

ABBREVIATIONS

A OR AMP	AMPERE
ACU	AUTONOMOUS CONTROL UNIT
A.F.C	ABOVE FINISHED CEILING
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ANNUN.	ANNUNCIATOR
ARCH.	ARCHITECT
CKT	CIRCUIT
CL	CENTERLINE
CLG.	CEILING
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONTR.	CONTRACTOR
DIA.	DIAMETER
DWG	DRAWING
DP	DISTRIBUTION PANEL
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQUIP.	EQUIPMENT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FAXP	FIRE ALARM TRANSPONDER PANEL
F.B.O.	FURNISHED BY OWNER
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FL.	FLOOR
FS	FLOW SWITCH
GPM	GALLON PER MINUTE
HP	HORSEPOWER
HT.	HEIGHT
HVAC	HEATING, VENTILATING, AIR CONDITIONING
JB	JUNCTION BOX
KW	KILOWATT
LOC	LOCAL OPERATING CONSOLE
LT.	LIGHT
LV	LOW VOLTAGE
MAX.	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MFR.	MANUFACTURER
MIN.	MINIMUM
MTD.	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
N.T.S.	NOT TO SCALE
PIV	POST INDICATOR VALVE
PNL.	PANEL
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PWR.	POWER
REQ.	REQUIRED
SLV.	SLEEVE
SP	STANDPIPE
SPEC.	SPECIFICATION
SPR	SPRINKLER
STD.	STANDARD
SW.	SWITCH
SYS.	SYSTEM
TEMP.	TEMPERATURE
TYP.	TYPICAL
U.L.	UNDERWRITER'S LABORATORY
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLT
VCC	VOICE COMMAND CENTER
W	WIRE
WP	WEATHERPROOF
WSP	WET STANDPIPE
XDR	TRANSDUCER
XMTR	TRANSMITTER
XPDR	TRANSPONDER
*	DISTANCE DOWN FROM CEILING
+	DISTANCE ABOVE FINISHED FLOOR

FIRE ALARM SYMBOLS

	FIRE ALARM CONTROL PANEL / MASS NOTIFICATION AUTONOMOUS CONTROL UNIT
	FIRE ALARM ANNUNCIATOR
	STROBE POWER EXTENDER
	FIRE ALARM TRANSPONDER
	MANUAL PULL STATION
	INTERFACE MODULE
	HEAT DETECTOR (HEAT DETECTOR CONTROL FUNCTION) R- THERMAL, RATE OF RISE F- THERMAL, FIXED TEMPERATURE FR- THERMAL, COMBINATION RATE OF RISE PLUS FIXED TEMPERATURE
	SMOKE DETECTOR (SMOKE DETECTOR CONTROL FUNCTION) S- AREA SMOKE, IONIZATION D- SMOKE REFRACTION, PHOTOELECTRIC P- DUCT MOUNTED, SMOKE IONIZATION
	DUCT SMOKE DETECTOR (PHOTOELECTRIC)
	FIREFIGHTER PHONE JACK
	DOOR HOLDER
	SURGE SUPPRESSOR
	FLOW DETECTOR/SWITCH
	PRESSURE DETECTOR/SWITCH
	TAMPER DETECTOR/SWITCH
	VALVE WITH TAMPER DETECTOR/SWITCH
	DOOR HARDWARE IDENTIFICATION
	AREA OF REFUGE TWO WAY OF COMMUNICATION CALL BOX
	AREA OF REFUGE TWO WAY COMMUNICATION CONTROL STATION
	AIR SAMPLING SMOKE DETECTOR PANEL
	AIR SAMPLING SMOKE DETECTOR PORT
	FIRE ALARM TRANSMITTER PANEL
	TRANSMITTER ANTENNA
	KNOX BOX
	ISO MODULE

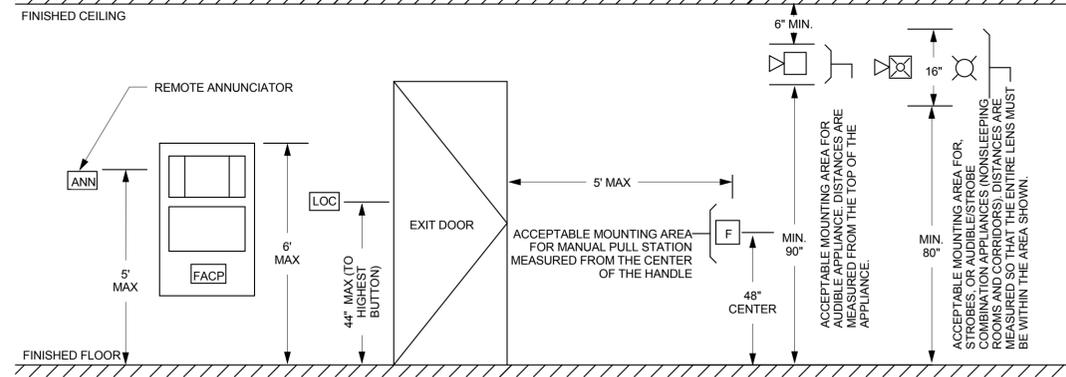
MASS NOTIFICATION SYMBOLS

	LOCAL OPERATOR CONSOLE
	TEXT DISPLAY
	MASS NOTIFICATION TRANSMITTER PANEL
	UNINTERRUPTED POWER SUPPLY

COMBINATION DEVICE SYMBOLS

	COMBINATION FIRE ALARM AND MNS SPEAKER WITH CLEAR FIRE ALARM/ MNS STROBE - WALL MOUNTED CANDELA RATING 15cd U.O.N.
	COMBINATION FIRE ALARM AND MNS SPEAKER WITH CLEAR FIRE ALARM/ MNS STROBE - CEILING MOUNTED CANDELA RATING 15cd U.O.N.
	SPEAKER- WALL MOUNTED
	SPEAKER- CEILING MOUNTED
	CLEAR FIRE ALARM/ MNS STROBE- WALL MOUNTED CANDELA RATING 15cd U.O.N.
	CLEAR FIRE ALARM/ MNS STROBE- CEILING MOUNTED CANDELA RATING 15cd U.O.N.
F	FIRE ALARM SYSTEM
M	MASS NOTIFICATION SYSTEM
A	ADMINISTRATIVE MASS NOTIFICATION SYSTEM

STANDARD MOUNTING HEIGHTS



- NOTES:**
1. IN MASONRY CONSTRUCTION THE ABOVE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
 2. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS OR SPECIFICATIONS. SEE G.3 AND INTERIOR ELEVATIONS FOR SPECIFIC MOUNTING HEIGHTS.
 3. DO NOT INSTALL ANY EQUIPMENT OUTSIDE UNLESS IT IS LISTED FOR OUTDOOR USE.
 4. FOR LOW CEILINGS WHERE THE MOUNTING HEIGHTS CAN NOT BE MET, MOUNT THE INDICATING APPLIANCE (EX: SPEAKERS, STROBE) 6" FROM THE CEILING.
 5. MOUNT ALL INDICATING APPLIANCES ON THE WALL, UNLESS INDICATED OTHERWISE.
 6. ALL DEVICE & APPLIANCE HEIGHTS SHOULD BE CONSISTENT FOR THE ENTIRE PROJECT. THE FIRE PANEL SHALL HAVE A MINIMUM 3 FT CLEARANCE FROM THE FRONT OF THE CONTROL EQUIPMENT & BE LOCATED IN A CLIMATE CONTROLLED AREA.

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Tel: 215-923-2020 Fax: 215-574-0932

AE INFO

FOR COMMANDER NAVFAC
ACTIVITY

SATISFACTORY TO DATE 07/01/08

Designer Author Checker

PM/DM

BRANCH MANAGER

CHIEF ENGR ARCH

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON

DOD/EA MARINE CORPS BASE QUANTICO, VIRGINIA

QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL

FIRE ALARM / MASS NOTIFICATION COVER SHEET

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND

DOD/EA MARINE CORPS BASE QUANTICO, VIRGINIA

QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL

FIRE ALARM / MASS NOTIFICATION COVER SHEET

SCALE: 12" = 1'-0"

PROJECT NO.: P-021

CONSTR. CONTR. NO.

W91236-15-C-0023

NAVFAC DRAWING NO.

13091485

SHEET 731 OF 789

FA-001

DRAWING REVISION 10 MARCH 2009

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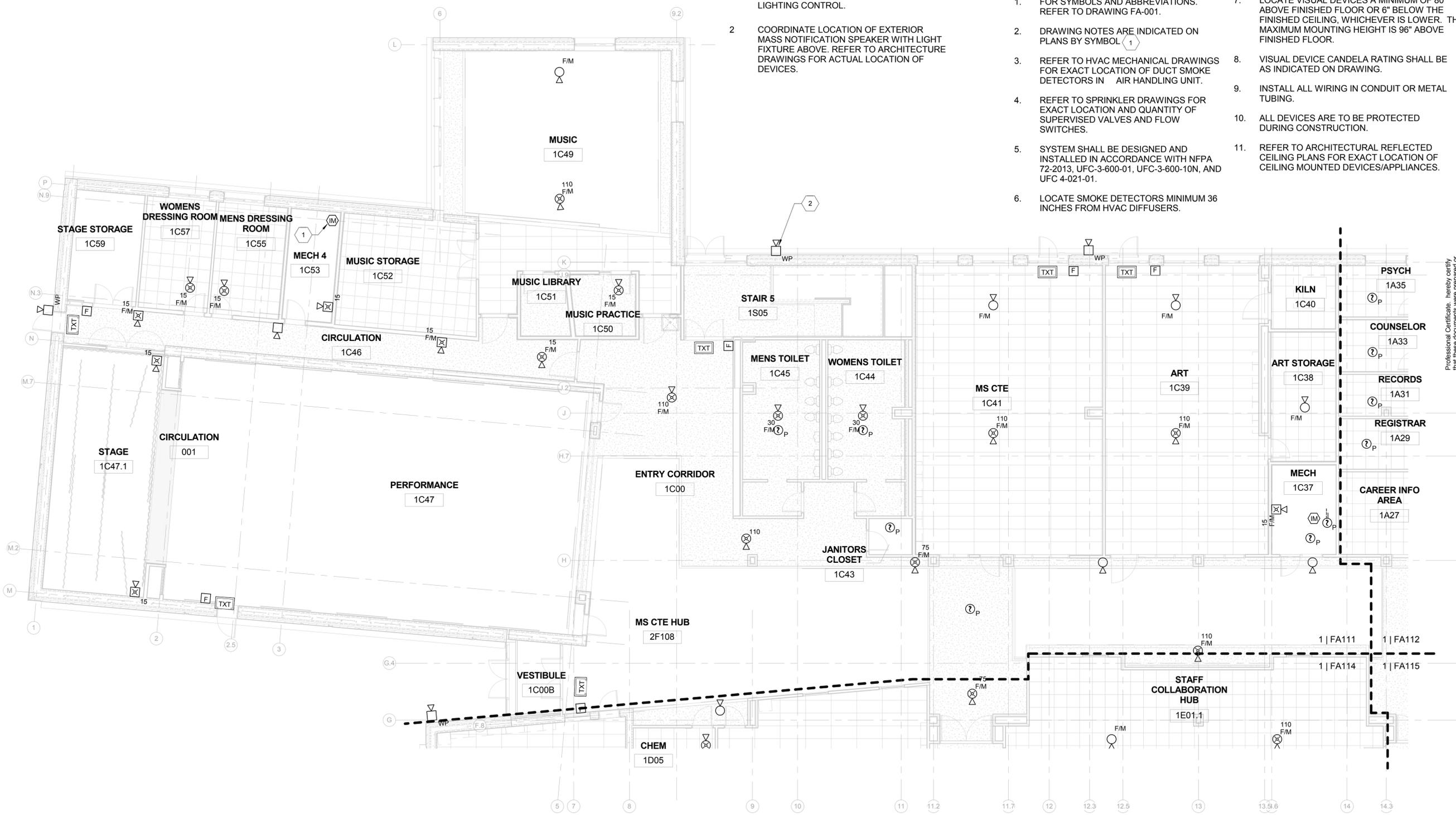
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DRAWING NOTES

