UNIVERSITY OF SOUTH CAROLINA

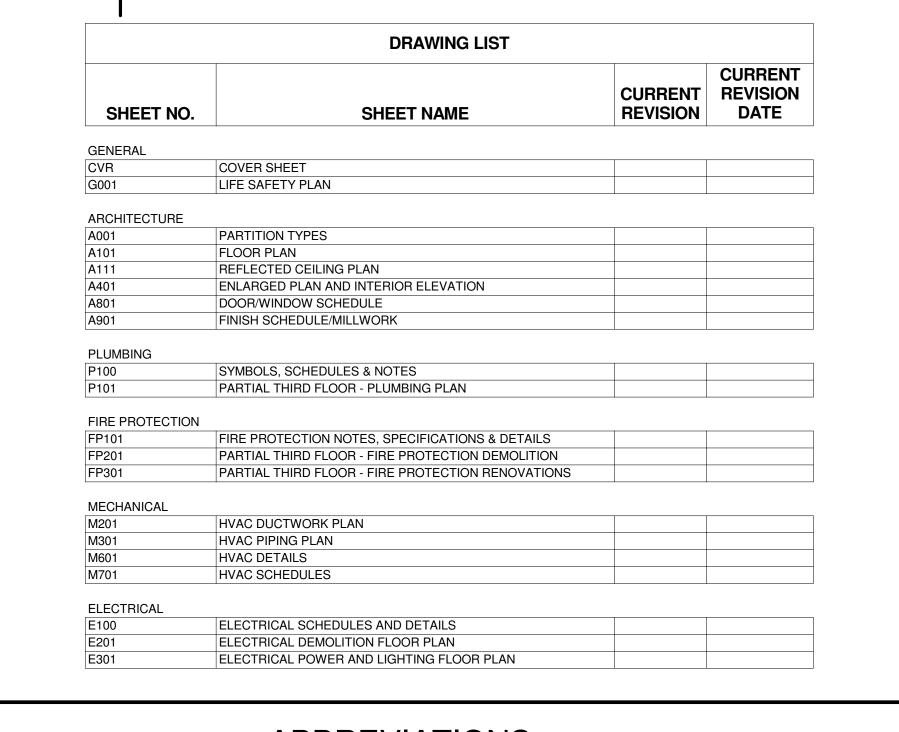
USC SOM BIOMEDICAL PRODUCTION STUDIO

6311 Garners Ferry Road, Columbia, SC 29209

DITTI DING CODE CHIMMADV

NAME OF PROJECT:	USC SOM MULTI-MEDIA P	RODUCTION STUDIO UPFIT	
ADDRESS:	6311 Garners Ferry Ro	ad, Columbia, SC 29209	
PROPOSED USE:	PRODUCTION STUDIO		
OWNER OR AUTHORIZED AGENT	: UNIVERSITY OF SOUTH C	AROLINA SCHOOL OF MEDICINE	
OWNED BY:		AROLINA SCHOOL OF MEDICINE	
CODE ENFORCEMENT JURISDIC	TION: UNIVERSITY OF SOUTH C.	AROLINA	
PROJECT DESIGN TEAM			
DESIGNER FIRM		CONTACT	IONE #
ARCHITECTURAL: STUD	IO 2LR, INC.	WES LYLES (8	03) 233-6602
CIVIL:)
STRUCTURAL:		(_)
PLUMBING: GMK	ENGINEERING	JUSTIN ROCHE (8	03) 256-0000
FIRE PROTECTION: GMK	ENGINEERING	JEREMY KYZER (8	03) 256-0000
MECHANICAL: GMK	ENGINEERING	JEFF BERNAGOZZI (8	03) 256-0000
SPRINKLER-STANDPIPE:)
ELECTRICAL: GMK	ENGINEERING	THOMAS KENNEDY, JR. (8	03) 256-0000
OTHER: <u></u>		(-)
NTERNATIONAL MECHANICAL CONTERNATIONAL FIRE CODE: NATIONAL ELECTRIC CODE: NTERNATIONAL ENERGY CONSECC/ANSI - 117.1: ADA STANDARDS FOR ACCESSIBLE BUILDING DATA - FOR PICONSTRUCTION TYPE (TABLE 50 SPRINKLERS: STANDPIPES: FIRE DISTRICT:	2012 WIT 2011 EDI 2011 EDI 2009 EDI 2009 EDI 2009 EDI 2010 EDI	TH SC MODIFICATIONS TION TION TION THE ONLY	UNLIMITED PER
BUILDING HEIGHT:			
BUILDING HEIGHT: MEZZANINE:			
BUILDING HEIGHT: MEZZANINE: HIGH RISE:			
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA:	NO		SUR-TOTAL
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR 3RD FLOOR	NO	NEW (SQ. FT.)	1,961
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA:	EXISTING (SQ. FT.)	NEW (SQ. FT.)	
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR 3RD FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	1,961
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR 3RD FLOOR TOTAL ALLOWABLE AREA	EXISTING (SQ. FT.)	NEW (SQ. FT.)	1,961
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR BRD FLOOR TOTAL ALLOWABLE AREA PRIMARY OCCUPANCY:	EXISTING (SQ. FT.)	NEW (SQ. FT.) FLOOR AREA PER OCCUPANT (TABLE 1004.1.2)	1,961 1,961 1.00 SF GROSS PER PERSON
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR BRD FLOOR TOTAL ALLOWABLE AREA PRIMARY OCCUPANCY: SECONDARY OCCUPANCY:	EXISTING (SQ. FT.) 1,961 GROUP B	NEW (SQ. FT.) FLOOR AREA PER OCCUPANT (TABLE 1004.1.2) FLOOR AREA PER OCCUPANT (TABLE 1004.1.2)	1,961 1,961 1.00 SF GROSS PER PERSON
BUILDING HEIGHT: MEZZANINE: HIGH RISE: GROSS BUILDING AREA: FLOOR BRD FLOOR TOTAL ALLOWABLE AREA PRIMARY OCCUPANCY:	EXISTING (SQ. FT.) 1,961 GROUP B	NEW (SQ. FT.) FLOOR AREA PER OCCUPANT (TABLE 1004.1.2)	1,961 1,961 1: 100 SF GROSS PER PERSON : :

EXIT REQUIREMENTS - FOR PRODUCTION STUDIO SUITE ONLY NUMBER AND ARRANGEMENTS OF EXITS FLOOR, ROOM OR SPACE TRAVEL DISTANCE **ALLOWABLE** ON PLANS TRAVEL TRAVEL ARRANGEMENTS MEANS OF EGRESS DISTANCE DISTANCE (SECTION 1015.2) 1,3 SHOWN ON REQUIRED DISTANCE **ACTUAL DISTANCE** PLANS BETWEEN EXIT DOORS BUSINESS **EXIT WIDTH** EXIT WIDTH (INCHES) 2,3,4,5,6 DESCRIPTION ACTUAL WIDTH SHOWN (SQ. FT.) OCCUPANT OCCUPANT (TABLE (TABLE 1004.1.2) 1005.3.1 AND 1005.3.2) BUSINESS 100 GROSS 1,961/100 x 0.2 = 3.9" 68" **TOILETS NOTE** THIS IS A TENANT UPFIT. TOILETS FOR BUILDING ARE EXISTING - NO TOILETS TO BE INCLUDED IN THIS UPFIT. MINIMUM STAIRWAY WIDTH (SECTION 1009.4); MIN. CORRIDOR WIDTH (SECTION 1018.2); MIN. DOOR WIDTH (SECTION 1008.1) MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1020.1) ¹SEE SECTION 1005.6 FOR CONVERGING EXITS THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE AVAILABLE CAPACITY TO LESS THAN 50 PERCENT OF THE ⁴ASSEMBLY OCCUPANCIES (SECTION 1028)

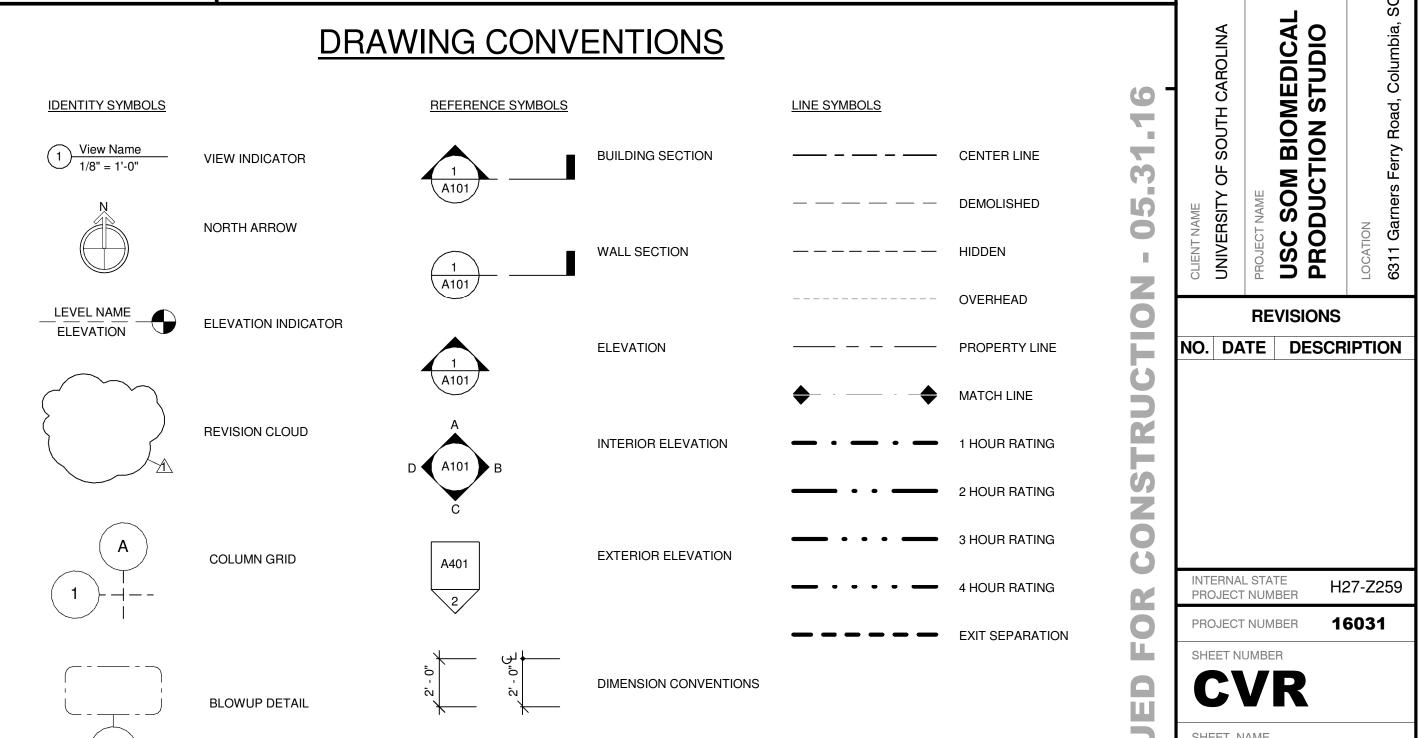


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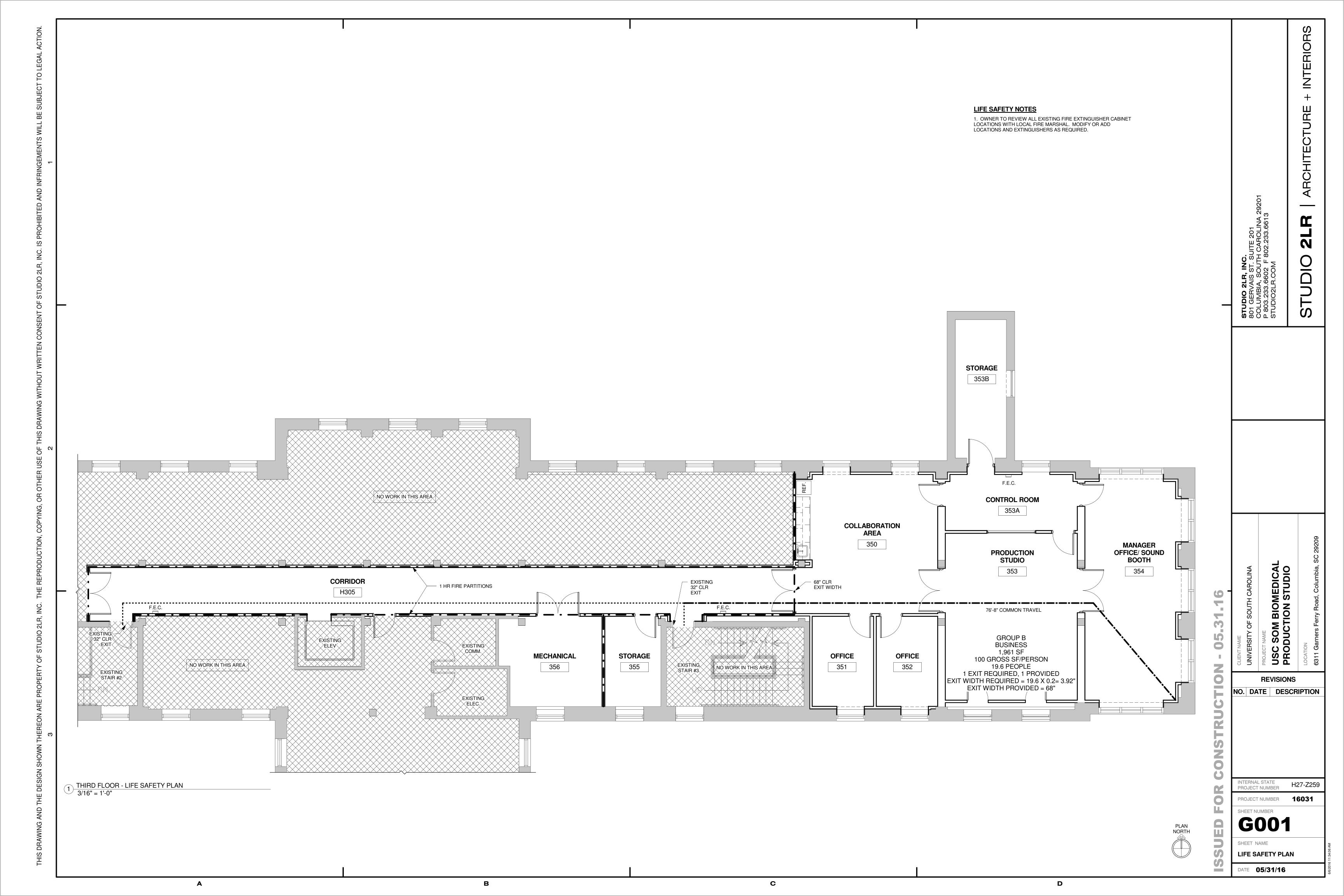
DATE **05/31/16**

