

CHERRY L. EMERSON BUILDING
3 STORY BRICK WITH PENTHOUSE
BLDG. #66

CHERRY L. EMERSON BUILDING
 3 STORY-BRICK
 BLDG. #66

CONC. STEPS w/
 METAL HANDRAIL

SEE FIRE PROTECTION DRAWINGS FOR CONTINUATION
 OF FIRE SERVICE MAIN. CONTRACTOR TO
 COORDINATE WITH FIRE PROTECTION CONTRACTOR
 TO ALIGN HORIZONTAL AND VERTICAL CONNECTION
 WITH INTERIOR FIRE PROTECTION PIPING AND
 PENETRATION OF BUILDING ENVELOPE.

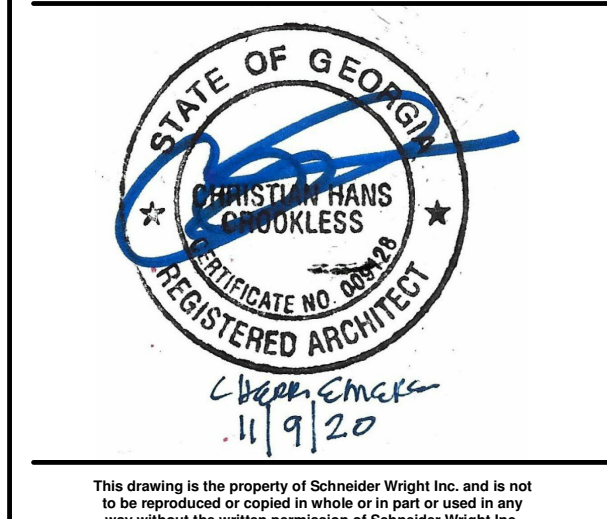
PIPING TO TURN VERTICAL AND ENTER BUILDING
 ABOVE GRADE. SEE MECHANICAL AND FIRE
 PROTECTION DRAWINGS FOR PIPING, INSULATION,
 AND HEAT TRACE DETAILS.
 CONTRACTOR TO INSTALL RESTRAINED JOINT PIPE AS
 REQUIRED TO COMPLY WITH SPECIFICATIONS AND BE
 COORDINATED WITH THE DESIGN AND CONSTRUCTION
 OF THE RISER.

ARCHITECTURAL SITE PLAN
 N.T.S.

DATE	NO.	DESCRIPTION
1-8-21	1	ISSUED FOR PERMITTING AND CONSTRUCTION

DATE	ISSUE
9-24-20	75% ISSUED FOR PRICING SET REVIEW
11-9-20	ISSUED FOR PERMITTING AND CONSTRUCTION

Cherry Emerson Building (066)
Fire Sprinkler System Addition
 The Georgia Institute of Technology
 310 Ferst Dr NW,
 Atlanta, GA 30332



DATE	DESCRIPTION
1-8-21	ISSUED FOR PERMITTING AND CONSTRUCTION

DATE	ISSUE
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www.uzuncase.com

CHERRY EMERSON BUILDING
THE GEORGIA INSTITUTE OF TECHNOLOGY
100% SUBMITTAL STRUCTURAL NARRATIVE
UZUN + CASE, LLC (JOB #20.106)
NOVEMBER 6th, 2020

PROJECT DESCRIPTION:

The structure consists of a 3-story building constructed with cast-in-place concrete and used primarily as laboratory and office space. The addition of a fire sprinkler system requires new wall and slab penetrations for supply and riser pipes.

Pipe Entry at East Stairwell:

Based on fire protection drawings, water supply and fire department connection pipes enter the building above grade through the exterior wall. Two new 8" x 8" openings are to be cut through existing CMU and brick façade on each face. Locate the openings at unreinforced CMU cells and do not overcut. A 3/8" x 3" x 12" lintel plate (hot dip galvanized) shall be installed below the brick on exterior and interior faces at each opening, with joints sawcut each side for 2" of bearing. The pipes enter the building into Stair Storage Room #137A beneath the intermediate stair landing and will exit the closet without altering or damaging the steel stair framing.

Risers at East Stairwell:

Based on fire protection drawings, there is a fire protection riser, a standpipe riser, and a drain riser in the east stairwell.

- The fire protection riser occurs between the steel framed stair risers within the shaft opening and does not alter or penetrate the stair or main landing structure.
- The standpipe riser occurs within the shaft opening and will penetrate the steel framed intermediate landing at the 1st and 2nd floors. A 6" maximum diameter core will be made through each intermediate landing which is constructed of a topping slab on steel pan. Steel channel and angle support framing is to be avoided and remain undamaged.
- A drain riser passes through the main landing at the 1st and 2nd levels. A 3" maximum diameter core may be made through the 48" wide x 17.5" deep reinforced concrete girder along grid line '11', within the middle third of the span, if existing rebar is not cut or damaged. Anticipated reinforcement based on existing building drawings is top and bottom longitudinal bars spaced approximately 4" apart with stirrups at varied spacing. Each girder must be scanned in advance to locate existing reinforcement. Core locations must fit between all rebar. If that is not possible, the riser shall be moved to a location approved by the fire protection consultant such that only the main landing slab is cored.

Riser at South Stairwell:

Based on fire protection drawings, the standpipe riser in the south stairwell occurs within the shaft opening and will penetrate the steel framed intermediate landing at the 1st, 2nd, and 3rd floors. A 6" maximum diameter core

1230 Peachtree St NE, Suite 2500
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678.553.5200

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will be made through each intermediate landing which is constructed of a topping slab on steel pan. Steel channel and angle support framing is to be avoided and remain undamaged. If required, a 6" maximum diameter core may be made through the penthouse roof slab or exterior wall for the rooftop greenhouse.

Riser at West Stairwell:

Based on fire protection drawings, the standpipe riser in the west stairwell occurs within the shaft opening and will penetrate the steel framed intermediate landing at the 1st and 2nd floors. A 6" maximum diameter core will be made through each intermediate landing which is constructed of a topping slab on steel pan. Steel channel and angle support framing is to be avoided and remain undamaged.

UZUN+CASE, LLC

Thomas A. Pfeifer
Thomas A. Pfeifer, PE
Principal

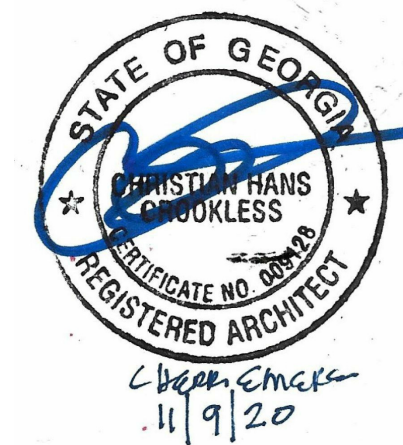


131 Roswell Street | Suite C 201
Alpharetta, Georgia 30009
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date	no.	description
1-8-21	△	REVISIONS FOR FIRE MARSHAL COMMENTS AND RFI#1

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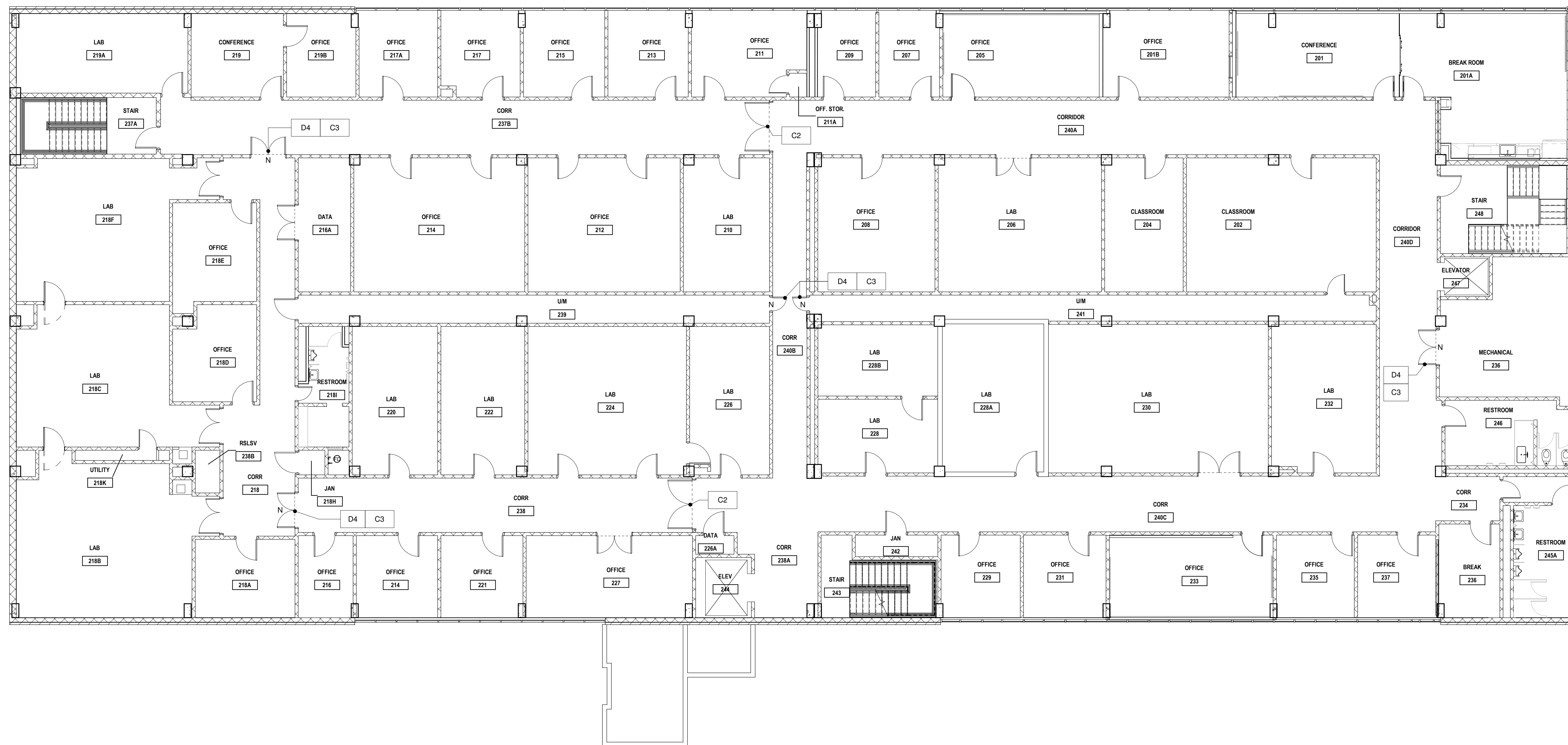
corr. no.	date
119000	1-8-21

drawn by	checked by
FJJC	JCC:CHC

STRUCTURAL NARRATIVE

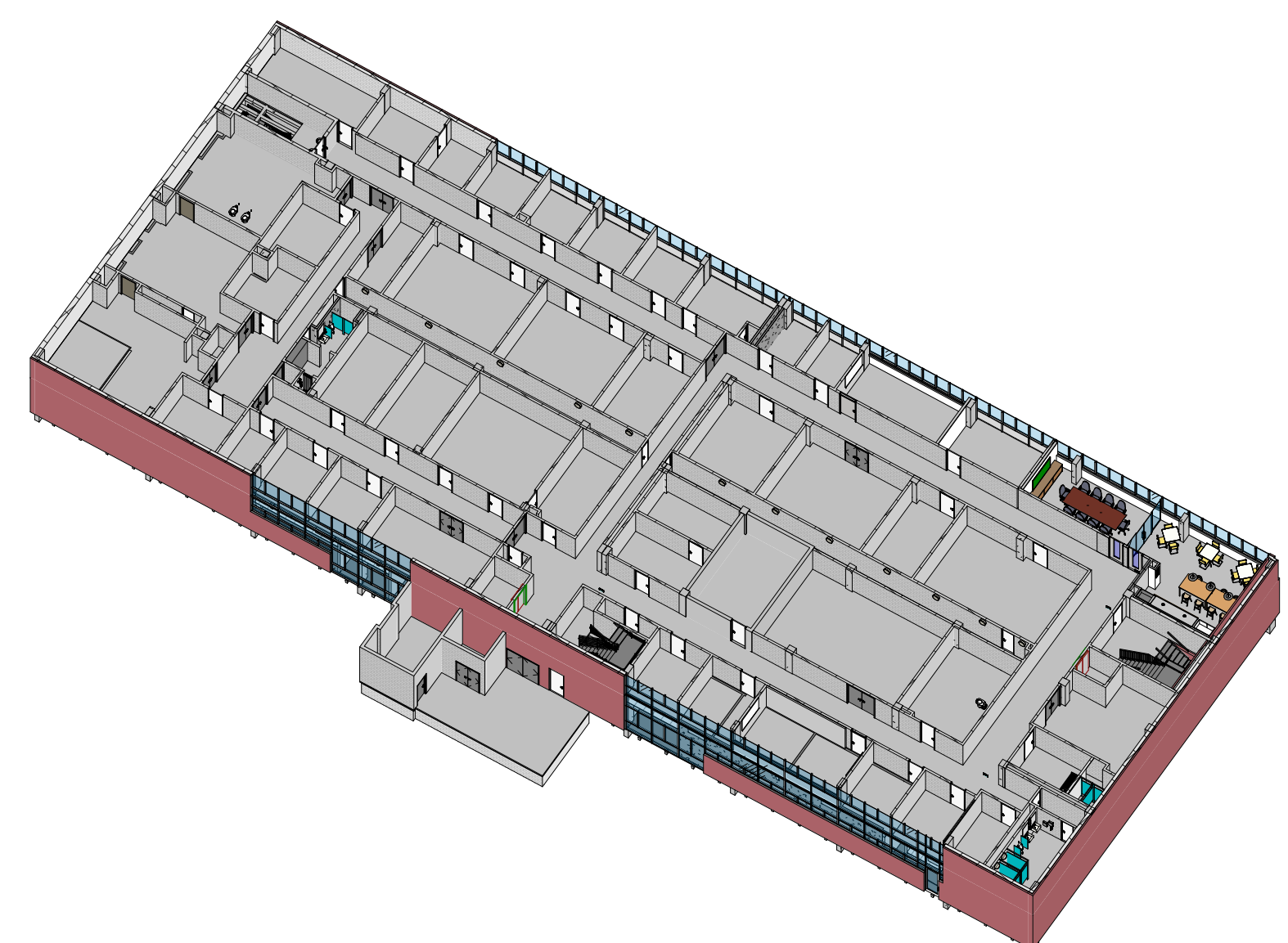
sheet no.