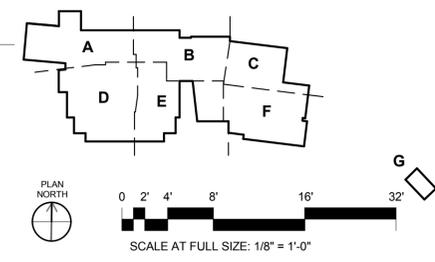
- 1 PROVIDE INTERFACE MODULE FOR LIGHTING CONTROL.
- 2 COORDINATE LOCATION OF EXTERIOR MASS NOTIFICATION SPEAKER WITH LIGHT FIXTURE ABOVE. REFER TO ARCHITECTURE DRAWINGS FOR ACTUAL LOCATION OF DEVICES.

GENERAL NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
- 2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1
- 3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- 4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- 5. SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- 6. LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- 7. LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- 8. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- 9. INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- 10. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- 11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.



1 Level 1 - Area 'A'
SCALE: 1/8" = 1'-0"



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SATISFACTORY TO DATE 07/01/08
Designer Checker

BRANCH MANAGER
CHIEF ENGR ARCH
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON
DOD/EA

MARINE CORPS BASE QUANTICO, VIRGINIA
QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL
FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'A'

DEPARTMENT OF THE NAVY
NAVFAC

SCALE: As Indicated
PROJECT NO: P-021

CONSTR. CONTR. NO.
W91236-15-C-0023

NAVFAC DRAWING NO.
13091486

SHEET 732 OF 789
FA-111

DRAWING REVISION: 10 MARCH 2009

GENERAL NOTES:

- FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
- DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1.
- REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.

DRAWING NOTES

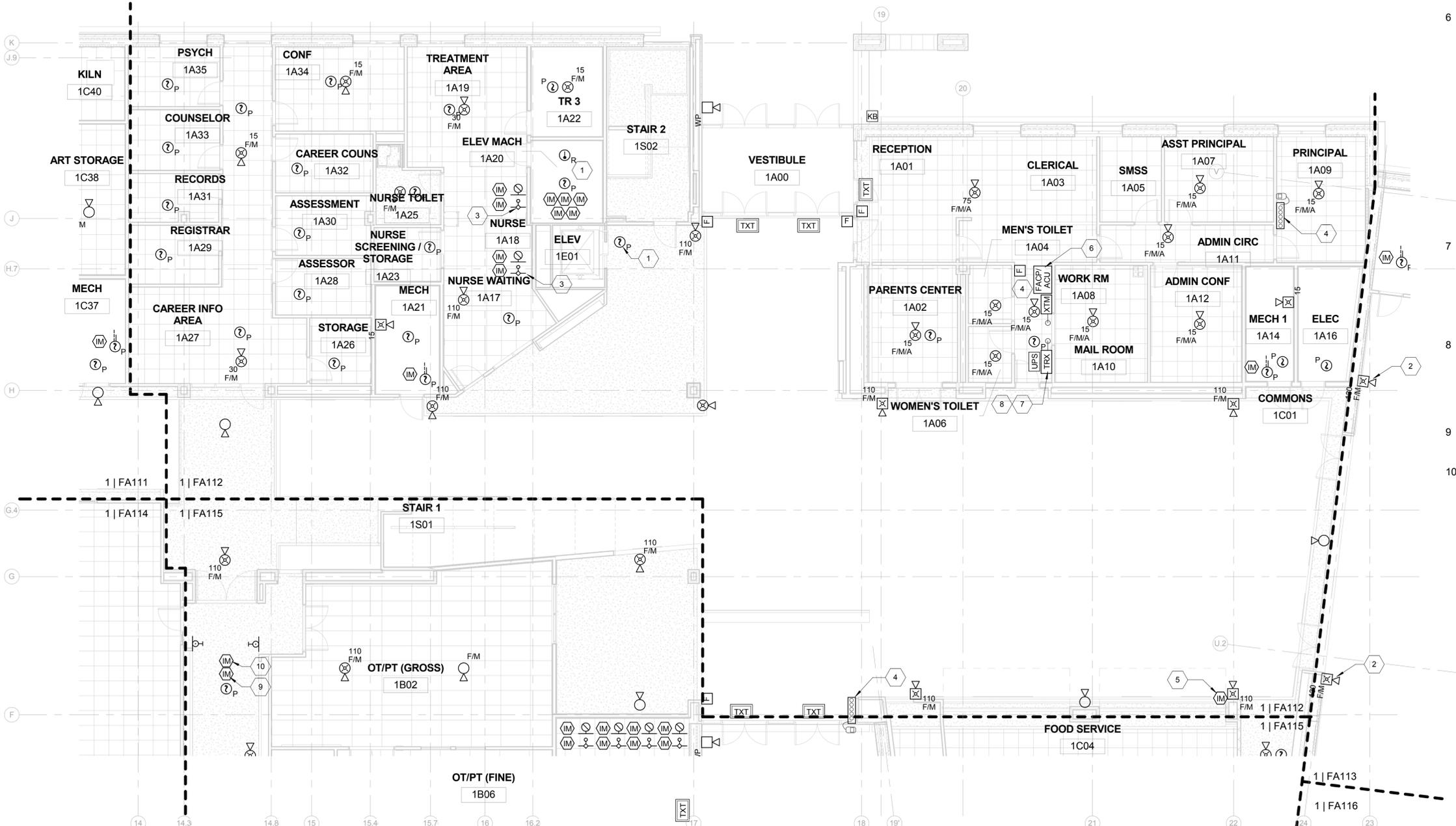
- SMOKE DETECTOR FOR ELEVATOR RECALL. MACHINE ROOM DETECTOR AND ELEVATOR LOBBY DETECTORS TO INITIATE ELEVATOR RECALL.
- PROVIDE GUARDS ON APPLIANCES IN GYM (TYPICAL).
- 0 TIME DELAY FLOW SWITCH FOR ELEVATOR POWER SHUNT.
- TYPICAL LOC SHALL HAVE A REMOTE MICROPHONE THAT EMULATES THE OPERATION OF THE ACU, INDIVIDUAL PUSHBUTTONS ACTIVATING THE MNS PRE-RECORDED MESSAGES, AND MANUAL ACTIVATION OF AHU SHUTDOWN.
- PROVIDE INTERFACE MODULE FOR ACTIVATION OF FIRE SHUTTER BETWEEN COMMONS AND FOOD SERVICE.
- FOR MASS NOTIFICATION SYSTEM PROVIDE ONE OF THE FOLLOWING: (A) COOPER/WHEELOCK SP-40 AUTONOMOUS CONTROL UNIT (ACU) OR CONTRACTING OFFICER'S APPROVED SUBSTITUTE WITH ALARM, STROBE, DISPLAY AND VOICE ALERTS TO RUN THE MNS APPLIANCE CIRCUITS; OR, (B) AN AUTONOMOUS CONTROL UNIT INCORPORATED IN THE FIRE ALARM CONTROL PANEL THAT WILL ACCOMPLISH ALL FUNCTIONS DESCRIBED IN (A) AND IS EQUIPPED WITH THE APPROPRIATE HARDWARE AND SOFTWARE TO ACCEPT AN EXTERIOR DIGITAL AUDIO INPUT (RS232/ LINE LEVEL AUDIO) FROM THE SPAWAR TRANSCIEVER UNIT. THIS CONFIGURATION IS SHOWN CURRENTLY ON THE DRAWING.
- PROVIDE WALL MOUNTING SPACE FOR THE MASS NOTIFICATION SPAWAR TRANSMITTAL UNIT, THE UNINTERRUPTED POWER SUPPLY (UPS) AND A 20"x20"x20" NEMA ENCLOSURE ADJACENT TO THE FACP WITHIN 10 FEET AND PROVIDE A DEDICATED 120 VOLT 20-AMP BREAKER FOR POWER.
- PROVIDE A 1.5" CONDUIT RUN FROM THE EQUIPMENT MOUNTING LOCATION TO THE ROOF WITH A WEATHER HEAD ATTACHMENT FOR THE ANTENNA. THE ANTENNA MAST SHALL EXCEED THE ROOFLINE BY MINIMUM OF 1 METER.
- PROVIDE INTERFACE MODULE FOR ELECTROMAGNETIC DOOR LOCK RELEASE.
- PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.

D

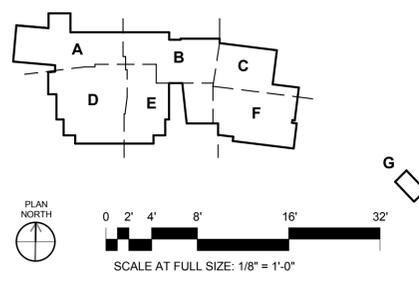
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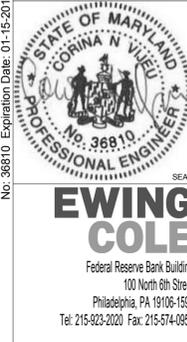


1 Level 1 - Area 'B'
SCALE: 1/8" = 1'-0"



RTA SUBMISSION - 10/13/2016

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APPROVED

FOR COMMANDER NAVFAC ACTIVITY

DESIGNER	AUTHOR	CHECKER

BRANCH MANAGER	CHEF ENGR ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON

DODEA

MARINE CORPS BASE QUANTICO, VIRGINIA

QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL

FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'B'

SCALE: As Indicated

PROJECT NO.: P-021

CONSTR. CONTR. NO.

