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## A circular professional engineer seal for the Commonwealth of Virginia. The outer ring contains the text "COMMONWEALTH OF VIRGINIA" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by a decorative border. In the center, the name "ROGER RUDY" is printed above the license number "LIC. No. 43952". A stylized signature is written across the bottom half of the seal.

Engineering Leader  
Engineering Designer

Roger Rudy, PE  
Joanne Sharma

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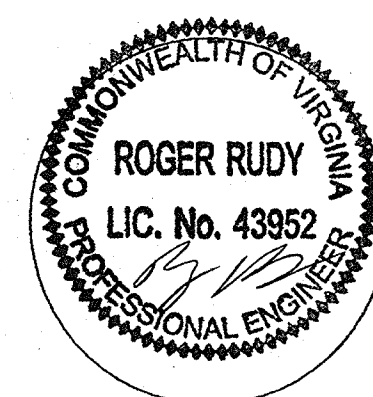
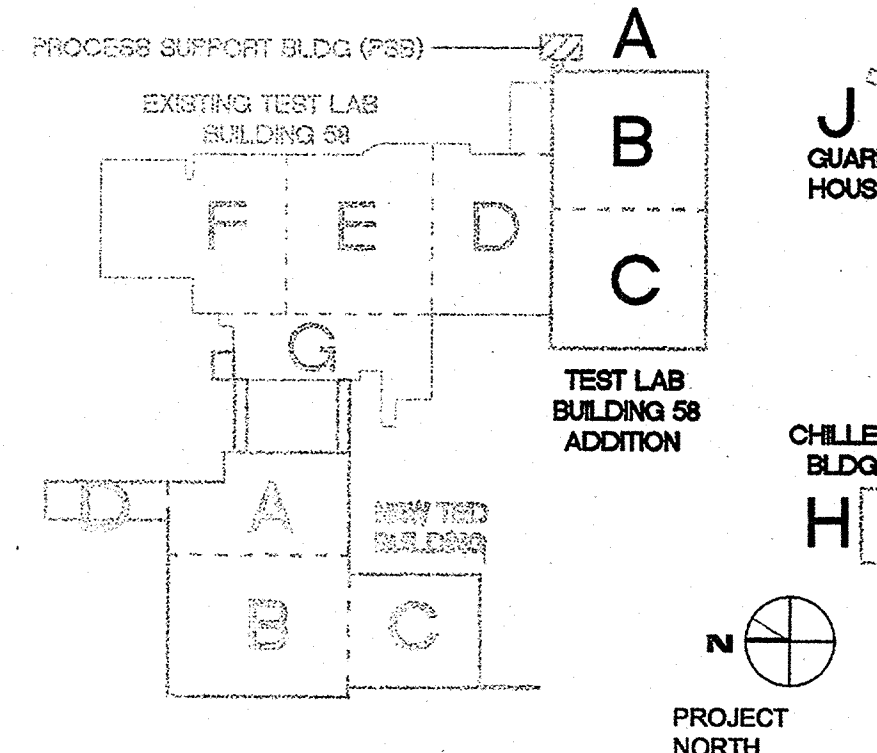
D

## GENERAL NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING FA0.1
2. REFER TO HVAC MECHANICAL PLANS AND CONTROLS DIAGRAMS FOR EXACT LOCATION AND QUANTITY OF DUCT SMOKE DETECTORS AND INTERFACE MODULES.
3. LOCATE SMOKE DETECTORS NO CLOSER THAN 36 INCHES FROM HVAC DIFFUSERS.
4. LOCATE VISUAL DEVICES A MINIMUM OF 80 INCHES ABOVE FINISHED FLOOR OR 6 INCHES BELOW THE FINISHED CEILING, WHICHEVER IS LOWER.
5. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING.
6. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.
7. REQUIRED STROBE CAPACITY INDICATED ON DRAWINGS FOR MASS NOTIFICATION SYSTEM STROBES (AMBER COLOR) SHALL BE THE ACTUAL OUTPUT IN ACCORDANCE WITH NFPA 72. (DERATED BY AMBER COLOR LENS.
8. REFER TO SPRINKLER DRAWINGS FOR EXACT QUANTITY OF LOCATIONS OF FLOW AND TAMPER SWITCHES.

## DRAWING NOTES:

- ① PROVIDE AND INSTALL LINEAR HEAT DETECTION IN PSB. SUPERVISE LINEAR HEAT DETECTION PANEL VIA FIRE ALARM SYSTEM FOR ALARM, TROUBLE, AND SUPERVISORY CONDITIONS.
- ② PROVIDE A LEAD-IN AND END-OF-LINE RESISTOR LINEAR HEAT CIRCUIT JUNCTION BOX.
- ③ PROVIDE LINEAR HEAT DETECTION SYSTEM. PROVIDE AS INDICATED ON PLANS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION, U.L. LISTING AND FM APPROVALS. PRODUCT SHALL BE PROTECTOWIRE MODEL PHSC-190-EPR OR EQUIVALENT FOR 190°F HEAT DETECTION. WIRE SHOULD NOT BE PAINTED. ENCLOSE PANEL IN NEMA 4X ENCLOSURE. INSTALL FIRE ALARM INTERFACE MODULES WITHIN NEMA ENCLOSURE.
- ④ ATTACH LINEAR DETECTOR TO STRUCTURE WITH BEAM CLAMPS OR MESSENGER WIRE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

**EWING  
COLE**Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952Engineering Leader  
Engineering DesignerRoger Rudy, PE  
Joanne Sharma**TECHNICAL ENGINEERING &  
DEVELOPMENT FACILITY  
(TEDF)**

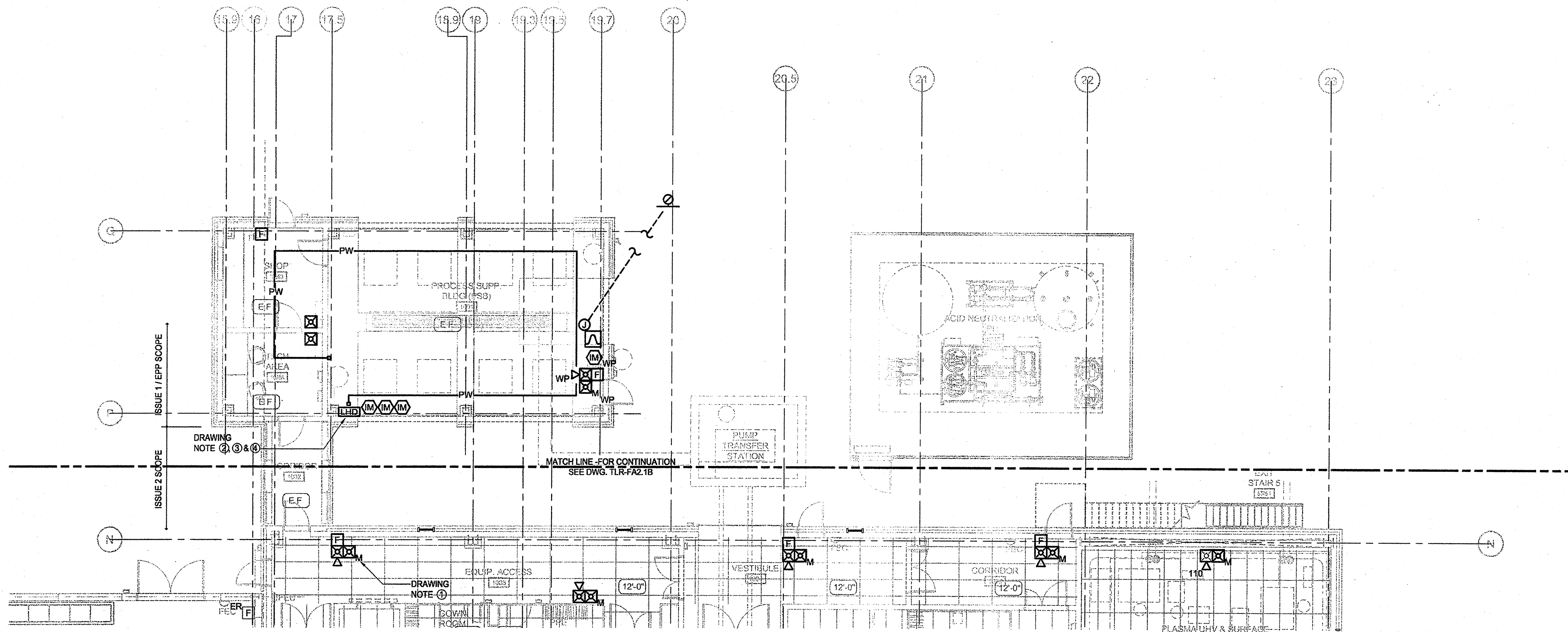
12000 JEFFERSON AVENUE, NEWPORT NEWS, VIRGINIA 23606

REV	ZONE	DESCRIPTION	APPR.	DATE
		ISSUE NO. 1 / EPP - OWNER REVIEW		01/08/10

FACILITY USERS		FACILITIES & LOGISTICS	
APPROVED	DATE	DESIGNER	DATE
APPROVED		DRAWN	
APPROVED		CHECKED	
APPROVED		APPROVED	