S-1.0



1 LEVEL 2
Scale: 1/8" = 1'-0"

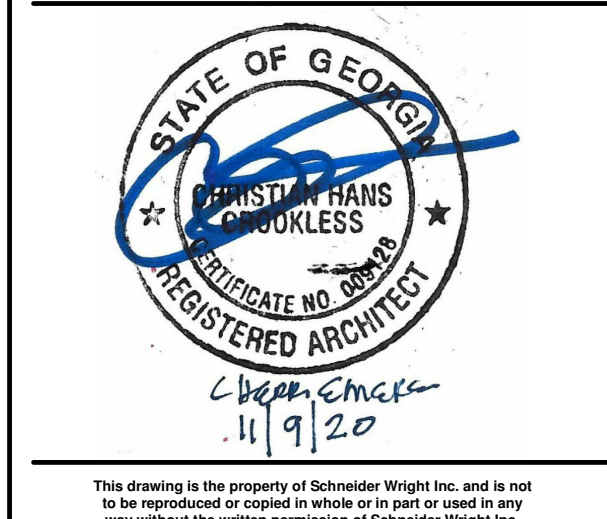
- LEGEND**
ALL PARTITIONS WALLS, WINDOWS AND DOORS ARE EXISTING TO REMAIN.
- EXISTING EXTERIOR WALL
 - EXISTING INTERIOR WALL
 - EXISTING STOREFRONT/WINDOW
 - EXISTING DOOR
 - NEW DOOR(S) WITH PANEL ABOVE



2 LEVEL 2

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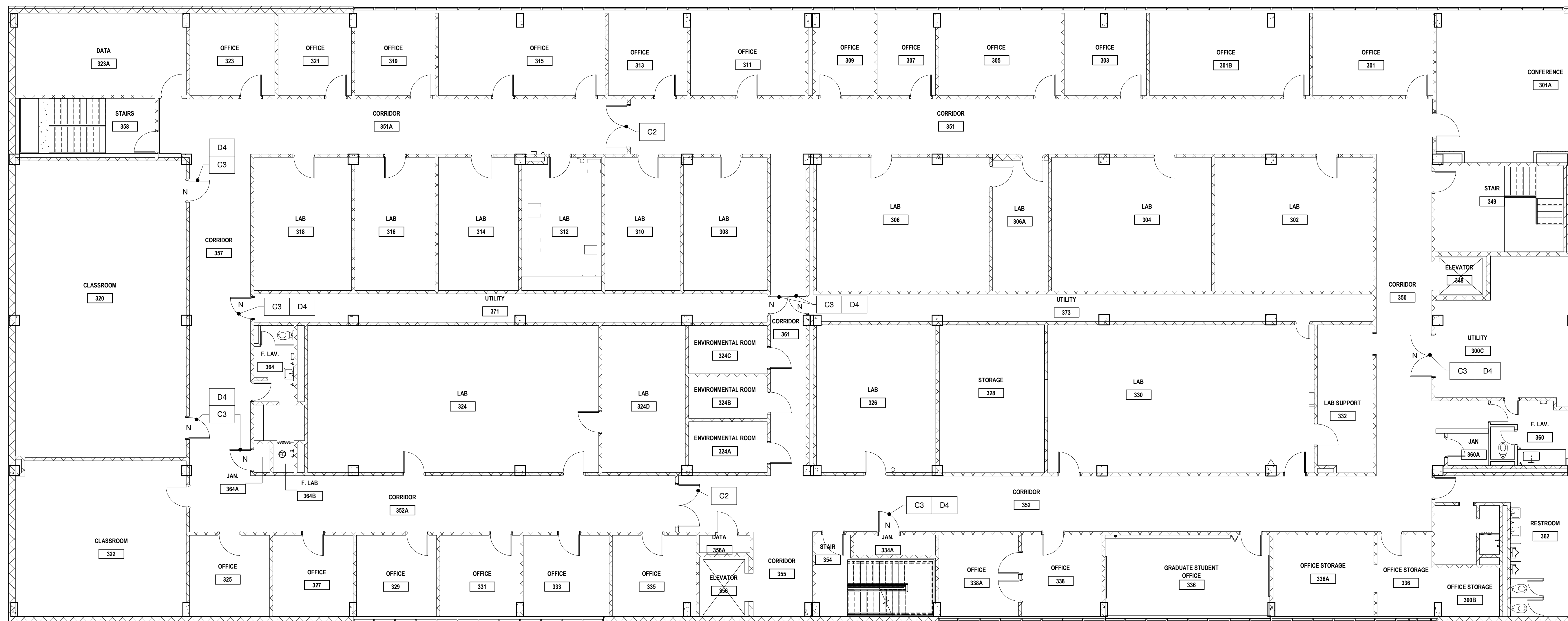


corr. no.	date
119060	1-8-21

drawn by: FJC
checked by: JCC/HC

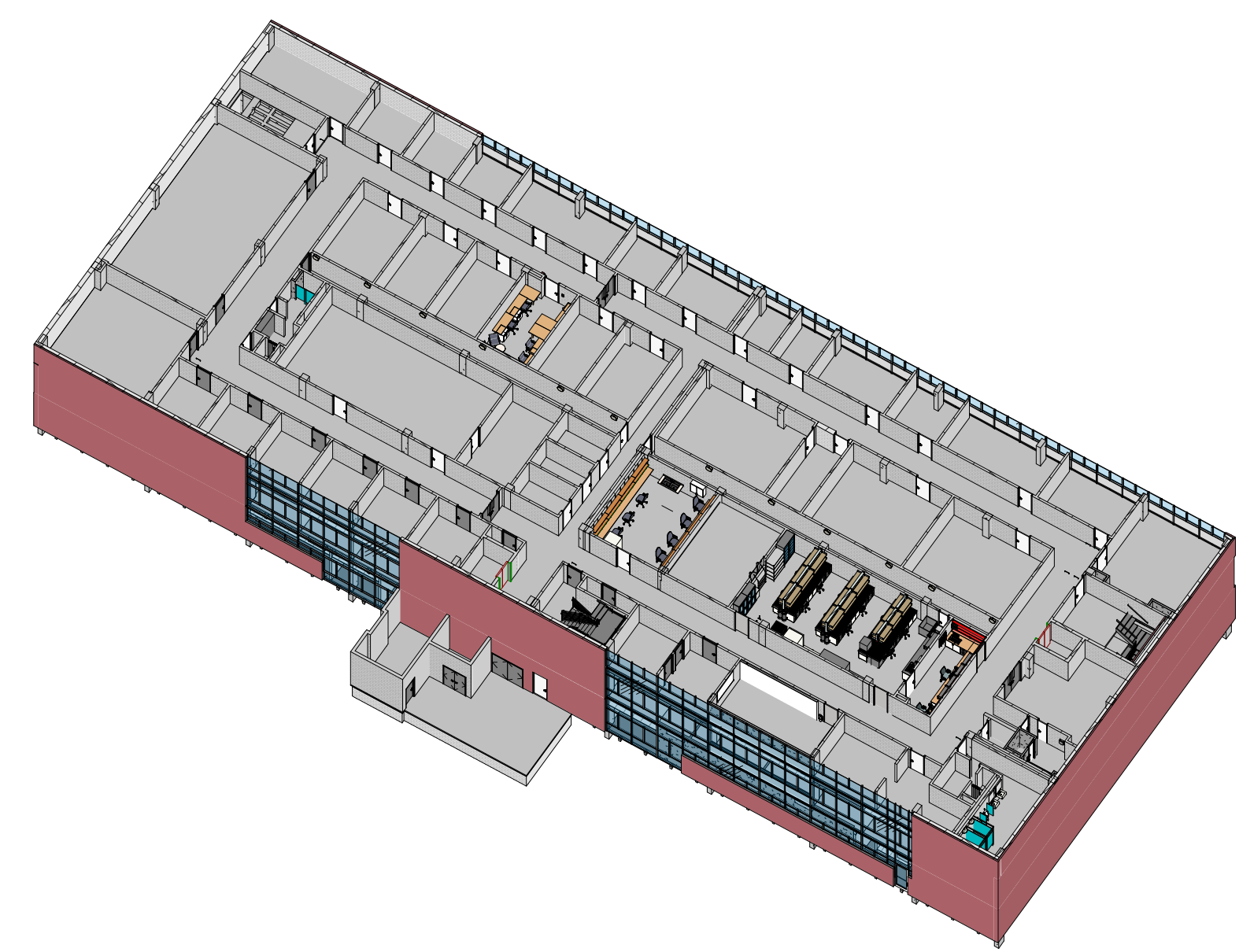
Sheet Description:
LEVEL 2 - FLOOR PLANS

TA-0.2



1 LEVEL 3
Scale: 1/8" = 1'-0"

- LEGEND**
ALL PARTITIONS WALLS, WINDOWS AND DOORS ARE EXISTING TO REMAIN.
- EXISTING EXTERIOR WALL
 - EXISTING INTERIOR WALL
 - EXISTING STOREFRONT/WINDOW
 - EXISTING DOOR
 - NEW DOOR(S) WITH PANEL ABOVE

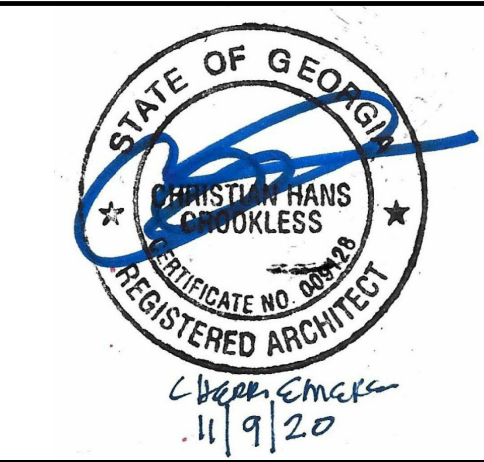


2 LEVEL 3

REVISIONS		
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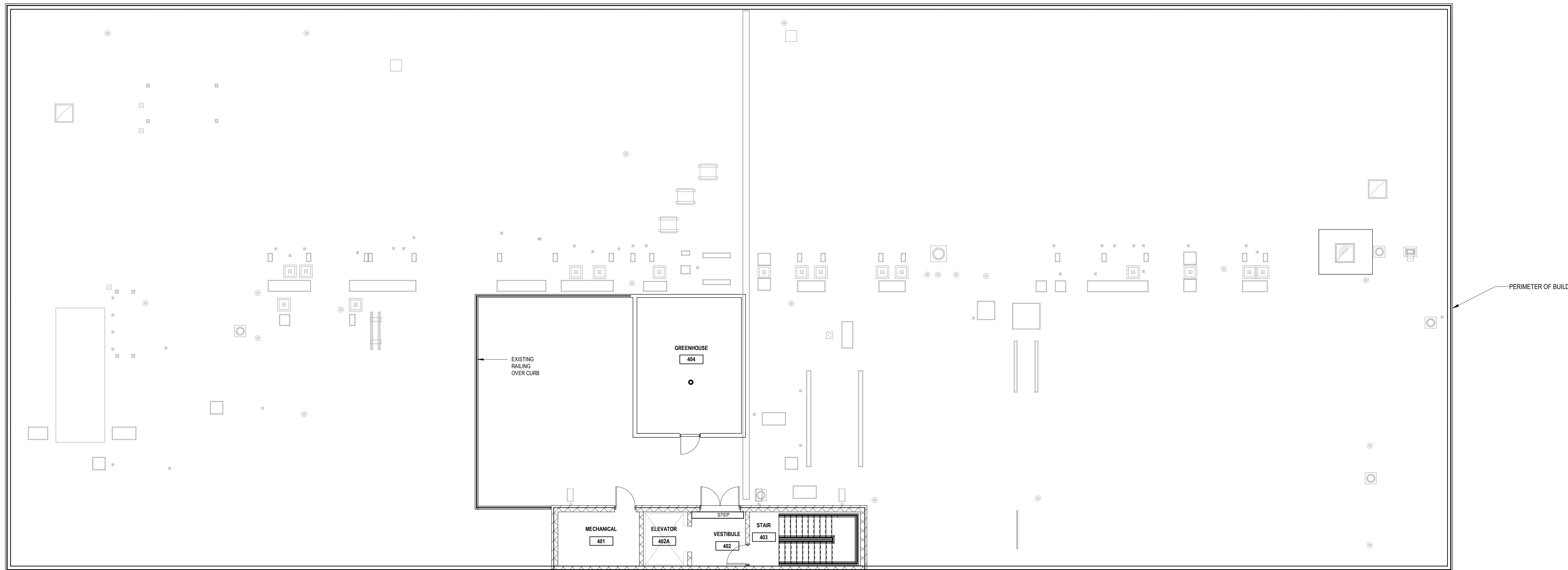
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comm. no.	date
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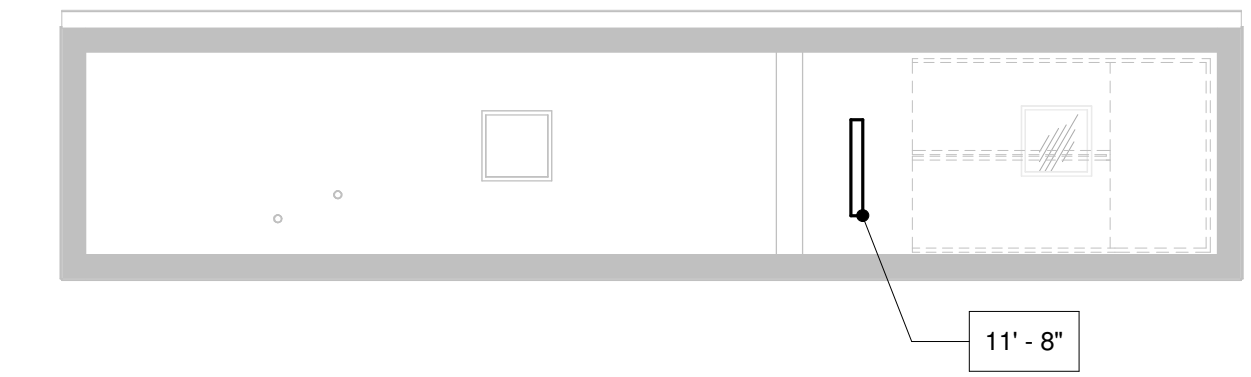
Sheet Description
LEVEL 3 - FLOOR PLANS

Sheet no.

TA-0.3



① PENTHOUSE ROOF PLAN
1/8" = 1'-0"

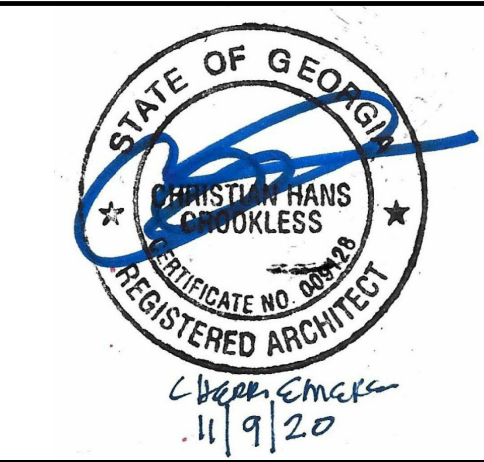


② PENTHOUSE RCP
1/8" = 1'-0"

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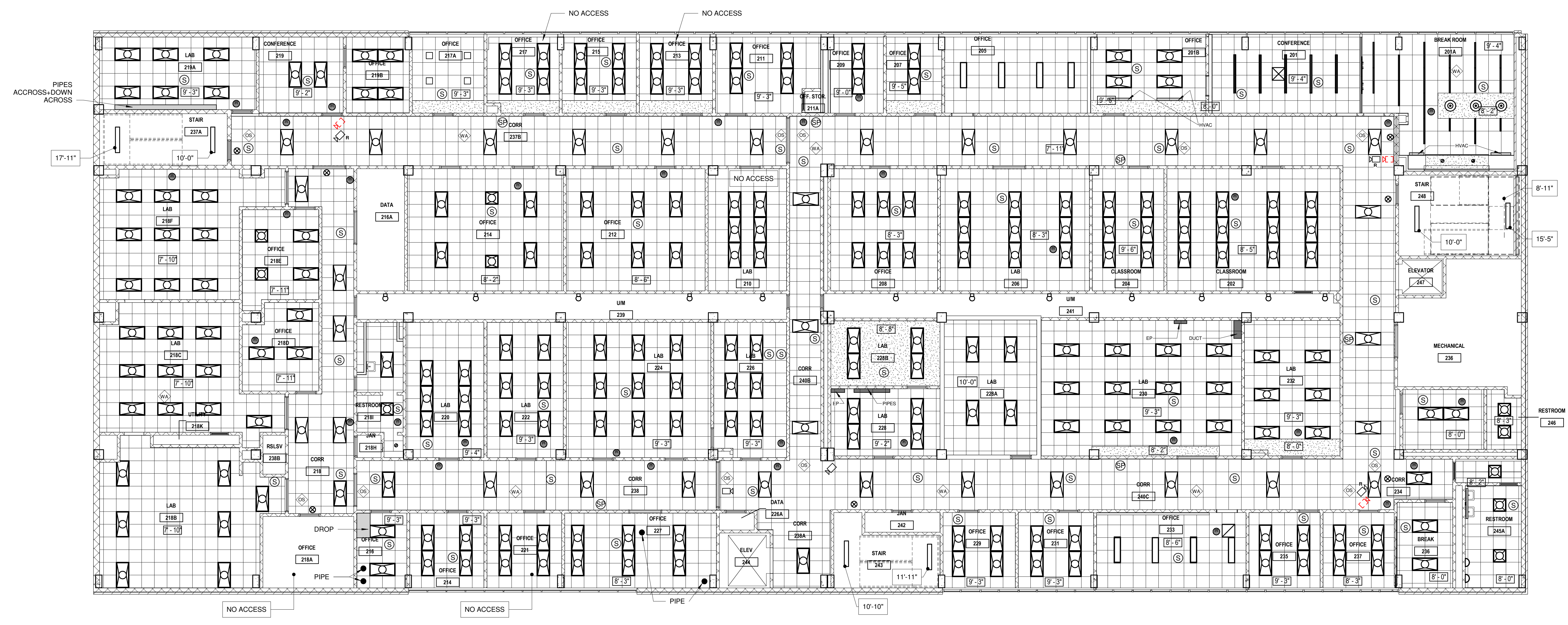
COMM. NO.	DATE
11900	1-8-21

Drawn by: FJJC
Checked by: JCC/HC

Sheet Description:
PENTHOUSE - PLANS

Sheet No.:

TA-0.4



1 LEVEL 2 - REFLECTED CEILING PLAN
 Scale: 1/8" = 1'-0"

LIGHTING NOTES:

1. EXISTING LIGHTING, CEILING GRID AND TILES TO REMAIN THROUGHOUT. GENERAL CONTRACTOR TO PATCH, REPAIR AND/OR REPLACE AS REQUIRED BY INSTALLATION OF NEW SPRINKLER LINES AND BRANCHES.

2. ROTATE OR RELOCATE EXISTING LIGHTING IN CENTRAL CORRIDOR AS REQUIRED FOR INSTALLATION OF NEW SPRINKLER LINES.

HVAC NOTES:

1. EXISTING HVAC TO REMAIN AS IS UNLESS AFFECTED BY SPRINKLER SYSTEM INSTALLATION. GENERAL CONTRACTOR TO CONTACT GT FACILITIES AND MEP ENGINEER FOR ANY CONFLICT FOR COORDINATION OF RELOCATION/REWORK AS REQUIRED.