W91236-15-C-0023

NAVFAC DRAWING NO. 13091487

SHEET 733 OF 789

FA-112

DRAWING REVISION: 10 MARCH 2009

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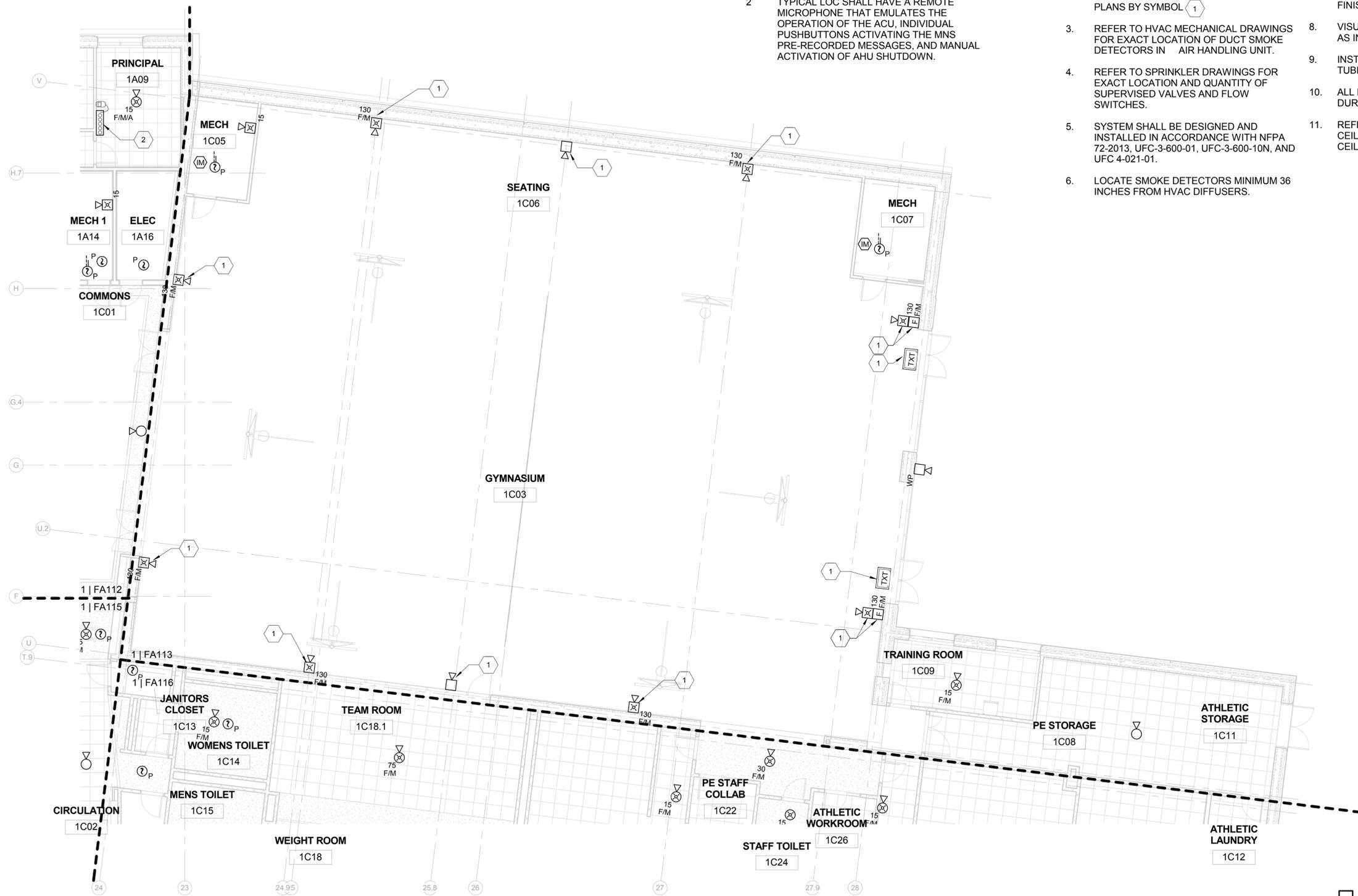
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DRAWING NOTES

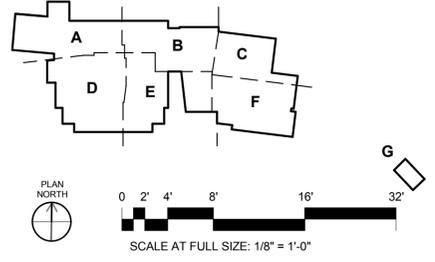
- 1 PROVIDE GUARDS ON APPLIANCES IN GYM (TYPICAL).
- 2 TYPICAL LOC SHALL HAVE A REMOTE MICROPHONE THAT EMULATES THE OPERATION OF THE ACU, INDIVIDUAL PUSHBUTTONS ACTIVATING THE MNS PRE-RECORDED MESSAGES, AND MANUAL ACTIVATION OF AHU SHUTDOWN.

GENERAL NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
- 2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL (1)
- 3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- 4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- 5. SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- 6. LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- 7. LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- 8. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- 9. INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- 10. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- 11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.



1 Level 1 - Area 'C'
SCALE: 1/8" = 1'-0"



APPR	
DATE	
SYN	DESCRIPTION
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AE INFO	
APPROVED	
FOR COMMANDER NAVFAC ACTIVITY	
SATISFACTORY TO	DATE 06/03/14
Designer	Author
Checker	
FACDM	
BRANCH MANAGER	
CHIEF ENGR ARCH	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON DOD/EA MARINE CORPS BASE QUANTICO, VIRGINIA QUANTICO, VA REPLACE QUANTICO M/H SCHOOL FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'C'	
SCALE:	As Indicated
PROJECT NO.:	P-021
CONSTR. CONTR. NO.:	
NAVIFAC DRAWING NO.:	W91236-15-C-0023
	13091488
SHEET	734 OF 789
	FA-113
DRAWFORM REVISION 10 MARCH 2009	

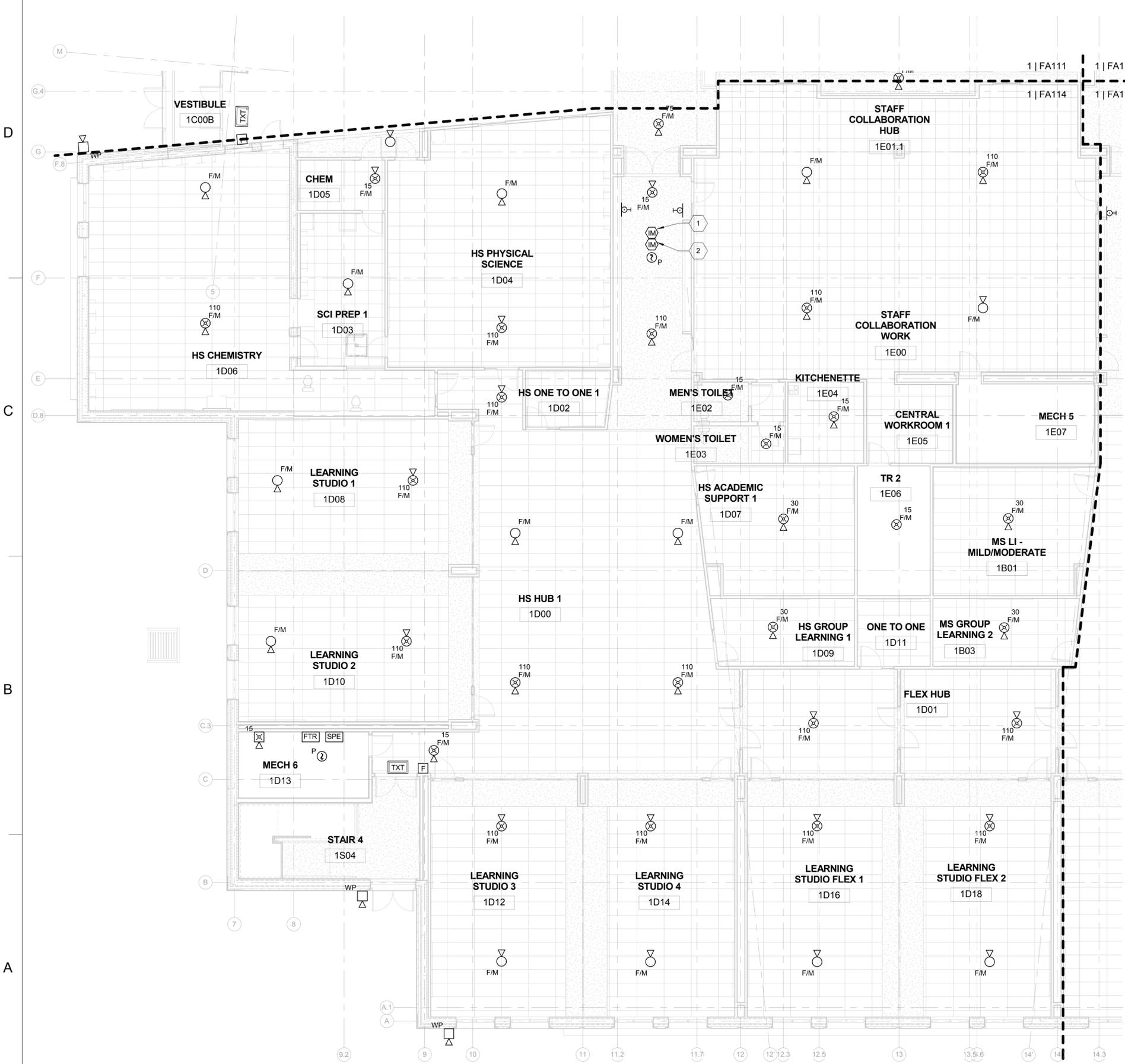
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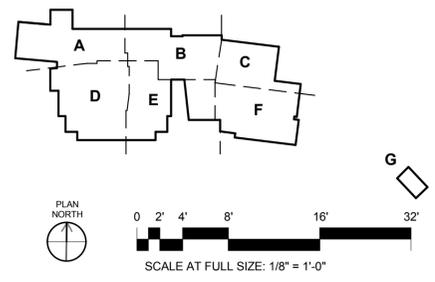
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DRAWING NOTES

- 1 PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.
- 2 PROVIDE INTERFACE MODULE FOR ELECTROMAGNETIC DOOR LOCK RELEASE.

