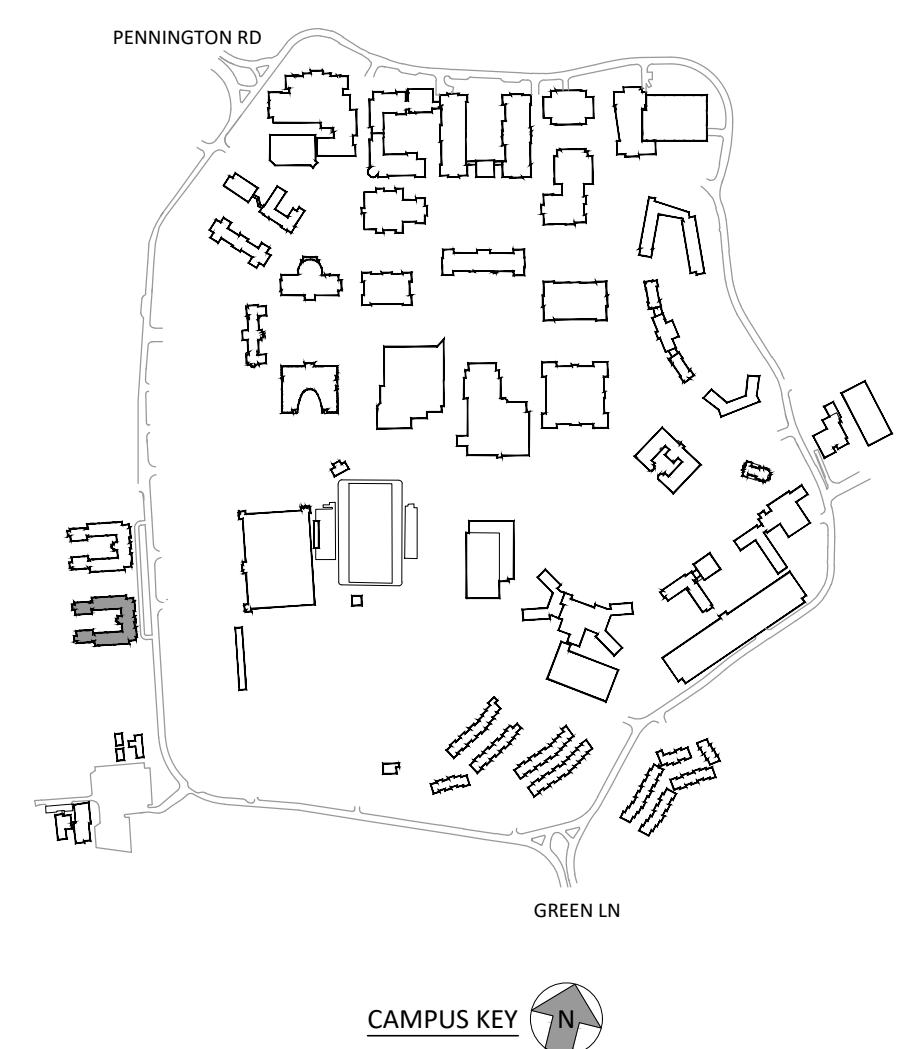
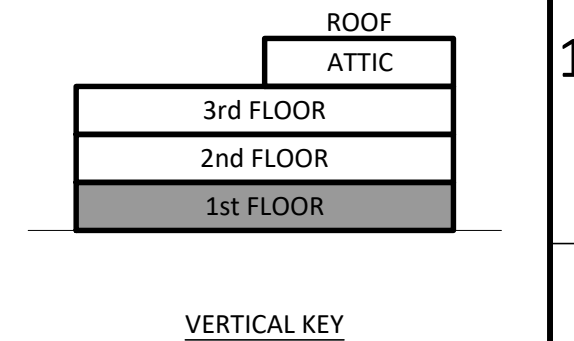
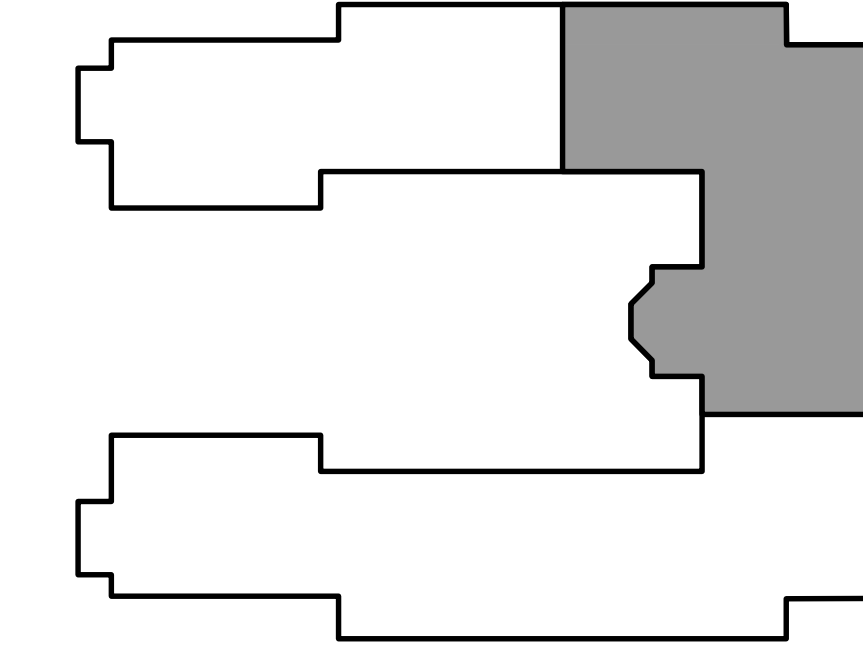
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
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- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[Symbol]	Fire Alarm Control Panel	[Symbol]	New Equipment
[Symbol]	Existing Wall-Mounted Connector Housing	[Symbol]	Existing Equipment
[Symbol]	Existing Fire Alarm Control Panel	[Symbol]	Photo Tag
		[Symbol]	Connect To Existing



ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
**TCNJ - CAMPUS FIRE ALARM PROJECT**  
**PART B - HARDWARE & SOFTWARE UPGRADES**  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

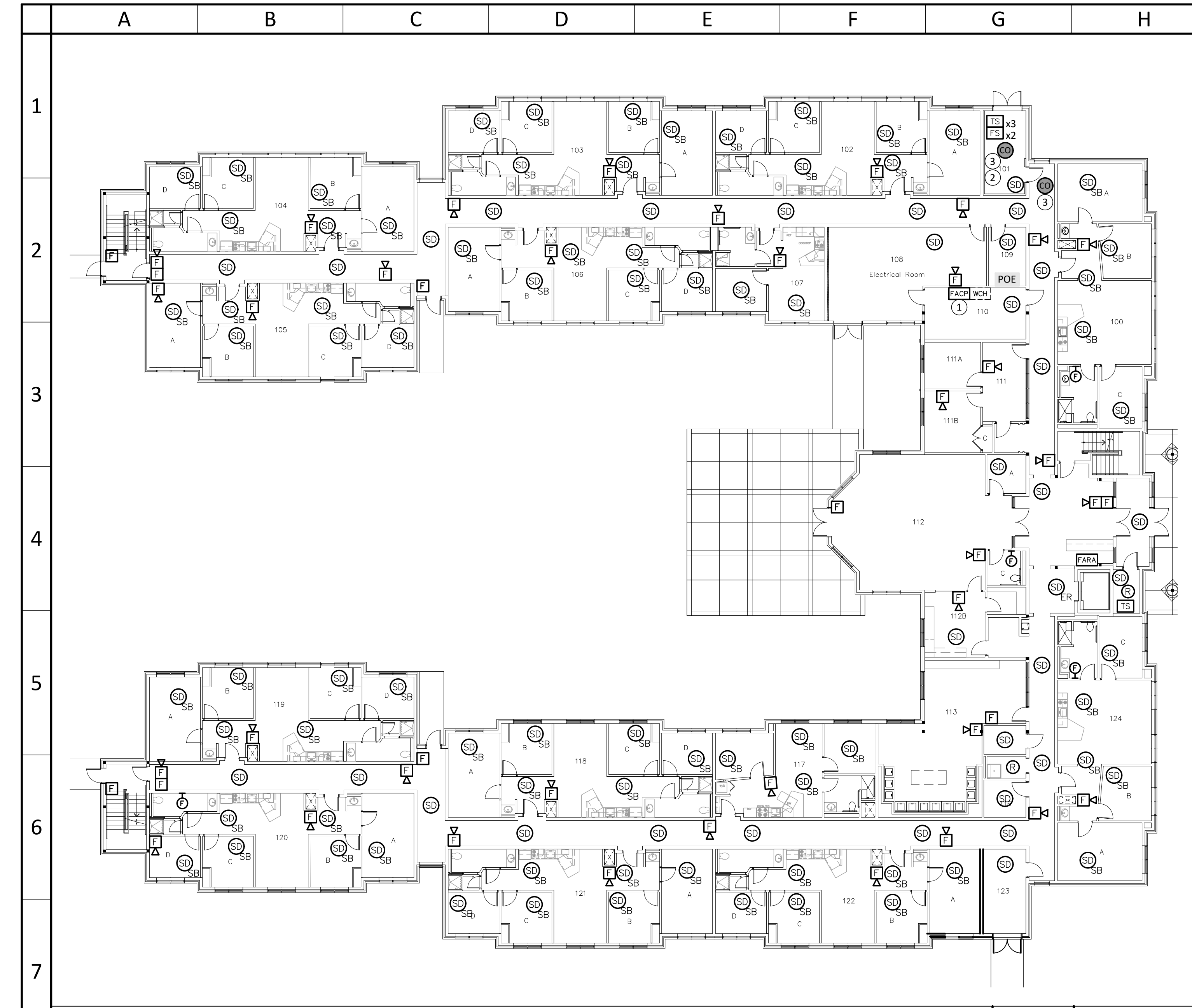
title  
**FIRE ALARM PANEL REPLACEMENT**  
**PHELPS HALL**

scale 1/8" = 1'-0" drawn by SC checked by SF date 5/03/2020

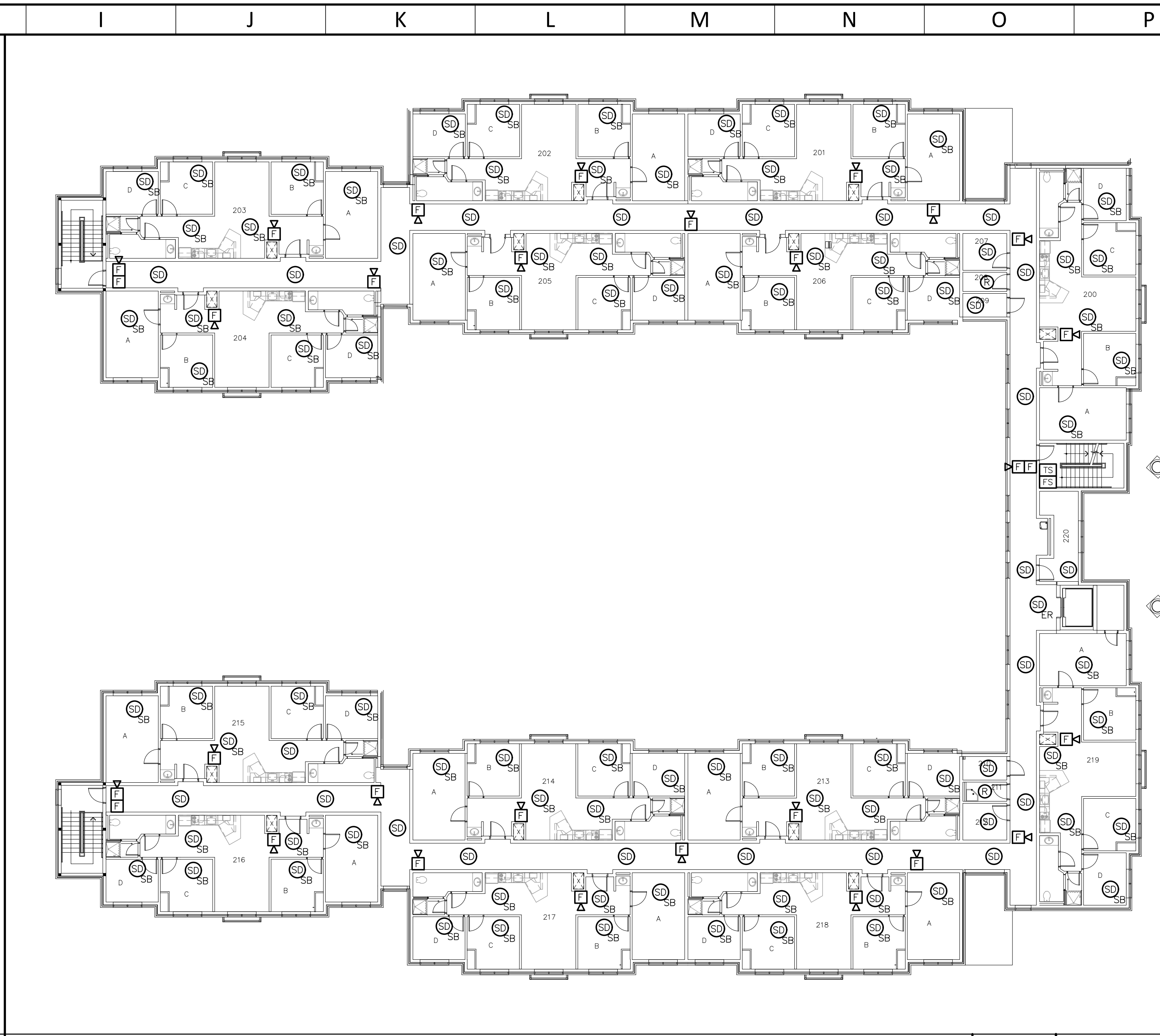
dwg. no.  
**E101-PHEL**

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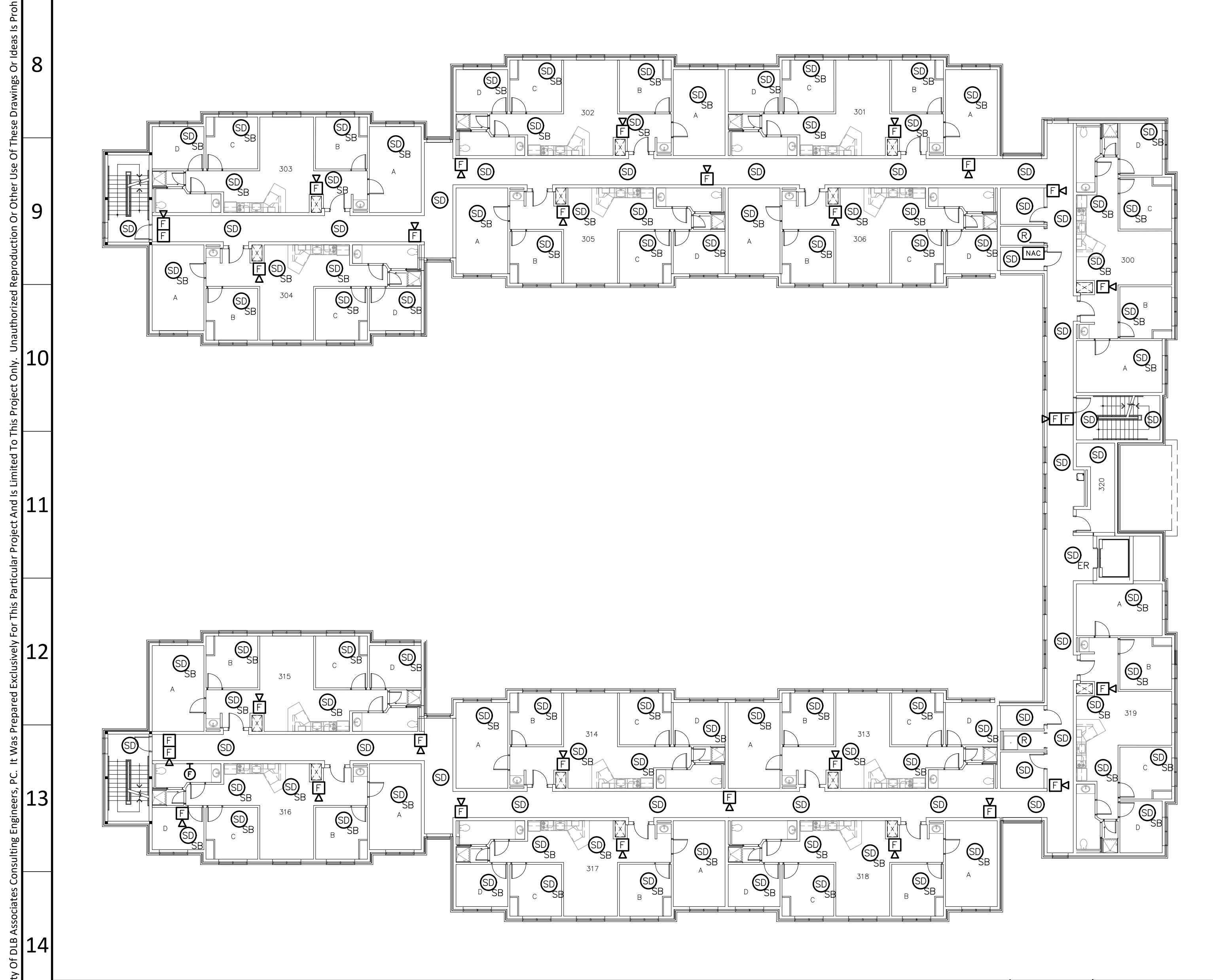
30442



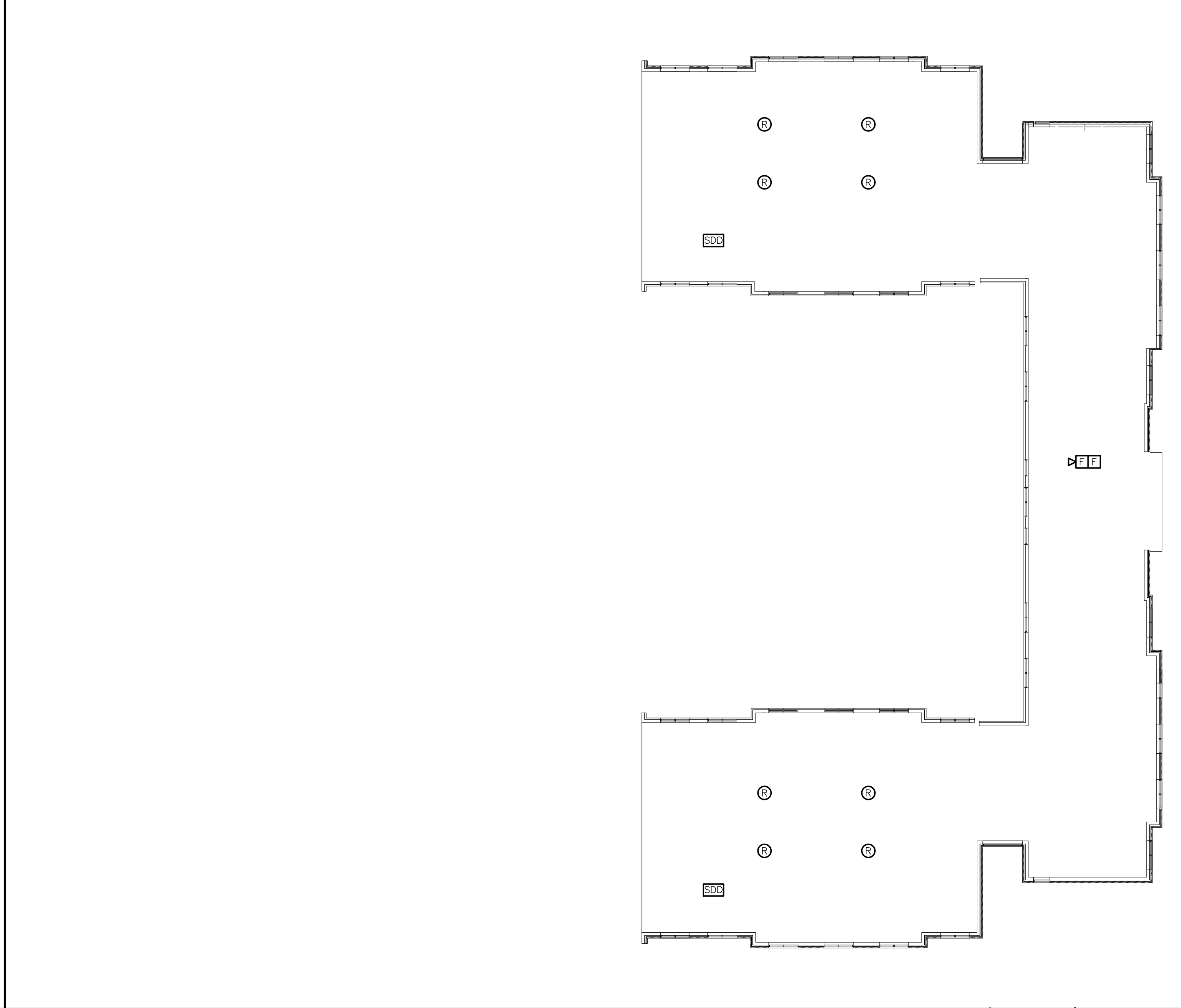
FIRST FLOOR LAYOUT Scale: 1/16"=1'-0" Drawing: E102  
Detail: 01



SECOND FLOOR LAYOUT Scale: 1/16"=1'-0" Drawing: E102  
Detail: 02



THIRD FLOOR LAYOUT Scale: 1/16"=1'-0" Drawing: E102  
Detail: 03



ATTIC LAYOUT Scale: 1/16"=1'-0" Drawing: E102  
Detail: 04

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

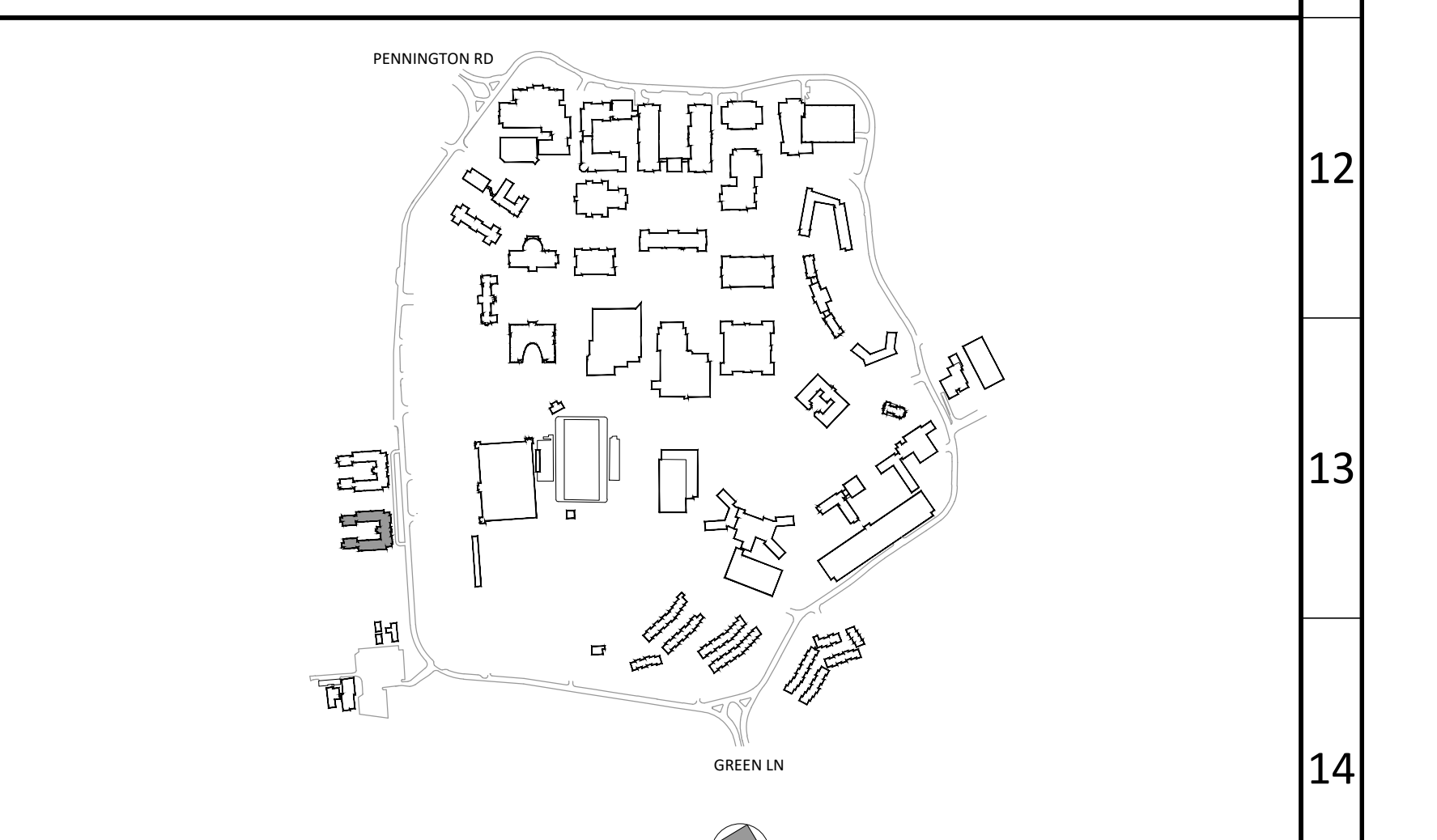
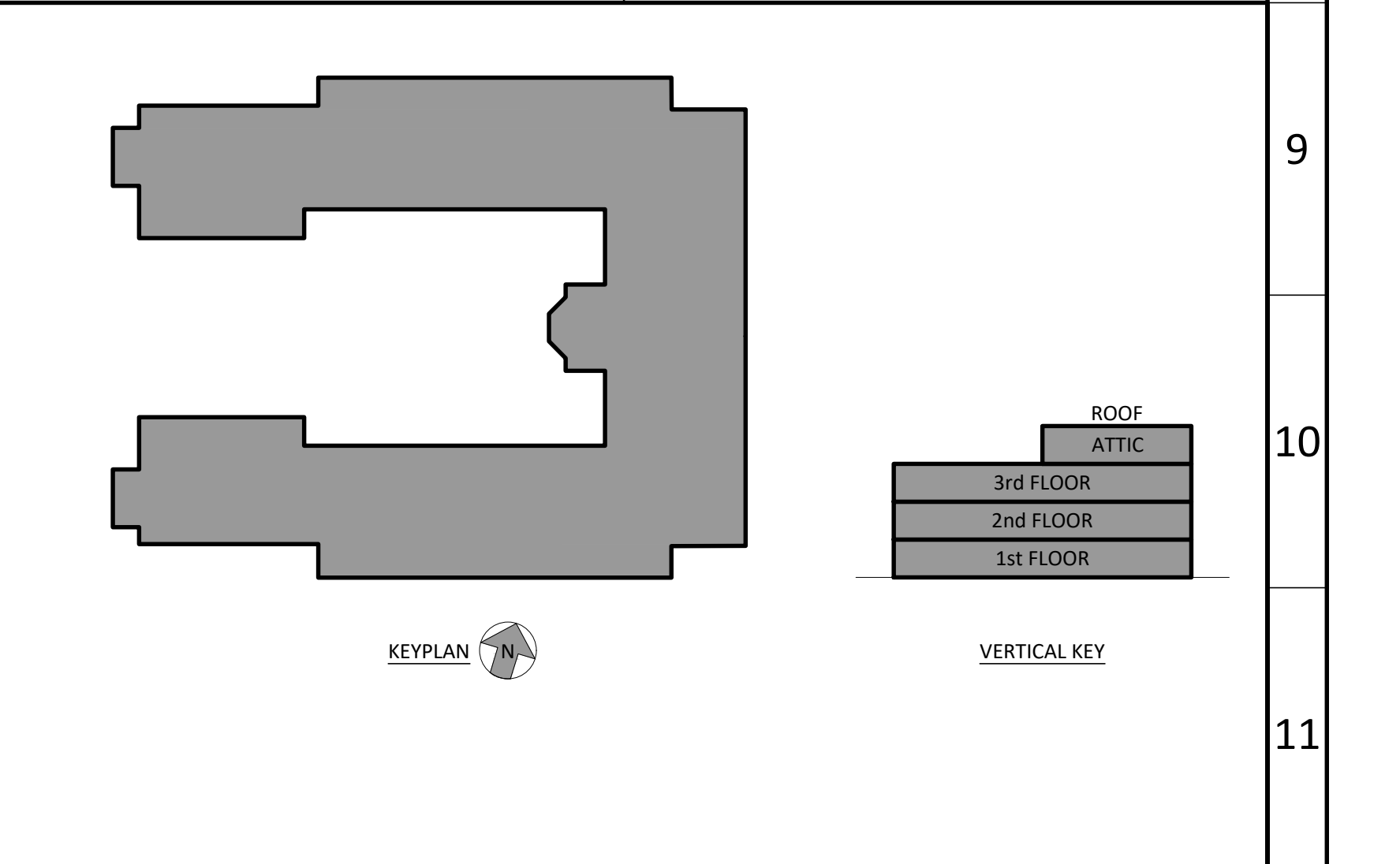
- Existing Fire Alarm Control Panel.
- Gas-Fired Water Heater.
- New CO Detector

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
Ⓜ	Manual Pull Station	Ⓜ	No Access
Ⓢ	Strobe Only	Ⓢ	New Smoke Detector
Ⓜ	Horn/Strobe	Ⓜ	New Manual Pull Station
Ⓢ	Smoke Detector	Ⓢ	New Strobe
Ⓢ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	Ⓜ	New Horn / Strobe
Ⓢ <sub>SB</sub>	Smoke Detector With Sounder Base	Ⓢ	New Carbon Monoxide Detector With Local Audio And Visual Notification.
Ⓢ	Heat Detector, Combination Fixed Temperature And Rate Of Rise	Ⓢ	Photo Location Indicator
Ⓢ	CO Detector	FACP	Fire Alarm Control Panel
Ⓢ <sub>DC</sub>	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARA	Fire Alarm Remote Annunciator Panel		
FABP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



30442

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
PHELPS HALL

scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E102-PHEL**

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**FIRE ALARM PHOTOS**



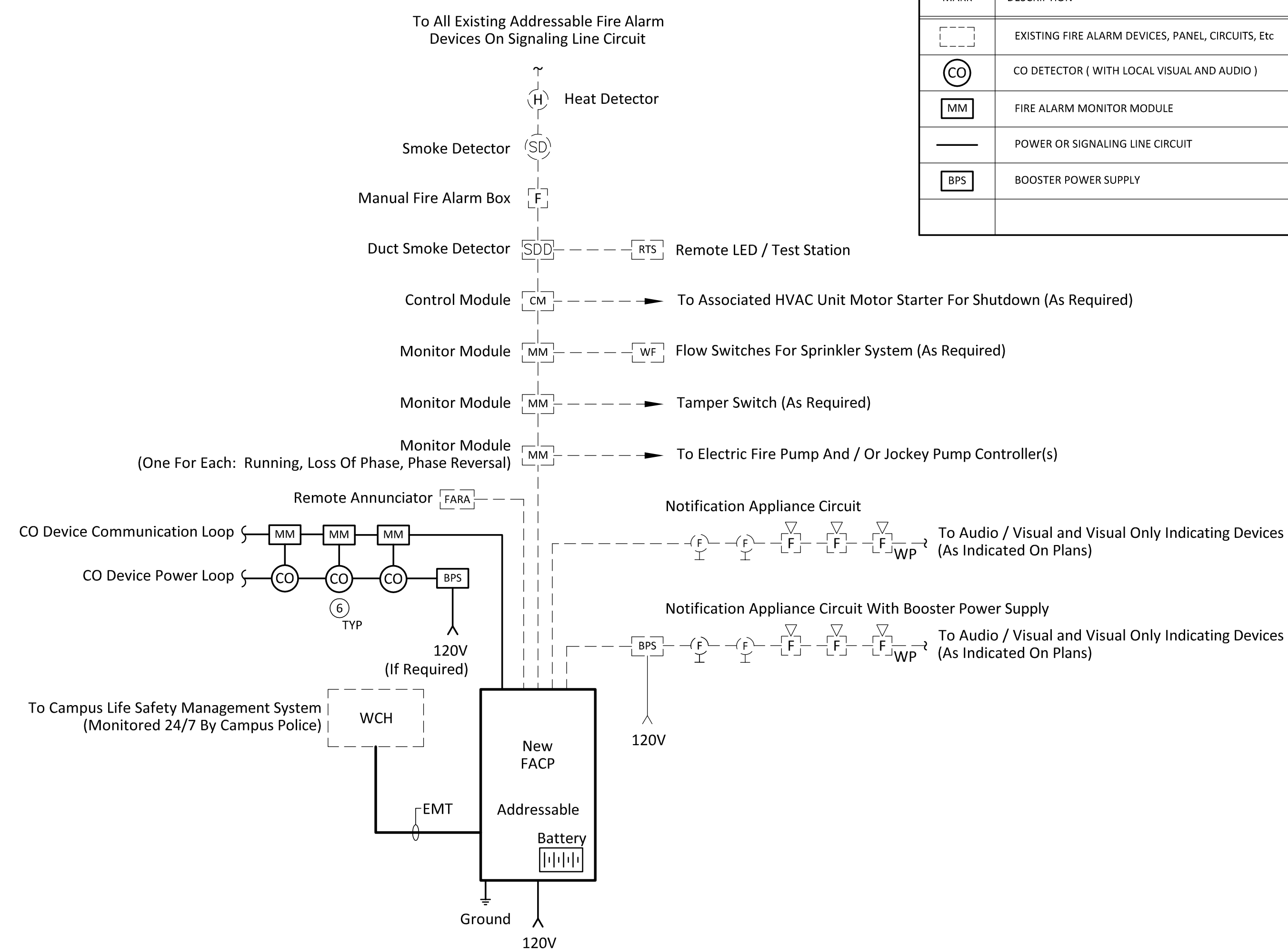
**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**  
Honeywell FS90 Addressable Fire Alarm Control Panel With Exposed Conduit Located Within Lower Level Electrical Room



**HONEYWELL FIRE ALARM DEVICES**  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building

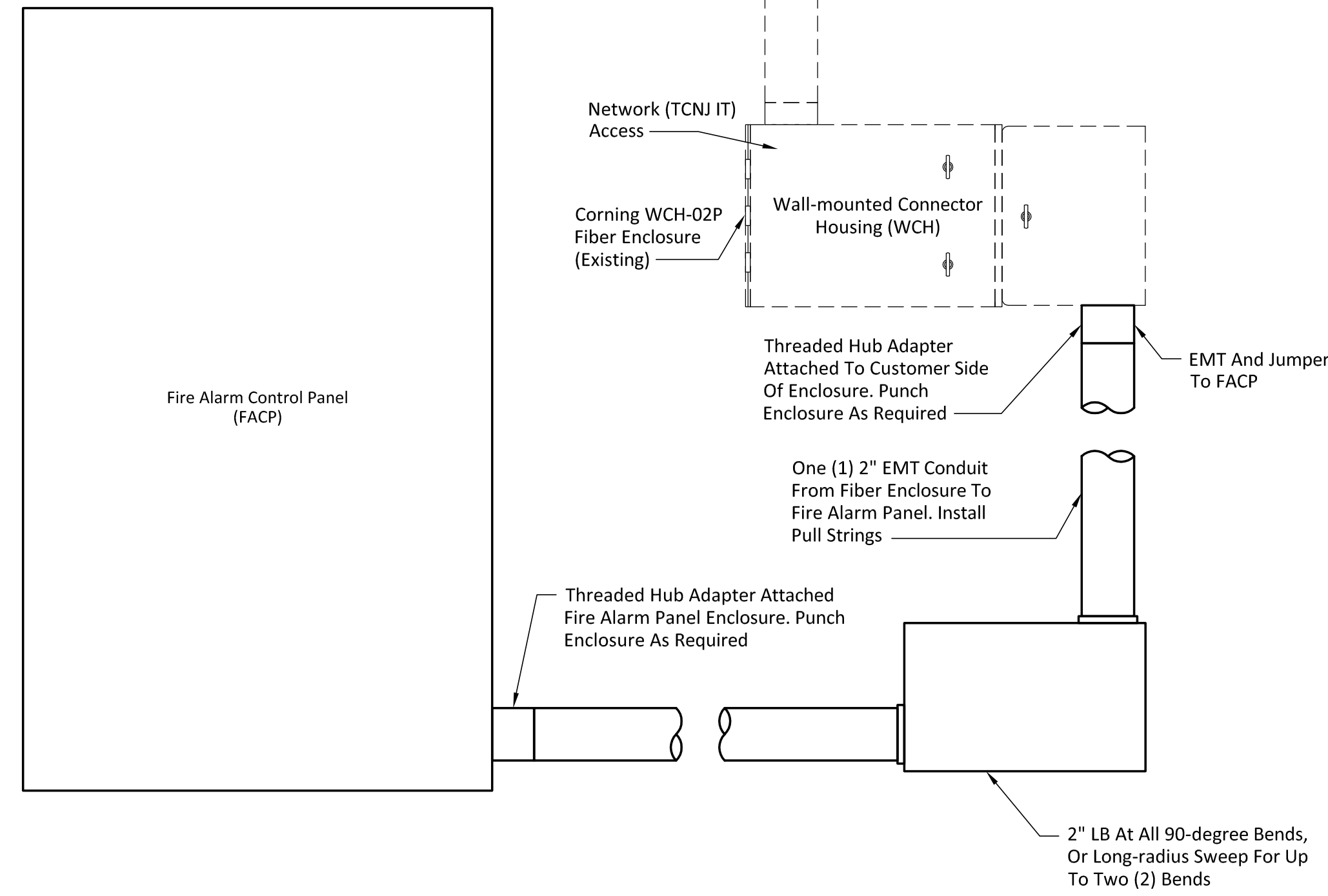
**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
[Symbol]	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC
[Symbol]	CO DETECTOR (WITH LOCAL VISUAL AND AUDIO)
[Symbol]	FIRE ALARM MONITOR MODULE
[Symbol]	POWER OR SIGNALING LINE CIRCUIT
[Symbol]	BOOSTER POWER SUPPLY



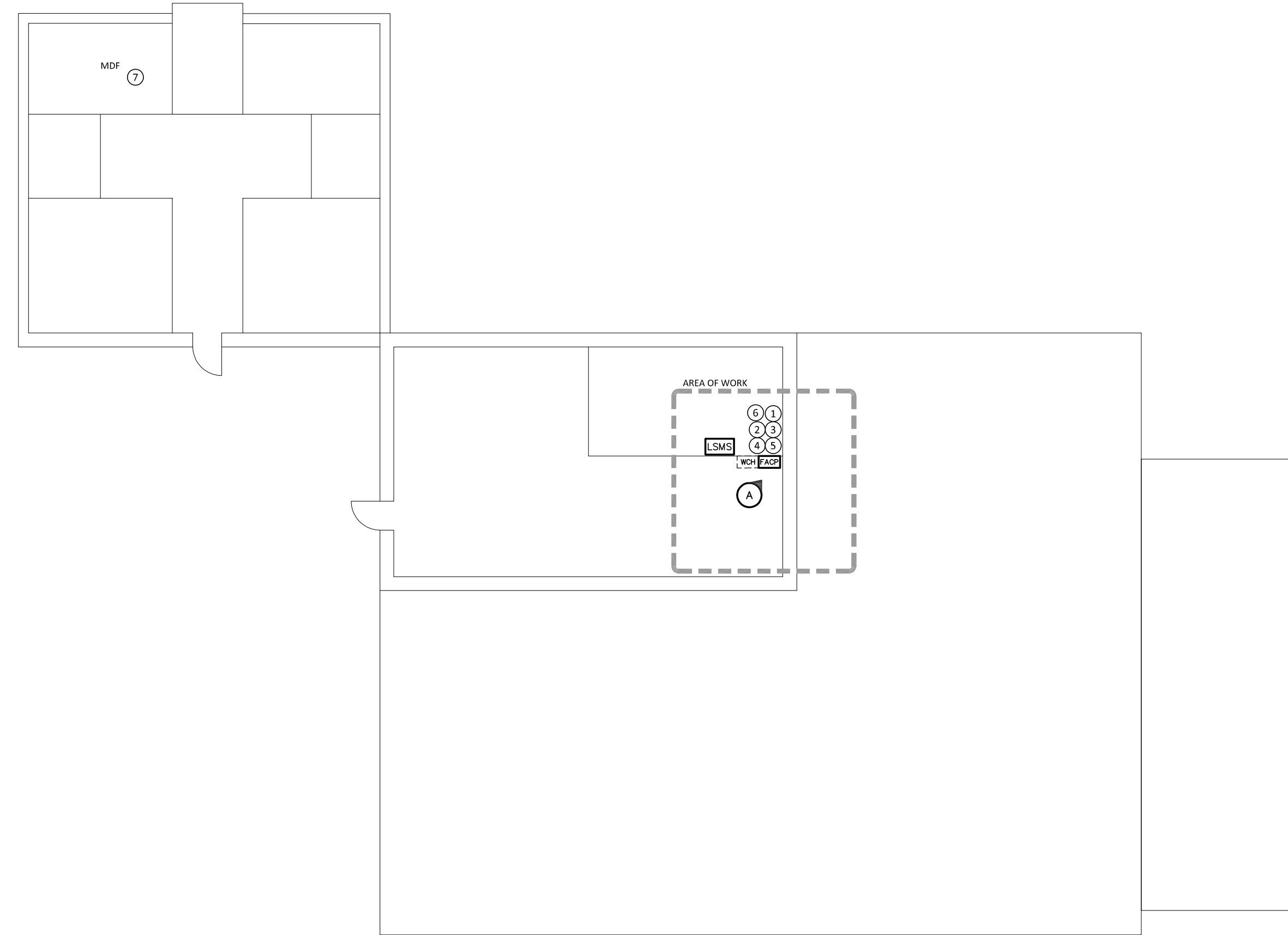
- NOTES:**
- General
    - A. The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - 1) Install New FACP With Capacity Noted Below.
      - 2) New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - 3) This Building Would Be Considered A Fully Addressable Building.
    - B. The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - C. The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - A. The Powerhouse Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell FS90 System.
    - B. Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - A. The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - B. The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - C. The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - D. The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - E. Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - A. Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**



- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - LOWER LEVEL** Scale: NTS Drawing: **E101** Detail: **03**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

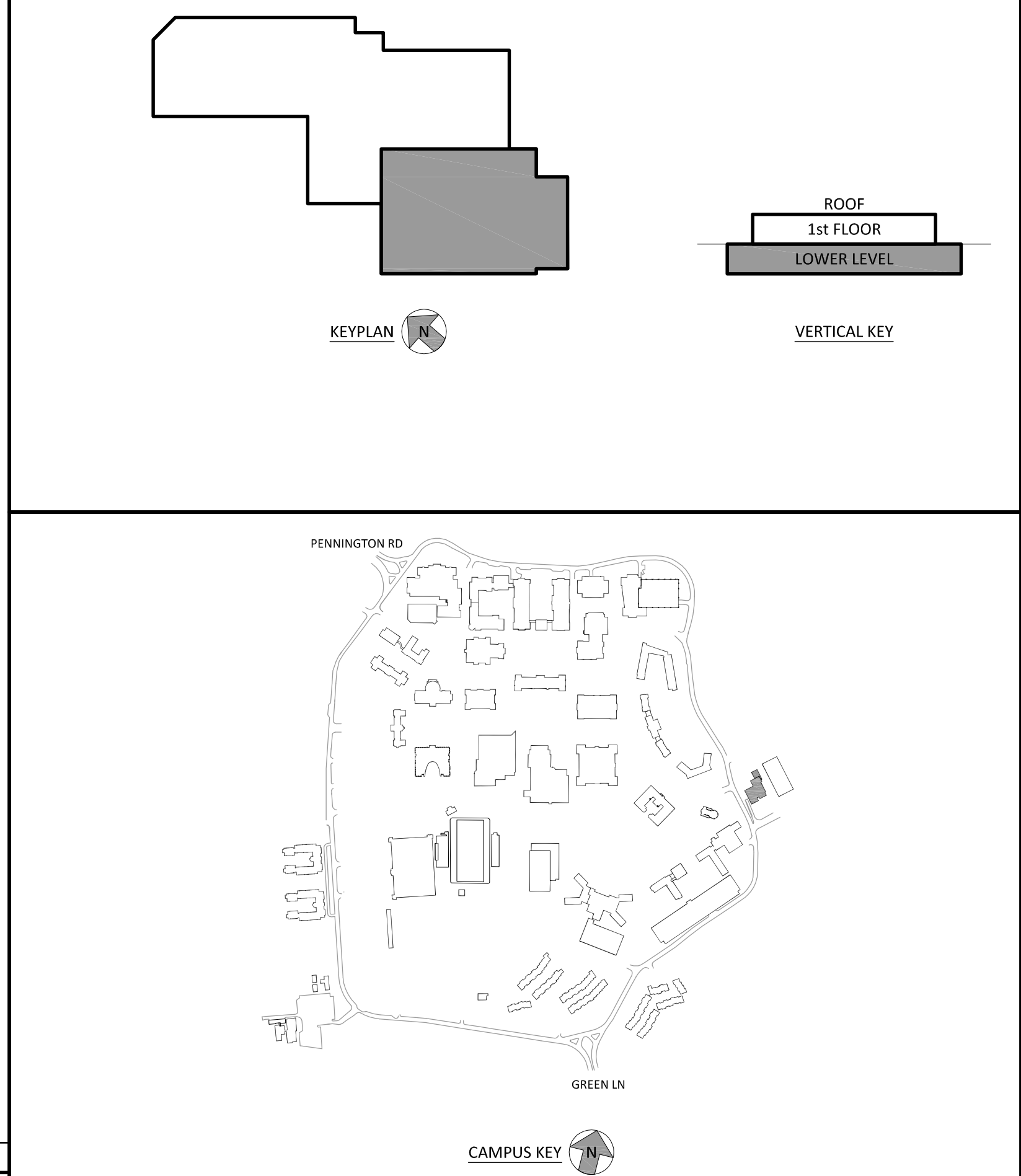
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.
- New Life Safety Management System Front End Workstation To Be Provided In Office Along With Cabling To connect To LSMS Network. See Specifications And Cable Infrastructure Package A Set For Additional Details.
- Provide New Fire Alarm Network Switch And Fiber Patch Cords As Required For New Life Safety Management System Network Architecture. Coordinate With TCNJ IT Department For Connection Of Switch To Fiber Network.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[Symbol]	Fire Alarm Control Panel	[Symbol]	New Equipment
[Symbol]	Existing Wall-Mounted Connector Housing	[Symbol]	Existing Equipment
[Symbol]	Existing Fire Alarm Control Panel	[Symbol]	Photo Tag
[Symbol]		[Symbol]	Connect To Existing



**FIRE ALARM PANEL REPLACEMENT POWERHOUSE** Scale: NTS Drawing: **E101** Detail: **03**

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30x42

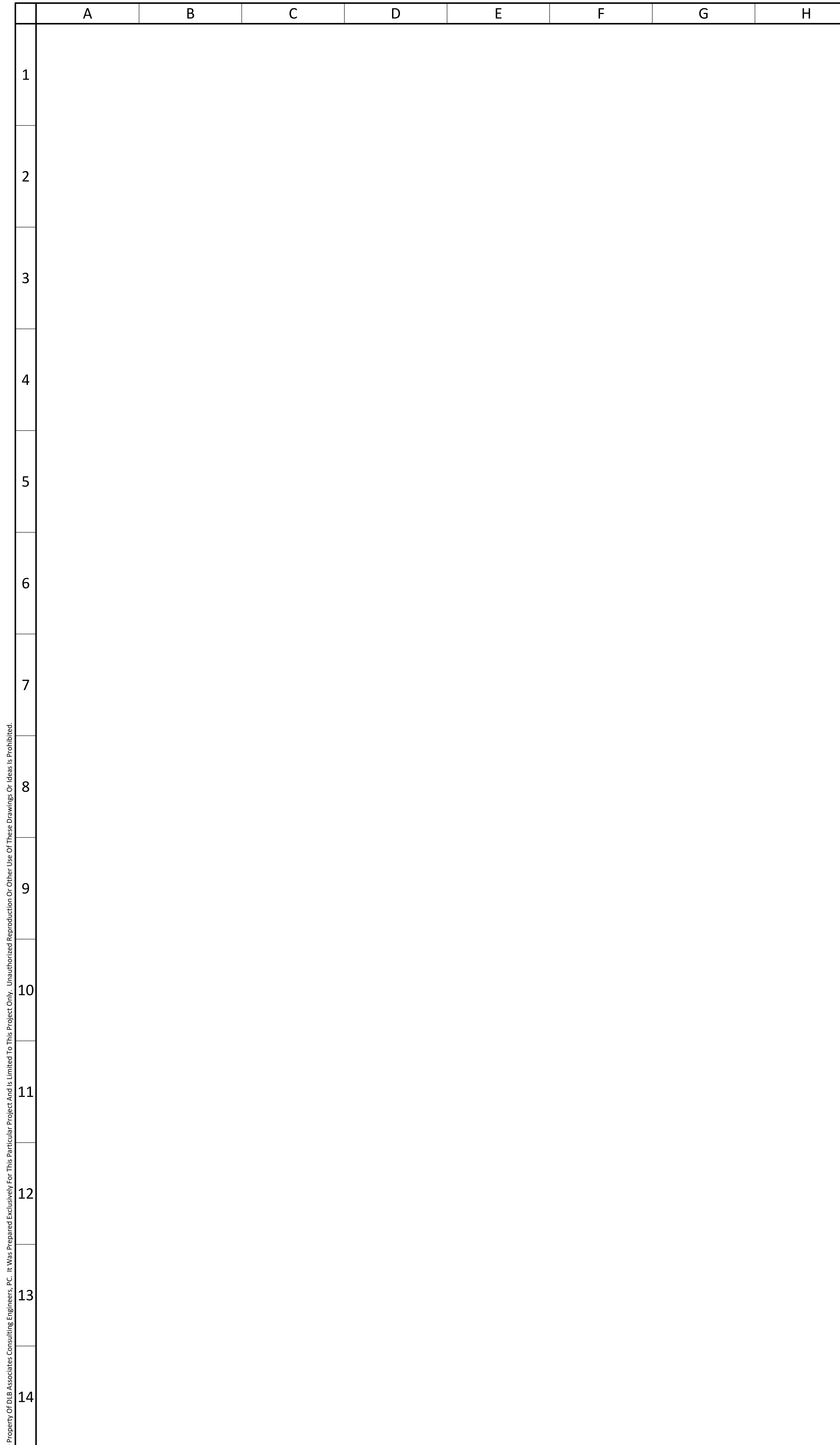
ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724  
Questions For DLB Call: Anthony Laskosky Phone: 732-927-5038

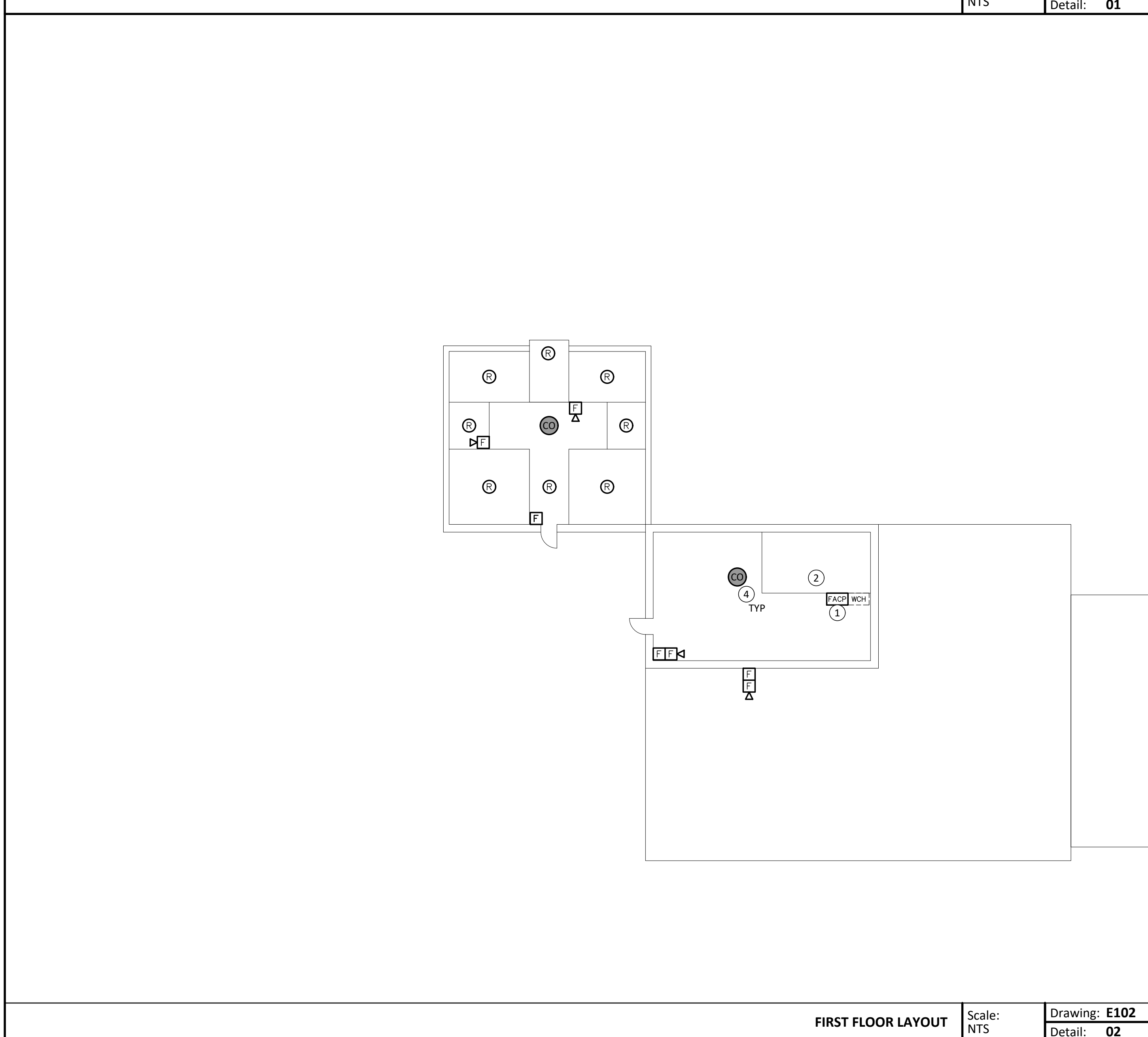
project  
**TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES**  
2000 PENNINGTON ROAD, EWING NJ, 08618

title  
**FIRE ALARM PANEL REPLACEMENT POWERHOUSE**  
scale NTS drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E101-PWR**



**LOWER LEVEL LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**

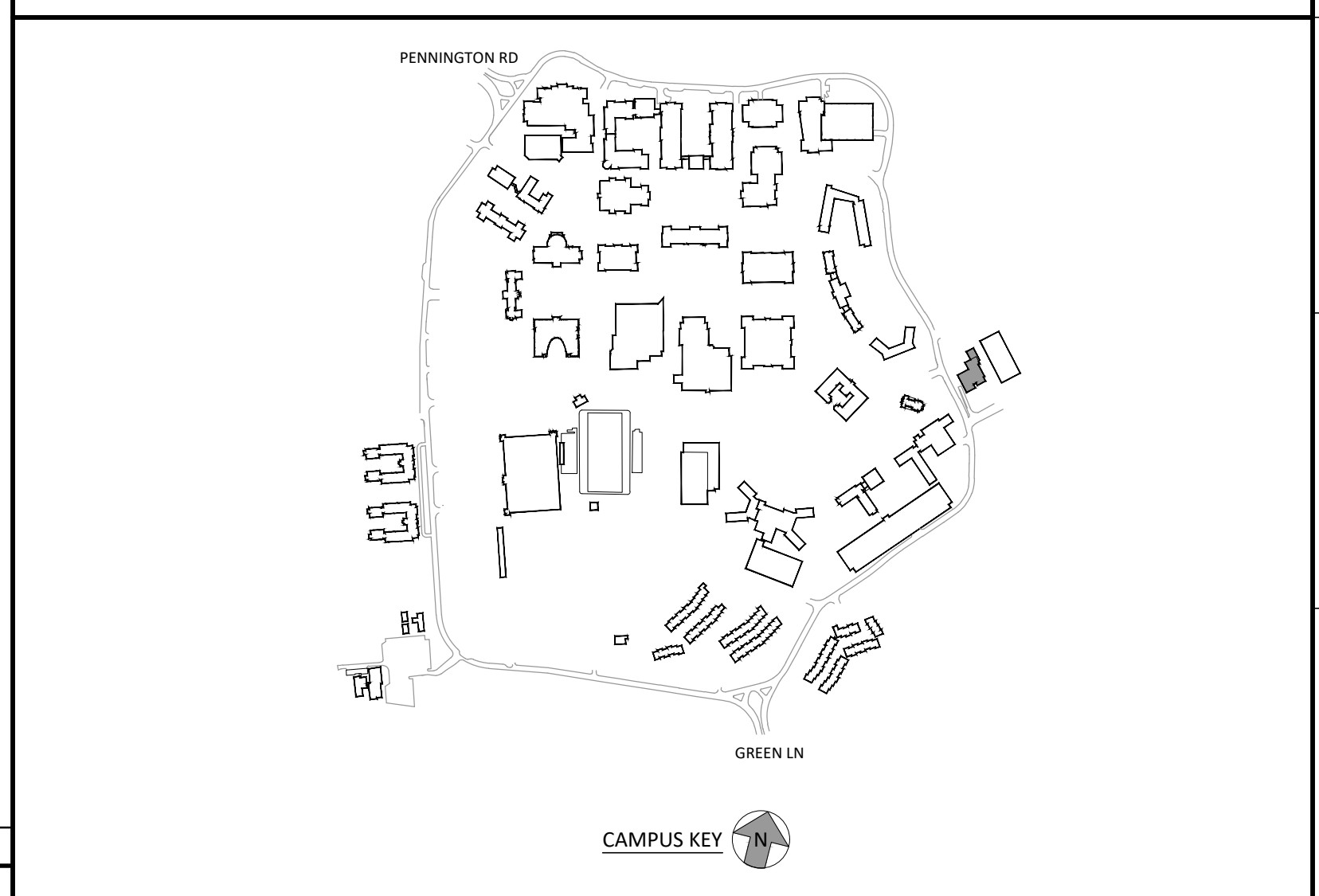
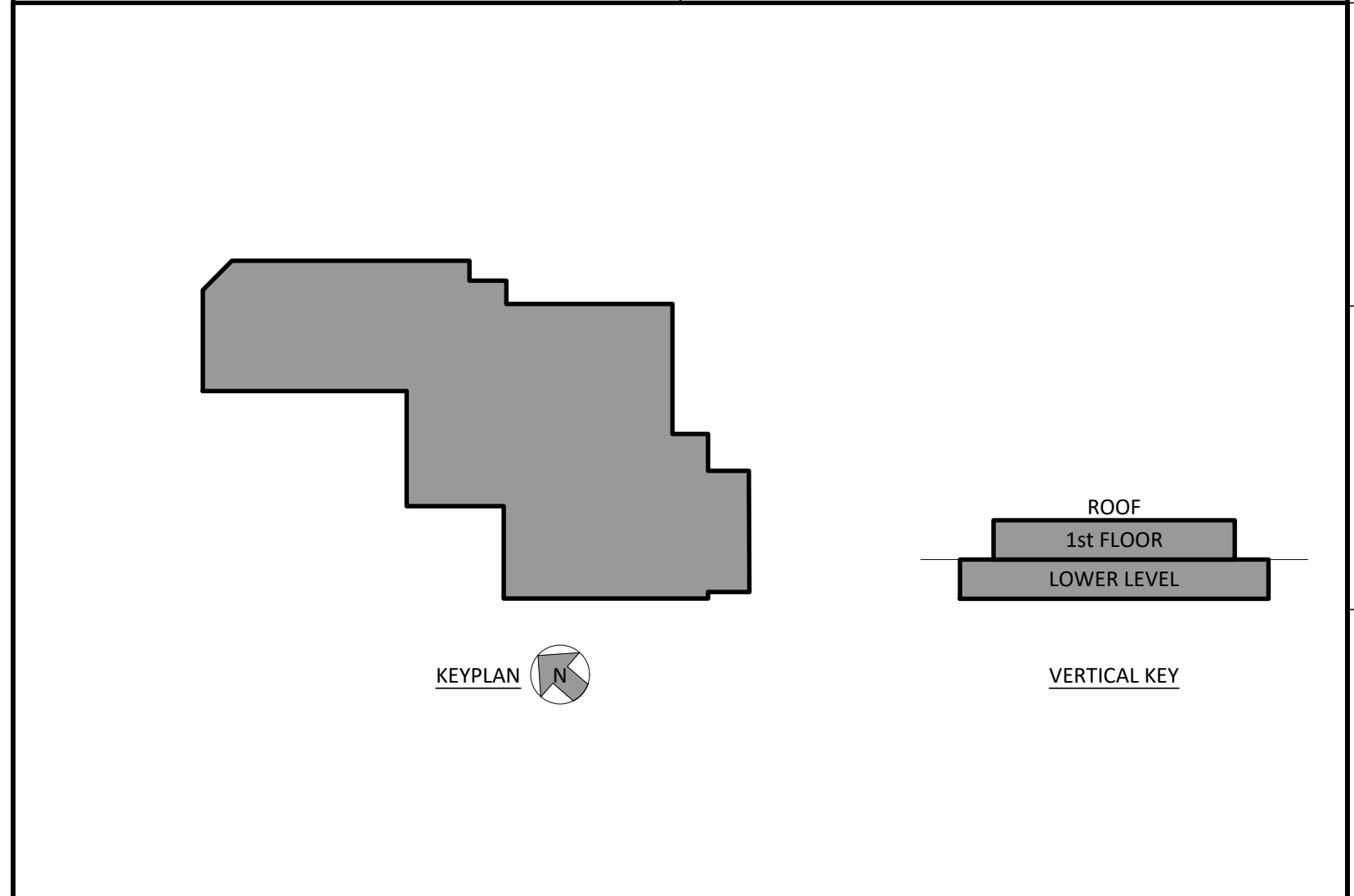
- KEY NOTES (SYMBOLS ①, ②, ETC.)**
- Existing Fire Alarm Control Panel.
  - Existing Fire Alarm Monitoring System.
  - Not Used
  - New CO Detector.

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Pull Station	□	No Access
⓪	Strobe Only	⓪	New Smoke Detector
V	Horn/Strobe	⓪	New Manual Pull Station
⓪	Smoke Detector	⓪	New Strobe
⓪ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	⓪	New Horn / Strobe
⓪ <sub>SB</sub>	Smoke Detector With Sounder Base	⓪	New Carbon Monoxide Detector With Local Audio And Visual Notification.
⓪	Heat Detector, Combination Fixed Temperature And Rate Of Rise	⓪	Photo Location Indicator
⓪	CO Detector	FACP	Fire Alarm Control Panel
⓪ <sub>DM</sub>	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARA	Fire Alarm Remote Annunciator Panel		
FAB	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

Questions For DLB Call:  
DLB Project ID: 47211

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724  
Anthony Laskosky  
Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
POWERHOUSE

scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

dwg. no.  
**E102-PWR**

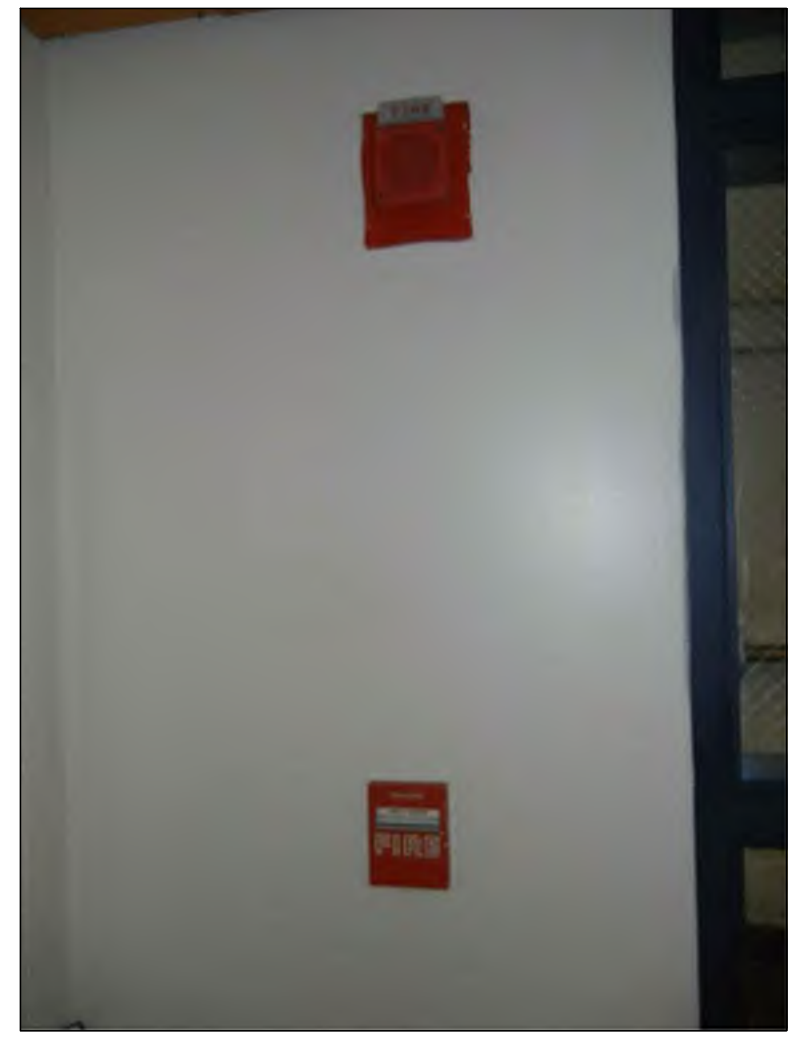
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30442

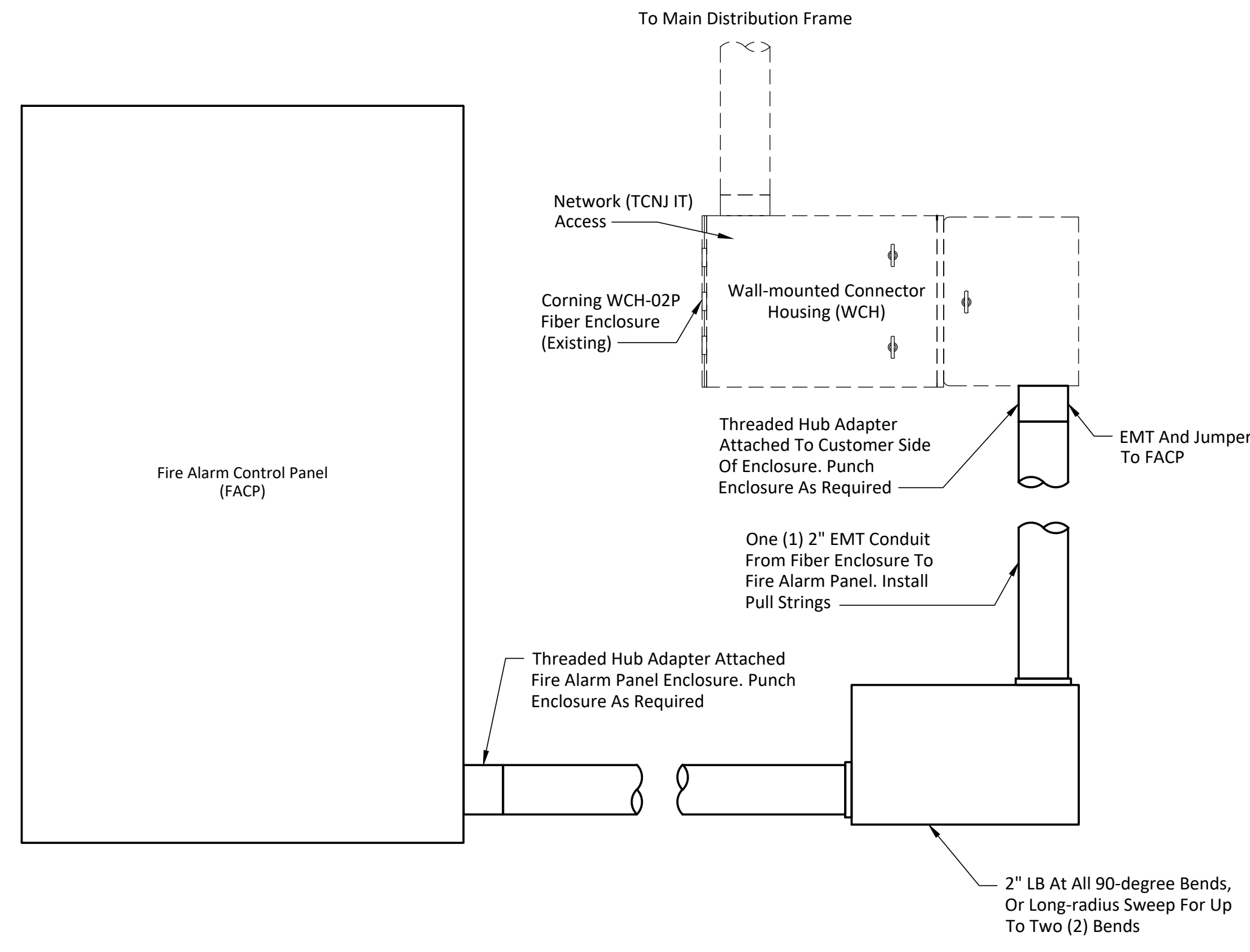
**FIRE ALARM PHOTOS**



**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**  
Honeywell XLS 1000 Addressable Fire Alarm Control Panel With Exposed Conduit Located Within Lower Level Electrical Room



**HONEYWELL FIRE ALARM DEVICES**  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building



- NOTES:**
- Coordinate Position Installation of EMT into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

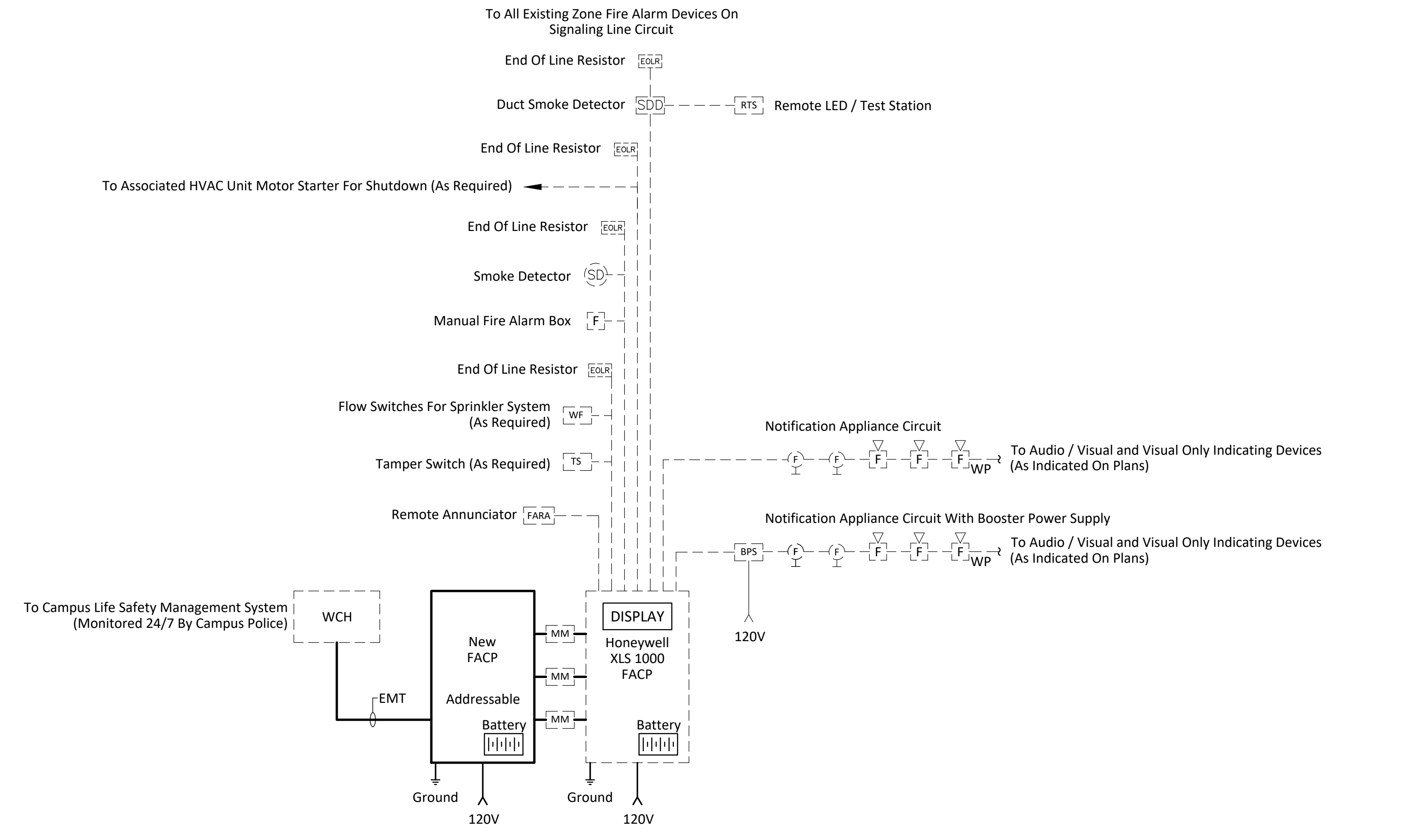
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
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**PARTIAL SYMBOLS & ABBREVIATIONS**

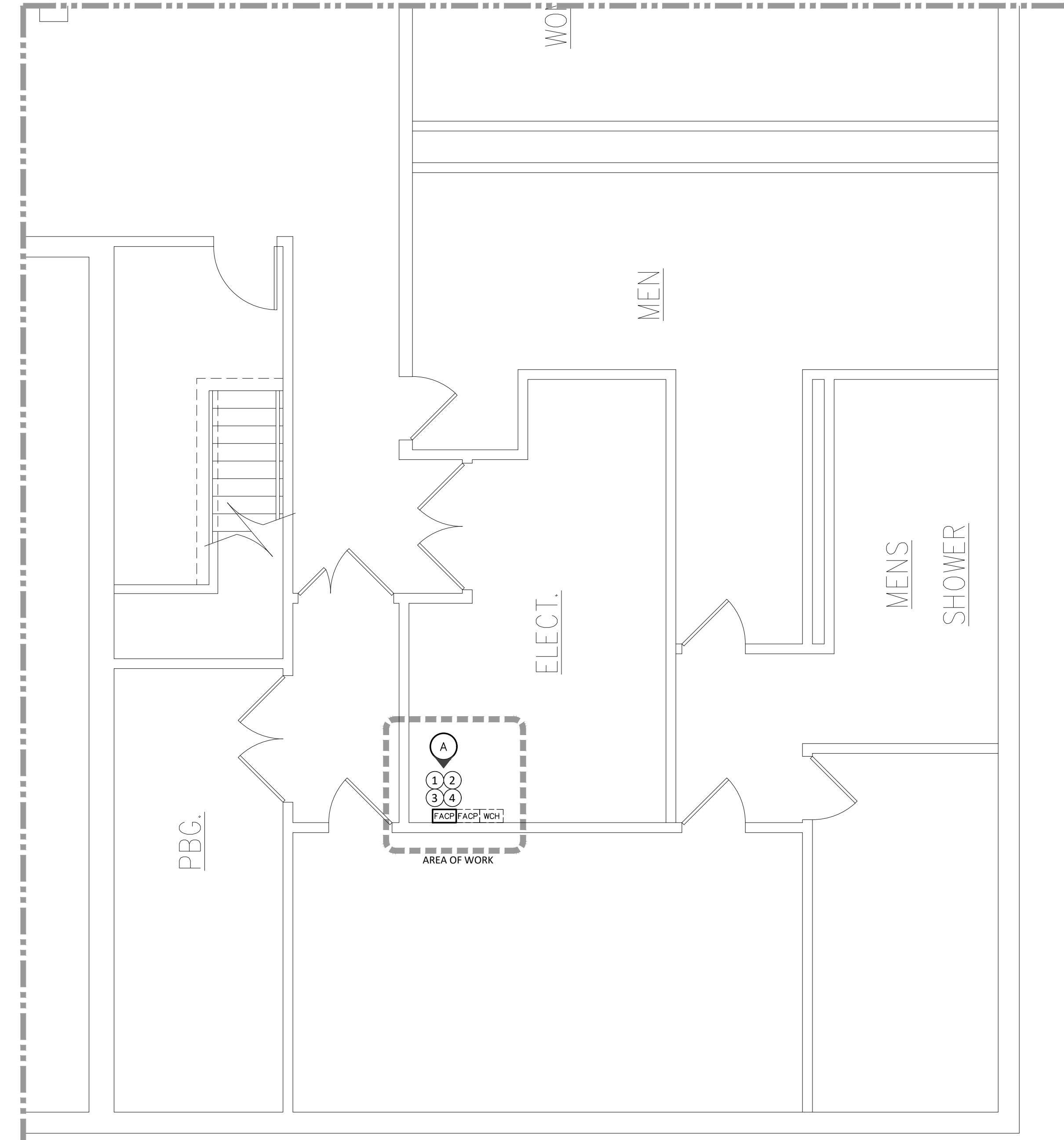
Identifier	Description	Identifier	Description
FACP	Fire Alarm Control Panel	FACP	Fire Alarm Control Panel
WCH	Existing Wall-Mounted Connector Housing	EMT	Electrical Metallic Tubing
FACP	Existing Fire Alarm Control Panel	CM	Control Module
[Symbol]	New Equipment	MM	Monitor Module
[Symbol]	Existing Equipment	WCH	Wall-Mounted Connector Housing
[Symbol]	Photo Tag		
[Symbol]	Connect To Existing		