- 9'-2" CEILING TAG
CEILING HEIGHT (AFF)
- 2x2' / 2x4' RECESSED LIGHT FIXTURE
- 2x2' / 2x4' SURFACE MOUNT LIGHT FIXTURE CENTERED ON GRID @ 9'-1" AFF (U.N.O.)
- TRACK LIGHTING
- DOME PENDANT/SUSPENDED LIGHT FIXTURE, ROUND
- 1x4 FLOURESCENT SURFACE MOUNT
- 1x4 FLOURESCENT PENDANT MOUNT FROM STRUCTURE
- 4"x4'-0" LED PENDANT MOUNT FROM STRUCTURE
- RESTROOM WALL MOUNT OVER SINK
- MENS RESTROOM WALL MOUNTED GLOBE LIGHT
- LED DOWNLIGHT
- STRIP FLOURESCENT WALL MOUNT
- 1x4 LED SURFACE MOUNT
- PENDANT LED MOUNTED TO STRUCTURE
- UTILITY INCANDESCENT
- SMOKE DETECTOR
- OCCUPANCY SENSOR
- CAMERA

CEILING LEGEND

REFER TO ELECTRICAL, MECHANICAL & TELECOMM DRAWINGS SHOWN FOR COORDINATION PURPOSES. RELOCATE EXISTING DEVICES/LIGHTING FIXTURES IF THESE CONFLICTS W/ NEW FIRE SPRINKLER SYSTEM.

- CEILING STROBE
- CEILING AUDIO (SPEAKER)
- WIRELESS ACCESS POINT
- HVAC RETURN LINEAR DIFFUSER
- EXIT SIGN
- PROJECTOR
- GYP. BD. CEILING

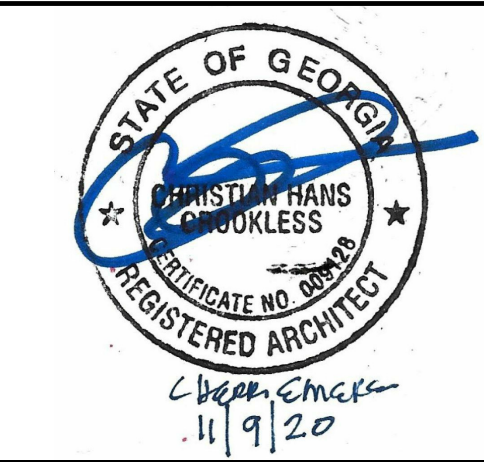
CEILING DEMOLITION LEGEND

- SMOKE DETECTOR DEMO
- OCCUPANCY SENSOR DEMO
- CAMERA SENSOR DEMO
- RELOCATE
- CEILING STROBE DEMO
- WIRELESS ACCESS POINT DEMO
- EXIT SIGN DEMO
- LIGHT DEMO

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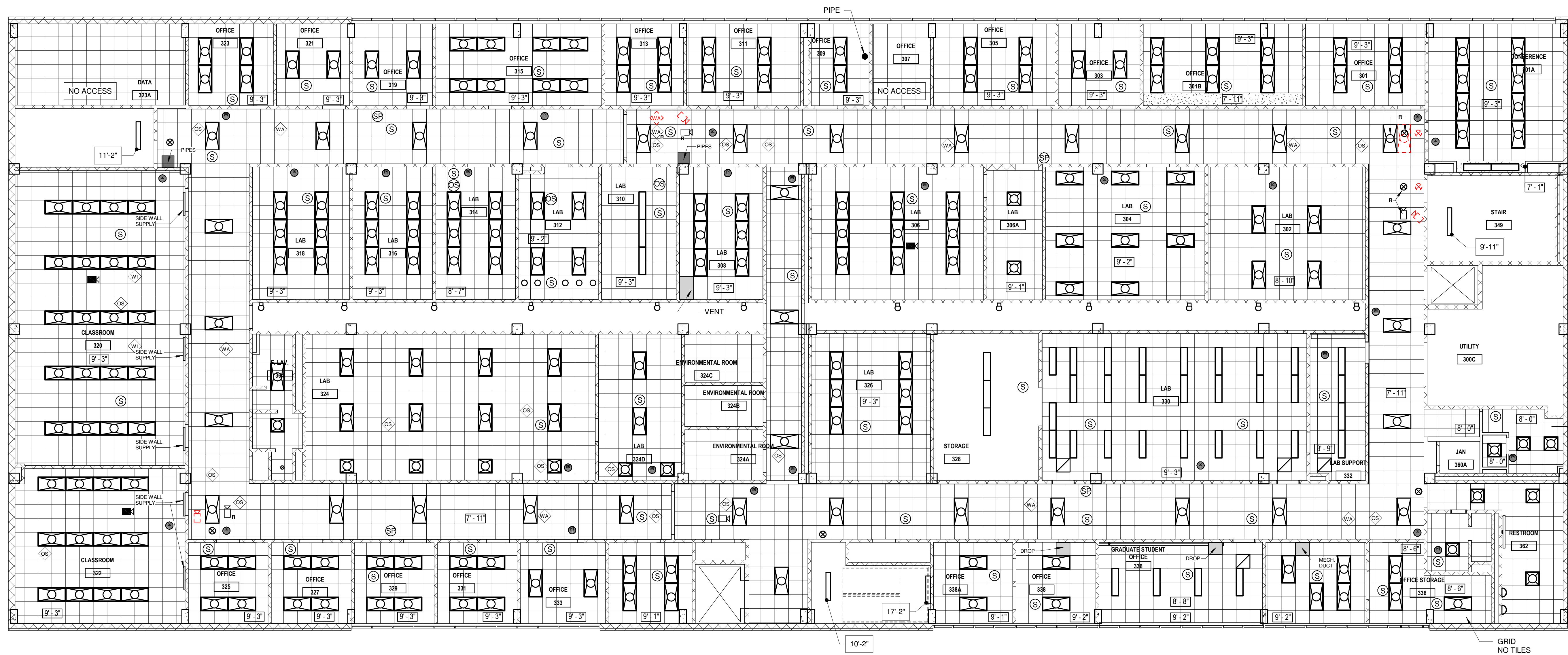
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DATE	DESCRIPTION
1-8-21	JDC:JHC

LEVEL 2 - REFLECTED CEILING PLANS

Sheet No.

TA-1.2



1 LEVEL 3 - REFLECTED CEILING PLAN
 Scale: 1/8" = 1'-0"

LIGHTING NOTES:

1. EXISTING LIGHTING, CEILING GRID AND TILES TO REMAIN THROUGHOUT. GENERAL CONTRACTOR TO PATCH, REPAIR AND/OR REPLACE AS REQUIRED BY INSTALLATION OF NEW SPRINKLER LINES AND BRANCHES.

2. ROTATE OR RELOCATE EXISTING LIGHTING IN CENTRAL CORRIDOR AS REQUIRED FOR INSTALLATION OF NEW SPRINKLER LINES.

HVAC NOTES:

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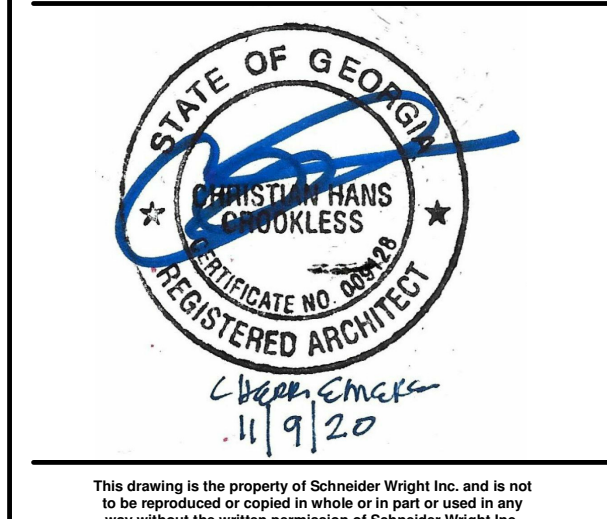
	CEILING TAG		CEILING STROBE
	2x2' / 2x4' RECESSED LIGHT FIXTURE		CEILING AUDIO (SPEAKER)
	2x2' / 2x4' SURFACE MOUNT LIGHT FIXTURE CENTERED ON GRID @ 9'-1" AFF (U.N.O.)		WIRELESS ACCESS POINT
	TRACK LIGHTING		HVAC RETURN LINEAR DIFFUSER
	DOMED PENDANT/SUSPENDED LIGHT FIXTURE, ROUND		EXIT SIGN
	1X4 FLOURESCENT SURFACE MOUNT		PROJECTOR
	1X4 FLOURESCENT PENDANT MOUNT FROM STRUCTURE		GYP. BD. CEILING
	4'x4'-0" LED PENDANT MOUNT FROM STRUCTURE		
	RESTROOM WALL MOUNT OVER SINK		

CEILING LEGEND
 REFER TO ELECTRICAL, MECHANICAL & TELECOMM DRAWINGS. SHOWN FOR COORDINATION PURPOSES
 RELOCATE EXISTING DEVICES/LIGHTING FIXTURES IF THESE CONFLICTS W/ NEW FIRE SPRINKLER SYSTEM

CEILING DEMOLITION LEGEND

	SMOKE DETECTOR DEMOD		CEILING STROBE DEMOD
	OCCUPATION SENSOR DEMOD		WIRELESS ACCESS POINT
	CAMERA SENSOR DEMOD		EXIT SIGN DEMOD
	RELOCATE		LIGHT DEMOD

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corr. no.	date
11900	1-8-21
drawn by	checked by
FJJC	JCC/HC
sheet description	

LEVEL 3 - REFLECTED CEILING PLANS

FIRE PROTECTION NOTES

1. SEE SHEET FX-5.0 AND FX-5.1 FOR FIRE PROTECTION NOTES AND DETAILS.

FIRE PROTECTION LEGEND

- QUICK-RESPONSE PENDENT SPRINKLER, K-5.6
- ⊙ QUICK-RESPONSE PENDENT SPRINKLER, K-8.0
- QUICK-RESPONSE UPRIGHT SPRINKLER, K-5.6
- ⊙ QUICK-RESPONSE UPRIGHT SPRINKLER, K-8.0
- △ QUICK-RESPONSE HORIZONTAL SIDEWALL SPRINKLER, K-5.6
- ⊙ QUICK-RESPONSE DRY PENDENT SPRINKLER, K-5.6
- LIGHT HAZARD
0.10 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF
- ▨ ORDINARY HAZARD - GROUP 1
0.15 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF

REV	NO	DATE	DESCRIPTION
01-08-2021	1		REVISIONS PER FIRE MARSHAL COMMENTS AND RFI #1



ISSUE	ISSUANCE
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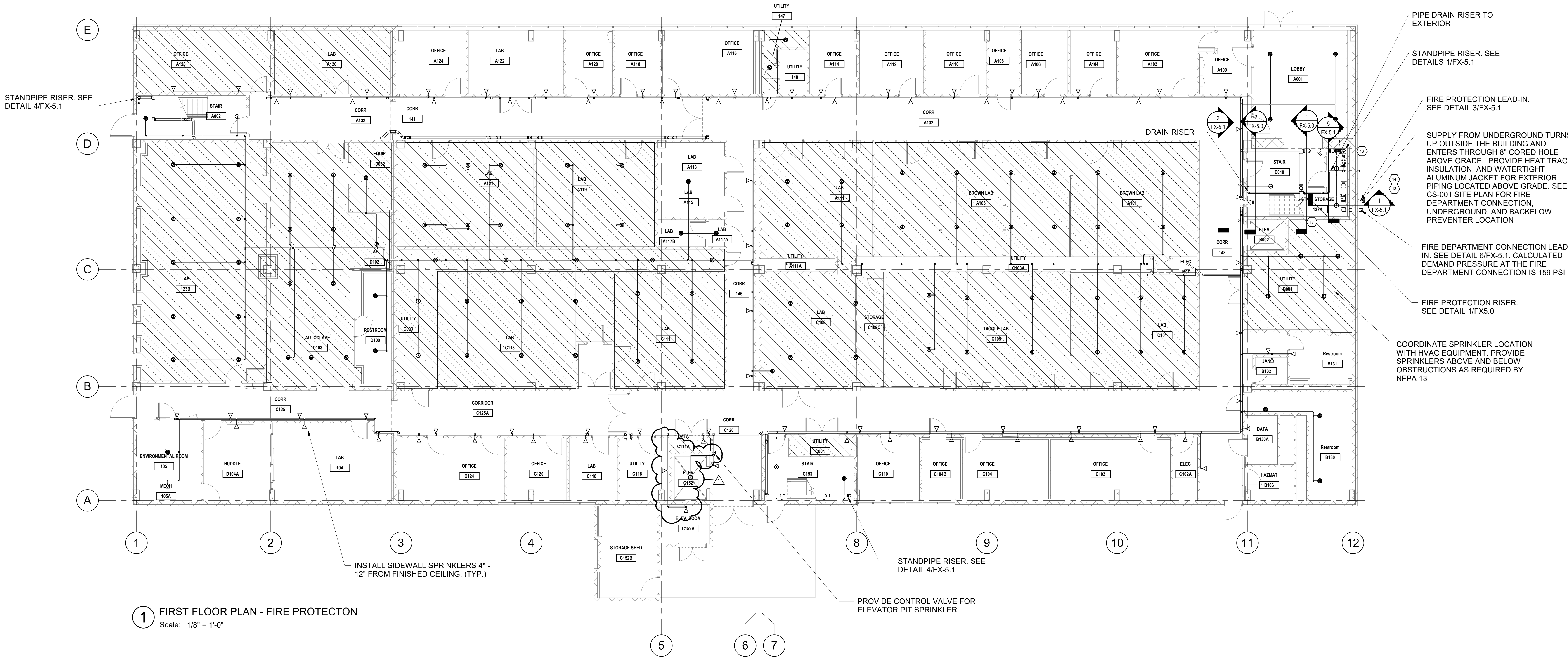
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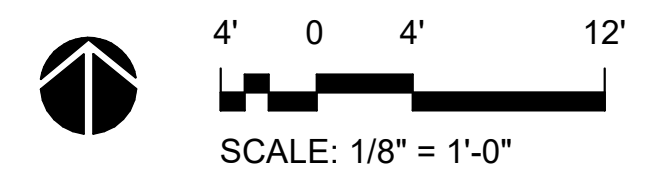
COMM.	DATE
N/A	11-09-2020
DRAWN	CHECKED
JHS	KAP

FIRST FLOOR PLAN - FIRE PROTECTION

FX-1.0



1 FIRST FLOOR PLAN - FIRE PROTECTON
 Scale: 1/8" = 1'-0"



FIRE PROTECTION NOTES

1. SEE SHEET FX-5.0 AND FX-5.1 FOR FIRE PROTECTION NOTES AND DETAILS.

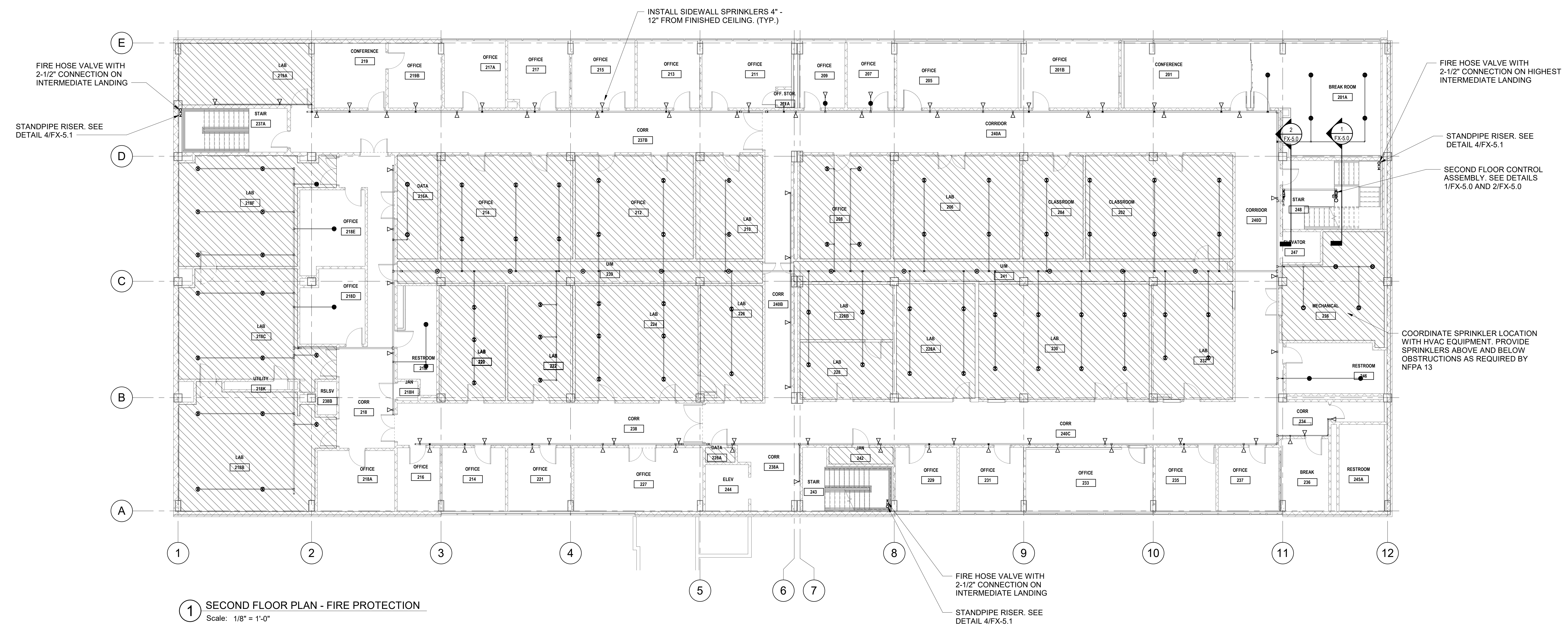
FIRE PROTECTION LEGEND

- QUICK-RESPONSE PENDENT SPRINKLER, K-5.6
- ⊗ QUICK-RESPONSE PENDENT SPRINKLER, K-8.0
- QUICK-RESPONSE UPRIGHT SPRINKLER, K-5.6
- ⊙ QUICK-RESPONSE UPRIGHT SPRINKLER, K-8.0
- ▽ QUICK-RESPONSE HORIZONTAL SIDEWALL SPRINKLER, K-5.6
- ⦿ QUICK-RESPONSE DRY PENDENT SPRINKLER, K-5.6
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0.15 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF

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1 SECOND FLOOR PLAN - FIRE PROTECTION
 Scale: 1/8" = 1'-0"



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JHS	KAP

SECOND FLOOR PLAN - FIRE PROTECTION

FX-1.1

FIRE PROTECTION NOTES
 1. SEE SHEET FX-5.0 AND FX-5.1 FOR FIRE PROTECTION NOTES AND DETAILS.

