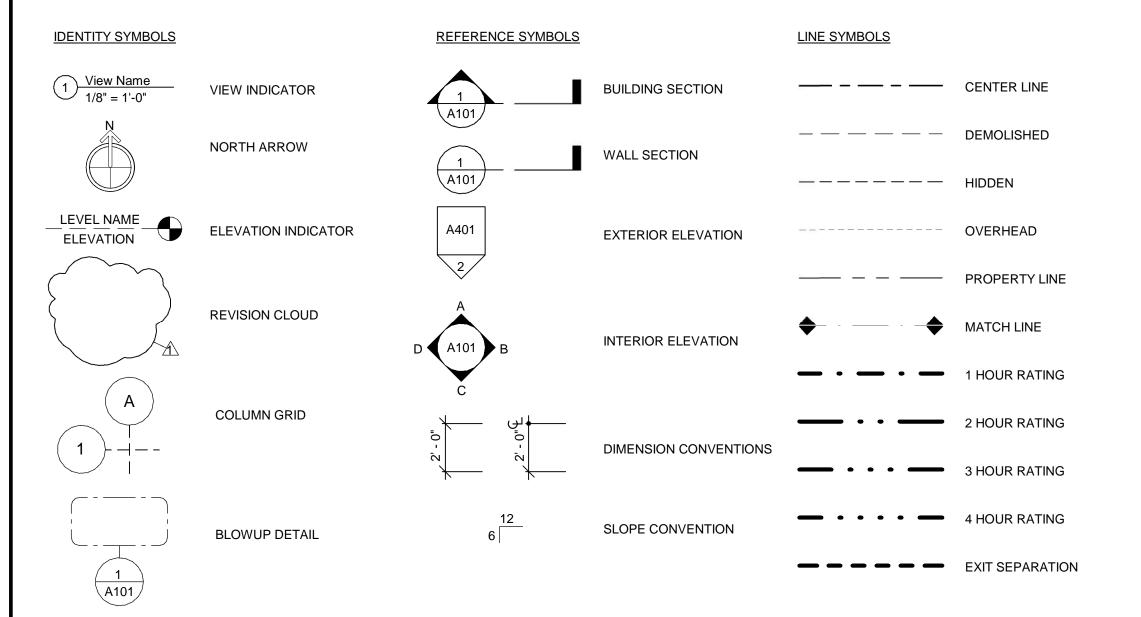
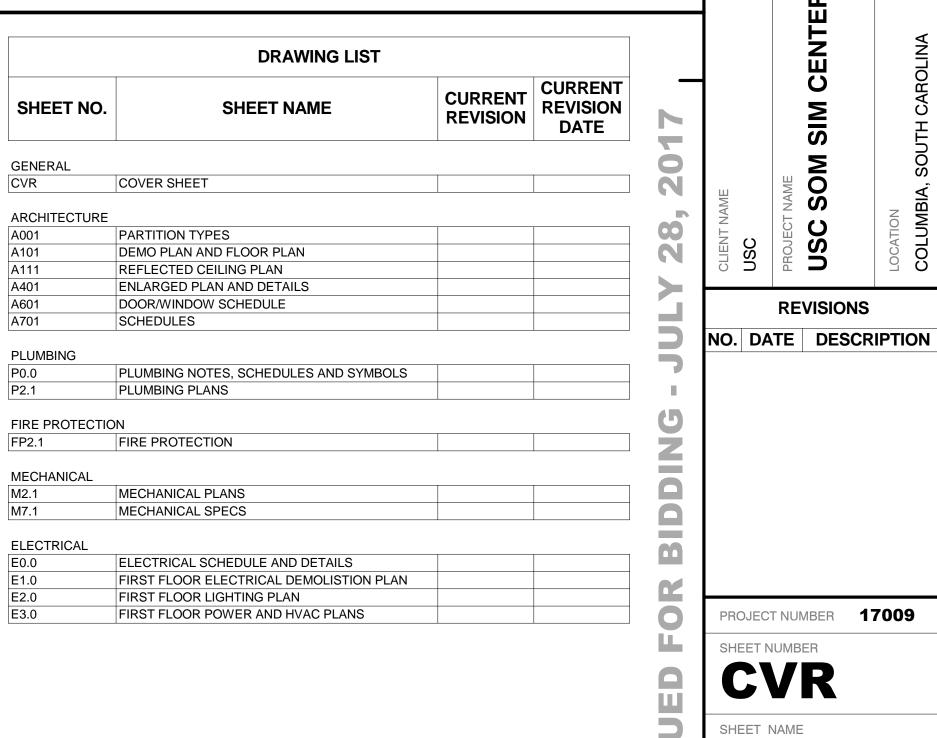
# UNIVERSITY OF SOUTH CAROLINA SOM BUILDING #28 SIMULATION AND INTERACTIVE LEARNING CENTER

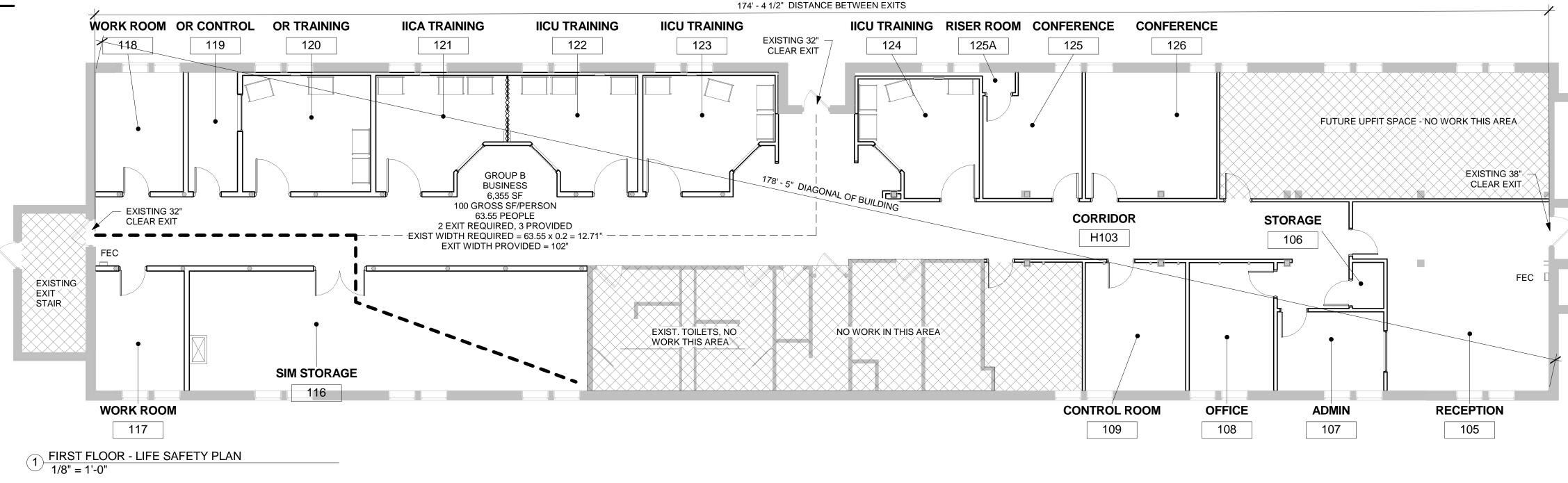
6311 GARNERS FERRY ROAD, COLUMBIA, SC 29209

#### **BUILDING CODE SUMMARY PROJECT INFORMATION** NAME OF PROJECT: <u>USC SOM BUILDING #28 SIMULATION AND INTERACTIVE LEARNING CENTER</u> NUMBER AND ARRANGEMENTS OF EXITS ADDRESS: 6311 GARNERS FERRY ROAD, COLUMBIA, SC 29209 PROPOSED USE: SIMULATION AND INTERACTIVE LEARNING CENTER MINIMUM NUMBER TRAVEL DISTANCE ARRANGEMENTS MEANS OF EGRESS OWNER OR AUTHORIZED AGENT: UNIVERSITY OF SOUTH CAROLINA SCHOOL OF MEDICINE (SECTION 1007.1) SPACE DESIGNATION UNIVERSITY OF SOUTH CAROLINA SCHOOL OF MEDICINE **ACTUAL DISTANCE** SHOWN | ALLOWABLE REQUIRED CODE ENFORCEMENT JURISDICTION: CITY OF COLUMBIA DISTANCE DISTANCE SHOWN ON PLANS ON PLANS | TRAVEL **BETWEEN EXIT** DISTANCE SHOWN ON (TABLE 1017.2) PLANS DOORS PROJECT DESIGN TEAM **BUSINESS** 40'-11 1/2" CONTACT **DESIGNER** PHONE # **EXIT WIDTH** STUDIO 2LR, INC. **WES LYLES** (803) 233-6602 ARCHITECTURAL: CIVIL: (---) ------USE GROUP OR SPACE (A) EXIT WIDTH (INCHES) 2,3,4,5,6 STRUCTURAL: DESCRIPTION PLUMBING: GMK ENGINEERING JEFFREY BERNAGOZZI (803) 256-0000 REQUIRED WIDTH **ACTUAL WIDTH GMK ENGINEERING** (803) 256-0000 FIRE PROTECTION: OCCUPANT OCCUPANT (TABLE SHOWN ON PLANS (TABLE 1004.1.2) 1005.3.1 AND 1005.3.2) MECHANICAL: **GMK ENGINEERING** JEFFREY BERNAGOZZI (803) 256-0000 SPRINKLER-STANDPIPE: (---) ------BUSINESS **ELECTRICAL**: GMK ENGINEERING JEFFREY BERNAGOZZI (803) 256-0000 OTHER: MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024.2) CODE COMPLIANCE SEE SECTION 1005.6 FOR CONVERGING EXITS INTERNATIONAL BUILDING CODE: 2015 EDITION WITH SC MODIFICATIONS THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE AVAILABLE CAPACITY TO LESS THAN 50 PERCENT OF THE INTERNATIONAL PLUMBING CODE: 2015 EDITION TOTAL REQUIRED (SECTION 1005.5) INTERNATIONAL MECHANICAL CODE 2015 EDITION ASSEMBLY OCCUPANCIES (SECTION 1029) 2015 EDITION WITH SC MODIFICATIONS INTERNATIONAL FIRE CODE: 2014 EDITION 2009 EDITION INTERNATIONAL ENERGY CONSERVATION CODE LIFE SAFETY SYSTEM REQUIREMENTS 2009 EDITION 2010 EDITION ADA STANDARDS FOR ACCESSIBLE DESIGN **BUILDING DATA** SMOKE ALARM SYSTEMS CONSTRUCTION TYPE (TABLE 503): YES\_X\_ PANIC HARDWARE: SPRINKLERS: STANDPIPES: FIRE DISTRICT: \_\_ FEET \_\_\_\_2, EXIST.\_\_\_ NUMBER OF STORIES UNLIMITED PER \_\_ **MEZZANINE:** THIS IS A TENANT UPFIT. TOILETS FOR BUILDING ARE EXISTING - NO TOILETS TO BE INCLUDED IN THIS UPFIT. HIGH RISE: GROSS AREA OF RENOVATION ONLY: EXISTING (SQ. FT.) NEW (SQ. FT.) TOTAL 6,355 1ST FLOOR ALLOWABLE AREA FLOOR AREA PER OCCUPANT (TABLE 1004.1.2): 100 SF GROSS PER PERSON PRIMARY OCCUPANCY: FLOOR AREA PER OCCUPANT (TABLE 1004.1.2): \_\_\_\_-SECONDARY OCCUPANCY: SPECIAL OCCUPANCY: FLOOR AREA PER OCCUPANT (TABLE 1004.1.2): \_\_\_\_\_ SEPARATION: \_\_\_\_ HR. EXCEPTION: \_\_\_\_

#### **ABBREVIATIONS** POUND OR NUMBER **GALVENIZED** GYPSUM ACOUSTICAL CEILING TILE **GYPSUM WALLBOARD** A.F.F ABOVE FINISHED FLOOR ALUM. **ALUMIMUM HOLLOW METAL** ANNODIZED HEATING, VENTILATION, AND AIR CONDITIONING **APPROXIMATE** INSULATION BOTTOM OF MAXIMUM CAST IN PLACE MASONRY OPENING **CONTROL JOINT MECHANICAL** CEILING MINIMUM CLEAR CMU CONCRETE MASONRY UNIT NOT IN CONTRAC COL. CONCRETE **NOMINAL** CONT. CONTINUOUS ON CENTER CARPET OVERHEAD **CERAMIC TILE OPPOSITE HAND** DEMOLISH PLYWOOD DIAMETER PRESSURE TREATED DIMENSION POLYVINYL CHLORIDE **DIMENSIONS** DOWN ROOF DRAIN DOOR REQUIRED DRAWING EACH SIMILAR STAINLESS STEE **ELEVATION OR ELEVATOR** ELEV. **EPDM** ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING) **STRUCTURAL** EQ. **EXISTING** TELEPHONE EXIST. **EXPANSION JOINT** TOILET EXP. JT **EXTERIOR** TOP OF E.W.C. **ELECTRIC WATER COOLER** TOP OF STEEL FLOOR DRAIN FIRE EXTINGUISHER UNLESS OTHERWISE NOTED F.E. F.E.C. FIRE EXTINGUISHER CABINET VERIFY IN FIELD FACE OF WOOD **DRAWING CONVENTIONS**