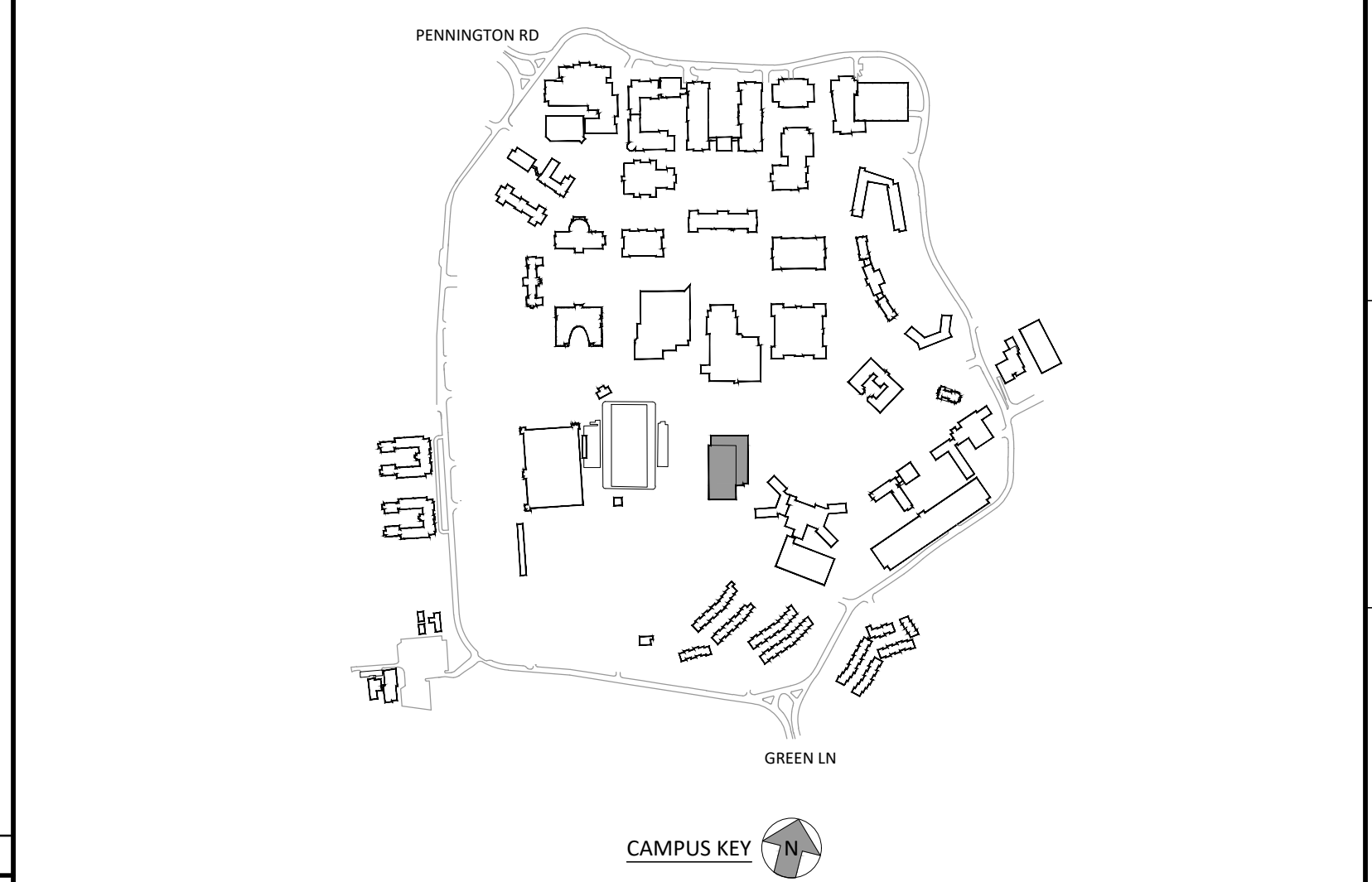
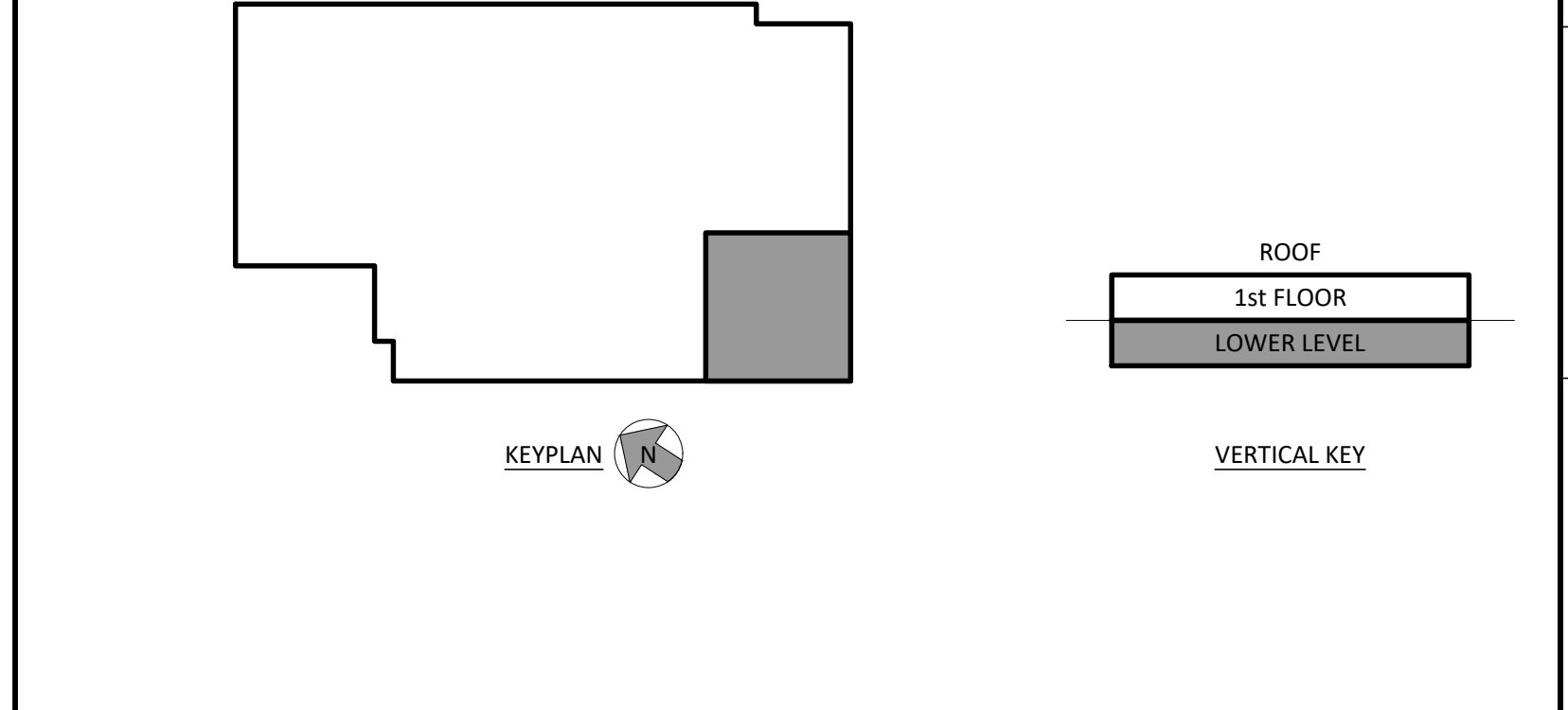
- NOTES:**
- General
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Not Be Compatible With The New FACP.
      - Install New FACP With Enough Capacity To Accommodate Total Device Count And Will Monitor Existing Honeywell FACP System.
      - New Honeywell FACP Would Monitor Existing Honeywell FACP For Alarm, Tamper, Trouble, And Other Points That Are Currently Monitored By The Front End At A Minimum.
      - This Building Would NOT Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - The Recreation Center Is Currently Covered By Fire Notification And Detection / Initiation Devices From A Honeywell XLS1000 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - LOWER LEVEL** Scale: 1/4"=1'-0" Drawing: **E101** Detail: **03**



project: **TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618**

title: **FIRE ALARM PANEL REPLACEMENT RECREATION CENTER**

scale: 1/4" = 1'-0" drawn by: AM checked by: SF date: 5/03/2020

dwg. no.: **E101-REC**

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30442

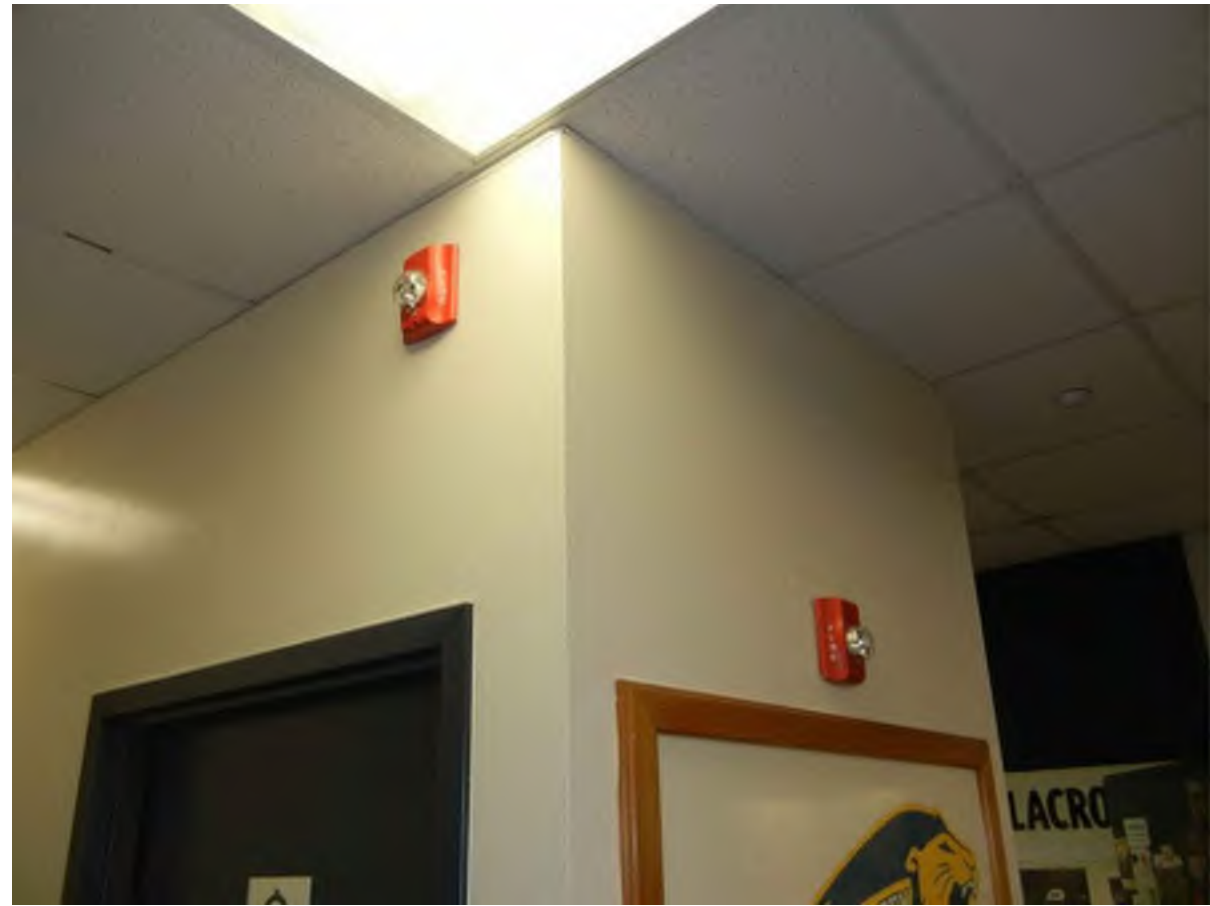


PHOTO A - NOTIFICATION  
Wall Mounted Notification Device Mounted Too High On The Wall

- KEY NOTES (SYMBOLS ①, ②, ETC.)**
- Relocate Notifications Devices To Be Below 96" Above The Floor.
  - Relocation Pull Stations To Be 48 Inches Above The Floor.
  - Existing Fire Alarm Control Panel.

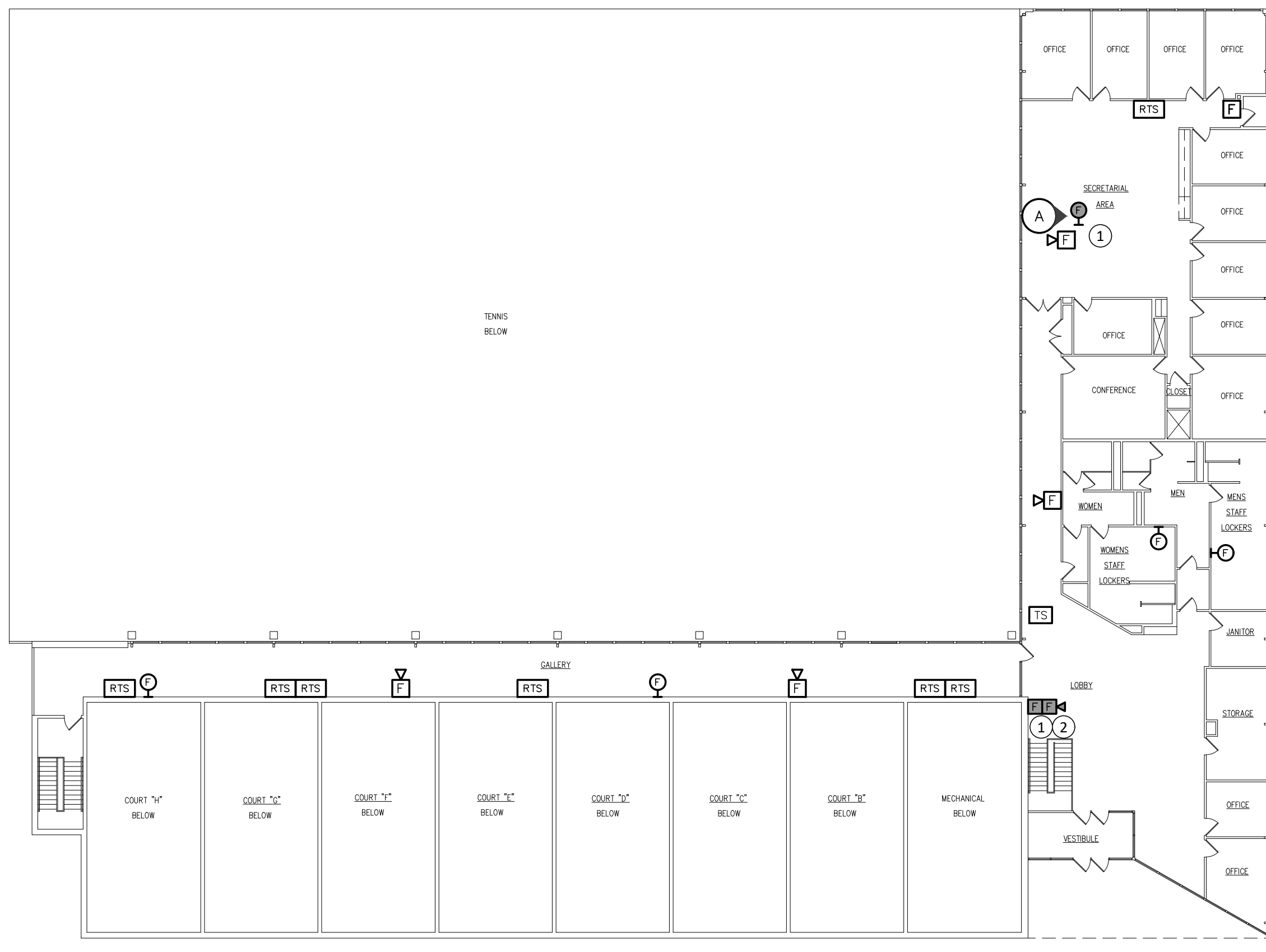
**GENERAL NOTES**

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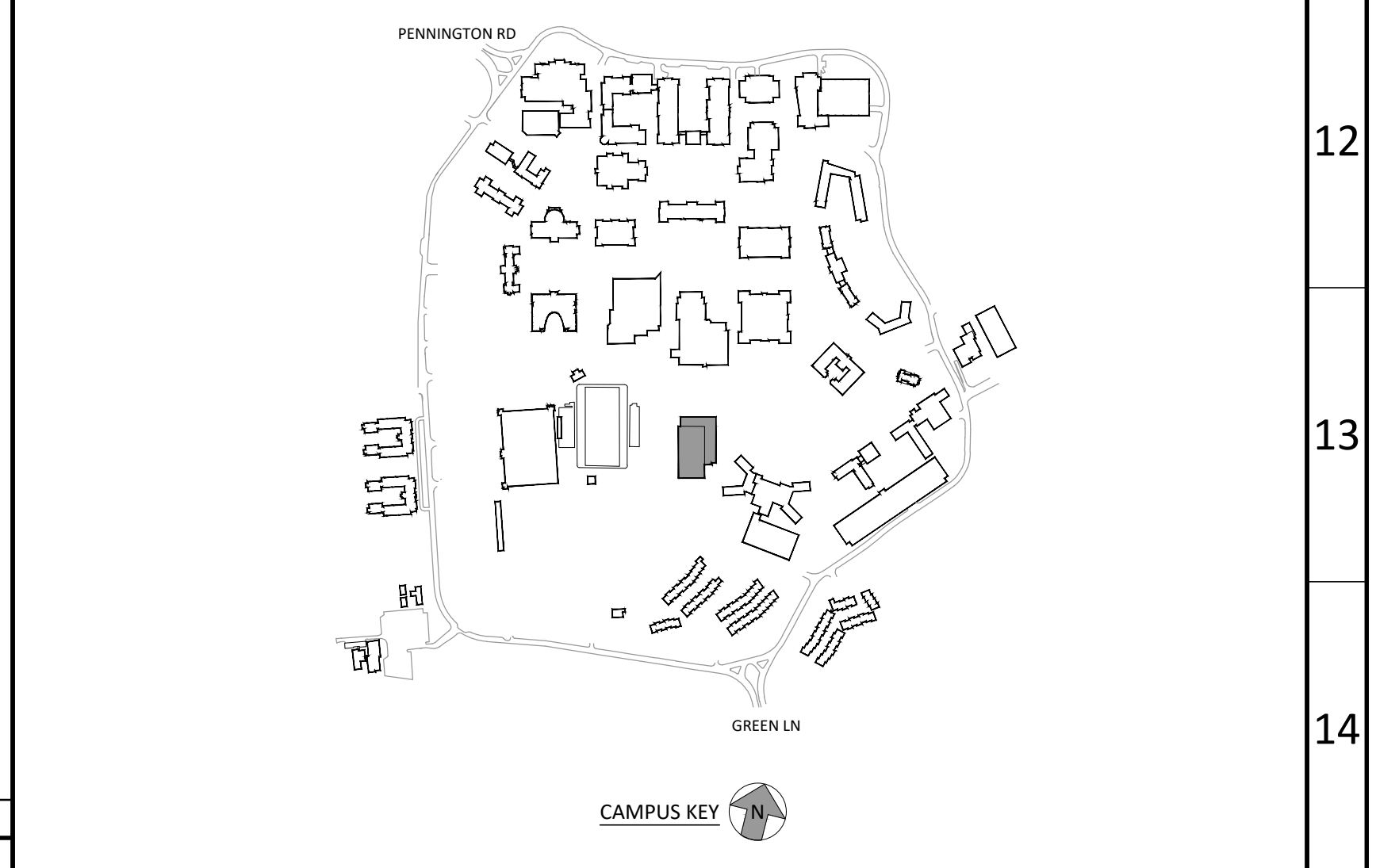
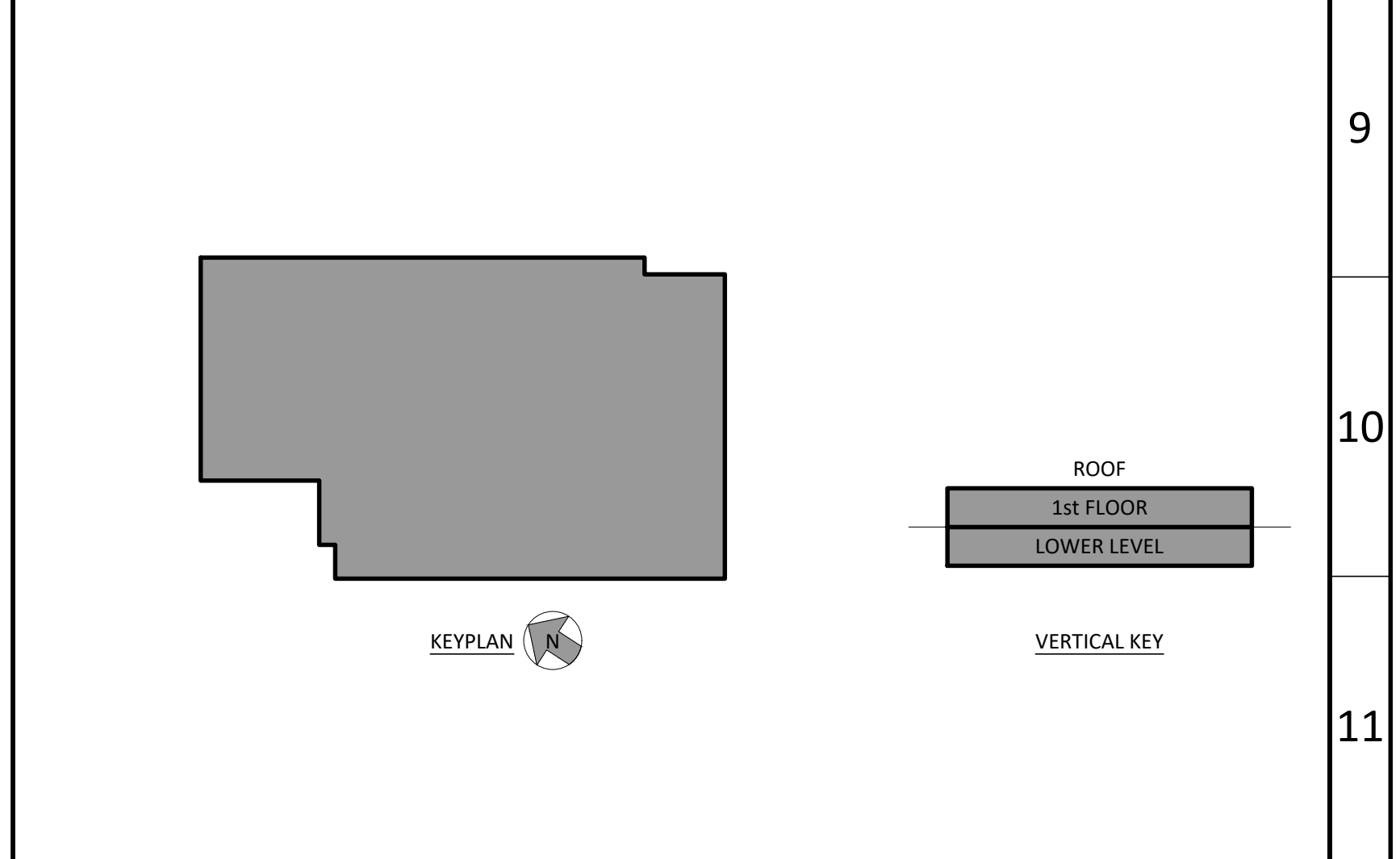
**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Pull Station	TS	Fire Sprinkler Tamper Switch
SO	Strobe Only	FS	Fire Sprinkler Flow Switch
VF	Horn/Strobe	NA	No Access
SD	Smoke Detector	NSD	New Smoke Detector
SD <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	FACP	New Manual Pull Station
SD <sub>SB</sub>	Smoke Detector With Sounder Base	NS	New Strobe
HT	Heat Detector, Combination Fixed Temperature And Rate Of Rise	NSH	New Horn / Strobe
CO	CO Detector	PT	Photo ID Tag
BD	Beam Detector	FACP	Fire Alarm Control Panel
SD <sub>D</sub>	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARA	Fire Alarm Remote Annunciator Panel		
FBAC	Fire Alarm Booster Panel		
RTS	Remote Test Switch		
WCH	Existing Wall Mounted Connector Housing		

LOWER LEVEL LAYOUT Scale: NTS Drawing: E102 Detail: 01



FIRST FLOOR LAYOUT Scale: NTS Drawing: E102 Detail: 02



ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724  
Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

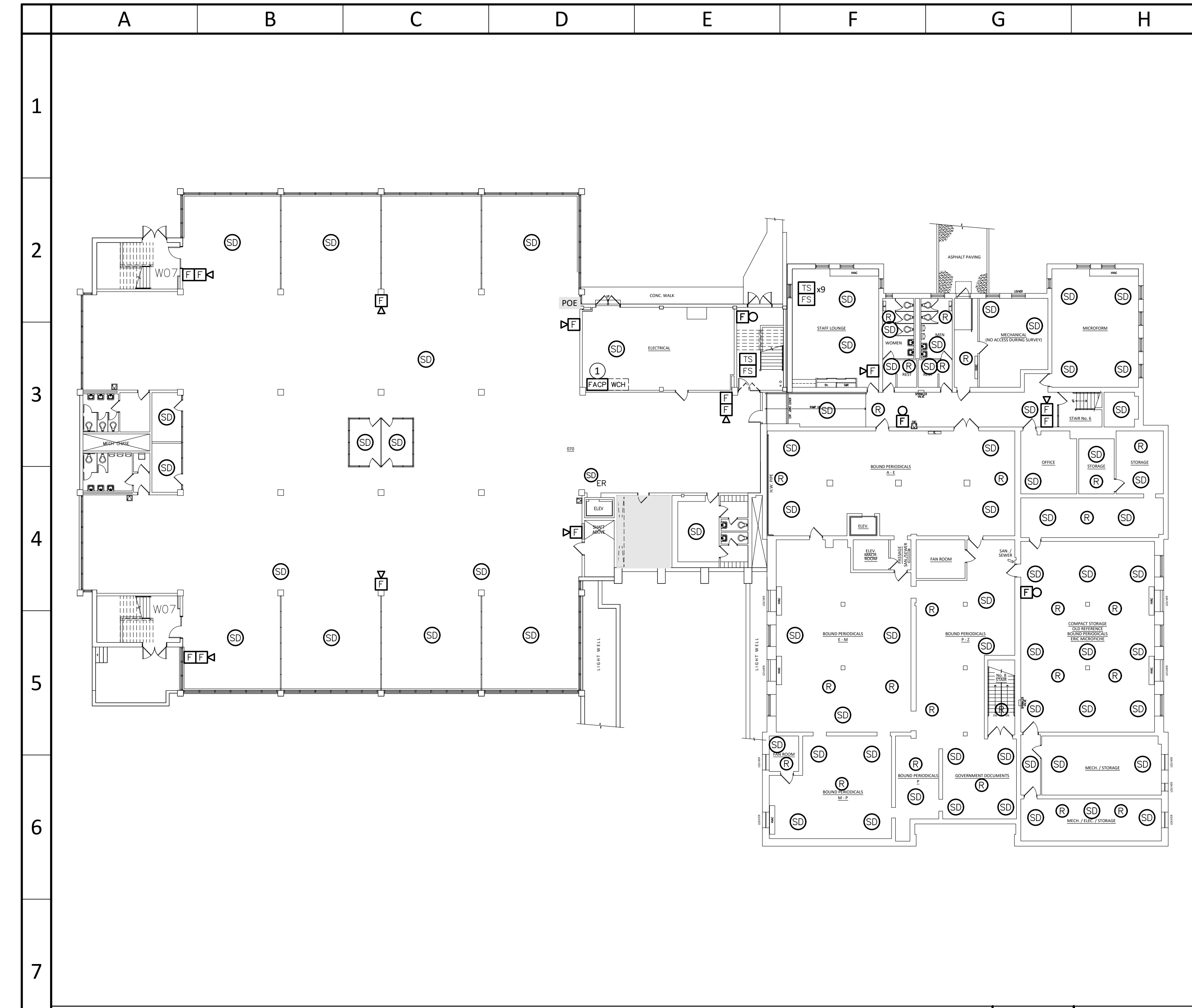
title  
FIRE ALARM - EXISTING LAYOUT  
RECREATION CENTER  
scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020  
dwg. no.  
**E102-REC**

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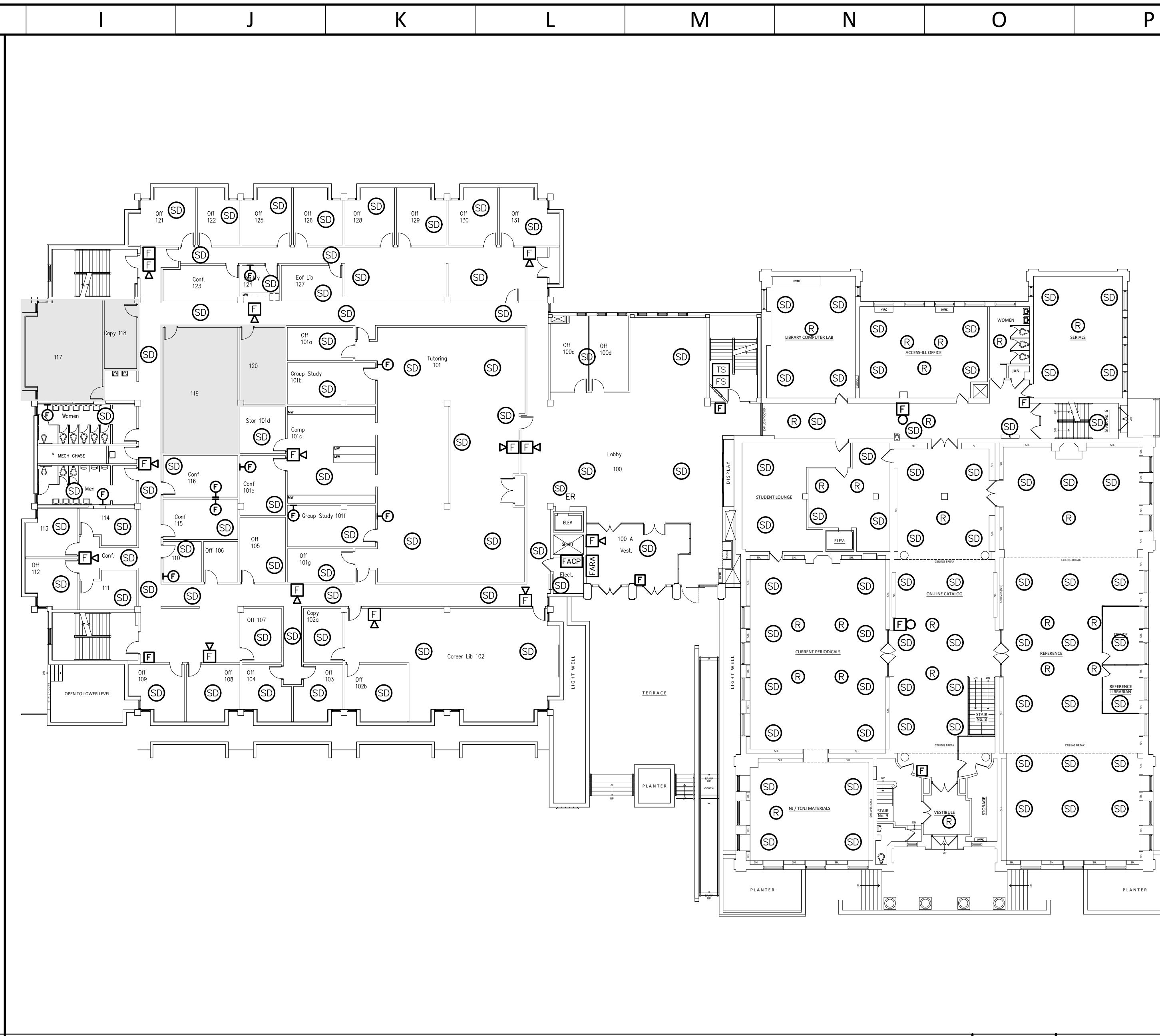
30x42



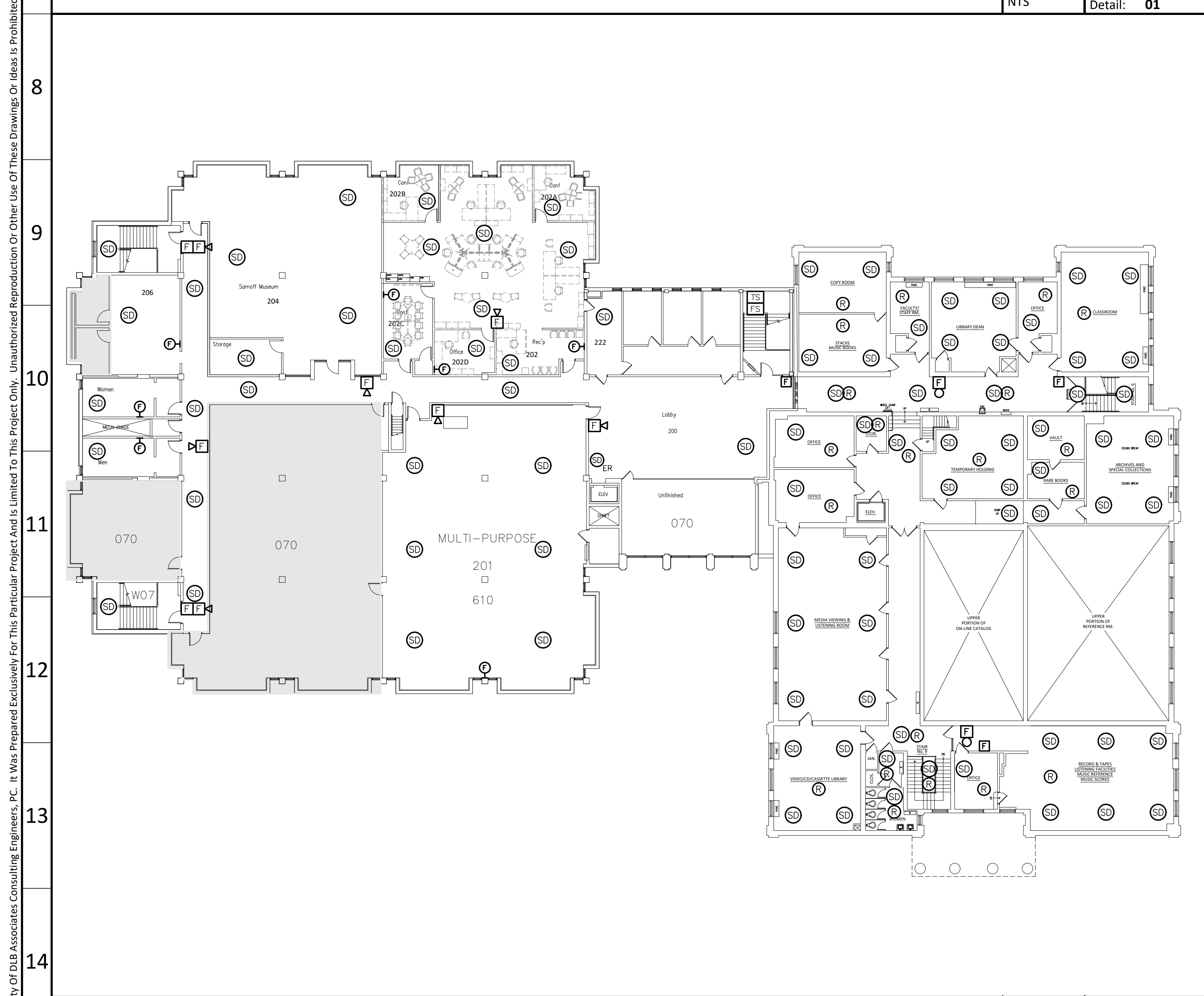




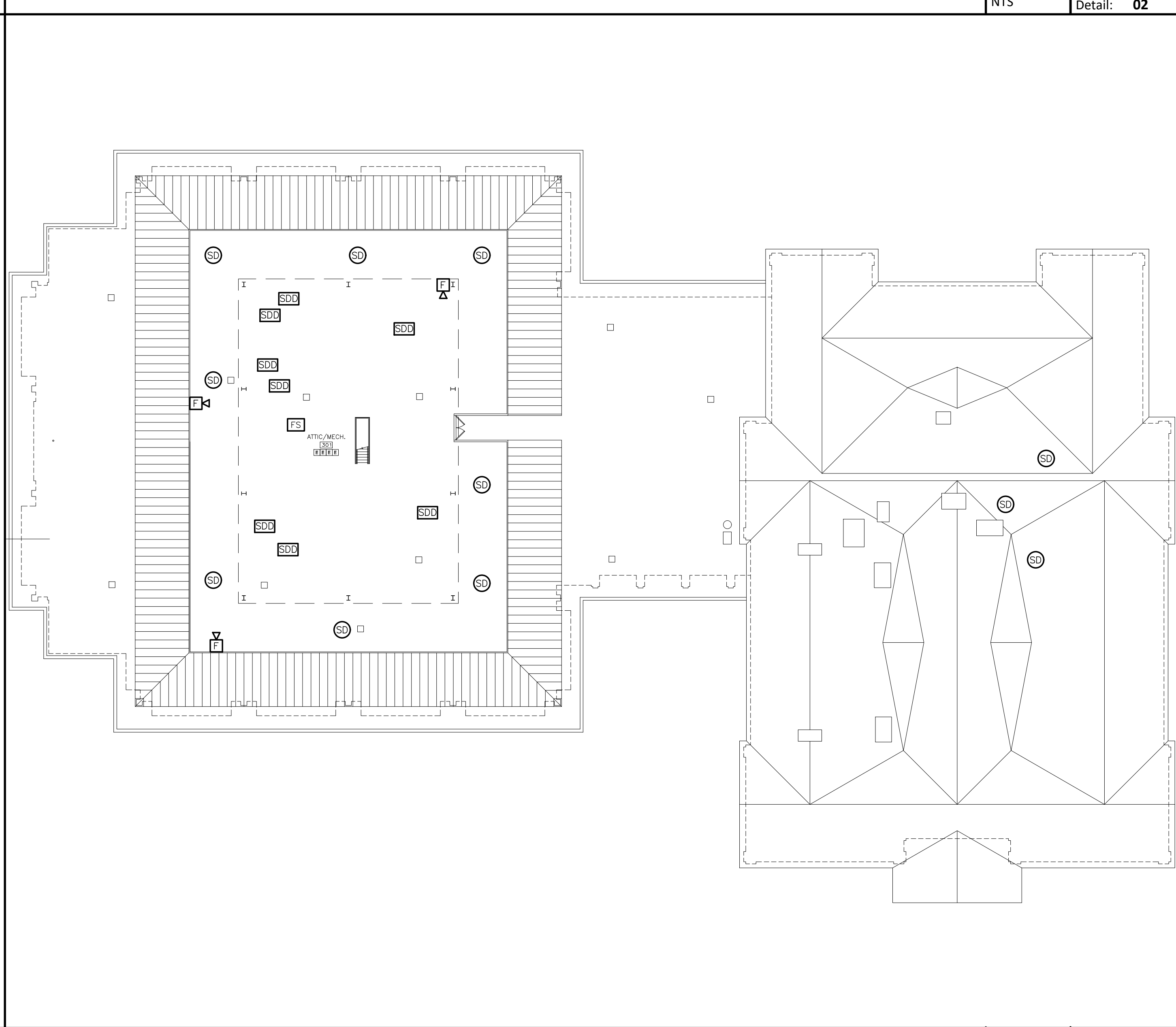
**LOWER LEVEL LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **03**



**ATTIC AND ROOF LAYOUT** Scale: NTS Drawing: **E102** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

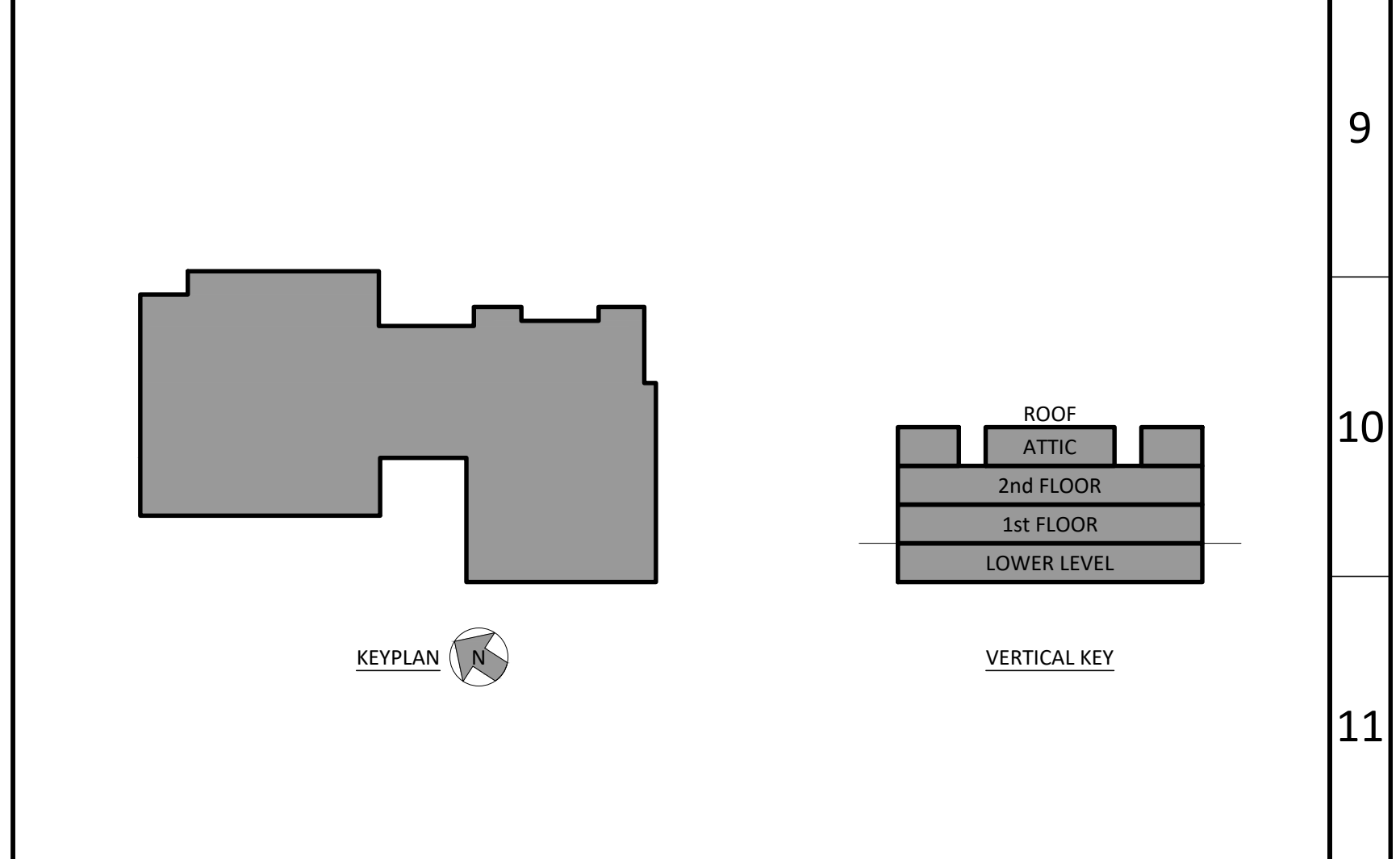
1. Existing Fire Alarm Control Panel.