**Jefferson Lab**TITLE:  
**FIRST FLOOR PLAN -  
FIRE ALARM - SEGMENT A**

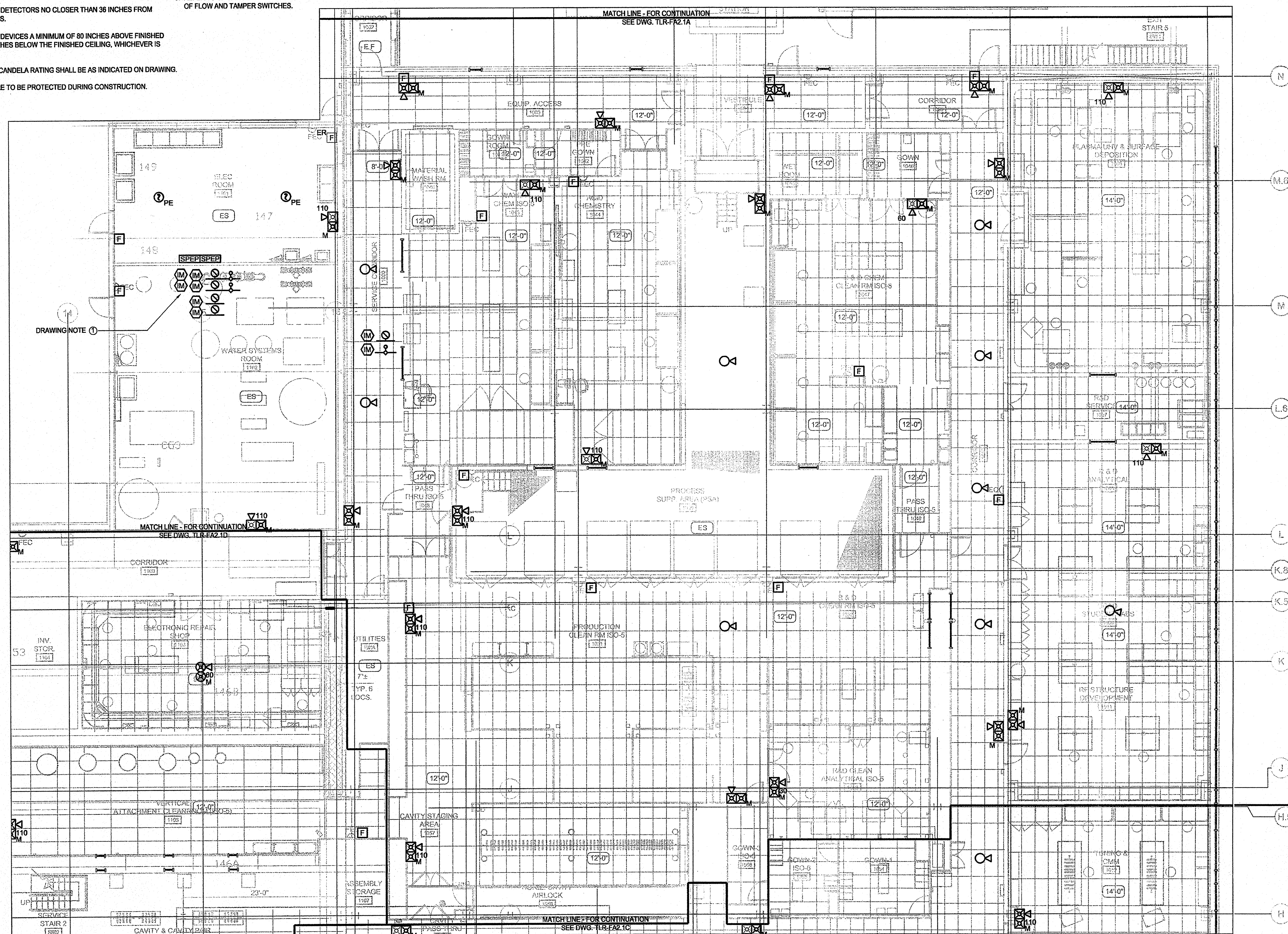
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1/8" = 1'-0"	100011-144-FA-2-SITE	TLR-FA2.1A	-

**1 FIRST FLOOR PLAN- FIRE ALARM- SEGMENT A**  
SCALE: 1/8"=1'-0"



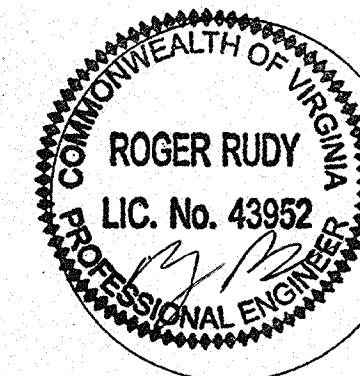
1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING FA0.1
2. REFER TO HVAC MECHANICAL PLANS AND CONTROLS DIAGRAMS FOR EXACT LOCATION AND QUANTITY OF DUCT SMOKE DETECTORS AND INTERFACE MODULES.
3. LOCATE SMOKE DETECTORS NO CLOSER THAN 36 INCHES FROM HVAC DIFFUSERS.
4. LOCATE VISUAL DEVICES A MINIMUM OF 80 INCHES ABOVE FINISHED FLOOR OR 6 INCHES BELOW THE FINISHED CEILING, WHICHEVER IS LOWER.
5. VISUAL DEVICE CANDELA RATING SHALL BE AS INDICATED ON DRAWING
6. ALL DEVICES ARE TO BE PROTECTED DURING CONSTRUCTION.

① FIRE ALARM / SPRINKLER SYSTEM INTERFACE. FIRE ALARM TO SUPERVISE ALL TAMPER AND FLOW SWITCHES. REFER TO FIRE PROTECTION SHOP DRAWINGS FOR EXACT QUANTITY AND LOCATION.

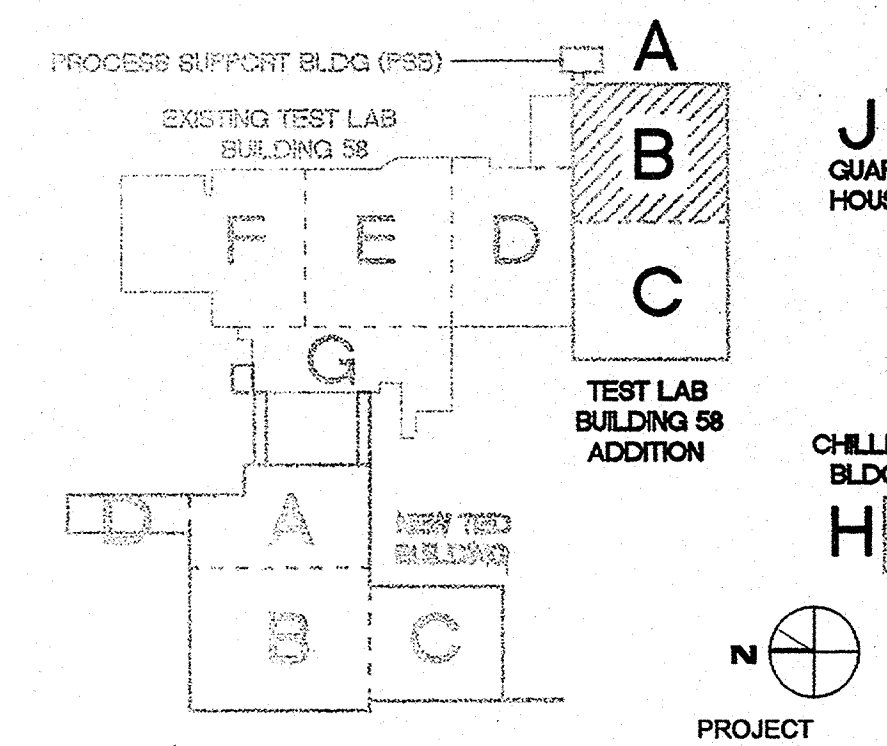


**1 FIRST FLOOR PLAN- FIRE ALARM- SEGMENT B**  
SCALE: 1/8"=1'-0"

Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Roger Rudy, PE  
Joanne Sharma



TECHNICAL ENGINEERING &  
DEVELOPMENT FACILITY  
(TEDF)