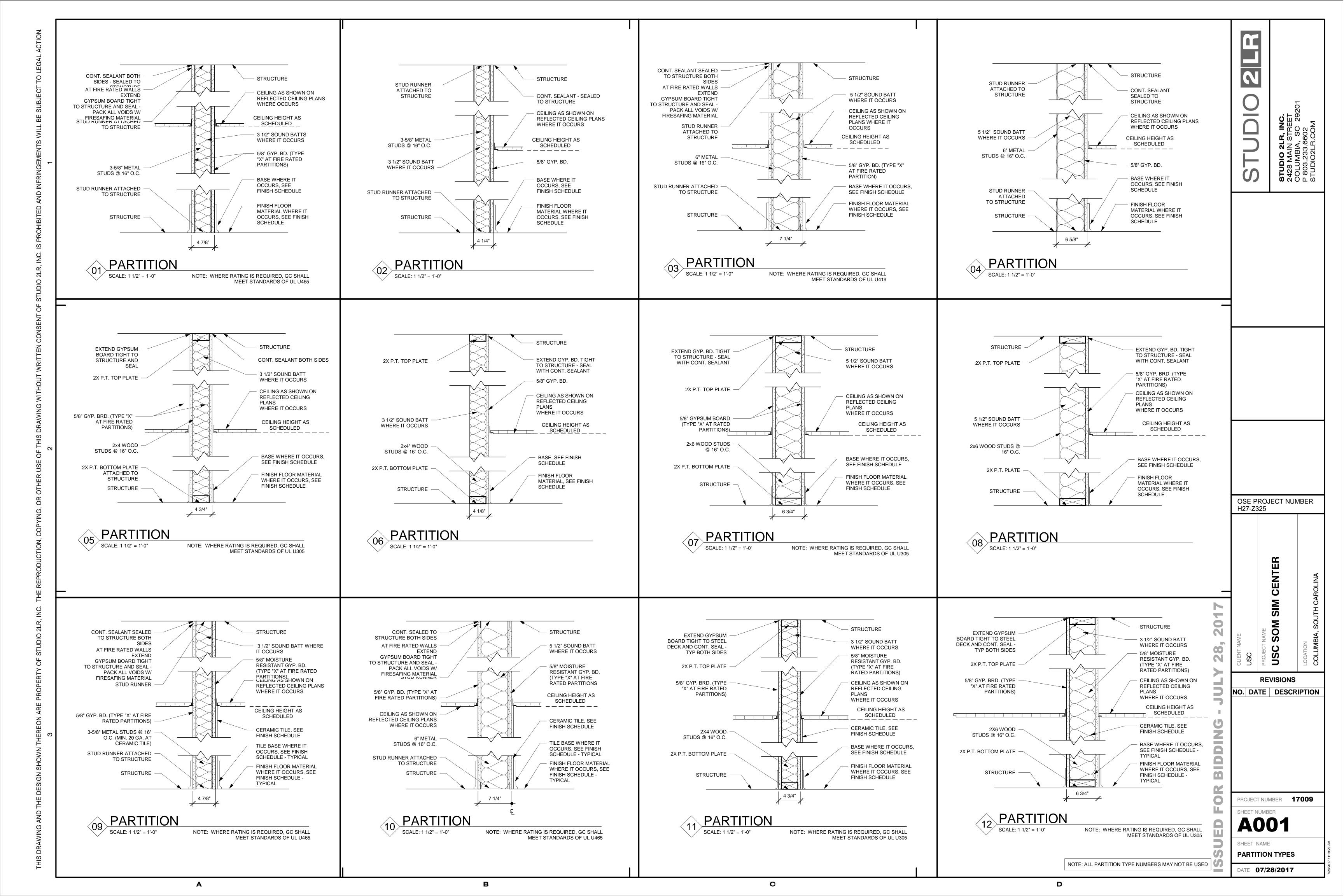


**COVER SHEET** 

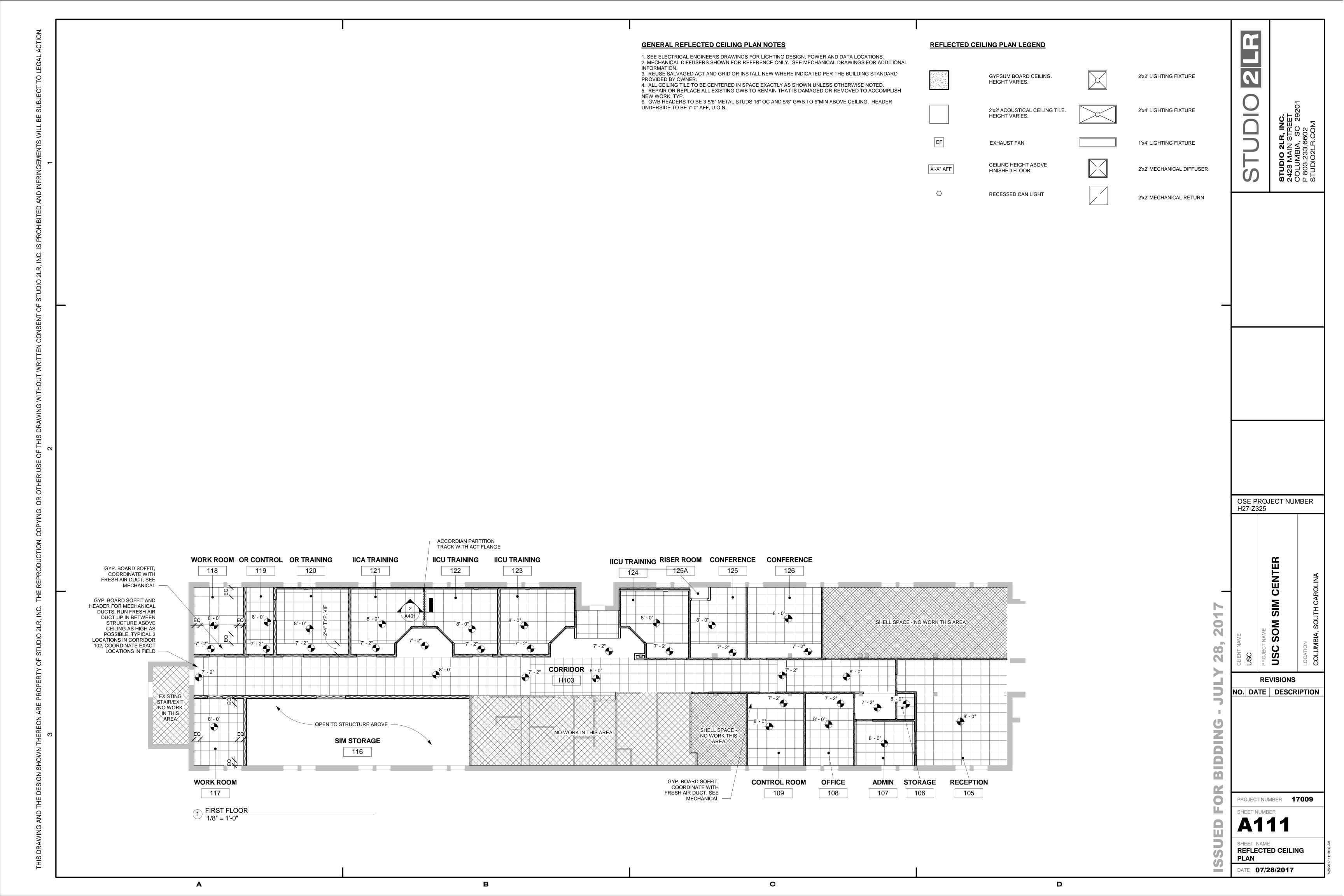
DATE **07/28/2017** 

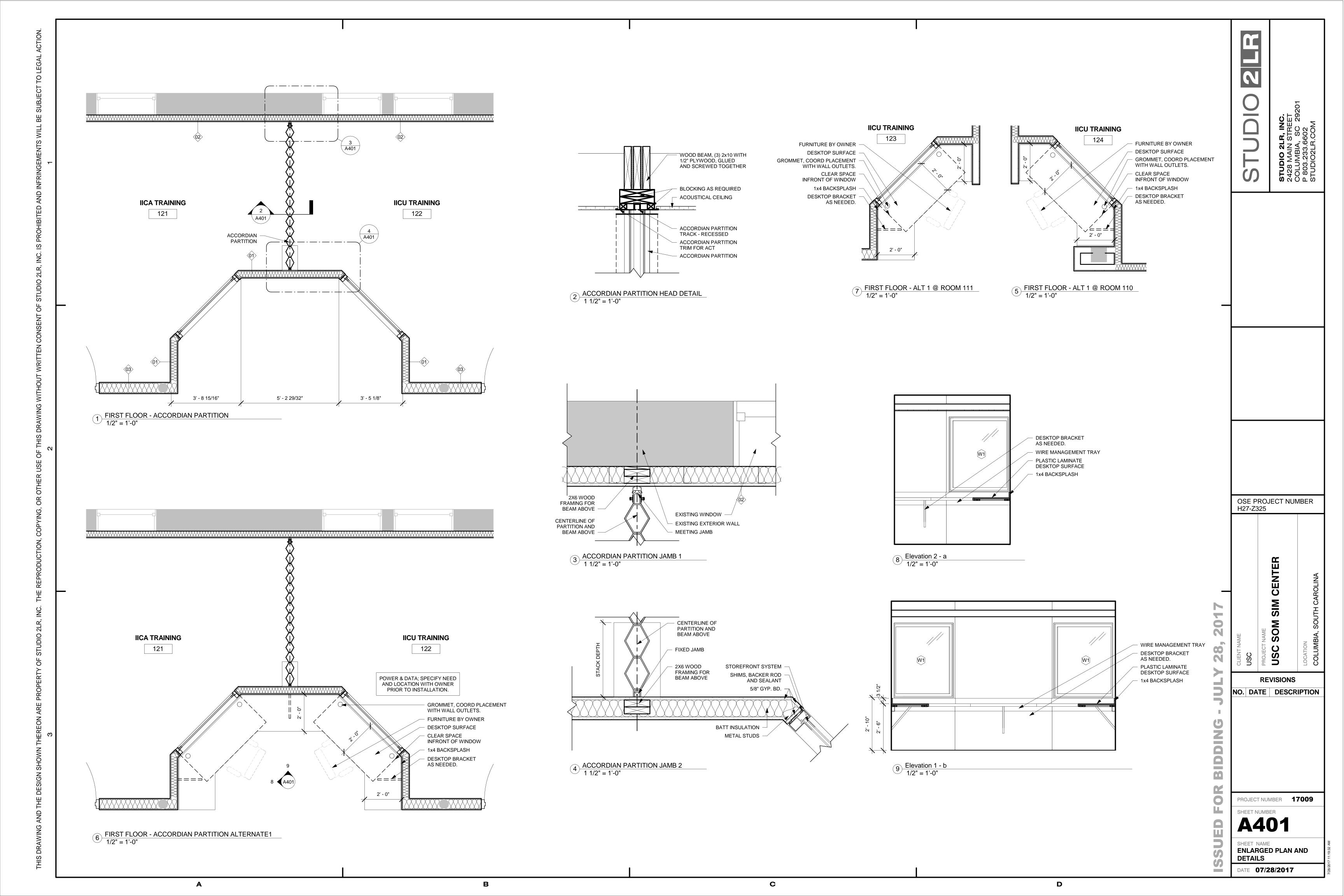
H27-Z325

**OSE PROJECT NUMBER** 



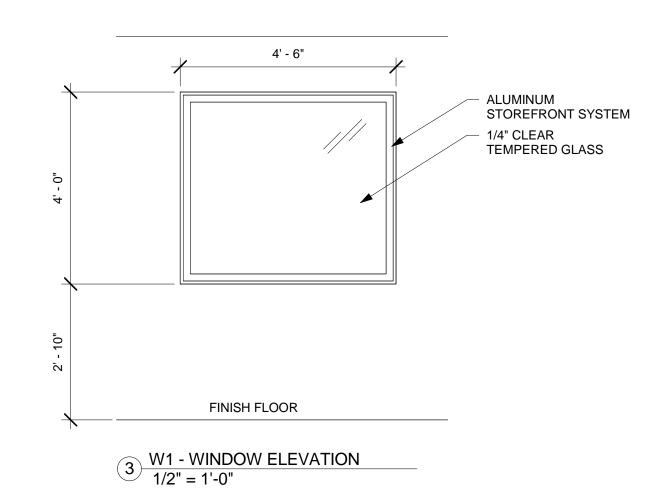
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#### **GENERAL DOOR NOTES**

- 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.



NG - JULY 28, 2017

CLIENT NAME

USC

SAN SIM CENTER

LOCATION

COLUMBIA, SOUTH CAROLINA

COLUMBIA, SOUTH CAROLINA

OSE PROJECT NUMBER

H27-Z325

PROJECT NUMBER 17009
SHEET NUMBER

SHEET NAME
DOOR/WINDOW
SCHEDULE
DATE 07/28/2017

A601

C

#### **GENERAL FINISH NOTES**

1. WALL FINISH DIRECTION IS BASED ON PLAN ORIENTATION (I.E. NORTH WALL REFERS TO PLAN NORTH)

2. PROVIDE CODE COMPLIANT TRANSITION STRIPS WHERE NEEDED. 3. PREP ALL SUB SURFACES TO RECEIVE NEW FINISH PER MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER TO SPECIFICATION DIVISION 03, SECTION 035416 FOR CONCRETE LEVELING PRODUCT.