1 Level 1 - Area 'D'
SCALE: 1/8" = 1'-0"



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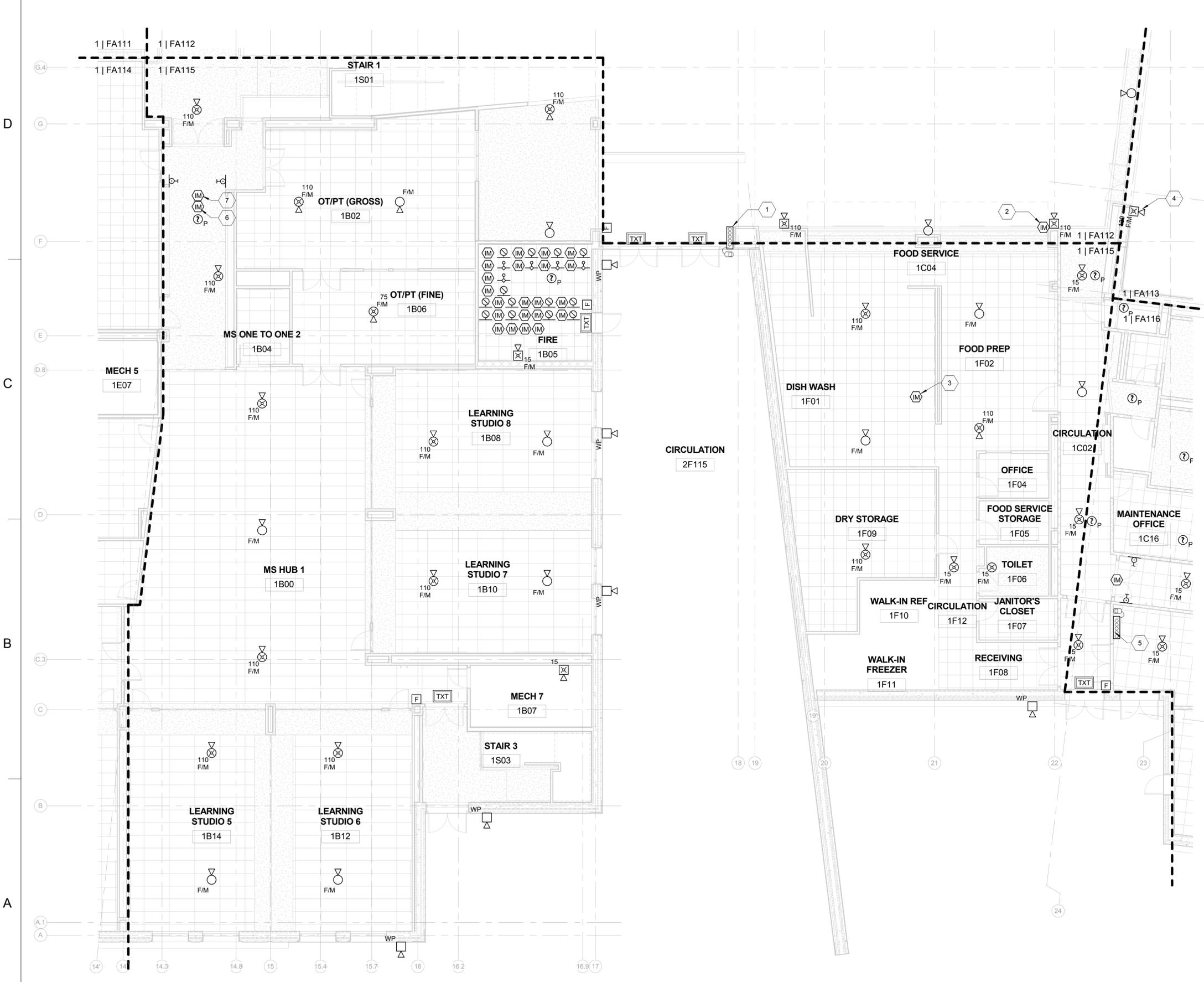
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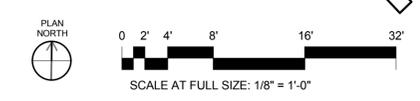
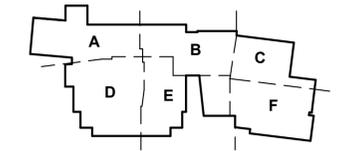
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- DRAWING NOTES**
- TYPICAL LOC SHALL HAVE A REMOTE MICROPHONE THAT EMULATES THE OPERATION OF THE ACU, INDIVIDUAL PUSHBUTTONS ACTIVATING THE MNS PRE-RECORDED MESSAGES, AND MANUAL ACTIVATION OF AHU SHUTDOWN.
 - PROVIDE INTERFACE MODULE FOR ACTIVATION OF FIRE SHUTTER BETWEEN COMMONS AND FOOD SERVICE.
 - PROVIDE INTERFACE MODULE FOR MONITORING OF KITCHEN HOOD FIRE SUPPRESSION SYSTEM. FOR ACTUAL LOCATIONS AND QUANTITIES REFER TO FOOD SERVICE DRAWINGS.
 - PROVIDE GUARDS ON APPLIANCES IN GYM (TYPICAL).
 - TYPICAL LOC SHALL HAVE A REMOTE MICROPHONE THAT EMULATES THE OPERATION OF THE ACU, INDIVIDUAL PUSHBUTTONS ACTIVATING THE MNS PRE-RECORDED MESSAGES, AND MANUAL ACTIVATION OF AHU SHUTDOWN.
 - PROVIDE INTERFACE MODULE FOR ELECTROMAGNETIC DOOR LOCK RELEASE.
 - PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.



1 Level 1 - Area 'E'
SCALE: 1/8" = 1'-0"

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NAVAC

STATE OF MARYLAND
CORPORA N VIELD
PROFESSIONAL ENGINEER
No. 36810

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Philadelphia, PA 19106-1590
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APPROVED	AE INFO
FOR COMMANDER NAVAC	ACTIVITY
SATISFACTORY TO	DATE 07/01/08
Designer	Author
Checker	Checker
PROJECT NO.	P-021
CONSTR. CONTR. NO.	W91236-15-C-0023
NAVAC DRAWING NO.	13091490
SHEET	736 OF 789
FA-115	

RTA SUBMISSION - 10/13/2016

DRAWING REVISION 10 MARCH 2009

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- DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1.
- REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.

DRAWING NOTES

- PROVIDE GUARDS ON APPLIANCES IN GYM (TYPICAL).
- PROVIDE SURGE SUPPRESSOR FOR CONNECTION BETWEEN MIDDLE/HIGH SCHOOL AND OUTDOOR FIELD HOUSE.
- PROVIDE INTERFACE MODULE TO ACTIVATE HVAC EMERGENCY SHUTDOWN FUNCTION BY THE BMS SYSTEM. LOCATE THE IM WITHIN 3FT OF THE DDC PANEL. REFER TO HVAC DRAWINGS FOR ACTUAL LOCATION OF DDC PANEL.
- TYPICAL LOC SHALL HAVE A REMOTE MICROPHONE THAT EMULATES THE OPERATION OF THE ACU, INDIVIDUAL PUSHBUTTONS ACTIVATING THE MNS PRE-RECORDED MESSAGES, AND MANUAL ACTIVATION OF AHU SHUTDOWN.

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EWING COLE
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 100 North 6th Street
 Philadelphia, PA 19106-1590
 Tel: 215-923-2020 Fax: 215-574-0932

AE INFO

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 06/03/14

Designer Author Checker

PM/DM

BRANCH MANAGER

CHIEF ENG/ ARCH

FIRE PROTECTION

NAVFAC ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON

DDDEA

MARINE CORPS BASE QUANTICO, VIRGINIA

QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL

FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'F'

DEPARTMENT OF THE NAVY

NAVFAC ENGINEERING COMMAND

NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON

DDDEA

MARINE CORPS BASE QUANTICO

QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL

FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'F'

SCALE: As indicated

PROJECT NO: P-021

CONSTR. CONTR. NO.

W91236-15-C-0023

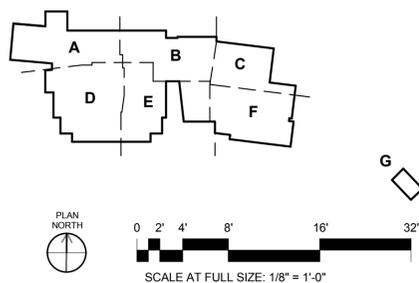
NAVFAC DRAWING NO. 13091491

SHEET 737 OF 789

FA-116

DRAWING REVISION: 10 MARCH 2016

1 Level 1 - Area 'F'
 SCALE: 1/8" = 1'-0"



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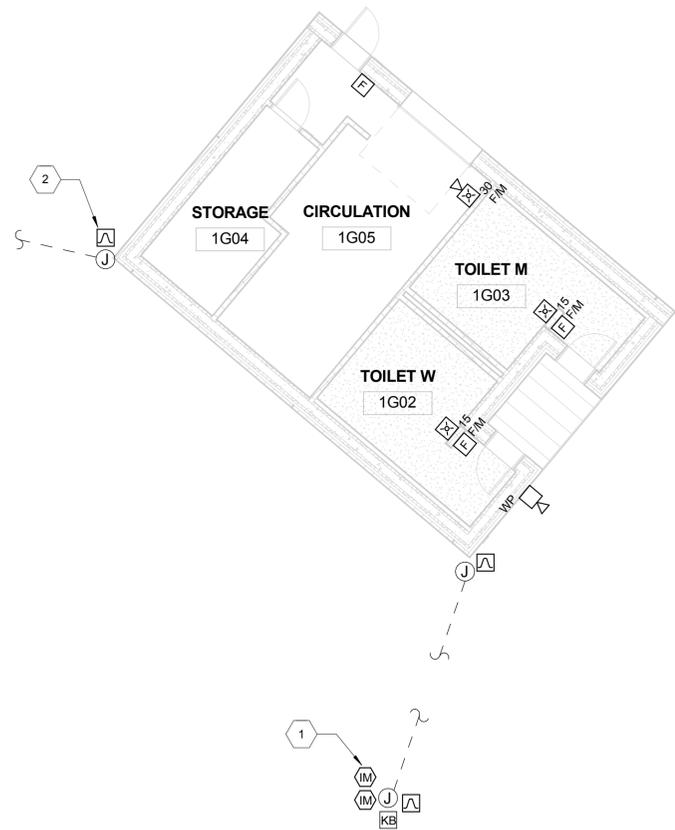
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DRAWING NOTES

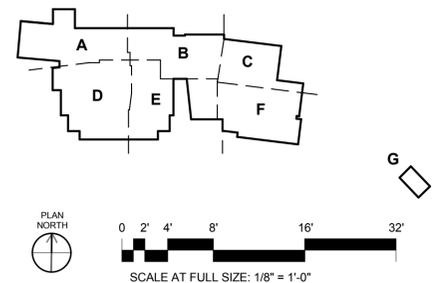
- 1 PROVIDE INTERFACE MODULE FOR MONITORING OF TAMPER SWITCH AT KNOX BOX AT SERVICE DRIVE GATE. PROVIDE INTERFACE MODULE FOR POWER OPERATED GATE. PROVIDE SURGE SUPPRESSOR.
- 2 PROVIDE SURGE SUPPRESSOR FOR CONNECTION BETWEEN MIDDLE/HIGH SCHOOL AND OUTDOOR FIELD HOUSE.