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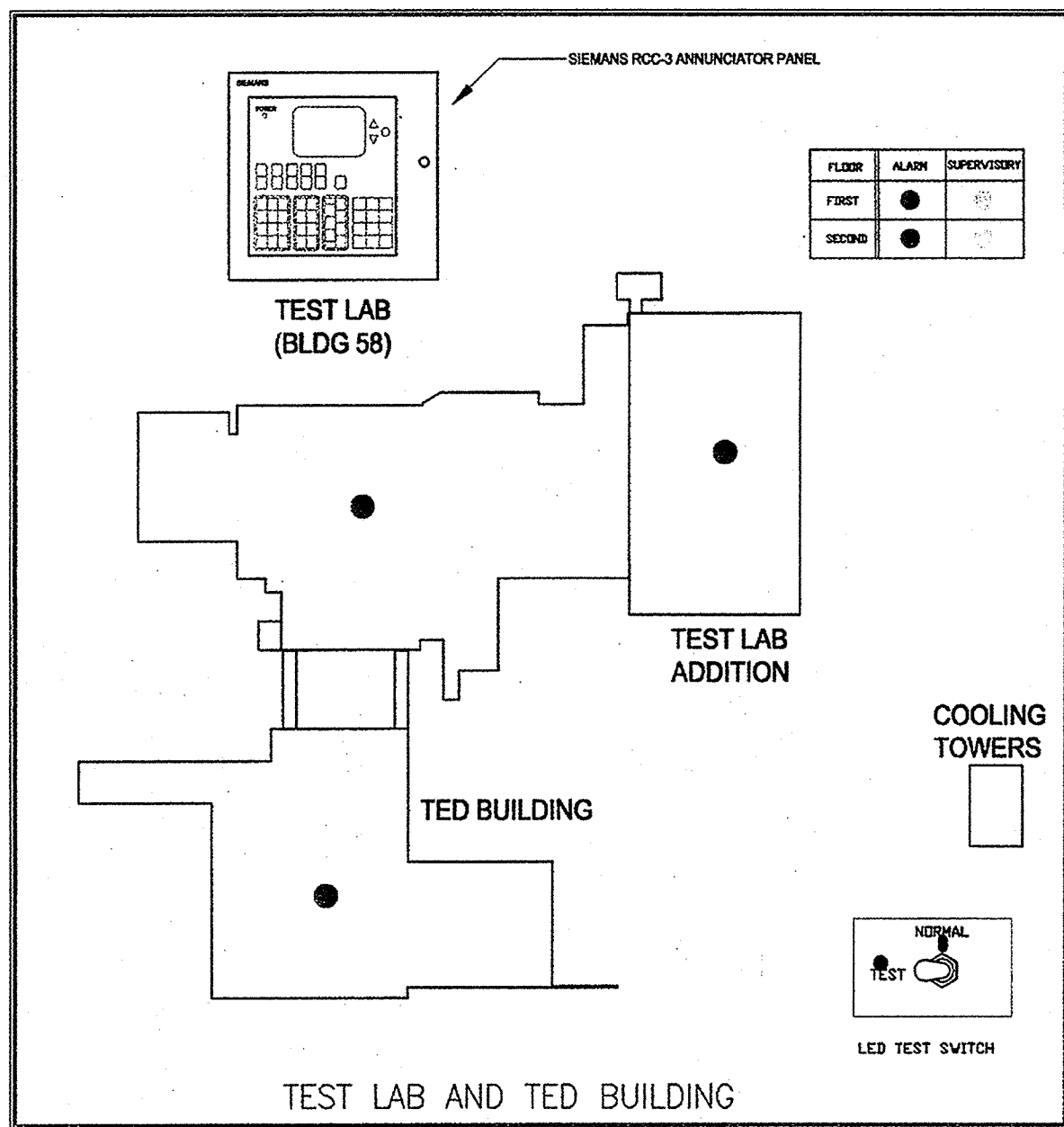
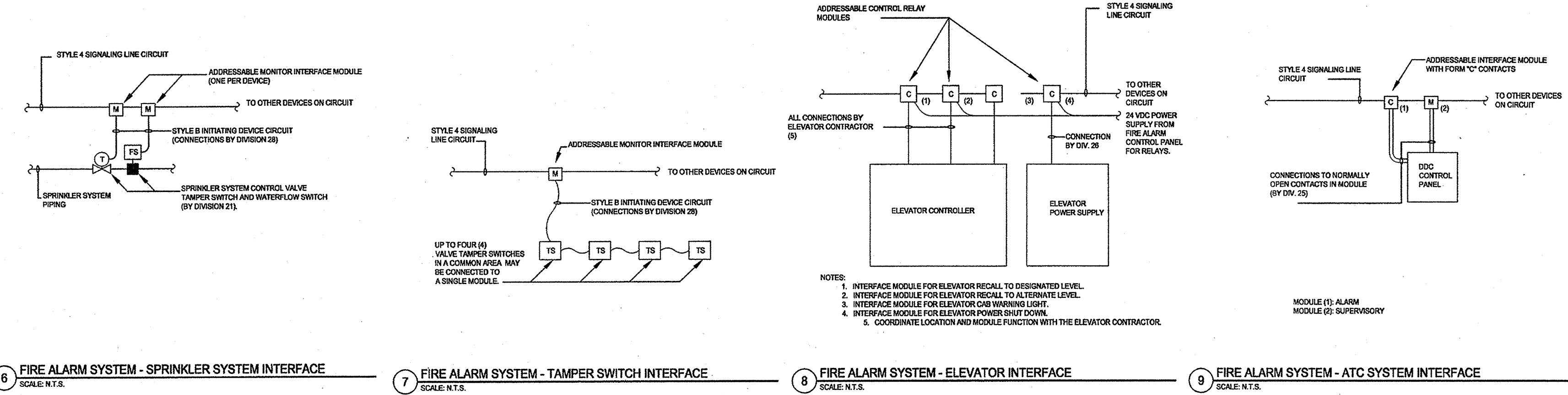
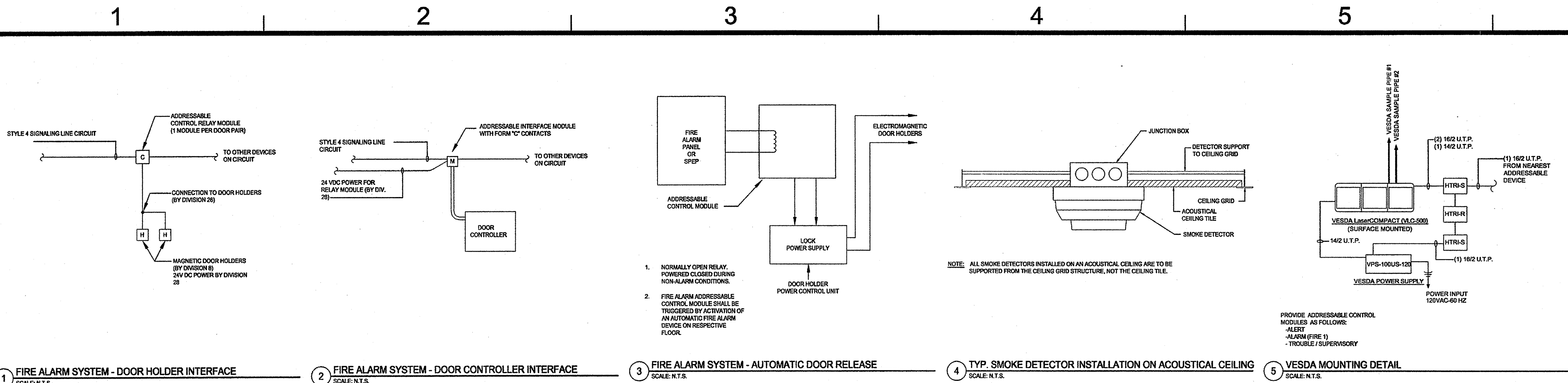
REV	ZONE	DESCRIPTION	APPR.	DATE
REVISIONS				
FACILITY USERS		FACILITIES & LOGISTICS		
APPROVED		DATE	DESIGNER	DATE
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APPROVED		DATE	DRAWN	
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APPROVED		DATE	CHECKED	
—		—	—	
APPROVED		DATE	APPROVED	
—		—	—	

**Jefferson Lab**

TITLE: FIRST FLOOR PLAN -  
FIRE ALARM - SEGMENT B

SCALE	DRAWING NUMBER	SHEET
1/8" = 1'-0"	100011-145-FA3-STE	TLR-FA2.1B





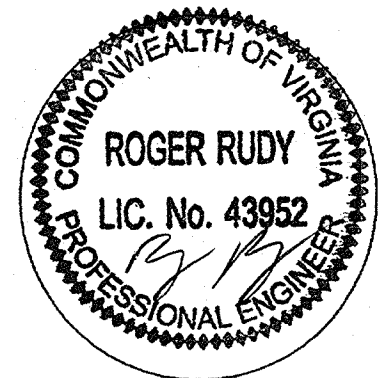
SYSTEM INPUTS											
SYSTEM OUTPUTS											
1	2	3	4	5	6	7	8	9	10	11	12
AREA/ROOM SMOKE DETECTOR											
DUST SMOKE DETECTOR (NOTE 1)											
WATER FLOW SWITCH/ PRESSURE											
MANUAL PULL STATION											
SMOKE DETECTOR AT DESIGNATED FLOOR ELEVATOR LOBBY											
SMOKE DETECTOR AT ALTERNATE FLOOR ELEVATOR LOBBY											
ELEVATOR MACHINE ROOM SMOKE DETECTOR											
ELEVATOR MACHINE ROOM HEAT DETECTOR 135°F											
MONITOR SWITCH (VALVE TAMPER OR SUPERVISORY AIR PRESSURE)											
SMOKE DETECTOR AT FIRE DOOR (SEE DWG. NOTE 14)											
ANY DEVICE OR CIRCUIT TROUBLE											
SWITCH DRY-PIPE HIGH/LOW AIR PRESSURE											

**11 INPUT/OUTPUT MATRIX**  
SCALE: N.T.S.

NOTE:  
1. VESDA DUST DETECTORS TO PERFORM AS AREA ROOM SMOKE DETECTOR IN ADDITION TO DUST DETECTOR FUNCTIONS.

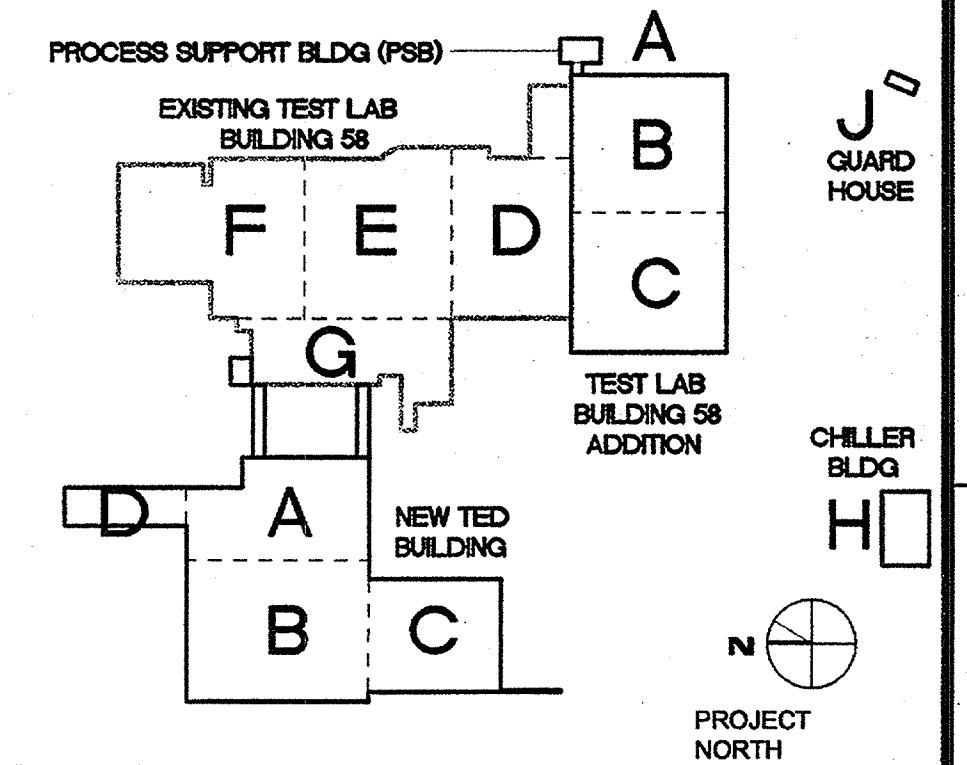
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Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Engineering Leader  
Engineering Designer