FIRE PROTECTION LEGEND

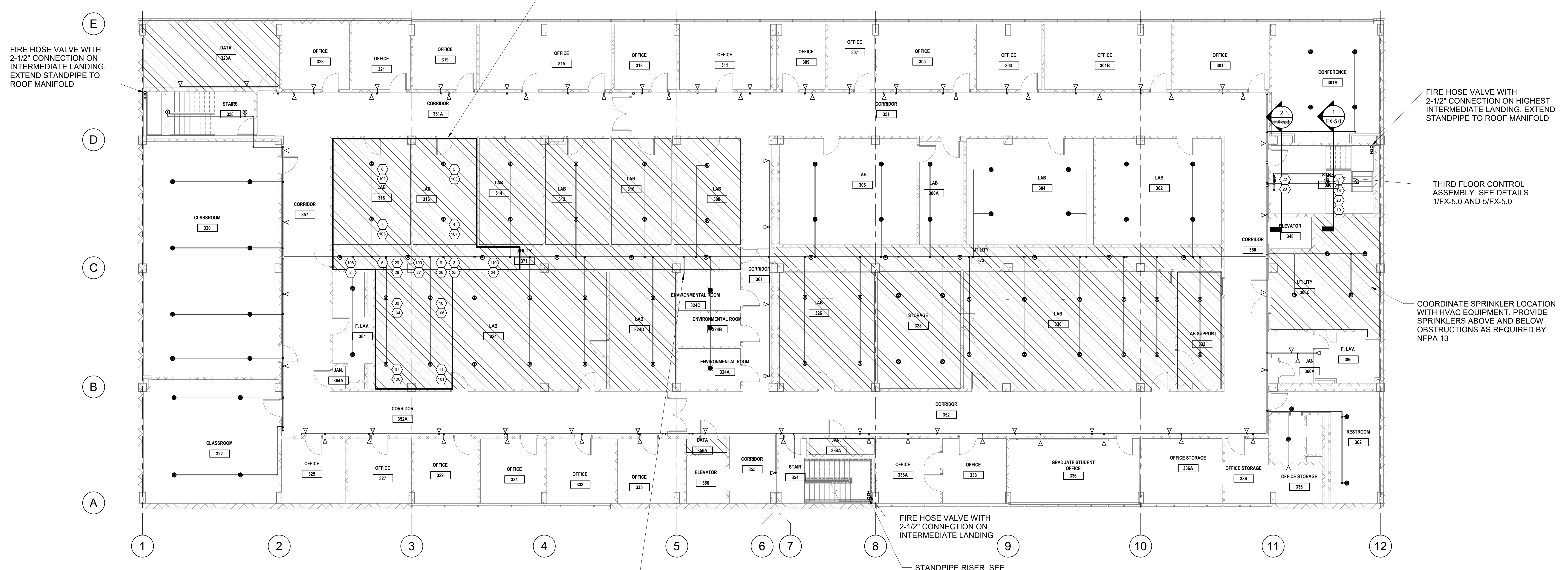
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- QUICK-RESPONSE PENDENT SPRINKLER, K-8.0
- QUICK-RESPONSE UPRIGHT SPRINKLER, K-5.6
- QUICK-RESPONSE UPRIGHT SPRINKLER, K-8.0
- ▽ QUICK-RESPONSE HORIZONTAL SIDEWALL SPRINKLER, K-5.6
- QUICK-RESPONSE DRY PENDENT SPRINKLER, K-5.6
- LIGHT HAZARD
0.10 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF
- ▨ ORDINARY HAZARD - GROUP 1
0.15 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF

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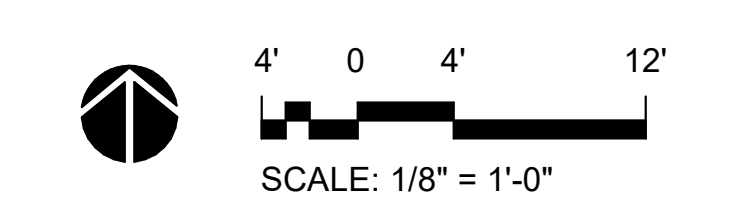


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DESIGN AREA: ORDINARY HAZARD GROUP 1
 .15 GPM/FT² OVER 951 FT²
 11 FLOWING SPRINKLERS
 TOTAL DEMAND: 252 GPM @ 103 PSI + 250 GPM HOSE STREAM
 AVAILABLE SUPPLY: 503 GPM @ 119.9 PSI (+16.9 PSI)



1 THIRD FLOOR PLAN - FIRE PROTECTION
 Scale: 1/8" = 1'-0"



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THIRD FLOOR PLAN - FIRE PROTECTION

FX-1.2

FIRE PROTECTION NOTES
1. SEE SHEET FX-5.0 AND FX-5.1 FOR FIRE PROTECTION NOTES AND DETAILS.

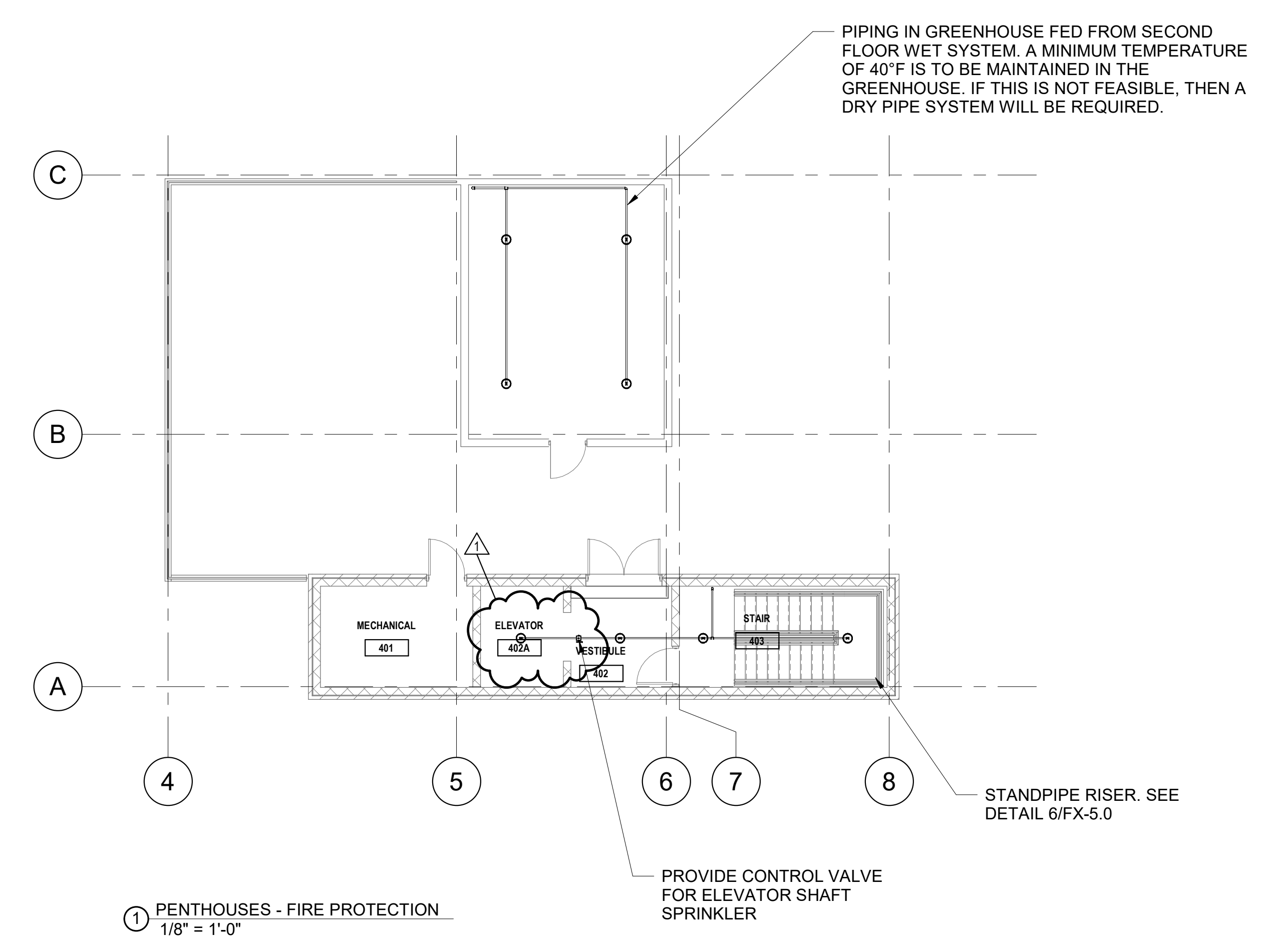
FIRE PROTECTION LEGEND

●	QUICK-RESPONSE PENDENT SPRINKLER, K-5.6
●	QUICK-RESPONSE PENDENT SPRINKLER, K-8.0
○	QUICK-RESPONSE UPRIGHT SPRINKLER, K-5.6
○	QUICK-RESPONSE UPRIGHT SPRINKLER, K-8.0
◁	QUICK-RESPONSE HORIZONTAL SIDEWALL SPRINKLER, K-5.6
◁	QUICK-RESPONSE DRY PENDENT SPRINKLER, K-5.6
□	LIGHT HAZARD 0.10 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF
▨	ORDINARY HAZARD - GROUP 1 0.15 GPM/SF OVER HYDRAULICALLY MOST REMOTE 1,500 SF

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comm.	dat.
N/A	11-09-2020
drawn	checked
JHS	KAP

PENTHOUSE - FIRE PROTECTION

FX-1.3

- ### FIRE PROTECTION NOTES
1. CONTRACTOR SHALL DESIGN AND INSTALL AUTOMATIC SPRINKLER PROTECTION THROUGHOUT THE FACILITY IN ACCORDANCE WITH NFPA 13.
 2. PROVIDE MANUAL WET STANDPIPE SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 14.
 3. THE SPRINKLER CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS WITH HYDRAULIC CALCULATIONS AND MATERIAL SPECIFICATION SHEETS FOR APPROVAL BY THE OWNER PRIOR TO SUBMISSION TO THE AUTHORITY HAVING JURISDICTION.
 4. FIRE PROTECTION SYSTEM PIPING, FITTINGS AND SIZES SHOWN ON THE DRAWINGS ARE DIAGRAMMATICAL IN NATURE AND ARE PROVIDED FOR ESTIMATING PURPOSES ONLY. THEY SHOULD NOT BE CONSIDERED REQUIREMENTS UNDER THIS CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES. ENSURE THE PROPER CLEARANCES ARE PROVIDED WHERE NECESSARY.
 5. CONTRACTOR SHALL PROVIDE ALL NECESSARY AUXILIARY DRAINS AND INSPECTORS' TEST CONNECTIONS AS REQUIRED BY NFPA 13.
 6. CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPE HANGERS AND SUPPORTS AS REQUIRED BY NFPA 13.
 7. ALL VALVES CONTROLLING WATERFLOW TO THE SPRINKLER SYSTEM SHALL BE PROVIDED WITH TAMPER SWITCHES TO BE CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR, INCLUDING POST INDICATOR VALVES.
 8. ALL PENETRATIONS THROUGH FIRE-RESISTANT ASSEMBLIES SHALL BE PROVIDED WITH A UL-LISTED THROUGH-PENETRATION FIRESTOP SYSTEM THAT IS APPROPRIATE FOR THE FIRE-RESISTANT ASSEMBLY. PENETRATIONS THROUGH THE SMOKE BARRIERS OR SMOKE PARTITIONS SHOULD UTILIZE NONCOMBUSTIBLE, FLEXIBLE SEALANT CAPABLE OF RESISTING THE PASSAGE OF SMOKE.
 9. CONTRACTOR SHALL BE RESPONSIBLE FOR AVOIDING ALL CONFLICTS WITH LIGHTING FIXTURES, ROOF DRAINS, DIFFUSERS, SMOKE/HEAT VENTS, GRILLS, DUCTS, CABLE TRAYS, CABLE BUNDLES, CONDUIT, PROCESS EQUIPMENT, UTILITY PIPING AND ALL OTHER OBSTRUCTIONS ENCOUNTERED.
 10. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO KEEP THE PREMISES DRY AT ALL TIMES AND TO PREVENT WATER DAMAGE. CONTRACTOR SHALL REPAIR WATER DAMAGE FROM THE WORK, WHETHER INTENTIONAL OR NOT, AT NO COST TO, AND TO THE SATISFACTION OF THE OWNER.
 11. NEITHER THE OWNER NOR THE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING A SAFE WORKING PLACE FOR THE CONTRACTOR, SUBCONTRACTORS, OR THEIR EMPLOYEES, OR ANY OTHER INDIVIDUAL RESPONSIBLE TO THEM FOR THE WORK. THIS RESPONSIBILITY RESTS SOLELY ON THE CONTRACTOR'S PROJECT SUPERINTENDENT.
 12. ALL PIPING 2 INCHES AND LESS IN DIAMETER SHALL BE SCHEDULE 40. PIPING 2 1/2 INCHES AND LARGER IN DIAMETER SHALL BE SCHEDULE 40 OR SCHEDULE 10.
 13. SPRINKLER SYSTEM(S) SHALL BE DESIGNED FOR A MAXIMUM WORKING PRESSURE OF 175 PSI PER NFPA 13.
 14. ALL VALVES SHALL HAVE A PERMANENTLY AFFIXED SIGN PER NFPA 13 INDICATING ITS FUNCTION AND SECURED TO THE VALVE WITH SUITABLE CHAIN.
 15. PROVIDE A PERMANENTLY ATTACHED HYDRAULIC NAMEPLATE FOR EACH SYSTEM RISER IN ACCORDANCE WITH NFPA 13.
 16. ALL SPRINKLERS IN CEILING TILES SHALL BE LOCATED IN THE CENTER OF TILE (+/- 2 INCHES).