4. ALL FINISHES TO BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO ORDERING/FABRICATING. 5. WHERE FLOOR TRENCHING OCCURS, LEVEL AND PREP NEW CONCRETE SUBSTRATE TO RECEIVE NEW FINISHES PER MANUFACTURER'S WRITTEN

6. PAINT ALL DOOR FRAMES TO MATCH THE WALL ON WHICH IT OCCURS. DOORS TO BE REFINISHED AND STAINED TO MATCH EXISTING.

#### **FINISH PLAN LEGEND**

CARPET, CPT1

QUARTZ COMPOSITION TILE, QT1

NO WORK, THIS AREA

PROJECT NUMBER 17009

C

107

SHELL SPACE

**RECEPTION** 

105

OSE PROJECT NUMBER

H27-Z325

NO. DATE DESCRIPTION

**SCHEDULES** 

DATE **07/28/2017** 

**REVISIONS** 

### PLUMBING FIXTURE SCHEDULE

SK-1; UTILITY SINK (FLOOR MOUNTED)

A. JUST NSFB-142-12/12 SINGLE COMPARTMENT, 14 GAUGE STAINLESS STEEL, FLOOR MOUNTED

A. 27-1/2"x45"x36".

CONNECTION A. 2" WASTE, 1/2" CW, 1/2" HW.

. MOUNTING

A. FLOOR MOUNTED

FITTING A. JUST JPR-309 EXPOSED WALL/BACKSPLASH MOUNT, STAINLESS STEEL HOSE. B. ESCUTCHEON PLATES. C. FLOW RATE 1.6 GPM

A. JUST JT-35-BLA-2, 304 STAINLESS STEEL STRAINER.

A. JUST JT-200, 17 GAUGE CHROME PLATED BRASS.



#### FCO (FLOOR CLEANOUT)

A. UNFINISHED CONCRETE, VINYL, RUBBER, CERAMIC, OR QUARRY TILE

SIMILAR TO JR SMITH MODEL #4051 STANDARD

A. ASME A112.36.2M MATERIAL A. CAST IRON BODY.

A. SQUARE, HEAVY DUTY LOADING, NICKEL BRASS WITH PLASTIC CLOSURE PLUG.



### WCO (WALL CLEANOUT)

FLOORS.

IN WALL CONSTRUCTION.

2. MANUFACTURER B. SIMILAR TO JAY R. SMITH MODEL #4551

A. ROUND 6. COVER FINISH

A. SQUARE POLISHED BRONZE FRAME & COVER FLUSH WITH WALL FINISH. . CLOSURE PLUG

A. PLASTIC COUNTERSUNK.



FD-1; FLOOR DRAIN (MED TRAFFIC SQUARE TOP)

A. SIMILAR TO J.R. SMITH 2005-B CAST IRON DRAIN WITH FLANGE, INTEGRAL CLAMPING COLLAR B. SEEPAGE FLANGE.

A. 6"X6" SATIN NICKEL BRONZE.

CONNECTION A. 2" WASTE.

TRAP A. DEEP SEAL. PROVIDE PRO-SET TRAP GUARD.



### ABBREVIATIONS \*

ABV AD AFF Finished BFP CI CONN CW DI DN ELEV ET EWC-# Cooler FD FL FT GPH Hour GPM Minute HW HWR	Above Access Door Above Floor Backflow Preventer Cast Iron Column Line Connection Cold Water De—ionized Water Down Elevation Expansion Tank Electric Water Floor Drain Floor Feet Gallons Per Hot Water Hot Water	NIC NOT NTS OX -#V Inch# PRS SH SH D P FIND -# SH SS ST D TYP -# VR	Not in Contract Normally Open National Pipe Thread Not To Scale Over Flow Storm Drain Oxygen Pump — No. Pressure Reducing Valve Pounds Per Square  Roof Drain Shock Absorber Shower Sink SUMP PUMP Stainless Steel Storm Drain Standard Temperature Top of Steel Typical Urinal Vacuum
FL FT GPH Hour GPM Minute HW	Floor Feet Gallons Per Gallons Per Hot Water	ST STD TEMP TOS TYP U-#	Storm Drain Standard Temperature Top of Steel Typical Urinal
Return IE L-# MA MAX MIN	Invert Elevation Lavatory Medical Air Maximum Minimum	VB V VTR VTW W WB-# WC-#	Vacuum Breaker Sanitary Vent Vent Thru Roof Vent Thru Wall Sanitary Waste Wall Box Water Closet
MPT Thread MSB-# Basin N/A	Male Pipe  Mop Sink  Not Applicable		

\* Not All Abbreviations Used

Normally Closed

### PLUMBING LEGEND

PLUMBING LEGEND				
SYMBOL	DESCRIPTION			
	COLD WATER LINE — (CW)			
	HOT WATER LINE - (HW)			
	SANITARY WASTE LINE — (W)			
	SANITARY VENT LINE - (V)			
	PIPE DOWN OR DROP (DN OR DROP)			
<u> </u>	PIPE UP			
	PIPE BREAK OR CONTINUATION			
—∞	P-TRAP			
	END CAP			
—- L	UNION			
↑ SA-A	SHOCK ABSORBER & TYPE			
<b>⊗</b> <sup>FD</sup>	FLOOR DRAIN			
<b>⊗</b> FCO	FLOOR CLEAN OUT			
COTG COTG	CLEANOUT TO GRADE			
	BALL VALVE			
	CHECK VALVE			
П	WALL BOX			
Э—— НВ	HOSE BIBB (INTERIOR)			
<u></u>	RECESSED WALL HYDRANT (NON-FREEZE)			
wco —	WALL CLEANOUT			

# FIXTURE SIZE SCHEDULE

MARK	WASTE	VENT	CW	HW
SK	1-1/2"	1-1/4"	1/2"	1/2"

CONNECTION SIZE IS FOR SINGLE POINT CONNECTION. REFER TO PLANS FOR MULTIPLE OR HEADER TYPE CONNECTIONS. PLUMBING CONTRACTOR TO VERIFY WITH MANUFACTURER'S INSTRUCTIONS BEFORE FINAL CONNECTION.

RECOVERY RISE (GPM) \*F

1.0

STORAGE (GAL.)

N/A

1. COMPLY WITH CURRENT ASHRAE/IESNA 90.1.

TAG NO. FUEL

ELECT.

# **SECTION** ■ G M K ENGINEERING

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

MODEL NO.

REMARKS

1, 2, 3



**STUDIO**2428 MAI
COLUMB
P 803.233
STUDIO2I

	2. INSTALL IN COMPLIANCE	PER STATE & LOCAL CODE	J. 1 LOW	CONTROLLED	TANKLESS	
_						

TANKLESS WATER HEATER SCHEDULE

240

CHARACTERISTICS

VOLTS PHASE HERTZ

1ø

MANUFACTURER

**EEMAX** 

3. FLOW CONTROLLED TANKLESS HEATER

### PLUMBING GENERAL NOTES

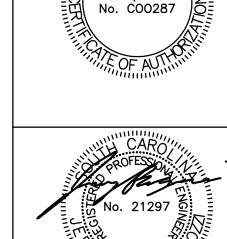
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**@** 6.5

- VERIFY EXACT LOCATION OF ALL PLUMBING FIXTURES IN OR ATTACHED TO CASEWORK WITH THE ARCHITECT AND THE MILLWORK SHOP DRAWINGS. COORDINATE PRIOR TO INSTALLATION.
- 2. CONFIRM OR VERIFY EXACT LOCATION AND ACTUAL INVERT OF SANITARY LINES PRIOR TO INSTALLATION.
- LOCATE SHUT-OFF VALVE ABOVE CEILING AND IN LOCATIONS ACCESSIBLE FOR SERVICE. LOCATION SHALL COMPLY WITH THE REQUIREMENTS OF ALL CODES REFERENCED HEREIN.
- 4. ALL SANITARY DRAINAGE PIPING 3" AND LARGER SHALL SLOPE 1/8" PER FOOT UNLESS NOTED OTHERWISE. ALL SANITARY DRAINAGE PIPING 2-1/2" AND SMALLER SHALL SLOPE 1/4" PER FOOT UNLESS NOTED
- 5. CONTRACTOR SHALL REFERENCE THE SPECIFICATIONS AND EQUIPMENT SCHEDULE FOR PLUMBING FIXTURES, EQUIPMENT AND MATERIALS AND INSTALLATION PROCEDURES.
- 6. CONTRACTOR SHALL PROVIDE HANGERS AND SUPPORTS FOR SEISMIC RESTRAINT PER THE 2015 SOUTH CAROLINA PLUMBING CODE. (IPC 2015)
- 7. 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.
- 8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE.
- 9. 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 ENGINEER.
- 10. CONTRACTOR SHALL SECURE ALL PERMITS, INSPECTIONS, LICENSES AND TESTS REQUIRED FOR THIS WORK AND PAY ALL FEES IN CONNECTION THEREWITH.
- 11. 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.
- 12. CONTRACTOR SHALL PROVIDE AND LOCATE CORE DRILLS IF REQUIRED BEFORE THE WALLS ARE BUILT AND SHALL BE RESPONSIBLE FOR THE COST OF CORE DRILLING AND PATCHING REQUIRED FOR PIPES WHERE THEY PASS THROUGH FINISHED SLAB.
- 13. 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
- 14. ALL WALL HUNG FIXTURES AND FLOOR MOUNTED MOP SINKS SHALL BE SEALED BETWEEN WALL AND FIXTURES WITH WHITE SILICONE CAULKING.
- 15. ALL COUNTER MOUNTED FIXTURE RIMS SHALL BE SEALED WITH SILICONE CAULKING.
- 16. CONTRACTOR SHALL MAKE PROVISIONS FOR EXPANSION LOOPS WHERE NECESSARY WHETHER OR NOT SHOWN ON DRAWINGS.
- 17. IT IS THE INTENT AND MEANING OF THE DRAWINGS TO PROVIDE COMPLETE AND OPERABLE PLUMBING AND DRAINAGE SYSTEMS.
- 18. ALL PLUMBING LINE SIZE REDUCTIONS SHALL BE MADE WITH REDUCERS AND/OR REDUCING FITTINGS.
- 19. DUE TO THE LIMITED SPACE ABOVE THE CEILING, AND THE AMOUNT OF DUCT WORK AND PIPING, COORDINATION WITH OTHER DISCIPLINES IS MANDATORY.
- 20. ALL BALL VALVES SHALL BE FULL PORT TYPE. ALL SERVICE AND BALANCING VALVES SHALL BE LOCATED WHERE ACCESSIBLE.
- 21. ALL CLEANOUTS AND FLOOR DRAINS SHALL BE INSTALLED PLUMB AND LEVEL WITH FINISHED FLOOR
- 22. THE FOLLOWING PLUMBING SYSTEMS SHALL BE INSULATED: COLD WATER, HOT WATER, AND P-TRAPS.
- 23. OFFSET PLUMBING VENTS AND WATER PIPING AS NECESSARY TO AVOID CONFLICTS WITH DUCTWORK. 24. LOCATE FLOOR CLEANOUTS PAST LIMITS OF THE CASEWORK.
- 25. 2015 IPC, IBC, IMC, CURRENT LOCAL CODES AND NFPA.
- 26. ALL PVC WASTE PIPING AND/OR CPVC WATER PIPING ROUTED THROUGH RETURN AIR PLENUMS SHALL BE WRAPPED WITH APPROVED RATED FIRE WRAP.

WATER-	HAMM	ER AR	RESTI	ER SC	HEDUI	LE
PDI UNITS	A	В	С	D	E	F
FIXTURE UNITS	1-11	12-32	33-60	61-113	114-154	155-330

NOTES: FIXTURE UNITS BASED ON IPC 2015, TABLE E103.3(2), LOAD VALUES ASSIGNED TO FIXTURES.



GMK, INC.