Roger Rudy, PE  
Joanne Sharma



## TECHNICAL ENGINEERING & DEVELOPMENT FACILITY (TEDF)

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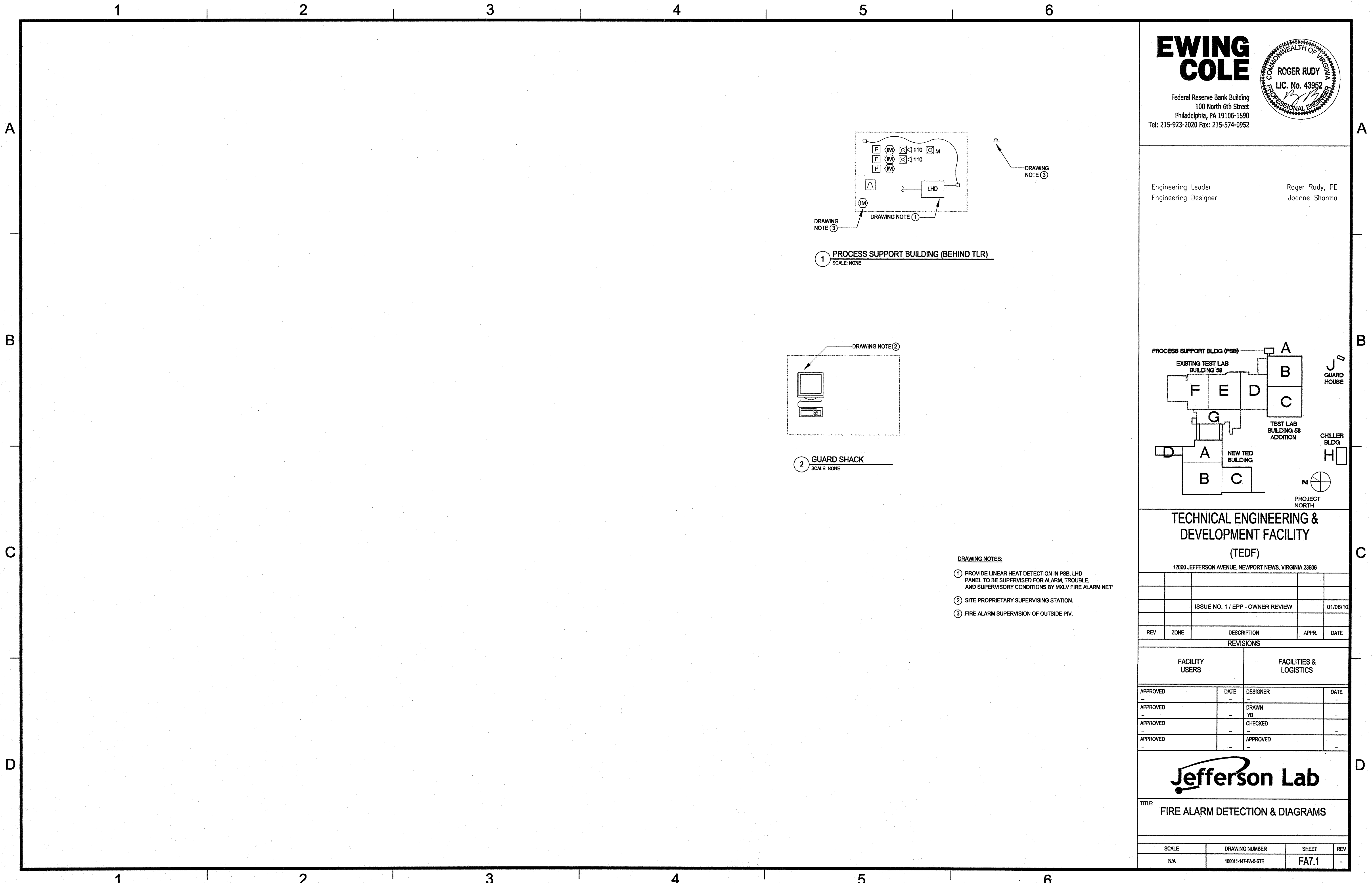
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		ISSUE NO. 1 / EPP - OWNER REVIEW		01/08/10

REVISIONS			
FACILITY USERS		FACILITIES & LOGISTICS	
APPROVED	DATE	DESIGNER	DATE
APPROVED	-	DRAWN YB	-
APPROVED	-	CHECKED	-
APPROVED	-	APPROVED	-

**Jefferson Lab**

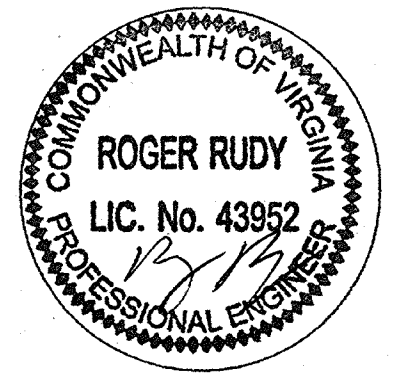
## TITLE: FIRE ALARM MATRIX OF OPERATIONS & DETAILS

SCALE	DRAWING NUMBER	SHEET	REV
N/A	100011-146-FA-4-SITE	FA6.1	-



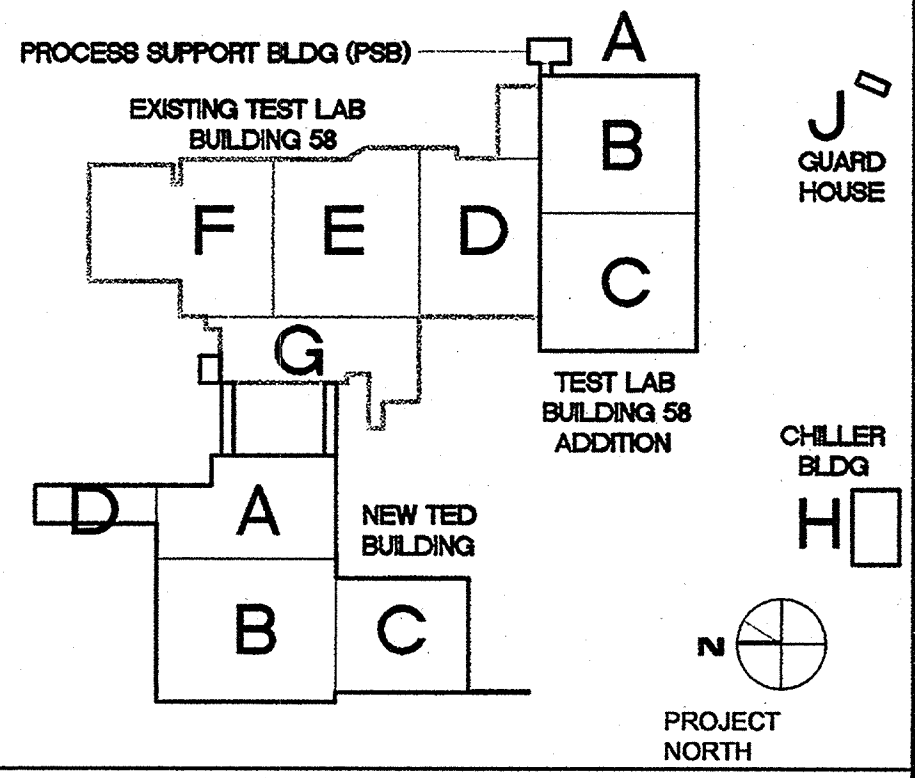
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COLE**

Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Engineering Leader  
Engineering Designer

Roger Rudy, PE  
Joanne Sharma



**TECHNICAL ENGINEERING &  
DEVELOPMENT FACILITY  
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APPROVED		YB	
APPROVED		CHECKED	
APPROVED		APPROVED	



TITLE:  
**FIRE ALARM DETECTION & DIAGRAMS**

SCALE	DRAWING NUMBER	SHEET	REV
N/A	100011-147-FA-5-SITE	FA7.1	-



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## BUILDING CONSTRUCTION CODE DATA

11

THIS FIRE PROTECTION DRAWING INDICATES THE GENERAL LOCATION OF THE SPRINKLERS. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR LAYING OUT ALL BRANCH LINE & ARM OVER PIPING IN CONFORMANCE WITH NFPA 13 STANDARDS. CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS FOR PIPE SIZING AND CONFIRM DESIGN DENSITIES AND SPRINKLER DISCHARGE CHARACTERISTICS WITH THE INSURANCE UNDERWRITER AND ANY OTHER AUTHORITY HAVING JURISDICTION. WORKING PLANS AND HYDRAULIC CALCULATIONS ARE TO BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO CONSTRUCTION.

COMMONWEALTH OF VIRGINIA  
**ROGER RUDY**  
 LIC. No. 43952  
 PROFESSIONAL ENGINEER  
 12/31/2015

Engineering Leader  
Project Designer

Roger Rudy  
Joanne Sharma

## A

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C

## FACILITY USERS

APPROVED	DATE	DESIGNER JS	DATE 6.12.09
APPROVED		DRAWN JS	6.12.09
APPROVED		CHECKED RR	6.12.09
APPROVED		APPROVED	

D

SCALE	DRAWING NUMBER	SHEET	REV
1/8" = 1'-0"	100011-148-FP-1-STE	FP.0.1	.