GENERAL NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
- 2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1
- 3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- 4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- 5. SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- 6. LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- 7. LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- 8. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- 9. INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- 10. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- 11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.



1 Level 1 - Area 'G'
SCALE: 1/8" = 1'-0"



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Tel: 215-923-2020 Fax: 215-574-0932

AE INFO

FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO	DATE
Designer	Author
Checker	

PM/DM

BRANCH MANAGER

CHIEF ENGR ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON DOD/EA
MARINE CORPS BASE QUANTICO, VIRGINIA
QUANTICO, VA
REPLACE QUANTICO M/H SCHOOL
FIRE ALARM / MASS NOTIFICATION FIRST FLOOR AREA 'G'

SCALE:	As indicated
PROJECT NO.:	P-021
CONSTR. CONTR. NO.:	W91236-15-C-0023
NAVFAC DRAWING NO.:	13091492
SHEET	738 OF 789
	FA-117

DRAWING REVISION: 10 MARCH 2009

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DRAWING NOTES

- 1 PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.

GENERAL NOTES:

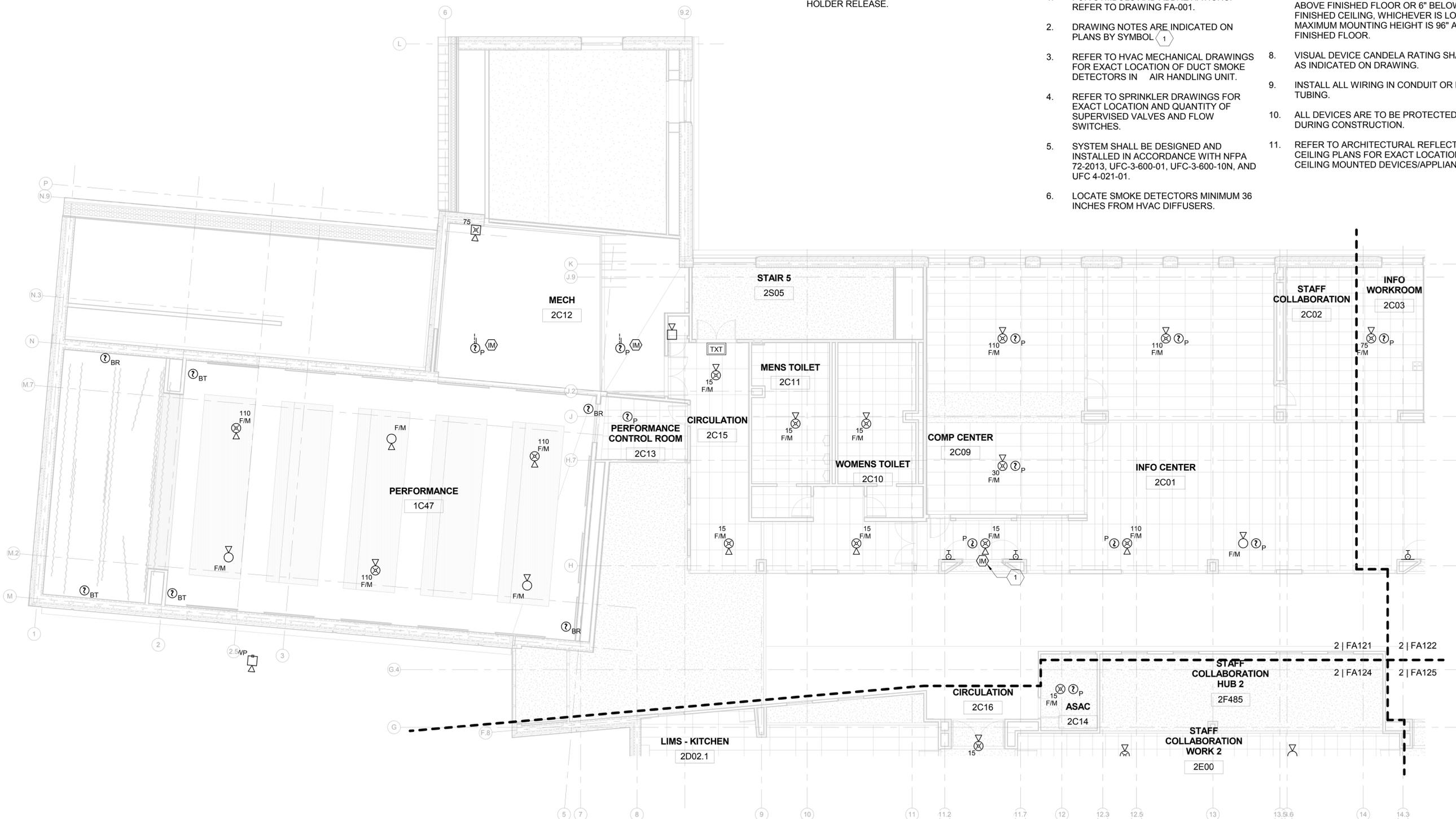
- 1. FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
- 2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1
- 3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- 4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
- 5. SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
- 6. LOCATE SMOKE DETECTORS MINIMUM 36 INCHES FROM HVAC DIFFUSERS.
- 7. LOCATE VISUAL DEVICES A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE FINISHED CEILING, WHICHEVER IS LOWER. THE MAXIMUM MOUNTING HEIGHT IS 96" ABOVE FINISHED FLOOR.
- 8. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
- 9. INSTALL ALL WIRING IN CONDUIT OR METAL TUBING.
- 10. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- 11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.

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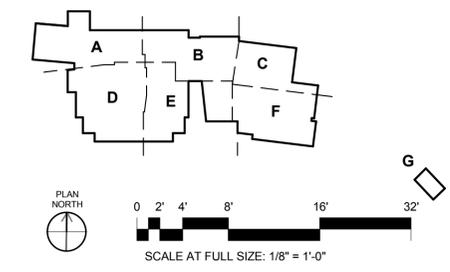
C

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1 Level 2 - Area 'A'
SCALE: 1/8" = 1'-0"



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AE INFO

FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO DATE 07/01/08
Designer Author Checker

BRANCH MANAGER
CHIEF ENGR ARCH
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON
DOD/EA
MARINE CORPS BASE QUANTICO, VIRGINIA
QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL
FIRE ALARM / MASS NOTIFICATION SECOND FLOOR AREA 'A'

SCALE: As indicated
PROJECT NO.: P-021
CONSTR. CONTR. NO.: W91236-15-C-0023
NAVFAC DRAWING NO.: 13091493
SHEET 739 OF 789
FA-121

DEPARTMENT OF THE NAVY
NAVFAC DRAWING NO. 13091493
SHEET 739 OF 789
FA-121

DRAWN FOR REVISION: 10 MARCH 2016

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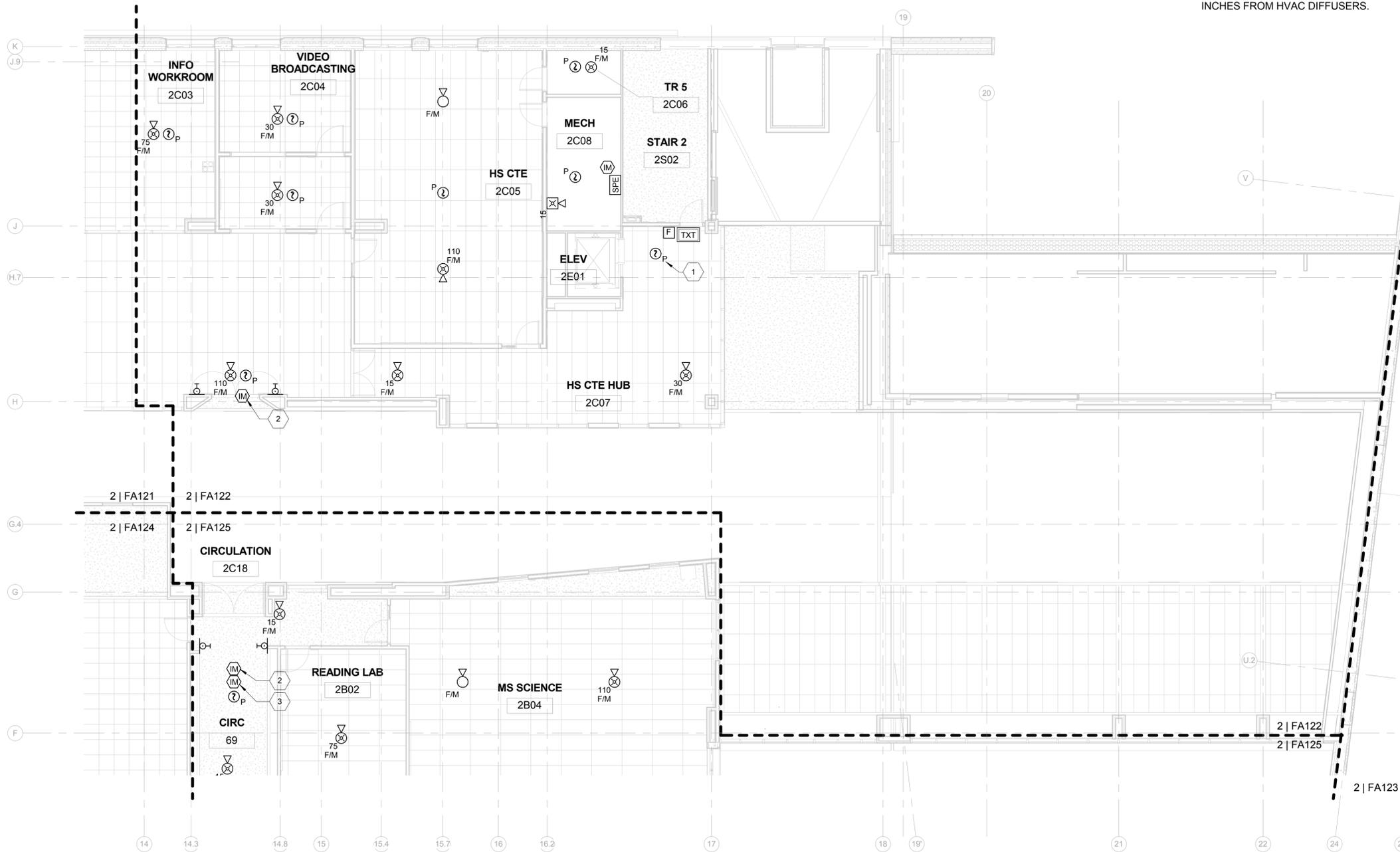
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DRAWING NOTES

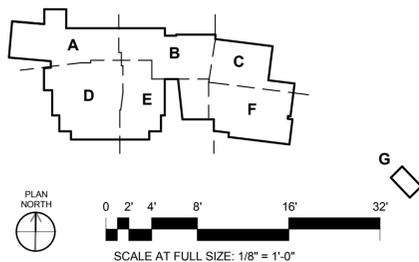
- 1 SMOKE DETECTOR FOR ELEVATOR RECALL, MACHINE ROOM DETECTOR AND ELEVATOR LOBBY DETECTORS TO INITIATE ELEVATOR RECALL.
- 2 PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.
- 3 PROVIDE INTERFACE MODULE FOR ELECTROMAGNETIC DOOR LOCK RELEASE.