**GENERAL NOTES**

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**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
Ⓜ	Manual Pull Station	Ⓜ	No Access
Ⓢ	Strobe Only	Ⓢ	New Smoke Detector
Ⓜ	Horn/Strobe	Ⓜ	New Manual Pull Station
Ⓢ	Smoke Detector	Ⓢ	New Strobe
Ⓢ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	Ⓜ	New Horn / Strobe
Ⓢ <sub>SB</sub>	Smoke Detector With Sounder Base	Ⓢ	Photo Location Indicator
Ⓢ	Heat Detector, Combination Fixed Temperature And Rate Of Rise	FACP	Fire Alarm Control Panel
Ⓢ	CO Detector	CO	Carbon Monoxide
Ⓢ <sub>DC</sub>	Duct Mounted Smoke Detector	POE	Point Of Entry
FACP	Fire Alarm Control Panel		
ARAP	Fire Alarm Remote Annunciator Panel		
BAP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



30x42

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
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Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

dlb associates  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
ROSCOE HALL

scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

dwg. no.  
**E102-ROSC**

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**FIRE ALARM PHOTOS**



PHOTO A - SIEMENS FIRE ALARM CONTROL PANEL

Siemens MXL Addressable Fire Alarm Control Panel And Honeywell FS90 Addressable Fire Alarm Control Panel With Exposed Conduit Located Within Basement Electrical Room

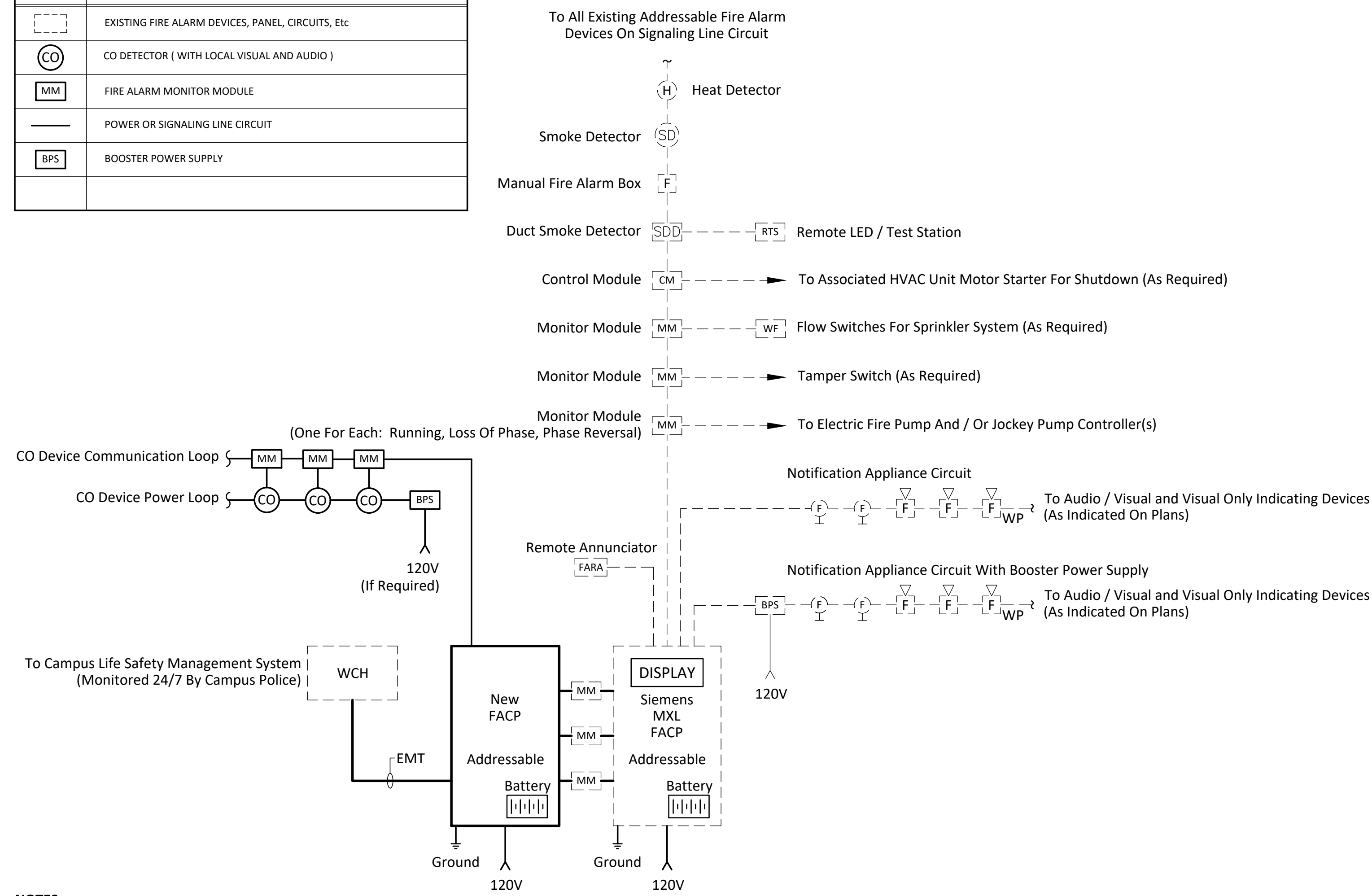


SIEMENS FIRE ALARM DEVICES

Existing Siemens Addressable Fire Alarm Devices Located Throughout The Building

**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
---	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC
CO	CO DETECTOR ( WITH LOCAL VISUAL AND AUDIO )
MM	FIRE ALARM MONITOR MODULE
---	POWER OR SIGNALING LINE CIRCUIT
BPS	BOOSTER POWER SUPPLY

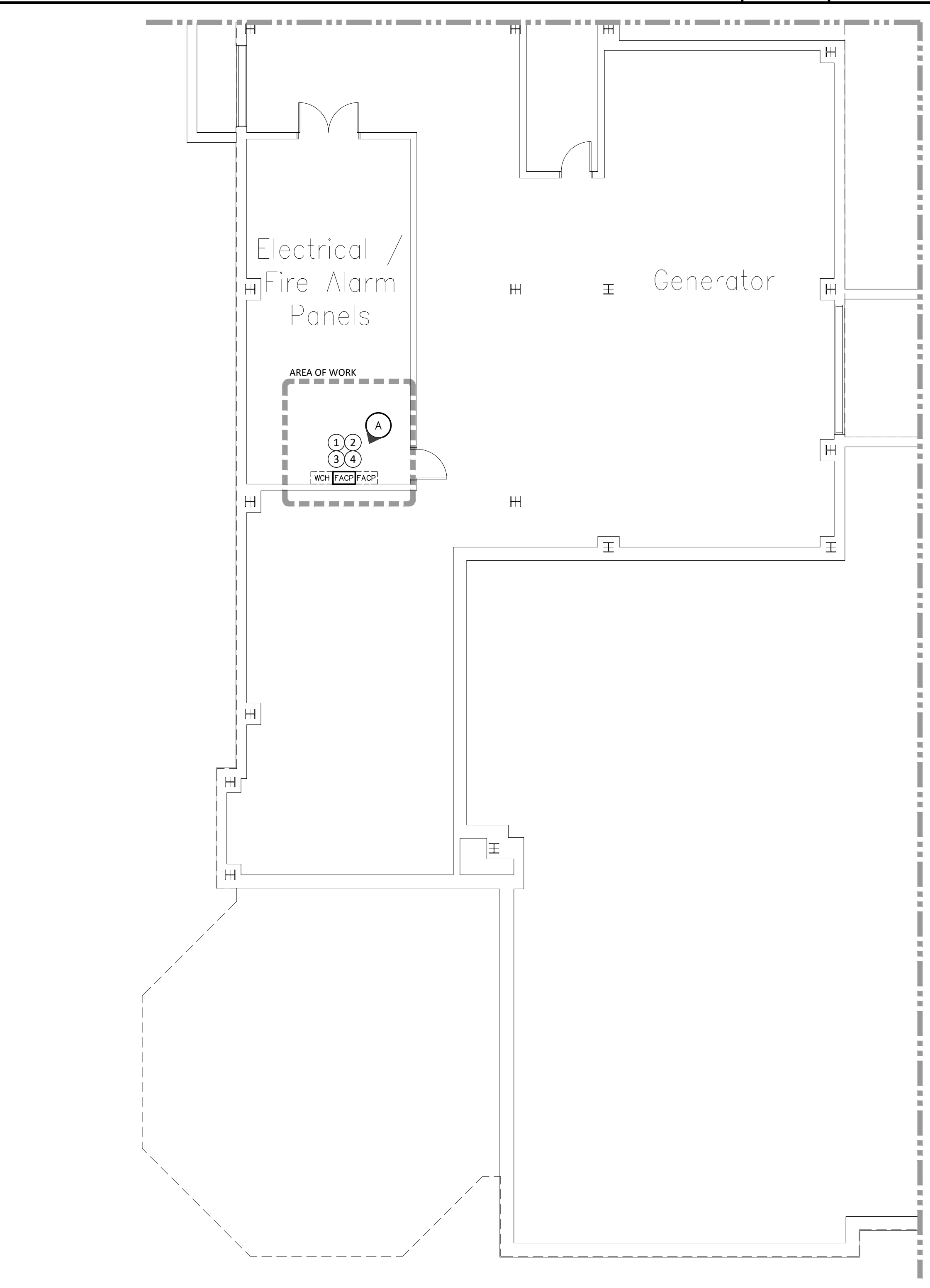


- NOTES:**
- General
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Siemens End Devices Would Not Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Monitor Existing Siemens FACP For Alarm, Tamper, Trouble, And Other Points That Are Currently Monitored By The Front End At A Minimum.
      - This Building Would NOT Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - The Science Complex Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Siemens MXL System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-degree End Unless Swept Long-radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - BASEMENT** Scale: 1/8"=1'-0" Drawing: **E101** Detail: **03**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

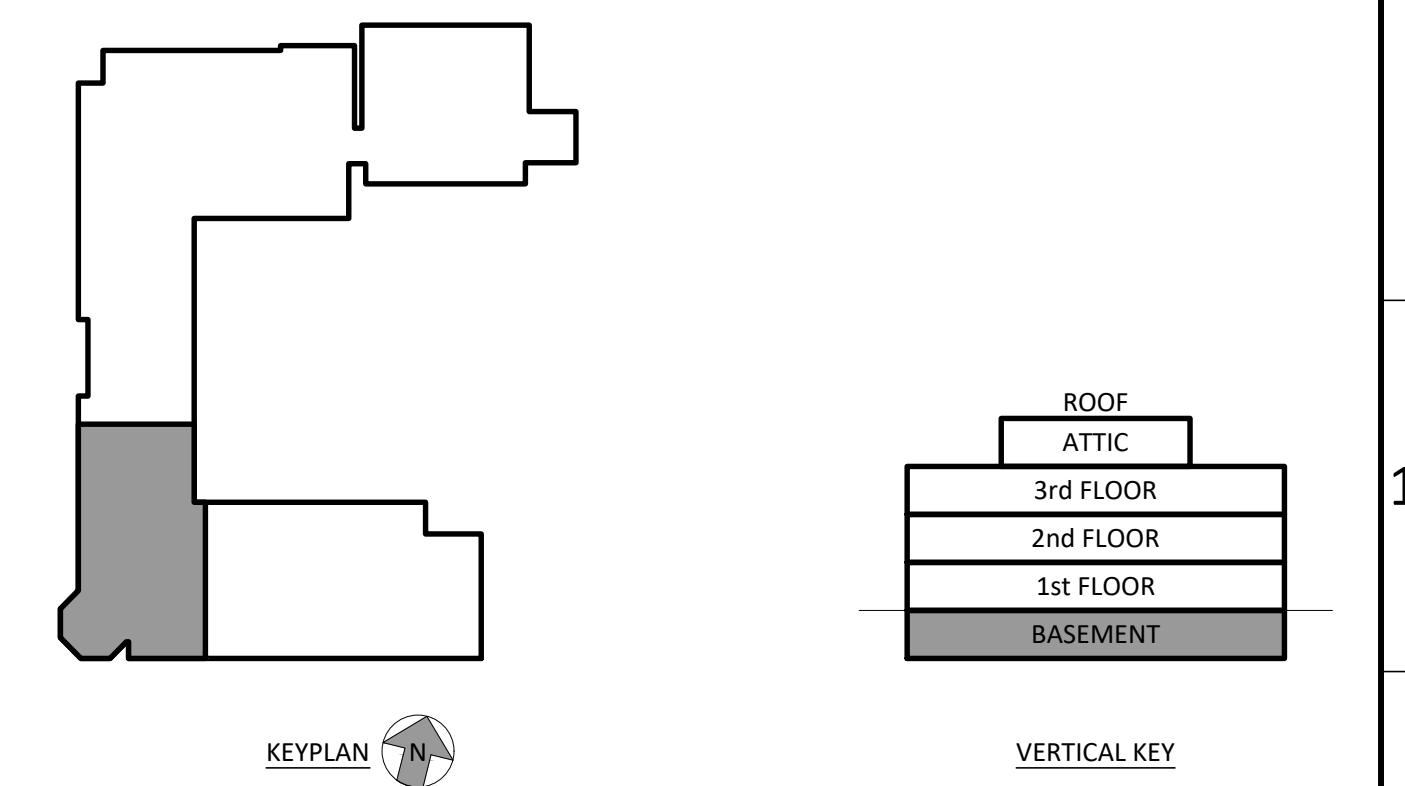
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
FACP	Fire Alarm Control Panel	□	New Equipment
WCH	Existing Wall-Mounted Connector Housing	○	Existing Equipment
FACP	Existing Fire Alarm Control Panel	⊙	Photo Tag
		⊙	Connect To Existing



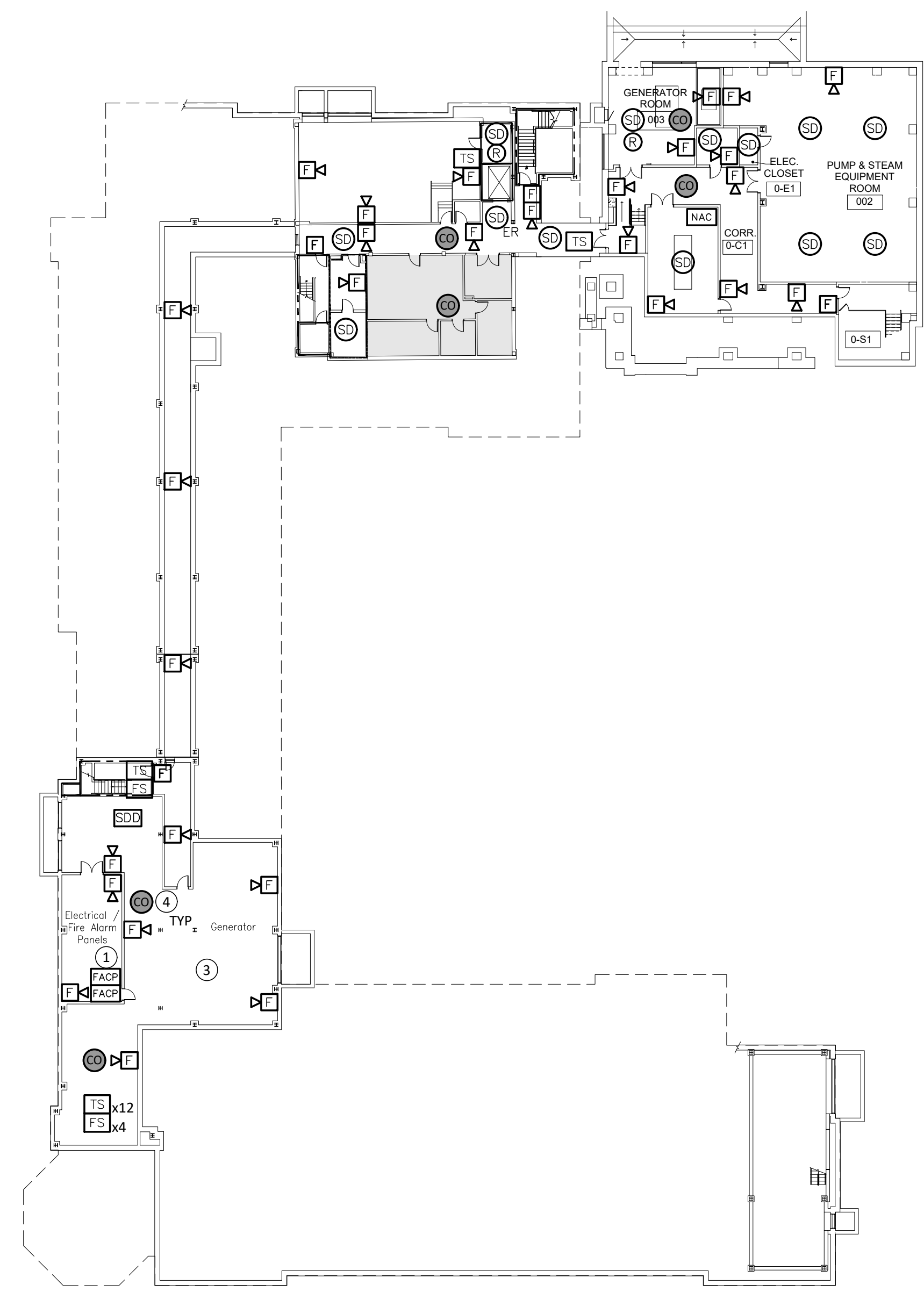
**CAMPUS KEY**

project	TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618	title	FIRE ALARM PANEL REPLACEMENT SCIENCE COMPLEX	dwg. no.	<b>E101-SCI</b>
scale	AS SHOWN	drawn by	SC	checked by	SF
				date	5/03/2020

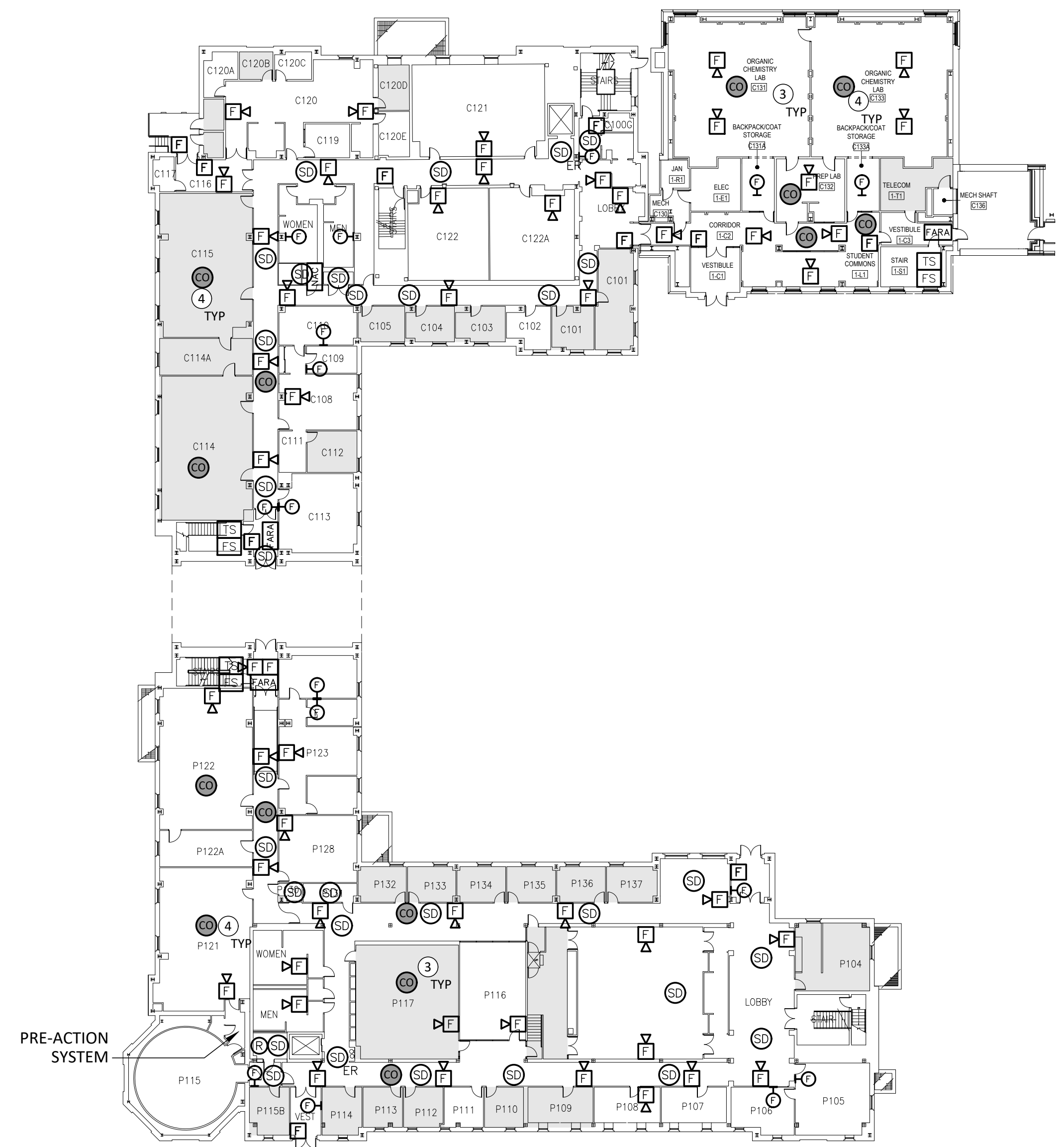
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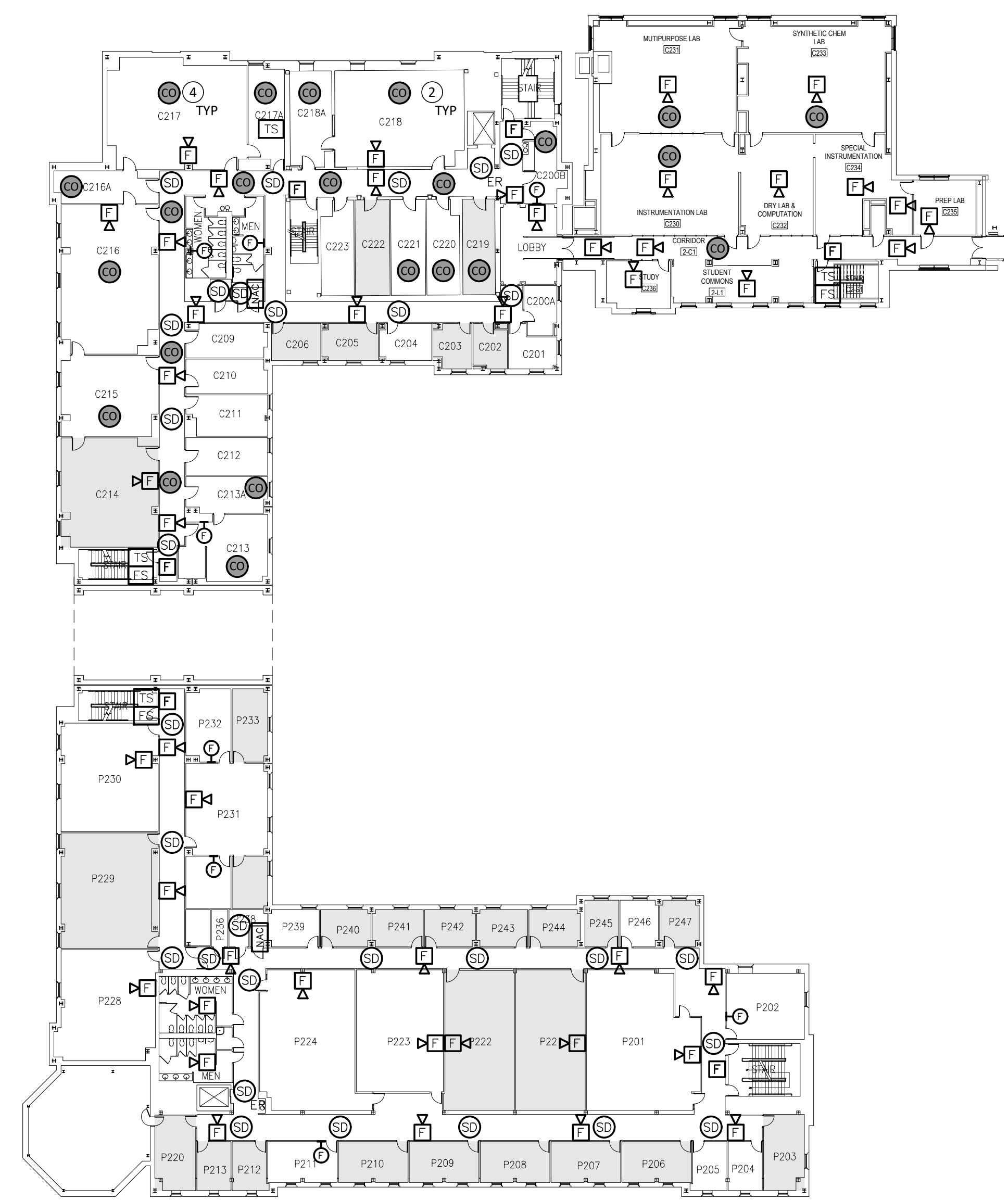
**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724  
Questions For DLB Call: Anthony Laskosky Phone: 732-927-5038



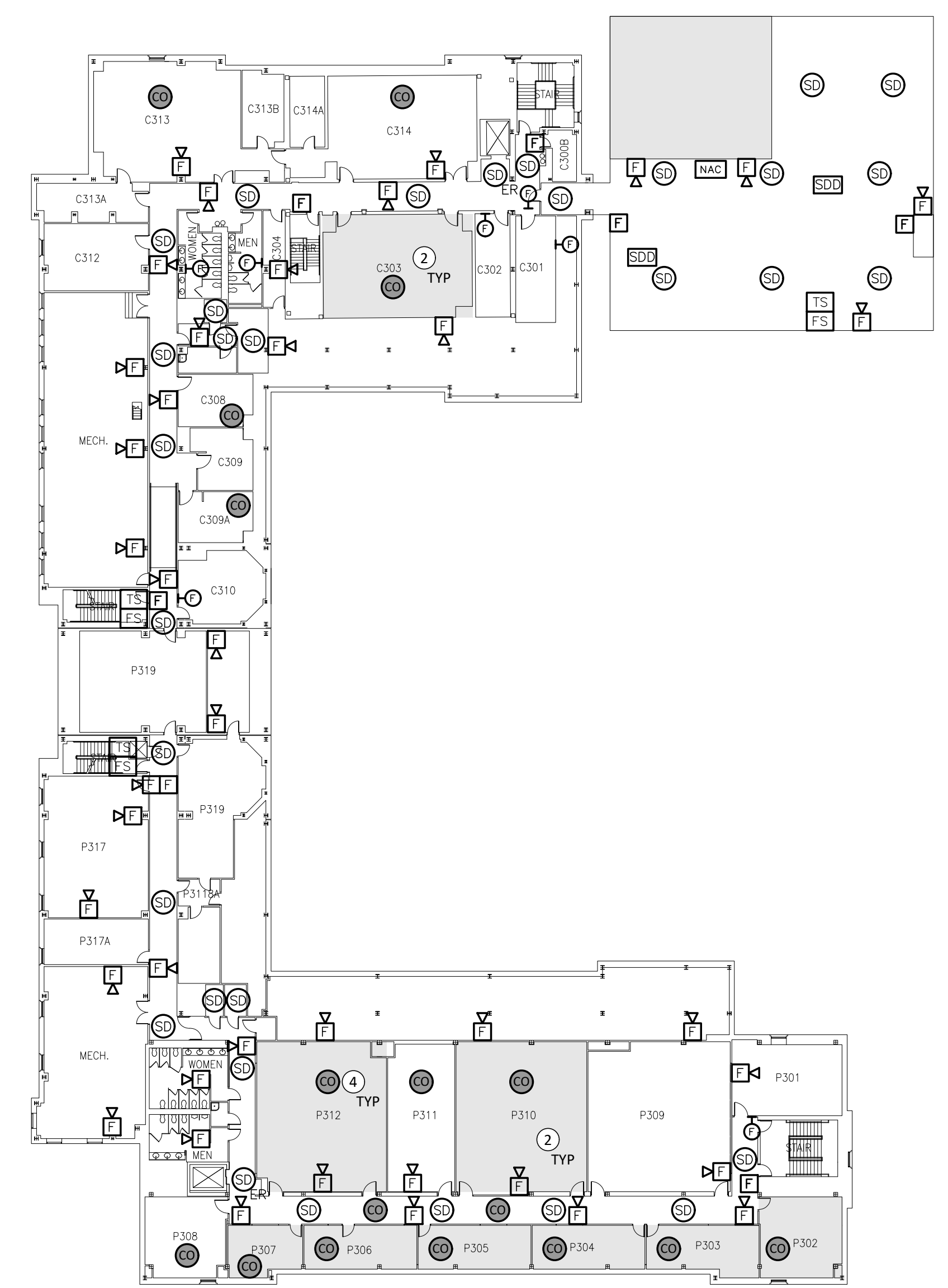
**BASEMENT LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **03**



**THIRD FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **04**

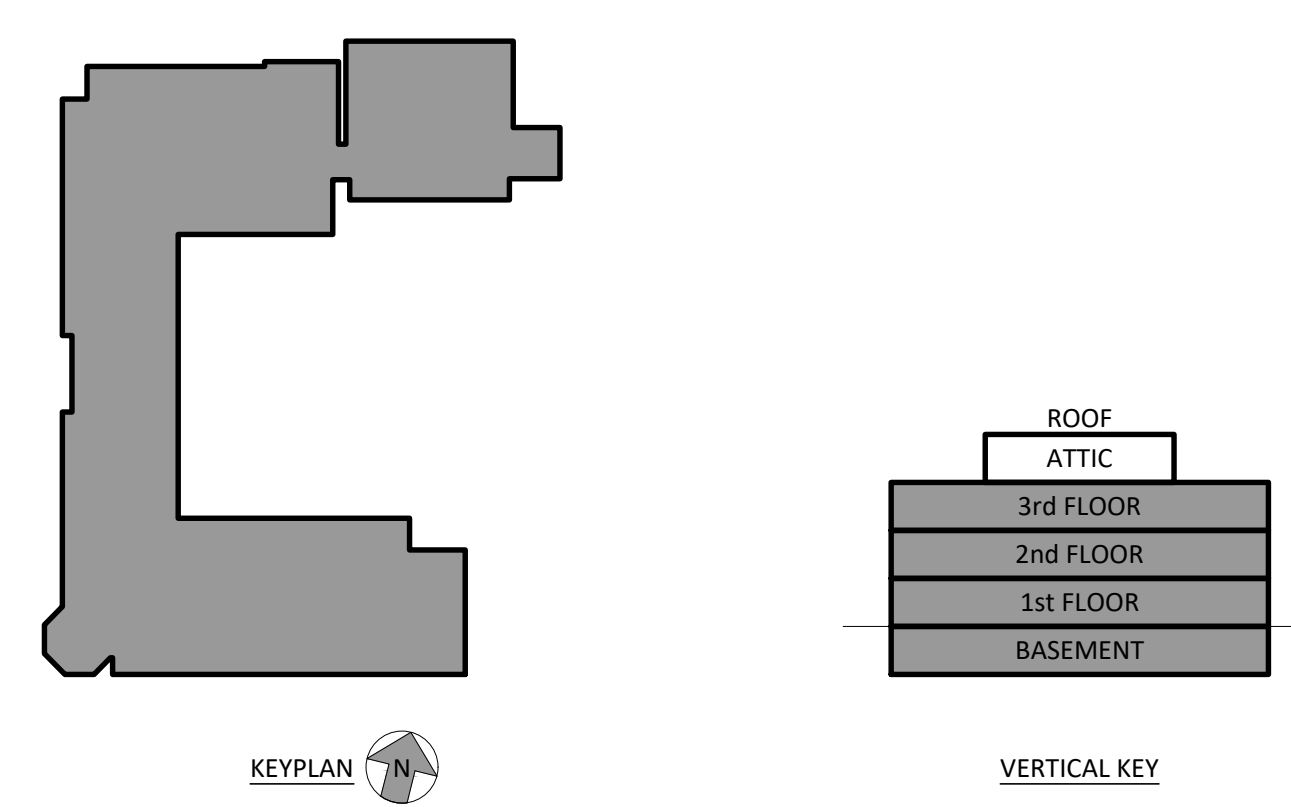
- KEY NOTES (SYMBOLS ①, ②, ETC.)**
- Existing Fire Alarm Control Panel.
  - Labs With Gas Connection.
  - Existing Gas Generator
  - New CO Detector

**GENERAL NOTES**

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⊕	Horn/Strobe	⊕	New Manual Pull Station
⊙	Smoke Detector	⊕	New Strobe
⊙ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	⊕	New Horn / Strobe
⊙ <sub>SB</sub>	Smoke Detector With Sounder Base	⊙	New Carbon Monoxide Detector With Local Audio And Visual Notification.
⊙	Heat Detector, Combination Fixed Temperature And Rate Of Rise	⊙	Photo Location Indicator
⊙	CO Detector	FACP	Fire Alarm Control Panel
⊕	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARP	Fire Alarm Remote Annunciator Panel		
FABP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		



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Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

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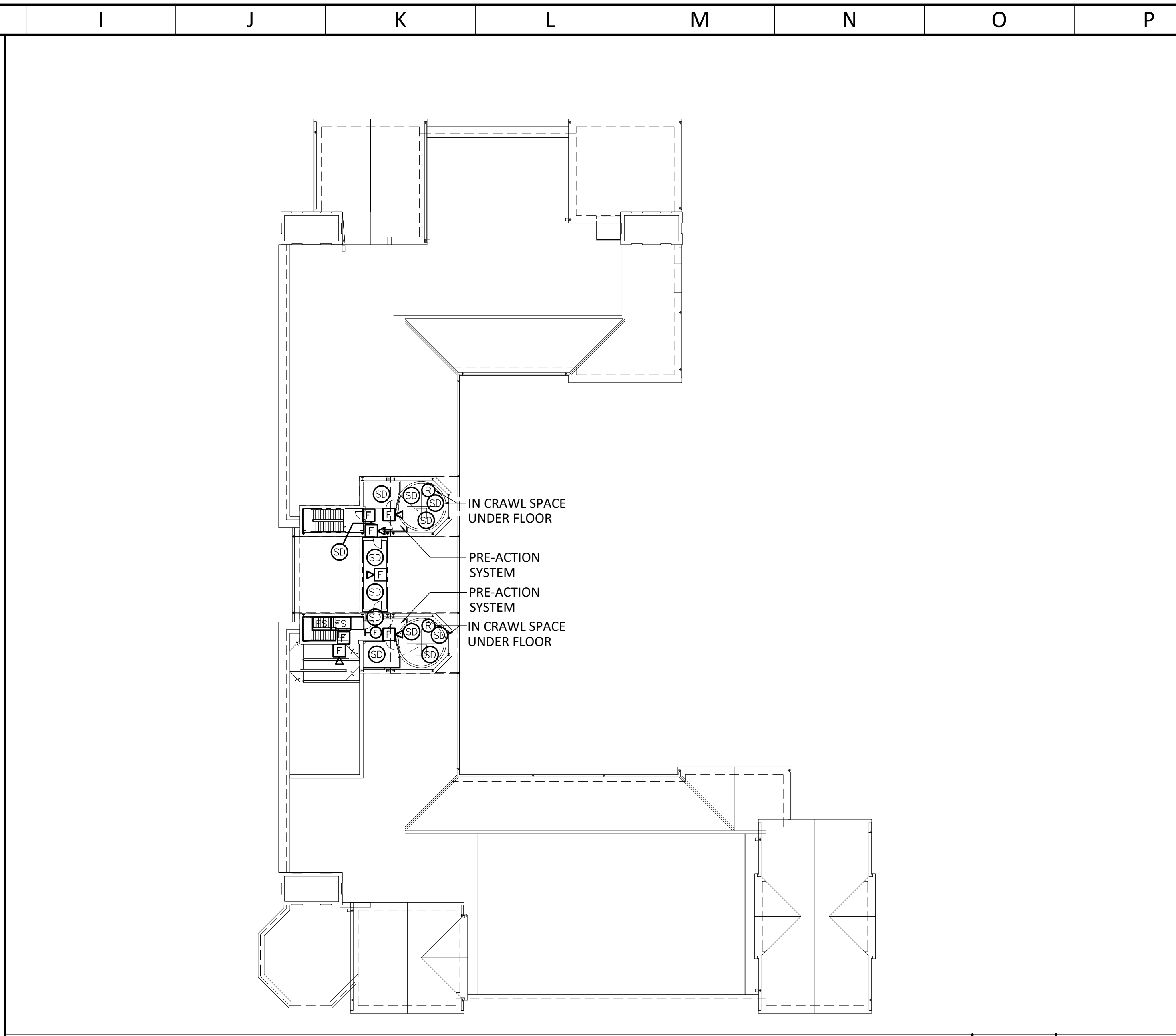
project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
SCIENCE COMPLEX  
scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

dwg. no.  
**E102-SCI**

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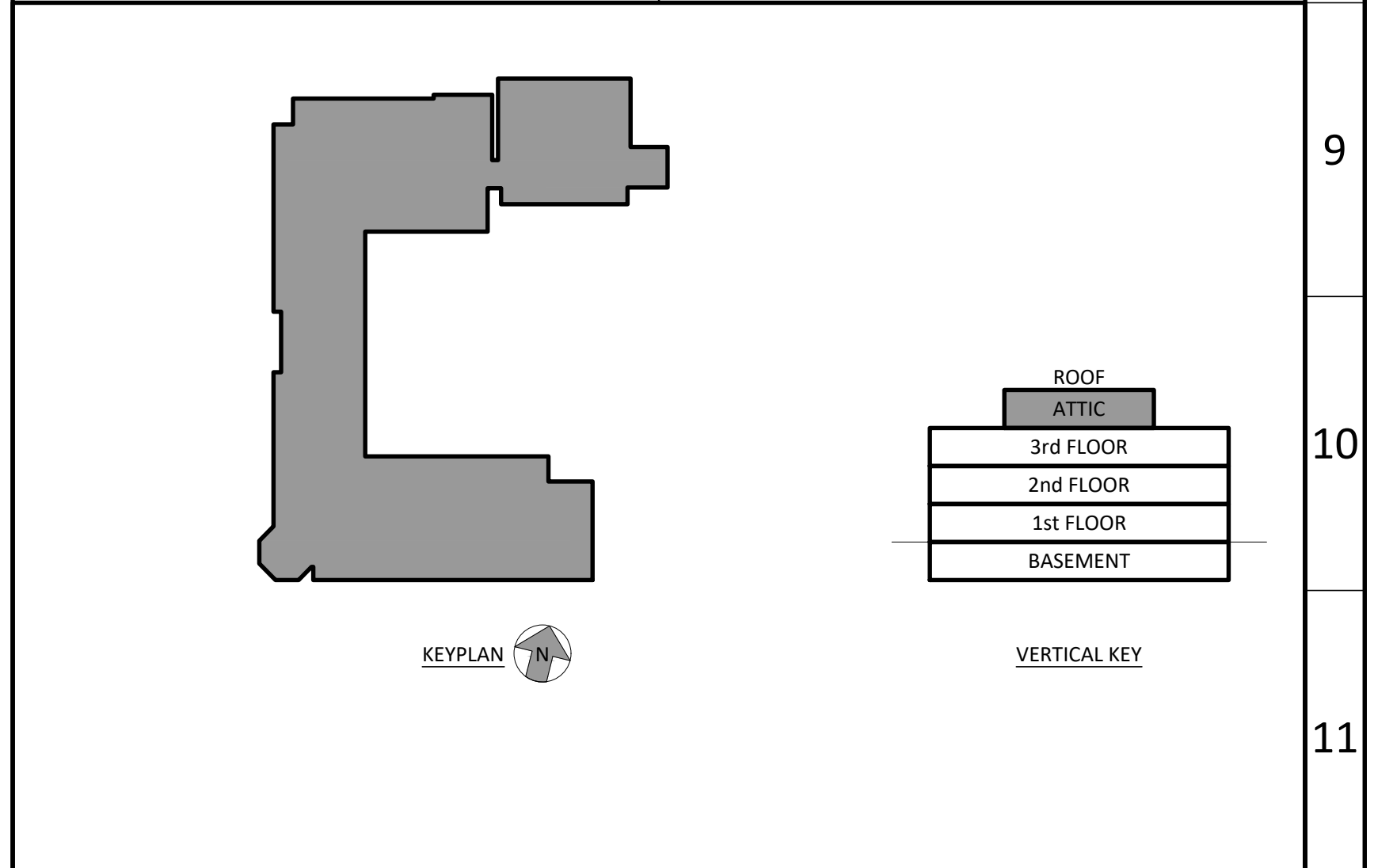
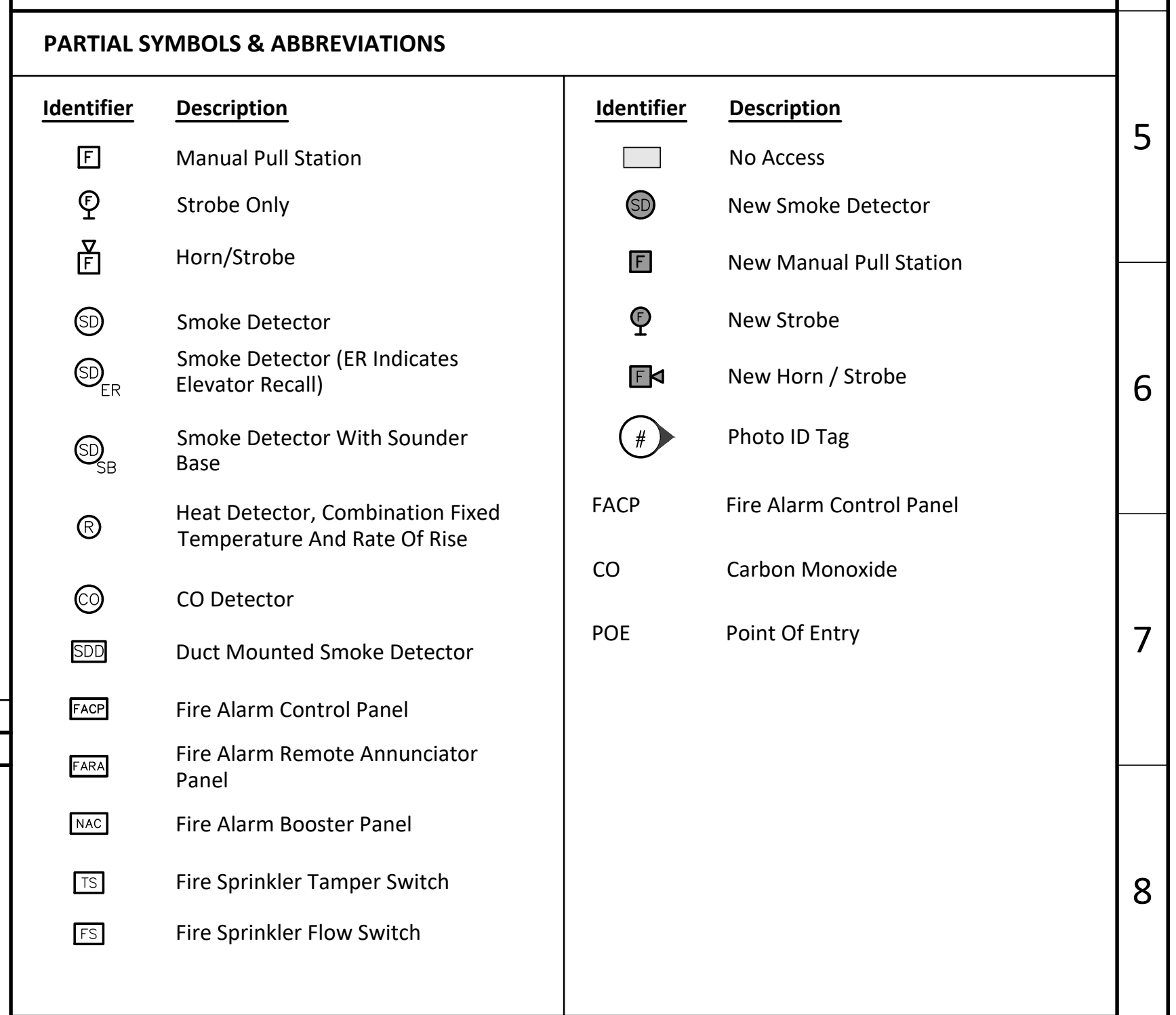
ATTIC LAYOUT Scale: NTS Drawing: E103 Detail: 01