W BERN 7/28/2017

OSE PROJECT NUMBER H27-Z325

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**REVISIONS** 

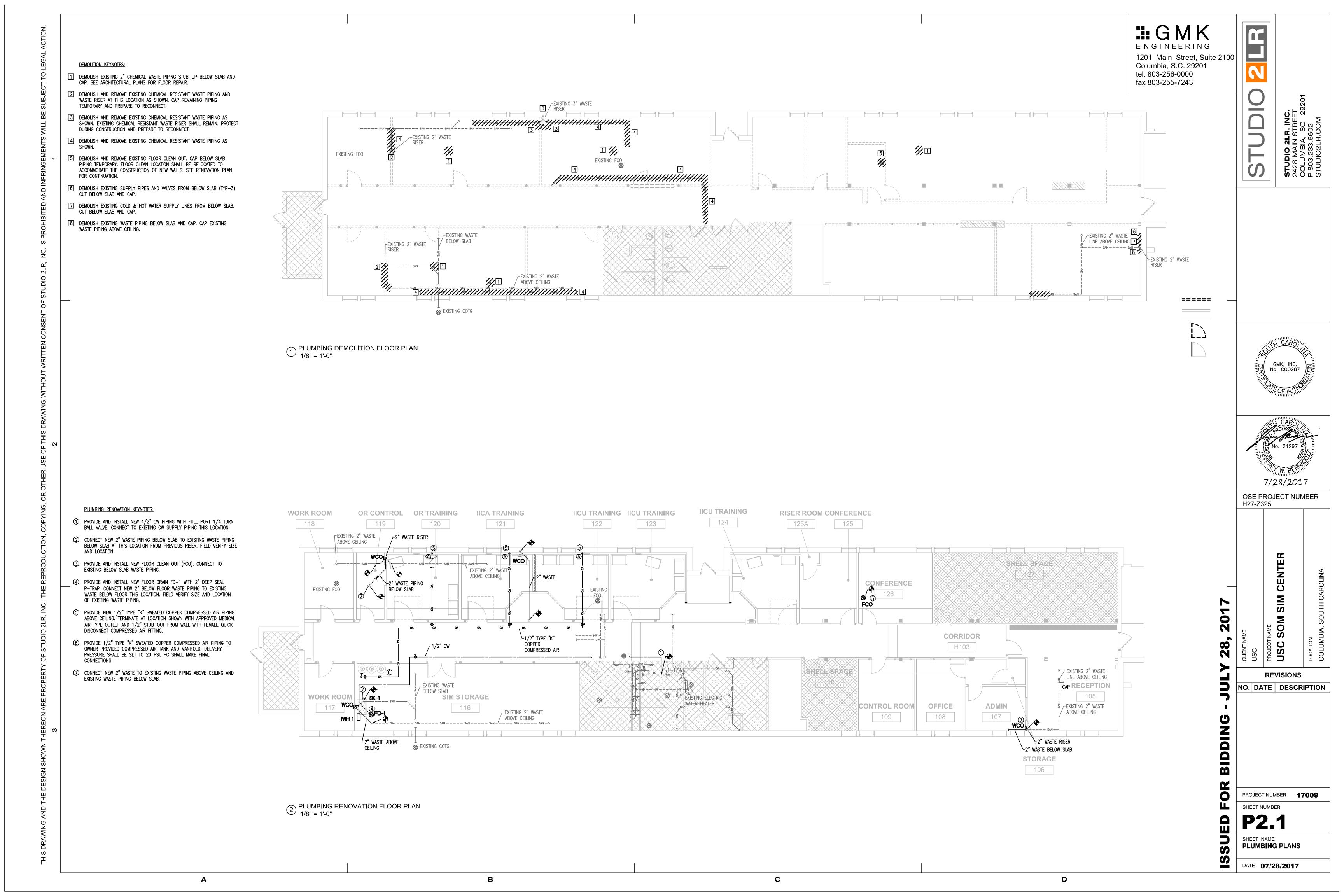
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PROJECT NUMBER 17009

SHEET NUMBER

DATE **07/28/2017** 

PLUMBING NOTES, SCHEDULES & SYMBOLS



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 / 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 DRAWINGS 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 GARDING DENSITY, AREA OF COVERAGE, SELECTION OF HYDRAULICALLY REMOTE AREAS. AND MAXIMUM COVERAGE PER SPRINKLE

1.01 SECTION INCLUDES

A. THIS SECTION SPECIFIES AUTOMATIC SPRINKLER SYSTEMS FOR 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 NEPA CODE BASED ON

THE SCOPE AND APPLICABILITY OF THIS PROJECT. 1.02 RELATED SECTIONS A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING THE 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. 03 REFERENCES A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

1. B1.20.1 PIPE THREADS 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 HOT-DIPPED ZINC-COATED (GALVANIZED) WELDED AND 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 PROCEDURES AND WELDERS FOR PIPING AND TUBING.

C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA): 1. 13— STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS. .04 DEFINITIONS

A. PIPE SIZES USED IN THIS SPECIFICATION ARE NOMINAL PIPE SIZE B. OTHER DEFINITIONS FOR FIRE PROTECTION SYSTEMS ARE LISTED IN NFPA STANDARDS 13.

C. 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

FLOW TEST DATA AND FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE DESIGN OF SPRINKLER SYSTEMS AND SUBMISSION OF DRAWINGS AND CALCULATIONS TO THE STATE FIRE MARSHALL'S OFFICE FOR

1.05 DESIGN REQUIREMENTS

.06 SUBMITTALS A. WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER

A. FIRE FLOW TEST DATA: CONTRACTOR SHALL OBTAIN CURRENT FIRE

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).

INSTALLATION AND SHALL SUBMIT DRAWINGS WITH CALCULATIONS AND PRODUCT DATA SHEETS TO THE ARCHITECT FOR PRELIMINARY REVIEW BY THE ENGINEER IN ACCORDANCE WITH PLANS AND . CONTRACTOR SHALL INCLUDE COMPLETED DATA SHEET ATTACHED AS REQUIRED BY THE STATE FIRE MARSHALL'S OFFICE FOR

OR CONTROL OR TRAINING

ENGINEER USE AND VERIFICATION WITH PRELIMINARY SHOP

FIRE SPRINKLER SPECIFICATIONS

BUT NOT LESS THAT 175 PSI. PIPE SHALL HAVE THE

ASTM STANDARD, MARKED ON EACH LENGTH OF PIPE.

CONFORM TO ANSI B1.20.1

CONFORM TO ANSI B1.20.1

OF THE PIPE BEING WELDED

SUITABLE FOR THE INSTALLATION.

2.03 GASKET MATERIALS:

2.05 AUTOMATIC SPRINKLERS:

TO MATCH SPRINKLER.

PART 3 EXECUTION

A. PIPE APPLICATIONS

1. WET-PIPE SYSTEM

a. THREADED PIPE:

b. GROOVED PIPE:

B. PIPING INSTALLATIONS:

COUPLINGS.

AND FITTINGS.

INSTALL PIPING AS INDICATED.

B. BLACK STEEL PIPE SHALL BE SCHEDULE 10 OR SCHEDULE 40.

STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL

E. GROOVED MECHANICAL FITTINGS SHALL BE ASTM A 536, GRADE

IRON; OR ASTM A53, TYPE F OR TYPES E OR S. GRADE B

FARRICATED STEEL FITTINGS WITH CROOVES OR SHOULDERS

LOCKING PIN. LOCKING TOGGLE. OR LOGS TO SECURE

RAISED GROUND FACE, BOLT HOLES SPOT FACED.

A. PIPE HANGERS SHALL BE AS SPECIFIED IN NFPA 13.

ROLL-GROOVED PIPE AND FITTINGS. GROOVED MECHANICAL

COUPLINGS INCLUDING GASKETS USED ON DRY-PIPE SYSTEMS

G. CAST IRON THREADED FLANGES SHALL BE ANSI B16.1, CLASS 250;

H. WELDING MATERIALS SHALL COMPLY WITH SECTION II, PART C, ASME

BE HANDLED, AND DESIGN TEMPERATURES AND PRESSURES.

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

AND STYLE AS INDICATED OR REQUIRED BY THE APPLICATION.

1/2 INCH DISCHARGE ORIFICE, HAVING TEMPERATURE RATINGS

B. SPRINKLER STYLES AND FINISHES SHALL BE AS FOLLOWS:

GROOVED MECHANICAL COUPLINGS.

GROOVED MECHANICAL COUPLINGS.

1. LOCATIONS AND ARRANGEMENTS: DRAWINGS (PLANS,

C. UPRIGHT, PENDENT, AND SIDEWALL STYLES: UNLESS NOTED

OTHERWISE, WHITE FINISH WITH RECESSED ESCUTCHEONS IN

UNLESS OTHERWISE INDICATED, PROVIDE SPRINKLERS WITH NOMINAL

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

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

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

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

**IICU TRAINING** 

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EACH VALVE. UNIONS ARE NOT REQUIRED ON FLANGED DEVICES

AND ARRANGEMENT OF PIPING SYSTEMS. SO FAR AS PRACTICAL,

DESIGNED TO ACCEPT GROOVED END COUPLINGS.

SHALL BE LISTED FOR DRY-PIPE SERVICE.

300, STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL

65-45-12 DUCTILE IRON; ASTM A 47 GRADE 32510 MALLEABLE

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,

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 F. CONTRACTOR SHALL SUBMIT REVISED SHOP DRAWINGS, UPDATED DATA SHEET AND CERTIFICATE OF COMPLIANCE TO THE STATE FIRE MARSHALL'S OFFICE FOR REVIEW. 1. CONTRACTOR SHALL MAKE ALL CHANGES NECESSARY FOR OBTAINING FINAL APPROVAL FROM THE STATE FIRE MARSHALL

AND THE INSURANCE UNDERWRITER PRIOR TO START OF 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

H. MAINTENANCE DATA FOR EACH TYPE SPRINKLER HEAD, FOR INCLUSION IN OPERATING AND MAINTENANCE MANUAL SPECIFIED IN SECTION 15010 - GENERAL MECHANICAL.

J. TEST REPORTS AND CERTIFICATE INCLUDING "CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING" AS DESCRIBED IN NFPA13.

WELDER'S QUALIFICATION CERTIFICATE.

1.07 QUALITY ASSURANCE 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 EXPERIENCE C. PRODUCTS REQUIRING ELECTRICAL CONNECTION: LISTED AND 2.04 PIPE HANGERS: 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.

1.08 DELIVERY, STORAGE, AND PROTECTION A. STORE MATERIALS UNDER COVER AND ELEVATED ABOVE GRADE.

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. D. REMOVE AND REPLACE DAMAGED SPRINKLER HEADS WITHIN PROJECT 3.01 INSTALLATION LIMITS, SIMILAR TO MAKE AND MODEL OF EXISTING SYSTEM

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

PART 2 PRODUCTS 2.01 MANUFACTURERS: A. PROVIDE PRODUCTS COMPLYING WITH THE SPECIFICATIONS BY ONE OF THE FOLLOWING MANUFACTURES.

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

1) GROOVED MECHANICAL COUPLINGS

2. CENTRAL C. CONTRACTOR SHALL PREPARE PRELIMINARY SHOP DRAWINGS OF THE 3. GLOBE 4. RELIABLE 5. VIKING

**IICA TRAINING** 

A. GENERAL: REFER TO THE EXECUTION SECTION, ARTICLE "PIPE

APPLICATIONS" FOR IDENTIFICATION OF SYSTEMS WHERE THE BELOW 5. INSTALL TEST CONNECTIONS SIZED AND LOCATED IN ACCORDANCE SPECIFIED PIPE AND FITTING MATERIALS ARE USED. PIPE SHALL BE WITH NFPA 13 COMPLETE WITH SHUTOFF VALVE. NEW, DESIGNED TO WITHSTAND THE WORKING PRESSURES INVOLVED,

C. HANGERS AND SUPPORTS: 1. COMPLY WITH THE REQUIREMENTS OF NFPA 13 AND NFPA 14. MANUFACTURER'S NAME OR BRANDS, ALONG WITH THE APPLICABLE HANGER AND SUPPORT SPACING AND LOCATIONS FOR PIPING JOINED WITH GROOVED MECHANICAL COUPLINGS SHALL BE IN ACCORDANCE WITH THE GROOVED MECHANICAL COUPLING SEAMLESS, AND IN ACCORDANCE WITH ASTM A53, A120, A135 OR MANUFACTURER'S WRITTEN INSTRUCTIONS, FOR RIGID SYSTEMS. PROVIDE PROTECTION FROM DAMAGE WHERE SUBJECT TO EARTHQUAKE IN ACCORDANCE WITH NFPA C. CAST-IRON THREADED FITTINGS SHALL BE ANSI B16.4, CLASS 250,

3.02 PIPE JOINT CONSTRUCTION: A. WELDED JOINTS: AWS D10.9, LEVEL AR-3. D. MALLEABLE-IRON THREADED FITTINGS SHALL BE ANSI B16.3, CLASS

B. THREADED JOINTS: CONFORM TO ANSI B1.20.1, TAPERED PIPE THREADS FOR FIELD CUT THREADS. JOIN PIPE, FITTINGS, AND VALVES AS FOLLOWS: 1. APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO THE EXTERNAL PIPE THREADS.

2. ASSEMBLE JOINT TO APPROPRIATE THREAD DEPTH. WHEN USING A WRENCH ON VALVES PLACE THE WRENCH ON THE VALVE END INTO WHICH THE PIPE IS BEING THREADED. 3. DAMAGED THREADS: DO NOT USE A PIPE WITH THREADS WHICH ARE CORRODED OR DAMAGED. IF A WELD OPENS DURING CUTTING OR THREADING OPERATIONS, THAT PORTION OF PIPE

SHALL NOT BE USED. C. FLANGED JOINTS: ALIGN FLANGES SURFACES PARALLEL. ASSEMBLE JOINTS BY SEQUENCING BOLT TIGHTENING TO MAKE INITIAL CONTACT OF FLANGES AND GASKETS AS FLAT AND PARALLEL AS POSSIBLE USE SUITABLE LUBRICANTS ON BOLT THREADS. TIGHTEN BOLTS GRADUALLY AND UNIFORMLY TO APPROPRIATE TORQUE SPECIFIED BY THE BOLT MANUFACTURER.

BOILER AND PRESSURE VESSEL CODE FOR WELDING MATERIALS D. MECHANICAL GROOVED JOINTS: CUT OR ROLL GROOVES ON PIPE APPROPRIATE FOR THE WALL THICKNESS AND CHEMICAL ANALYSIS ENDS DIMENSIONALLY COMPATIBLE WITH THE COUPLINGS. E. END TREATMENT: AFTER CUTTING PIPE LENGTHS, REMOVE BURRS AND FINS FROM PIPE ENDS. A. THICKNESS, MATERIAL, AND TYPE SUITABLE FOR FLUID OR GAS TO

3.03 SPRINKLER HEAD INSTALLATIONS: A. INSTALL SPRINKLERS IN CENTER OF LAY-IN CEILING TILE BY MEANS OF "RETURN BENDS."

B. INSTALL SPRINKLER GUARDS ON SPRINKLERS WHICH ARE SO LOCATED AS TO BE SUBJECT TO MECHANICAL DAMAGE (IN EITHER UPRIGHT, PENDENT, OR SIDEWALL POSITIONS). C. USE PROPER TOOLS TO PREVENT DAMAGE DURING INSTALLATION.