DRAWING NOTES:

1. REFER TO THE TABLE ON THIS DRAWING FOR SPRINKLER SYSTEM DESIGN CRITERIA.

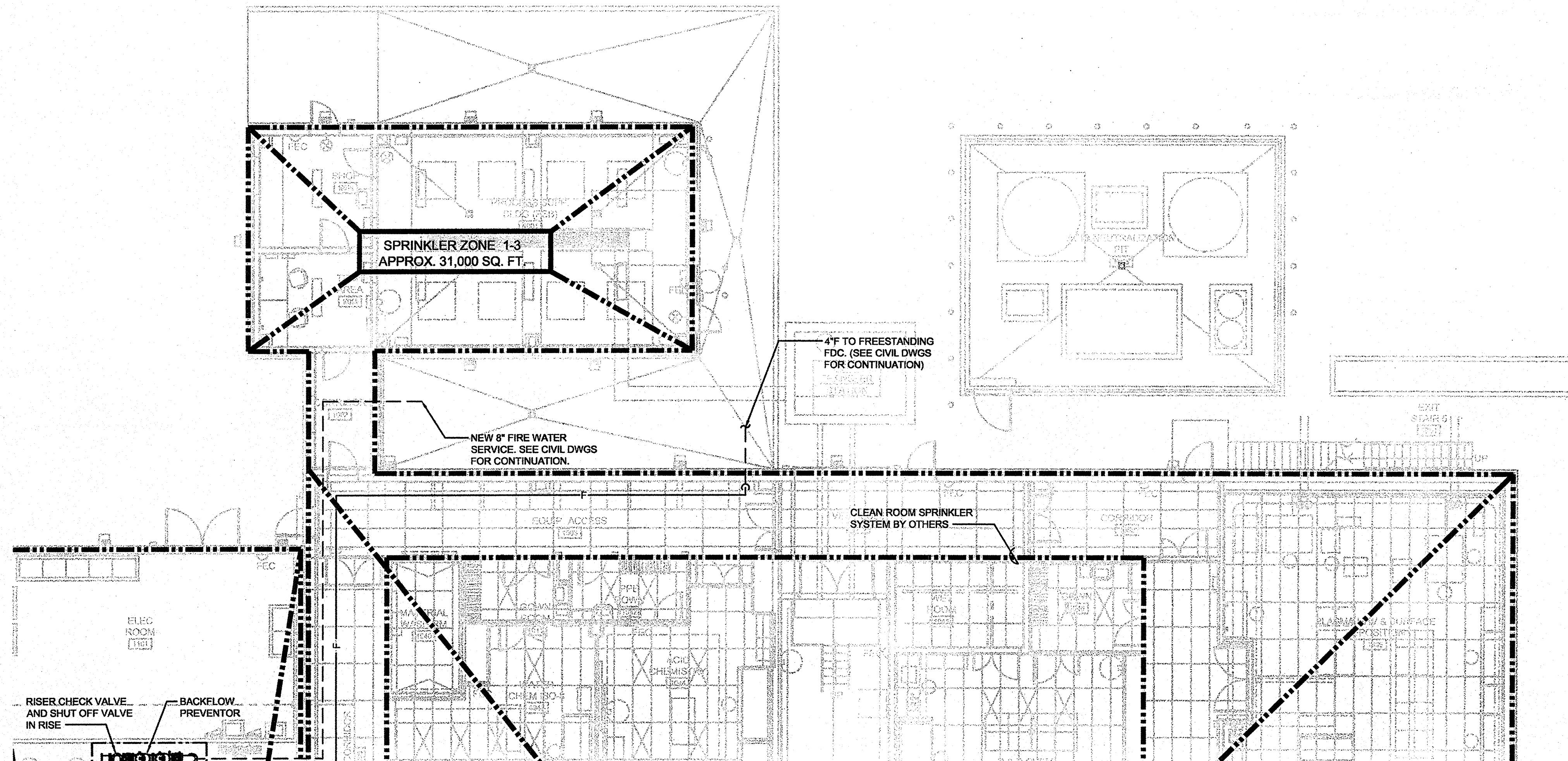
2. NEW SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILE WHERE POSSIBLE.

3. UPRIGHT AND PENDANT HEADS IN THE PROCESS SUPPORT BUILDING SHALL BE CORROSIVE RESISTANT WITH WHITE POLYESTER COATING AND SIMILAR TO VIKING MODEL MICROFAST.

4. PIPES, FITTINGS AND HANGERS SHALL BE PAINTED RED.

DESIGN CRITERIA:

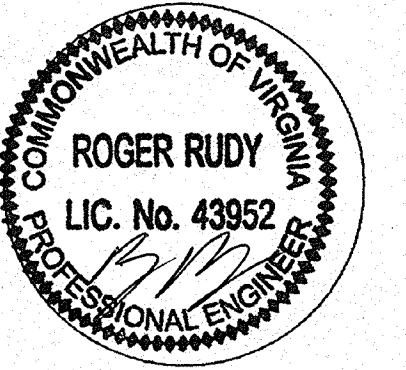
- PROCESSING SUPPORT BUILDING MINIMUM  
ORDINARY HAZARD GROUP 2:  
0.20 GPM/SQ. FT. OVER 1,500 SQ. FT. WITH 250  
GPM OUTSIDE HOSE REQUIREMENTS.



1 FIRST FLOOR PLAN- FIRE PROTECTION- SEGMENT A  
SCALE: 1/8"=1'-0"

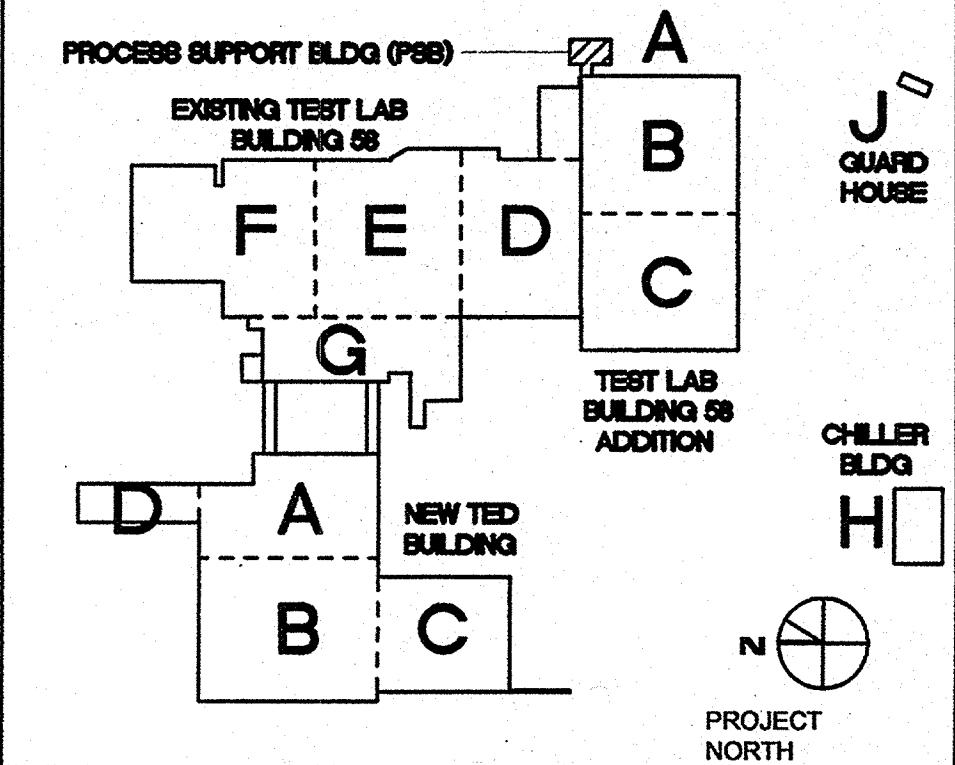
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COLE**

Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Engineering Leader  
Project Designer

Roger Rudy  
Joanne Sharma



**TECHNICAL ENGINEERING &  
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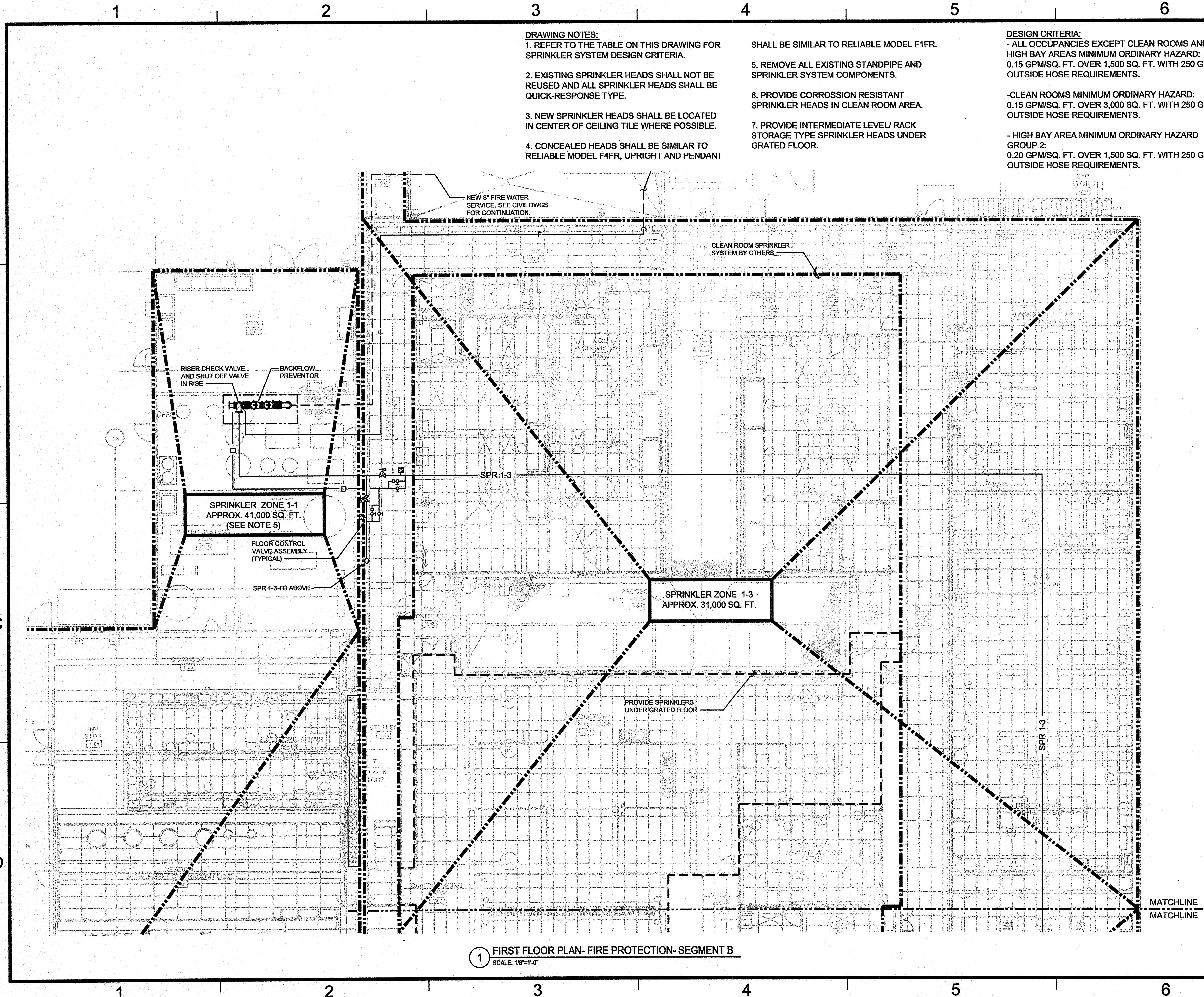
REVISIONS			
FACILITY USERS		FACILITIES & LOGISTICS	
APPROVED	DATE	DESIGNER JS	DATE 6.12.09
APPROVED		DRAWN JS	6.12.09
APPROVED		CHECKED RR	6.12.09
APPROVED		APPROVED	