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PARTIAL SYMBOLS & ABBREVIATIONS

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[S]	Strobe Only	[SD]	New Smoke Detector
[F/S]	Horn/Strobe	[MPS]	New Manual Pull Station
[SD]	Smoke Detector	[S]	New Strobe
[SD <sub>ER</sub> ]	Smoke Detector (ER Indicates Elevator Recall)	[H/S]	New Horn / Strobe
[SD <sub>SB</sub> ]	Smoke Detector With Sounder Base	[PIT]	Photo ID Tag
[HTR]	Heat Detector, Combination Fixed Temperature And Rate Of Rise	FACP	Fire Alarm Control Panel
[CO]	CO Detector	CO	Carbon Monoxide
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[FS]	Fire Sprinkler Flow Switch		



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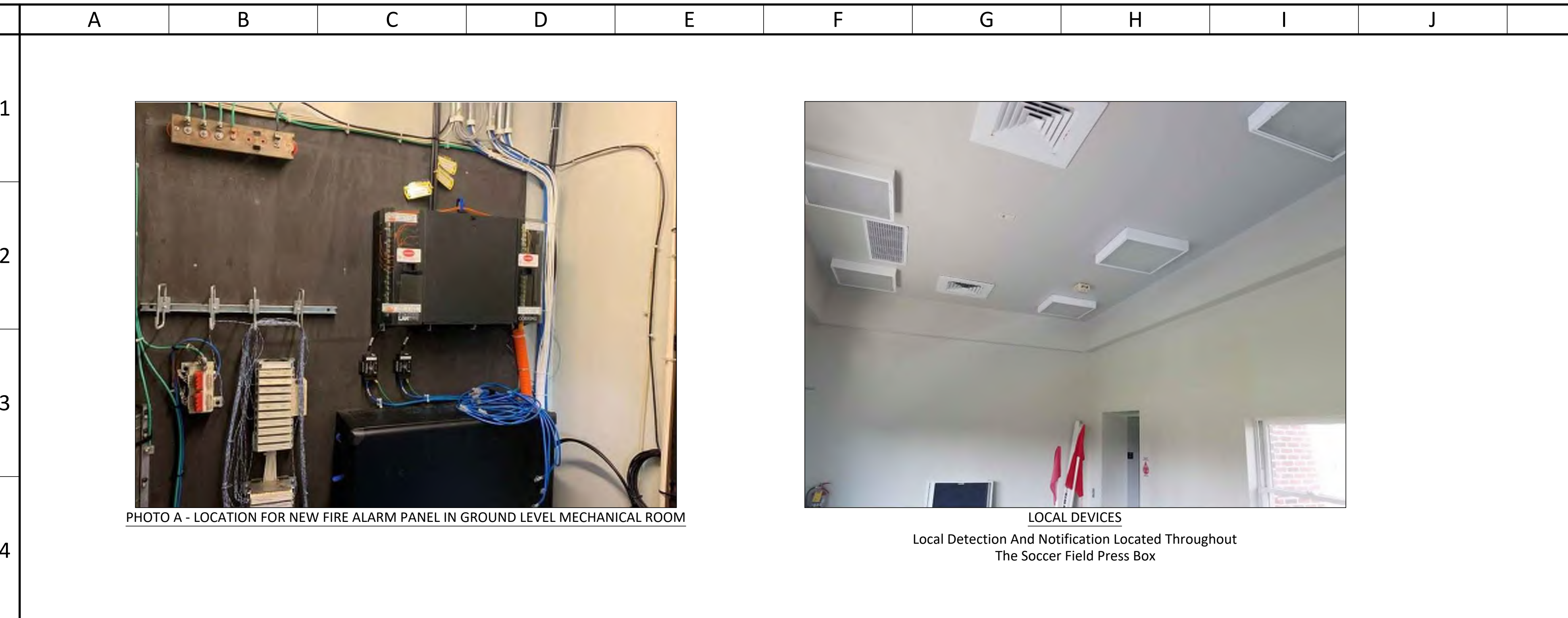
project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
SCIENCE COMPLEX

scale AS SHOWN drawn by SC checked by SF date 5/03/2020

dwg. no.  
**E103-SCI**

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**PROJECT OVERVIEW**

1. Project Description:

A. The Project Consists Of The Replacement Of The Existing Fire Alarm System With A New Addressable Fire Alarm System. The System Is Being Replaced Due To Its Age And Lack Of Availability Of Replacement Parts.

2. Overview:

A. The Following Is A Brief Overview Of The Existing System (Not Intended To Be All Inclusive):

- 1) Fire Alarm Control Panel Currently Located In The Electrical Room.
- 2) Audible Devices Located In Press Box Areas.

B. The Following Is A Brief Scope Of The Work For This Project (Not Intended To Be All Inclusive):

- 1) New Addressable Fire Alarm System. Fire Alarm Control Panel Will Be Located In The Electrical Room.
- 2) Fire Alarm Shop Drawings Shall Meet The Requirements Of IBC 2015 (NJ Edition) Section 907.1.2 And Shall Be Submitted For Review And Approval Prior To System Installation.
- 3) Removal And Disposal Of Existing Fire Alarm System.
- 4) Patch, Repair, And Refinish Walls, Floors, Ceilings And Other Finished Surfaces Affected By Removal Of Existing System.
- 5) New Fire Alarm Integration With Life Safety System.

**ELECTRICAL GENERAL NOTES**

**Electrical Wiring**

1. In General, Branch Circuit Wiring Is Not Shown On The Plan Drawings.
2. The Minimum Branch Circuit Wiring Size Shall Be 2#12, #12 Ground In 3/4 Inch Conduit Unless Otherwise Noted.

**Wiring Methods**

1. General
  - A. In Finished Areas, Conceal All Wiring In Building Walls, Floors, And Above Finished Ceilings. Wiring May Be Run Exposed In Mechanical/Electrical Equipment Rooms, Electrical Closets, Utility Rooms.
  - B. For Devices Mounted To Block Walls : Approved Surface Mounted Raceway May Be Utilized.
  - C. Final Connections To Mechanical Equipment, Lighting Fixtures, Motors, Transformers, Instruments, And Control Devices Shall Be Flexible Conduit To Minimize Vibration Transmission.
2. Indoors (Unclassified Areas)
  - A. Exposed: EMT Conduit With Steel Set Screw Fittings, Unless Otherwise Noted
  - B. In Dry Walls/Above Ceilings: EMT Conduit With Steel Set Screw Fittings (Type MC Clad Cable May Be Used For 1 Pole, 15 And 20 Amp Branch Circuits )
3. Outdoors (Including Unconditioned Covered Areas)
  - A. Above Ground: RGS Threaded Conduit
  - B. Final Connections: Liquid-Tight Flexible Conduit

**Equipment Grounding**

1. An Insulated (Green) Equipment Ground Conductor(s) Shall Be Provided In All Branch Circuits. Utilizing The Conduit As The Equipment Grounding Conductor Is Not Acceptable.

**Electrical Enclosures And Terminations**

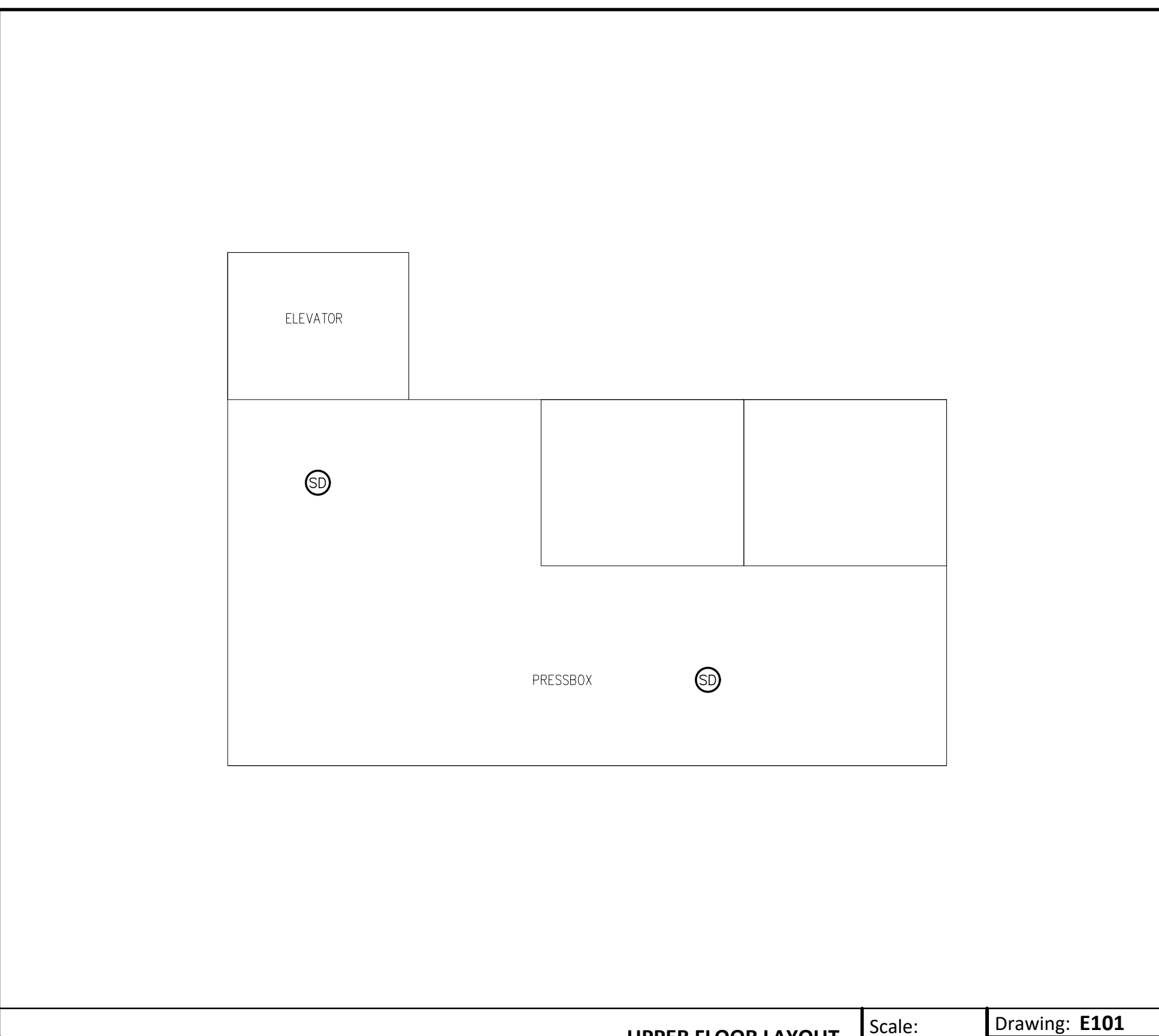
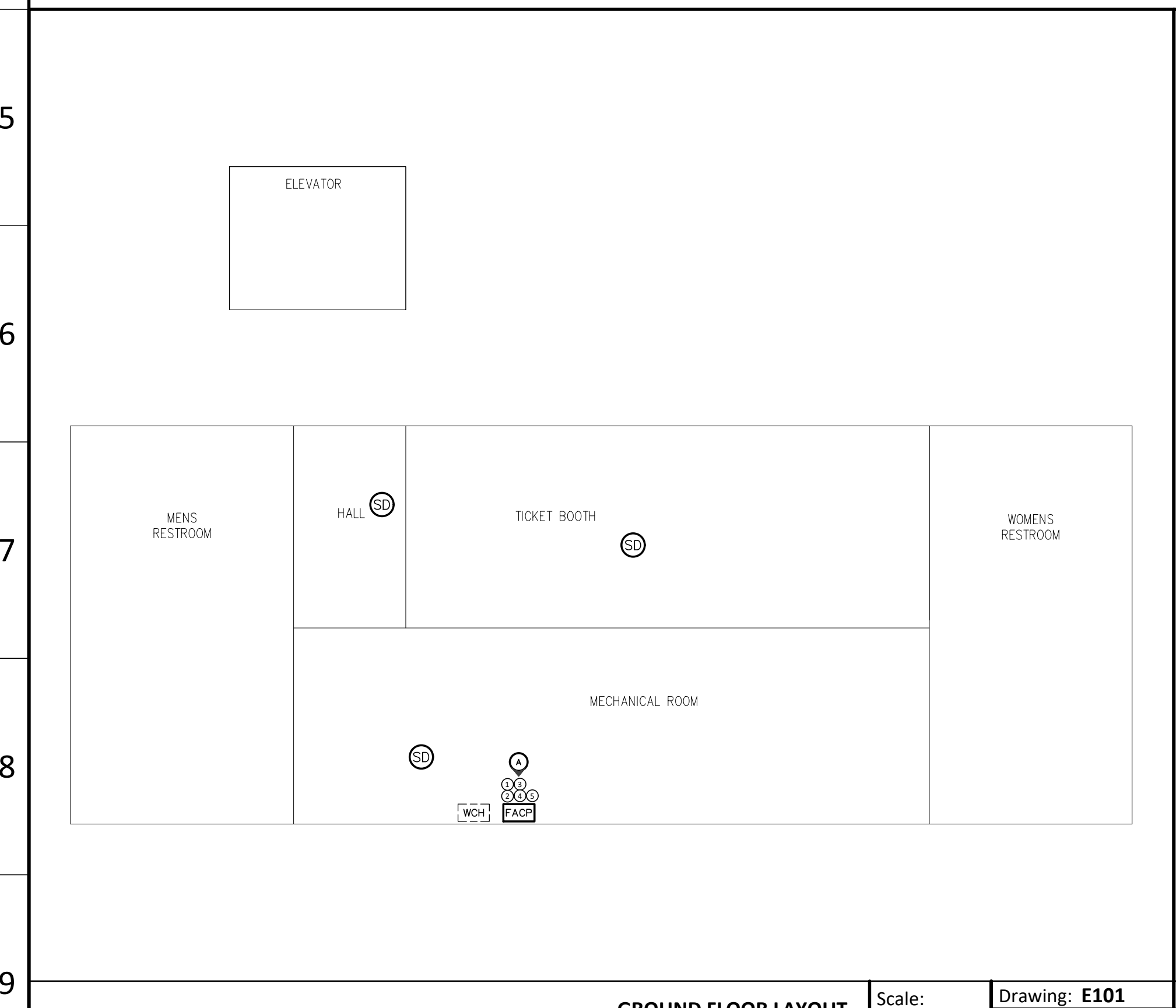
1. Electrical Equipment Enclosures Shall Be Provided As Listed Below Unless Otherwise Noted.
  - A. Indoors Unclassified Areas NEMA 1
  - B. Indoors Classified 'Damp' NEMA 1
  - C. Outdoors NEMA 3R
2. Electrical Terminations (Lugs, Terminals, Etc.) On All Equipment Shall Be Rated For Use With 75 Degree Celsius Conductors.
3. Firestopping
  - A. Provide UL Listed Fire Stopping Assemblies For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Fire-Partitioned Rooms.
  - B. Provide Sealant For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Non-Fire-Partitioned Rooms

**FIRE ALARM**

1. Fire Alarm Must Be Routed In Its Own Separate Pathway And Cannot Share Pathway With Any Other Infrastructure.
2. Provide Ceiling Mounted Smoke Detector At Each Fire Alarm Control Panel, Remote Power Panel, And Remote Annunciation Panel.
3. Duct Smoke Detectors Shall Be Furnished And Installed As Part Of The Electrical Work.
  - A. Duct Mounted Smoke Detectors Shall Be Wired To Shut Down The Associated Unit And Annunciate At The Fire Alarm Control Panel.
  - B. Remote Reset Capability Shall Be Provided For Each Detector. Coordinate Location Of Test Switches In The Field With Owner So That They Are Accessible. Switches Shall Be Provided With Identification Label.
4. Locations Of Fire Alarm Devices And Equipment Shown On The Plan Drawings Is Diagrammatic. Exact Locations Shall Be Determined By The Electrical Contractor In Accordance With Field Conditions And The Following:
  - A. Ceiling Mounted Devices Shall Be Coordinated With Suspended Ceiling, Lighting Fixtures, Diffusers, Ductwork, Sprinkler Heads, Etc. And Per NFPA Requirements.
  - B. Wall Mounted Devices Shall Be Coordinated With Other Wall Mounted Devices, Wall Construction Type, Etc. And NFPA And IBC Requirements. Whenever Possible Devices Shall Be Mounted Flush Or Semi Flush. Surface Mounted Devices Will Be Permitted Where Approved By Engineer And Owner.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Fire Alarm Box	FARA	Fire Alarm Remote Annunciator
⊕	Fire Alarm Strobe	ANS	Ansul System Control Panel
⊕	Speaker / Strobe	SD	Duct Mounted Smoke Detector
⊕ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	⊕	Heat Detector, Fixed Temperature (194°)
⊕	CO Detector		
⊕	Heat Detector, Combination Fixed Temperature And Rate Of Rise		
FACP	Fire Alarm Control Panel		



**GROUND FLOOR LAYOUT** Scale: NTS Drawing: E101 Detail: 01

**UPPER FLOOR LAYOUT** Scale: NTS Drawing: E101 Detail: 01

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

1. Provide New Fire Alarm Panel.
2. Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
3. Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 3 Sheet E200. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
4. Contractor Shall Coordinate And Confirm Jumper Length With Field Conditions / Routing Distance Between MDF WCH And FACP. Coordinate With TCNJ IT Department For Specific Fiber Connection Information And Labeling.
5. Provide Branch Circuit For Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.

**GENERAL NOTES**

1. The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
2. The Fire Alarm System Shall Consist Of Smoke Detectors, Heat Detectors, Manual Fire Alarm Box Placed At Each Exterior Exit. The Fire Alarm System Shall Consist Of Speaker And Strobes To Provide Audible And Visual Annunciation. The Entire System Shall Be Controlled Via The Fire Alarm Control Panel.
3. The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments.
4. All HVAC Duct Smoke Detectors Shall Be Monitored By The Fire Alarm Control Panel. Duct Smoke Detectors Shall Be Provided With An Appropriate Environmental Housing, Addressable Control Relay, Remote Indicator Test Station, And Sampling Tube. Coordinate Location Of Remote Indicator Test Station With Architect. Coordinate Exact Location And Quantity Of Devices With Field Conditions.
5. Provide Fire Alarm Wiring Connections To Each Non-Addressable Device Via Monitor Modules.
6. Fire Alarm Cabling Routed Above A Finished Ceiling Can Be Routed Utilizing Dedicated J-Hooks Or Other Approved Means Of Support. Cabling Shall Not Be Bundled With Other Cabling Or Supported From Existing Conduit, Piping, Cabling. Fire Alarm Cabling Shall Be Plenum Rated And Shall Not Be Spliced. Fire Alarm Wiring Is Permitted To Be Installed In Open Raceways Where Concealed. Fire Alarm Rated MC Cable Is Acceptable For Concealed Locations. All Cabling Shall Be Sleeved When Passing Thru A Wall Using Conduit Sleeves With Bushings And Fire Stopped.
7. Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Surface Metal Raceway In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
8. All Conduits Entering / Leaving The Building Shall Be Sealed At The Building's Exterior To Prevent Moisture Within The Raceway From Entering The Facility. The Sealing Method Shall Be Compatible With The Conduit And Conductors Installed.
9. Coordinate The Exact Quantity And Location Of Water Flow And Tamper Switches With Field Quantities. Provide Fire Alarm Wiring Connections To Each Device.
10. Panel Board Circuit Breaker Supplying Fire Alarm Control Panel and Associated Equipment Shall Have A Handle "Lock On" Device.
11. Visual Fire Alarms (Strobes) Shall Have Minimum 5'-0" Clearance From Any Obstructions. All The Strobes Shall Be Synchronized.
12. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
13. Replace Any Acoustical Ceiling Tile Which Is Damaged During The Course Of Construction To Match Existing In All Respects.

**ELECTRICAL GENERAL NOTES**

**Electrical Wiring**

1. In General, Branch Circuit Wiring Is Not Shown On The Plan Drawings.
2. The Minimum Branch Circuit Wiring Size Shall Be 2#12, #12 Ground In 3/4 Inch Conduit Unless Otherwise Noted.

**Wiring Methods**

1. General
  - A. In Finished Areas, Conceal All Wiring In Building Walls, Floors, And Above Finished Ceilings. Wiring May Be Run Exposed In Mechanical/Electrical Equipment Rooms, Electrical Closets, Utility Rooms.
  - B. For Devices Mounted To Block Walls : Approved Surface Mounted Raceway May Be Utilized.
  - C. Final Connections To Mechanical Equipment, Lighting Fixtures, Motors, Transformers, Instruments, And Control Devices Shall Be Flexible Conduit To Minimize Vibration Transmission.
2. Indoors (Unclassified Areas)
  - A. Exposed: EMT Conduit With Steel Set Screw Fittings, Unless Otherwise Noted
  - B. In Dry Walls/Above Ceilings: EMT Conduit With Steel Set Screw Fittings (Type MC Clad Cable May Be Used For 1 Pole, 15 And 20 Amp Branch Circuits )
3. Outdoors (Including Unconditioned Covered Areas)
  - A. Above Ground: RGS Threaded Conduit
  - B. Final Connections: Liquid-Tight Flexible Conduit

**Equipment Grounding**

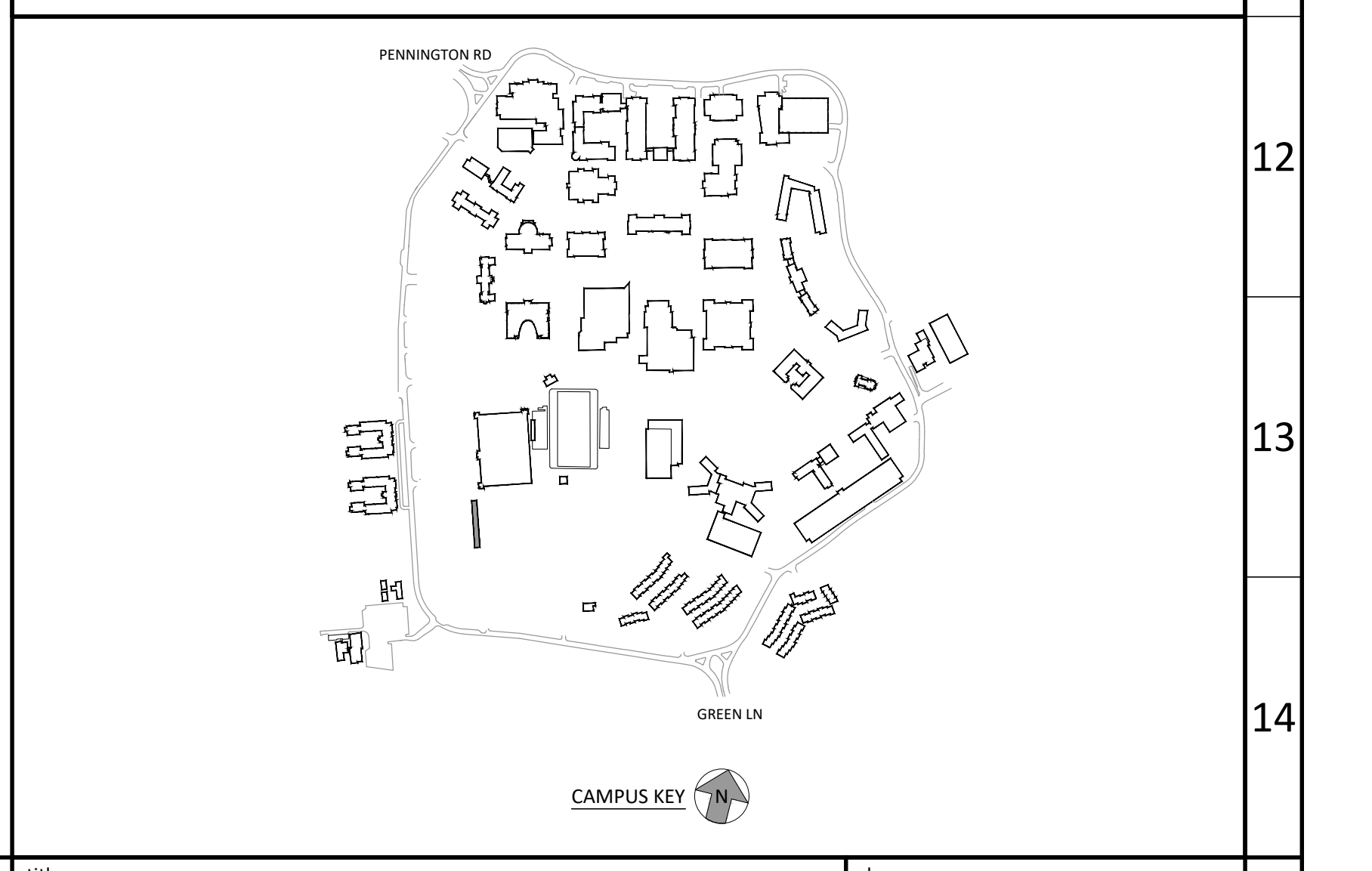
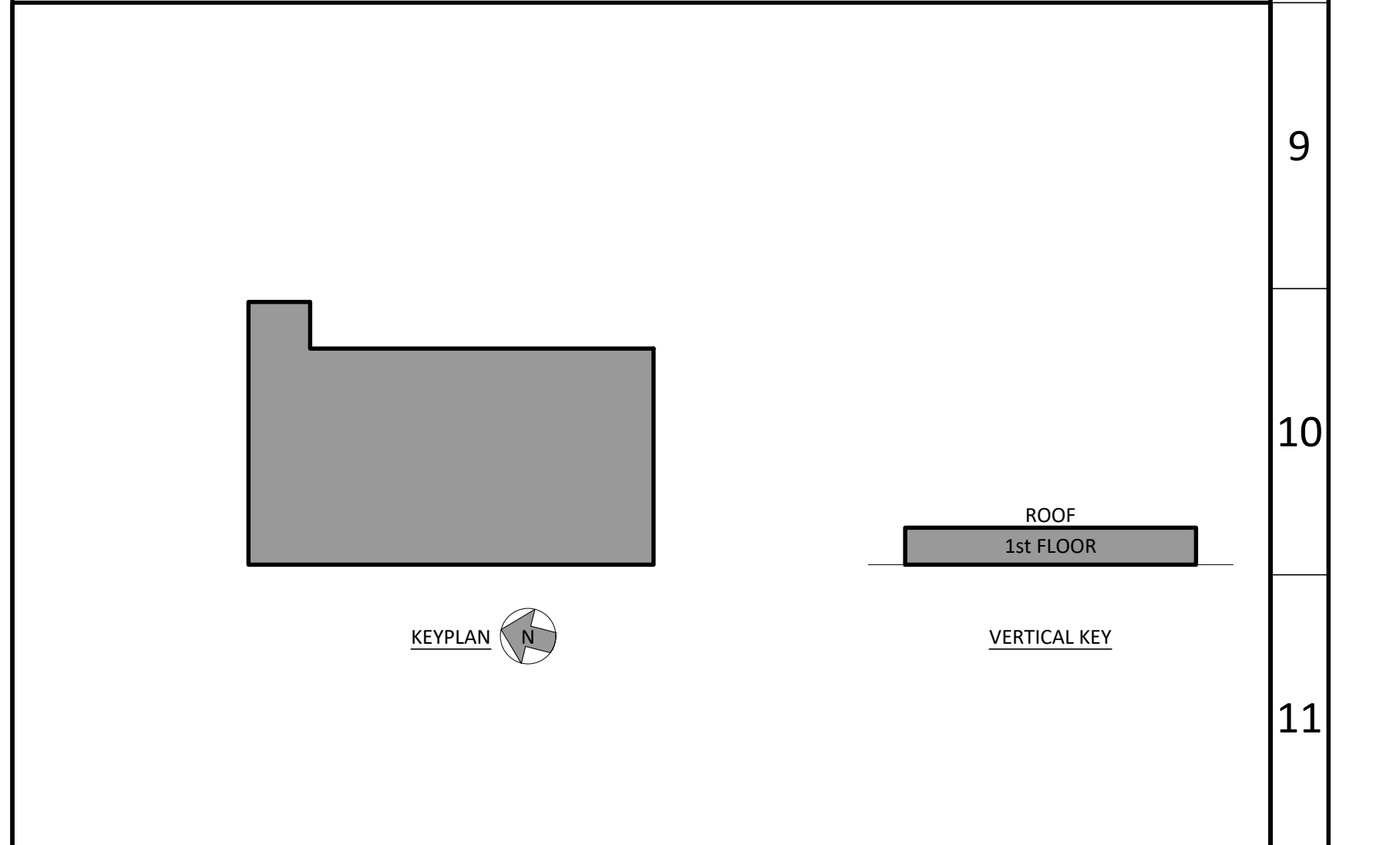
1. An Insulated (Green) Equipment Ground Conductor(s) Shall Be Provided In All Branch Circuits. Utilizing The Conduit As The Equipment Grounding Conductor Is Not Acceptable.

**Electrical Enclosures And Terminations**

1. Electrical Equipment Enclosures Shall Be Provided As Listed Below Unless Otherwise Noted.
  - A. Indoors Unclassified Areas NEMA 1
  - B. Indoors Classified 'Damp' NEMA 1
  - C. Outdoors NEMA 3R
2. Electrical Terminations (Lugs, Terminals, Etc.) On All Equipment Shall Be Rated For Use With 75 Degree Celsius Conductors.
3. Firestopping
  - A. Provide UL Listed Fire Stopping Assemblies For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Fire-Partitioned Rooms.
  - B. Provide Sealant For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Non-Fire-Partitioned Rooms

**FIRE ALARM**

1. Fire Alarm Must Be Routed In Its Own Separate Pathway And Cannot Share Pathway With Any Other Infrastructure.
2. Provide Ceiling Mounted Smoke Detector At Each Fire Alarm Control Panel, Remote Power Panel, And Remote Annunciation Panel.
3. Duct Smoke Detectors Shall Be Furnished And Installed As Part Of The Electrical Work.
  - A. Duct Mounted Smoke Detectors Shall Be Wired To Shut Down The Associated Unit And Annunciate At The Fire Alarm Control Panel.
  - B. Remote Reset Capability Shall Be Provided For Each Detector. Coordinate Location Of Test Switches In The Field With Owner So That They Are Accessible. Switches Shall Be Provided With Identification Label.
4. Locations Of Fire Alarm Devices And Equipment Shown On The Plan Drawings Is Diagrammatic. Exact Locations Shall Be Determined By The Electrical Contractor In Accordance With Field Conditions And The Following:
  - A. Ceiling Mounted Devices Shall Be Coordinated With Suspended Ceiling, Lighting Fixtures, Diffusers, Ductwork, Sprinkler Heads, Etc. And Per NFPA Requirements.
  - B. Wall Mounted Devices Shall Be Coordinated With Other Wall Mounted Devices, Wall Construction Type, Etc. And NFPA And IBC Requirements. Whenever Possible Devices Shall Be Mounted Flush Or Semi Flush. Surface Mounted Devices Will Be Permitted Where Approved By Engineer And Owner.



ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018



**dlb associates**  
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Questions For DLB Call: Anthony Laskosky  
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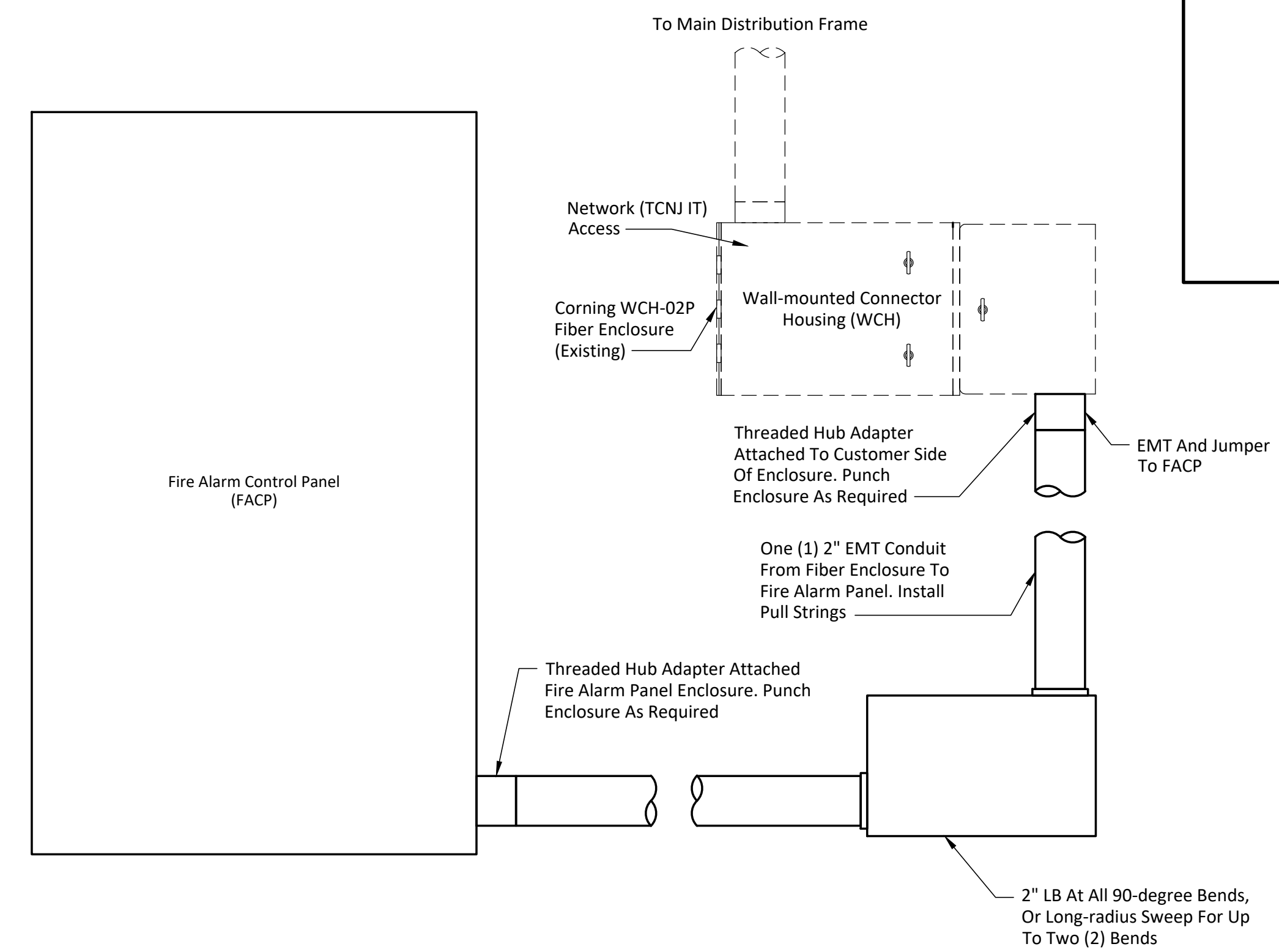
project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
SOCCER FIELD PRESS BOX  
scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

dwg. no.  
**E101-SPRE**  
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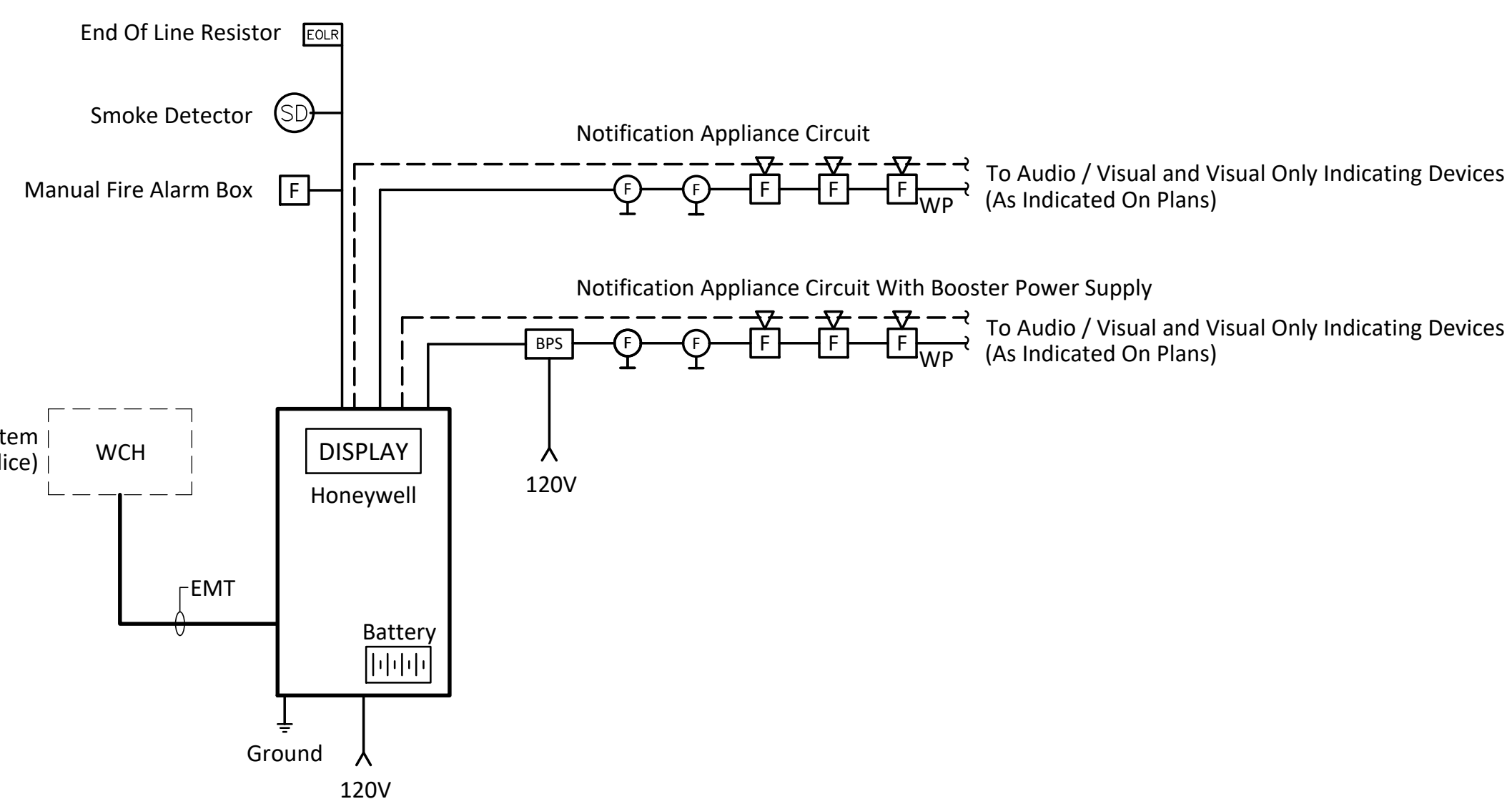
FIRE ALARM SYSTEM RESPONSE MATRIX											
Initiation Device Or Input		Response									
System	Component	Building				FACP		Annunciator		Central Station	
		Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building
General	Manual Fire Alarm Box	X	X	X	X	X	X	X	X	X	X
	Heat Detector	X	X	X	X	X	X	X	X	X	X
	Smoke Detector	X	X	X	X	X	X	X	X	X	X
	FACP Troubles Per NFPA 72						X			X	