3.04 FIELD QUALITY CONTROL: A. FLUSH, TEST, AND INSPECT SPRINKLER PIPING SYSTEMS IN

END OF SECTION

RISER ROOM CONFERENCE

ACCORDANCE WITH NFPA 13.

PLAN HATCHING

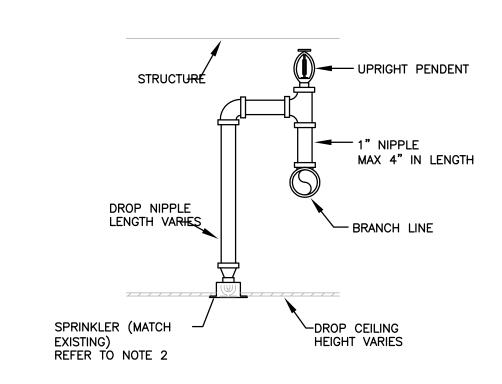
REMOVE EXISTING SPRINKLER HEADS. LOCATE NEW SPRINKLER HEADS PER NFPA 13 & CONNECT TO EXISTING SPRINKLER PIPING. MODIFY EXISTING SPRINKLER PIPING FOR NEW HEAD LOCATIONS. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID.

FLOOR PLAN LEGEND

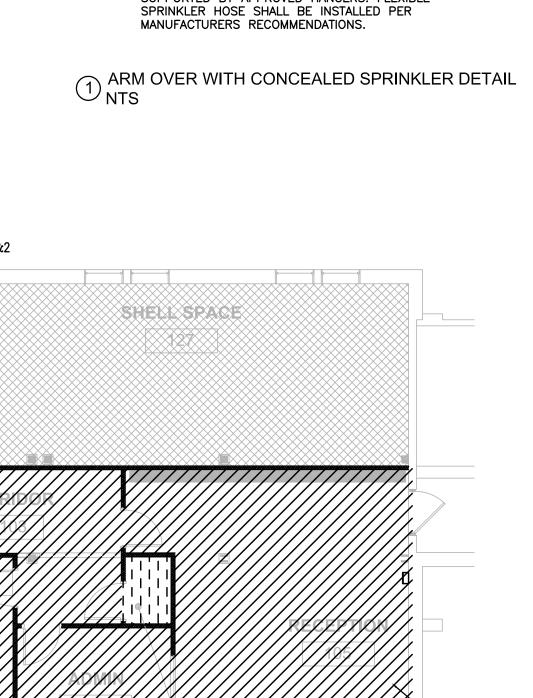
SYSTEM TYPE - WET

SYSTEM TYPE - WET

2. REFER TO ARCHITECTURAL PLANS FOR REFLECTED CEILING PLAN, USE CONCEALED PENDENT FOR HARD CEILING & RECESSED PENDENT FOR LAY-IN CEILING.



NOTE:
FLEXIBLE SPRINKLER HOSE CAN BE USED IN LIEU OF SCH 40 PIPE. MAXIMUM ALLOWABLE FLEXIBLE CONNECTION SHALL NOT EXCEED 6 FT. UNLESS SUPPORTED BY APPROVED HANGERS. FLEXIBLE



ENGINEERING

Columbia, S.C. 29201

tel. 803-256-0000

fax 803-255-7243

DESIGN CRITERIA

MAX. COVERAGE PER SPRINKLER - 225 SQ. FT

HAZARD CLASSIFICATION - ORDINARY GROUP 2

MAX. COVERAGE PER SPRINKLER - 130 SQ. FT.

SPRINKLER TYPE - QR RECESSED PENDENT

SPRINKLER TYPE - QR RECESSED PENDENT

HAZARD CLASSIFICATION — LIGHT

REMOTE AREA - 1500 SQ. FT.

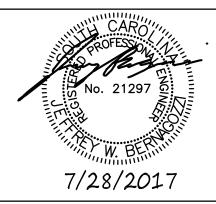
DESIGN DENSITY - 0.10 GPM/SQ.FT.

DESIGN DENSITY - 0.20 GPM/SQ.FT.

REMOTE AREA — 1500 SQ. FT.

1201 Main Street, Suite 2100





**OSE PROJECT NUMBER** H27-Z325

**REVISIONS** 

PROJECT NUMBER 17009 SHEET NUMBER

FIRE PROTECTION

2 FIRE PROTECTION RENOVATION FLOOR PLAN 1/8" = 1'-0"

**WORK ROOM** 

118

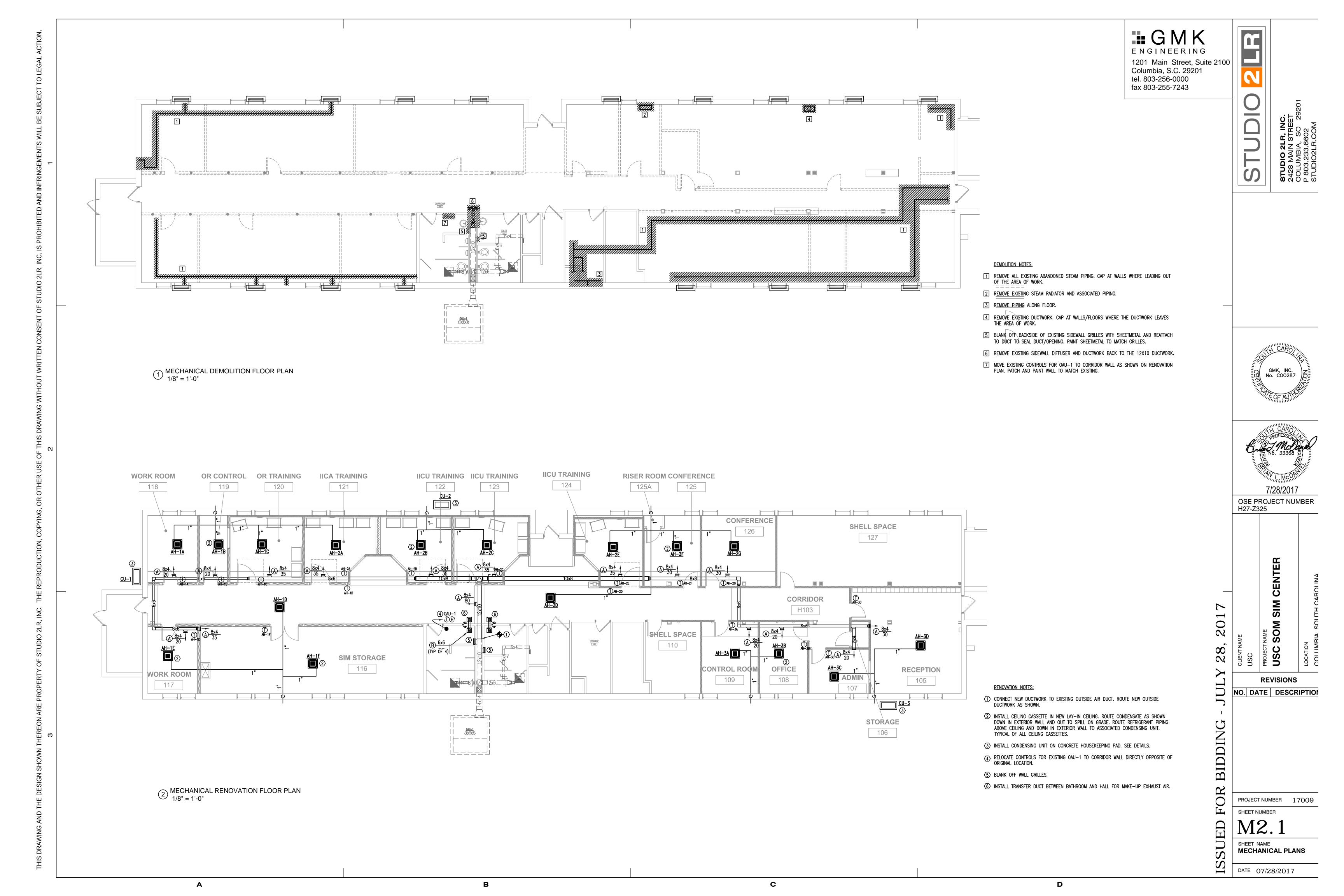
C

**STORAGE** 

106

D

DATE **07/128/2017** 



— SECURE UNIT TO EQUIPMENT PAD

-NEOPRENE VIBRATION ISOLATORS

UNLESS OTHERWISE NOTED, ONE OR TWO REFRIGERANT PERMITTED IF LINES CAN BE REPLACED IN CASING. CASING SHALL BE 4" MINIMUM.

GROUT SLEEVE~

MECHANICAL FASTENERS

**■** G M K ENGINEERING 1201 Main Street, Suite 2100 Columbia, S.C. 29201 tel. 803-256-0000 fax 803-255-7243

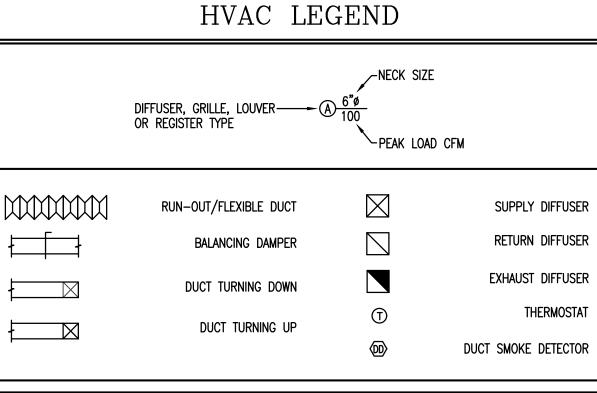


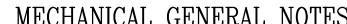
OR REGISTER TYPE PEAK LOAD CFM RUN-OUT/FLEXIBLE DUCT SUPPLY DIFFUSER RETURN DIFFUSER BALANCING DAMPER EXHAUST DIFFUSER DUCT TURNING DOWN **THERMOSTAT** 

	ABBREVIATIONS			
A/C ABV AFF BHP CFM CU-# DD DB DN EAT ELEC EWB EXH FD FL HP-# KW LAT LWB MAX MBH	Air Conditioning Above Above Finished Floor Brake Horsepower Cubic Feet Per Minute Condensing Unit Tag Duct Smoke Detector Dry Bulb Temperature Duct Down Entering Air Temperature Electric or Electrical Entering Air Wet Bulb Exhaust Fire Damper Floor Horsepower Heat Pump Tag Kilowatts Leaving Air Temperature Leaving Air Temperature Leaving Air Temperature Leaving Air Temperature Leaving Air Wet Bulb Maximum Thousand BTU/Hr (thousands)	MIN N/A NIC NTS OBD OD PD RET RH SA SHT SP SPEC SPL TEMP TSTAT TYP UP WB ZD	Minimum Not Applicable Not in Contract Not To Scale Opposed Blade Damper Outside Diameter Pressure Drop Return Air Return Relative Humidity Supply Air Sheet Static Pressure Specifications Supply Thermostat Temperature Thermostat Typical Duct Up Wet Bulb Temperature Zone Damper	

### MECHANICAL GENERAL NOTES

- DO NOT SCALE DRAWINGS; SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
- 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
- ALL PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND
- LOCATE ALL THERMOSTATS, HUMIDISTATS AND SWITCHES 4'-0" ABOVE FINISH FLOOR; ALIGN WITH LIGHT
- 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.
- ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE.
- CORRECT SETTINGS ON ALL BALANCING FITTINGS SHALL BE PERMANENTLY MARKED. 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
- 10. 45 DEGREE TAKEOFFS SHALL BE USED ON ALL HARD DUCTED SUPPLY BRANCHES.
- ALL PIPING, DUCTS, VENTS, ETC. EXTENDING THRU EXTERIOR WALLS AND ROOFS SHALL BE FLASHED AND
- PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, DUCT HEATERS, AIR VOLUME CONTROLLERS,
- 13. ALL DUCT IS GALVANIZED SHEET METAL EXCEPT AS NOTED.
- 14. DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
  - PROVIDE DIELECTRIC FITTINGS AT ALL LOCATIONS WHERE DISSIMILAR METALS ARE JOINED IN PIPING AND DUCT
- UPON ACTIVATION OF FIRE ALARM OR SPRINKLER SYSTEMS, ALL AIR HANDLERS SHOULD BE WIRED TO SHUT

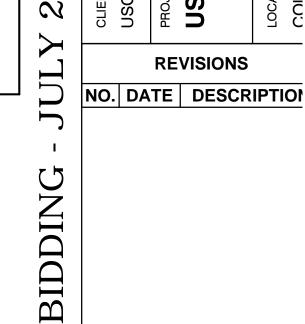




- MANUAL AIR VENTS AT ALL HIGH POINTS, AND 3/4" DRAIN VALVES AT ALL LOW POINTS.
- PARTITIONS EXCEPT WHERE PROHIBITED BY FIRE CODES.
- ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS AND FURTHER SUPPORTS OR

- SPIN-IN, A HARD DUCTED TAKEOFF MUST BE PROVIDED.