**Jefferson Lab**

TITLE:  
FIRST FLOOR PLAN -  
FIRE PROTECTION - SEGMENT A

SCALE	DRAWING NUMBER	SHEET	REV
1/8" = 1'-0"	100011-149-FP-2-SITE	TLR-FP2.1.A	





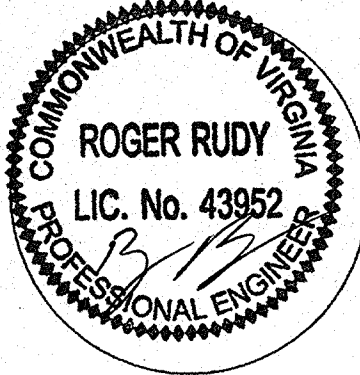
- DRAWING NOTES:**
1. REFER TO THE TABLE ON THIS DRAWING FOR SPRINKLER SYSTEM DESIGN CRITERIA.
  2. EXISTING SPRINKLER HEADS SHALL NOT BE REUSED AND ALL SPRINKLER HEADS SHALL BE QUICK-RESPONSE TYPE.
  3. NEW SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILE WHERE POSSIBLE.
  4. CONCEALED HEADS SHALL BE SIMILAR TO RELIABLE MODEL F4FR, UPRIGHT AND PENDANT

- SHALL BE SIMILAR TO RELIABLE MODEL F1FR.
5. REMOVE ALL EXISTING STANDPIPE AND SPRINKLER SYSTEM COMPONENTS.
  6. PROVIDE CORROSION RESISTANT SPRINKLER HEADS IN CLEAN ROOM AREA.
  7. PROVIDE INTERMEDIATE LEVEL/ RACK STORAGE TYPE SPRINKLER HEADS UNDER GRATED FLOOR.

- DESIGN CRITERIA:**
- ALL OCCUPANCIES EXCEPT CLEAN ROOMS AND HIGH BAY AREAS MINIMUM ORDINARY HAZARD: 0.15 GPM/SQ. FT. OVER 1,500 SQ. FT. WITH 250 GPM OUTSIDE HOSE REQUIREMENTS.
  - CLEAN ROOMS MINIMUM ORDINARY HAZARD: 0.15 GPM/SQ. FT. OVER 3,000 SQ. FT. WITH 250 GPM OUTSIDE HOSE REQUIREMENTS.
  - HIGH BAY AREA MINIMUM ORDINARY HAZARD GROUP 2: 0.20 GPM/SQ. FT. OVER 1,500 SQ. FT. WITH 250 GPM OUTSIDE HOSE REQUIREMENTS.

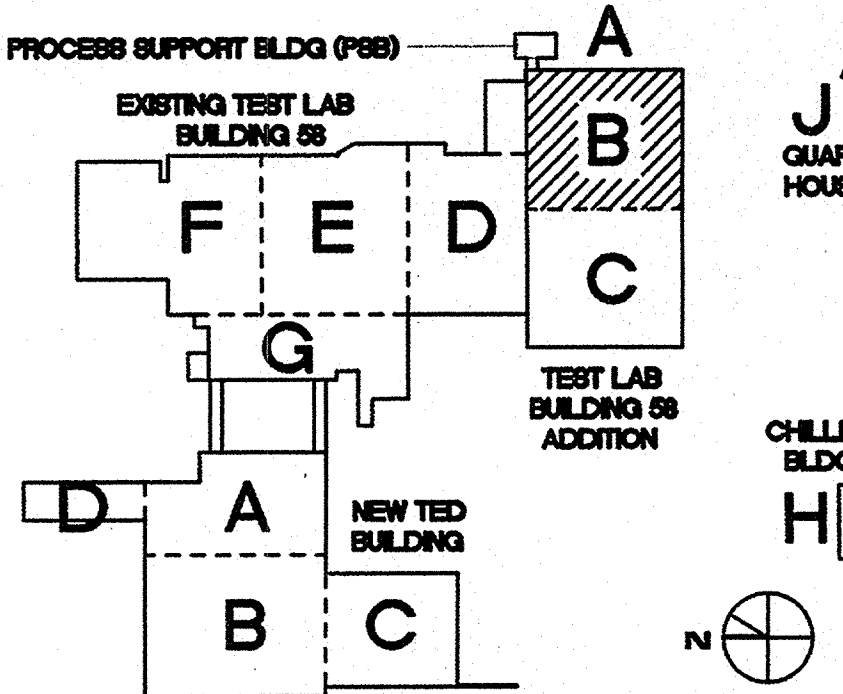
**EWING COLE**

Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Engineering Leader  
Project Designer

Roger Rudy  
Joanne Sharma



**TECHNICAL ENGINEERING & DEVELOPMENT FACILITY (TEDF)**

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APPROVED		DATE	DESIGNER JS	DATE 6.12.09
APPROVED			DRAWN JS	6.12.09
APPROVED			CHECKED RR	6.12.09
APPROVED			APPROVED	

**Jefferson Lab**

TITLE:  
**FIRST FLOOR PLAN - FIRE PROTECTION - SEGMENT B**

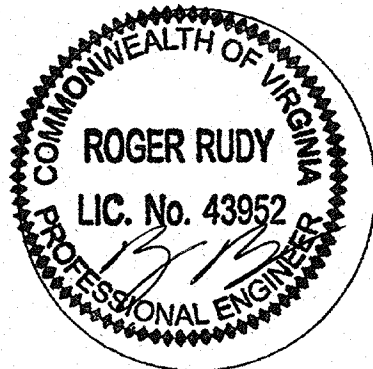
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**1 FIRST FLOOR PLAN- FIRE PROTECTION- SEGMENT B**  
SCALE: 1/8"=1'-0"



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COLE**

Federal Reserve Bank Building  
100 North 6th Street  
Philadelphia, PA 19106-1590  
Tel: 215-923-2020 Fax: 215-574-0952



Engineering Leader  
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Joanne Sharma

**TECHNICAL ENGINEERING &  
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APPROVED	DATE	DESIGNER	DATE	
APPROVED		JS	6.19.09	
APPROVED		DRAWN	6.19.09	
APPROVED		CHECKED	6.19.09	
APPROVED		RR		
		APPROVED		

**Jefferson Lab**

**TITLE:  
FIRE PROTECTION  
RISER DIAGRAMS**

SCALE	DRAWING NUMBER	SHEET	REV
NTS	100011-151-FP-4-SITE	FP5.1	

**1 TLR BUILDING RISER DIAGRAM**  
NO SCALE

**2 CHILLER BUILDING RISER DIAGRAM**  
NO SCALE

**3 TED BUILDING RISER DIAGRAM**  
NO SCALE



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COLE**

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100 North 6th Street  
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Tel: 215-923-2020 Fax: 215-574-0952

COMMONWEALTH OF VIRGINIA

ROGER RUDY  
LIC. No. 43952  
PROFESSIONAL ENGINEER

Engineering Leader  
Project Designer

Roger Rudy  
Joanne Sharma

TECHNICAL ENGINEERING &  
DEVELOPMENT FACILITY  
(TEDF)