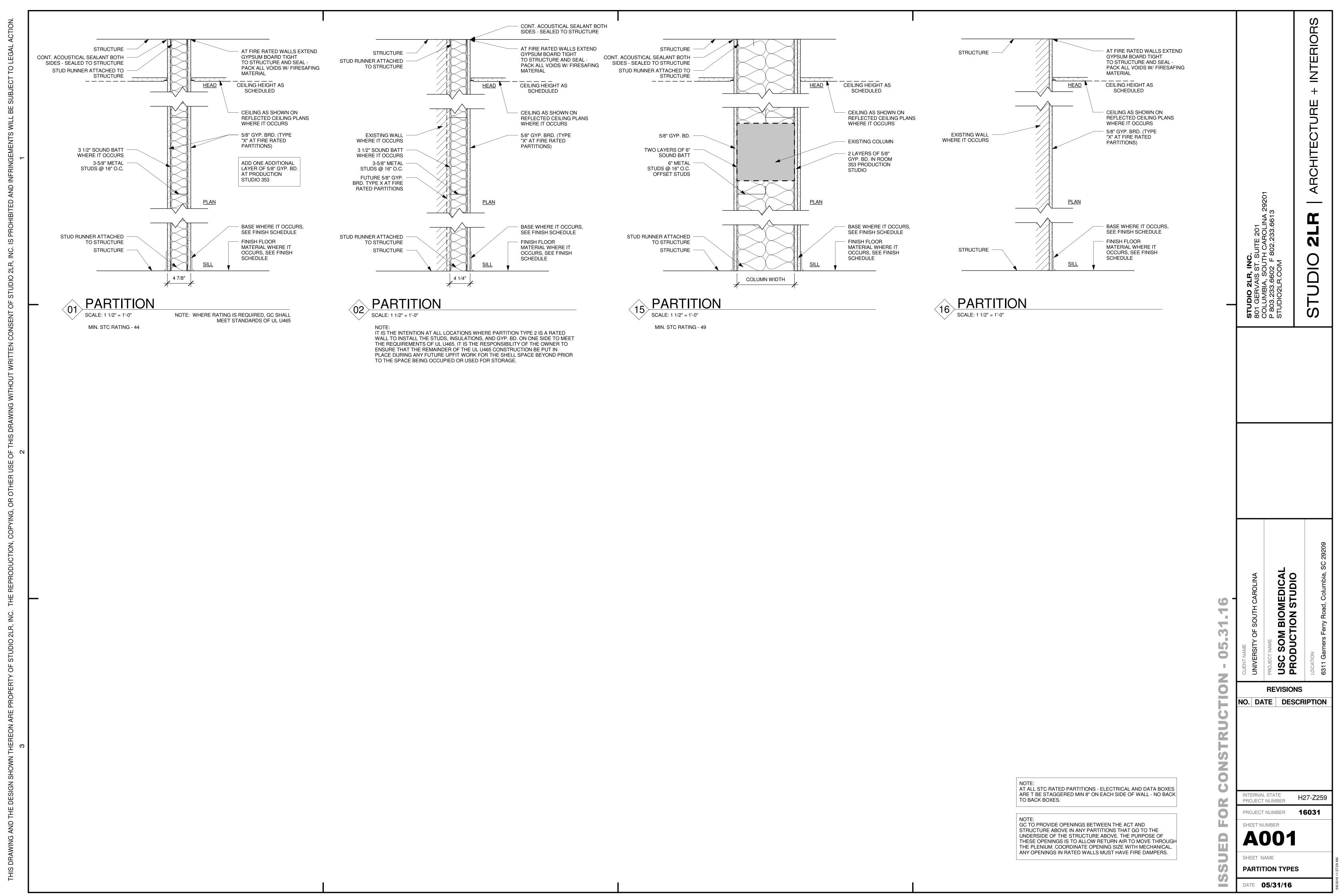


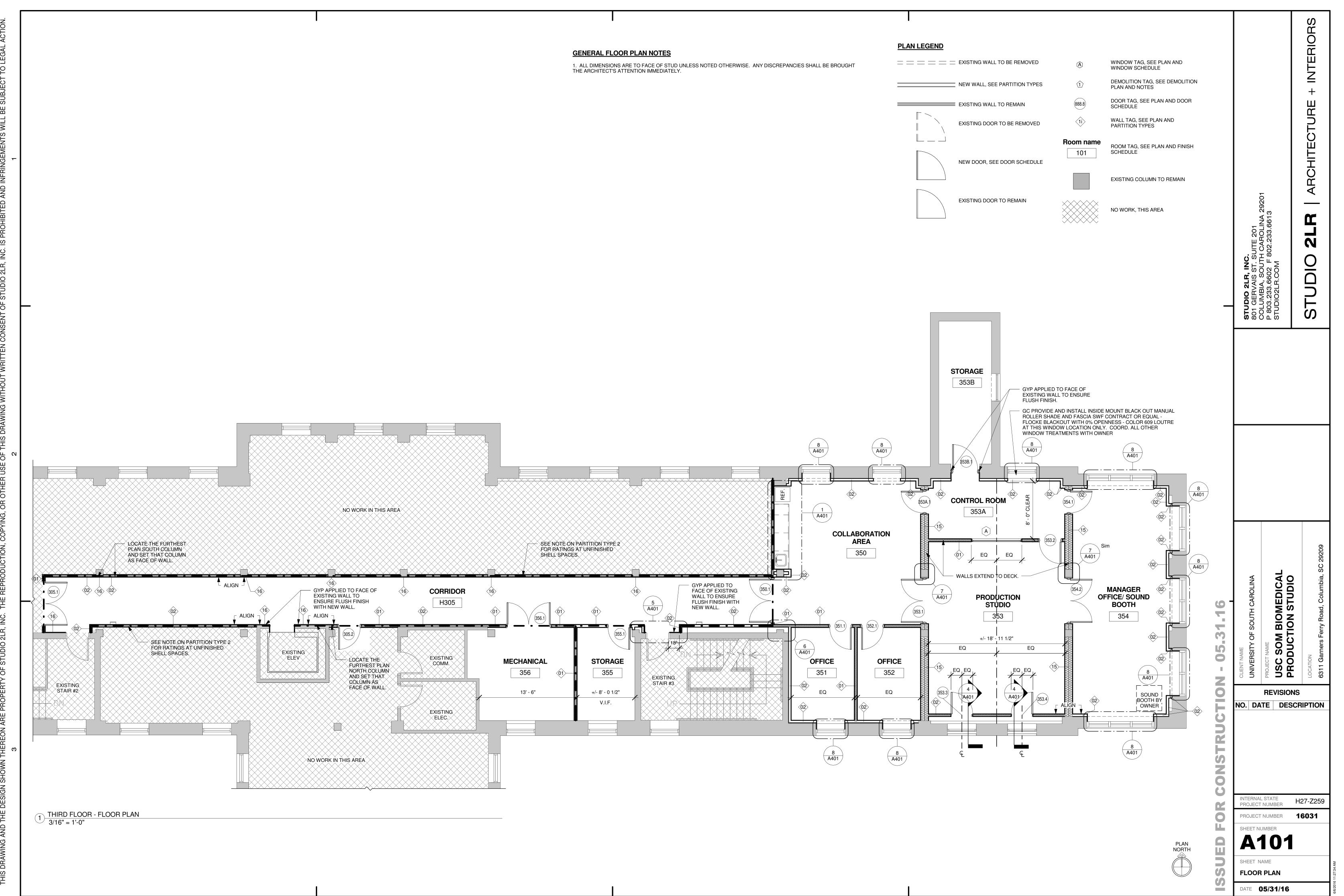


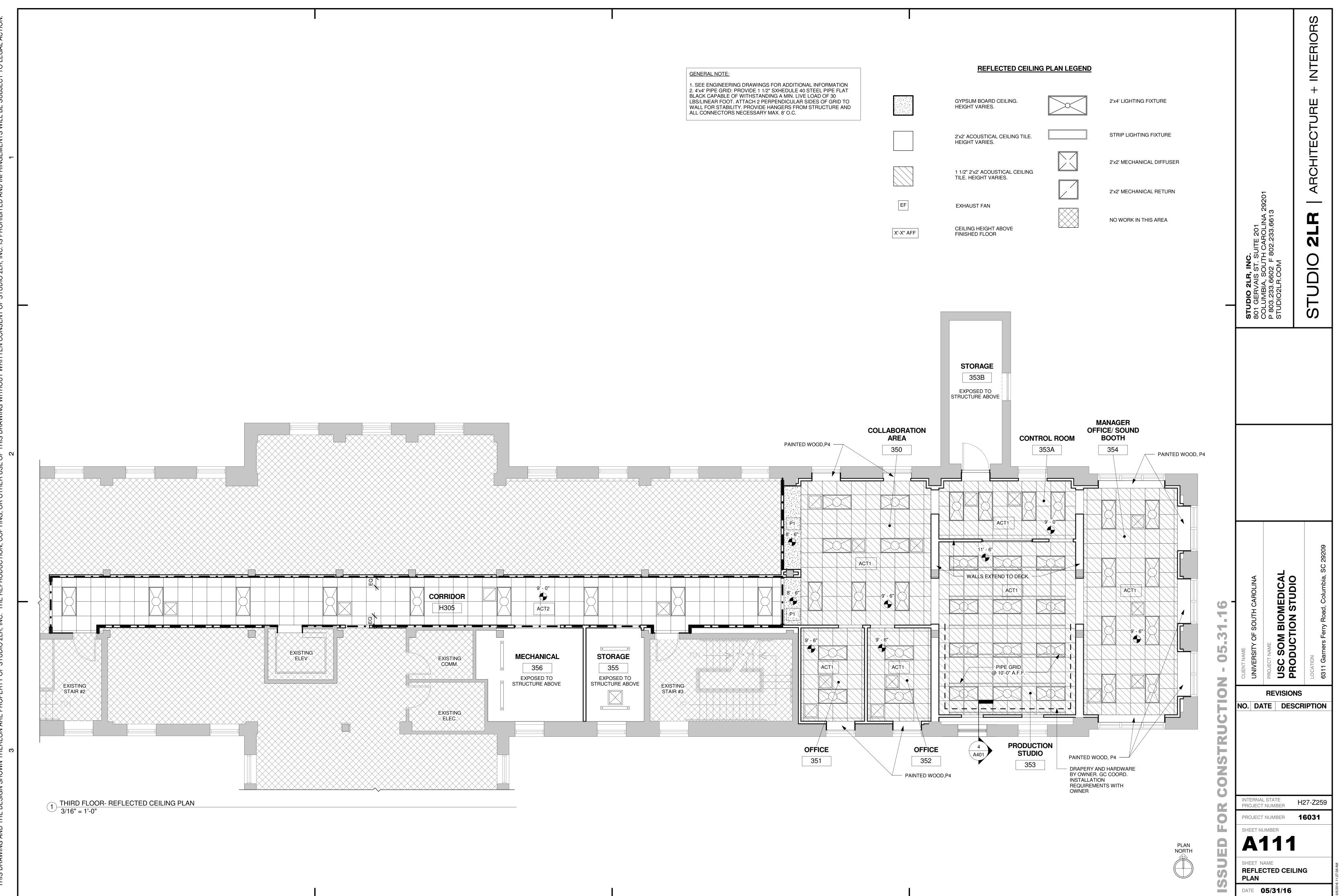
SLOPE CONVENTION

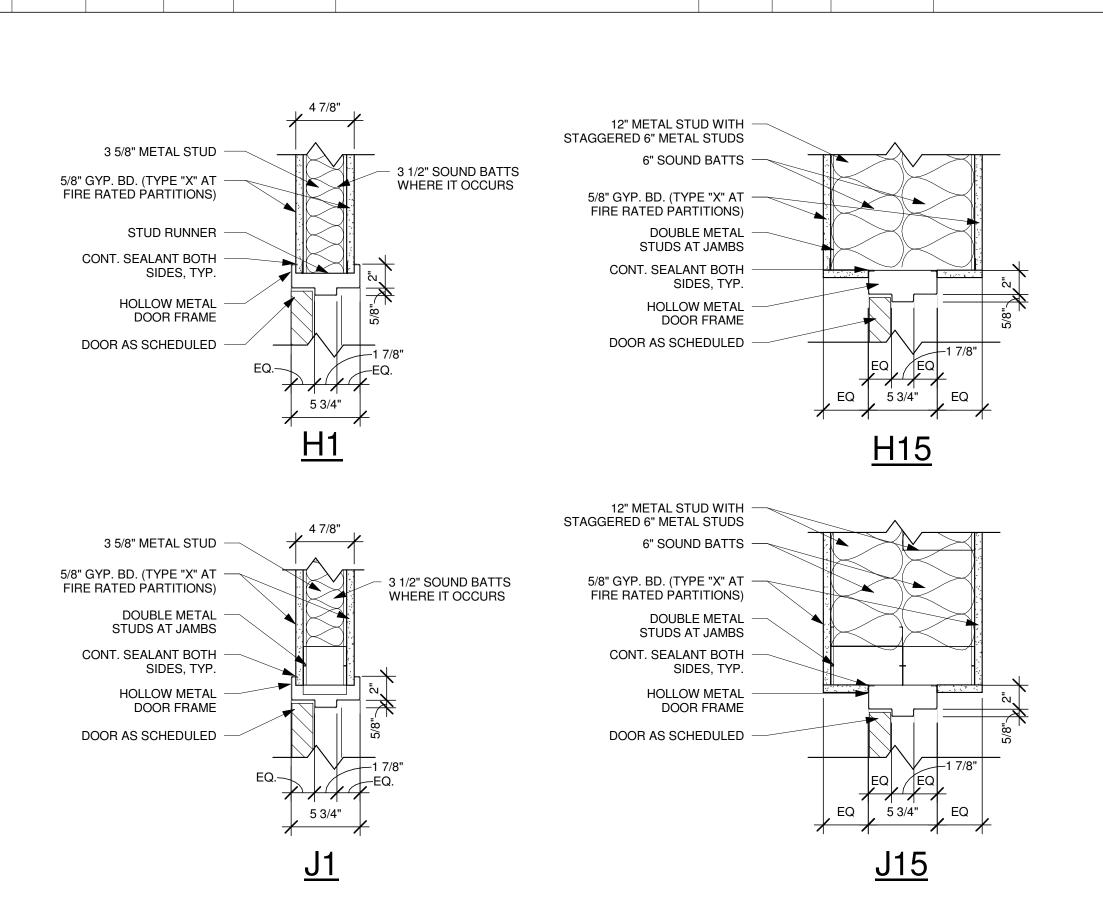
COVER SHEET





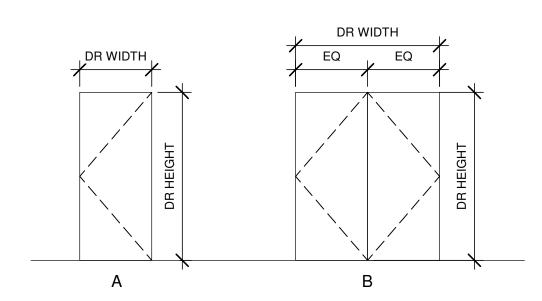




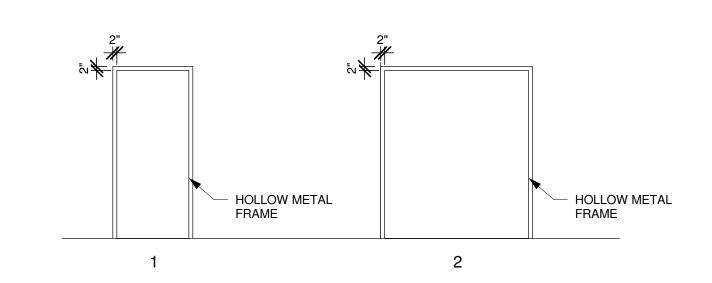


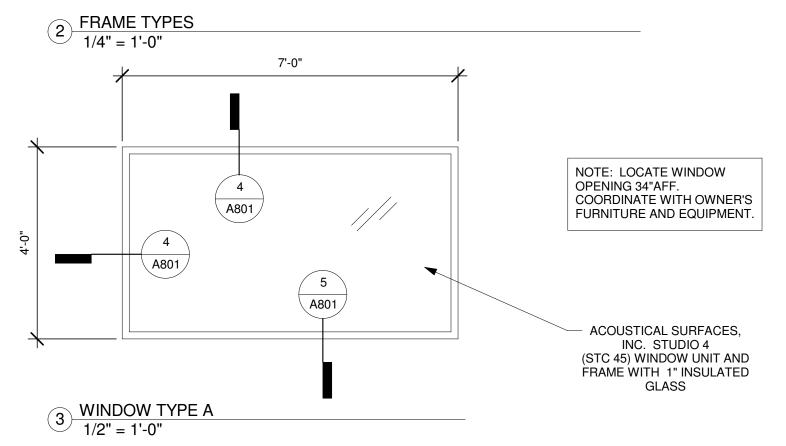
GENERAL DOOR NOTES

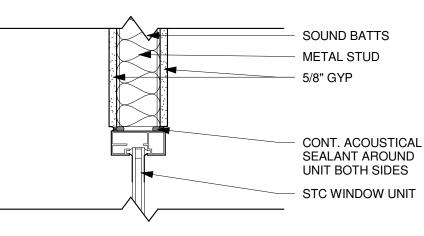
- 1. ALL DOORS TO BE LOCATED 6" FROM ADJACENT PERPENDICULAR WALL TO INSIDE FACE OF FRAME, UNLESS NOTED OTHERWISE. THIS DOES NOT APPLY TO STOREFRONT ITEMS.
- 2. HEAD, JAMB AND SILL DETAILS SHOWN FOR REFERENCE ONLY. COORDINATE WITH MANUFACTURER'S REQUIREMENTS, STRUCTURAL DRAWINGS, AND PARTITION TYPES.
- 3. ALL WOOD DOORS TO BE FLUSH. WOOD DOORS TO BE 5-PLY PREMIUM GRADE, BONDED CORE IN ACCORDANCE WITH THE WINDOW AND DOOR MANUFACTURERS ASSOCIATION ARCHITECTURAL WOOD FLUSH DOORS
- 4. STEEL DOORS AND FRAMES: FABRICATE FRAMES OF MINIMUM 16 GAUGE COLD-ROLLED STEEL, DOUBLE RABBET PROFILE, MITERED CORNERS. PROVIDE FULLY WELDED FRAMES AT ALL H.M. DOORS.
- 5. COMPLY WITH NFPA 80 FOR FIRE RATED ASSEMBLIES.
- 6. DOOR HARDWARE ALLOWANCE: \$750 PER LEAF, MATCH EXISTING HARDWARE IF APPLICABLE AND COORDINATE WITH OWNER. DOOR HARDWARE WITHIN SUITE SHALL BE MATTE BLACK UNLESS OTHERWISE NOTED.
- 7. ALL STC (SOUND TRANSMISSION CLASS) DOORS AND FRAME ASSEMBLY TO HAVE A MIN. STC RATING OF 45 PER ASTM E90 & ASTM E2235. PROVIDE ALL STC HARDWARE INCLUDING THRESHOLD, PERIMETER GASKET, DOOR BOTTOM, HINGE, ETC FOR