GENERAL NOTES:

- 1. FOR SYMBOLS AND ABBREVIATIONS, REFER TO DRAWING FA-001.
- 2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1.
- 3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
- 4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
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- 11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.



1 Level 2 - Area 'B'
SCALE: 1/8" = 1'-0"



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SATISFACTORY TO	DATE 09/23/13
Designer	Author
Checker	
PROJECT NO.	P-021
CONSTR. CONTR. NO.	W91236-15-C-0023
NAVFAC DRAWING NO.	13091494
SHEET	740 OF 789
FA-122	

RTA SUBMISSION - 10/13/2016

DRAWING REVISION 10 MARCH 2009

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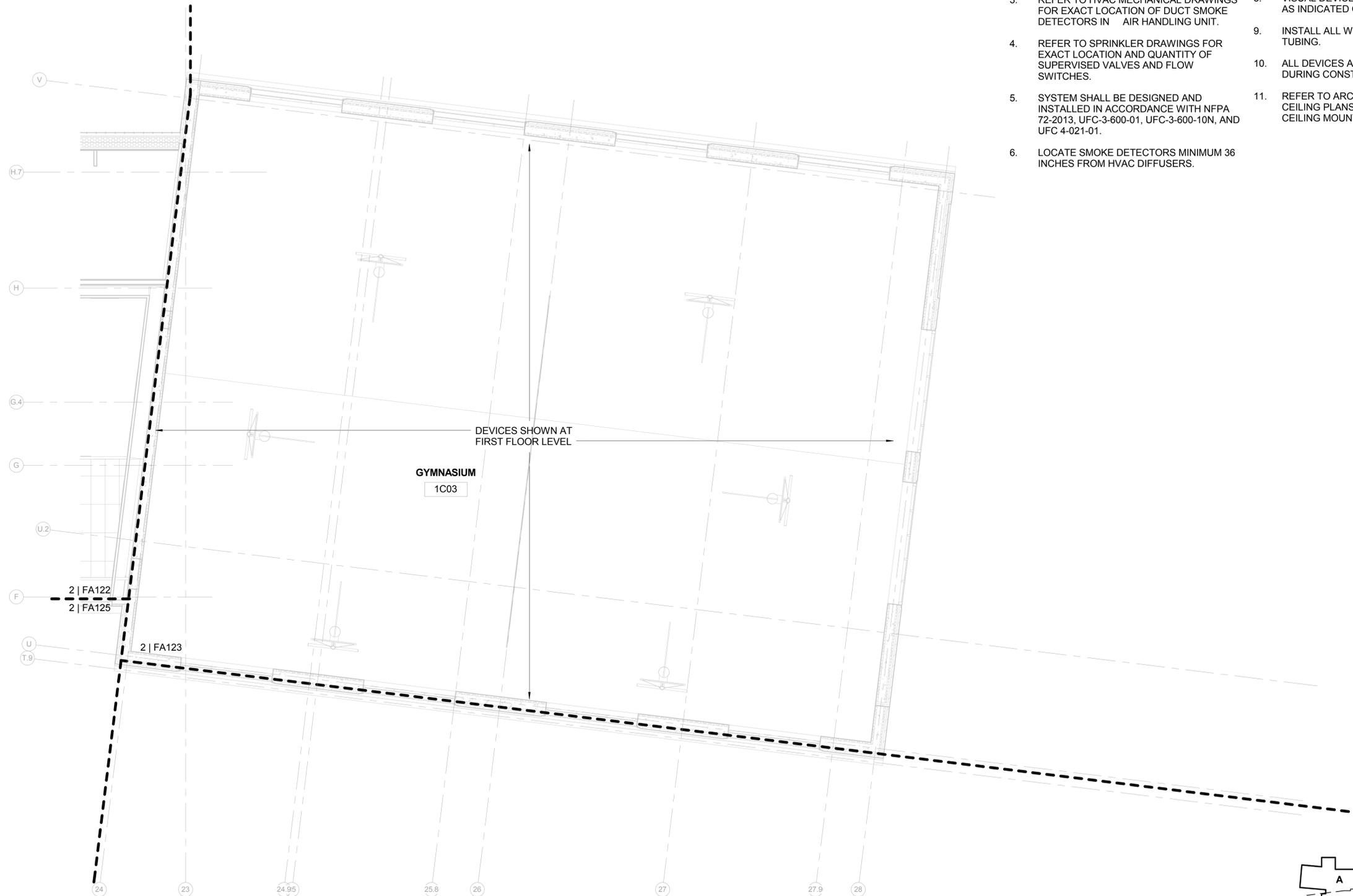
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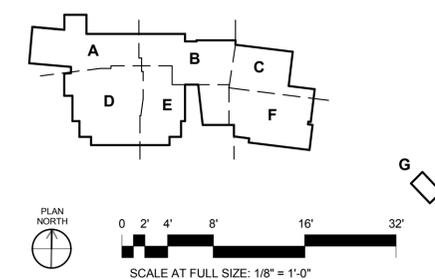
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GENERAL NOTES:

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2. DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 
3. REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
4. REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
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1 Level 2 - Area 'C'
SCALE: 1/8" = 1'-0"



	APPR
	DATE
	SYM DESCRIPTION
	
	
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ACTIVITY	
SATISFACTORY TO DATE 09/23/13	
Designer	Author Checker
PM/DM	
BRANCH MANAGER	
CHIEF ENG ARCH	
FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON DOD/EA MARINE CORPS BASE QUANTICO, VIRGINIA REPLACE QUANTICO M/H SCHOOL QUANTICO, VA FIRE ALARM / MASS NOTIFICATION SECOND FLOOR AREA 'C'	
SCALE: As Indicated	
PROJECT NO.: P-021	
CONSTR. CONTR. NO.	
W91236-15-C-0023	
NAVFAC DRAWING NO. 13091495	
SHEET 741 OF 789	
FA-123	
DRAWING REVISION: 10 MARCH 2009	

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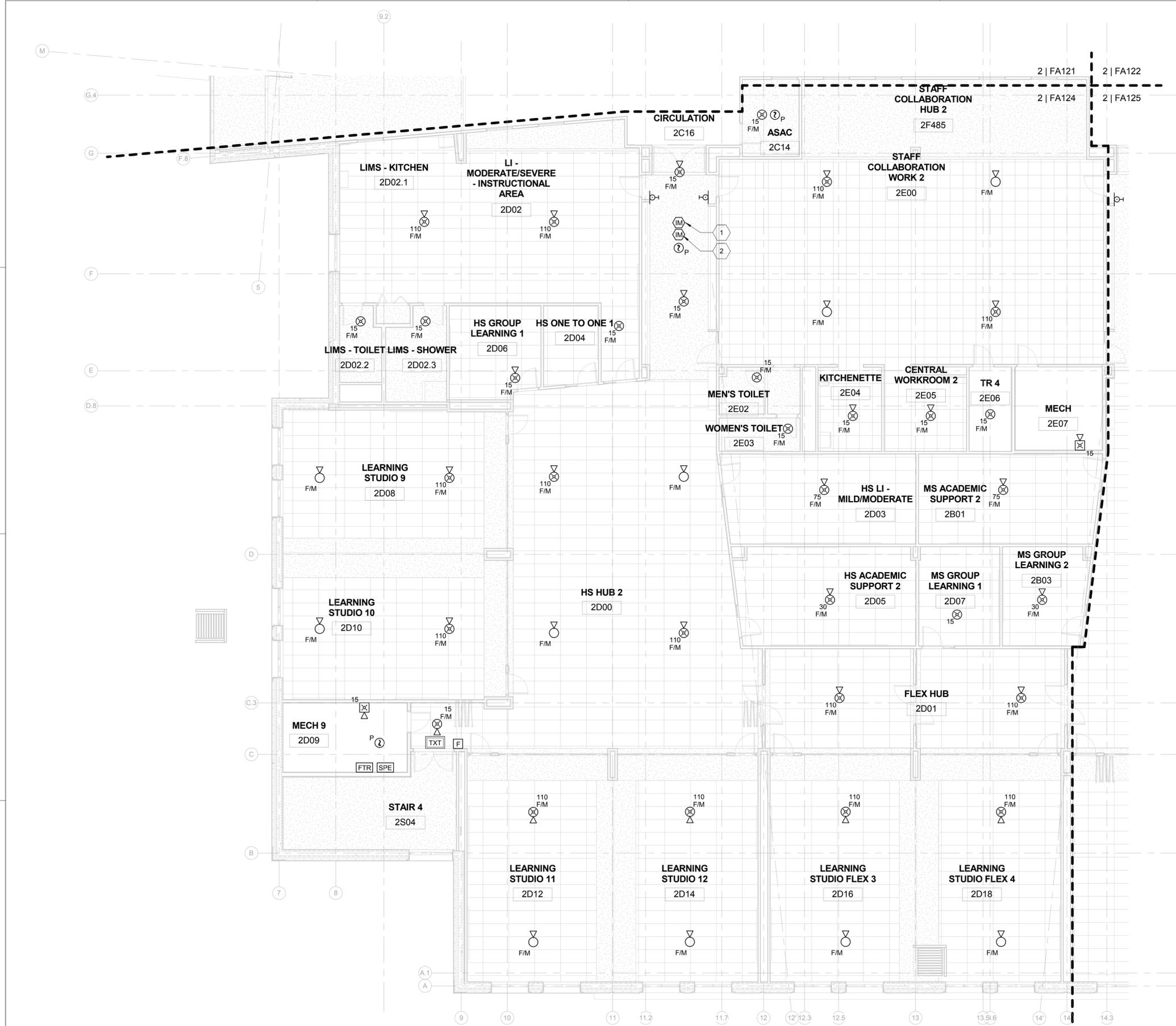
5

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GENERAL NOTES:

- FOR SYMBOLS AND ABBREVIATIONS, REFER TO DRAWING FA-001.
- DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1
- REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
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- INSTALL ALL WIRING IN CONDUIT.
- ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.

DRAWING NOTES

- PROVIDE INTERFACE MODULE FOR DOOR HOLDER RELEASE.
- PROVIDE INTERFACE MODULE FOR ELECTROMAGNETIC DOOR LOCK RELEASE.