RESPONSE MATRIX Scale: NTS Drawing: E200 Detail: 01



- NOTES:
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-degree End Unless Swept Long-radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

FIRE ALARM FIBER ENCLOSURE INSTALLATION Scale: NTS Drawing: E200 Detail: 03

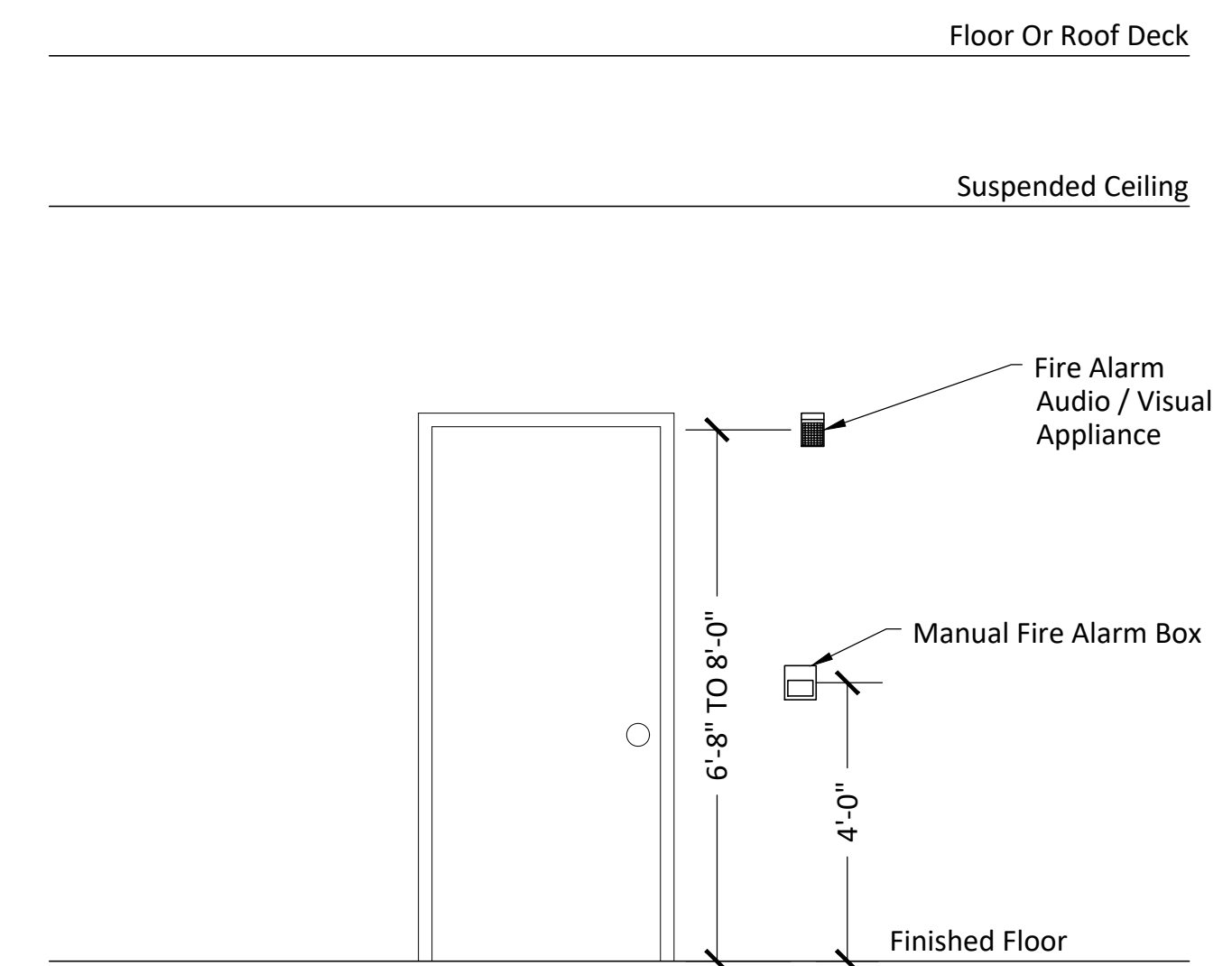


MARK	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL FIRE ALARM BOX
FV	FIRE ALARM AUDIO / VISUAL DEVICE
FS	FIRE ALARM STROBE VISUAL DEVICE
H	HEAT DETECTOR - FIXED TEMPERATURE (134°)
R	HEAT DETECTOR - COMBINATION FIXED TEMPERATURE AND RATE OF RISE
SD	SMOKE DETECTOR
CM	FIRE ALARM CONTROL MODULE
MM	FIRE ALARM MONITOR MODULE
BPS	NOTIFICATION APPLIANCE CIRCUIT BOOSTER POWER SUPPLY
---	POWER OR SIGNALING LINE CIRCUIT
WP	WEATHERPROOF

NOTES:

- General
  - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
  - An Addressable Type, Fire Alarm System Shall Be Installed Throughout The Building. This System Shall Consist Of A Central Fire Alarm Control Panel (FACP), Detection Devices, And Notification Appliances.
  - The FACP Shall Connect The Campus Life Safety Management System.
- Equipment
  - Refer To Floor Plan Drawings For Additional Provisions That Shall Be Provided.
  - Provide All Required Expansion Panels, PC Boards, Power Supplies, Batteries, Amplifiers, Branch Circuits, And NAC Signal Power Boosters, For A Complete And Operable Fire Alarm System.
  - Field Verify Exact Location, Quantity, And Voltage Of Duct Smoke Detectors.
  - Provide Remote LED Indicator / Test Station At Accessible Locations For RTU(s) Equipped With Duct Smoke Detector.
- Wiring
  - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
  - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware.
  - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
  - Each Notification Appliance Circuit Shall Contain A Minimum Of 30% Spare Capacity. Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
- Testing
  - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

FIRE ALARM RISER Scale: NTS Drawing: E200 Detail: 02



SYMBOLS LEGEND	
Plan View	Detail View
[Symbol]	[Symbol]
[Symbol]	[Symbol]

TYPICAL FIRE ALARM DEVICE MOUNTING HEIGHT Scale: NTS Drawing: E200 Detail: 04

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project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM PANEL REPLACEMENT  
SOCCER FIELD PRESS BOX  
scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

dwg. no.  
**E200-SPRE**

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30x42

**FIRE ALARM PHOTOS**



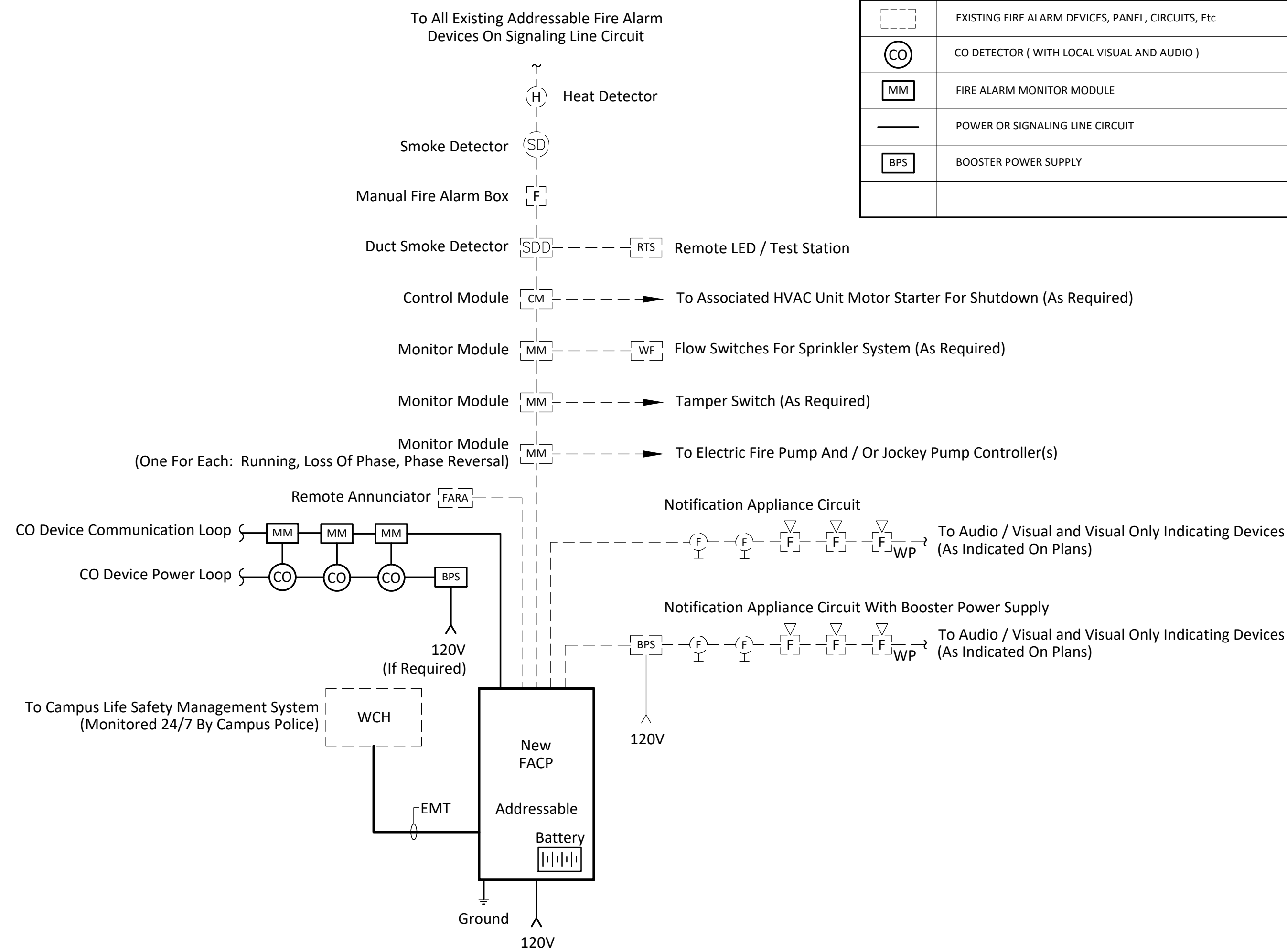
PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL  
Existing Honeywell FS90 Addressable Fire Alarm Control Panel With Exposed Conduit Located In Lower Level Electrical Room



HONEYWELL FIRE ALARM DEVICES  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building

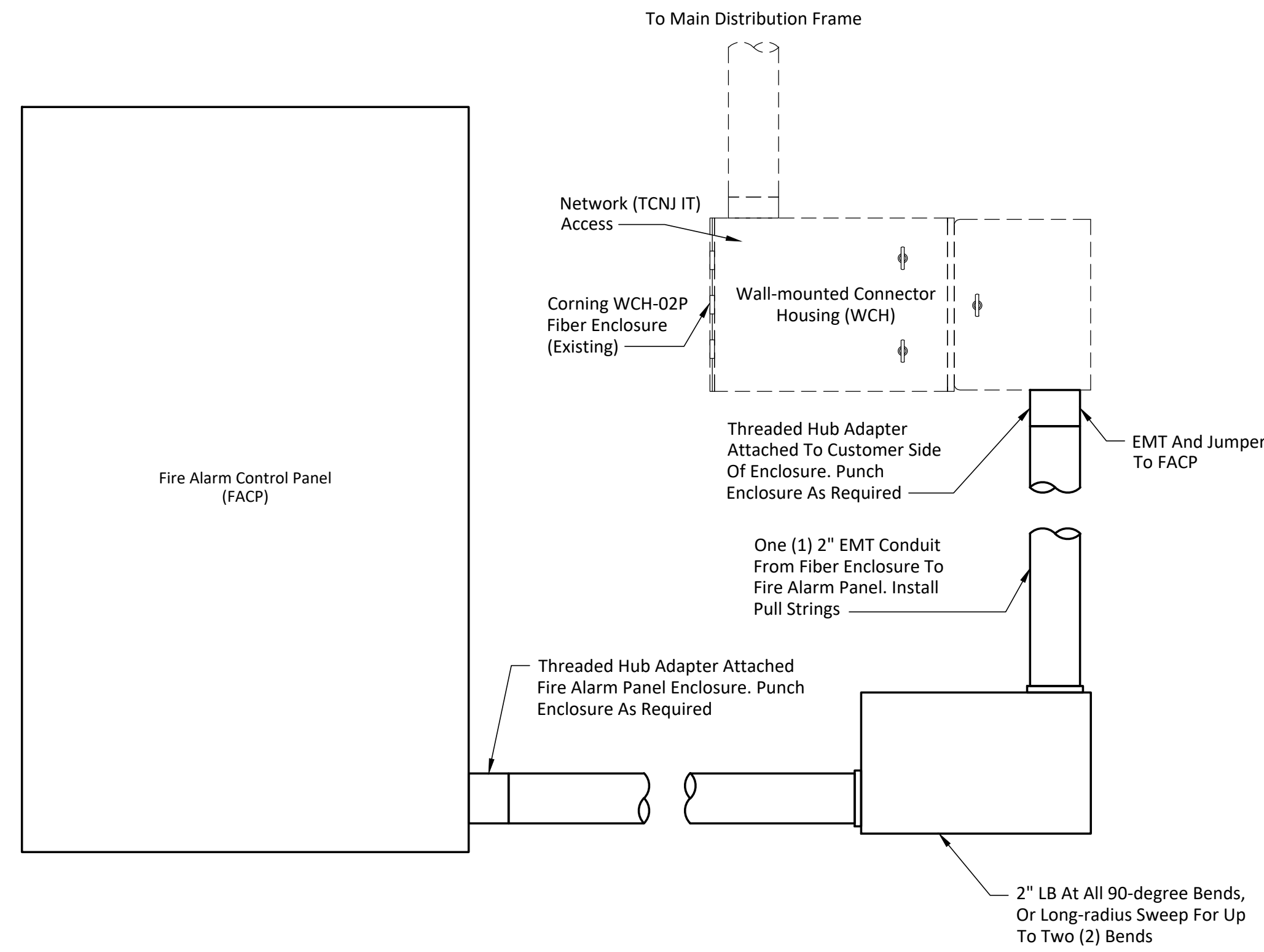
**FIRE ALARM SCHEDULE**

MARK	DESCRIPTION
[Symbol]	EXISTING FIRE ALARM DEVICES, PANEL, CIRCUITS, ETC
[CO]	CO DETECTOR ( WITH LOCAL VISUAL AND AUDIO )
[MM]	FIRE ALARM MONITOR MODULE
[Line]	POWER OR SIGNALING LINE CIRCUIT
[BPS]	BOOSTER POWER SUPPLY



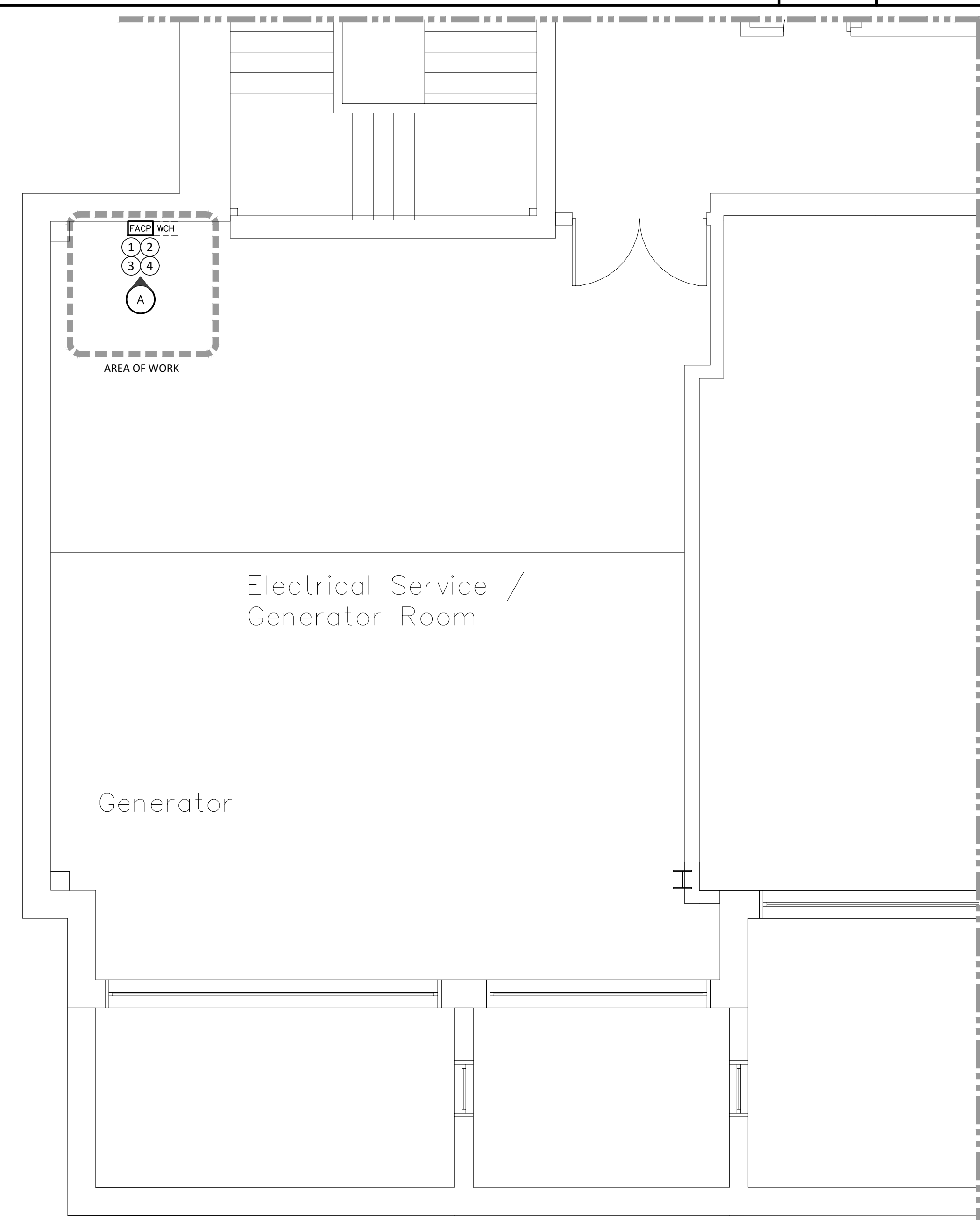
- NOTES:**
- General
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - This Building Would Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - Social Science Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell FS90 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**



- NOTES:**
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - LOWER LEVEL** Scale: 1/4"=1'-0" Drawing: **E101** Detail: **03**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

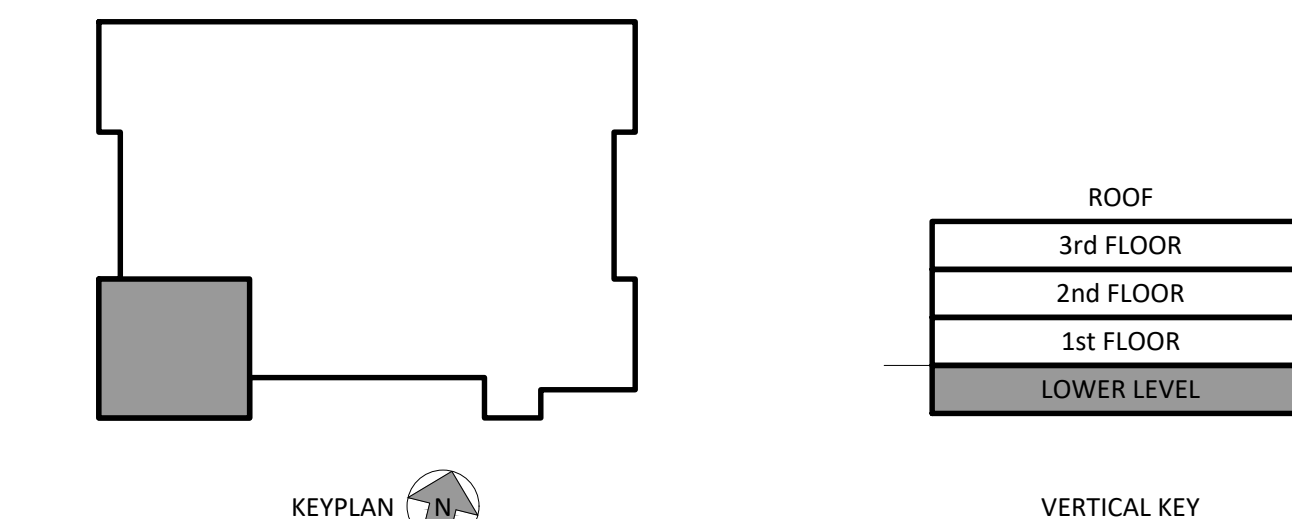
- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.
- Provide New CO Devices Connected To New Panel. See Sheet E102 For Approximate Location.

**GENERAL NOTES**

- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
- CO Detectors To Provide Local Audio Visual And Supervisory At FACP And LSMS Control Station.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
[FACP]	Fire Alarm Control Panel	[New Box]	New Equipment
[WCH]	Existing Wall-Mounted Connector Housing	[Dashed Box]	Existing Equipment
[Photo Tag]	Existing Fire Alarm Control Panel	[Circle with A]	Photo Tag
[Arrow]		[Arrow with circle]	Connect To Existing



project: **TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618**

title: **FIRE ALARM PANEL REPLACEMENT SOCIAL SCIENCE**

scale: AS SHOWN drawn by: AM checked by: SF date: 5/03/2020

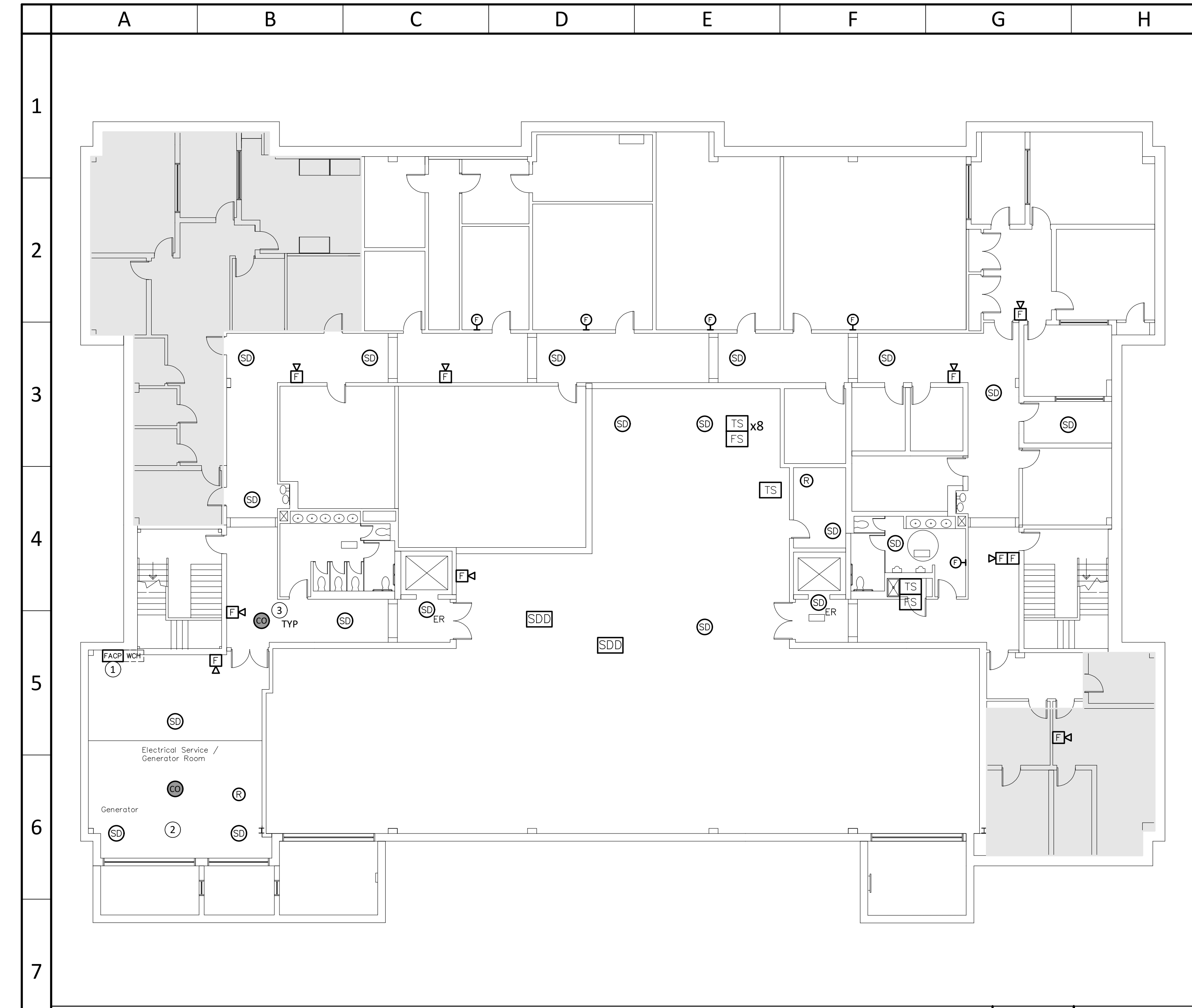
dwg. no.: **E101-SOCL**

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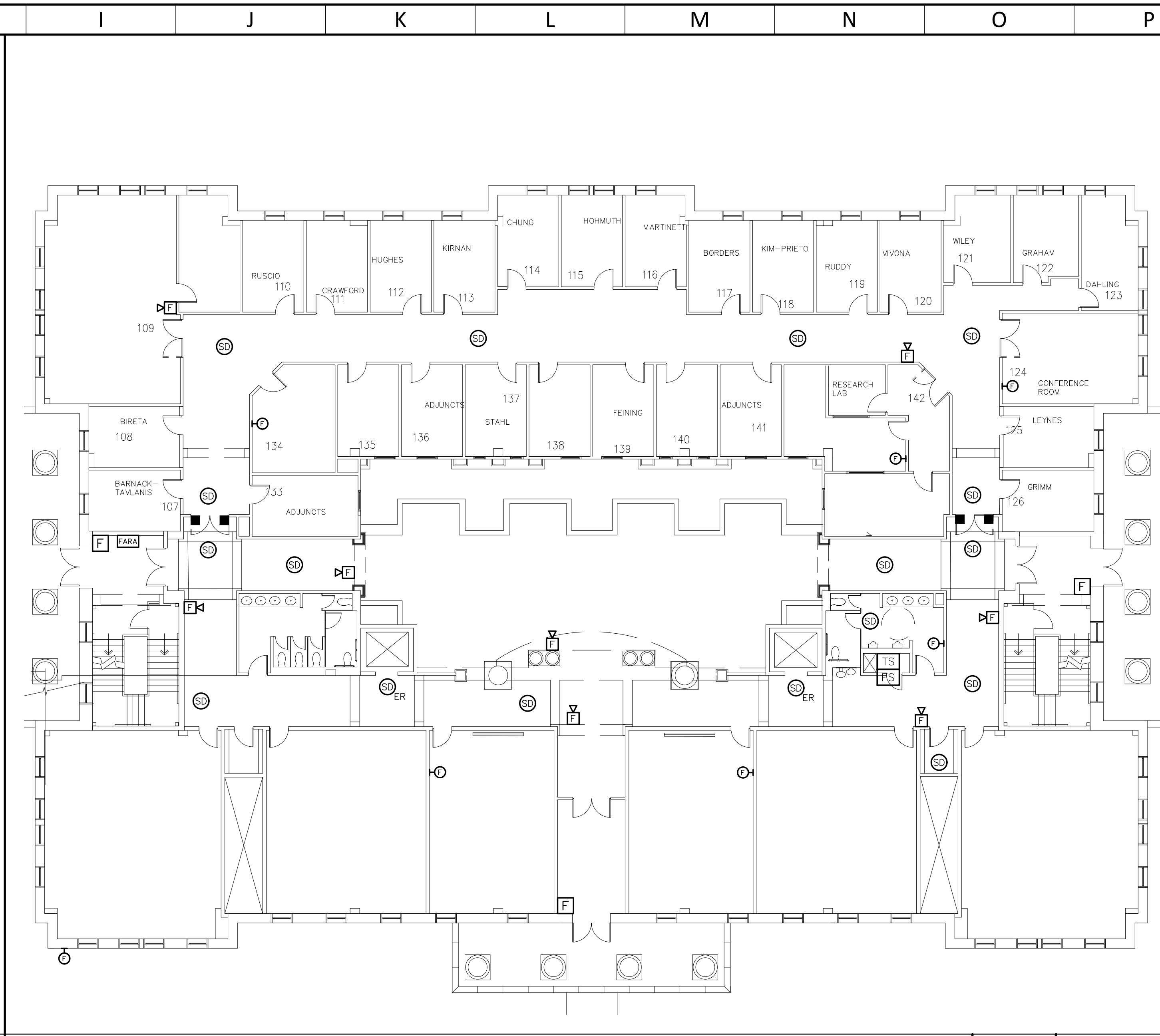
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CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

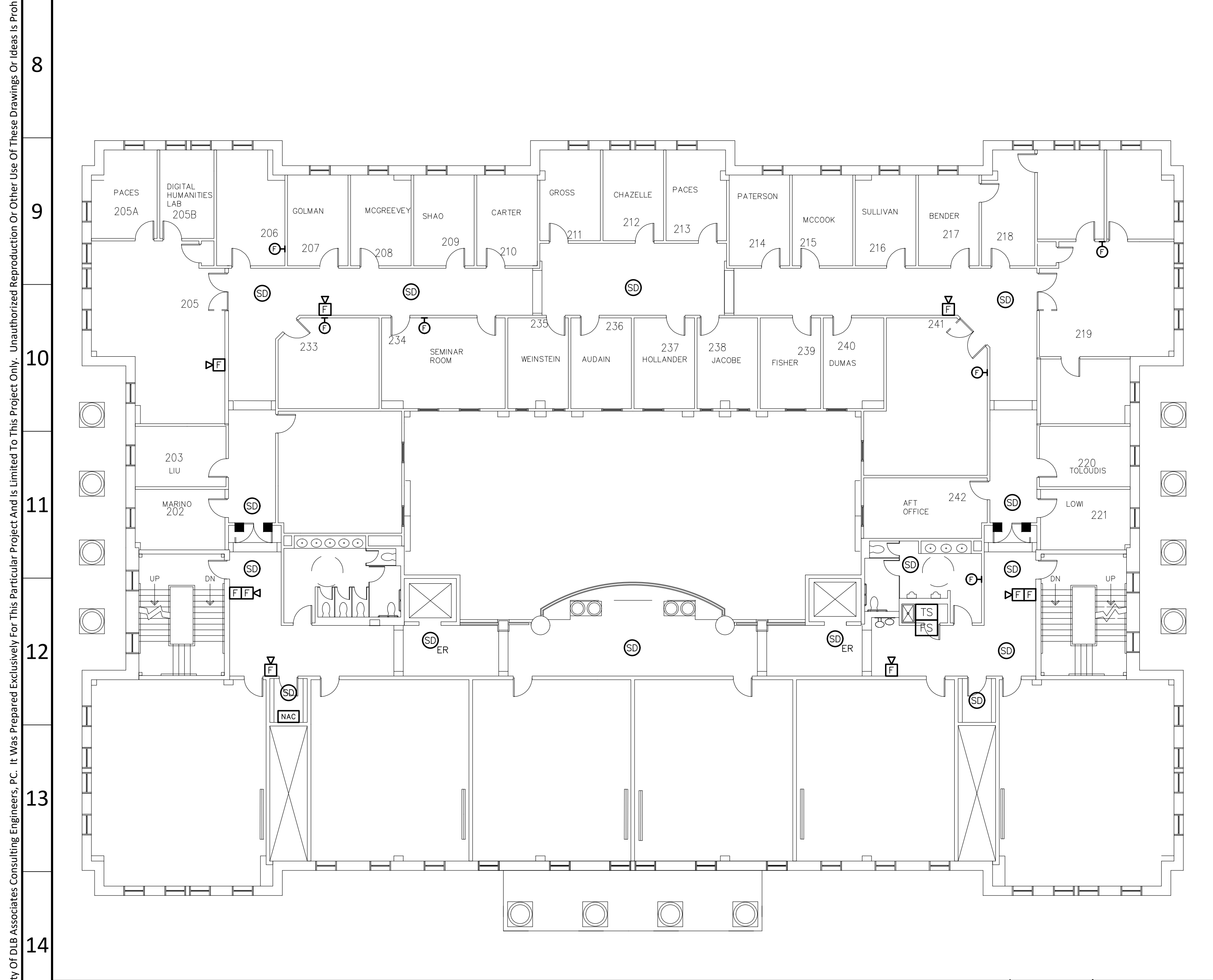
Questions For DLB Call: **Anthony Laskosky** Phone: 732-927-5038



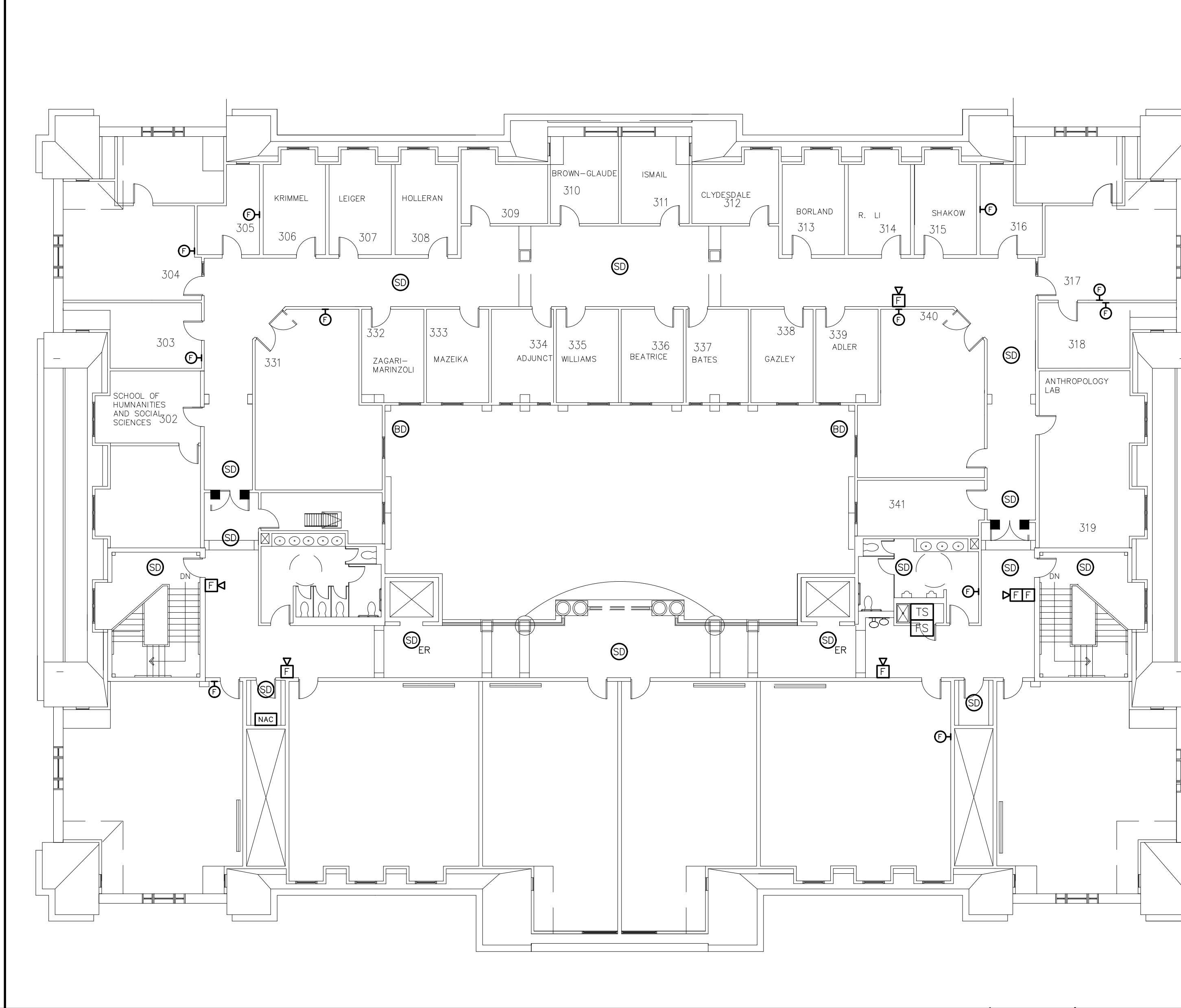
**LOWER LEVEL LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**



**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **02**



**SECOND FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **03**



**THIRD FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **04**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