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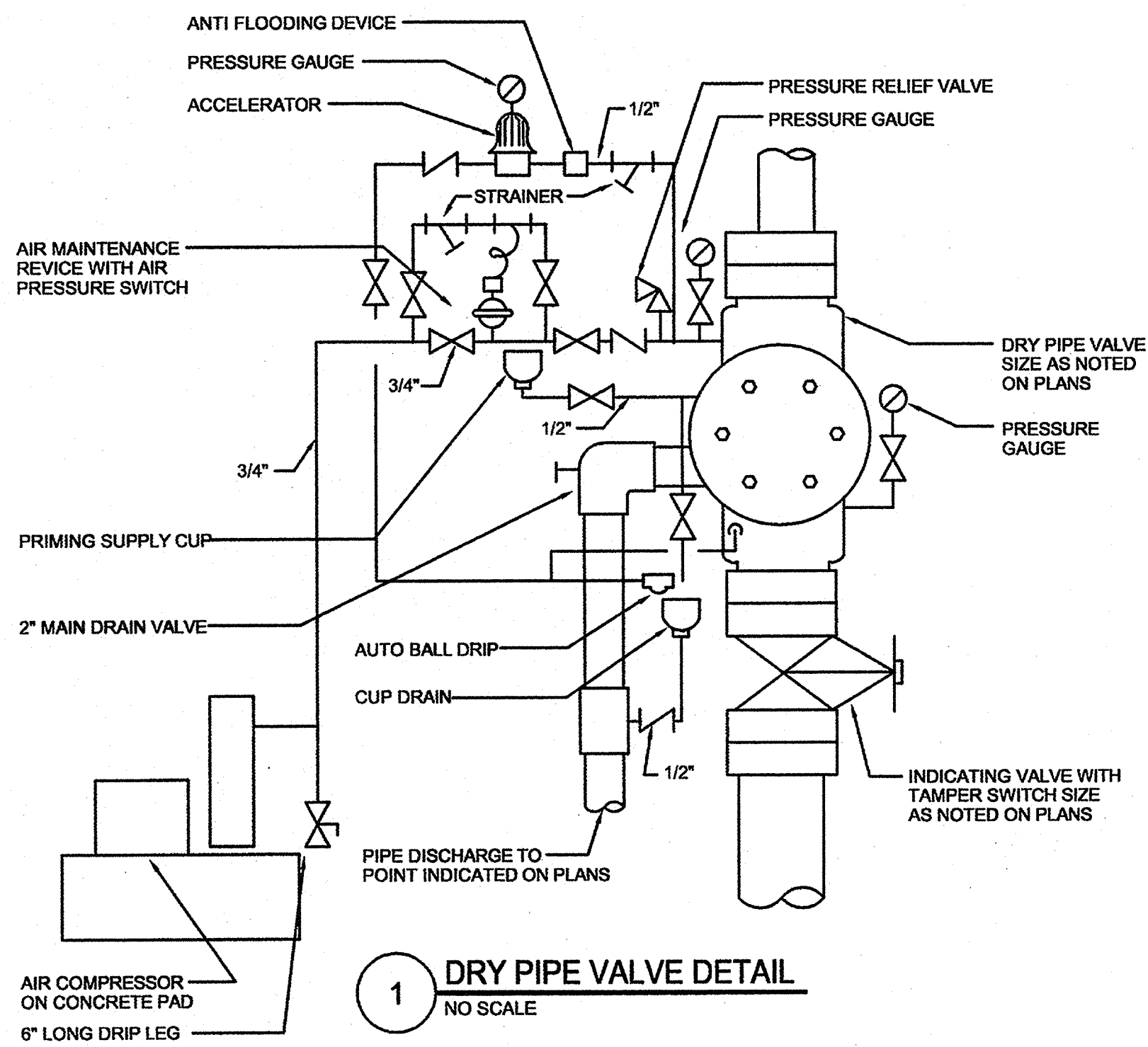
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REVISIONS			
FACILITY USERS		FACILITIES & LOGISTICS	
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APPROVED		DRAWN JLC	6.19.09
APPROVED		CHECKED FA	6.19.09
APPROVED		APPROVED	

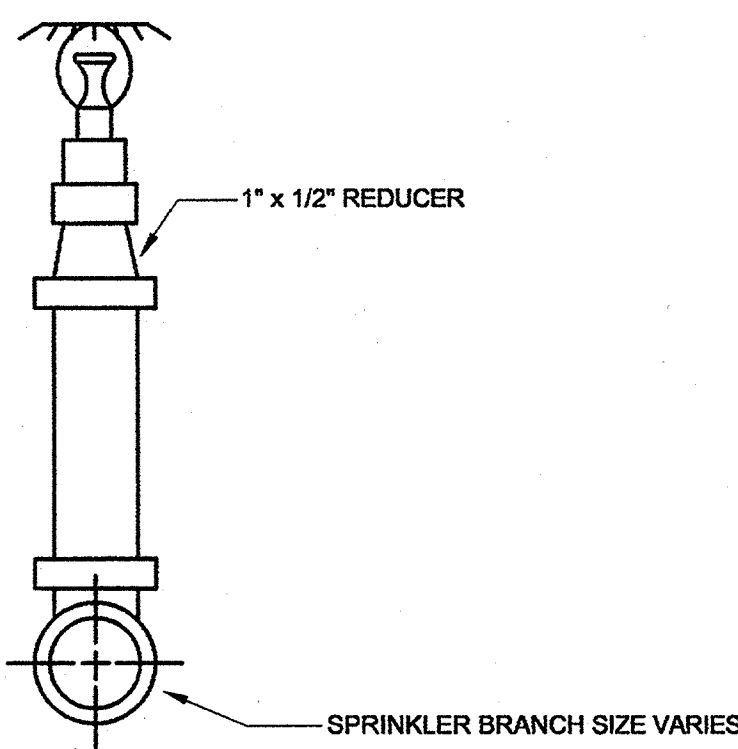
**Jefferson Lab**

TITLE:  
FIRE PROTECTION  
DETAILS

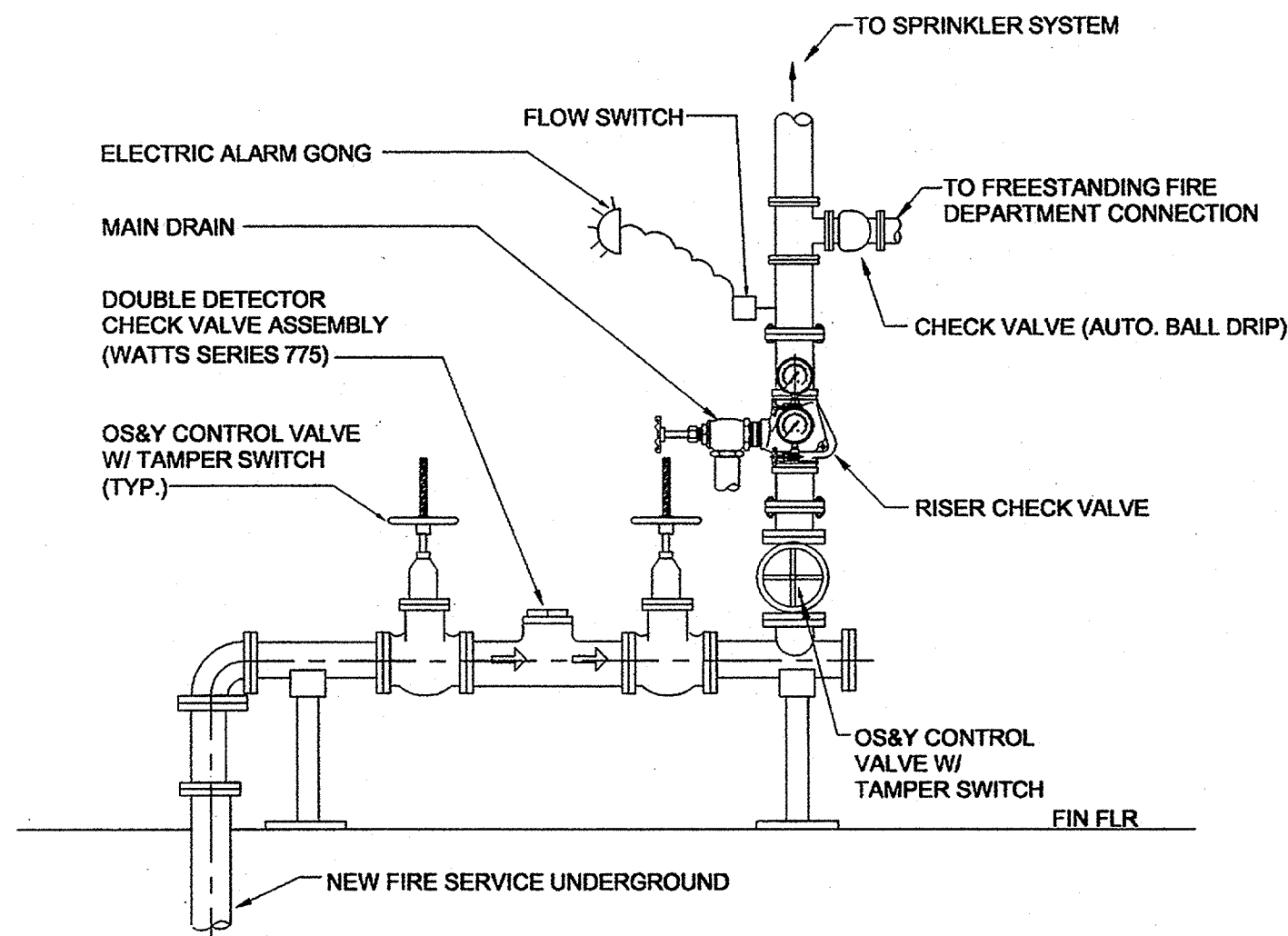
SCALE	DRAWING NUMBER	SHEET	REV
NTS	100011-162-FP-5-SITE	FP6.1	