- FAN COIL UNITS, EXHAUST FANS, SUPPLY FANS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.
- INTAKES FOR AIR HANDLING EQUIPMENT SHALL BE A MINIMUM OF TEN FEET AWAY FROM ANY EXHAUST OR VENT. AIR DISTRIBUTION UNITS SHALL HAVE TRIM REQUIRED FOR FINISHED SERVICE.



PROJECT NUMBER 17009

7/28/2017

OSE PROJECT NUMBER

H27-Z325

SHEET NUMBER

SHEET NAME **MECHANICAL** SHEDULES AND DETAILS DATE 07/28/2017

C

EXTEND CURB 6" MIN. 4 x 4, 6-6 MESH-ALL EDGES — BEYOND EQUIPMENT 4 ▽ 4 ▽ 1. L & W DIMENSIONS SHALL BE 6" GREATER THAN THE EQUIPMENT BASE

2. CONC. SHALL BE 3000 PSI MINIMUM

1 MINI-SPLIT CONDENSING UNIT SUPPORT DETAIL

RIGID VAPORTIGHT SUCTION LINE

INSULATION 6" LONG (MINIMUM)

-Provide additional 6" of Galv.

☐ ELECTRICAL CONDUIT. CLAMPS BY

ELECTRICAL CONTRACTOR.

NOTE: REFRIGERANT PIPING SUPPORTS

INSIDE BUILDING ARE SIMILAR;

ATTACH "UNISTRUT" TO STRUCTURE.

MECHANICAL FASTENERS

2"x2"x1/4" TUBING. 3'-0" LONG CEMENT IN PLACE

REFRIGERANT PIPE SUPPORT ON GRADE

"U<u>NI</u>-STRUT" FOR SUPPORT OF

W/VAPOR BARRIER AT BUTT JOINTS.

CONDENSING UNIT

EQUIPMENT PAD -

SECURE REFRIGERANT

LINES TO SUPPORT

WITH "HYDRA-ZORB"

OR "CUSH-A-CLAMP"

SUPPORTS SPACED TO SUPPORT

WITH "GALVANEAL".

SMALLEST PIPE OR CONDUIT. COAT ALL

CUT, EXPOSED, OR WELDED SURFACES

PAVEMENT

SCH. 40 PVC SEAL WITH SILICONE -CASING NOTE 3 SEALER AROUND (4) REFRIGERANT PIPE THRU WALL DETAIL

NTS

T-----

EXTERIOR ←

→ INTERIOR

FILL SPACE WITH

SEAL WITH SILICONE

- SEALER AROUND PIPES NOTE 3

2 CEILING CASSETTE DETAIL

ROUTE CONDENSATE LINE PER FLOOR PLAN.

RECESSED CEILING CASSETTE HEAT PUMP

GRILLE PANEL

THREADED CAP

- SUPPLY/RETURN CEILING

NOTE 5

PIPE FULL SIZE OF

EQUIPMENT DRAIN

CONNECTION

BLOW THRU DRAIN DRAW THRU DRAIN

> NOTE:
>
> 1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING. 2. TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT. 3. HEIGHT SHALL BE EQUAL TO 2 TIMES UNIT MAXIMUM POSITIVE STATIC 4. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".

HEATING CAPACITY

49.5

49.5

37

MFGR

HSPF

10

10

10.3

REMARKS

1 THRU 7

1 THRU 7

1 THRU 7

SERIES 620DAL

NOTES

1,2,3

\_PIPE FULL SIZE OF

EQUIPMENT DRAIN

CONNECTION

THREADED CAP

NOTE 4

6. PIPE TO NEAREST FLOOR DRAIN. 5 EQUIPMENT CONDENSATE DRAIN DETAIL

5. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE.

#### **GENERAL NOTES ALL DRAWINGS:**

- DO NOT SCALE DRAWINGS. LOCATE OUTLETS, EQUIPMENT AND OTHER ELECTRICAL DEVICES AS INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS WITH
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE #12 AWG. PROVIDE DEDICATED NEUTRAL FOR EACH MULTI-WIRE BRANCH CIRCUIT IN COMPLIANCE WITH NEC.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, "ECON" BY ECONOMY, OR FERRAZ
- 4. BRANCH CIRCUIT SIZES ARE #12 AWG, 1/2°C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES OR ON
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSSES TO OBTAIN MINIMUM NEUTRAL
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND PER NEC TABLE 250-122.
- PROVIDE PULL STRING IN ALL EMPTY RACEWAYS.
- 8. COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS.
- 9. DO NOT FLUSH MOUNT JUNCTION BOXES BACK TO BACK, STAGGER TO REDUCE SOUND TRANSMISSION BETWEEN
- 10. CONCEAL OUTLETS FOR ALL EQUIPMENT IN FINISHED AREAS. OBTAIN ROUGHING DIAGRAMS FOR ALL EQUIPMENT AND INSTALL ELECTRICAL WORK ACCORDING TO DIAGRAMS.
- 11. SEAL ALL PENETRATIONS TO RATED WALLS AND CEILINGS WITH APPROPRIATE UL LISTED FIREPROOFING SYSTEM FOR ASSEMBLY TYPE, THIS IS TO INCLUDE BUT IS IN NO WAY LIMITED TO CONDUCTOR, RACEWAY AND DEVICE PENETRATIONS. SUBMIT SYSTEM AND INSTALLATION DETAILS AS PART OF SHOP DRAWING SUBMITTAL KEYED TO
- 13. WHERE NOT INDICATED OTHERWISE, EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER NEC TABLE
- 14. ALL METAL CONDUITS 1" AND LARGER SHALL HAVE A GROUNDING BUSHING BONDING CONDUIT TO ENCLOSURE.
- 15. REMOVE DRYWALL DUST AND MUD FROM THE INTERIOR OF BOXES BEFORE INSTALLING DEVICES.
- 16. AT SUBSTANTIAL COMPLETION CLEAN ALL LIGHT FIXTURES AND CLEAN ALL DEVICES IN THE CONSTRUCTION AREAS. REPLACE DAMAGED DEVICES AND DEVICE PLATES AS NEEDED.
- 17. VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS WITH MECHANICAL PLANS, MECHANICAL CONTRACTOR, AND EQUIPMENT SUBMITTALS. IF MECHANICAL EQUIPMENT BEING PROVIDED DOES NOT MATCH DESIGN NOTIFY ENGINEER IMMEDIATELY. CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL COSTS DUE TO REQUIREMENTS OF EQUIPMENT FURNISHED DIFFERING FROM THAT USED AS BASIS OF DESIGN AND SPECIFICATION.
- CONCEAL ALL CONDUIT AND RACEWAY. IF CONDITIONS REQUIRE CONDUIT OR RACEWAY TO BE RUN EXPOSED COORDINATE ROUTING WITH ARCHITECT AND PAINT AS REQUIRED BY ARCHITECT.
- 19. ELECTRICAL WORK SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, REQUIREMENTS AND ORDINANCES.
- 20. ALL BACKBOXES SHALL BE MINIMUM 4" SQUARE.

LIGHTING FIXTURES WEIGHING LESS -

CEILING GRID

NO SCALE

THAN 56 LBS SHALL HAVE 2 #12 GAUGE HANGERS MINIMUM

SUPPORTING THE FIXTURE TO THE STRUCTURE ABOVE. MINIMUM FOUR TWISTS AT EACH END OF WIRE.

- 21. ALL EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROAT, SET SCREW TYPE NOT PERMITTED.
- 22. PROVIDE PLASTIC ENGRAVED NAMETAGS FOR ALL ELECTRICAL GEAR. INDICATE EQUIPMENT NAME. EQUIPMENT SERVED (WHERE APPLICABLE), FEEDER SOURCE AND CIRCUIT, VOLTAGE. LETTERING SHALL BE 3/8" IN HEIGHT, WHITE ON BLACK BACKGROUND.
- 23. PROVIDE LABELS INDICATING CIRCUIT NUMBER AND SOURCE FOR ALL 120V AND GREATER DEVICES. LABELS SHALL BE THERMAL TRANSFER TYPE, 3/8" WITH 1/4" LETTERING. WHITE BACKGROUND FOR BLACK DEVICES, CLEAR BACKGROUND OTHERWISE.
- PROVIDE ALL EQUIPMENT WITH 75°C OR 90°C TERMINATIONS. ALL WIRE SIZING INDICATED ON PLANS IS BASED ON 75°C TERMINATIONS. WHERE EQUIPMENT IS PROVIDED BY OTHERS AND IS NOT SPECIFICALLY LISTED AND MARKED WITH 75°C TERMINATIONS INCREASE CONDUCTOR SIZE BASED ON 2011 NEC TABLE 310.15(B)(16) 60°C COLUMN FOR CIRCUITS 100 AMPERES AND LESS IN SIZE.
- 25. EQUIPMENT ROUGH IN DRAWINGS ARE SCHEMATIC IN NATURE AND INTENDED TO PROVIDE THE GENERAL SCOPE OF WORK AND POWER CONNECTIONS TO BE INSTALLED BY THE CONTRACTOR. VERIFY ALL INSTALLATION REQUIREMENTS WITH VENDOR INSTALLATION DRAWINGS AND MANUALS PRIOR TO PLACING BID. CONTRACTOR SHALL BE RESPONSIBLE FOR INTERCONNECTIONS AND ALL RACEWAYS AND WIRING AS REQUIRED BY VENDOR INSTALLATION DRAWINGS. WHERE DISCREPANCIES OCCUR BETWEEN INFORMATION INCLUDED ON THESE DRAWINGS AND THAT WHICH IS PUBLISHED IN THE MANUFACTURER INSTALLATION MANUAL, THE MANUFACTURER PUBLICATION SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING ALL WORK AND MATERIALS AS REQUIRED TO A COMPLETE SYSTEM IN ACCORDANCE WITH MANUFACTURER INSTALLATION INSTRUCTIONS.
- 26. SUPPLEMENTAL GROUNDING SHALL BE REQUIRED BETWEEN PULL BOXES AND EQUIPMENT LOCATIONS PER EQUIPMENT MANUFACTURER INSTALLATION REQUIREMENTS. THE CONTRACTOR SHALL BE REQUIRED TO REVIEW THE VENDOR/MANUFACTURER INSTALLATION MANUAL PRIOR TO PLACING BID AND IS RESPONSIBLE FOR PROVIDING ALL SUPPLEMENTAL GROUNDING CONNECTIONS, WIRING, RACEWAYS, AND SUPPORT MATERIALS FOR A COMPLETE INSTALLATION IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION MANUAL.
- 27. THE SCOPE OF WORK REQUIRES ELECTRICAL DEMOLITION IN AN AREA OF THE FACILITY WHICH WILL NOT BE IN-USE DURING THE RENOVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CIRCUITING AND CONNECTIONS TO AREAS OF THE FACILITY THAT WILL BE IN-USE AND SHALL NOT TURN POWER OFF TO ANY CIRCUIT BREAKER OR PORTION OF THE ELECTRICAL DISTRIBUTION SYSTEM WITHOUT PERMISSION FROM THE OWNER.
- 28. THE DEMOLITION NOTES INCLUDED IN THESE DRAWINGS ARE INTENDED TO REPRESENT A GENERAL DIRECTIVE FOR DISCONNECTION AND REMOVAL OF EXISTING EQUIPMENT AND PREPARATION OF EXISTING ROOMS OR AREAS SCHEDULED FOR RENOVATION. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS AND PROVIDING ALL LABOR AND MATERIALS AS REQUIRED FOR RENOVATIONS TO ELECTRICAL SYSTEMS AS DESCRIBED IN THESE DRAWINGS AND SPECIFICATIONS.

RECESSED LAY - IN FIXTURE DETAIL

ELECTRICAL SYMBOL SCHEDULE - GENERAL		
GENERAL		
LP1-2,4	BRANCH CIRCUIT RACEWAY. RUN CONCEALED IN CEILING OR WALLS. ARROWHEAD DENOTES HOMERUN TO PANEL. 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.	
LP1-2,4	BRANCH CIRCUIT RACEWAY. RUN IN OR UNDER SLAB OR FLOOR. ARROWHEAD DENOTES HOMERUN TO PANEL. 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.	
TCB	PLYWOOD TELECOM BACKBOARD, EXISTING.	
PP1	ELECTRICAL DISTRIBUTION OR BRANCH CIRCUIT PANELBOARD. TEXT DENOTES NAME, REFER TO DRAWINGS FOR LOCATION. SEE POWER RISER DIAGRAM AND PANEL SCHEDULES. SURFACE OR FLUSH MOUNTED AS INDICATED ON PANEL SCHEDULE.	
\$м	1-PHASE, 2-POLE, 20A, 1HP @ 120-240V MOTOR RATED TOGGLE SWITCH. HEAVY DUTY TY	
•	DENOTES ELECTRICAL DEVICE IS SURFACE MOUNTED.	

	ELECTRICAL SYMBOL SCHEDULE - POWER		
POWER			
P	120V, 20A DUPLEX RECEPTACLE, NEMA 5-20R. WALL MOUNTED, REFER TO TYPICAL MOUNTING HEIGHTS DETAIL. REFER TO ADDITIONAL NOTATIONS BELOW WHERE INDICATED ON DRAWINGS.		
8	120V, 20A QUADRAPLEX RECEPTACLE CONSISTING OF TWO DUPLEX RECEPTACLES IN COMMON BACKBOX, NEMA 5-20R. WALL MOUNTED, REFER TO TYPICAL MOUNTING HEIGHTS DETAIL. REFER TO ADDITIONAL NOTATIONS BELOW WHERE INDICATED ON DRAWINGS.		
라	HEAVY DUTY DISCONNECT SWITCH, SEE SCHEDULE.		