REV	NO	DATE	DESCRIPTION
01-08-2021	1	11/09/2020	REVISIONS PER FIRE MARSHAL COMMENTS AND RFI #1

ISSUE	ISSUANCE
01-08-2021	REVISIONS PER FIRE MARSHAL COMMENTS AND RFI #1

**Cherry Emerson Building (066)
 Fire Sprinkler System Addition
 The Georgia Institute of Technology
 310 Ferst Dr NW,
 Atlanta, GA 30332**

ISSUED FOR PERMITTING AND CONSTRUCTION

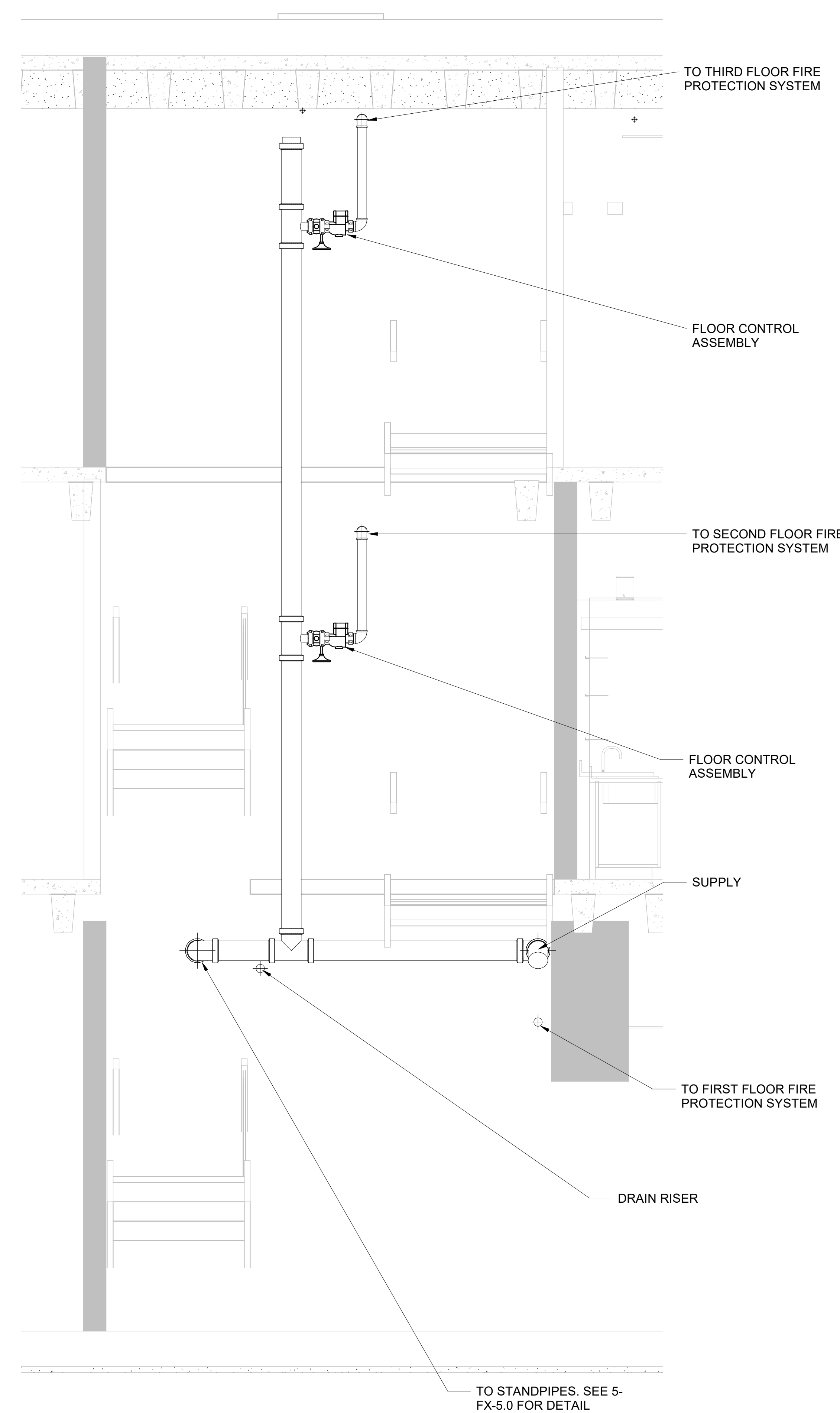
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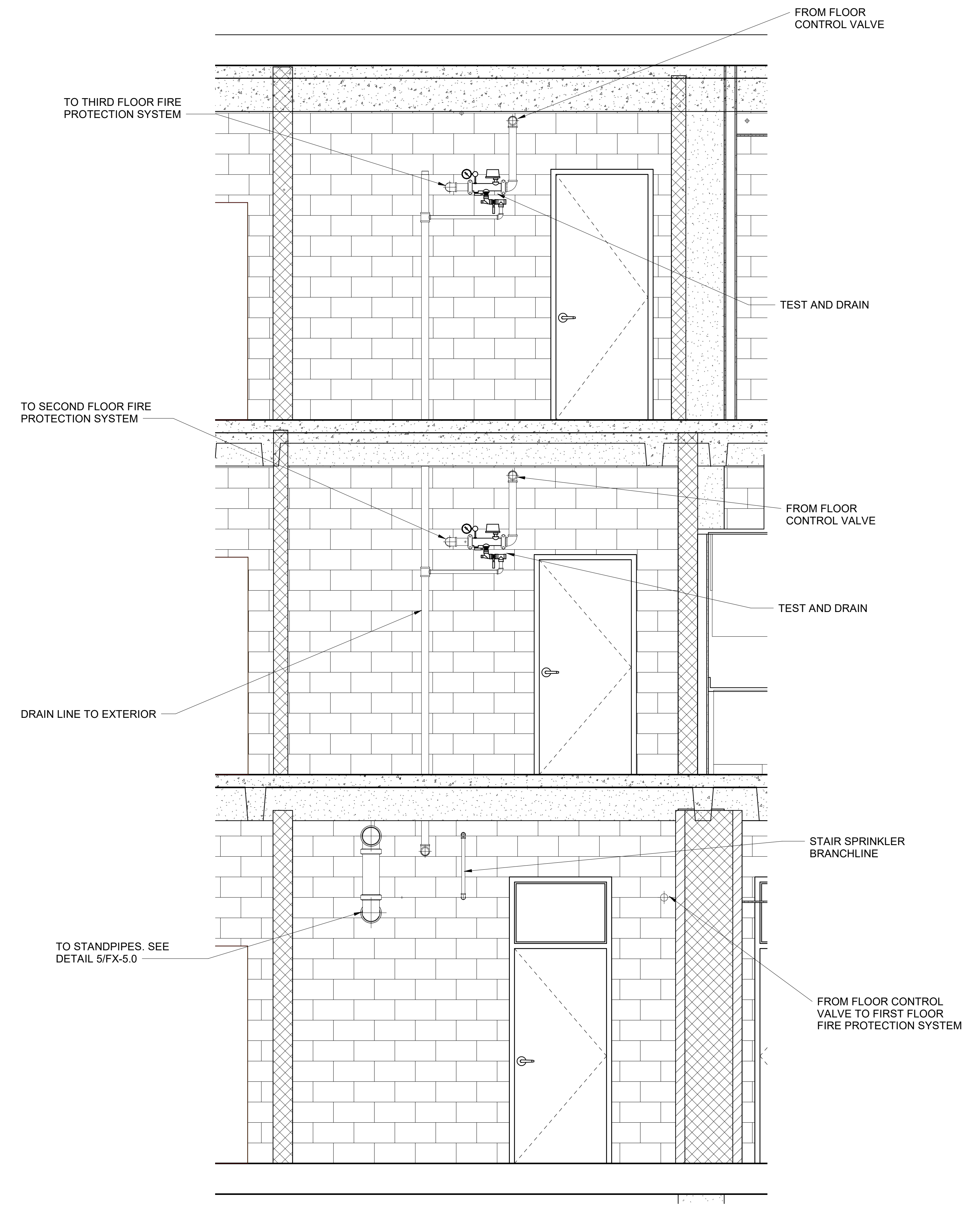
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DETAILS - FIRE PROTECTION

FX-5.0



1 EAST STAIR RISER DETAIL
 Scale: 1/2" = 1'-0"

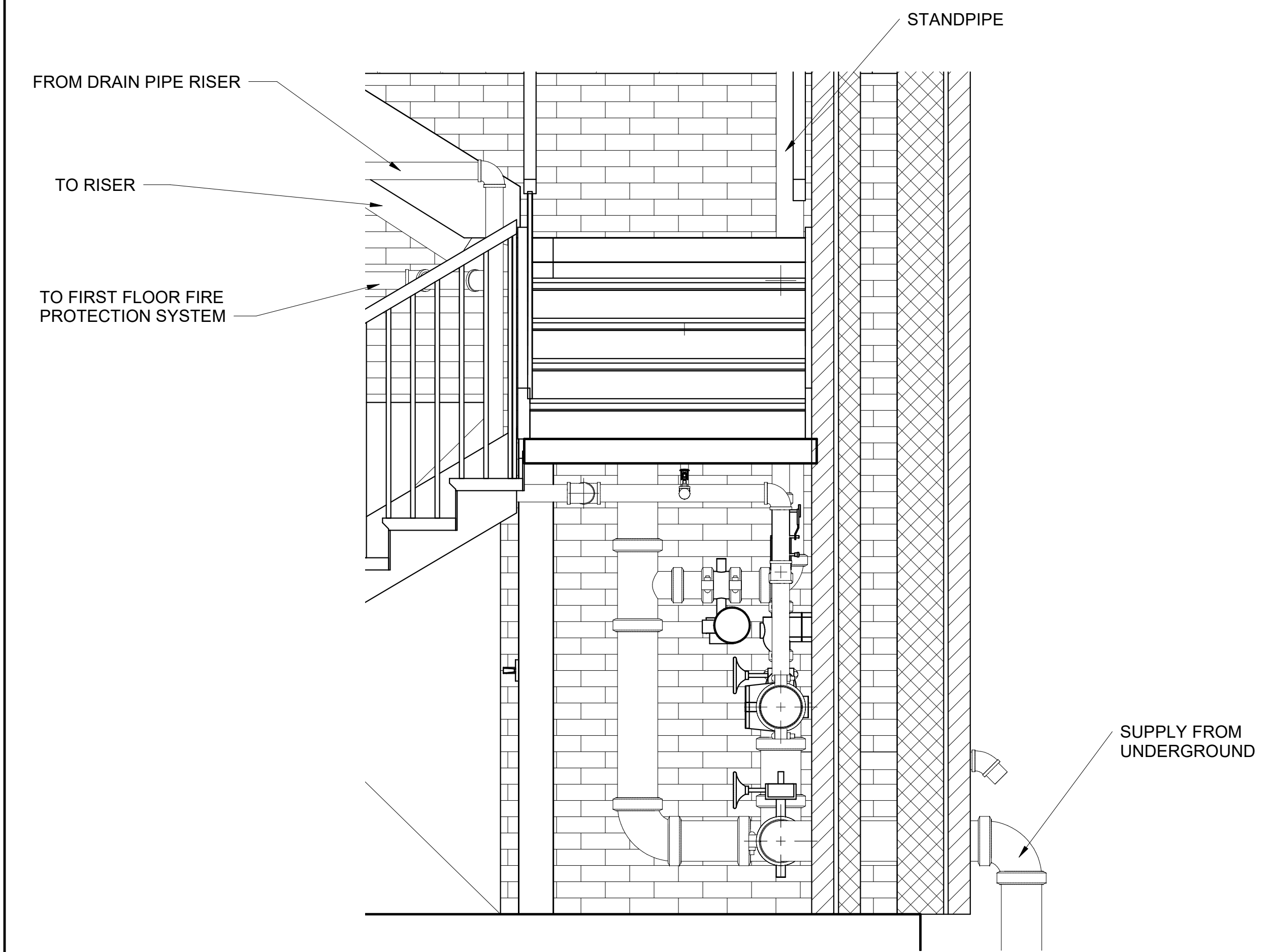


2 EAST STAIR DRAIN RISER DETAIL
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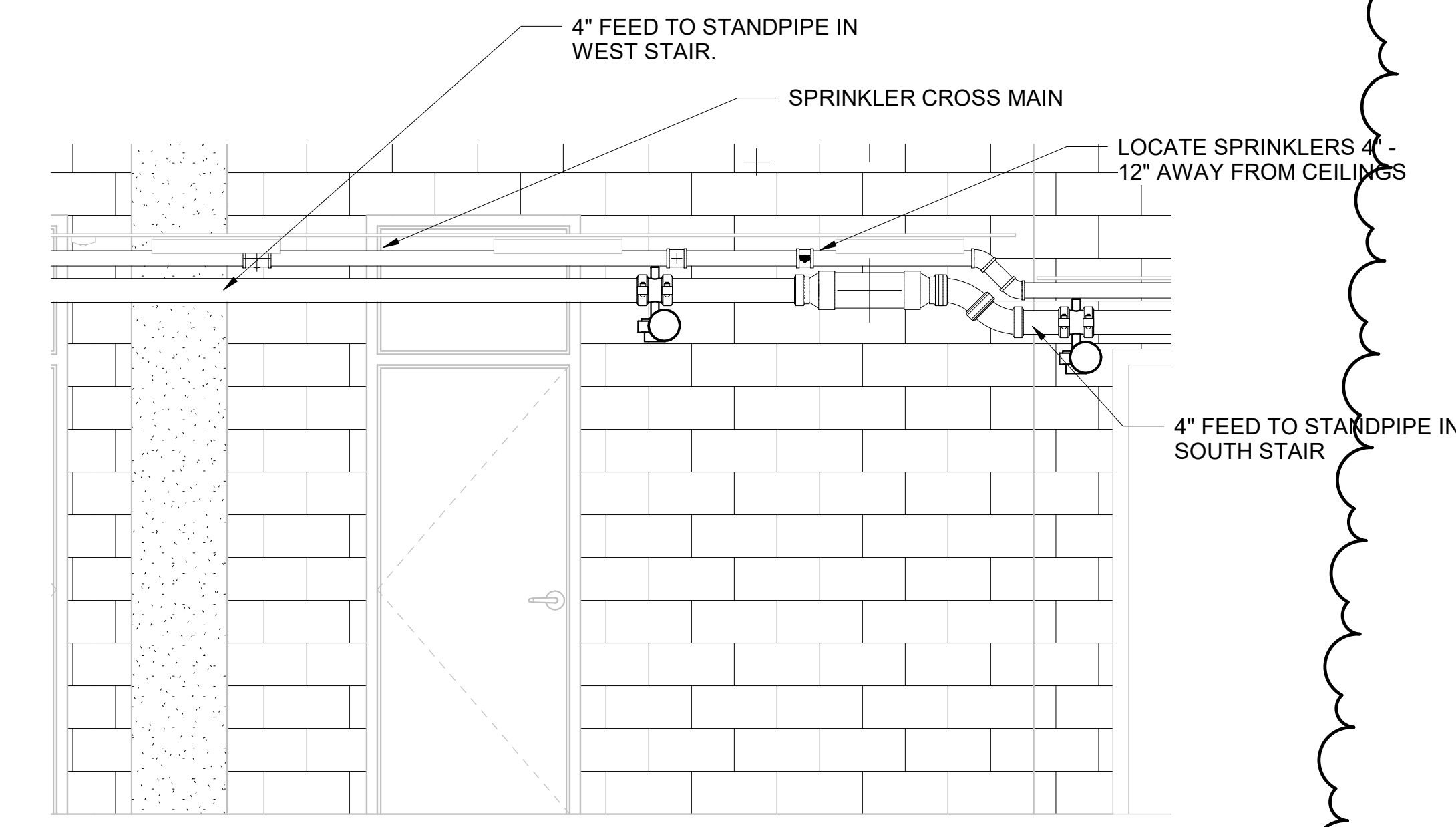
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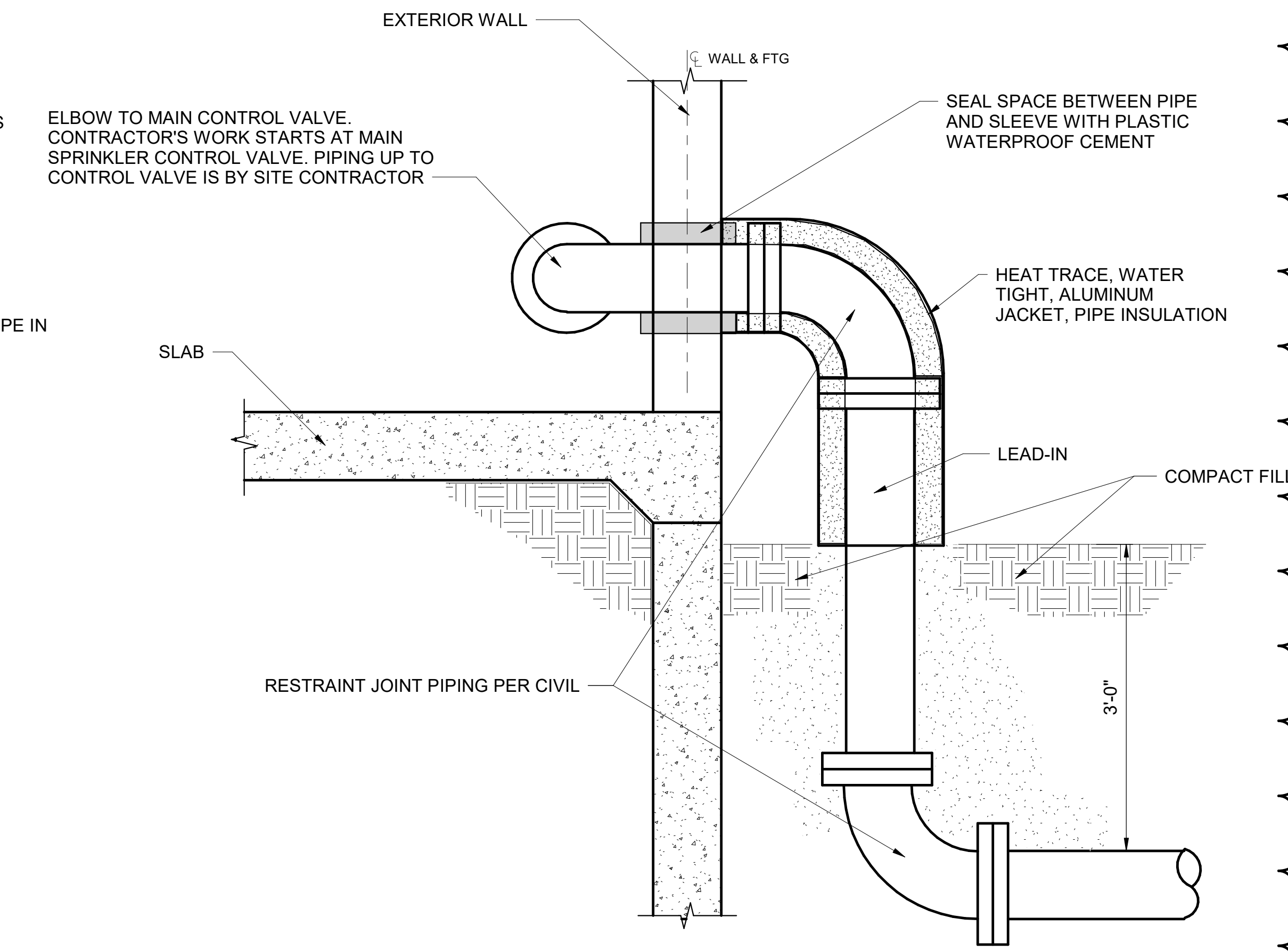
issue	issuance
01-08-2021	REVISIONS PER FIRE MARSHAL COMMENTS AND RFI #1