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FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO DATE 07/01/08
 Designer Author Checker

BRANCH MANAGER
 CHIEF ENGR ARCH

FIRE PROTECTION

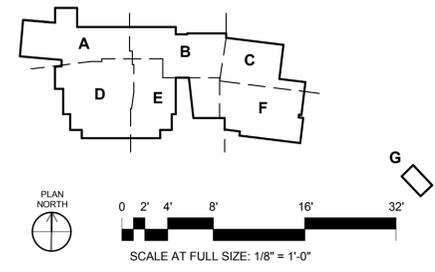
NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON
 DODEA
 MARINE CORPS BASE QUANTICO, VIRGINIA
 QUANTICO, VA

REPLACE QUANTICO M/H SCHOOL
 FIRE ALARM / MASS NOTIFICATION SECOND FLOOR AREA 'D'

SCALE: As indicated
 PROJECT NO.: P-021
 CONSTR. CONTR. NO.: W91236-15-C-0023
 NAVFAC DRAWING NO.: 13091496
 SHEET 742 OF 789
 FA-124

DRAWING REVISION 10 MARCH 2009

1 Level 2 - Area 'D'
 SCALE: 1/8" = 1'-0"



RTA SUBMISSION - 10/13/2016

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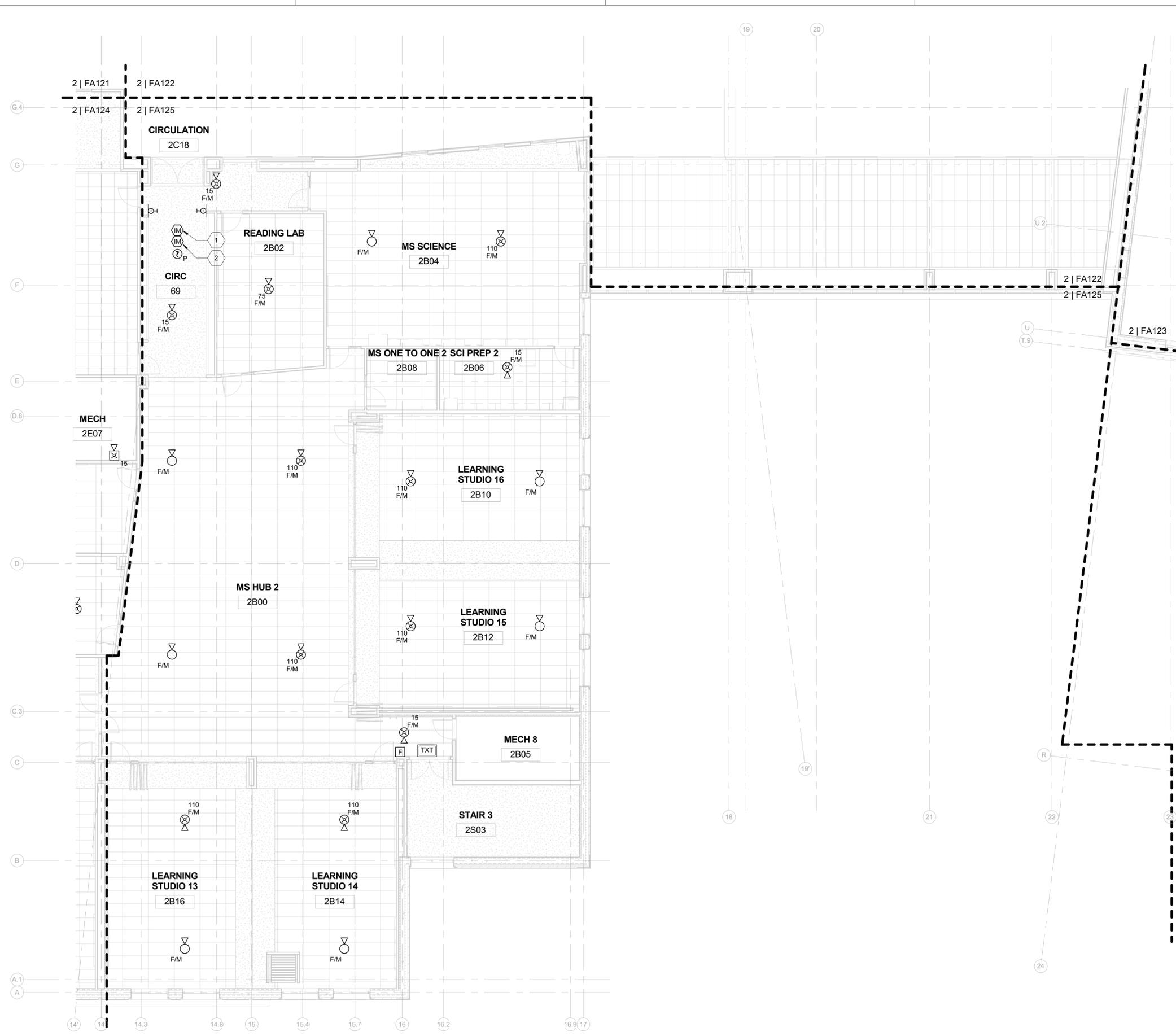
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- GENERAL NOTES:**
- FOR SYMBOLS AND ABBREVIATIONS. REFER TO DRAWING FA-001.
 - DRAWING NOTES ARE INDICATED ON PLANS BY SYMBOL 1
 - REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN AIR HANDLING UNIT.
 - REFER TO SPRINKLER DRAWINGS FOR EXACT LOCATION AND QUANTITY OF SUPERVISED VALVES AND FLOW SWITCHES.
 - SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72-2013, UFC-3-600-01, UFC-3-600-10N, AND UFC 4-021-01.
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 - VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
 - INSTALL ALL WIRING IN CONDUIT.
 - ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
 - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED DEVICES/APPLIANCES.

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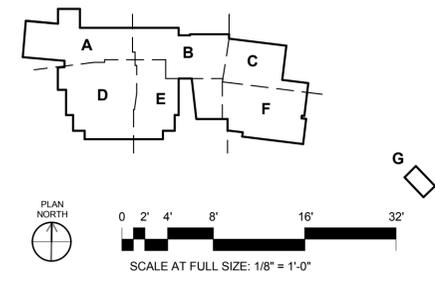
SATISFACTORY TO DATE 09/23/13
 Designer Author Checker

BRANCH MANAGER
 CHIEF ENGR ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON
 DODEA
 MARINE CORPS BASE QUANTICO, VIRGINIA
 QUANTICO, VA
REPLACE QUANTICO M/H SCHOOL
 FIRE ALARM / MASS NOTIFICATION SECOND FLOOR AREA 'E'

SCALE: As Indicated
 PROJECT NO.: P-021
 CONSTR. CONTR. NO.: W91236-15-C-0023
 NAVFAC DRAWING NO.: 13091497
 SHEET 743 OF 789
 FA-125



1 Level 2 - Area 'E'
 SCALE: 1/8" = 1'-0"

RTA SUBMISSION - 10/13/2016

DRAWING REVISION 10 MARCH 2009

FIRE ALARM RISER DIAGRAM NOTES:

- REFER TO FLOOR PLANS FOR LOCATIONS OF PANELS AND OTHER MAJOR EQUIPMENT. THIS DIAGRAM DOES NOT SHOW ALL REQUIRED DEVICES. IT IS INTENDED TO CONVEY GENERAL PERFORMANCE CHARACTERISTICS OF THE FIRE ALARM SYSTEM. ALL EQUIPMENT AND DEVICES WILL BE NEW.
- SIGNALING LINE CIRCUITS SHALL BE ARRANGED AS STYLE 6 FOR CONNECTION OF ALL SENSORS AND ADDRESSABLE DEVICES. EACH SIGNALING LINE CIRCUIT SHALL BE PROVIDED WITH A MINIMUM OF 25 PERCENT SPARE CAPACITY. NO TAPPING IS PERMITTED ON STYLE 6 (CLASS A) SIGNALING LINE CIRCUITS.
- NOTIFICATION APPLIANCE CIRCUITS SHALL BE ARRANGED AS STYLE Z (CLASS A) FOR CONNECTION OF ALL APPLIANCES. EACH NOTIFICATION APPLIANCE CIRCUIT SHALL BE PROVIDED WITH A MINIMUM 25 PERCENT SPARE CAPACITY.
- ADDRESSABLE INTERFACE MODULES AND RELAYS SHALL BE USED TO CONNECT NON-ADDRESSABLE INITIATING DEVICES TO THE SIGNALING LINE CIRCUIT AND TO PERFORM AUXILIARY CONTROL FUNCTIONS VIA THE FIRE ALARM SYSTEM.
- PROVIDE MASTER BOX AND CONNECTION BUILDING FA MNS SYSTEM. CONNECTION TO SITE MULLOUGH LOOP IS BY SITE'S ALARM SHOP TECHNICIANS. COORDINATE INSTALLATION PHASING WITH ALARM SHOP.
- REFER TO HVAC MECHANICAL DRAWINGS FOR EXACT LOCATION OF DUCT SMOKE DETECTORS IN DUCTS AND AIR HANDLING UNITS.
- PROVIDE SURGE SUPPRESSORS ON ANY FA / MNS CONDUCTORS PENETRATING THE BUILDING EXTERIOR.
- ALL NOTIFICATION APPLIANCES ARE A COMBINATION FIRE ALARM AND MASS NOTIFICATION SPEAKERS OR STROBES OR SPEAKER/STROBES WITH CLEAR LENS. IF THE FACP HAS LINE ISOLATORS BUILT-IN, THEN A MINIMUM OF ONE IN THE MIDDLE OF THE LOOP, OR AT LEAST 1 EVERY 25 DEVICES, IS REQUIRED. IF THEY ARE NOT BUILT-IN, THEN LINE ISOLATORS MUST ALSO BE THE FIRST AND LAST DEVICES INSTALLED ON THE "CLASS A" LOOP. INSTALL LINE ISOLATORS PER THE MANUFACTURER'S INSTRUCTIONS. WHEN THE RADIO TRANSMITTER IS TRIGGERED BY ADDRESSABLE RELAYS ON AN SLC LOOP, THEY SHALL BE PROTECTED FROM SHORT CIRCUITS ON THAT LOOP BY LINE ISOLATORS. THIS MAY REQUIRE INSTALLATION OF LINE ISOLATORS ON THE SLC LOOP BEFORE AND AFTER THE RELAYS.