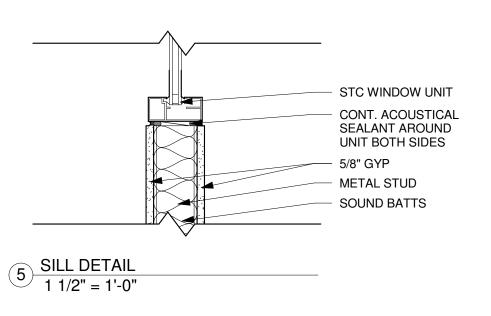
1) DOOR TYPES 1/4" = 1'-0"







4 HEAD/JAMB DETAIL 1 1/2" = 1'-0"



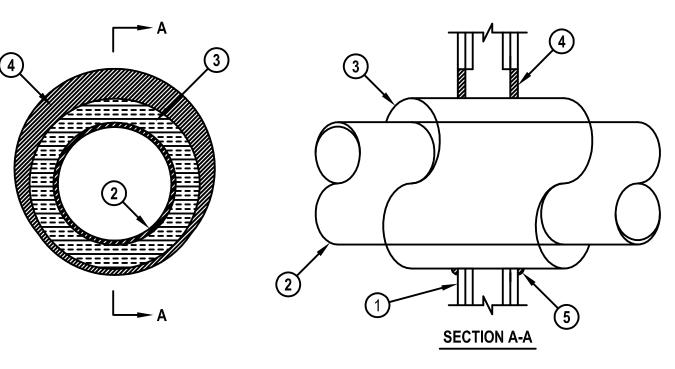
NO. DATE DESCRIPTION 0

H27-Z259 PROJECT NUMBER 16031 PROJECT NUMBER

REVISIONS

A801 DOOR/WINDOW SCHEDULE

DATE **05/31/16**



. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm). The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.

. Through Penetrants — One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used: A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe. C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).

D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).

. Pipe Covering* — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).

See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

The hourly T, FT, FTH Ratings of the firestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 hr rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).

3A. Pipe Covering* — (Not Shown) — As an alternate to Item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above. See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a

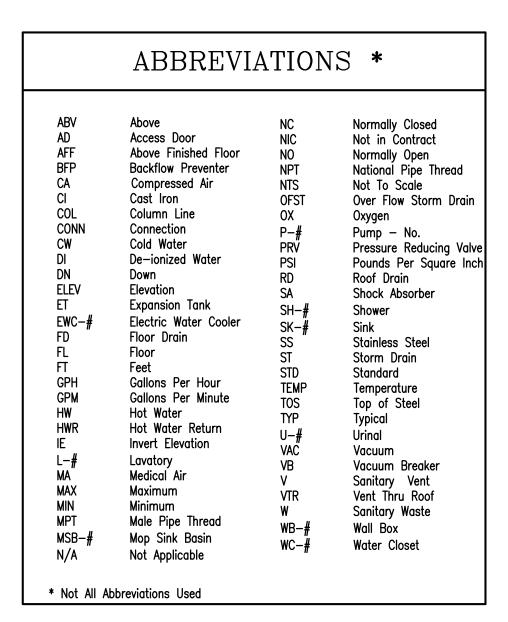
Smoke Developed Index of 50 or less may be used. 4. Fill, Void or Cavity Material* — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material

shall be applied at the pipe covering/gypsum board interface on both surfaces of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

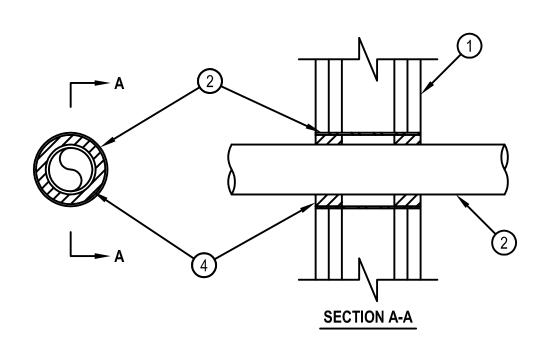
Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada),

RATED WALL PENETRATION

1 INSULATED METALLIC PIPE IN GYPSUM BOARD WALL



System No. W-L-2128 F Rating — 1 and 2 Hr (See Item 1) T Rating — 0 Hr nderwriters Laboratories, Inc



. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3-1/2 in.

. Metallic Sleeve Optional — Nom 3-1/2 in. (89 mm) (or smaller) cylindrical sleeve fabricated from min 0.016 in. thick (28 gauge) galv sheet steel and having a min 1-1/4 in. (32 mm) lap salong longitudinal seam. Length of sleeve to be installed flush with wall surfaces. . Through Penetrants — One nonmetallic pipe installed within the firestop system.. Pipe may be installed at an angle not greater than 45 degrees from perpendicular. Pipe to be rigidly supported on both sides of wall assembly. The space between pipe and periphery of opening shall be min

1/4 in. (6 mm) to max 11/16 in. (17.5 mm). The following types and sizes of nonmetallic pipes may be used: A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or

. Fill, Void or Cavity Materials* — Sealant — For 1 hr F Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 2 hr F Rating, min 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

RATED WALL PENETRATION NONMETALLIC PIPE IN GYPSUM BOARD WALL

PLUMBING GENERAL NOTES

- VERIFY EXACT LOCATION OF ALL PLUMBING FIXTURES IN OR ATTACHED TO CASEWORK WITH THE ARCHITECT AND THE MILLWORK SHOP DRAWINGS.
- CONFIRM OR VERIFY EXACT LOCATION AND ACTUAL INVERT OF WASTE LINES PRIOR TO INSTALLATION.
- DUE TO THE LARGE QUANTITY OF PIPING, DUCTWORK, CONDUIT, ETC. ABOVE THE CEILING COORDINATION WITH OTHER DISCIPLINES IS MANDATORY.
- LOCATE SHUT-OFF VALVE ABOVE CEILING AND IN LOCATIONS ACCESSIBLE FOR SERVICE. LOCATION SHALL COMPLY WITH THE REQUIREMENTS OF ALL CODES REFERENCED HEREIN.
- ALL SANITARY/ACID DRAINAGE PIPING 3" AND LARGER SHALL SLOPE 1/8" PER FOOT UNLESS NOTED OTHERWISE. ALL SANITARY/ACID DRAINAGE PIPING 2" AND SMALLER SHALL SLOPE 1/4" PER FOOT UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL REFERENCE DIVISION 22 OF THE SPECIFICATIONS AND EQUIPMENT SCHEDULE ON DRAWING PO.O FOR PLUMBING FIXTURES, EQUIPMENT, MATERIALS, PIPING, INSULATION, HANGERS, AND SUPPORTS.
- REFERENCE PLUMBING FIXTURE CONNECTION SCHEDULE ON THIS SHEET FOR LINE SIZES NOT SHOWN TO FIXTURES/EQUIPMENT.
- CONTRACTOR SHALL PROVIDE HANGERS AND SUPPORTS FOR SEISMIC RESTRAINT PER THE 2012 INTERNATIONAL BUILDING CODE.
- ALL DRAINAGE PIPING AND PRESSURE SYSTEM PIPING SHALL BE RUN AS HIGH AS POSSIBLE TO BOTTOM OF STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE PIPE ROUTING WITH ALL OTHER TRADES.
- 10. THE FOLLOWING PLUMBING SYSTEMS SHALL BE INSULATED: COLD WATER, HOT WATER, HOT WATER RECIRCULATION, P-TRAPS AND HORIZONTAL PIPING RECEIVING CONDENSATE ABOVE CEILINGS, HORIZONTAL ROOF DRAIN LEADERS (REFERENCE DIVISION 15 OF THE SPECIFICATIONS).
- 11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE.
- 12. ALL WALL HUNG FIXTURES SHALL BE SEALED BETWEEN WALL AND FIXTURES WITH WHITE SILICONE CAULKING.
- 13. LOCATE FLOOR CLEANOUTS PAST LIMITS OF THE CASEWORK.
- 14. CONTRACTOR SHALL MAKE PROVISIONS FOR EXPANSION LOOPS WHERE NECESSARY WHETHER OR NOT SHOWN ON DRAWINGS.
- 15. OFFSET PLUMBING VENTS, WATER PIPING AS NECESSARY TO AVOID CONFLICTS WITH DUCTWORK. SEE HVAC PLANS.
- 16. IT IS THE INTENT AND MEANING OF THE DRAWINGS TO PROVIDE COMPLETE AND OPERABLE PLUMBING AND DRAINAGE SYSTEMS.
- 17. ALL PLUMBING LINE SIZE REDUCTIONS SHALL BE MADE WITH REDUCERS AND/OR REDUCING FITTINGS.
- 18. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EXACT LOCATIONS OF FIXTURES AND EQUIPMENT. ALL OFFSETS AND FITTINGS FOR COMPLETE INSTALLATION MAY NOT BE DEFINED ON THE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT DIMENSIONS AT THE BUILDING AND ANY NECESSARY CHANGES MADE IN ACCORDANCE WITH STRUCTURAL CONDITIONS, EQUIPMENT TO BE INSTALLED AND COORDINATION WITH OTHER SYSTEMS. IF CONFLICTS CANNOT BE RESOLVED THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER.
- CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS INSOFAR AS THEY APPLY: NFPA 54, 2012 INTERNATIONAL BUILDING
- 20. CONTRACTOR SHALL SECURE ALL PERMITS, INSPECTIONS, LICENSES AND TESTS REQUIRED FOR THIS WORK AND PAY ALL FEES IN CONNECTION
- I. ALL MATERIALS SHALL BEAR THE MANUFACTURER'S NAME, TRADE NAME AND BE U.L. LABELED IF REQUIRED. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. ALL EQUIPMENT OF A SIMILAR TYPE SHALL BE OF THE SAME MANUFACTURER.
- . CONTRACTOR SHALL LOCATE AND SIZE ALL OPENINGS REQUIRED FOR PLUMBING EQUIPMENT AND PIPING; AND PROVIDE THIS INFORMATION TO THE GENERAL CONTRACTOR IN TIME NOT TO DELAY BUILDING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE AND LOCATE SLEEVES AND INSERTS REQUIRED BEFORE THE FLOOR AND WALLS ARE BUILT OR SHALL BE RESPONSIBLE FOR THE COST OF CUTTING AND PATCHING REQUIRED FOR PIPES WHERE SLEEVES AND INSERTS WERE NOT INSTALLED OR WHERE THEY WERE INCORRECTLY LOCATED.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR OR OF THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL TO THE WORK OF THE CONTRACTOR. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE FAILURE OF THE CONTRACTOR TO PERFORM THE CONSTRUCTION WORK IN ACCORDANCE WITH THE DRAWINGS.

#GMK ENGINEERING
1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000 fax 803-255-7243

	PLUMBIN	10	G LEGEN	D
SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION
	COLD WATER LINE - NEW (CW)		—∞	P-TRAP
	HOT WATER LINE - NEW (HW)		со —	INLINE CLEANOUT
	HOT WATER RECIRCULATING LINE - NEW (HWR)			BALL VALVE
	SANITARY WASTE LINE — NEW (W)		•	POINT OF CONNECTION — NEW TO EXISTING
	SANITARY VENT LINE - NEW (V)			BALANCING VALVE
	PIPE DOWN OR DROP (DN OR DROP)			CHECK VALVE
o	PIPE UP			BALANCING VALVE (FLOW)
	PIPE BREAK OR CONTINUATION			WALL BOX
	END CAP		↓ SA-A	SHOCK ABSORBER & TYPE

WATE	WATER-HAMMER ARRESTER SCHEDULE									
PDI UNITS	Α	В	С	D	E	F				
FIXTURE UNITS	1-11	12-32	33-60	61–113	114–154	155-330				

PLUMBING FIXTURE SCHEDULE

SK-1; UTILITY SINK (COUNTER UNDER MOUNT)

A. ELKAY ELUH-1814PD 18 GA. STAINLESS STEEL.

A. 20-1/2"x16-1/2"x9-3/8". 3. CONNECTION

A. 1-1/2" WASTE, 1/2" CW, 1/2" HW. . MOUNTING

A. UNDER MOUNT AS SHOWN ON ARCH DRAWINGS.

A. MOEN MODEL: 8287 TWO-HANDLE KITCHEN FAUCET, CHROME PLATED FINISH, FIXED SPOUT

s. Supplies A. MCGUIRE 165LK WITH LOOSE KEY STOPS.

A. MCGUIRE 152 1-1/2" W/ OPEN GRID STRAINER & 1-1/2" TAILPIECE.

A. MCGUIRE 8912 1-1/2" P-TRAP WITH C.O. PLUG.

WB-1; REFRIGERATOR OUTLET BOX

A. GUY GRAY MODEL BIM875 RECESSED 10"x8-3/4"x3-1/2" 20 GA. HOT DIPPED GALVANIZED STEEL BOX WITH FLANGED 18 GA. FACE PLATE

11-5/8"Wx9-1/2"H OVERALL. CONNECTION

A. 1/2" CW.

A. 1/4" OD COMPRESSION ANGLE VALVE FOR OUTLET FURNISHED INSTALLED BY BOX MFR.

FS-1; FLOOR SINK (MECHANICAL ROOMS & INDIRECT WASTE)

A. J.R. SMITH 3430-Y CAST IRON DRAIN WITH A.R.C. INTERIOR, SEEPAGE FLANGE.

A. A.R.C. GRATE WITH 8-1/4"x3-1/4"x4-1/2" HIGH OVAL A.R.C. FUNNEL.

S. ACCESSORIES A. ALUMINUM SEDIMENT BUCKET.

CONNECTION A. AS SHOWN.

A. DEEP SEAL P-TRAP WITH PROSET TRAP GUARD INSERT.

PIPE IDEN	TIFICATION SCI	HEDULE
SERVICE TYPE	DECAL IDENTIFICATION	TAPE COLOR
COLD WATER SERVICE	COLD WATER SUPPLY	GREEN
HOT WATER	DOMESTIC HOT WATER	YELLOW
HOT WATER RETURN	DOMESTIC HOT WATER RETURN	YELLOW

^{1.} PIPE SIZES 1-1/4" TO 6", USE 2-1/4" LETTERING. 2. PIPE SIZES 1" OR LESS, USE 1-1/4" LETTERING.