1 DRY PIPE VALVE DETAIL  
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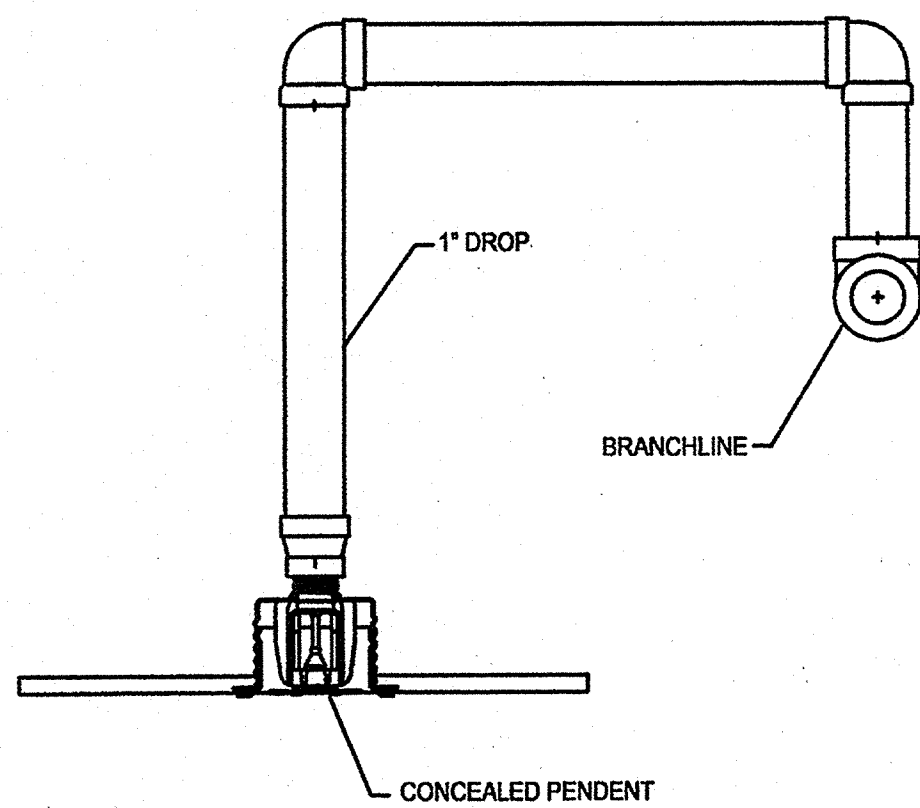


2 TYPICAL SPRINKLER ON SPRIG (UPRIGHT)  
NO SCALE

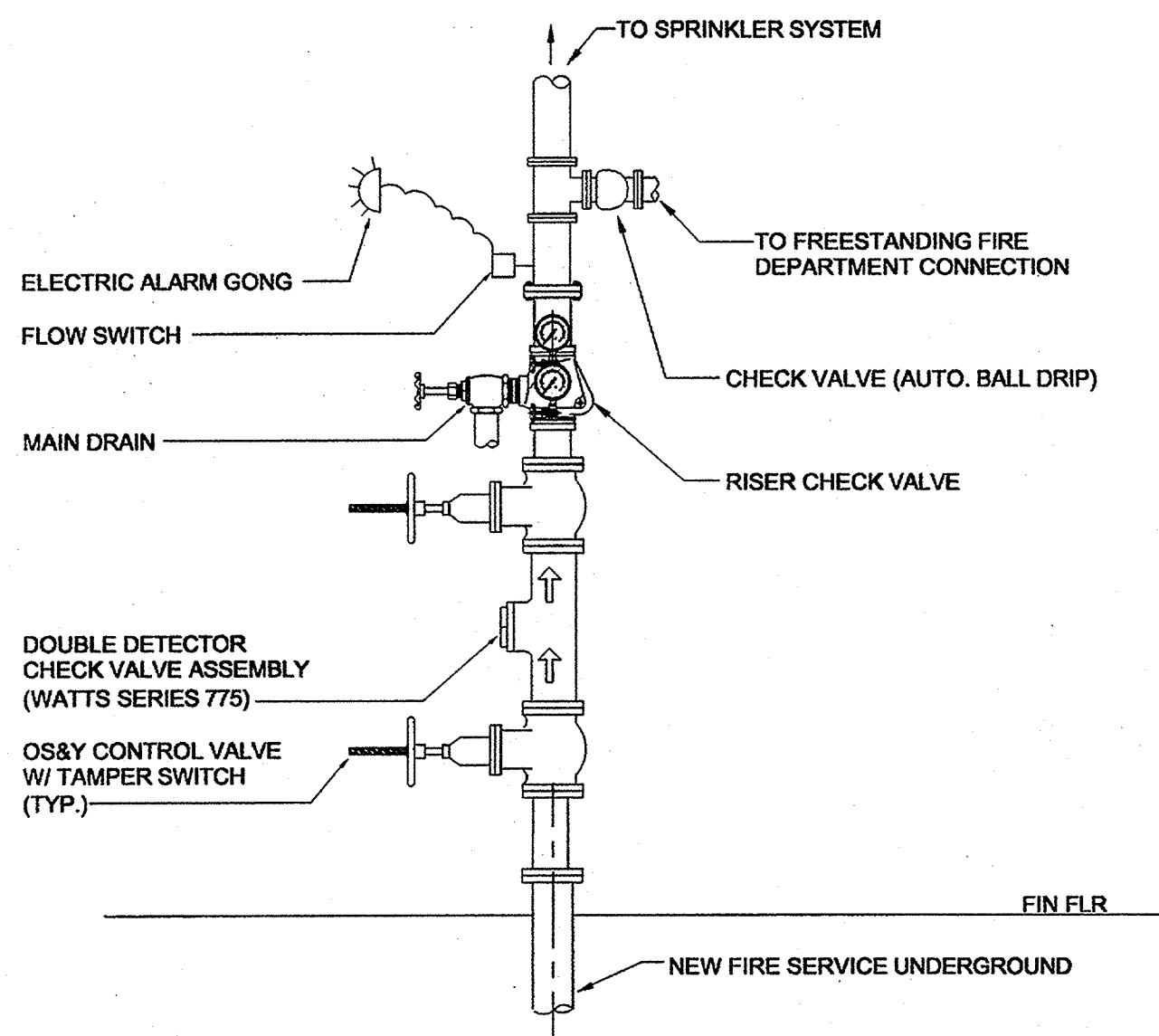


3 BACKFLOW PREVENTER AND SPRINKLER SYSTEM RISER DETAIL  
NO SCALE

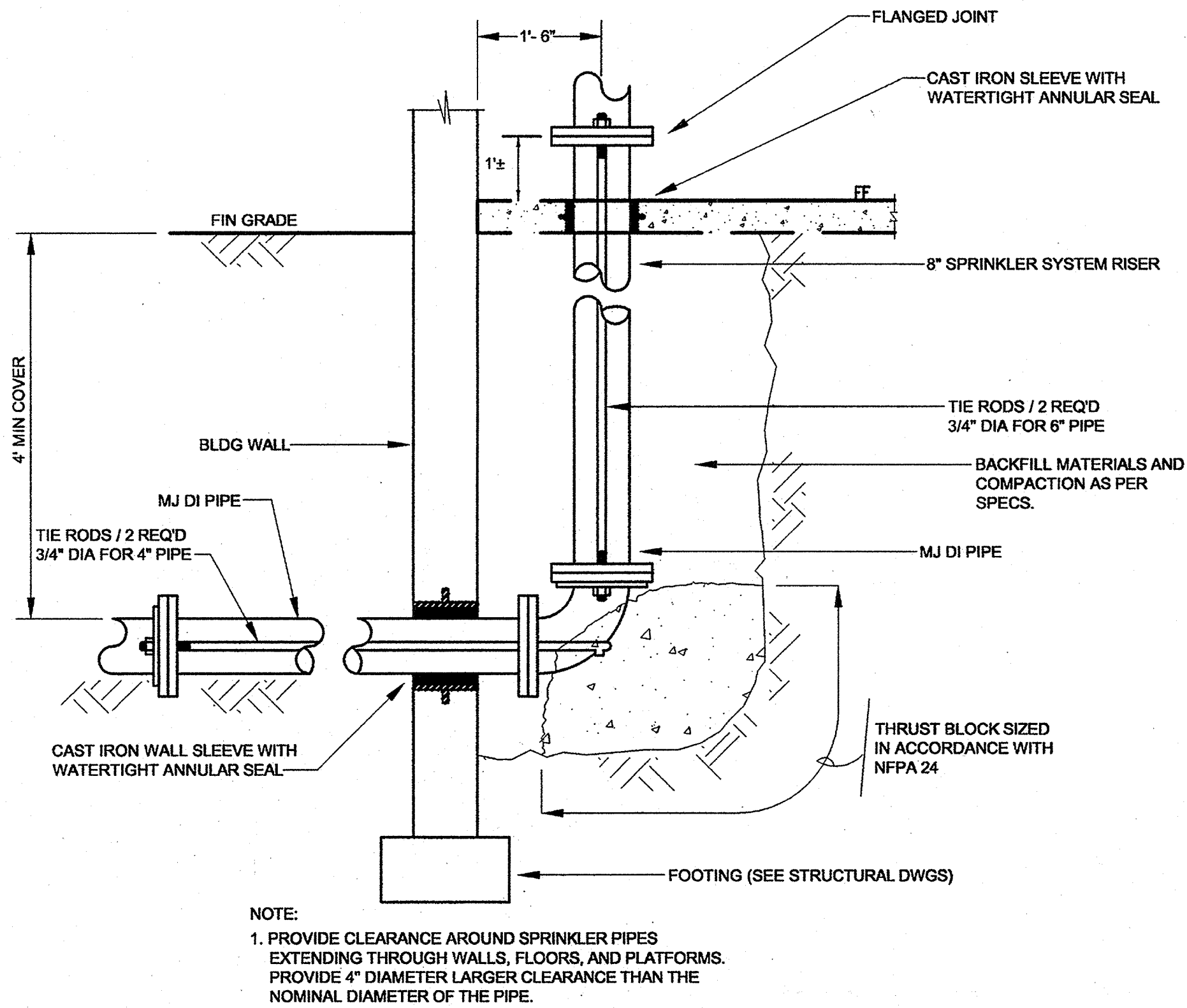
- NOTES:
1. WHEN ARM OVER IS MORE THEN 24" INCHES IN LENGTH, THE ARM OVER MUST BE SUPPORTED WITH A PIPE HANGER.
  2. CONNECT ALL ARM-OVERS TO THE TOP THE BRANCH LINE PIPING.



4 HEAD SPRINKLER DETAIL ON RETURN BEND  
NO SCALE



5 CHILLER BUILDING SPRINKLER RISER DETAIL  
NO SCALE



6 RISER DETAIL  
NO SCALE