D

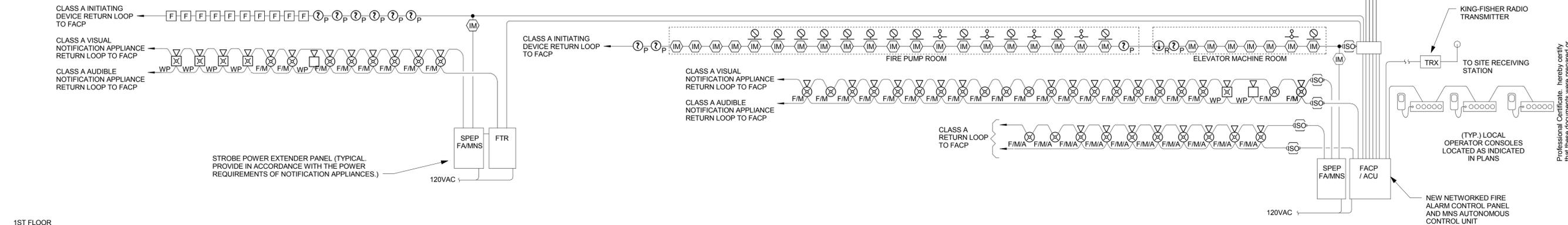
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BUILDING MASS NOTIFICATION/ FIRE ALARM RISER
SCALE: NTS

	SYSTEM INPUTS																		SYSTEM OUTPUTS																	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1 AREA/ROOM SMOKE DETECTOR																																				
2 DUCT SMOKE DETECTOR																																				
3 WATER FLOW SWITCH																																				
4 MANUAL PULL STATION																																				
5 MONITOR SWITCH (FIRE SUPPRESSION VALVE TAMPER OR KNOX BOX TAMPER SWITCH)																																				
6 KITCHEN HOOD FIRE SUPPRESSION SYSTEM																																				
7 MASS NOTIFICATION IN-BUILDING EVENT																																				
8 MASS NOTIFICATION - AHU SHUTDOWN SWITCH (AT FACPIACU AND LOC)																																				
9 MASS NOTIFICATION - INPUT SIGNAL FROM BASE SPAWAR SYSTEM																																				
10 SMOKE DETECTOR AT DESIGNATED FLOOR ELEVATOR LOBBY																																				
11 FIRE PUMP RUNNING																																				
12 FIRE PUMP PHASE REVERSAL																																				
13 FIRE PUMP TROUBLE																																				
14 FIRE PUMP CONNECTED TO ALTERNATE POWER SOURCE																																				
15 SMOKE DETECTOR AT ALTERNATE FLOOR ELEVATOR LOBBY																																				
16 ELEVATOR MACHINE ROOM SMOKE DETECTOR																																				
17 ELEVATOR MACHINE ROOM FLOW SWITCH																																				
18 ELEVATOR SHUNT TRIP POWER MONITOR																																				
19 DEVICE OR SYSTEM TROUBLE																																				
20 ELECTROMAGNETIC DOOR LOCK DEVICE																																				

*MASS NOTIFICATION VOICE ANNOUNCEMENTS SHALL TAKE PRECEDENCE OVER FIRE ALARM EVACUATION SIGNAL.

1 FA SYSTEM - MATRIX OF OPERATIONS
SCALE: NTS

Professional Certificate, hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, No. 36810, Expiration Date: 01-15-2017

EWING COLE
Federal Reserve Bank Building
100 North 6th Street
Philadelphia, PA 19106-1590
Tel: 215-923-2020 Fax: 215-574-0932

APPROVED

FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO DATE 07/01/08

Designer Author Checker

PROJECT NO. P-021

CONSTR. CONTR. NO. W91236-15-C-0023

NAVFAC DRAWING NO. 13091498

SHEET 744 OF 789

FA-601

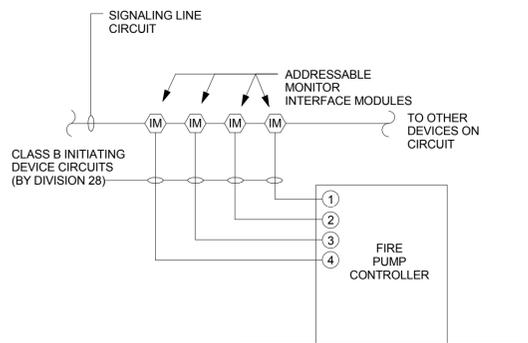
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVFAC
DOD/EA
MARINE CORPS BASE QUANTICO, VIRGINIA
QUANTICO, VA
REPLACE QUANTICO M/H SCHOOL
FIRE ALARM RISER

D

C

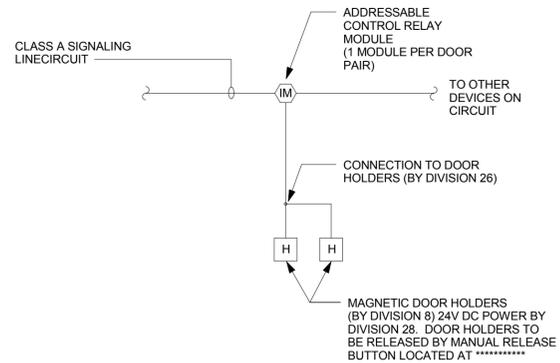
B

A

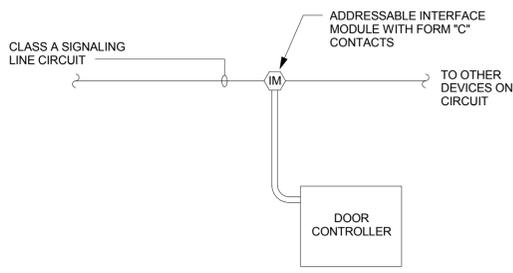


7 FIRE ALARM SYSTEM - FIRE PUMP CONTROLLER INTERFACE
SCALE: NTS

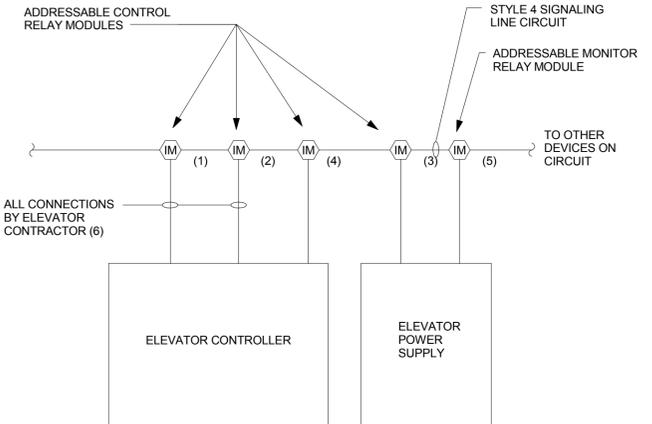
- ① PUMP RUNNING CONTACTS
- ② LOSS OF PHASE
- ③ PHASE REVERSAL
- ④ CONTROLLER CONNECTED TO ALTERNATE POWER SOURCE



4 FA SYSTEM - DOOR HOLDER INTERFACE
SCALE: NTS

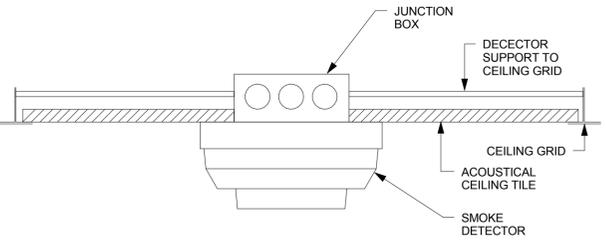


3 FA SYSTEM - DOOR CONTROLLER INTERFACE
SCALE: NTS



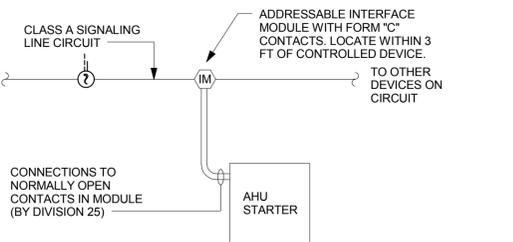
6 FA SYSTEM - ELEVATOR INTERFACE
SCALE: NTS

NOTES:
 1. CONTROL MODULE FOR ELEVATOR RECALL TO DESIGNATED LEVEL.
 2. CONTROL MODULE FOR ELEVATOR RECALL TO ALTERNATE LEVEL.
 3. CONTROL MODULE FOR ELEVATOR POWER SHUT DOWN.
 4. CONTROL MODULE FOR IN-CAB WARNING LAMP (FIREMAN'S HELMET).
 5. MONITOR MODULE FOR SUPERVISION OF POWER SHUNT TRIP BREAKER.
 6. COORDINATE LOCATION AND MODULE FUNCTION WITH THE ELEVATOR CONTRACTOR.

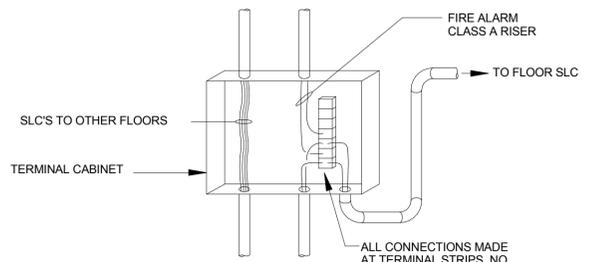


9 FA SYSTEM - TYPICAL SMOKE DETECTOR INSTALLATION ON ACOUSTICAL CEILING
SCALE: NTS

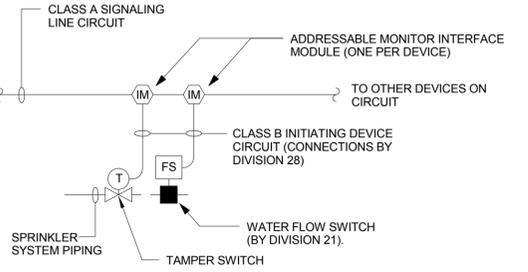
NOTE: ALL SMOKE DETECTORS INSTALLED ON AN ACOUSTICAL CEILING ARE TO BE SUPPORTED FROM THE CEILING GRID STRUCTURE, NOT THE CEILING TILE.



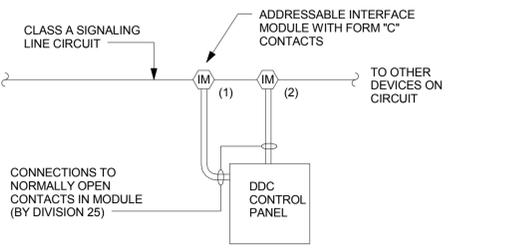
2 FA SYSTEM - AHU SHUTDOWN INTERFACE
SCALE: NTS



8 FA SYSTEM - RISER CONNECTIONS
SCALE: NTS



5 FA SYSTEM - SPRINKLER SYSTEM INTERFACE
SCALE: NTS



1 FA SYSTEM - ATC SYSTEM INTERFACE
SCALE: NTS

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APPROVED

FOR COMMANDER NAVFAC ACTIVITY

SATISFACTORY TO DATE 06/03/14

Designer TAW CVP

PM/DM

BRANCH MANAGER

CHIEF ENG/ ARCH

FIRE PROTECTION

DEPARTMENT OF THE NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 NAVAL FACILITIES ENGINEERING COMMAND - WASHINGTON DODEA
 MARINE CORPS BASE QUANTICO, VIRGINIA
 QUANTICO, VA
REPLACE QUANTICO M/H SCHOOL

SCALE: NTS

PROJECT NO.: P-021

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.: W91236-15-C-0023

13091499

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FIRE ALARM DETAILS