NORTH

PROJECT NUMBER SHEET NUMBER P100

INTERNAL STATE

PROJECT NUMBER

SYMBOLS, SCHEDULES, **NOTES & DETAILS** DATE **05/31/16**

H27-Z259

16031

06/02/2016

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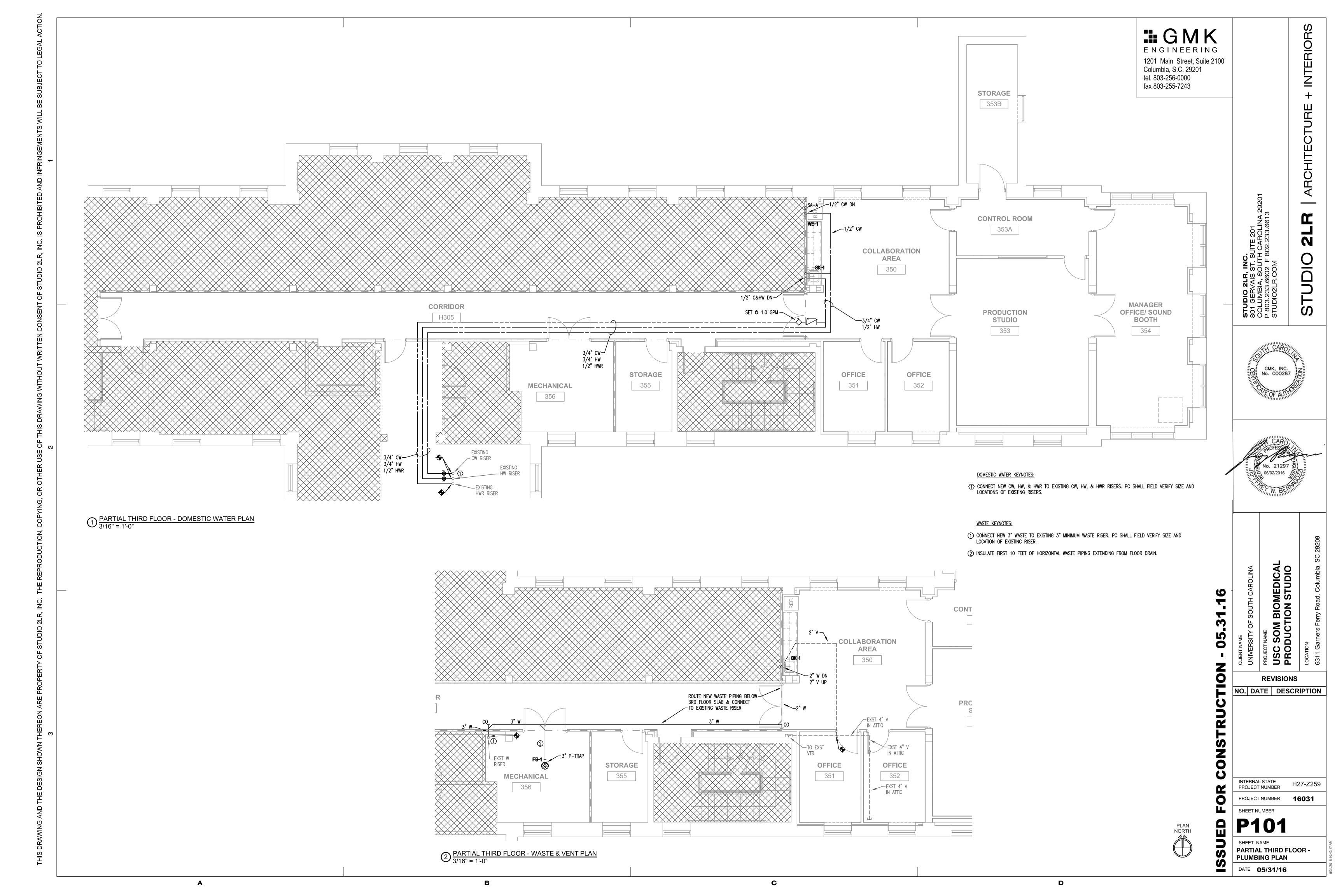
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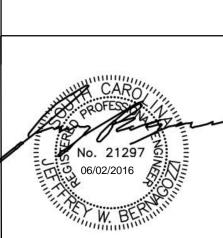
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REVISIONS

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INTERNAL STATE PROJECT NUMBER PROJECT NUMBER

16031

FIRE PROTECTION NOTES. **SPECIFICATIONS & DETAILS** DATE **05/31/16**

FIRE SPRINKLER SPECIFICATIONS PART GENERAL 1.01 SECTION INCLUDES A. THIS SECTION SPECIFIES AUTOMATIC SPRINKLER SYSTEMS FOR DESCRIBED IN NFPA13. BUILDINGS AND STRUCTURES. B. THE "WET-PIPE" SYSTEM SHALL EMPLOY AUTOMATIC SPRINKLERS ATTACHED TO A PIPING SYSTEM CONTAINING WATER AND CONNECTED TO A WATER SUPPLY SO THAT WATER DISCHARGES IMMEDIATELY

FROM SPRINKLERS OPENED BY FIRE. C. NOTE THAT THIS IS A PERFORMANCE SPECIFICATION REQUIRING THE LICENSED CONTRACTOR WHOM IS AWARDED THE PROJECT SHALL BE RESPONSIBLE FOR ACQUIRING A LICENSED FIRE PROTECTION ENGINEER TO PROVIDE A COMPLETE SPRINKLER SYSTEM DESIGN. THE DESIGN SHALL MEET ALL LOCAL AND INTERNATIONAL BUILDING CODES AS WELL AS MEETING THE MINIMUM REQUIREMENTS SET FORTH BY NFPA CODE BASED ON THE SCOPE AND APPLICABILITY OF THIS PROJECT.

Project Data

Water Supply Information

(flow test data must be less than 1 year old per §40-10-250(A)(1))

| County: Richland

Static pressure (psi): 65 | Residual pressure (psi): 49 | Flow (gpm): 1010

Title: Inspector

Churn Pressure (psi): 171

Pressure @ 150% flow (psi): 162

Certificate of Authorization | Professional Engineer's Seal

Horizontal (ft): 100 | Vertical (elevation difference in ft): 3

State project: ✓ Yes ☐ No

Pipe Size (in.): 6

100

250

250

State project #: H27-Z259

Telephone #: NA

Address (street # & street name): 6311 Garners Ferry Road, Columbia, SC 29209

Pump Capacity (gpm): 1000

Mechanical Room, Storage Room next to Mechanical

0.10/1500

0.15/1500

0.20/1500

Production Studio, Storage Room next to Production Studio

Design Parameters

Area # System Type | Density (gpm/ft²) / Area (ft²) or Other (reference code section) | Inside Hose (gpm) | Outside Hose (gpm)

Applicable Codes, Standards & Editions (i.e. "2006 IBC", "2007 NFPA 13", etc.) for the Scope of Work on the Sprinkler System

Scope of work (such as sprinkler system A.G. from 1'-0" A.F.F., U.G. from tap to 5'-0" outside, etc.) and notes (attach continuation page when necessary):

Specifier's Information

NFPA Hazard Classification

Area # | Class or Code Reference | Description of Hazard Protected (commodity description, storage height, and arrangement as applicable.)

Offices, Corridor, Collaboration Area, Control Room, Manager Office/Sound Booth

Rated Pressure (psi): 110

☐ Municipal dead-end ☑ Municipal circulation ☐ Other:

Organization: Lifeguard Fire Protection

On-site storage tank: ☐ Yes ☑ No ☐ New ☐ Existing ☐ Tank capacity (gallons):

Sprinkler system upfit for the 3rd floor renovations of an existing sprinklered building.

Fax #: 803-256-9610

Project name: USC SOM Biomedical Production Studio

City: Columbia

Distances of test gauges relative to the base of the riser:

I New **☑** Existing

Ordinary Hazard (Group 1)

Ordinary Hazard (Group 2)

Wet

Wet

Seismic Design Data: $S_s = 0.427$

Name: Jeff Bernagozzi

Phone #: 803-256-0000

E-mail: jbernagozzi@gmka.com

| City: Columbia

State: SC

Firm name: GMK Associates

Address: 1201 Main Street, Suite 2100

Name: Von Ray Price

Location in

South Carolina:

Date test conducted: 06 / 10 / 2015

Source of water supply:

1 | Light Hazard

Test data by/from:

1.02 RELATED SECTIONS A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING THE 1.08 DELIVERY, STORAGE, AND PROTECTION NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS, GENERAL CONDITIONS OF THE CONTRACT, SUPPLEMENTARY GENERAL CONDITIONS. AND ALL APPLICABLE SPECIFICATION SECTIONS OF DIVISION 1 — GENERAL REQUIREMENTS SHALL APPLY TO THIS

B. DIVISION 7 - FIRESTOPPING, SEALANTS AND CAULKING FOR MATERIALS AND METHODS FOR SEALING PIPE PENETRATIONS THROUGH BASEMENT WALLS AND FIRE/SMOKE BARRIERS. 1.03 REFERENCES A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

2. B16.3 MALLEABLE IRON FITTINGS, CLASS 150 AND 300. 3. B16.4 CAST-IRON THREADED FITTINGS, 125 AND 250. 4. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM): 5. A 47-84 SPECIFICATIONS FOR FERRITIC MALLEABLE IRON 6. A 120-84 SPECIFICATIONS FOR PIPE, STEEL, BLACK AND

1. B1.20.1 PIPE THREADS

SEAMLESS, FOR ORDINARY USES. B. AMERICAN WELDING SOCIETY (AWS): 1. A5.8-81 SPECIFICATIONS FOR BRAZING FILLER METAL (AN AMERICAN NATIONAL STANDARD) 2. D10.9-80 SPECIFICATION FOR QUALIFICATIONS OF WELDING

HOT-DIPPED ZINC-COATED (GALVANIZED) WELDED AND

PROCEDURES AND WELDERS FOR PIPING AND TUBING. C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA): 1. 13- STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.

B. OTHER DEFINITIONS FOR FIRE PROTECTION SYSTEMS ARE LISTED IN NFPA STANDARDS 13. . WORKING PLANS AS USED IN THIS SECTION REFERS TO THOSE DOCUMENTS (INCLUDING DRAWINGS AND HYDRAULIC CALCULATIONS) PREPARED PURSUANT TO THE REQUIREMENTS CONTAINED IN NFPA 13 FOR OBTAINING APPROVAL OF THE AUTHORITY HAVING

1.05 DESIGN REQUIREMENTS A. FIRE FLOW TEST DATA: CONTRACTOR SHALL OBTAIN CURRENT FIRE THE DESIGN OF SPRINKLER SYSTEMS AND SUBMISSION OF DRAWINGS AND CALCULATIONS TO THE STATE FIRE MARSHALL'S OFFICE FOR

1.06 SUBMITTALS

A. WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED D. MALLEABLE-IRON THREADED FITTINGS SHALL BE ANSI B16.3, CLASS WITH MANUFACTURER. B. PRODUCT DATA SHALL BE SUBMITTED IN ONE PACKAGE AND SHALL INCLUDE THE FOLLOWING:

1. PIPING (INCLUDING FITTINGS, PIPE HANGERS, AND SUPPORTS). 2. AUTOMATIC SPRINKLERS (INCLUDING ESCUTCHEONS). C. CONTRACTOR SHALL PREPARE PRELIMINARY SHOP DRAWINGS OF THE

PRODUCT DATA SHEETS TO THE ARCHITECT FOR PRELIMINARY REVIEW BY THE ENGINEER IN ACCORDANCE WITH PLANS AND SPECIFICATIONS. 1. CONTRACTOR SHALL INCLUDE COMPLETED DATA SHEET ATTACHED AS REQUIRED BY THE STATE FIRE MARSHALL'S OFFICE FOR ENGINEER USE AND VERIFICATION WITH PRELIMINARY SHOP

DRAWINGS AND CALCULATIONS. D. AFTER RECEIPT OF REVIEWED PRELIMINARY SHOP DRAWINGS, CONTRACTOR SHALL REVISE DRAWINGS AND CALCULATIONS AS REQUIRED TO COMPLY WITH ALL PRELIMINARY REVIEW COMMENTS. E. NOTIFY ENGINEER ONCE ALL ITEMS FROM PRELIMINARY REVIEW ARE

CORRECTED TO OBTAIN UPDATED DATA SHEET AND CERTIFICATE OF COMPLIANCE FOR SUBMISSION TO THE STATE FIRE MARSHALL'S 2.03 GASKET MATERIALS: F. CONTRACTOR SHALL SUBMIT REVISED SHOP DRAWINGS, UPDATED DATA SHEET AND CERTIFICATE OF COMPLIANCE TO THE STATE FIRE 2.04 PIPE HANGERS: MARSHALL'S OFFICE FOR REVIEW.

1. CONTRACTOR SHALL MAKE ALL CHANGES NECESSARY FOR OBTAINING FINAL APPROVAL FROM THE STATE FIRE MARSHALL 2.05 AUTOMATIC SPRINKLERS: AND THE INSURANCE UNDERWRITER PRIOR TO START OF CONSTRUCTION. G. REVIEW OF CONTRACTOR'S DRAWINGS SHALL NOT RELIEVE HIM FROM

THE RESPONSIBILITY FOR ERRORS, OMISSIONS OR DEVIATIONS FROM PLANS AND SPECIFICATIONS, UNLESS THE CONTRACTOR HAS CALLED THE OWNER'S ATTENTION TO SUCH DEVIATIONS IN WRITING AT TIME OF SUBMITTAL. H. MAINTENANCE DATA FOR EACH TYPE SPRINKLER HEAD, FOR

INCLUSION IN OPERATING AND MAINTENANCE MANUAL SPECIFIED IN SECTION 15010 — GENERAL MECHANICAL.

WELDER'S QUALIFICATION CERTIFICATE.

J. TEST REPORTS AND CERTIFICATE INCLUDING "CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING" AS

PART 3 EXECUTION

3.01 INSTALLATION

1. WET-PIPE SYSTEM:

a. THREADED PIPE:

b. GROOVED PIPE:

B. PIPING INSTALLATIONS:

AND FITTINGS

INSTALL PIPING AS INDICATED.

1) SCHEDULE 40 BLACK STEEL PIPE WITH THREADED JOINTS

1) SCHEDULE 10 STEEL PIPE WITH ROLL GROOVED ENDS AND

2) SCHEDULE 40 STEEL PIPE WITH CUT GROOVED ENDS AND

SCHEMATICS, AND DIAGRAMS) INDICATE THE GENERAL LOCATION

2. USE APPROVED FITTINGS TO MAKE ALL CHANGES IN DIRECTION,

BRANCH TAKEOFFS FROM MAINS, AND REDUCTIONS IN PIPE

3. INSTALL UNIONS IN PIPES 2 INCH AND SMALLER, ADJACENT TO

OR IN PIPING INSTALLATIONS USING GROOVED MECHANICAL

EACH VALVE. UNIONS ARE NOT REQUIRED ON FLANGED DEVICES

4. INSTALL FLANGES OR FLANGE ADAPTORS ON VALVES, APPARATUS,

HANGER AND SUPPORT SPACING AND LOCATIONS FOR PIPING

JOINED WITH GROOVED MECHANICAL COUPLINGS SHALL BE IN

MANUFACTURER'S WRITTEN INSTRUCTIONS, FOR RIGID SYSTEMS.