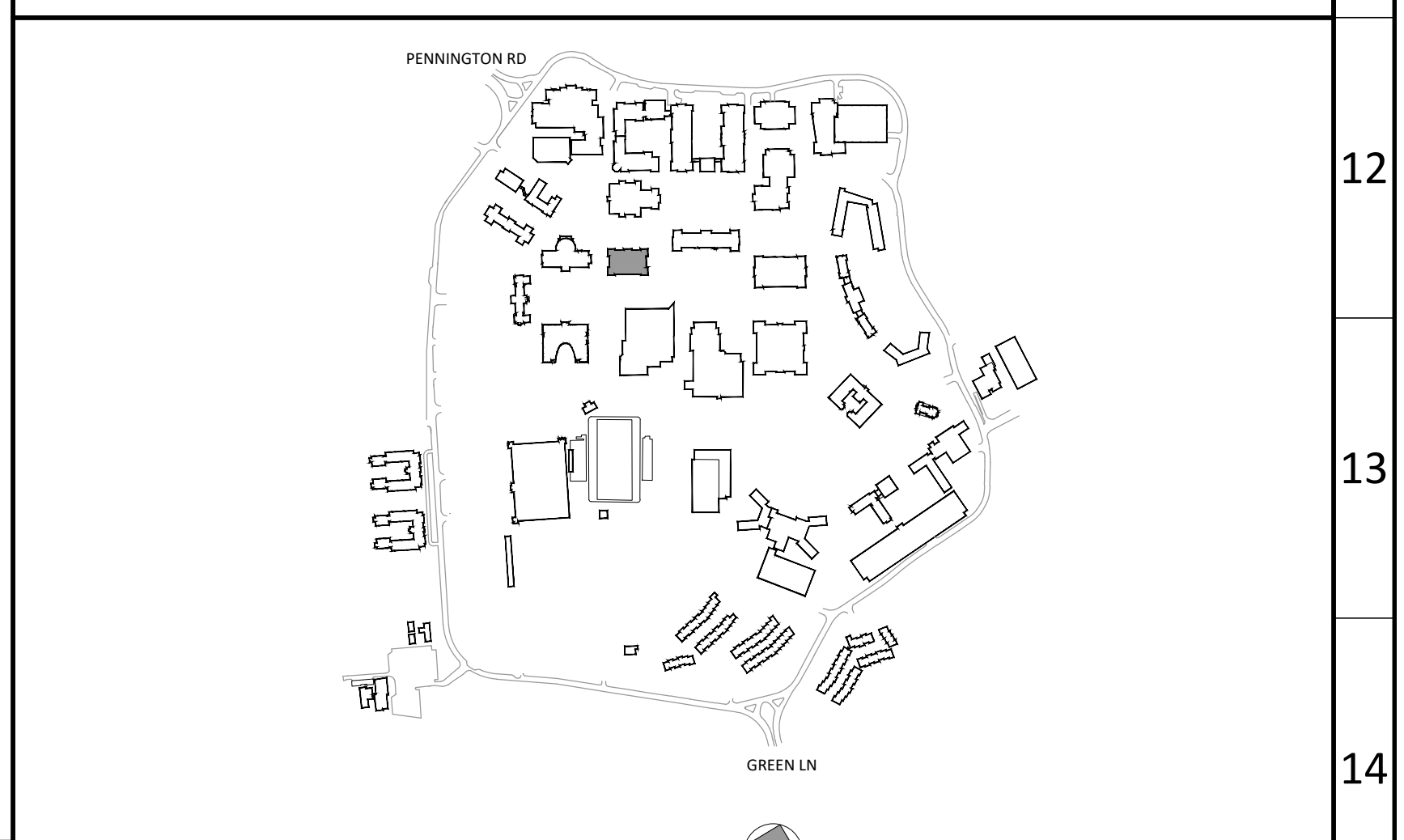
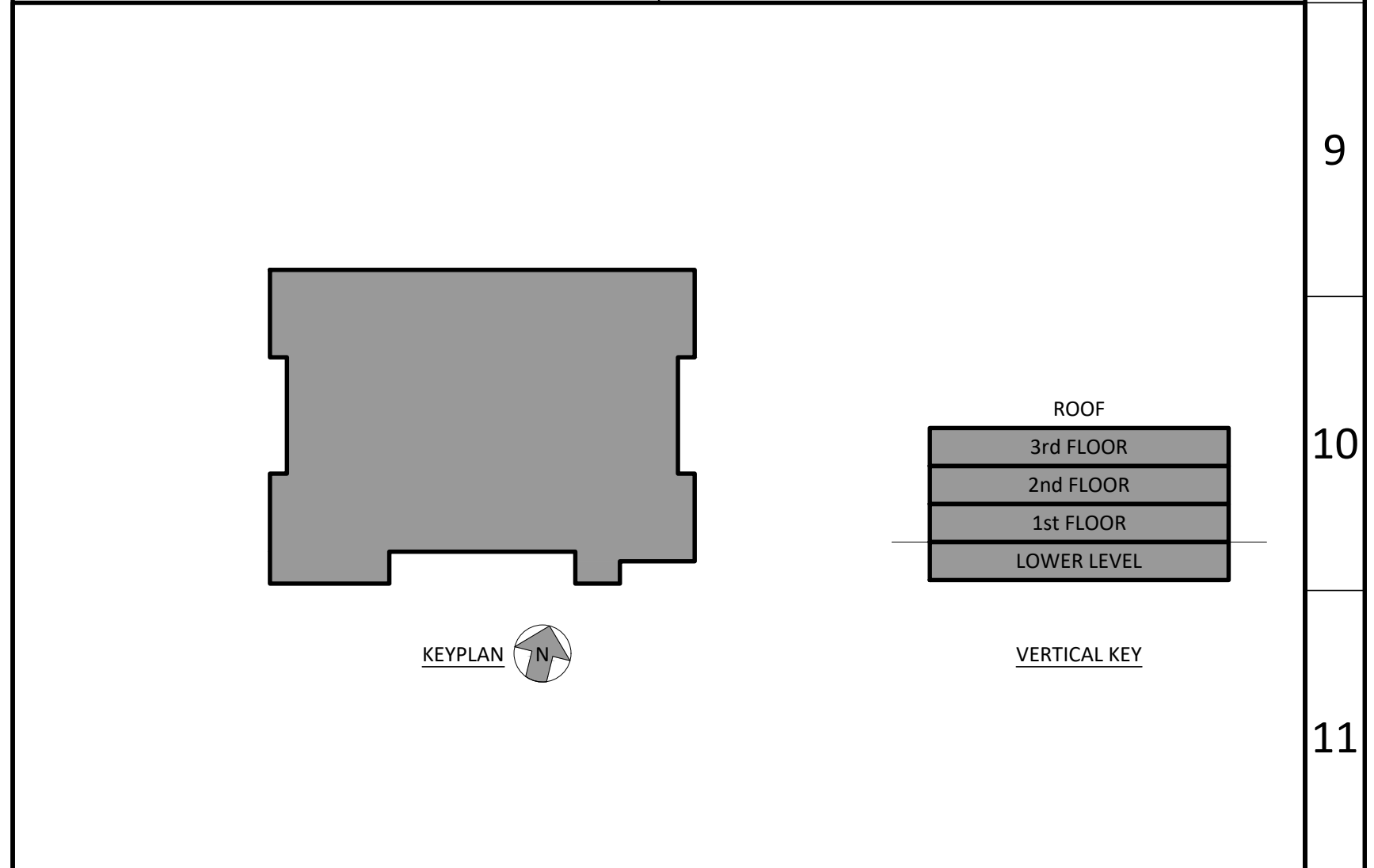
- Existing Fire Alarm Control Panel.
- Existing Gas Generator.
- New CO Detector

**GENERAL NOTES**

- This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Pull Station	□	No Access
Q	Strobe Only	⊕	New Smoke Detector
H	Horn/Strobe	⊕	New Manual Pull Station
SD	Smoke Detector	⊕	New Strobe
SD <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	⊕	New Horn / Strobe
SD <sub>SB</sub>	Smoke Detector With Sounder Base	⊕	New Carbon Monoxide Detector With Local Audio And Visual Notification.
HT	Heat Detector, Combination Fixed Temperature And Rate Of Rise	⊕	Photo Location Indicator
CD	CO Detector	FACP	Fire Alarm Control Panel
SD <sub>DC</sub>	Duct Mounted Smoke Detector	CO	Carbon Monoxide
FACP	Fire Alarm Control Panel	POE	Point Of Entry
FARA	Fire Alarm Remote Annunciator Panel		
FABP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



30442

ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
1	05/01/2020	ISSUED FOR BID			

Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

**dlb associates**  
CONSULTING ENGINEERS, P.C.  
265 Industrial Way West, Eatontown, N.J. 07724

Questions For DLB Call: Anthony Laskosky Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

scale AS SHOWN	drawn by SC	checked by SF	date 5/03/2020	title FIRE ALARM - EXISTING LAYOUT SOCIAL SCIENCE	dwg. no. <b>E102-SOCL</b>
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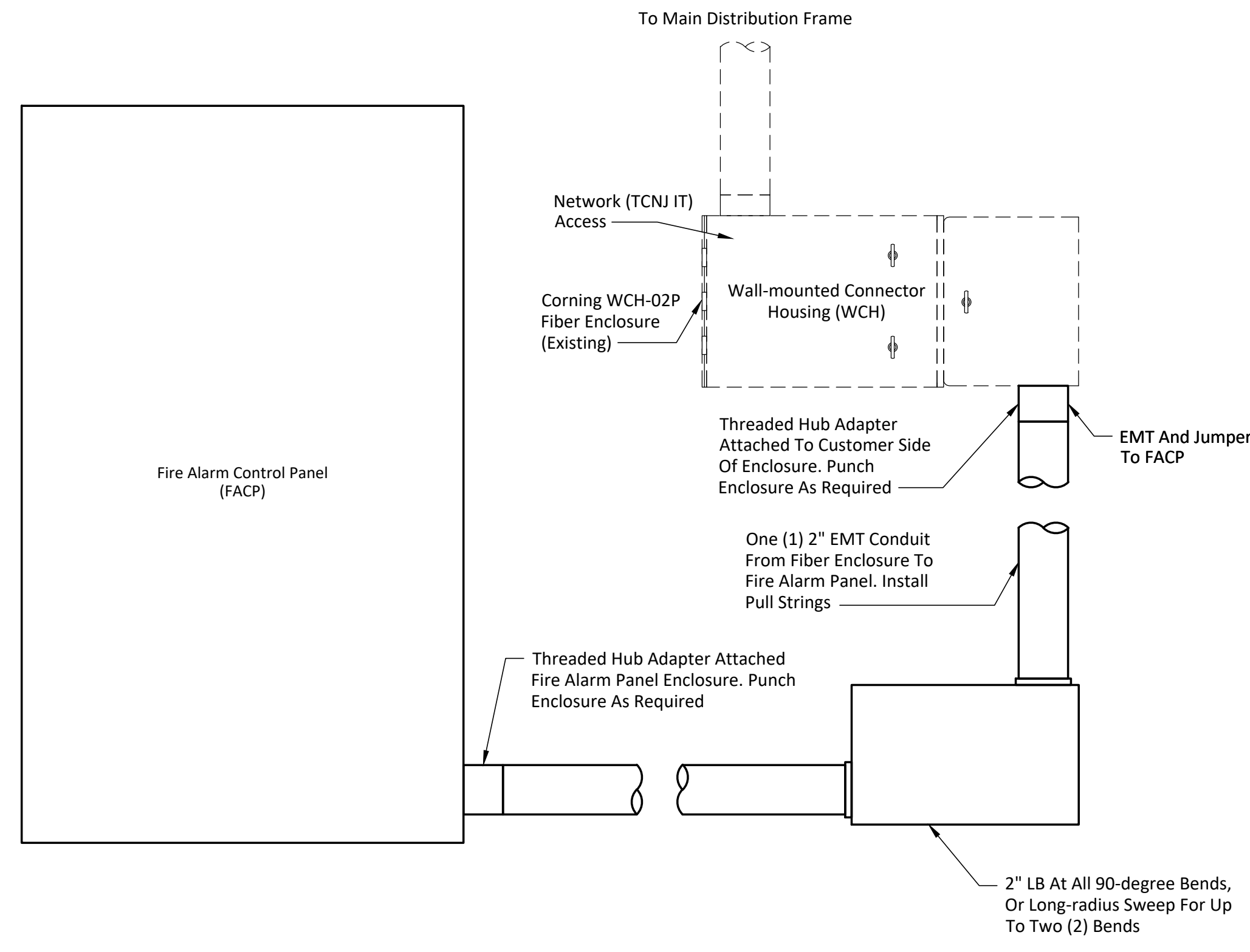
**FIRE ALARM PHOTOS**



**PHOTO A - HONEYWELL FIRE ALARM CONTROL PANEL**  
Honeywell FS90 Addressable Fire Alarm Control Panel Located Within Mechanical Room



**HONEYWELL FIRE ALARM DEVICES**  
Existing Honeywell Addressable Fire Alarm Devices Located Throughout The Building



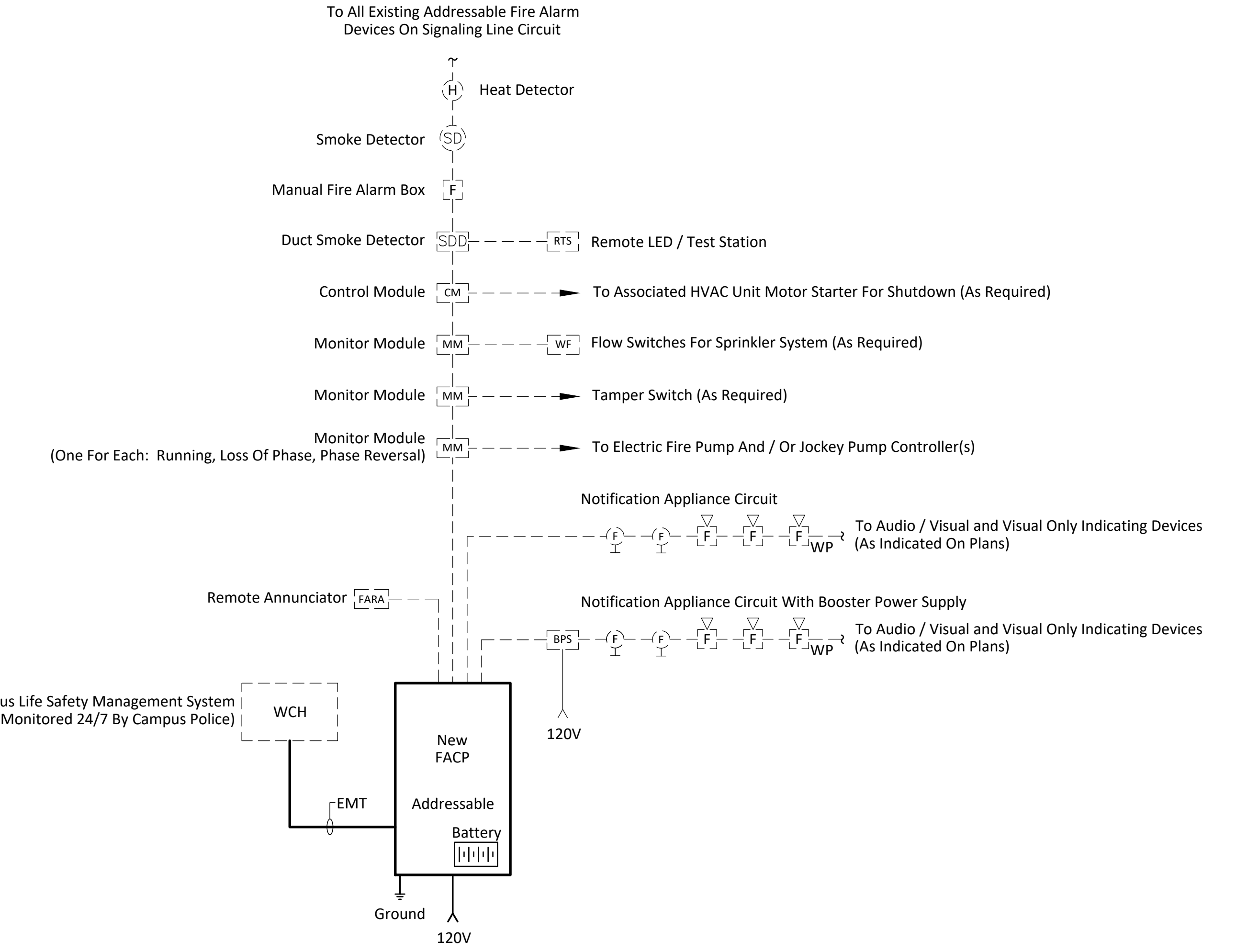
- NOTES:**
- Coordinate Position Installation of EMT into FACP Enclosure With Respect To Fiber Termination Connections in FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-Degree End Unless Swept Long-Radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

- Provide A New Fire Alarm Panel, Or Replace Existing Fire Alarm Panel, Or Replace Existing Fire Alarm System To Enable Addressable Communication With The New Campus Front End. To Count As One Of The Fully Addressable Buildings, Each Device Point Must Be Communicated To The Front End System.
- Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
- Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 2. Also Provide Duplex Fiber Jumper Cables Pre-terminated On Both Ends At The MDF Between Required Interconnection Points. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
- Provide Branch Circuit For The New Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.

**GENERAL NOTES**

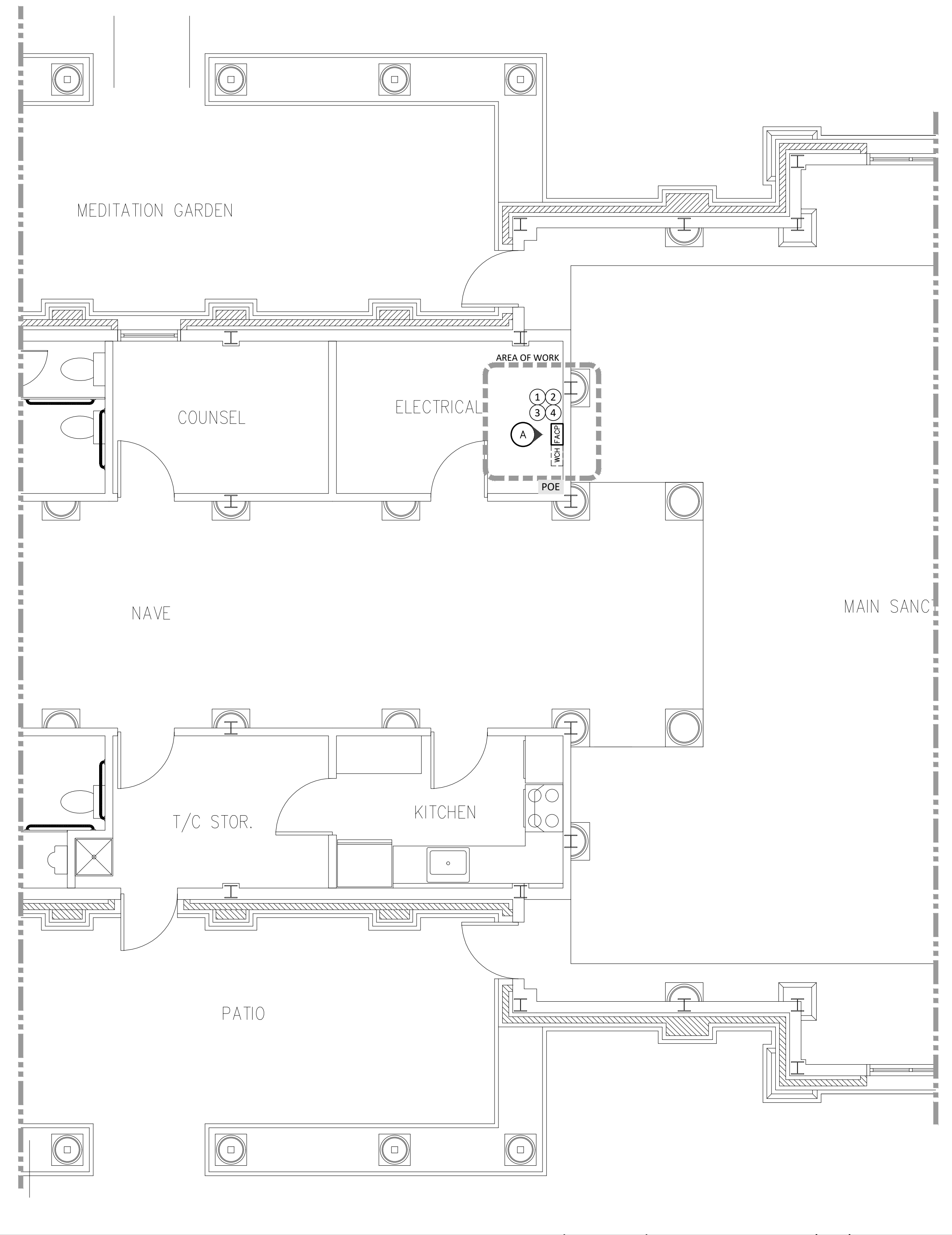
- The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
- The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments.
- Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Wire Mold In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
- Panel Board Circuit Breaker Supplying Fire Alarm Control Panel And Associated Equipment Shall Have A Handle "Lock On" Device.
- Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
- When Replacing An Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.



- NOTES:**
- General**
    - The Riser Above Depicts A "Honeywell" Basis Of Design With A New Honeywell FACP. All Existing Honeywell End Devices Would Be Compatible With The New FACP.
      - Install New FACP With Capacity Noted Below.
      - New Honeywell FACP Would Communicate The Point Identification Of Each Device To The New Front End.
      - This Building Would Be Considered A Fully Addressable Building.
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment**
    - The Spiritual Center Is Currently Covered By Fire Notification And Detection / Initiation Devices From An Addressable Honeywell FS90 System.
    - Fire Alarm Fiber Jumper Is To Be Brought Into Wall Mounted Connector Housing In The Vicinity Of The FACP.
  - Wiring**
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware. See Sheet E102 For Location Of Main Electric Room.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - The New FACP Shall Contain A Minimum Of 30% Spare Capacity Above The Total Amount Of Existing Devices Connected To The Existing FACP Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
    - Surge Protector To Be Provided For Each 120V Power Supply Circuit, Refer To Specifications For Further Information.
  - Testing**
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

**FIRE ALARM RISER** Scale: NTS Drawing: **E101** Detail: **01**

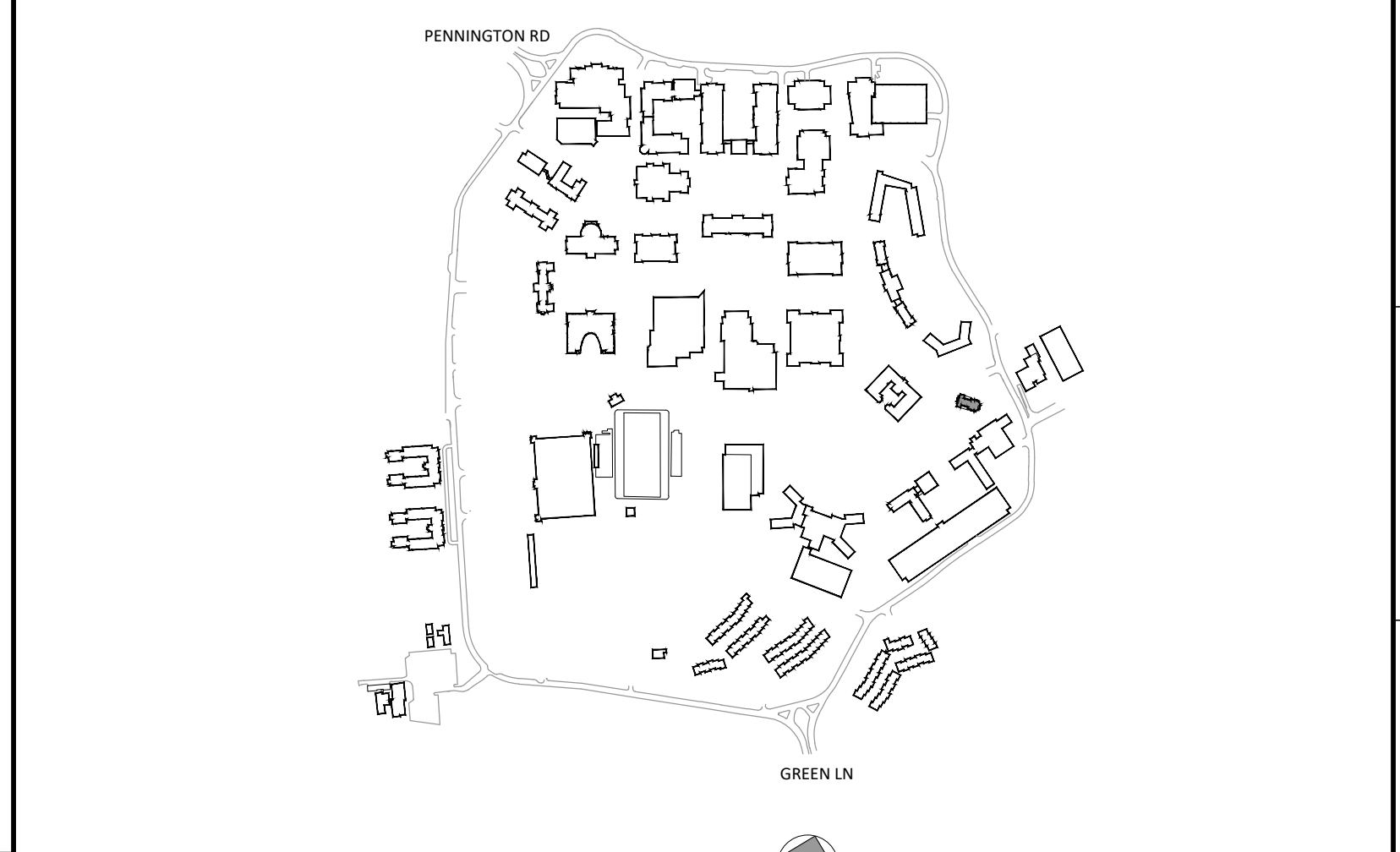
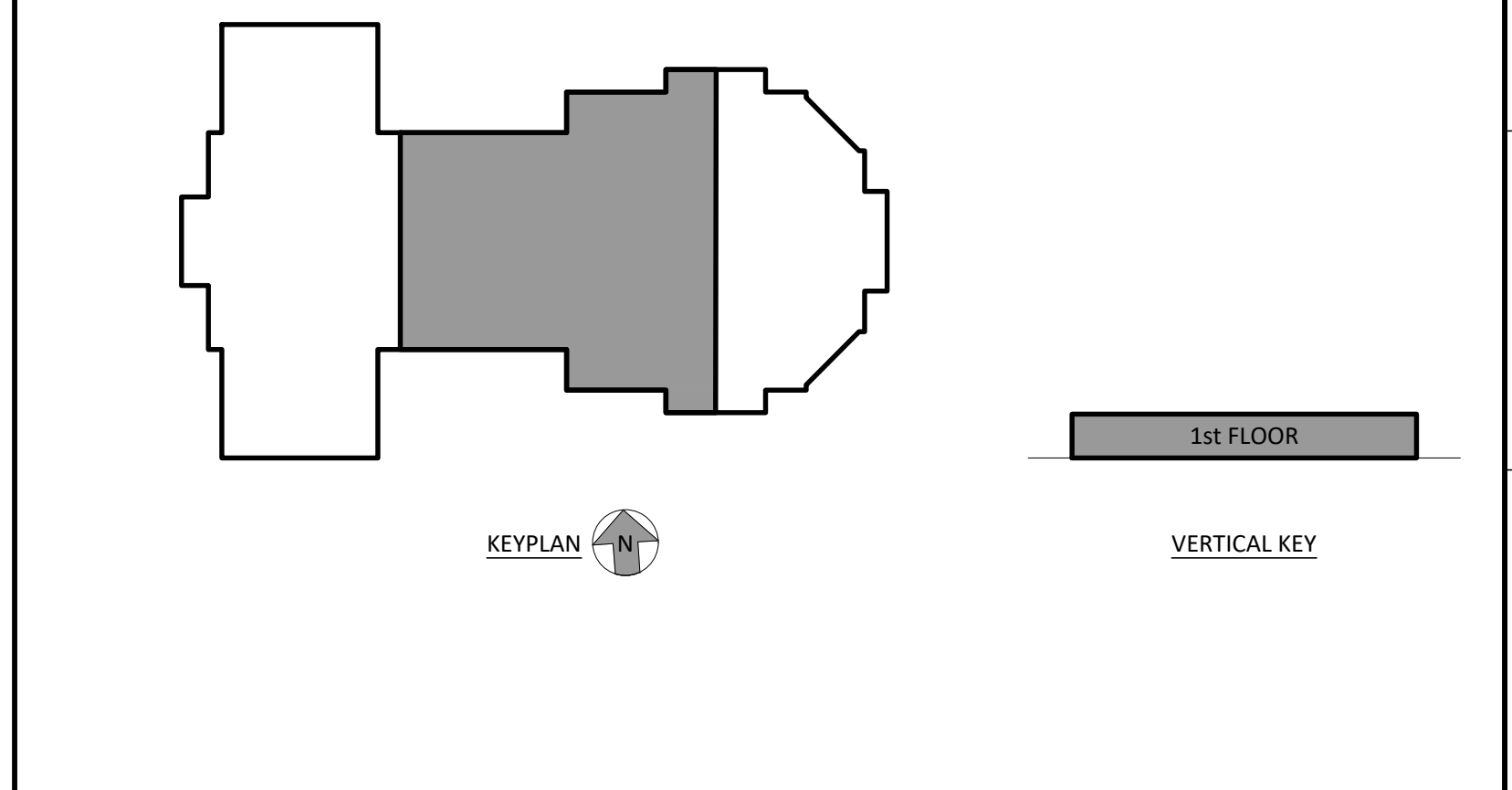
**FIRE ALARM FIBER ENCLOSURE INSTALLATION** Scale: NTS Drawing: **E101** Detail: **02**



**PARTIAL FLOOR PLAN - FIRST FLOOR** Scale: 1/4"=1'-0" Drawing: **E101** Detail: **03**

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
FACP	Fire Alarm Control Panel	FACP	Fire Alarm Control Panel
WCH	Existing Wall-Mounted Connector Housing	EMT	Electrical Metallic Tubing
FACP	Existing Fire Alarm Control Panel	CM	Control Module
[Symbol]	New Equipment	MM	Monitor Module
[Symbol]	Existing Equipment	WCH	Wall-Mounted Connector Housing
⊙	Photo Tag	POE	Point Of Entry
→	Connect To Existing		



title: **FIRE ALARM PANEL REPLACEMENT SPIRITUAL CENTER** dwg. no.: **E101-SPRT**

scale: AS SHOWN drawn by: SC checked by: SF date: 5/03/2020

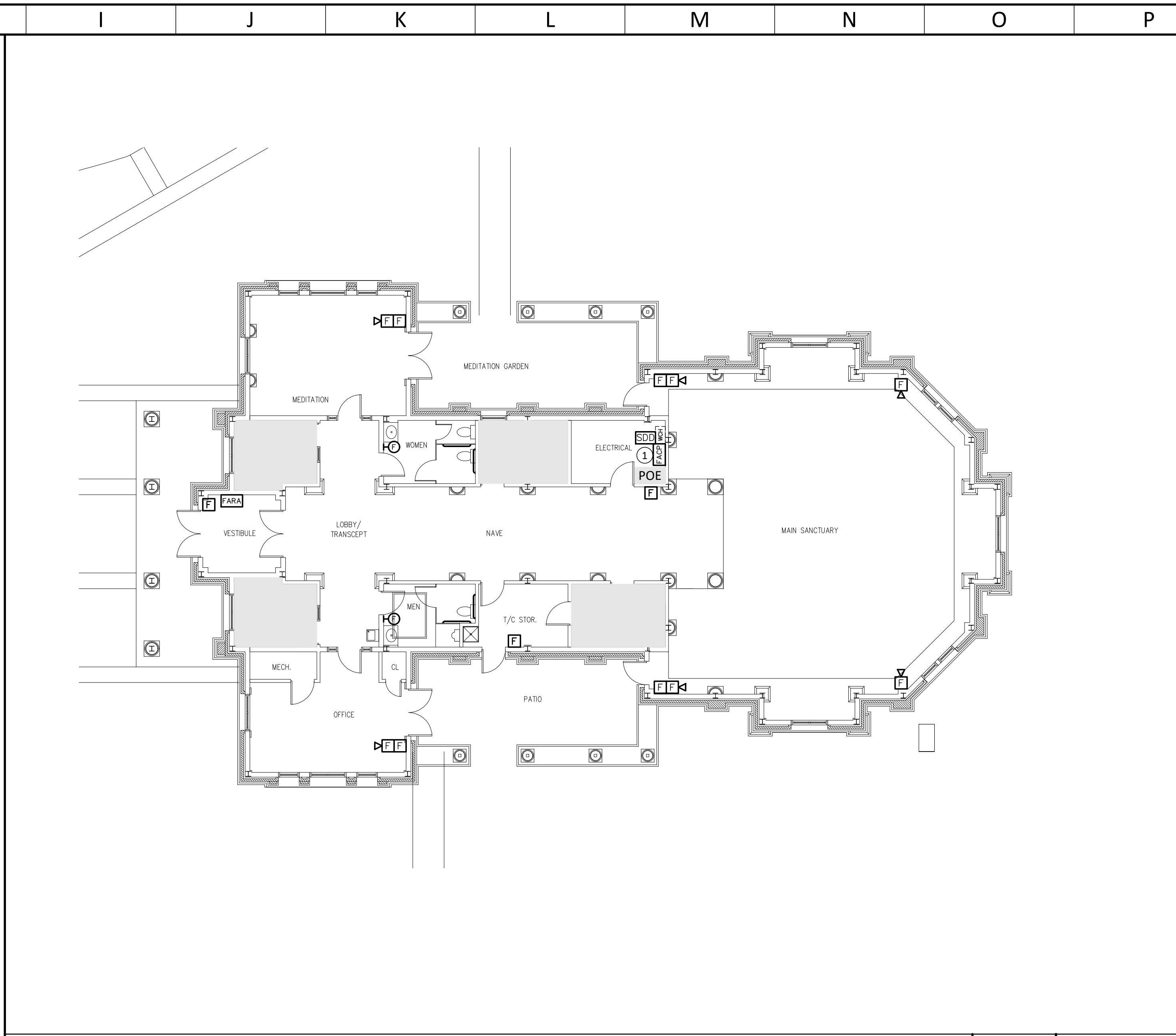
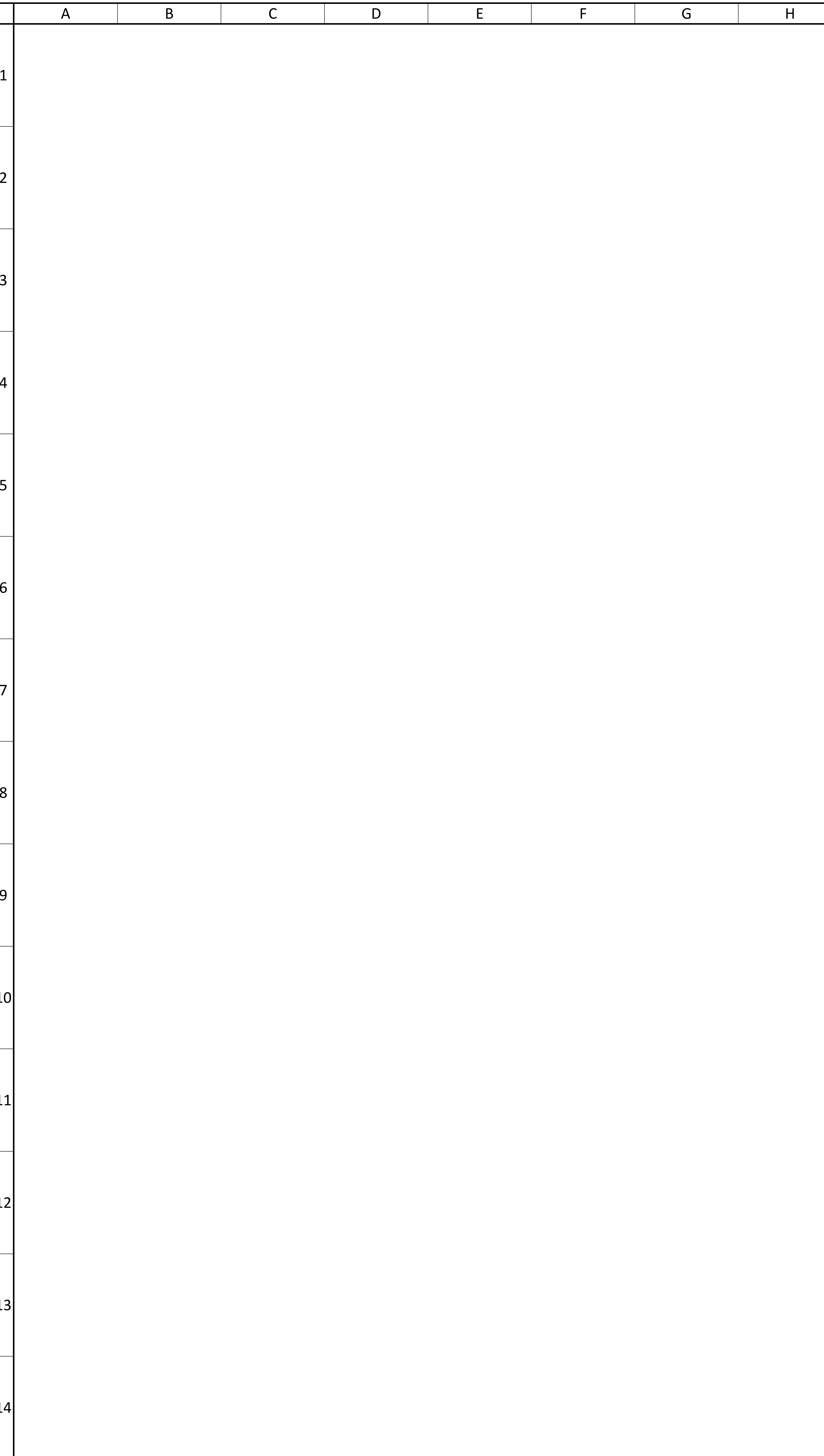
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265 Industrial Way West, Eatontown, N.J. 07724  
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project: **TCNJ - CAMPUS FIRE ALARM PROJECT PART B - HARDWARE & SOFTWARE UPGRADES 2000 PENNINGTON ROAD, EWING NJ, 08618**

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**FIRST FLOOR LAYOUT** Scale: NTS Drawing: **E102** Detail: **01**

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

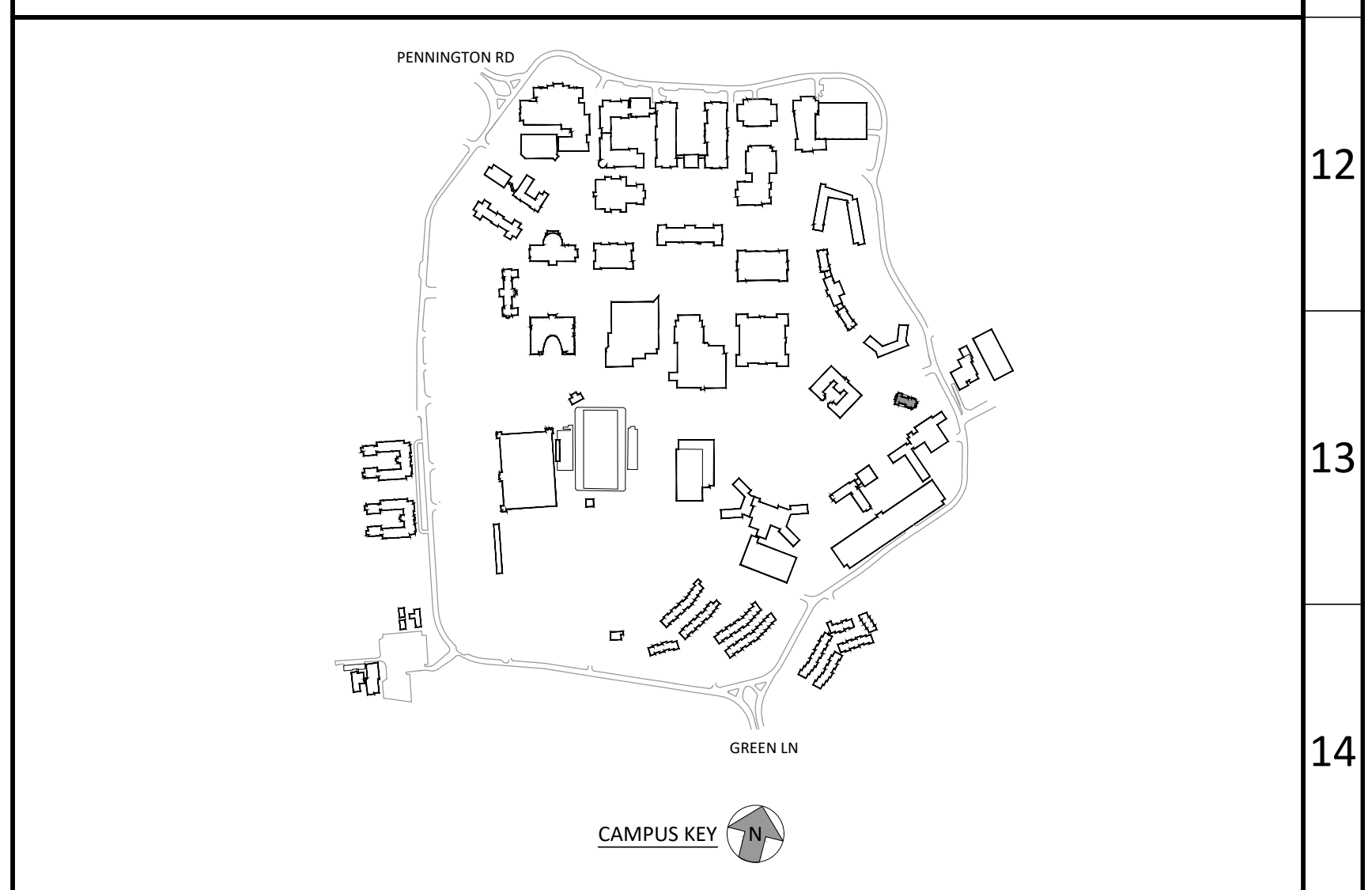
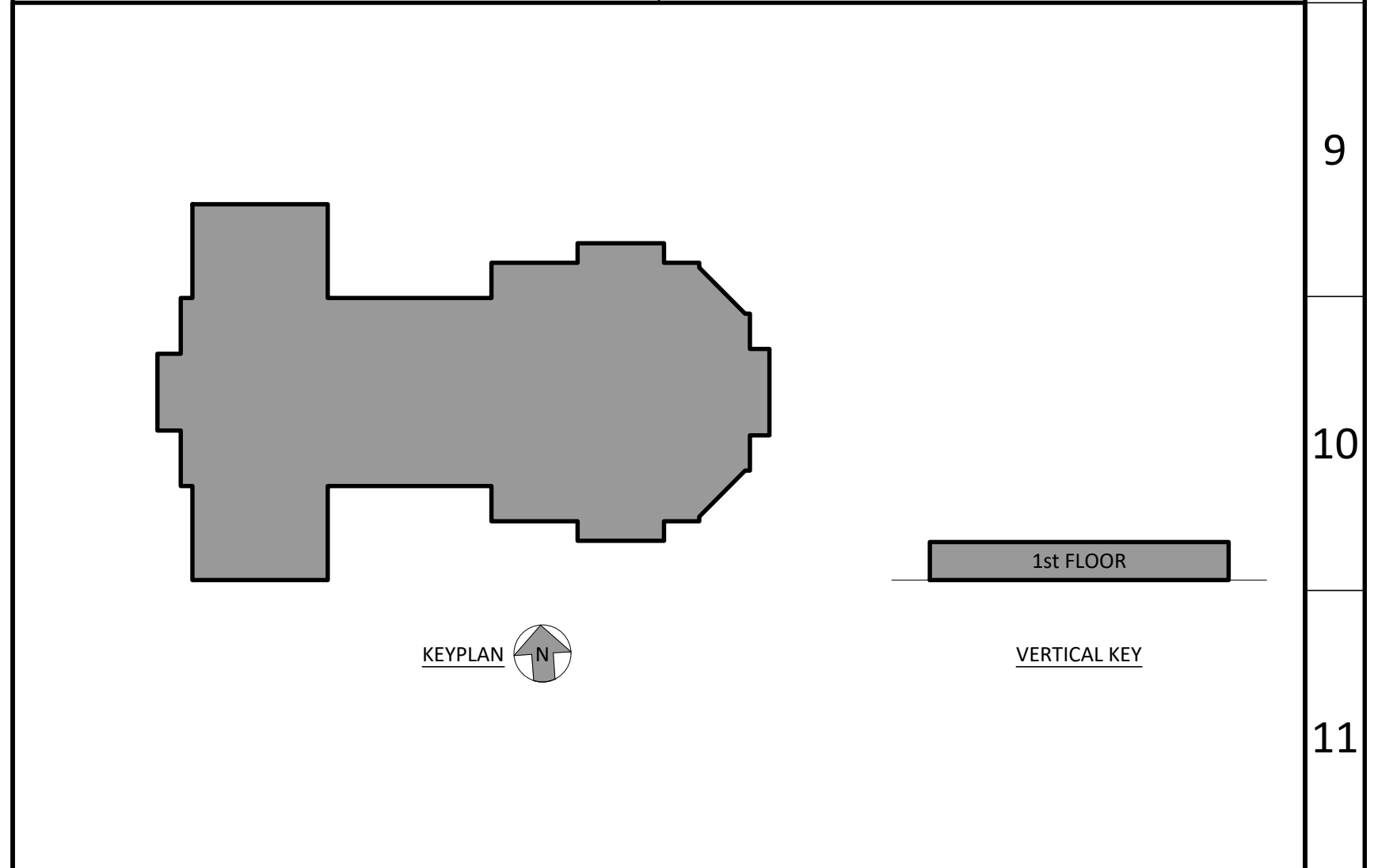
1. Existing Fire Alarm Control Panel.