WIRING DEVICE TYPICAL NOTATIONS			
GF	GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.		
GF WP	GROUND FAULT CIRCUIT INTERRUPTER TYPE WITH CAST WEATHERPROOF IN—USE TYPE COVER. ALL RECEPTACLES LOCATED OUTDOORS OR EXPOSED TO THE ELEMENTS SHALL BE WEATHER RESISTANT LISTED WITH "WR" LISTING ON FACE OF DEVICE BY FACTORY.		

	ELECTRICAL SYMBOL SCHEDULE - COMMUNICATIONS				
COMMUNICATIONS	COMMUNICATIONS				
∇	COMBINATION DATA/TELEPHONE OUTLET LOCATION. REFER TO TYPICAL MOUNTING HEIGHTS DETAIL. PROVIDE 1"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING WHERE APPLICABLE OR TO TELECOM BACKBOARD IN OPEN STRUCTURE SPACES.				
\ \	SAME AS ABOVE EXCEPT COUNTERTOP HEIGHT.				

ELECTRICAL SYMBOL SCHEDULE - FIRE ALARM		
FIRE ALARM		
	HORN/STROBE CEILING MOUNTED FIRE ALARM DEVICE.	
(SD)	CEILING MOUNTED SMOKE DETECTOR, PHOTOELECTRIC TYPE.	
F	FIRE ALARM PULL STATION, WALL MOUNTED. PROVIDE WITH TAMPER RESISTANT ALARM COVER.	

FIXTURES SHALL BE

TO THE CEILING

### ELECTRICAL SYMBOL SCHEDULE - LIGHTING SYSTEMS AND ACCESSORIES

CEILING MOUNTED LIGHT FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. SEE RECESSED LAY-IN FIXTURE DETAIL FOR LAY-IN FIXTURES MOUNTED IN CEILING GRID. LETTER DENOTES FIXTURE TYPE.

LINEAR STRIP FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. LETTER DENOTES FIXTURE TYPE. WALL MOUNTED INCANDESCENT, COMPACT FLUORESCENT, LED OR HID FIXTURE. REFER TO

LIGHT FIXTURE SCHEDULE FOR TYPE. MOUNTING HEIGHTS AS INDICATED ON DRAWINGS OR IN LIGHT FIXTURE SCHEDULE OR AS DIRECTED BY OWNER, LETTER DENOTES FIXTURE TYPE. PROVIDE COLD WEATHER BALLASTS/DRIVES FOR ALL FIXTURES LOCATED OUTDOORS. CEILING MOUNTED INCANDESCENT, COMPACT FLUORESCENT, LED OR HID FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. PROVIDE MOUNTING HARDWARE

REFLECTED CEILING PLAN. LETTER DENOTES FIXTURE TYPE. LED EXIT SIGN, WALL OR CEILING MOUNTED, STEM DENOTES WALL MOUNTED. SINGLE FACE FOR WALL MOUNTED, FACES AS INDICATED BY DARKENED AREAS FOR CEILING MOUNTED. ARROWS DENOTE CHEVRONS INDICATING DIRECTION OF EXIT AS INDICATED ON DRAWINGS. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE.

APPROPRIATE FOR TYPE OF CEILING WHERE FIXTURE IS INSTALLED. SEE ARCHITECTURAL

LED EXIT SIGN WITH HIGH OUTPUT BATTERY CAPABLE OF POWERING DUAL REMOTE EGRESS HEADS AT BUILDING EXTERIOR. EXIT SIGN DOES NOT INCLUDE INTEGRAL EGRESS LAMP HEADS FOR INTERIOR. WALL OR CEILING MOUNTED, STEM DENOTES WALL MOUNTED. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE.

120-277V, 20A SINGLE POLE LIGHT SWITCH. HEAVY DUTY TYPE. PROVIDE NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS.

120-277V, 20A 3-WAY LIGHT SWITCH. HEAVY DUTY TYPE. PROVIDE NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS.

TO ALL SWITCH LOCATIONS. 120-277V OCCUPANCY SENSOR WALL SWITCH. PASSIVE INFRARED UNLESS OTHERWISE NOTED ON DRAWINGS. WATTSTOPPER PW-100 OR EQUIVALENT. "D" DENOTES DUAL TECHNOLOGY TYPE (WATTSTOPPER DW-100), "U" DENOTES ULTRASONIC TYPE

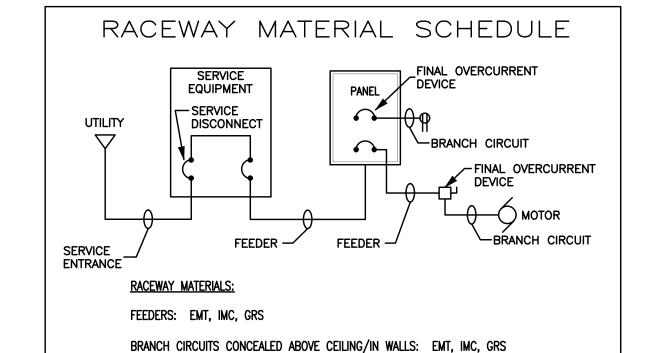
120-277V, 20A 4-WAY LIGHT SWITCH. HEAVY DUTY TYPE. PROVIDE NEUTRAL CONDUCTOR

(WATTSTOPPER UW-100). 120V WALL MOUNTED DIMMER SWITCH, RATED TO SUIT LED LOAD SERVED. COORDINATE WITH LED FIXTURE MANUFACTURER COMPATIBILITY LISTINGS AND PROVIDE DIMMER COMPATIBLE WITH LED DIMMING DRIVER PROVIDED WITH FIXTURE. DIMMER SHALL FEATURE

SLIDE HANDLE WITH SEPARATE ON/OFF ROCKER SWITCH OR PUSHBUTTON. LEVITON

RENOIR SERIES OR EQUIVALENT. CEILING MOUNTED LOW VOLTAGE 360° COVERAGE OCCUPANCY SENSOR, DUAL TECHNOLOGY UNLESS OTHERWISE NOTED ON DRAWINGS. WATTSTOPPER DT-300/305 OR EQUIVALENT. "P" DENOTES PASSIVE INFRARED TYPE (WATTSTOPPER CI-300/305), "U" DENOTES ULTRASONIC TYPE (WATTSTOPPER WT SERIES). PROVIDE QUANTITY OF POWER PACKS AS REQUIRED TO SUIT LOAD. PROVIDE SIGNAL CABLING AS REQUIRED TO LINK MULTIPLE SENSORS/POWER PACKS SERVING COMMON AREA OR LIGHTING ZONE.

DENOTES FIXTURE TO SERVE AS A NIGHT LIGHT. CONNECT LINE SIDE OF ANY SWITCHING, OCCUPANCY SENSOR, RELAYS, OR OTHER FORM OF MANUAL OR AUTOMATIC CONTROL. FOR HIGH BAY FIXTURES WITH MULTIPLE DRIVERS OR FLUORESCENT FIXTURES WITH DUAL BALLASTS, CONNECT TO POWER ONLY ONE INPUT CIRCUIT WHERE FIXTURES ARE CONFIGURED FOR DUAL-LEVEL CONTROL.



BRANCH CIRCUITS EXPOSED (INTERIOR): EMT

**∷** G M K ENGINEERING

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



**STUD** 2428 | COLU P 803.

AUTOMATIC WALL SENSOR SWITCH Soc TYPICAL SINGLE RELAY WIRING SCHEMATIC

**\_{**TO LOAD/FIXTURES

NOTE 1: SCHEMATIC IS REPRESENTATIVE OF WATTSTOPPER PW/DW-100 AND DSW-100. CONNECTION REQUIREMENTS AND COLOR

WATTSTOPPER

PW-100 OF

EQUIVALENT

CODING MAY DIFFER BETWEEN MANUFACTURERS. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS. NOTE 2: WHERE APPLICABLE, CONNECT EXIT SIGNS, BATTERY PACKS FOR EGRESS LIGHTING, AND NIGHT LIGHTS LINE SIDE OF AUTOMATIC WALL SWITCH SENSORS.

**ABBREVIATIONS** 

ELECTRICAL CONTRACTOR, DIVISION 16 (DIV 16)

GENERAL CONTRACTOR, DIVISION 00 THROUGH 14

MECHANICAL CONTRACTOR, DIVISION 15 (DIV 15)

VOLT 2014 NATIONAL ELECTRICAL CODE, (NFPA 70)

DEVICE SHALL HAVE ISOLATED GROUND — SEE SPECIFICATIONS

Connect All Exit Signs, Emergency Battery Packs, Night

Lights, And Lighting In Other Areas Controlled By Other Means Line Side Of Power Pack And Switching.

GROUND FAULT CIRCUIT INTERRUPTER

GALVANIZED RIGID STEEL CONDUIT

INTERMEDIATE METALLIC CONDUIT

ABOVE FINISHED FLOOR ABOVE FINISHED GRADE

CABLE TELEVISION

EXHAUST FAN

FAN COIL UNIT

JUNCTION BOX

SWITCHBOARD

WATER COOLER

TRANSFORMER

KII OWATT

MINIMUM

KILOVOLT AMPERES

BREAKER

CONDUIT

CATV

KVA

SWBD TYP

ARC FAULT CIRCUIT INTERRUPTER

ELECTRICAL METALLIC TUBING

HIGH INTENSITY DISCHARGE

MAIN DISTRIBUTION PANEL

UNLESS NOTED OTHERWISE

Pack

NONMETALLIC-SHEATHED CABLE

		S-1	30A/2P
		S-2	60A/2P
		S-3	100A/2P
		S-4	200A/2P
		S-5	400A/2P
_	1	S-6	30A/3P
		S-7	60A/3P
		S-8	100A/3P
		S-9	200A/3P
		S-10	400A/3P
		S-11	30A/4WSN
		S-12	60A/4WSN
		S-13	100A/4WSN
		S-14	200A/4WSN
		S-15	400A/4WSN
		SWITCH NOTE	 :S:
			CONNECTS SHALL BE

DISCONNECT SWITCH SCHEDULE

DESCRIPTION

VOLTAGE. ALL DISCONNECTS FUSIBLE UNLESS OTHERWISE NOTED,

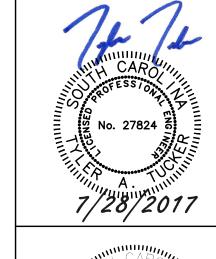
ENCLOSURES NEMA 3R UNLESS OTHERWISE NOTED. ALL OUTDOOR DISCONNECTS SERVING GROUND MOUNTED HVAC UNITS SHALL NOT BE MOUNTED HIGHER THAN 36"

Dashed Lines Indicate Typical

Wiring For Dual Light Level

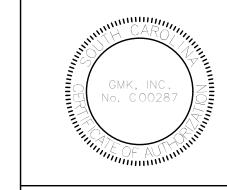
Switching Dual Ballast Fixtures

Where Indicated On Drawings.

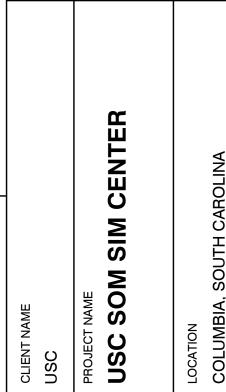


HEAVY DUTY TYPE.
240V OR 600V TO SUIT CIRCUIT PROVIDE FUSES TO SUIT LOAD.

LOCATIONS. NEMA 1 ELSEWHERE ABOVE FINISHED GRADE.



OSE PROJECT NUMBER H27-Z325



**REVISIONS** NO. DATE DESCRIPTION

CEILING MOUNT OCCUPANCY SENSOR TYPICAL WIRING SCHEMATIC FOR LOW VOLTAGE SENSOR

Control Output

POWER PACKS FOR EACH BRANCH CIRCUIT AND PHASE.

NOTE 1: SCHEMATIC IS REPRESENTATIVE OF WATTSTOPPER DT-300/305. CONNECTION REQUIREMENTS AND LOW VOLTAGE TOPOLOGY MAY DIFFER BETWEEN MANÚFACTURERS. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS.