ACCORDANCE WITH THE GROOVED MECHANICAL COUPLING

PROVIDE PROTECTION FROM DAMAGE WHERE SUBJECT TO

B. THREADED JOINTS: CONFORM TO ANSI B1.20.1, TAPERED PIPE

THREADS FOR FIELD CUT THREADS. JOIN PIPE, FITTINGS, AND

2. ASSEMBLE JOINT TO APPROPRIATE THREAD DEPTH. WHEN USING

A WRENCH ON VALVES PLACE THE WRENCH ON THE VALVE END

3. DAMAGED THREADS: DO NOT USE A PIPE WITH THREADS WHICH

ARE CORRODED OR DAMAGED. IF A WELD OPENS DURING

C. FLANGED JOINTS: ALIGN FLANGES SURFACES PARALLEL. ASSEMBLE

OF FLANGES AND GASKETS AS FLAT AND PARALLEL AS POSSIBLE.

USE SUITABLE LUBRICANTS ON BOLT THREADS. TIGHTEN BOLTS

D. MECHANICAL GROOVED JOINTS: CUT OR ROLL GROOVES ON PIPE

E. END TREATMENT: AFTER CUTTING PIPE LENGTHS, REMOVE BURRS

LOCATED AS TO BE SUBJECT TO MECHANICAL DAMAGE (IN EITHER

C. USE PROPER TOOLS TO PREVENT DAMAGE DURING INSTALLATION.

END OF SECTION

A. FLUSH. TEST. AND INSPECT SPRINKLER PIPING SYSTEMS IN

UPRIGHT, PENDENT, OR SIDEWALL POSITIONS).

ENDS DIMENSIONALLY COMPATIBLE WITH THE COUPLINGS.

JOINTS BY SEQUENCING BOLT TIGHTENING TO MAKE INITIAL CONTACT

GRADUALLY AND UNIFORMLY TO APPROPRIATE TORQUE SPECIFIED BY

CUTTING OR THREADING OPERATIONS, THAT PORTION OF PIPE

1. APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO THE

AND EQUIPMENT HAVING 2-1/2 INCH AND LARGER CONNECTIONS.

AND ARRANGEMENT OF PIPING SYSTEMS. SO FAR AS PRACTICAL,

GROOVED MECHANICAL COUPLINGS.

GROOVED MECHANICAL COUPLINGS.

1. LOCATIONS AND ARRANGEMENTS: DRAWINGS (PLANS,

WITH NFPA 13 COMPLETE WITH SHUTOFF VALVE.

EARTHQUAKE IN ACCORDANCE WITH NFPA

INTO WHICH THE PIPE IS BEING THREADED.

A. WELDED JOINTS: AWS D10.9, LEVEL AR-3.

3.02 PIPE JOINT CONSTRUCTION:

VALVES AS FOLLOWS:

EXTERNAL PIPE THREADS.

THE BOLT MANUFACTURER.

AND FINS FROM PIPE ENDS.

3.03 SPRINKLER HEAD INSTALLATIONS:

OF "RETURN BENDS."

3.04 FIELD QUALITY CONTROL:

ACCORDANCE WITH NFPA 13.

A. PIPE APPLICATIONS A. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION, WITH NOT LESS THAN THREE YEARS OF DOCUMENTED EXPERIENCE.

B. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM 3 YEARS OF C. PRODUCTS REQUIRING ELECTRICAL CONNECTION: LISTED AND CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE SPECIFIED AND

D. UL AND FM COMPLIANCE: FIRE PROTECTION SYSTEM MATERIALS AND COMPONENTS SHALL BE UNDERWRITERS' LABORATORIES LISTED AND LABELED AND FACTORY MUTUAL APPROVED FOR THE APPLICATION ANTICIPATED.

A. STORE MATERIALS UNDER COVER AND ELEVATED ABOVE GRADE. 1.09 PROJECT CONDITIONS A. COORDINATE SPRINKLER INSTALLATION WITH SIZE, LOCATION AND INSTALLATION OF SERVICE UTILITIES.

B. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO C. COORDINATE RELOCATED SPRINKLER HEADS AND PIPING LOCATIONS

WITH OTHER TRADES. 5. INSTALL TEST CONNECTIONS SIZED AND LOCATED IN ACCORDANCE D. REMOVE AND REPLACE DAMAGED SPRINKLER HEADS WITHIN PROJECT LIMITS, SIMILAR TO MAKE AND MODEL OF EXISTING SYSTEM C. HANGERS AND SUPPORTS: 1. COMPLY WITH THE REQUIREMENTS OF NFPA 13 AND NFPA 14.

A. SEE SECTION 01780 — CLOSEOUT SUBMITTALS, FOR ADDITIONAL WARRANTY REQUIREMENTS. B. CORRECT DEFECTIVE WORK WITHIN A ONE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION.

2.01 MANUFACTURERS: A. PROVIDE PRODUCTS COMPLYING WITH THE SPECIFICATIONS BY ONE OF THE FOLLOWING MANUFACTURES. 1) GROOVED MECHANICAL COUPLINGS

VICTAULIC 3. VIKING 2) AUTOMATIC SPRINKLERS: 1. VICTAULIC 2. CENTRAL

GRINNEL

A. PIPE SIZES USED IN THIS SPECIFICATION ARE NOMINAL PIPE SIZE 3. GLOBE 4. RELIABLE 5. VIKING 2.02 PIPE AND PIPE FITTINGS:

A. GENERAL: REFER TO THE EXECUTION SECTION, ARTICLE "PIPE APPLICATIONS" FOR IDENTIFICATION OF SYSTEMS WHERE THE BELOW SPECIFIED PIPE AND FITTING MATERIALS ARE USED. PIPE SHALL BI NEW, DESIGNED TO WITHSTAND THE WORKING PRESSURES INVOLVED, BUT NOT LESS THAT 175 PSI. PIPE SHALL HAVE THE MANUFACTURER'S NAME OR BRANDS, ALONG WITH THE APPLICABLE ASTM STANDARD, MARKED ON EACH LENGTH OF PIPE.

FLOW TEST DATA AND FIFLD VERIEY EXISTING CONDITIONS PRIOR TO ... B. BLACK STEEL PIPE SHALL BE SCHEDULE 10. OR SCHEDULE 40. SEAMLESS, AND IN ACCORDANCE WITH ASTM A53, A120, A135 OR

> C. CAST-IRON THREADED FITTINGS SHALL BE ANSI B16.4, CLASS 250, A. INSTALL SPRINKLERS IN CENTER OF LAY-IN CEILING TILE BY MEANS STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL CONFORM TO ANSI B1.20.1. B. INSTALL SPRINKLER GUARDS ON SPRINKLERS WHICH ARE SO 300, STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL CONFORM TO ANSI B1.20.1.

E. GROOVED MECHANICAL FITTINGS SHALL BE ASTM A 536, GRADE 65-45-12 DUCTILE IRON; ASTM A 47 GRADE 32510 MALLEABLE IRON; OR ASTM A53, TYPE F OR TYPES E OR S, GRADE B FABRICATED STEEL FITTINGS WITH GROOVES OR SHOULDERS DESIGNED TO ACCEPT GROOVED END COUPLINGS.

INSTALLATION AND SHALL SUBMIT DRAWINGS WITH CALCULATIONS AND
F. GROOVED MECHANICAL COUPLINGS SHALL CONSIST OF DUCTILE OR MALLEABLE IRON; HOUSING, A SYNTHETIC RUBBER GASKET OR A CENTRAL CAVITY PRESSURE-RESPONSIVE DESIGN; WITH NUTS, BOLTS, LOCKING PIN. LOCKING TOGGLE, OR LOGS TO SECURE ROLL-GROOVED PIPE AND FITTINGS. GROOVED MECHANICAL COUPLINGS INCLUDING GASKETS USED ON DRY-PIPE SYSTEMS

SHALL BE LISTED FOR DRY-PIPE SERVICE. G. CAST IRON THREADED FLANGES SHALL BE ANSI B16.1, CLASS 250; RAISED GROUND FACE, BOLT HOLES SPOT FACED. H. WELDING MATERIALS SHALL COMPLY WITH SECTION II, PART C, ASME

BOILER AND PRESSURE VESSEL CODE FOR WELDING MATERIALS APPROPRIATE FOR THE WALL THICKNESS AND CHEMICAL ANALYSIS OF THE PIPE BEING WELDED. A. THICKNESS, MATERIAL, AND TYPE SUITABLE FOR FLUID OR GAS TO

BE HANDLED, AND DESIGN TEMPERATURES AND PRESSURES. A. PIPE HANGERS SHALL BE AS SPECIFIED IN NFPA 13.

A. SPRINKLERS SHALL BE FRANGIBLE BULB, QUICK RESPONSE TYPE,

AND STYLE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE INDICATED. PROVIDE SPRINKLERS WITH NOMINAL 1/2 INCH DISCHARGE ORIFICE, HAVING TEMPERATURE RATINGS SUITABLE FOR THE INSTALLATION. B. SPRINKLER STYLES AND FINISHES SHALL BE AS FOLLOWS:

C. UPRIGHT, PENDENT, AND SIDEWALL STYLES: UNLESS NOTED OTHERWISE, WHITE FINISH WITH RECESSED ESCUTCHEONS IN FINISHED SPACES, EXPOSED TO VIEW; ROUGH BRONZE FINISH FOR HEADS IN UNFINISHED SPACES AND NOT EXPOSED TO VIEW. SPRINKLER ESCUTCHEONS SHALL BE ALL METAL TYPE WITH FINISH TO MATCH SPRINKLER.

FIRE PROTECTION GENERAL NOTES

NOTE THAT THIS IS A PERFORMANCE SPECIFICATION REQUIRING THE LICENSED CONTRACTOR WHOM IS AWARDED THE PROJECT SHALL BE RESPONSIBLE FOR ACQUIRING A LICENSED FIRE PROTECTION ENGINEER TO PROVIDE A COMPLETE SPRINKLER SYSTEM DESIGN. THE DESIGN SHALL MEET ALL LOCAL AND INTERNATIONAL BUILDING CODES AS WELL AS MEETING THE MINIMUM REQUIREMENTS SET FORTH BY NFPA CODE BASED ON THE SCOPE AND APPLICABILITY OF THIS PROJECT.

SYSTEMS SHALL COMPLY WITH NFPA 13 AND ALL APPLICABLE STATE AND LOCAL CODES.

FIRE PROTECTION CONTRACTOR SHALL OBTAIN APPLICABLE PERMITS AND LICENSES

INSPECTIONS AND FINAL APPROVAL BY LOCAL AHJ AND ARCHITECT / ENGINEER.

PIPE ROUTING SHALL BE COORDINATED WITH OTHER TRADES TO MAINTAIN PROPER CLEARANCES. FIRE PROTECTION CONTRACTOR TO VERIFY STRUCTURAL, MECHANICAL, ELECTRICAL INSTALLATIONS AND AVOID ANY / ALL OBSTRUCTIONS OR INTERFERENCE'S WITH FIRE PROTECTION PIPE ROUTING.

REFER TO ARCHITECTURAL REFLECTED CEILING AND ELECTRICAL LIGHTING DRAWINGS FOR CEILING DESCRIPTIONS AND HEIGHTS.

PROVIDE APPROVED / LISTED METHODS OF SEALING PENETRATIONS THROUGH SMOKE / FIRE WALLS, CEILINGS, ETC.

PROVIDE ACCESS PANELS TO ALL VALVES ABOVE NON-ACCESSIBLE CEILINGS AND WALLS. COORDINATE WITH ARCHITECTURAL DRAWINGS.

SPRINKLER HEADS ARE TO BE COORDINATED WITH ALL DIFFUSERS, GRILLES, LIGHTING FIXTURES AND CEILING SYSTEMS.

SPRINKLER HEADS SHALL BE INSTALLED IN THE CENTER OF ACOUSTICAL TILE PANELS.

SHOP DRAWINGS SHALL INDICATE CENTER TO CENTER DIMENSIONS OR PIPE CUT LENGTHS AND NOMINAL PIPE DIAMETERS ON ALL PIPING.

INDICATE PIPE TYPE, SCHEDULE OF WALL THICKNESS AND METHOD OF JOINING ON SHOP DRAWINGS.

PROVIDE THE ROOM NAMES FOR EACH AREA ON SHOP DRAWINGS.

PROVIDE STOCK OF EXTRA SPRINKLER HEADS IN ACCORDANCE WITH NFPA 13 6.2.9.

SHOP DRAWINGS SHOULD PROVIDE DETAIL AND INDICATE TYPE OF HANGER TO BE INSTALLED FOR SPRINKLER PIPING.

MATERIAL SUBMITTALS SHALL BE SUBMITTED TO ARCHITECT / ENGINEER AND SHALL BE APPROVED BEFORE ANY INSTALLATION.

THREADED PIPE SHALL BE STEEL, SCHEDULE 40, BLACK AND IN ACCORDANCE WITH SPECIFICATION ASTM A120.

THREADED SCHEDULE 40 BLACK STEEL PIPE SHALL BE JOINED BY SCREWED JOINTS IN ACCORDANCE WITH SPECIFICATION ANSI B2.1.

GROOVED PIPE SHALL BE STEEL, SCHEDULE 10 OR SCHEDULE 40, BLACK.

AUTOMATIC SPRINKLER TEMPERATURE RATINGS TO BE IN ACCORDANCE WITH NFPA 13.

METHODS OF HANGING PIPES, HEADERS AND BRANCHES SHALL BE APPROVED BY NFPA 13. HANGERS SHALL NOT INTERFERE WITH ANY OTHER TRADE.

ALL VALVES FOR FIRE SERVICE SHALL BE APPROVED BY THE UNDERWRITER'S LABORATORIES INC. AND THE FACTORY MUTUAL LABORATORIES. VALVES SHALL BE MARKED "UL" AND "FM", 175 P.S.I. WORKING PRESSURE.

ALL VALVES ON THE FIRE PROTECTION SYSTEM TO BE ELECTRICALLY SUPERVISED. FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ELECTRICAL CONTRACTOR, TYPE AND EXACT LOCATION OF FLOW, PRESSURE AND SUPERVISORY SWITCHES. ADDITIONAL WIRING OR ADDITIONAL SWITCHES REQUIRED BY FIRE PROTECTION CONTRACTOR'S DESIGN WILL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.

ALL POWER WIRING SHALL BE ACCOMPLISHED UNDER ELECTRICAL DIVISION. FIRE PROTECTION CONTRACTOR SHALL COORDINATE ALL ELECTRICAL ITEMS WITH ELECTRICAL CONTRACTOR AND INSURE PROPER COORDINATION.

PROVIDE A PERMANENTLY ATTACHED NAME TAG STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SYSTEM.

SPRINKLERS SHALL COVER THE ENTIRE AREA OF THE ROOM INCLUDING ALCOVES. SPRAY SHALL NOT BE BLOCKED BY WALLS OR PARTITIONS.

THE FIRE PROTECTION CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER OF ANY DISCREPANCIES FOUND BETWEEN THESE PLANS, THE ARCHITECTURAL PLANS AND \slash OR FIELD CONDITIONS PRIOR TO CONSTRUCTION.

MAKE NO CHANGES WITHOUT ARCHITECT / ENGINEER'S WRITTEN PERMISSION. IN CASE OF DISPUTE OR DOUBT AS TO INTENT OF DRAWINGS OR SPECIFICATIONS, OBTAIN ARCHITECT / ENGINEER'S DECISION BEFORE PROCEEDING WITH WORK INVOLVED. FAILURE TO FOLLOW THIS INSTRUCTION SHALL MAKE THE CONTRACTOR LIABLE FOR DAMAGE TO OTHER WORK AND FOR REMOVING AND REPAIRING DEFECTIVE OR MISLOCATED WORK IN PROPER MANNER.