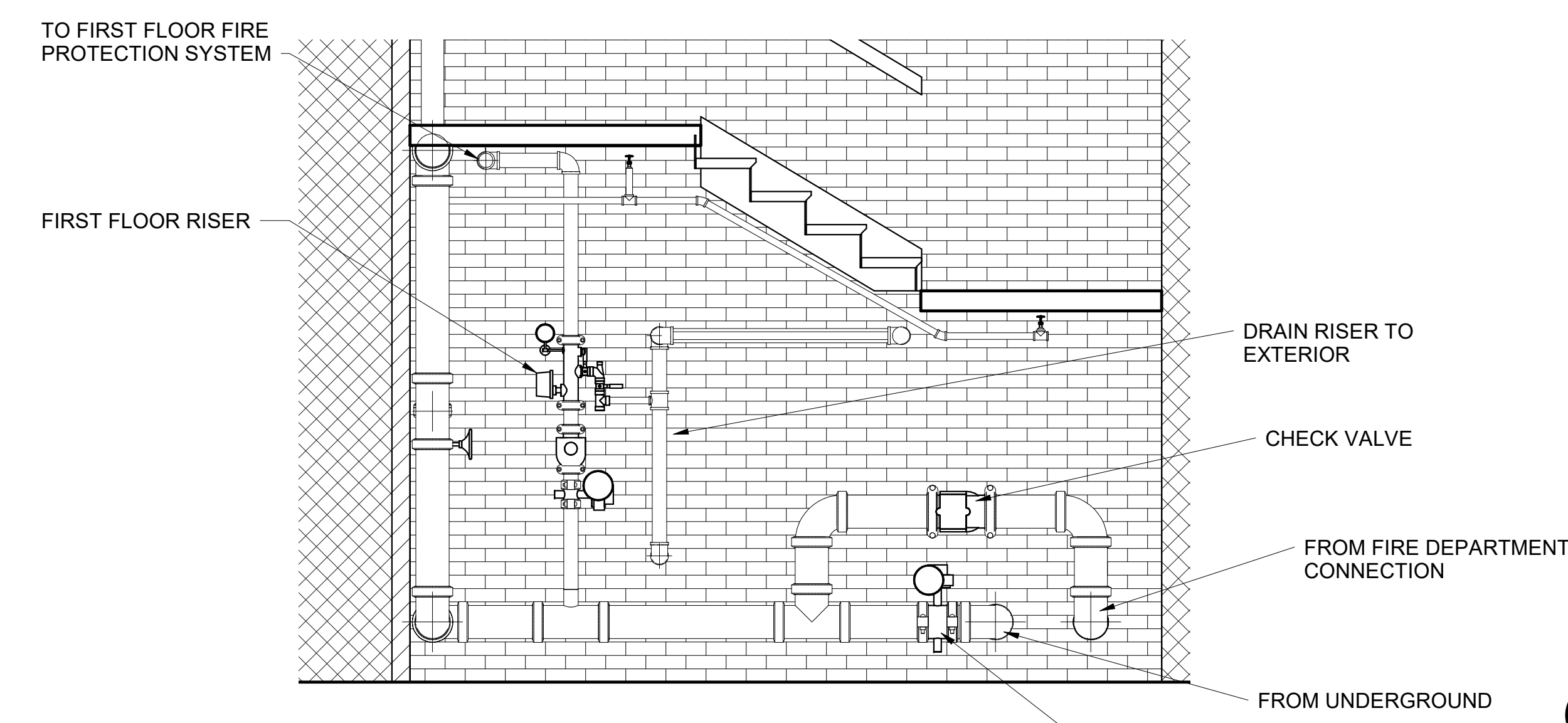
1 EAST STAIR SECTION DETAIL
 Scale: 3/4" = 1'-0"



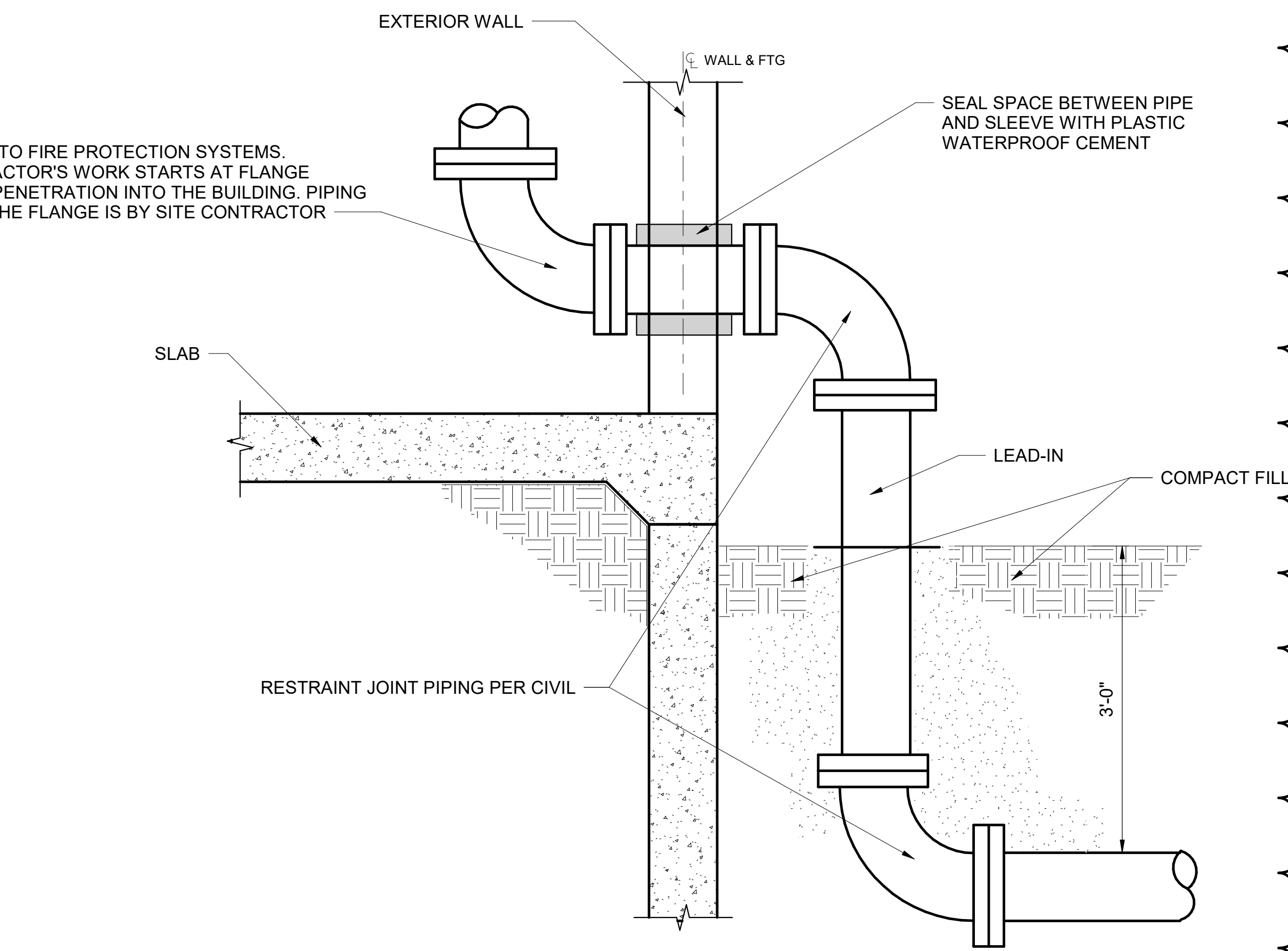
2 FIRST FLOOR CROSS MAIN DETAIL
 Scale: 1/2" = 1'-0"



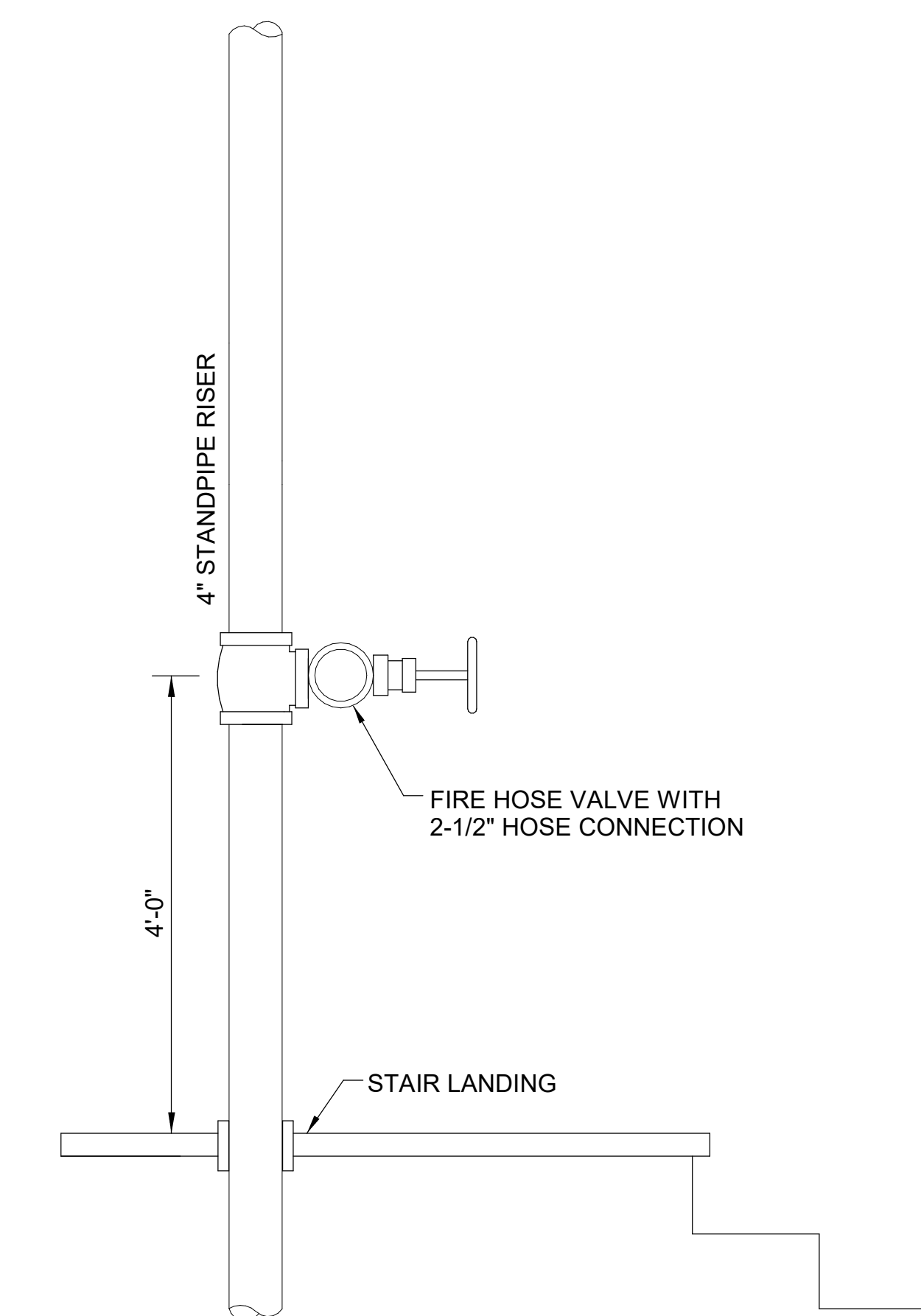
3 LEAD-IN THROUGH WALL DETAIL
 Scale: NONE



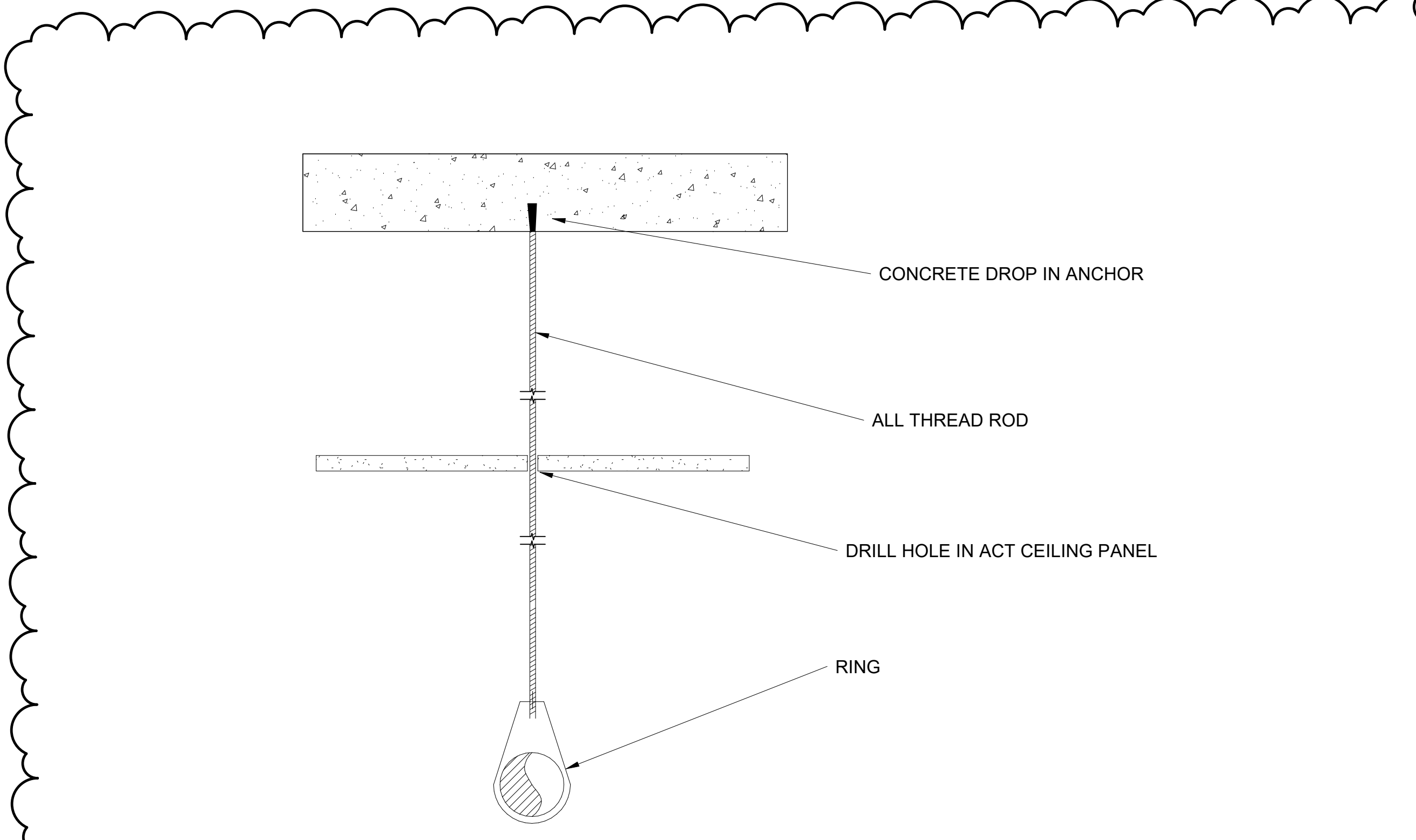
5 FIRST FLOOR RISER ROOM DETAIL
 Scale: 1/2" = 1'-0"



6 FIRE DEPARTMENT CONNECTION LEAD-IN DETAIL
 Scale: NONE



4 STANDPIPE DETAIL (TYPICAL)
 Scale: NONE



7 HANGER DETAIL
 Scale: NONE

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 Fire Sprinkler System Addition**
 The Georgia Institute of Technology
 310 First Dr NW,
 Atlanta, GA 30332

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DETAILS - FIRE PROTECTION

FX-5.1

SECTION 26010
ELECTRICAL GENERAL

1.0 GENERAL

1.01 SCOPE

A. Division 26 includes all Specifications in the 26000 series and the accompanying Electrical Drawings. Provide all labor, materials and equipment, and all necessary operations to provide the complete scope of the electrical systems intended under this Division. Division 26 is not a stand alone document, but a part of the complete Project Documents.