**GENERAL NOTES**

1. This Drawing Is Provided For Reference Only And Includes Existing Fire Alarm Devices Noted During A Visual Walk Through To Provide An Understanding Of The Existing Level Of Detection Within Each Building. The Intent Of This Reference Drawing Is To Provide A Baseline Or Minimum Level Of Protection That Shall Be Maintained In Within The Building. It Is Not Intended To Depict The Requirements For A Complete System Replacement Or Layout Of New Devices For This Building.

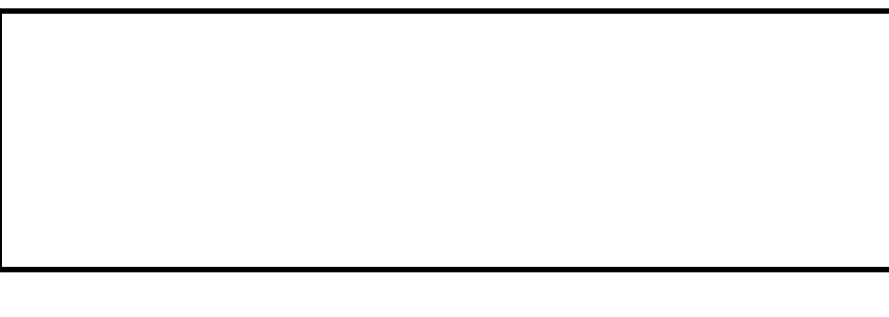
**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Pull Station	□	No Access
S	Strobe Only	⊙	New Smoke Detector
H	Horn/Strobe	⊕	New Manual Pull Station
SD	Smoke Detector	⊙	New Strobe
SD-ER	Smoke Detector (ER Indicates Elevator Recall)	⊕	New Horn / Strobe
SD-SB	Smoke Detector With Sounder Base	⊙	Photo Location Indicator
HD	Heat Detector, Combination Fixed Temperature And Rate Of Rise	FACP	Fire Alarm Control Panel
CO	CO Detector	CO	Carbon Monoxide
DMSD	Duct Mounted Smoke Detector	POE	Point Of Entry
FACP	Fire Alarm Control Panel		
FARA	Fire Alarm Remote Annunciator Panel		
FABP	Fire Alarm Booster Panel		
TS	Fire Sprinkler Tamper Switch		
FS	Fire Sprinkler Flow Switch		
WCH	Existing Wall Mounted Connector Housing		



ITEM	DATE	ISSUE DESCRIPTION	ITEM	DATE	ISSUE DESCRIPTION
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Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018



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265 Industrial Way West, Eatontown, N.J. 07724  
Questions For DLB Call: Anthony Laskosky  
DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
SPIRITUAL CENTER  
scale AS SHOWN drawn by SC checked by SF date 5/03/2020  
dwg. no.  
**E102-SPRT**



PHOTO A - INTERMEDIARY FIRE ALARM CONTROL PANEL  
Honeywell FS90 Intermediary Fire Alarm Control Panel  
Located Within Electrical Room To Be Replaced.



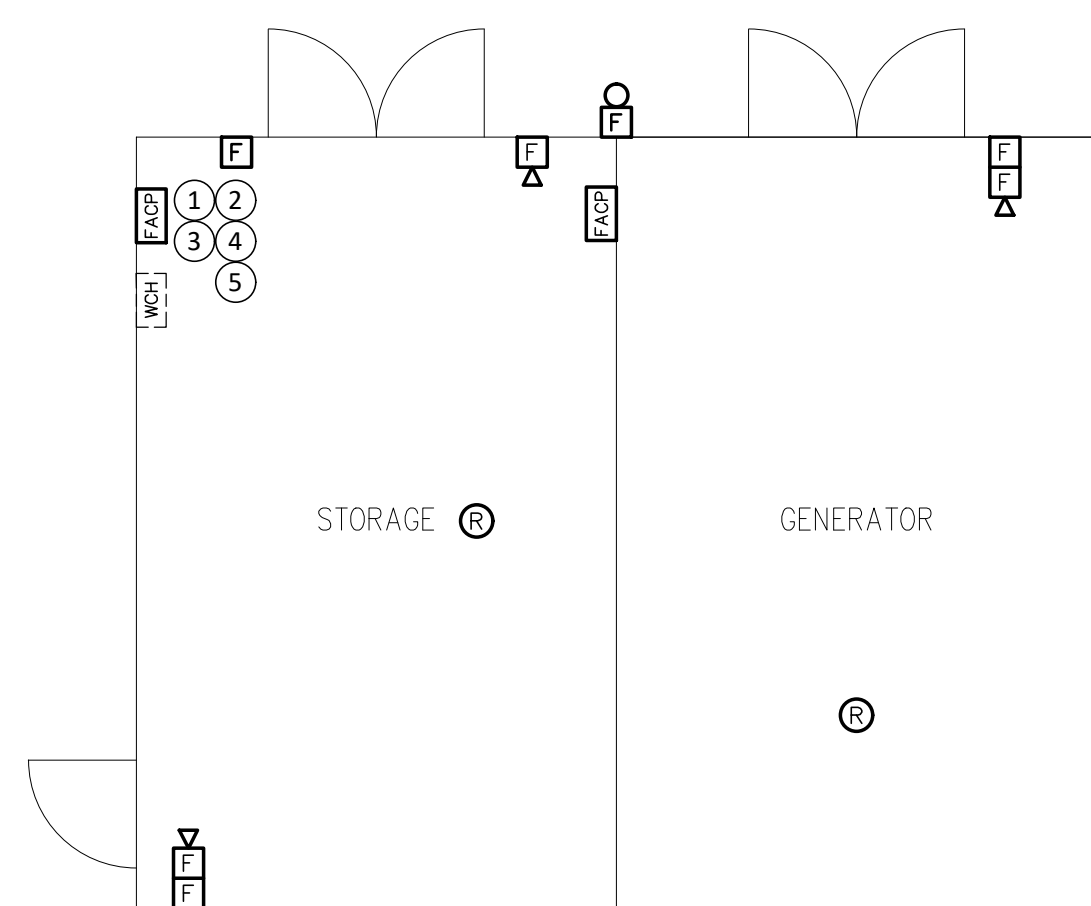
PHOTO B - SIMPLEX FIRE ALARM CONTROL PANEL  
Simplex 2001 Fire Alarm Control Panel Located  
Within Electrical Room



**SECOND FLOOR**



**FIRST FLOOR**



**GENERATOR**

**GENERATOR AND PRESS BOX LAYOUT**

Scale: NTS  
Drawing: E101  
Detail: 01

**KEY NOTES (SYMBOLS ①, ②, ETC.)**

1. Provide New Fire Alarm Panel.
2. Provide UL Listed Alarm System Loop Circuit Surge Protection For Each 24V Alarm System Loop Circuits In A Field-Replaceable Module. Includes Hardwired Mounting Base For Each Module.
3. Provide Two Duplex Fiber Jumper Cables Pre-terminated On Both Ends, Between The Existing WCH And Fire Alarm Control Panel As Per Detail 3 Sheet E200. Contractor Shall Coordinate And Confirm Jumper Connection Types, Fiber Type, Length, Routing Conditions, Etc With Field Conditions. Coordinate With TCNJ IT Department For Fiber Connection And Labeling Information.
4. Contractor Shall Coordinate And Confirm Jumper Length With Field Conditions / Routing Distance Between MDF WCH And FACP. Coordinate With TCNJ IT Department For Specific Fiber Connection Information And Labeling.
5. Provide Branch Circuit For Fire Alarm Panel From Existing Electrical Panel In Electric Room That Currently Supplies The Existing Fire Alarm Panel. Utilize 2#12, #12G In 3/4" Conduit And Provide New 20Amp Circuit Breaker (Red And Clearly Identify FACP Circuit). Match Existing Type/Ratings For Circuit Breaker.

**GENERAL NOTES**

1. The Fire Alarm Plan Shows The General Layout And Intent Of The Fire Alarm System. It Does Not Necessarily Reflect Exact Quantities Required By Code. The Contractor Shall Determine The Actual Quantity And Location Of Devices Required Based Upon Actual Field Conditions Required As Per NFPA 72.
2. The Fire Alarm System Shall Consist Of Smoke Detectors, Heat Detectors, Manual Fire Alarm Box Placed At Each Exterior Exit. The Fire Alarm System Shall Consist Of Speaker And Strobes To Provide Audible And Visual Annunciation. The Entire System Shall Be Controlled Via The Fire Alarm Control Panel.
3. The Fire Alarm System Shall Comply With NFPA 72 And All Local Codes And Amendments.
4. All HVAC Duct Smoke Detectors Shall Be Monitored By The Fire Alarm Control Panel. Duct Smoke Detectors Shall Be Provided With An Appropriate Environmental Housing, Addressable Control Relay, Remote Indicator Test Station, And Sampling Tube. Coordinate Location Of Remote Indicator Test Station With Architect. Coordinate Exact Location And Quantity Of Devices With Field Conditions.
5. Provide Fire Alarm Wiring Connections To Each Non-Addressable Device Via Monitor Modules.
6. Fire Alarm Cabling Routed Above A Finished Ceiling Can Be Routed Utilizing Dedicated J-Hooks Or Other Approved Means Of Support. Cabling Shall Not Be Bundled With Other Cabling Or Supported From Existing Conduit, Piping, Cabling. Fire Alarm Cabling Shall Be Plenum Rated And Shall Not Be Spliced. Fire Alarm Wiring Is Permitted To Be Installed In Open Raceways Where Concealed. Fire Alarm Rated MC Cable Is Acceptable For Concealed Locations. All Cabling Shall Be Sleeved When Passing Thru A Wall Using Conduit Sleeves With Bushings And Fire Stopped.
7. Fire Alarm Cabling That Cannot Be Concealed Shall Be Neatly Surface Mounted Utilizing Surface Metal Raceway In Finished Areas Or EMT In Non-Finished Areas. All Exposed EMT Shall Be Prepped And Painted To Match Adjacent Wall Surface.
8. All Conduits Entering / Leaving The Building Shall Be Sealed At The Building's Exterior To Prevent Moisture Within The Raceway From Entering The Facility. The Sealing Method Shall Be Compatible With The Conduit And Conductors Installed.
9. Coordinate The Exact Quantity And Location Of Water Flow And Tamper Switches With Field Quantities. Provide Fire Alarm Wiring Connections To Each Device.
10. Panel Board Circuit Breaker Supplying Fire Alarm Control Panel and Associated Equipment Shall Have A Handle "Lock On" Device.
11. Visual Fire Alarms (Strobes) Shall Have Minimum 5'-0" Clearance From Any Obstructions. All The Strobes Shall Be Synchronized.
12. Provide Installation Testing Per NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.
13. Replace Any Acoustical Ceiling Tile Which Is Damaged During The Course Of Construction To Match Existing In All Respects.
14. When Replacing The Existing FACP It Is The Contractors Responsibility To Transfer All Systems That Are Currently Reporting To The Existing Panel. There Are Certain Panels That Monitor Accessory Systems Such As Security, Fire Shutters Clean Agent Systems, CO Detectors, Access Control Etc. Contractor Shall Survey The Buildings And Include All Accessory Systems And

**PROJECT OVERVIEW**

1. Project Description:
  - A. The Project Consists Of The Replacement Of The Existing Fire Alarm System With A New Addressable Fire Alarm System. The System Is Being Replaced Due To Its Age And Lack Of Availability Of Replacement Parts.
2. Overview:
  - A. The Following Is A Brief Overview Of The Existing System (Not Intended To Be All Inclusive):
    - 1) Fire Alarm Control Panel Currently Located In The Storage Room.
    - 2) Audible Devices Located In The Storage, Generator, and Press Box Areas.
  - B. The Following Is A Brief Scope Of The Work For This Project (Not Intended To Be All Inclusive):
    - 1) New Addressable Fire Alarm System. Fire Alarm Control Panel Will Be Located In The Storage Room.
    - 2) Fire Alarm Shop Drawings Shall Meet The Requirements Of IBC 2015 (NJ Edition) Section 907.1.2 And Shall Be Submitted For Review And Approval Prior To System Installation.
    - 3) Removal And Disposal Of Existing Fire Alarm System.
    - 4) Patch, Repair, And Refinish Walls, Floors, Ceilings And Other Finished Surfaces Affected By Removal Of Existing System.
    - 5) New Fire Alarm Integration With Life Safety System.

**ELECTRICAL GENERAL NOTES**

- Electrical Wiring**
1. In General, Branch Circuit Wiring Is Not Shown On The Plan Drawings.
  2. The Minimum Branch Circuit Wiring Size Shall Be 2#12, #12 Ground In 3/4 Inch Conduit Unless Otherwise Noted.
- Wiring Methods**
1. General
    - A. In Finished Areas, Conceal All Wiring In Building Walls, Floors, And Above Finished Ceilings. Wiring May Be Run Exposed In Mechanical/Electrical Equipment Rooms, Electrical Closets, Utility Rooms.
    - B. For Devices Mounted To Block Walls : Approved Surface Mounted Raceway May Be Utilized.
    - C. Final Connections To Mechanical Equipment, Lighting Fixtures, Motors, Transformers, Instruments, And Control Devices Shall Be Flexible Conduit To Minimize Vibration Transmission.
  2. Indoors (Unclassified Areas)
    - A. Exposed: EMT Conduit With Steel Set Screw Fittings, Unless Otherwise Noted
    - B. In Dry Walls/Above Ceilings: EMT Conduit With Steel Set Screw Fittings (Type MC Clad Cable May Be Used For 1 Pole, 15 And 20 Amp Branch Circuits )
  3. Outdoors (Including Unconditioned Covered Areas)
    - A. Above Ground: RGS Threaded Conduit
    - B. Final Connections: Liquid-Tight Flexible Conduit

**Equipment Grounding**

1. An Insulated (Green) Equipment Ground Conductor(s) Shall Be Provided In All Branch Circuits. Utilizing The Conduit As The Equipment Grounding Conductor Is Not Acceptable.

**Electrical Enclosures And Terminations**

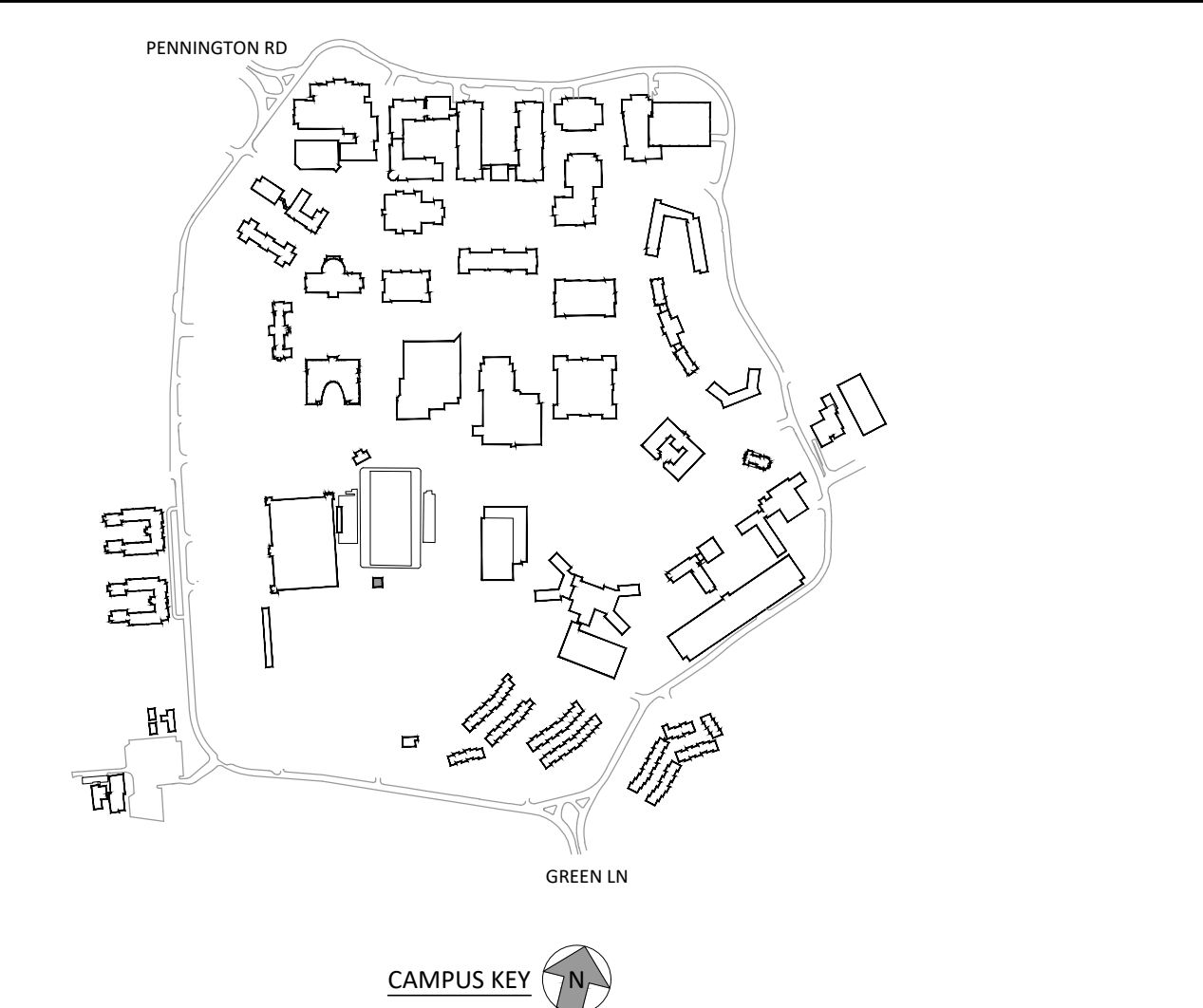
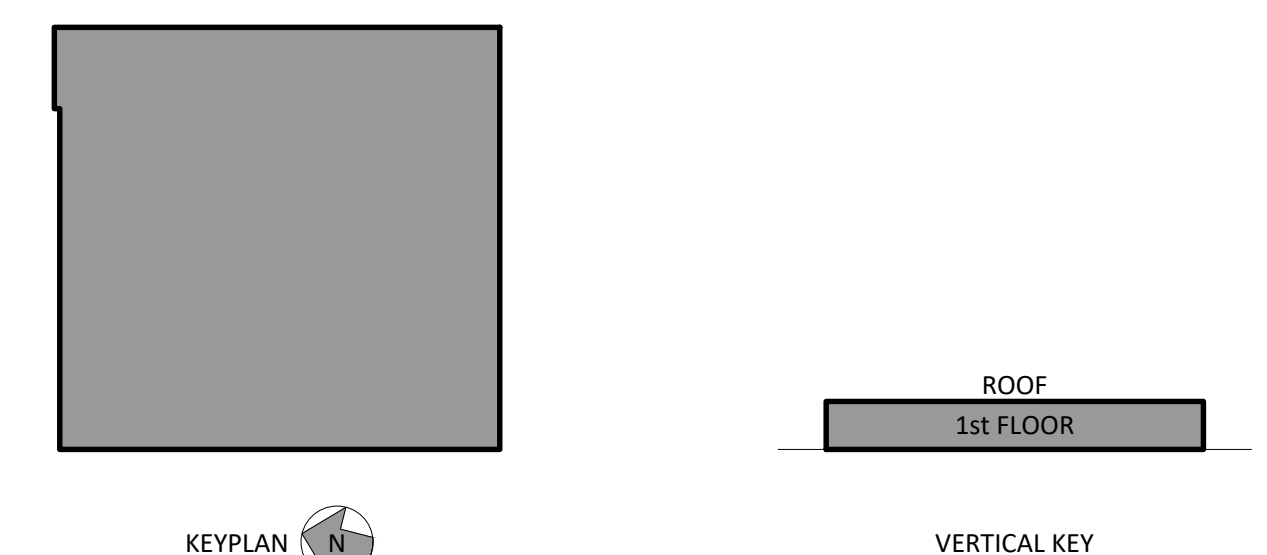
1. Electrical Equipment Enclosures Shall Be Provided As Listed Below Unless Otherwise Noted.
  - A. Indoors Unclassified Areas NEMA 1
  - B. Indoors Classified 'Damp' NEMA 1
  - C. Outdoors NEMA 3R
2. Electrical Terminations (Lugs, Terminals, Etc.) On All Equipment Shall Be Rated For Use With 75 Degree Celsius Conductors.
3. Firestopping
  - A. Provide UL Listed Fire Stopping Assemblies For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Fire-Partitioned Rooms.
  - B. Provide Sealant For Raceways And Wire Passing Through Floor Slots, Sleeves Or Openings In Non-Fire-Partitioned Rooms

**FIRE ALARM**

1. Fire Alarm Must Be Routed In Its Own Separate Pathway And Cannot Share Pathway With Any Other Infrastructure.
2. Provide Ceiling Mounted Smoke Detector At Each Fire Alarm Control Panel, Remote Power Panel, And Remote Annunciation Panel. Intermediary Devices Required To Integrate Said Systems On Their Shop Drawings.
3. Duct Smoke Detectors Shall Be Furnished And Installed As Part Of The Electrical Work.
  - A. Duct Mounted Smoke Detectors Shall Be Wired To Shut Down The Associated Unit And Annunciate At The Fire Alarm Control Panel.
  - B. Remote Reset Capability Shall Be Provided For Each Detector. Coordinate Location Of Test Switches In The Field With Owner So That They Are Accessible. Switches Shall Be Provided With Identification Label.
4. Locations Of Fire Alarm Devices And Equipment Shown On The Plan Drawings Is Diagrammatic. Exact Locations Shall Be Determined By The Electrical Contractor In Accordance With Field Conditions And The Following:
  - A. Ceiling Mounted Devices Shall Be Coordinated With Suspended Ceiling, Lighting Fixtures, Diffusers, Ductwork, Sprinkler Heads, Etc. And Per NFPA Requirements.
  - B. Wall Mounted Devices Shall Be Coordinated With Other Wall Mounted Devices, Wall Construction Type, Etc. And NFPA And IBC Requirements. Whenever Possible Devices Shall Be Mounted Flush Or Semi Flush. Surface Mounted Devices Will Be Permitted Where Approved By Engineer And Owner.

**PARTIAL SYMBOLS & ABBREVIATIONS**

Identifier	Description	Identifier	Description
F	Manual Fire Alarm Box	FAMA	Fire Alarm Remote Annunciator Panel
⊕	Fire Alarm Strobe	AMS	Ansul System Control Panel
V	Speaker / Strobe	SMD	Duct Mounted Smoke Detector
⊙ <sub>ER</sub>	Smoke Detector (ER Indicates Elevator Recall)	⊙	Heat Detector, Fixed Temperature (194°)
⊙	CO Detector		
⊙	Heat Detector, Combination Fixed Temperature And Rate Of Rise		
FACP	Fire Alarm Control Panel		



Drawings Based On Visual Inspection Site Walk Through Completed During Nov 2017 - March 2018

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DLB Project ID: 47211 Phone: 732-927-5038

project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
2000 PENNINGTON ROAD,  
EWING NJ, 08618

title  
FIRE ALARM - EXISTING LAYOUT  
STADIUM GENERATOR / PRESS BOX BUILDING  
scale AS SHOWN  
drawn by SC  
checked by SF  
date 5/03/2020

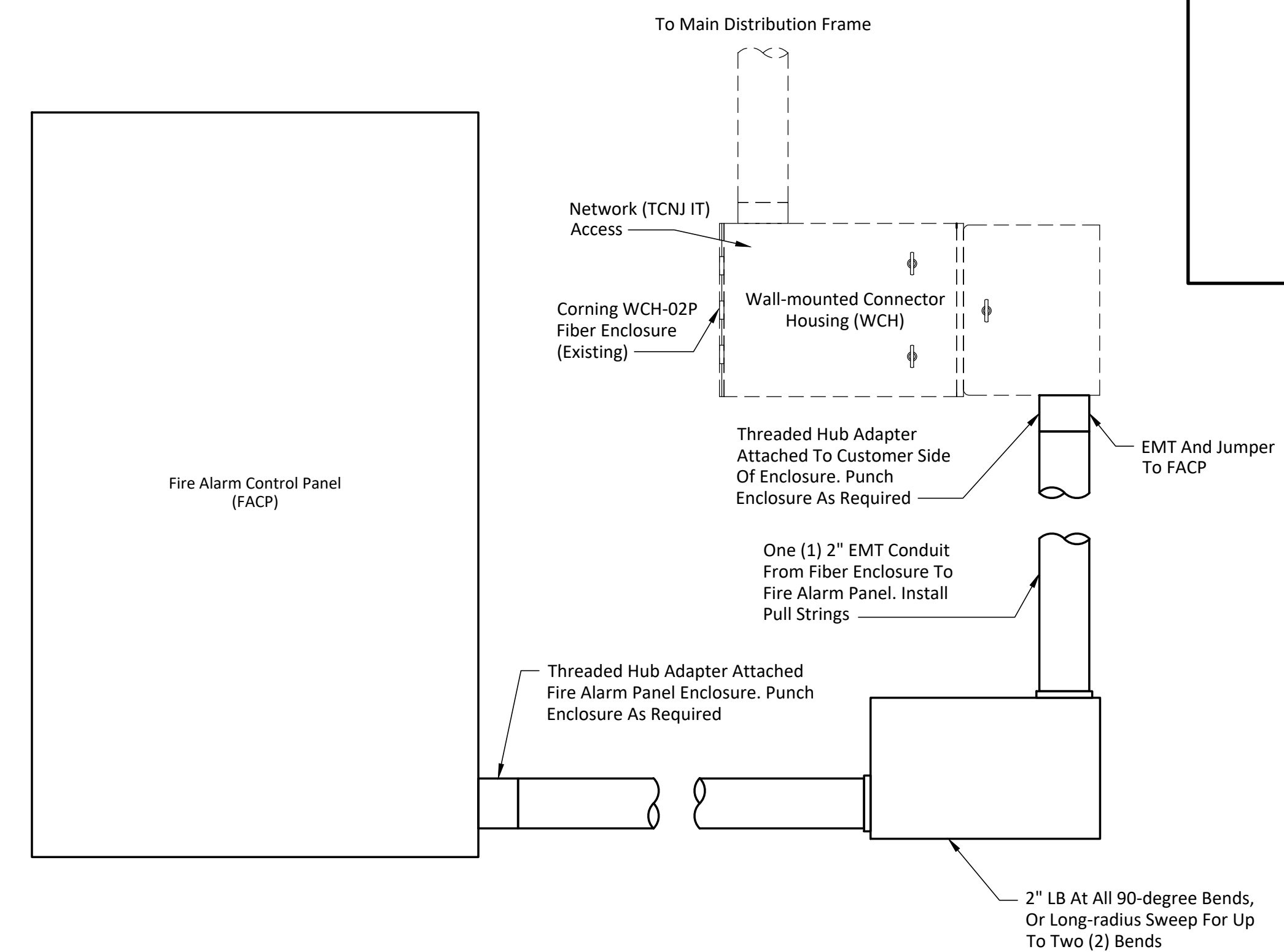
dwg. no.  
**E101-STAD**

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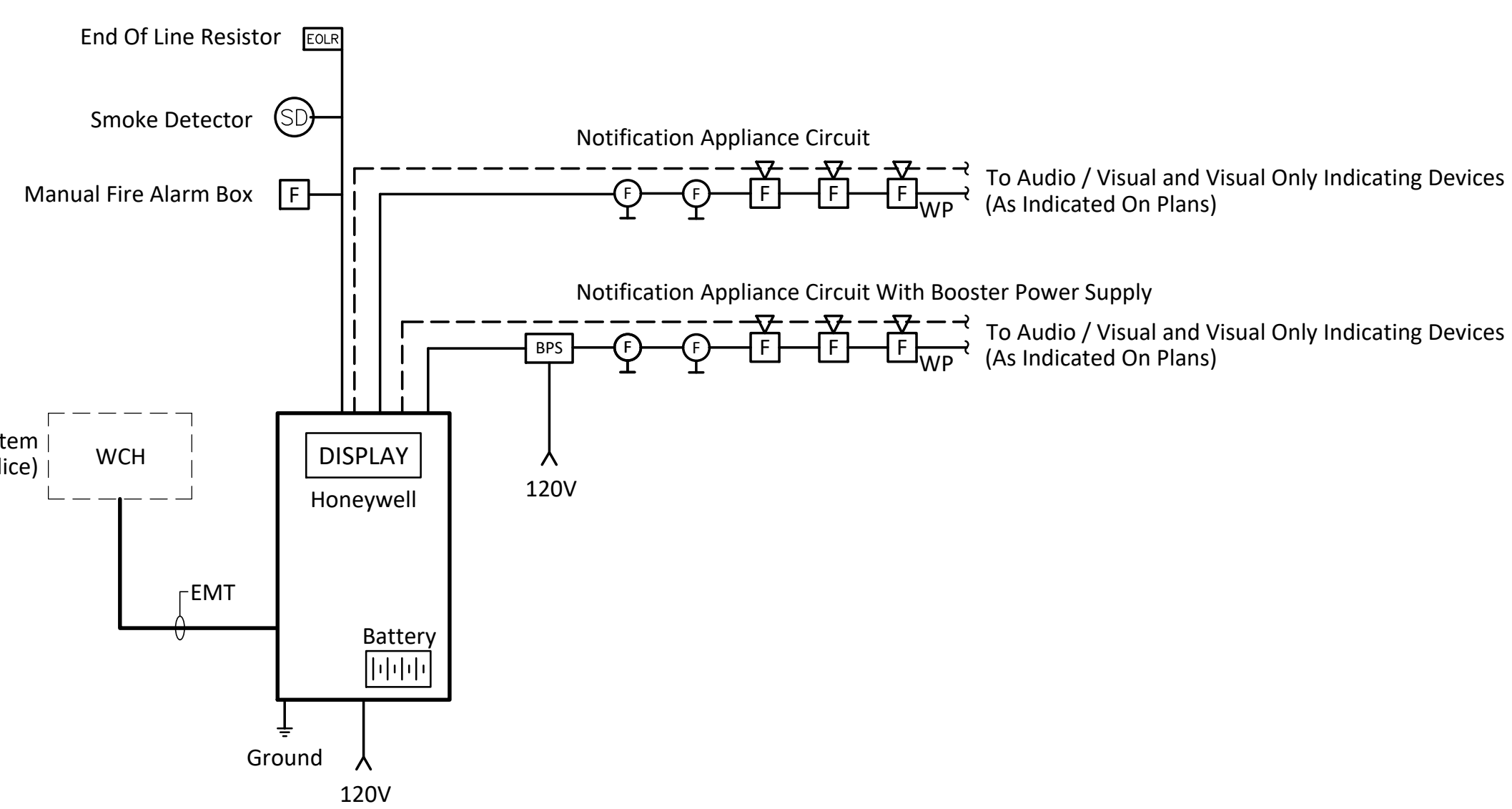
FIRE ALARM SYSTEM RESPONSE MATRIX										
Initiation Device Or Input		Response								
System	Component	Building			FACP			Annunciator		Central Station
		Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building	Activate Audio / Visual Signals Throughout Building
General	Manual Fire Alarm Box	X	X	X	X	X	X	X	X	X
	Heat Detector	X	X	X	X	X	X	X	X	X
	Smoke Detector	X	X	X	X	X	X	X	X	X
	FACP Troubles Per NFPA 72					X				X

RESPONSE MATRIX Scale: NTS Drawing: E200 Detail: 01



- NOTES:
- Coordinate Position Installation Of EMT Into FACP Enclosure With Respect To Fiber Termination Connections In FACP Enclosure, And With TCNJ/IT
  - Install 2" EMT From Fiber Enclosure To FACP Enclosure. Use LBs At Each 90-degree End Unless Swept Long-radius Bends Can Be Installed. No More Than (2) 90-degree Bends Are Permitted Before An Accessible Pulling Point Shall Be Furnished.
  - Install Fiber Jumpers Between WCH And FACP.

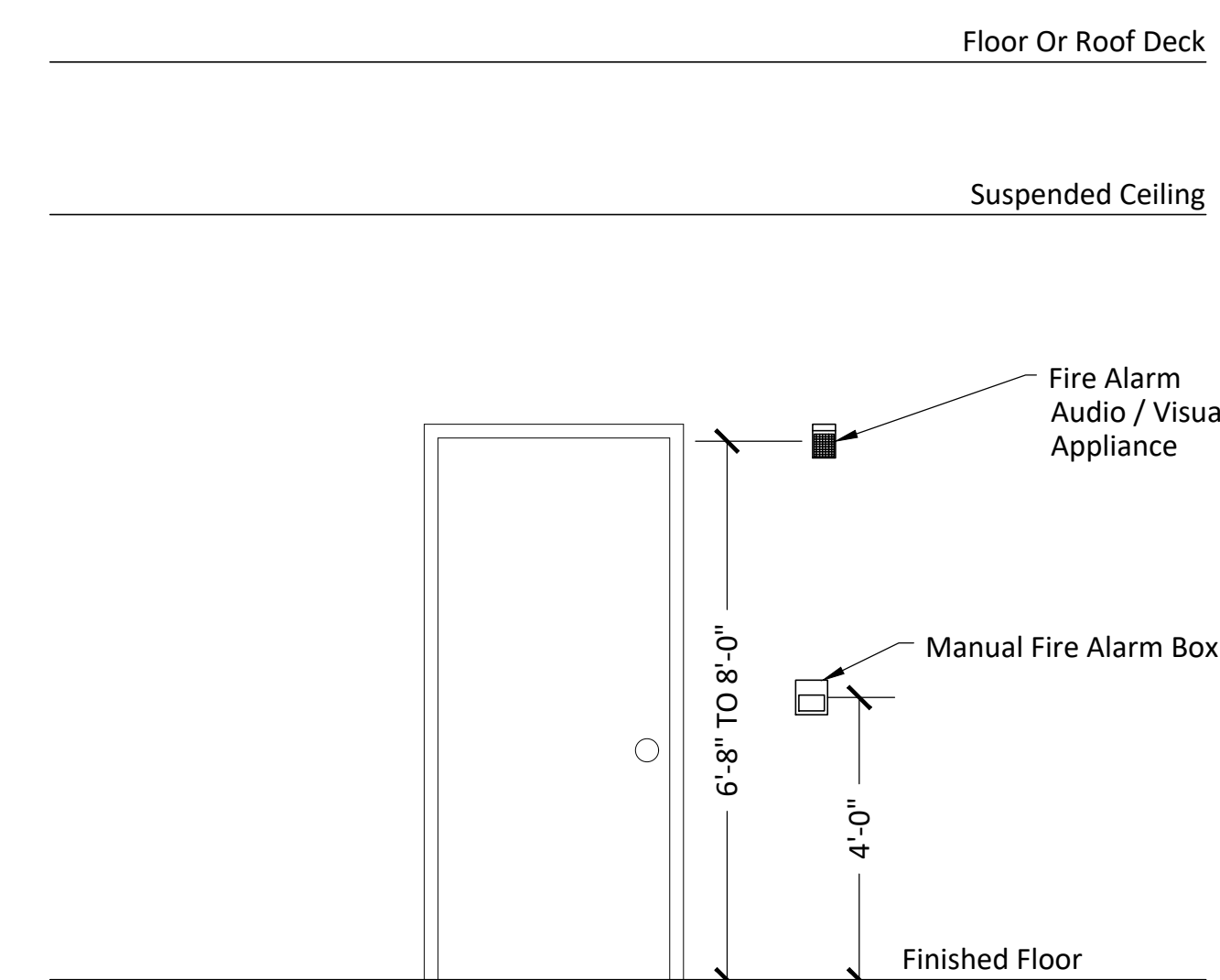
FIRE ALARM FIBER ENCLOSURE INSTALLATION Scale: NTS Drawing: E200 Detail: 03



MARK	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL FIRE ALARM BOX
FV	FIRE ALARM AUDIO / VISUAL DEVICE
FS	FIRE ALARM STROBE VISUAL DEVICE
H	HEAT DETECTOR - FIXED TEMPERATURE (134°)
R	HEAT DETECTOR - COMBINATION FIXED TEMPERATURE AND RATE OF RISE
SD	SMOKE DETECTOR
CM	FIRE ALARM CONTROL MODULE
MM	FIRE ALARM MONITOR MODULE
BPS	NOTIFICATION APPLIANCE CIRCUIT BOOSTER POWER SUPPLY
—	POWER OR SIGNALING LINE CIRCUIT
WP	WEATHERPROOF

- NOTES:
- General
    - The Schematic Riser Diagram Is Intended As An Overview Of The Fire Alarm System Including The General Configuration And Type Of Devices Found Throughout The Building.
    - An Addressable Type, Fire Alarm System Shall Be Installed Throughout The Building. This System Shall Consist Of A Central Fire Alarm Control Panel (FACP), Detection Devices, And Notification Appliances.
    - The FACP Shall Connect The Campus Life Safety Management System.
  - Equipment
    - Refer To Floor Plan Drawings For Additional Provisions That Shall Be Provided.
    - Provide All Required Expansion Panels, PC Boards, Power Supplies, Batteries, Amplifiers, Branch Circuits, And NAC Signal Power Boosters, For A Complete And Operable Fire Alarm System.
    - Field Verify Exact Location, Quantity, And Voltage Of Duct Smoke Detectors.
    - Provide Remote LED Indicator / Test Station At Accessible Locations For RTU(s) Equipped With Duct Smoke Detector.
  - Wiring
    - The FACP Power Supply Shall Be Derived From A Dedicated, Lockable Electrical Circuit (Colored Red) As Well As An Internal Battery Sized To Provide 15 Minutes Of Alarm Condition After 24 Hours Of Operation Without Normal Power And Include 20% Additional Spare Capacity.
    - The FACP Ground Shall Consist Of An #8 AWG Conductor In 3/4" Conduit From The Fire Alarm Control Panel (FACP) To The Building's Grounding Electrode System. Bond To Metallic Conduit On Both Ends With Listed Hardware.
    - The Fire Alarm System's Wiring Method Shall Be Class A Rated Between Panels (Where Applicable) And Class B Rated For Detection Devices And Notification Appliances.
    - Each Notification Appliance Circuit Shall Contain A Minimum Of 30% Spare Capacity. Provide Fire Alarm Panel With Hardware For Two (2) Spare Circuits.
  - Testing
    - Perform A Final Acceptance Test Of The Entire Fire Alarm System In Accordance With All Applicable Codes Including The International Building Code (IBC) And NFPA 72 By NICET Level II Or Greater Certified Fire Alarm Technician.

FIRE ALARM RISER Scale: NTS Drawing: E200 Detail: 02



SYMBOLS LEGEND	
Plan View	Detail View
[Symbol]	[Symbol]
[Symbol]	[Symbol]

TYPICAL FIRE ALARM DEVICE MOUNTING HEIGHT Scale: NTS Drawing: E200 Detail: 04

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project  
TCNJ - CAMPUS FIRE ALARM PROJECT  
PART B - HARDWARE & SOFTWARE UPGRADES  
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title  
FIRE ALARM PANEL REPLACEMENT  
STADIUM GENERATOR / PRESS BOX BUILDING  
scale  
NTS  
drawn by  
SC  
checked by  
SF  
date  
5/03/2020

dwg. no.  
**E200-STAD**

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