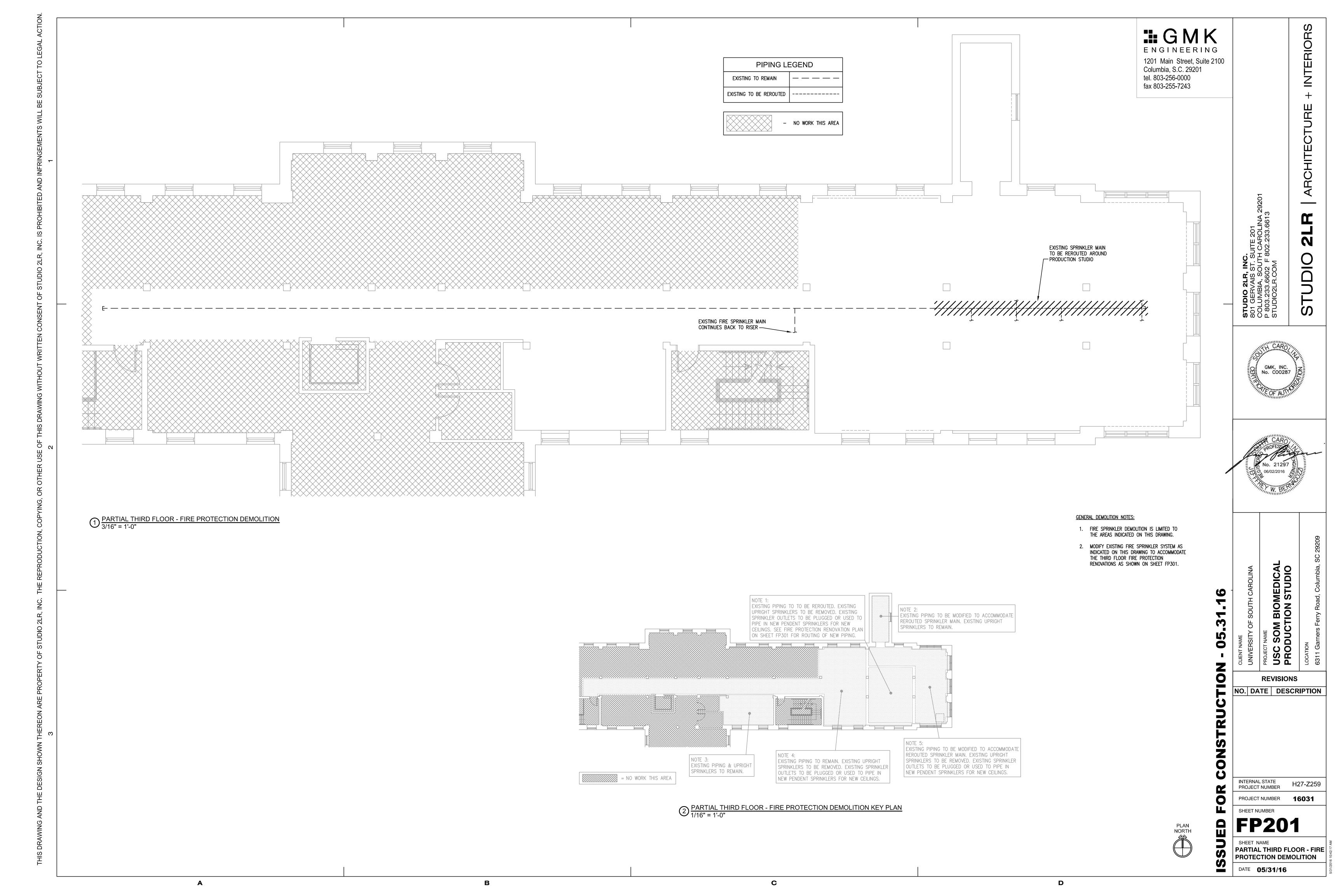
BEFORE SUBMITTING PROPOSAL OF BID, FIRE PROTECTION CONTRACTOR SHALL EXAMINE ALL DRAWNGS AND SPECIFICATIONS RELATING TO THIS PROJECT, THE AMOUNT OF SPACE AVAILABLE FOR PIPING EQUIPMENT AND CONNECTING SERVICES, THE SITE OF THE WORK, THE REQUIREMENTS TO CORRELATE THE FIRE

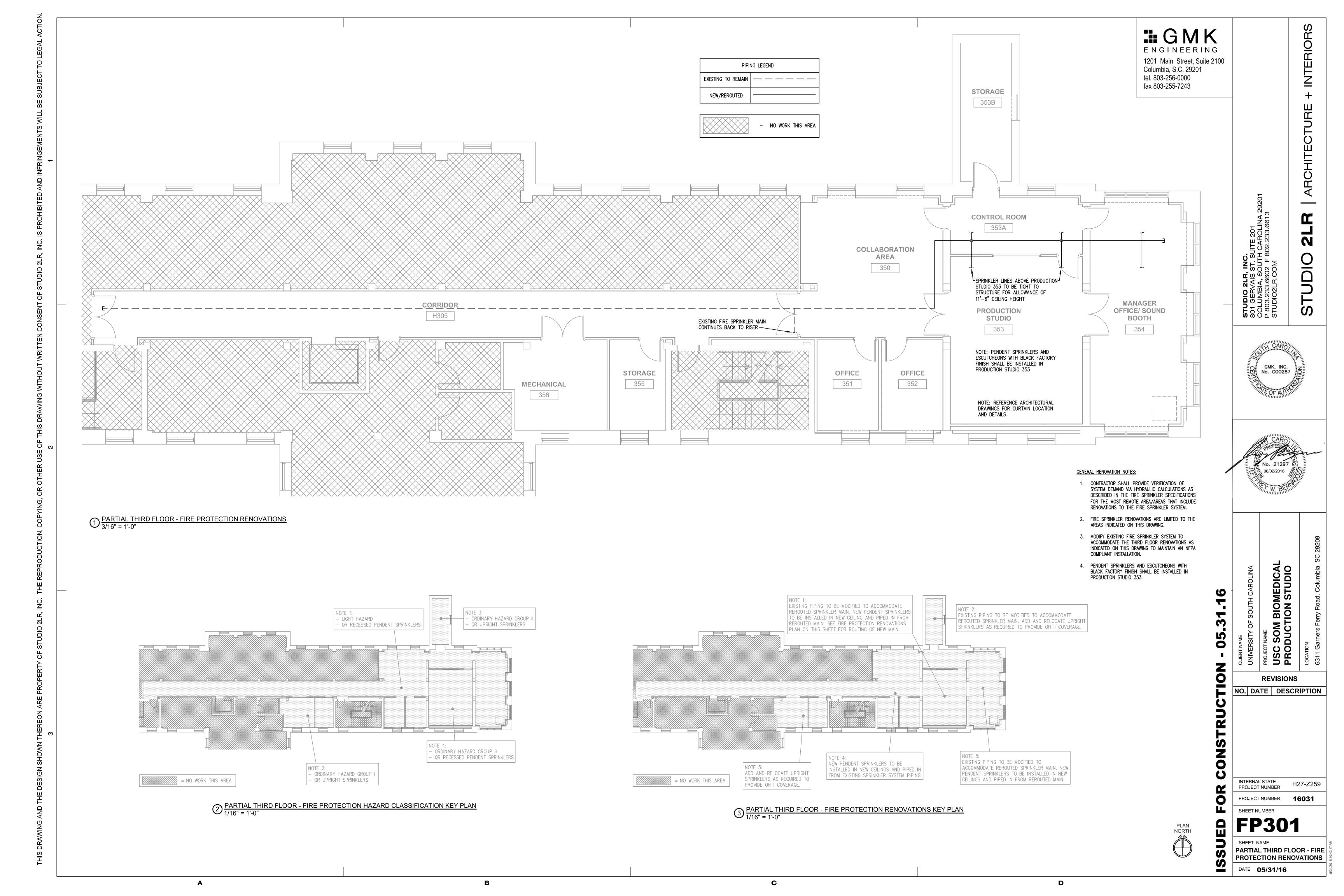
PROTECTIONS WORK WITH THAT OF OTHER TRADES, AND THE TIME SCHEDULE NECESSARY TO PERFORM THE WORK. FIRE PROTECTION CONTRACTOR, AFTER EXAMINATION OF ALL PLANS AND SPECIFICATIONS, SHALL INCLUDE ALL THE COSTS NECESSARY FOR A COMPLETE AND FINISHED INSTALLATION IN ALL ASPECTS. IT IS THE INTENT THAT ALL COSTS FOR THE WORK REQUIRED BE INCLUDED IN THE BID OF THE FIRE PROTECTION

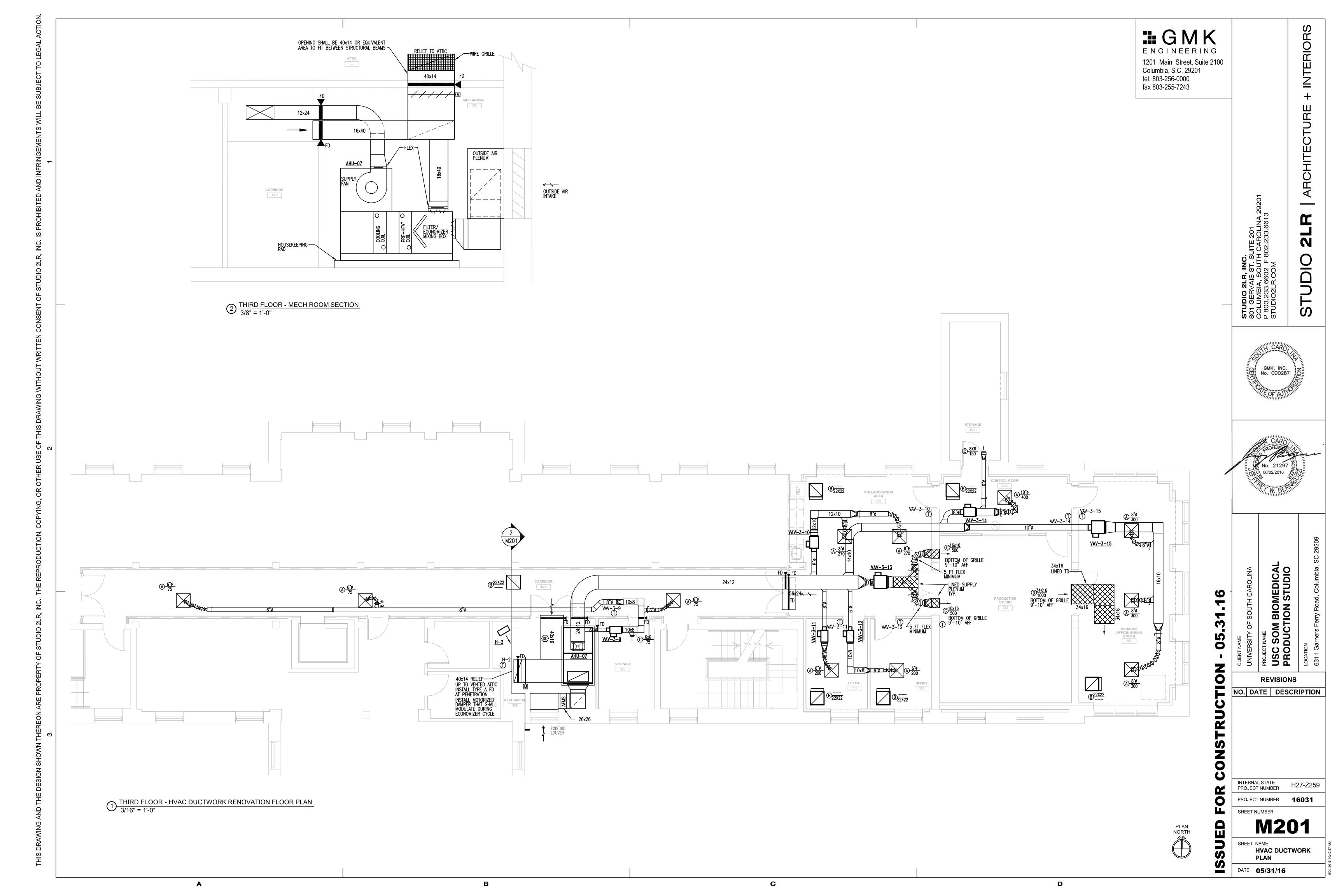
SUBMIT HYDRAULIC CALCULATIONS PROVING THE VIABILITY OF THE MOST HYDRAULICALLY REMOTE AREAS OF THE PROJECT. INDICATE HYDRAULIC REFERENCE POINTS AND SUBMIT COMPUTER ANALYZED NODAL CALCULATIONS IN BOTH TABULAR AND GRAPHICAL FORMATS. HYDRAULIC IMBALANCE SHALL NOT EXCEED 0.01 GPM AT A NODE, AND WATER VELOCITY SHALL NOT EXCEED 25 FEET PER SECOND. DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS OF NFPA 13 REGARDING DENSITY, AREA OF COVERAGE, SELECTION OF HYDRAULICALLY REMOTE AREAS, AND MAXIMUM COVERAGE PER SPRINKLER.

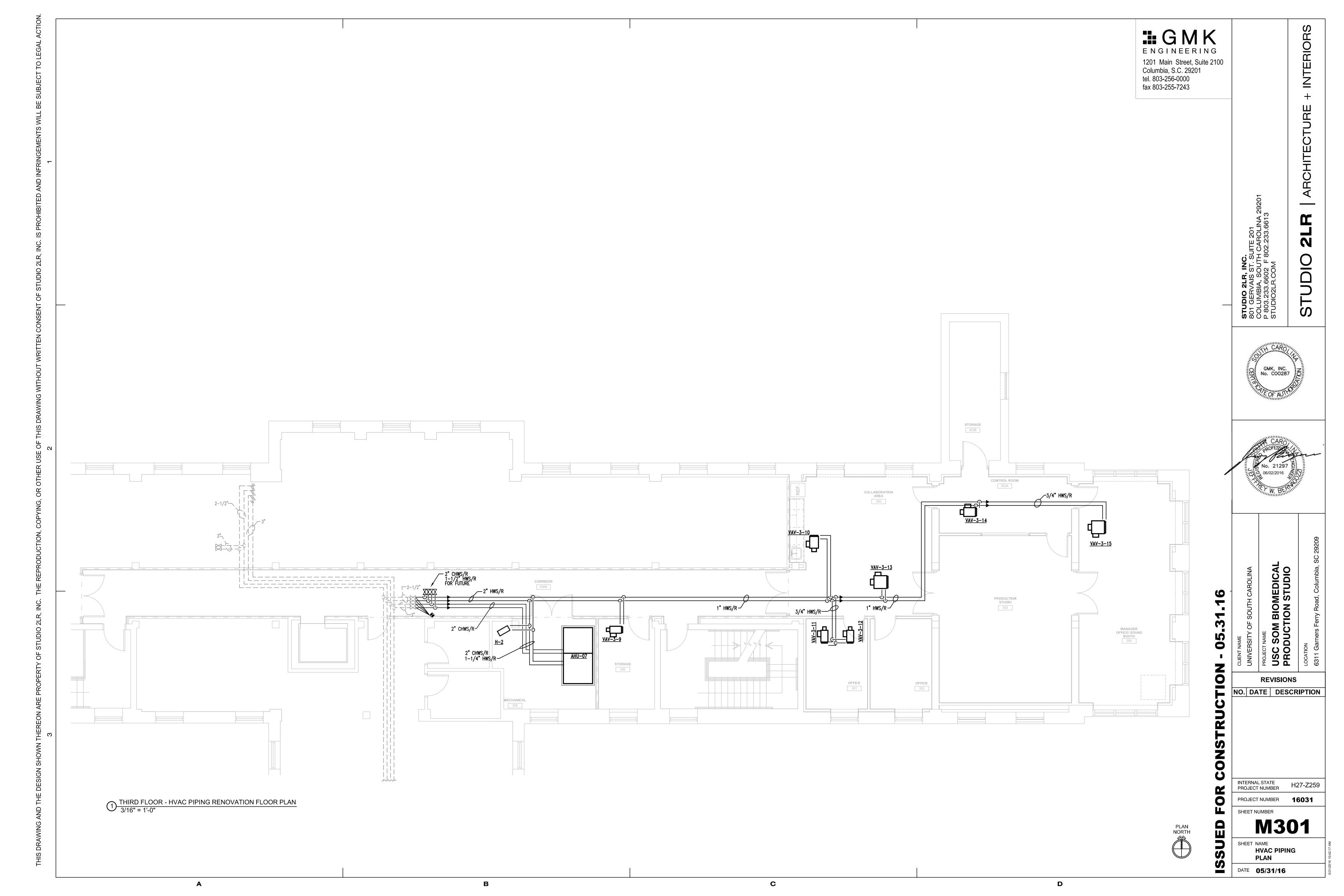
MAX 4" IN LENGTH DROP NIPPLE LENGTH VARIES -