B. Attention is called to the fact that there are many interfaces between the work required in this Division and the work required in other Divisions. Provide the necessary interface and coordination with other Divisions to provide a complete project.

1.02 CODES AND REGULATIONS

A. All work under this Division shall comply with all local building codes, laws, regulations, ordinances and the requirements of the 2017 National Electrical Code with Georgia Amendments.

B. Where conflicts of installation requirements occur between the aforementioned codes, regulations or the Contract Documents, the most restrictive shall govern.

C. Obtain all permits and licenses and pay all fees required by local authorities. Arrange for all necessary inspections required by the authorities having jurisdiction and provide written certificates of approval to the project Owner or his designated representative.

1.03 DRAWINGS AND SPECIFICATIONS

A. The Drawings and Specifications together are to be considered as the Contract Documents. Any work shown in one and not shown in the other, or implied by either, shall be provided to give a complete project.

B. Should any conflicts exist between the Drawings and Specifications or there is an item shown/called for which is not clearly defined, immediately submit a request for clarification. Additional monies will be granted later when a conflict is resolved or an item is more clearly defined.

C. The Drawings are schematic and are not intended to show the exact location outlets, etc. or the routing of conduit.

D. The exact location of equipment requiring electrical connections (mechanical equipment, elevators, lights, etc.) shall be as located by other Divisions of the Contract Documents. Refer to the Architectural, Structural and Mechanical Documents for dimensions and details of building construction and provide work described in this Division so that it conforms to the details of the project. The right is reserved to relocate any receptacle, switch or other outlet a maximum of 10'-0" before it is permanently installed without incurring additions to the Contract amount.

1.04 SITE VISIT

A. Visit the site and become familiar with all aspects of the site and existing conditions before submitting Contract price. No allowance will be made for lack of knowledge of existing conditions.

2.0 PRODUCTS

2.01 STANDARDS FOR MATERIALS AND WORKMANSHIP
A. All materials used shall be new and shall be stamped with the label of Underwriters Laboratories, Inc. (UL).

B. All materials shall meet the standards of the following associations and institutes where applicable:
1. National Fire Protection Association (NFPA)
2. American Society of Testing Materials (ASTM)
3. American National Standards Institute (ANSI)
4. National Electrical Manufacturers Association (NEMA)
5. Institute of Electrical and Electronic Engineers (IEEE)

2.02 SHOP DRAWINGS AND SUBMITTAL

A. The Engineer's review of shop drawings or submittals is a cursory review to check for general compliances of submittals with the design intent of the Contract Documents. The Engineer's review does not relieve the Contractor of his responsibility of complying with the Contract Documents. All coordination of the work in strict compliance with the Contract Documents is the sole responsibility of the Contractor.

B. The following items shall be submitted for review:
1. Fire Alarm - devices and floor plan drawings

2.03 RECORD (AS-BUILT) DRAWINGS AND MAINTENANCE MANUALS

A. At job completion, submit to the Architect, a set of mylar sepia showing all deviations from the Contract Documents. The Drawings shall also have dimensions locating all underground conduits. At job completion, submit to the Architect, three (3) sets of maintenance and instruction manuals for all equipment furnished on the project.

3.0 EXECUTION

3.01 COORDINATION

A. Coordinate all space requirements with all other Divisions before installing any work. Install work such that adequate space will be allotted for all other work from other Divisions to be installed and also will allow room for future access for repair and maintenance.

B. Any work installed without proper coordination shall be relocated at the Architect's direction without increasing the Contract price.

C. During the bidding process or the pricing for a guaranteed maximum price, coordinate with all other Divisions for the total amount of work required in Division 16. Any work shown or implied in another Division requiring work in Division 16 shall be included in the Contract price regardless of whether or not it is addressed in Division 26.

3.02 GUARANTEE

A. All systems, equipment, components, work, etc. provided under this Division shall be covered by a one year guarantee starting at the time of final acceptance of the work by the Owner. Any defects in the work, systems, equipment or components found during this year shall be corrected at no charge. The guarantee shall include providing all necessary cutting, patchwork, repainting, etc. to make the work complete and new.

B. Present this guarantee and any additional warranties or guarantees on furnished equipment or systems to the Architect. All equipment or system guarantees are in addition to the general guarantee.

SECTION 26100
ELECTRICAL BASIC MATERIALS & METHODS

1.0 GENERAL

N/A

2.0 PRODUCTS

2.01 CONDUIT

A. Galvanized rigid steel conduit shall be low carbon, hot-dipped galvanized both inside and out with threaded joints.

B. Intermediate metal conduit (IMC) shall be steel, galvanized both inside and out with threaded joints.

C. Electrical metallic tubing (EMT) shall be steel, galvanized both inside and out.

D. Flexible metal conduit shall be flexible steel conduit tubing and shall meet Underwriters Laboratories Standard for Flexible Steel Conduit.

E. Liquid-tight flexible metal conduit and liquid-tight non-metallic conduits shall be liquid-tight and sunlight resistant.

F. Steel conduit approved manufacturers are Allied, Triangle and Republic.

2.02 CONDUCTORS

A. Conductors shall be copper of 98% conductivity, 600 volt insulation. Sizes specified are AWG gauge for No. 4/0 and smaller and circular mils (MCM) for all sizes larger than No. 4/0. Conductors No. 10 and smaller shall be solid and type "THHN" or "THWN" insulation. No. 8 and larger shall be stranded and type "THW" or "XHHW" insulation. Armored cable may be used in walls and masonry only and must be MC type (with ground). All conduit to and above the plenum shall be EMT.

2.03 OUTLETS

A. Outlet boxes and covers shall be of such form and dimensions as to be adapted to their specified usage, locations, size and quantity of conduit, and size and quantity of conductors entering the boxes. In special "Fire Rated" partitions, outlets shall comply with ASTM No. E119.

B. Flush ceiling outlets for surface or pendant mounted lighting fixtures shall be one-piece 4" square or octagonal pressed steel boxes. Boxes for devices in unfinished masonry walls or stud walls shall be pressed steel, square corner, sectional switch boxes, or shall be 4" square box with 0 square cornered tile wall cover, set flush with masonry construction. Boxes in concrete ceiling slab shall be octagonal, shallow concrete boxes. Welded boxes are not acceptable.

C. Outlet box approved manufacturers are Appleton, Raco, Steel City or Crouse-Hinds.

2.04 DISCONNECT SWITCHES

A. Disconnect switches shall be "heavy-duty" type, enclosed switches of quick-make, quick-break construction. Switches shall be horsepower rated for 600 volts AC as required. Lugs shall be UL listed for copper and aluminum.

B. Disconnect switches shall be mounted to structure. Disconnect switches shall not be mounted to mechanical equipment or ductwork.

C. Fused disconnect switches shall have rejection type fuse clips with dual element, current limiting fuses of rating shown.

2.05 NAMEPLATES

A. Nameplates shall have 3/8" high engraved letters, 120 or 208 volts, white core laminated bakelite with black finish, 277 or 480 volts: white core laminated bakelite with red finish.

2.06 WALL SWITCHES

A. Wall switches shall be plastic, totally enclosed, quiet type, self-grounding, 277 volts and 20A rating and shall match existing if possible and equal the following:
Single Pole: Hubbell No. 1221 P&S No. 20AC1 Leviton No. 1221 Double Pole: Hubbell No. 1222 P&S No. 20AC2 Leviton No. 1222 Three-Way: Hubbell No. 1223 P&S No. 20AC3 Leviton No. 1223 Four-Way: Hubbell No. 1224 P&S No. 20AC4 Leviton No. 1224

B. Color shall be as selected by Architect.

C. Flush motor switches with red pilot light and with overload protection for fractional horsepower motors shall be Square "D" type FSJ-1P.

2.07 RECEPTACLES

A. Duplex receptacles shall be plastic, two-pole, three wire, self-grounding, side wired, 125 volts and 15A rating and shall match existing if possible and be equal to the following: Duplex receptacles shall be Hubbell No. 5262 Series. Isolated ground type shall be Hubbell No. IG-5262 Series.

B. Single receptacles shall be two-pole, three wire, self-grounding, side wired, 125 volts and 20A rating and shall match existing if possible and be equal to the following: Single receptacles shall be Hubbell No. 5361 Series, Leviton No. 5361 Series or P&S No. 5361 Series. Isolated ground type to be Hubbell No. IG-5361 Series, Leviton No. IG-5361 Series or P&S IG-5361 Series.

C. Color shall be as selected by Architect.

2.08 COVERPLATES

A. Coverplates for flush mounted devices shall be as selected by Architect, standard size, P&S Sierra Series.

2.09 SMOKE AND FIRE STOP FITTINGS

A. Smoke and Fire Stop Fittings shall be UL listed for that purpose. The fittings used to seal conduit either on the outside of the conduit, bunway or cable or internally shall have heat activated intumescent material which expands to fill all voids. Smoke and fire stop fittings shall be O.Z./Gedney "FIRE-SEAL" or Dow Corning silicone RTV foam with an hourly fire-rating equal to or higher than the rating of the floor, ceiling or wall through which the cable or conduit passes. The seals for conduit shall be of the flanged type.

2.10 FUSES

A. Provide all fuses. All fuses shall be of the same manufacturer. All fuses shall be of the high interrupting rating (200,000 Amps), current limiting type and manufactured by Bussmann. Fuses shall be provided for each fuse cutout and the specified quantity of fuses shall be furnished for spares.

B. Circuits 0 to 600 ampere shall be protected by rejection type, current limiting BUSSMANN LOWPEAK Dual Element Fuses LPN-RK (250 volts) or LPS-RK (600 volts). All dual-element fuses shall have separate overload and short-circuit clearing chamber. The fuse must hold 500% of rated current for a minimum of 10 seconds and be listed by Underwriters Laboratories, Inc. with an interrupting rating of 200,000 amperes RMS symmetrical. The fuses shall be UL Class RK-1.

3.0 EXECUTION

3.01 CONDUIT

A. PVC extruded cover flexible conduit shall be used in making short flexible connections to rotating or vibrating machinery or equipment. The flexible conduit of these locations shall be as short as possible, but shall have a minimum length of 12".

B. A green stranded bonding jumper shall be installed outside of all flexible conduit that extends directly from a non-flex conduit to a rotating or vibrating machine. Where a junction box is used, the green stranded bonding jumper shall be installed inside the flexible conduit and attached to the junction box and to the machine. When the bonding jumper is installed outside of the flexible conduit, plastic wire straps shall be used 6" o.c. to secure the jumper to the flexible conduit.

C. EMT shall be used for branch circuits, fire alarm and telephone when not underground or in concrete in contact with the earth.

D. Armored cable may be used in walls and masonry only and must be MC type (with ground). All conduit to and above the plenum shall be EMT.

E. Rigid steel (or IMC) shall be used for service entrance and all feeders and branch circuits where exposed to damage.

3.03 WIRING

A. All conductors shall be installed in conduit. No conductors shall be pulled into the conduit until the conduit system is complete and plaster had dried. Wire pulling lubricants shall be Gardner-Bender "Wireolite" or Ideal "Yellow 77".

B. Conductors shall be continuous from outlet to outlet and from outlet to junction box or pull box. All splices and joints shall be carefully and securely made to be mechanically and electrically solid with pressure type connectors, Gardner Bender "Wingnuts" or Ideal "Wingnut". Tape shall be "Scotch" No. 33 for indoor and No. 88 for outdoor or Gardner Bender No. 95-861. Where connection is made to any terminals of more than 30 amperes capacity and where conductors larger than No. 10 are connected to any terminal, copper terminal lugs shall be bolted to the conductors. Where multiple connections are made to the same terminal, individual lugs for each conductor shall be used. (Aluminum conductors, if used for service conductors, shall be made with high compression lugs as manufactured by Square D, Ideal or MAC.)

C. Each conduit shall have a minimum of two (2) conductors pulled in unless that particular conduit is noted as being for systems other than electrical circuitry and/or future use or unless noted otherwise.

D. Conductors for lighting and receptacle circuits shall have color coded jackets. The wiring shall be color coded with the same color used with its respective phase through the entire job as follows:
208/120 Volt System
Phase A - Black
Phase B - Red
Phase C - Blue
Neutral - White
Ground - Green

E. The feeder and service entrance conductors shall be color coded by the use of colored plastic tape applied within 6" of each conductor end.

F. Branch circuit conductors shall not be smaller than No. 12 and where the home run from center of load exceeds 100'-0", the conductors from home run outlet to panel shall be No. 10 minimum.

3.04 GROUNDING

A. Provide all grounding in accordance with the requirements of the 2017 National Electrical Code with Georgia Amendments.

B. Provide an insulated green bonding jumper from the grounding lug of all receptacles to a Steel City "GEE" clip or a sheet metal screw in the outlet box. The ground wire installed behind the device mounting screws will not be acceptable.

ELECTRICAL GENERAL NOTES

1. ALL WORK THIS DIVISION SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF THE 2017 NATIONAL ELECTRICAL CODE WITH GEORGIA AMENDMENTS.

2. THE CONTRACTOR SHALL KEEP A RECORD OF THE CHANGES WHICH ARE IN CONFLICT WITH THESE DRAWINGS AND SPECIFICATIONS. AT THE COMPLETION OF HIS WORK HE SHALL SUBMIT "AS BUILT" PRINTS TO THE OWNER.

3. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. ALL WORK SHALL BE INSTALLED SO THAT JUNCTION BOXES AND COMPONENTS WILL BE ACCESSIBLE FOR SERVICE.

4. ALL SYSTEMS, EQUIPMENT, COMPONENTS, WORK, ETC. PROVIDED UNDER THIS DIVISION SHALL BE COVERED BY A ONE YEAR GUARANTEE STARTING AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. ANY DEFECTS IN THE WORK, SYSTEMS, EQUIPMENT, OR COMPONENTS FOUND DURING THIS YEAR SHALL BE CORRECTED AT NO CHARGE. THE GUARANTEE SHALL INCLUDE PROVIDING ALL NECESSARY CUTTING, PATCHWORK, REPAINTING, ETC. TO MAKE THE WORK COMPLETE AND NEW.

5. ALL EXISTING POWER DISTRIBUTION, FIRE ALARM, ECT., JUNCTION BOXES SHALL BE RELOCATED IF LOCATED OVER A CEILING SCHEDULED TO BE GYPSON BOARD. ALL EXISTING JUNCTION BOXES SHALL BE RELOCATED IF NECESSARY TO AN ACCESSIBLE LOCATION.

6. ALL CONDUIT MUST BE CONCEALED IN THE WALLS OR ABOVE THE CEILING UNLESS OTHERWISE NOTED. MINIMUM CONDUIT SIZE IS 1/2".

7. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THW" OR "THWN" INSULATION AND THE MINIMUM WIRE SIZE SHALL BE #12 A.W.G. WITH A 167 DEGREE TEMPERATURE RATING.

8. ALL WORK MUST BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED PRINCIPALS OF FIRST CLASS WORKMANSHIP.

9. ARMORED CABLE MAY BE USED FOR LIGHTING CIRCUITS ABOVE CEILINGS AND MUST BE MC TYPE (WITH GROUND). PROVIDE EMT FOR CIRCUIT HOMERUNS.

10. WHERE WORK BY THE GENERAL CONTRACTOR (WALL REMOVAL, NEW OR RELOCATED WALL OPENING, ETC.) RESULTS IN THE REMOVAL, RELOCATION OR REFEEDING OF ELECTRICAL DEVICES OR LIGHTING FIXTURES, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT OR RECONNECT AS REQUIRED ALL ACTIVE DEVICES REMAINING ON THAT CIRCUIT SYSTEM.

11. ALL PENETRATIONS THRU RATED WALLS, FLOORS AND CEILINGS SHALL BE FIRE STOPPED PER N.E.C. 300-21.

12. PROVIDE ALL GROUNDING AS REQUIRED BY N.E.C.

13. WHERE DEMOLITION DISRUPTS ELECTRICAL CONTINUITY OF EXISTING TO REMAIN RECEPTACLES/LIGHTS, AND NO RECONNECTION IS SHOWN, RECONNECT TO ITS EXISTING CIRCUIT.