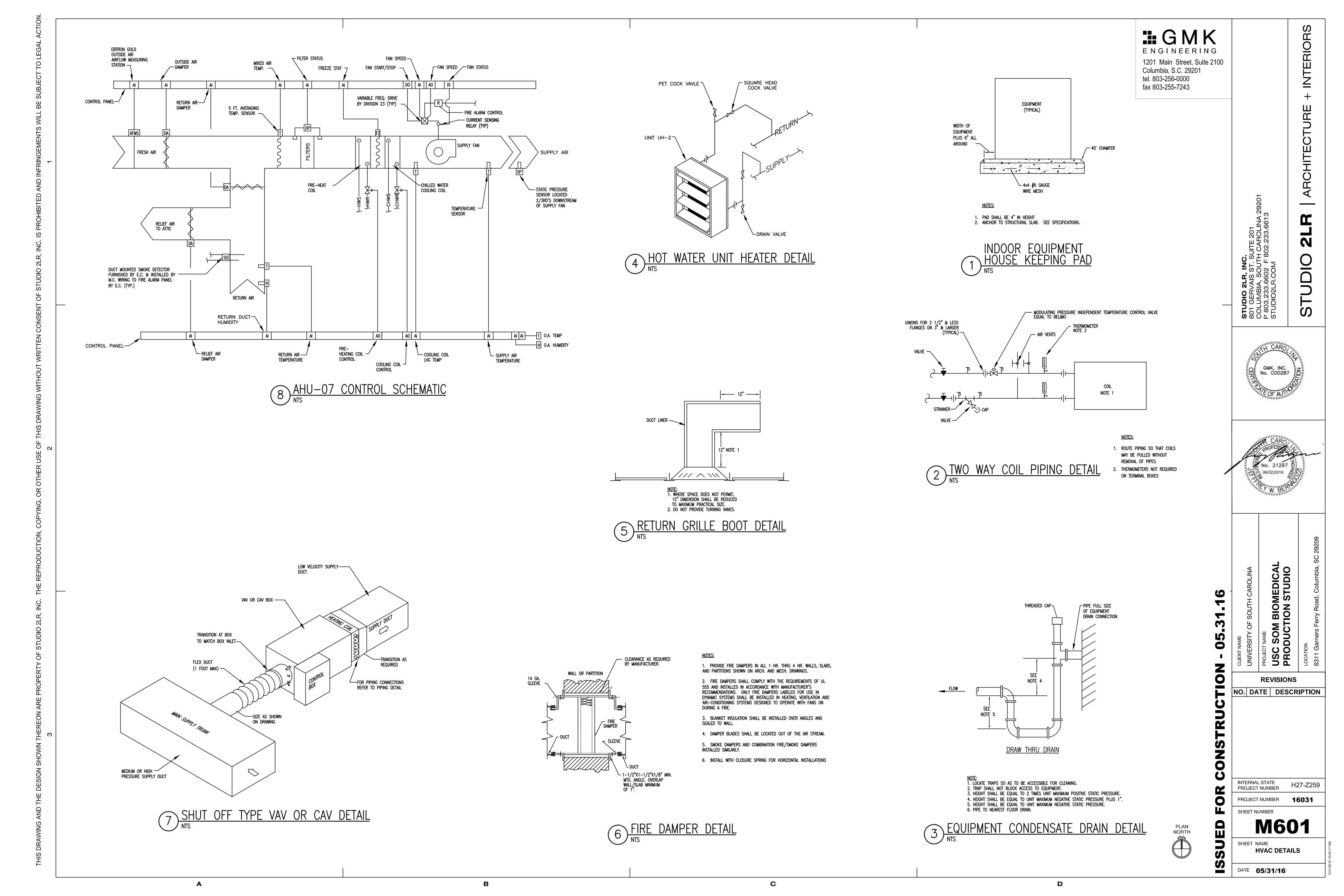












EXTEND ALL DRAIN LINES TO NEAREST FLOOR DRAIN OR AS INDICATED. ROUTE TO AVOID INTERFERENCE WITH PASSAGEWAYS. CONDENSATE DRAINS SHALL BE TRAPPED. SLOPE DRAIN LINES 1/8" PER FOOT.

ALL PIPING SHALL PITCH DOWN IN DIRECTION OF FLOW OR AS INDICATED ON DRAWINGS: 1" PER 40 FEET WITH MANUAL AIR VENTS AT ALL HIGH POINTS, AND 3/4" DRAIN VALVES AT ALL LOW POINTS. ALL PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY

THROUGH FLOORS, ROOFS AND PARTITIONS EXCEPT WHERE PROHIBITED LOCATE ALL THERMOSTATS, HUMIDISTATS AND SWITCHES 4'-0" ABOVE

FINISH FLOOR; ALIGN WITH LIGHT SWITCHES. EXTEND DRAIN LINES FROM RELIEF VALVES TO 2" ABOVE NEAREST FLOOR DRAIN OR AS INDICATED.

ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS AND FURTHER SUPPORTS OR HANGERS SHALL BE ADJACENT TO ELBOWS, TO PREVENT WEIGHT OF PIPING BEING PLACED ON THE EQUIPMENT. SUPPORT DETAILS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER.

8. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID

CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY

10. AIR DISTRIBUTION SYSTEMS WITH MORE THAN ONE BRANCH, OR MULTIPLE OUTLETS ON A BRANCH, SHALL HAVE VOLUME DAMPERS TO BALANCE AIR FLOWS. SPIN-IN FITTINGS ARE PERMITTED FOR CONNECTING FLEX DUCT TO BRANCH OR TRUNK DUCTS WHERE FLEX DUCTS ARE INDICATED. IF FLEX DUCT CANNOT BE CONNECTED WITH A SPIN-IN, A HARD DUCTED TAKEOFF MUST BE PROVIDED.

11. 45 DEGREE TAKEOFFS SHALL BE USED ON ALL HARD DUCTED SUPPLY

PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, DUCT HEATERS, AIR VOLUME CONTROLLERS, FAN COIL UNITS, EXHAUST FANS, SUPPLY FANS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.

13. BLANK-OFF ALL UNUSED PORTIONS OF LOUVERS (WHICH HAVE MECHANICAL DUCT CONNECTIONS) WITH 20 GAGE GALVANIZED SHEET

14. ALL TRANSFER DUCTS SHALL BE LINED WITH ONE INCH ACOUSTICAL

15. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED.

16. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. 17. INTAKES FOR AIR HANDLING EQUIPMENT SHALL BE A MINIMUM OF TEN

FEET AWAY FROM ANY EXHAUST OR VENT. 18. ALL HYDRONIC UNITS LOCATED IN CONCEALED LOCATIONS SHALL HAVE

AUXILIARY DRAIN PANS. 19. AIR DISTRIBUTION UNITS SHALL HAVE TRIM REQUIRED FOR FINISHED

20. COORDINATE ORIENTATION OF SUPPLY AND RETURN PIPING BEFORE

21. PROVIDE DIELECTRIC FITTINGS AT ALL LOCATIONS WHERE DISSIMILAR METALS ARE JOINED IN PIPING AND DUCT SYSTEMS.

HVAC LEGEND SUPPLY DIFFUSER return / exhaust FIRE DAMPER IN FIRE—RATED WALL THERMOSTAT CONNECT TO EXISTING HWS HOT WATER SUPPLY HOT WATER RETURN CHWS CHILLED WATER SUPPLY CHILLED WATER RETURN FLEXIBLE DUCT RCHANGE IN DUCT ELEVATION DUCT TURNING DOWN DUCT TURNING UP **///** DUCT TO BE REMOVED XXX ACOUSTICALLY LINED DUCT NECK SIZE DIFFUSER, GRILLE, LOUVER——(A) 6"ø 100 or register type PEAK LOAD CFM

	AIR HANDLING UNIT SCHEDULE																		
TAG	CAPACITY CFM	MINIMUM O.A.	FAN TYPE		PRESS. W.G. EXT	F <i>F</i> RPM	AN BHP	MOT RPM	TOR HP	MCA	ELECTRICAL VOLTS/PHASE	EMERGENCY POWER	AIR VOLUME CONTROL	PREHEAT COIL EQ. NO.	HEATING COIL EQ. NO.	COOLING COIL EQ. NO.	MANUFACTURER	MODEL	REMARKS
AHU-07	3690	1300	AF	5.2	3.5	3187	5.3	1800	7.5	11.75	480/3	NO	FACTORY VFD	PHC-7		CC-7	TRANE	MCC	1
1. FACTOR	Y MTD VFD																		

										COI	LS	CHE	DUI	Æ									
																							
			CADACITY			AIR PRESS		CAPACITY			AIR TEMP	PERATURE			WATE	₹		ST	EAM	MINIMUM	MAXIMUM	FLECTRICAL	
TAG	LOCATION	SERVICE	CAPACITY CFM	VELOCITY	AREA	DROP	TOTAL	SENS.	KW	ENTE	RING	LEA\	VING	ENTERING	LEAVING	GPM	PRESS DROP	PSIG	FLOW	NO. OF	NO. OF	ELECTRICAL (VOLTS/PHASE)	NOTES
			CIWI	(FPM)	(SQ. FT.)	(IN. WG.)	MBH	MBH	I NW	DB 'F	WB 'F	DB °F	WB 'F	TEMP. *F	TEMP. *F	GFIVI	(FT. WATER)	F 310	(LBS/HR)	ROWS	FINS/IN.	(VOLIS/TTIASE)	1
PHC-07	SEE SCHED.	PRE-HEAT	3690	500		.066	112			40		68		180	160	11.2	.5			1			
CC-07	SEE SCHED.	COOLING	3690	500		.72	148	103		78	65	52	52	54	42	25	2.4			8			
1. MINIMUM	MINIMUM WATER VELOCITY - 3 FEET PER SECOND																						

			VAR	RIABI	LE A	IR V	OLU	JME	TERN	MINAL S	CHEDUL	E			
TAG NO.	MAXIMUM	MINIMUM	MIN. INLET		REH	HEAT COIL	AT COIL		INLET SIZE ELECTRICAL				MANUFACTURER	MODEL NO.	NOTE
170 110.	BOX CFM	BOX CFM	S.P. (W.C.)	мвн	GPM	LAT	EWT	LWT	(INCHES)	(VOLTS/PHASE)	WANGFAGIGILLI	WODEL NO.	NOTE		
VAV-3-9	300	100	1"	5	.5	100°	140°	120°	6	120/1	TRANE	VCWF-06	1, 4, 6		
/AV-3-10	540	250	1"	12.4	1.2	100°	140°	120°	8	120/1	TRANE	VCWF-08	1, 4, 6		
/AV-3-11	200	75	1"	3.7	.4	100°	140°	120°	6	120/1	TRANE	VCWF-06	1, 4, 6		
/AV-3-12	200	75	1"	3.7	.4	100°	140°	120°	6	120/1	TRANE	VCWF-06	1, 4, 6		
/AV-3-13	1000	300	1"	14.9	1.5	100°	140°	120°	10	120/1	TRANE	VCWF-10	1, 4, 6		
/AV-3-14	550	250	1"	12.4	1.2	100°	140°	120°	8	120/1	TRANE	VCWF-08	1, 4, 6		
/AV-3-15	900	350	1"	17.3	1.7	100°	140°	120°	10	120/1	TRANE	VCWF-10	1, 4, 6		
											_				

4. SINGLE POINT POWER CONNECTION WITH DISCONNECT 1. ELECTRIC ACTUATOR 2. PNEUMATIC ACTUATOR ACCESS PANEL 3. SOUND ATTENUATOR 6. CONTROL POWER TRANSFORMER

			UN	IIT	HE	ATER	SCHEI	OULE		
			CAPACITY		ELE	CTRICAL CHARA	ACTERISTICS			
TAG	TYPE	CFM	мвн	GPM	HP	MOTOR VOLTS/PHASE	HEATER VOLTS/PHASE	MANUFACTURER	MODEL	NOTES
H-2	HOT WATER	400	24	1.9	1/10	120/1		REZNOR	WS 18/24	1, 2,

DISCONNECT 2. BUILT IN T-STAT 3. VERTICAL LOUVERS

	AIR I	JIST.	KIBU	TION	SCH	EDUI	_E	
TAG	DESCRIPTION	NECK	MODULE SIZE	MOUNT	CONSTR.	MFGR	MODEL	NOTE
Α	SQUARE PLAQUE CEILING SUPPLY	AS SHOWN	24x24	LAY-IN	ALUMINUM	PRICE	SERIES ASPD	1,2,3
В	PERFORATED CEILING RETURN/EXHAUST	AS SHOWN	24x24	LAY-IN	ALUMINUM	PRICE	SERIES APDDR	1,3
С	SIDEWALL SUPPLY	AS SHOWN	AS SHOWN	SIDEWALL	ALUMINUM	PRICE	SERIES 620DAL	1,4
D	SIDEWALL RETURN/EXHAUST	AS SHOWN	AS SHOWN	SIDEWALL	ALUMINUM	PRICE	SERIES 630DAL	1,4

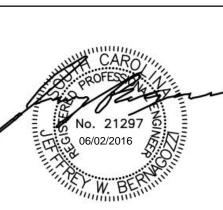
∷ GMK ENGINEERING 1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000

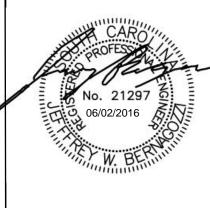
fax 803-255-7243

RC

INTERIORS





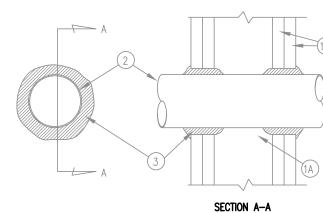


NO. DATE DESCRIPTION

PROJECT NUMBER PROJECT NUMBER 16031

SHEET NUMBER

SCHEDULES DATE **05/31/16**

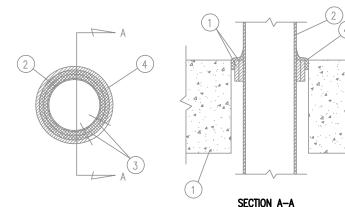


- 1. Wall Assembly The 1, 2, 3, or 4 hour fire—rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features: A. Studs - Wall framing may consist of either wood or steel channel studs. Wood studs (max 2 hour fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min
- 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC. B. Wallboard, Gypsum* - Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 13-1/2 in.
- 2. Pipe or conduit Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe, nom 12 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) Class 50 (or heavier) ductile iron pressure pipe, nom 6 in. (or smaller) steel conduit, nom 4 in. diam (or smaller) steel electrical metallic tubing, nom 6 in. diam (or smaller) Type L or (or heavier) copper tubing or nom 1 in. diam (or smaller) flexible steel conduit. When copper pipe is used, max F Rating of firestop system (Item 3) is 2 hr. Steel pipes or conduits larger than nom 4 in. diam may only be used in walls constructed using steel channel studs. A max of one pipe or conduit is permitted in the firestop system. Pipe or conduit to be
- installed near center of stud cavity width and to be rigidly supported on both sides of wall assembly. 3. Fill, Void or Cavity Material* — Caulk — Caulk fill material installed to completely fill annular space betweer pipe or conduit and gypsum wallboard and with a min 1/4 in. diam bead of caulk applied to perimeter of pipe or conduit at its egress from the wall. Caulk installed symmetrically on both sides of wall assembly. The hourly F Rating of the firestop system is DEPENDENT upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or conduit Diam, In.	Annular Space, In	F Rating, Hr	Rating, Hr
1	0 to 3/16	1 or 2	0+, 1 or 2
1	1/4 to 1/2	3 or 4	3 or 4
4	0 to 1-1/2	1 or 2	0
6	1/4 to 1/2	3 or 4	0
12	3/16 to 3/8	1 or 2	0

+When copper pipe is used, T Rating is 0 hr. Minnesota Mining & Mfg. Co. — CP 25WB+.
*Bearing the UL Classification Marking.

System No. WL1052 F Rating - 2, 3 AND 4 Hr T Rating — 0 Hr L Rating At Ambient - 2 CFM/sq ft (See Item 4) L Rating At 400 F - less than 1 CFM/sq ft (See Item 4)



- 1. Floor or Wall Assembly Lightweight or normal weight (100-150 pcf) concrete. Min. thickness of concrete floor or wall assembly is 4-1/2 in. for 2 and 3 hr F Ratings and 5-1/2 in. for 4 hr F Rating. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of circular opening is 13-1/2 in. See Concrete Blocks (CAZT category in the Fire Resistance Directory for names of manufacturers. Steel Pipe or Conduit - Nom 12 in. diam (or smaller) Schedule 10 or heavier steel pipe, nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel EMT. Max one pipe or conduit per opening, centered in opening. Min clearance between pipe or conduit and sides of through opening is 1/4 in. Max clearance between pipe or conduit and sides of through opening is 1-3/4 in for 2 hr F rating and 3/4 in. for 3 and 4 hr F ratings. Pipe or conduit to be rigidly supported on both sides of floor or
- Fill, Void or Cavity Material* Wrap Strip Nom 1/4 in. thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. wide strips. For the 2 and 3 hr F Ratings, min 1 in. wide strip(s) wrapped around pipe/conduit (foil side exposed) until OD of wrap strip is equal to or max 3/16 in. less than ID of circular through opening. Wrap strip tightly bound with steel tie wire or pressure sensitive tape and slid into through opening such that the top edge of the wrap strip(s) is recessed 1/4 in. from the top surface of floor or, in wall assemblies, such that the wrap strip(s) is centered in the wall thickness. For the 4 hr F Rating, nom 2 in. wide strip(s) wrapped around pipe/conduit (foil side exposed) on each side of the floor or wall assembly until OD of wrap strip is equal to or max 3/16 in. less than ID of circular through opening. Wrap strip tightly bound with steel tie wire or pressure sensitive tape and slid into through opening on each side of floor or wall assembly such that the exposed edges are recessed
- Minnesota Mining & Mfg. Co. Types FS—195, FS—195+ Fill, Void or Cavity Material* Caulk Nom 1/4 in. thickness of caulk to be applied to the exposed edges of the wrap strip and to fill all voids between the pipe/conduit and the periphery of the through opening. For 2 or 3 hour F rating in floor assemblies, caulk to be installed flush with top surface of floor. For wall assemblies and for the 4 hour F Rating in floor assemblies, caulk to be applied on both sides of assembly

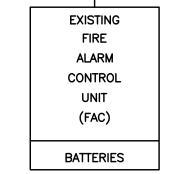
Minnesota Mining & Mfg. Co. — Types CP-25 S/L, CP-25 N/S, CP-25 WB, CP-25 WB+. (Note: L Ratings apply only when Type CP-25 WB+ caulk is used.) *Bearing the UL Classification Marking.

SYMBOL DESCRIPTION SYMBOL DESCRIPTION ELECTRICAL CIRCUIT BREAKER PANELBOARD. BRANCH CIRCUIT RACEWAY. RUN CONCEALED IN CEILING OR WALLS. ARROWHEAD DENOTES HOMERUN TO PANEL. CROSSLINES DENOTE NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MAORE THAN DUPLEX RECEPTACLE, 120 VOLT, 20 AMP, WALL MOUNTED, GROUND FAULT CIRCUIT INTERRUPTER, 16" TWO ARE TO BE INSTALLED. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. AFF. THE NUMBER DENOTES CIRCUIT NUMBER. "WP" DENOTES WEATHERPROOF COVER. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE. DUPLEX RECEPTACLE, 120 VOLT, 20 AMP, WALL MOUNTED. THE NUMBER DENOTES CIRCUIT NUMBER. BRANCH CIRCUIT RACEWAY. RUN IN AND/OR UNDER SLAB. ARROWHEAD DENOTES HOMERUN TO PANEL. **⇒** 8 "GF" DENOTES GFCI RECEPTACLE. CROSSLINES DENOTE NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MORE THAN TWO ARE TO BE INSTALLED. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE. 2 - 120 VOLT, 20 AMP DUPLEX RECEPTACLES, WALL MOUNTED, 16" AFF, UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT. WEATHERPROOF TYPE WHEN CONNECTED TO MOTORS. CROSSLINES DENOTE THE NUMBER DENOTES CIRCUIT NUMBER. ~#~ NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MORE THAN TWO ARE INSTALLED. INSTALL 2 - 120 VOLT, 20 AMP DUPLEX RECEPTACLES, WALL MOUNTED, 3" ABOVE THE TOP OF THE GROUND WIRE WIRE #12 AWG MINIMUM. COUNTERTOP BACKSPLASH, UNLESS OTHERWISE NOTED. THE RECEPTACLE SHALL NOT EXCEED 6" ABOVE SPACE NAME AND NUMBER. COORDINATE WITH ARCHITECTURAL SPACE NUMBER. THE BACKSPLASH. THE NUMBER DENOTES CIRCUIT NUMBER. REFER TO ARCHITECTURAL ELEVATIONS AND COORDINATE WITH MILLWORK CONTRACTOR. "GF" DENOTES GFCI PROTECTED. WALL MOUNTED FLUORESCENT, INCANDESCENT OR HID FIXTURE. LETTER DENOTES TYPE OF FIXTURE, B **O**-6 SEE FIXTURE SCHEDULE. NUMBER DENOTES CIRCUIT NUMBER. COORDINATE MOOUNTING HEIGHT. FLUSH WALL MOUNTED JUNCTION BOX, SIZED PER NEC. "WP" DENOTES NEMA 3R WEATHERPROOF. CEILING MOUNTED INCANDESCENT, COMPACT FLOURESCENT, OR HID FIXTURE. FURNISH FRAME WITH PROVIDE AND INSTALL A FLUSH COVER PLATE. FIXTURE TO MOUNT IN SPECIFIED CEILING. LETTER DENOTES TYPE OF FIXTURE, SEE FIXTURE SCHEDULE. JUNCTION BOX, MOUNTED IN CEILING, SIZED PER NEC. REFER TO THE NEC TO MAINTAIN CLEARANCES. NUMBER DENOTES CIRCUIT NUMBER. SEE REFLECTED CEILING PLAN. FLUORESCENT STRIP LIGHT. LETTER DENOTES TYPE OF FIXTURE, SEE FIXTURE SCHEDULE. SEE 1 1/2" GROMMET CABLE PASS THROUGH SINGLE GANG BLACK STAINLESS STEEL WALL PLATE, 16" AFF. MOUNTING REQUIREMENTS IN FIXTURE SCHEDULE. NUMBER DENOTES CIRCUIT NUMBER. EXIT SIGN. REFER TO FIXTURE SCHEDULE. DARKENED AREA DENOTES SIGN FACE. NUMBER DENOTES CIRCUIT NUMBER. STEM DESIGNATES WALL MOUNTING. NO STEM DENOTES CEILING MOUNTED. DOUBLE FACED EXIT SIGN. NOTATION SAME AS ABOVE. ARROWS DENOTE EXIT DIRECTION. LIGHT SWITCH, SPST, 20A, 48" AFF. LIGHT SWITCH, 3-WAY. 20A. LIGHT SWITCH, 4-WAY, 20A, 48" AFF. DENOTES THAT ELECTRICAL DEVICE IS SURFACE MOUNTED. DENOTES EMPTY CONDUIT CONDUIT SLEEVE FOR DATA WIRE. **ABBREVIATIONS** COMMUNICATIONS/SIGNAL SINGLE GANG DATA OUTLET. FLUSH WALL MOUNTED, 16" AFF. ◁ ABOVE FINISHED FLOOR. AUTOMATIC TRANSFER SWITCH ATS COMBINATION TELEPHONE AND DATA OUTLET. WALL TYPE, TWO GANG, 16" ABOVE FINISHED FLOOR WITH BREAKER. A SINGLE 3/4 INCH CONDUIT FROM THE TWO GANG BOX TO THE CEILING PLENUM. CONDUIT. C CKT EC CIRCUIT. SINGLE GANG DATA OUTLET. FLUSH WALL MOUNTED, 3" ABOVE CONUNTERTOP BACKSPLASH (48" AFF IF ELECTRICAL CONTRACTOR, DIVISION 26 NOT MOUNTED ABOVE CASEWORK UNLESS OTHERWISE NOTED). FURNISH AND INSTALL A BLANK COVER EXHAUST FAN. PLATE. INSTALL PULL WIRE IN RACEWAY. FCU FAN COIL UNIT. CEILING MOUNTED FIRE ALARM HORN. GENERAL CONTRACTOR, DIVISION OO THROUGH 14. GROUND FAULT CIRCUIT INTERRUPTER. JUNCTION BOX. JB or J-BOX **□**⊲ 30 WALL MOUNTED FIRE ALARM HORN WITH FLASHING LIGHT. KVA KILOVOLT AMPERES. KW FIRE ALARM VISUAL UNIT WITH STROBE LIGHT, MOUNTED 80" AFF OR 12" BELOW CEILING, WHICHEVER IS KILOWATT. MAX MAXIMUM. LOWER. NUMBER DENOTES LIGHT LEVEL OF STROBE. MECHANICAL CONTRACTOR, DIVISION 26 FIRE ALARM PULL STATION, WALL MOUNTED 48" AFF. MAIN DISTRIBUTION PANEL. MDP MIN MINIMUM. PHOTOELECTRIC SMOKE DETECTOR MOUNTED ON AIR DUCT WITH SAMPLING TUBE THE FULL WIDTH OF VOLT. VARIABLE FREQUENCY DRIVE DUCT, FURNISHED AND WIRED BY THE EC, INSTALLED BY THE MC. VFĎ NATIONAL ELECTRICAL CODE. (NFPA 70). SURGE PROTECTIVE DEVICE. CEILING MOUNTED SMOKE DETECTOR. IONIZATION SWITCHBOARD. TYPICAL. WATER COOLER. SWBD TYP EXISTING TRANSFORMER.

ELECTRICAL SYMBOL SCHEDULE

		LIGHT FIXTURE SCH	HEDULE	
	TYPE	DESCRIPTION	CATALOG NO.	LAMPS
	A2	FLUORESCENT, 2' x 4', 2 LAMP RECESSED, LENSED TROFFER NO PRE PAINT.	COLUMBIA# 4PS24-232G-FAA12-EU-PAF	2-F32T8/SPX41
	A2E		COLUMBIA 4PS24-232G-FAA12-EU-1/1,1/1-PAF 277 VOLT	2-F32T8/SPX41
	В	LED, RECESSED INDIRECT 2' X 4' GRID MOUNTED FIXTURE WITH CENTER BASKET. NO PRE PAINT.	COLUMBIA# LTRE24-40K-HLG-RFA-EU-AM	LED
	BE	LED, RECESSED INDIRECT 2' X 4' GRID MOUNTED FIXTURE WITH CENTER BASKET. NO PRE PAINT. WITH GENERATOR TRANSFER DEVICE.	COLUMBIA# LTRE24-40K-HLG-RFA-EU-AM-GTD	LED
	D	LED 2' x 4' RECESSED GRID LAY—IN CEILING FIXTURE.	COLUMBIA# LJT24-40HLG-FSA2125-EU	LED
	D1	LED 2' x 4' RECESSED GRID LAY—IN CEILING FIXTURE. DIMMING	COLUMBIA# LJT24-40VLG-FSA2125-ED	LED
	D2	LED 2' x 4' RECESSED GRID LAY—IN CEILING FIXTURE. DIMMING	COLUMBIA# LJT24-40HLG-FSA2125-ED	LED
	С	FLUORESCENT, 4 FOOT, 2 LAMP STRIP LIGHT.	COLUMBIA# CS4-232-EU-CSWG4-PAF-DL	2-F32T8/SPX41
RECORDING	R	LED WALL MOUNTED ILLUMINATED WARNING SIGN WITH SHATTERPROOF FACE PLATE AND WALL/DMX CONTROL.	REKALLDYNAMICS# RD2020:AC-LED FIXTURE	LED
	U2	LED, LOW PROFILE, WHITE, 3500K, UNDER COUNTER LIGHT. OCCUPANCY SENSOR CONTROLLED. MAX LENGTH OF 28".	PHILIPS# LINCS100-L28-120-WHG-OSC	LED
EXIT	⊗	EXIT LIGHT, LED LAMPS, BATTERY BACKUP, SINGLE FACED, WALL MOUNTED 6" ABOVE DOOR FRAME. RED LETTERING. SIGN HAS STEM IF WALL MOUNTED.	SURE-LITES	BY MANUFACTURER
	NOTE #1:	ALL RECESSED LIGHT FIXTURES SHALL BE HUNG WITH 4 HANGE ALL RECESSED FIXTURES SHALL BE INSTALLED WITH EARTHQUAK PLAN AND THE HVAC PLAN.		

TO ALL OTHER FIRE ALARM DEVICES.



FIRE ALARM RISER DIAGRAM

I. WIRING AND CONDUIT IS NOT SHOWN ON THE PLANS. FURNISH AND INSTALL WIRING AND CONDUIT AS REQUIRED FOR A COMPLETE SYSTEM.

-J-BOX COVER J-BOX CIRCUIT CONTENTS MARKED WITH INDELIBLE INK

ALL EXPOSED J-BOXES, NOT INCLUDING ELECTRICAL OR MECHANICAL ROOMS, SHALL BE MARKED ON THE INSIDE COVER. ALL OTHERS SHALL BE MARKED ON THE

ALL J-BOXES CONTAINING FIRE ALARM CIRCUITS SHALL BE PAINTED RED. J-BOX COVER DETAIL

ALL CONDUIT SHALL BE INSTALLED IN A NEAT AND ORDERLY MANNER, PERPENDICULAR TO ALL BUILDING WALLS AND BEAMS AND SHALL COMPLY STRICTLY WITH ALL CODES AND REQUIREMENTS OF THE NEC, NFPA, UL AND SBCCI WITH NO EXCEPTIONS.

STUB INTO LAY-IN CEILING PLENUM. CAP WITH PLASTIC Bushing. CEILING-CONDUIT BACKBOX

TYPICAL PHONE AND DATA OUTLET

FOR FIXTURES WEIGHING 56LBS. OR MORE,

_ ATTACHED TO STRUCTURE ABOVE - ONE

TOTAL OF FOUR (4), HANGER WIRES TO BE INSTALLED VERTICAL (NOT MORE THAN

1 IN 6 OUT OF PLUMB). FOR FIXTURES

WEIGHING LESS THAN 56LBS, WIRES MAY

AT EACH CORNER OF FIXTURE FOR A

✓INSTALL #12 GAUGE HANGER WIRE

BE INSTALLED SLACK AT TWO (2)

RECESSED LIGHTING FIXTURE DETAIL

NTS

FRAMING MEMBERS

EARTHQUAKE CLIP

TO THE CEILING

FRAMING MEMBERS

FIXTURES SHALL BE

SECURELY FASTENED

WHERE FIXTURES ARE HUNG IN A FIRE RATED CEILING, THE CEILING CONTRACTOR SHALL PROVIDE FIRE PROTECTION AS SHOWN IN UL FIRE RESISTANCE BOOK AS DESIGN NOTE P230 OR P510.

CORNERS.

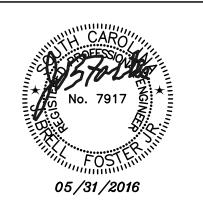


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INTERIOR

ARCHITECTUR





EDIC, TUDI(BION

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REVISIONS

NO. | DATE | DESCRIPTION

INTERNAL STATE

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PROJECT NUMBER

PROJECT NUMBER

DATE **05/31/16**

SHEET NUMBER

H27-Z259

16031

ELECTRICAL SCHEDULES AND DETAILS

NORTH