14. ALL CONDUIT SHALL BE 1/2" EMT WITH #12AWG CONDUCTORS UNLESS OTHERWISE NOTED.

15. UPDATE EACH PANEL DIRECTORY NOTING ALL CHANGES AND ADDITIONS.

16. PROVIDE #12AWG GND. FOR ALL MECHANICAL EQUIPMENT UNLESS SHOWN OTHERWISE. ALL EQUIPMENT SHALL BE GROUNDED AT THE PANEL WHICH FEEDS THE EQUIPMENT.

FIRE ALARM GENERAL NOTES

1. ALL NEW FIRE ALARM DEVICES SHALL BE ADA APPROVED. COORDINATE COLOR WITH ARCHITECT AND BASE BUILDING. DEVICES TO MATCH BASE BUILDING SYSTEM MANUFACTURER. PROVIDE ANY ADDITIONAL POWER AMPLIFIERS REQUIRED FOR INSTALLATION OF NEW ADA APPROVED DEVICES.

2. ALL FIRE ALARM DEVICES, INCLUDING SPEAKERS, VISUALS, SMOKE DETECTORS, ETC. SHALL BE CONNECTED TO THE BASE BUILDING FIRE ALARM SYSTEM BY A LICENSED FIRE ALARM CONTRACTOR. COORDINATE CONNECTIONS WITH SYSTEM MANUFACTURER.

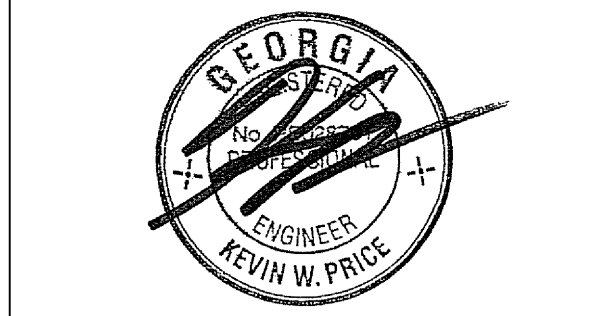
3. COORDINATE FIRE ALARM SYSTEM SHUTDOWNS AND REPROGRAMMING WITH OWNER.

4. COORDINATE THE LOCATION AND QUANTITY OF ALL FLOW SWITCHES AND TAMPER SWITCHES WITH SPRINKLER SHOP DRAWINGS. PROVIDE CONNECTIONS AS REQUIRED.

ELECTRICAL SYMBOL LEGEND table with columns for SYMBOL, DESCRIPTION, and ON CENTER MTG. HT.



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revisions

Table with columns: date, no., description

issue report

Table with columns: date, issuance

11-09-20 ISSUED FOR CONSTRUCTION

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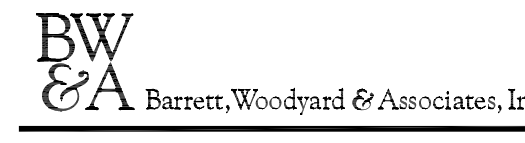
comm. no. 119060 date 11-09-20

drawn by EY checked by KP

sheet description

ELECTRICAL LEGEND, NOTES & SPECIFICATIONS

sheet no.



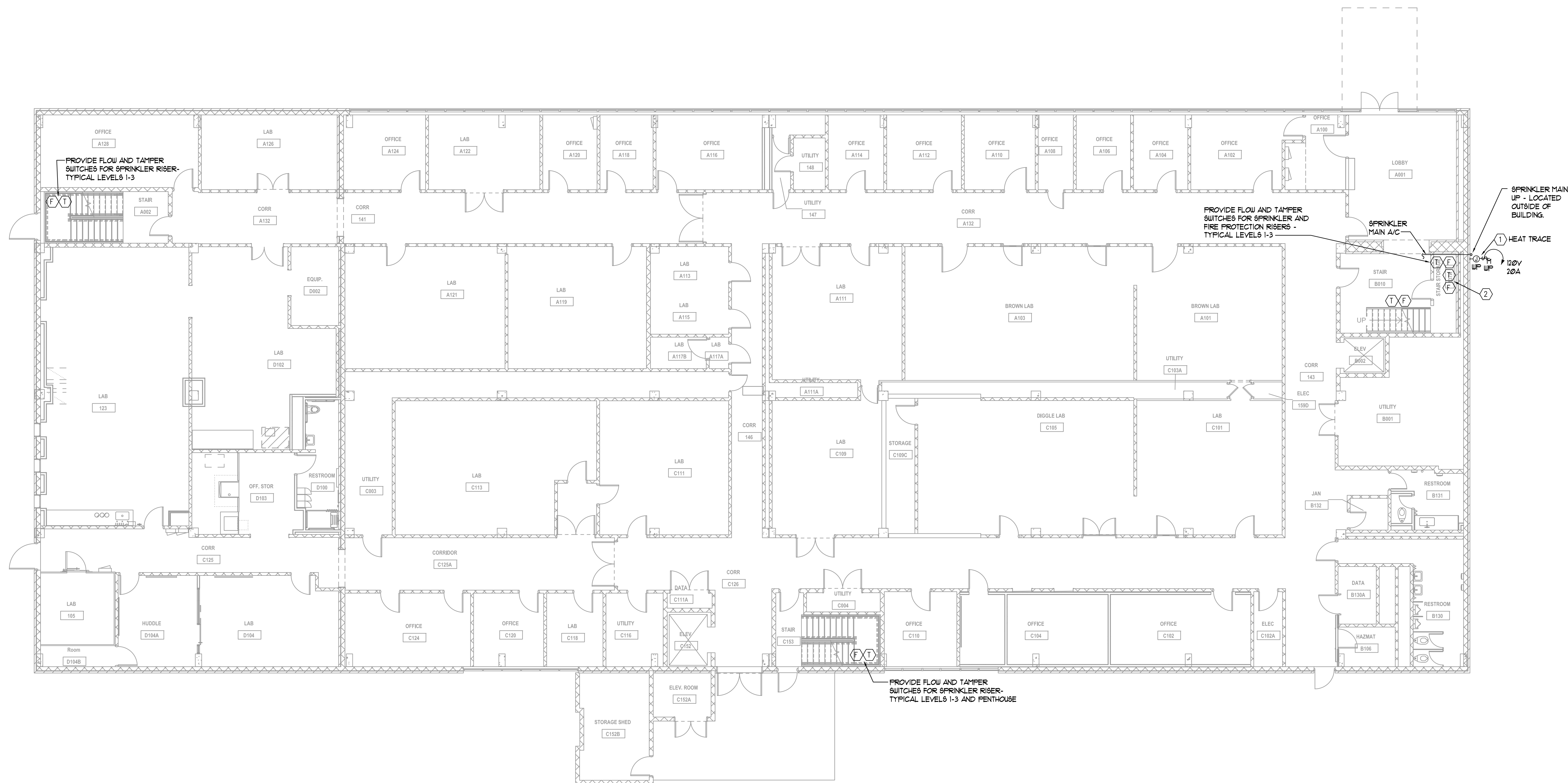
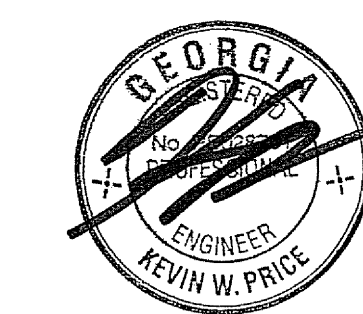
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BWA # 2019-1541

E-0.0

11-09-20



1 LEVEL 1 - ELECTRICAL PLAN
 E-1.1 1/8"=1'-0"

- LEGEND NOTES**
 (APPLY THIS SHEET ONLY)
- 1 PROVIDE J-BOX AND DISCONNECT SWITCH FOR CONNECTION OF HEAT TRACE. PROVIDE 120V HOMERUN TO A SPARE 20A BREAKER IN NEAREST AVAILABLE NORMAL POWER PANEL. PROVIDE NEW BREAKER TO REPLACE SPACE IF REQUIRED. COORDINATE PANEL LOCATION WITH OWNER. COORDINATE CONNECTION OF HEAT TRACE WITH DIVISION 23.
 - 2 PROVIDE FLOW AND TAMPER SWITCHES FOR FIRE PROTECTION LEAD IN. COORDINATE LOCATIONS AND QUANTITIES WITH FIRE PROTECTION EQUIPMENT CONSULTANT AND INSTALLER.

revisions		
date	no.	description
11-09-20		ISSUED FOR CONSTRUCTION

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 Atlanta, GA 30332

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EY	KP
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LEVEL 1 - ELECTRICAL PLAN

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 BW&A Job No. 2019-1541

E-1.1

ABBREVIATIONS

A/C	ABOVE CEILING	ID	INSIDE DIMENSION
AD	ACCESS DOOR	IN	INCHES
ADJ	ADJUSTABLE		
AFF	ABOVE FINISHED FLOOR	KW	KILOWATTS
AUTO	AUTOMATIC		
AC	AIR CONDITIONING	LAT	LEAVING AIR TEMPERATURE
AHU	AIR HANDLING UNIT	LB	POUNDS
		LG	LINEAR GRILLE
BAL	BALANCING	LRG	LINEAR RETURN GRILLE
BDD	BACKDRAFT DAMPER	LWR	LOOP WATER RETURN
B/F	BELOW FLOOR	LWS	LOOP WATER SUPPLY
B/G	BELOW GRADE		
B/FLY	BUTTERFLY		
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BCO	BASE CLEANOUT	MAX	MAXIMUM
		MD	MANUAL DAMPER
		MOD	MOTOR OPERATED DAMPER
		MFR	MANUFACTURER
CFM	CUBIC FEET PER MINUTE		
CBCR	CURVED BLADE CEILING REGISTER	NC	NORMALLY CLOSED
CD	CEILING DIFFUSER	NG	NATURAL GAS
CU	CONDENSING UNIT	NFWS	NON-FREEZE WALL HYDRANT
CW	COLD WATER (DOMESTIC)	NO	NORMALLY OPEN
CHWS	CHILLED WATER SUPPLY	NOM	NOMINAL
CHWR	CHILLED WATER RETURN		
CWS	CONDENSER WATER SUPPLY		
CWR	CONDENSER WATER RETURN		
CON	CONCENTRIC		
CO	CLEANOUT	OA	OUTSIDE AIR
COND	CONDENSATE	OD	OUTSIDE DIMENSION
		OBD	OPPOSED BLADE DAMPER
db	DRY BULB		
DN	DOWN	PIU	POWERED INDUCTION UNIT
DR	DRAIN	PSI	POUNDS PER SQUARE INCH
do	DITTO		
dB	DECIBELS		
DWG	DRAWING	RA	RETURN AIR
		RAD	RADIUS
EA	EACH	RAG	RETURN AIR GRILLE
EAT	ENTERING AIR TEMPERATURE	RED	REDUCER
ECC	ECCENTRIC	RL	REFRIGERANT LIQUID
EF	EXHAUST FAN	RS	REFRIGERANT SUCTION
EOD	EMERGENCY OVERFLOW DRAIN	RTU	ROOFTOP UNIT
ER	EXHAUST REGISTER	RAR	RETURN AIR REGISTER
ESP	EXTERNAL STATIC PRESSURE		
EWT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE
EXH	EXHAUST	SPS	STATIC PRESSURE SENSOR
EFF	EFFICIENCY	SA	SUPPLY AIR
		SAN	SANITARY
		SD	SMOKE DAMPER
F	FAHRENHEIT	SEN	SENSIBLE
FCO	FLOOR CLEANOUT	SQ	SQUARE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FSD	FIRE/SMOKE DAMPER	ST	STORM
FD	FIRE DAMPER OR FLOOR DRAIN	SS	SPLIT SYSTEM
FL DR	FLOOR DRAIN (only)		
FLR	FLOOR		
FOB	FLAT ON BOTTOM	TEMP	TEMPERATURE
FOR	FUEL OIL RETURN	TC	TRANSFER GRILLE
FOS	FUEL OIL SUPPLY	TYP	TYPICAL
FOT	FLAT ON TOP		
FPM	FEET PER MINUTE		
FPS	FEET PER SECOND		
FT	FEET	UON	UNLESS OTHERWISE NOTED
G	GATE	V	VENT
GA	GAUGE	VA	VALVE
GPM	GALLONS PER MINUTE	VTR	VENT THRU ROOF
GL	GLOBE	VAV	VARIABLE AIR VOLUME
GCO	GRADE CLEANOUT		
		wb	WET BULB
HD	HUB DRAIN	WC	WATER COLUMN
HP	HORSEPOWER	WHA	WATER HAMMER ARRESTOR
HTG	HEATING	WT	WEIGHT
HW	HOT WATER (DOMESTIC)	W	WASTE
HWR	HOT WATER RETURN		
HWRR	HOT WATER REVERSE RETURN		
HWS	HOT WATER SUPPLY		
Hz	HERTZ		

GENERAL NOTES

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE TENANT MECHANICAL SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, ACCESSORIES, OPTIONS AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL ITEMS AND LABOR REQUIRED FOR A COMPLETE TENANT MECHANICAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THE BASE BUILDING CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ADDITIONS TO THE CONTRACT.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT PARTITION LAYOUTS, REFLECTED CEILING PLANS, DIMENSIONS, ETC.
- VISIT SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. THE EXISTING CONDITIONS SHOWN ARE BASED ON DOCUMENTS PROVIDED BY OTHERS AND HAVE NOT BEEN VERIFIED BY THE ENGINEER. IF EXISTING CONDITIONS DIFFER FROM DRAWINGS IN SUCH A MANNER THAT WILL AFFECT PRICING, CONTRACTOR WILL NOTIFY OWNER SO THAT A RESOLUTION CAN BE MADE PRIOR TO SUBMITTING BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

SECTION 23 05 33

HEAT TRACING FOR HVAC PIPING

1.0 GENERAL

1.01 DESCRIPTION

A. All work specified in this Section is governed by the Common Work Results for HVAC Section 23 05 00.

B. This Section 23 05 33 and the accompanying drawings cover the provisions of all labor, equipment, appliances and materials, and performing all operations in connection with furnishing and installing the electric heat tracing as specified herein and as shown. This work includes, but is not limited to, the following:

1. A complete UL listed system of heaters, components, and controls to prevent water-carrying outdoor piping from freezing.

C. Only one electrical power connection shall be required for each system.

D. Electric heat tracing shall be UL listed.

1.02 INTENT

A. It is the intent of this Section of the specifications to provide complete, operable, fully wired electric heat tracing systems as shown and specified, which operate efficiently and automatically.

1.03 BASIS OF DESIGN

A. The basis of design is Raychem XL-Trace. Acceptable alternate manufacturers are Chromalox and nVent/Raychem, subject to substitution requirements.

2.0 PRODUCTS

2.01 ELECTRIC HEAT TRACING

A. The self-regulating heater shall consist of two (2) 16 AWG tinned-copper bus wires embedded in parallel in a self-regulating polymer core that varies its power output to respond to temperature oil along its length, allowing the heater to be crossed over itself without overheating, to be used directly on plastic pipe, and to be cut to length in the field. The heater shall be covered by a radiation cross-linked, modified polyolefin, dielectric jacket. Special attention is called to installations on plastic piping. Heat tracing shall be approved for plastic piping installation where applicable.

B. In order to provide energy conservation and to prevent overheating, the heater shall have a self-regulating factor of at least 90 percent. The self-regulation factor is defined as the percentage reduction, without thermostatic control, of the heater output going from 40°F pipe temperature operation to 150°F pipe temperature operation.

C. The heat tracing shall be 120V/1-phase. Coordinate with Division 26.

D. The heat tracing shall operate on the available line voltage indicated without the use of transformers.

E. The heater shall be sized according to the following table. The required heater output rating is in watts per foot at 50°F.

Pipe Size	Minimum Ambient of -10°F
-----------	--------------------------

3 inch or less	5 watts
4 & 5 inch	5 watts
6 inch	8 watts
8 inch	2 strips of 5 watts
10 inch to 14 inch	2 strips of 8 watts

F. Provide all power connections, end seals, splices and tee kits.

G. The system shall be controlled by a bulb-sensing thermostat set at 40°F either directly or through an appropriate contactor.

3.0 EXECUTION

3.01 INSTALLATION

A. The electric heat tracing and associated controls shall be installed in strict accordance with the manufacturer's recommendations.

B. The thermostatic control system shall be completely wired under this Division 23. Wiring shall be in accordance with the NEC and shall meet all requirements for this installation.

C. Apply the heat tracing linearly on the pipe after piping has been successfully pressure tested. Secure the heater to the piping with cable ties or fiberglass tape.

D. Apply "ELECTRIC TRACED" signs to the outside of the piping insulation.

3.02 TESTS

A. After installation and both before and after installing the piping insulation, subject heat tracing to testing using a 1000 VDC megger. Insulation resistance shall be 20 to 1000 megohms regardless of length.

END OF SECTION



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Cherry Emerson Building (066)
Fire Sprinkler System Addition
The Georgia Institute of Technology
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**MECHANICAL
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