24VDC

Any 24VDC

Ceiling/Wo

NOTE 2: WHERE APPLICABLE, CONNECT EXIT SIGNS, BATTERY PACKS FOR EGRESS LIGHTING, AND NIGHT LIGHTS LINE SIDE OF AUTOMATIC WALL SWITCH SENSORS. PROVIDE QUANTITY OF POWER PACKS AS REQUIRED TO SERVE LOADS AS INDICATED ON DRAWINGS. WHERE MULTIPLE BRANCH CIRCUITS SERVE THE SAME AREA, PROVIDE SEPARATE

D

**BIDDING** PROJECT NUMBER SHEET NUMBER

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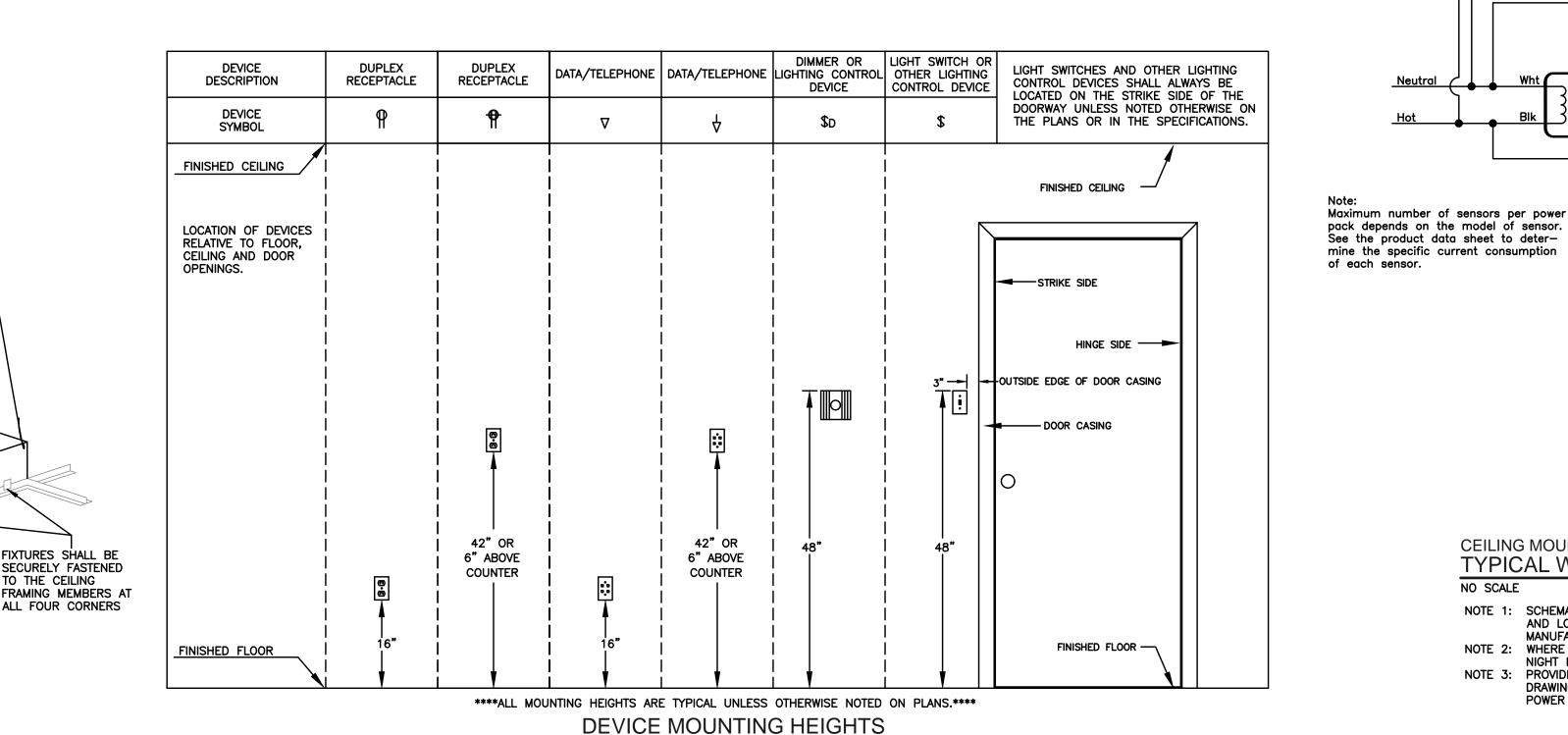
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SHEET NAME

**ELECTRICAL SCHEDULES AND DETAILS** 

DATE 07/28/2017

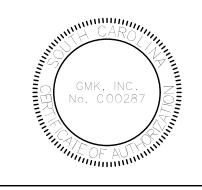


NO SCALE

**∷** G M K ENGINEERING

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





OSE PROJECT NUMBER

H27-Z325

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S

BIDDIN

**REVISIONS** 

NO. DATE DESCRIPTION

PROJECT NUMBER SHEET NUMBER

SHEET NAME FIRST FLOOR ELECTRICAL **DEMOLITION PLAN** 

DATE 07/28/2017

1/8" = 1'-0"

GENERAL NOTES NOT KEYED TO PLAN:

EXISTING ELECTRICAL DEVICES IN ALL SPACES SHALL REMAIN AS—IS AND NOT BE DEMOLISHED UNLESS OTHERWISE

DEMOLITION NOTES KEYED TO PLAN:

REFUSED BY OWNER.

DEMOLISH COMPLETE ALL EXISTING RECEPTACLES/LIGHT FIXTURES/LIGHT SWITCHES/BACKBOXES/J-BOX'S/PULL BOXES/CONDUITS ETC. IN WALLS AND CEILINGS TO SOURCE PANEL IN ALL SPACES/ROOMS. MARK ALL CIRCUITS NO LONGER IN USE AS A RESULT OF DEMOLITION AS "SPARE" IN PANELBOARD(S) AND SWITCH TO OFF POSITION. DEMOLISH LONGER IN USE AS A RESULT OF DEMOLITION AS SPANE IN TRINLEDGRAD, ALL WIRING AND RACEWAY NO LONGER IN USE TO SOURCE PANEL, ALL REMOVED EQUIPMENT SHALL BE TRANSPORTED AND RECEIVED FOR DISPOSAL FOR ALL MATERIAL TO THE OWNER'S STORAGE FACILITY BY THE CONTRACTOR. CONTRACTOR RESPONSIBLE FOR DISPOSAL FOR ALL MATERIALS

- (D2) EXISTING FIRE ALARM DEVICE TO BE RELOCATED IN RENOVATION. COORDINATE WITH RENOVATION PLANS.
- EXISTING RECEPTACLES ON WALL SHALL BE REMOVED. REMOVE RECEPTACLE, FACE PLATE, BACKBOX, SUPPLY CONDUIT AND (D3) CONDUCTORS BACK TO SOURCE PANEL. MARK EXISTING CIRCUIT BREAKER AS "SPARE" IN PANELBOARD AND SWITCH TO
- EXISTING DISCONNECT SWITCH ON WALL SHALL BE REMOVED. CONDUIT, WIRE, AND BACKBOX SHALL BE REMOVED BACK TO EXISTING DISCONNECT SWITCH ON WALL STIALL BE INTROVED. CONDON, MINE, MIN
- EXISTING DISCONNECT SWITCH SERVED FROM TRANSFER SWITCH ON WALL SHALL BE REMOVED. EXISTING TRANSFER SWITCH/FIRE EXISTING DISCONNECT SWITCH SERVED FROM TRANSFER SWITCH ON WALL SHALL DE INCIDENCE D
- EXISTING FIRE ALARM DEVICE IN CEILING SHALL BE REMOVED. COORDINATE. ALL REMOVED EQUIPMENT SHALL BE TRANSPORTED TO THE OWNER'S STORAGE FACILITY BY THE CONTRACTOR. CONTRACTOR RESPONSIBLE FOR DISPOSAL FOR ALL MATERIALS REFUSED BY OWNER.
- DISCONNECT AND REMOVE ALL 2 POLE BREAKERS IN EXISTING PANEL NO LONGER IN USE AS REQUIRED TO PROVIDE SPACE FOR NEW BREAKERS ASSOCIATED WITH RENOVATION WORK. SEE RENOVATION PANEL SCHEDULES ON SHEET E3.0 FOR NEW BREAKER CONFIGURATIONS.

#### GENERAL DEMOLITION NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND REMOVAL OF ANY ELECTRICAL DEVICES OR SYSTEMS AS REQUIRED FOR BUILDING ADDITION WORK. COORDINATE WITH ARCHITECTURAL DRAWINGS AND PROVIDE LABOR AND MATERIALS FOR ALL WORK REQUIRED TO DISCONNECT DEVICES, LIGHT FIXTURES, ETC AT WALLS AND CEILINGS SCHEDULED FOR DEMOLITION.

WHERE DEVICES OR FIXTURES ARE REMOVED OR OTHERWISE MODIFIED TO ACCOMMODATE NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONNECTIONS AND WIRING TO EXISTING BRANCH CIRCUITS AND DEVICES AND EXTENDING CIRCUITS AS REQUIRED TO MAINTAIN CONNECTIVITY TO EXISTING ADJACENT DEVICES AND FIXTURES TO REMAIN. NOTIFY OWNER PRIOR TO DISCONNECTION OR REMOVAL OF ANY ELECTRICAL SYSTEM DEVICE OR EQUIPMENT.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING STYLES AND FINISHES OF EXISTING DEVICES, COVER PLATES, AND FIXTURES. NEW DEVICES AND EXIT SIGNS SHALL BE FURNISHED TO CLOSELY MATCH AESTHETIC CHARACTERISTICS OF EXISTING FIXTURES AND

WHERE DEVICES OR EQUIPMENT ARE ABANDONED OR DEMOLISHED AS PART OF THE SCOPE OF WORK, THE OWNER HAS FIRST RIGHT OF REFUSAL TO ALL EQUIPMENT, WIRING, AND MATERIALS DEMOLISHED. THE CONTRACTOR SHALL PROVIDE FOR PROPER DISPOSAL OF ALL EQUIPMENT AND MATERIALS NOT ACCEPTED BY THE OWNER. CONTRACTOR SHALL PROVIDE FOR REASONABLE TRANSPORTATION TO STORAGE FACILITY AS DIRECTED BY THE OWNER FOR ALL EQUIPMENT AND MATERIALS FOR WHICH THE OWNER CHOOSES TO RETAIN POSSESSION OF AFTER REMOVAL.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING, PAINTING, ETC AS REQUIRED TO CLOSELY MATCH ADJACENT BUILDING FINISHES WHERE DEVICES OR EQUIOPMENT ARE

WHERE DEVICES OR FIXTURES ARE DEMOLISHED OR OTHERWISE ABANDONED AS PART OF THIS WORK, THE CONTRACTOR SHALL REMOVE ALL WIRING, RACEWAY, AND PERIPHERAL MATERIALS AND SUPPORTS TO SOURCE PANEL OR TO NEAREST JUNCTION BOX WHERE CIRCUIT SERVES OTHER DEVICES OR FIXTURES IN ADJACENT AREAS WHICH ARE TO REMAIN. FIELD COORDINATE.

CONTRACTOR SHALL PROVIDE REVISED CIRCUIT DIRECTORIES IN ALL PANELBOARDS ASSOCIATED WITH AREA OF RENOVATION TO INDICATE ALL LOADS BOTH EXISTING AND MODIFIED/NEW UPON COMPLETION OF RENOVATION WORK.

REMOVE ALL CEILING MOUNTED DEVICES FROM CEILINGS BEING DEMOLISHED OR REWORKED AND REINSTALL AT SAME LOCATION OR NEW LOCATION AS DESCRIBED ON RENOVATION DRAWINGS. WHERE ANY NEW CEILINGS ARE LOWERED AND ARE BELOW LEVEL OF EXISTING WALL MOUNTED DEVICES, CONTRACTOR SHALL RELOCATE EXISTING DEVICES BELOW NEW CEILING LEVEL AND EXTEND WIRING/RACEWAY AS REQUIRED.

CAREFULLY REVIEW ARCHITECTURAL, MECHANICAL, AND PLUMBING DEMOLITION PLANS. EXAMINE WORK TO BE DONE AND PROVIDE ALL ELECTRICAL WORK AS REQUIRED FOR DEMOLITION OF WALLS, CEILINGS, EQUIPMENT, OR SIMILAR AS DESCRIBED IN CONTRACT DOCUMENT SET. THIS INCLUDES RELOCATION, REROUTING, ETC OF ELECTRICAL CIRCUITS OR INFRASTRUCTURE WHERE REQUIRED FOR WORK UNDER OTHER TRADES WHETHER SPECIFICALLY INDICATED ON ELECTRICAL DRAWINGS OR NOT. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO PLACING BID AND INCLUDE IN BID ANY LABOR AND MATERIALS ASSOCIATED WITH RELOCATION OR MODIFICATION OF EXISTING ELECTRICAL SYSTEMS WHICH MAY BE AFFECTED BY WORK IN THE AREAS OF RENOVATION OR ADJACENT BUILDING AREAS.

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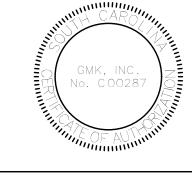
— LOCATE WALL TO WORK WITH EXISTING THROUGH FLOOR PIPE AND SPRINKLER CONTROL BOX **IICU TRAINING WORK ROOM** OR CONTROL OR TRAINING **IICA TRAINING IICU TRAINING IICU TRAINING** RISER ROOM CONFERENCE — CENTER WALL BETWEEN /— CENTER WALL BETWEEN 124 118 120 121 122 123 125A 119 **EXIST WINDOWS** EXIST WINDOWS SHELL SPACE **127** SHELL SPACE - NO WORK THIS AREA CENTER WALL ON -EXISTING STEEL POSTS NO WORK THIS CENTER WALL BETWEEN — GYP TO ALIGN **STORAGE EXIST WINDOWS** 106 1) FIRST FLOOR LIGHTING PLAN 1/8" = 1'-0" LIGHT FIXTURE SCHEDULE TYPE DESCRIPTION WATTAGE CATALOG NUMBER LAMPS NOTES METALUX #24GR-LD4-48-F1-UNV-L840-CD-1-U-EQCLIPU 2'x4' RECESSED LAYIN LED LENSED TROFFER WITH 4800 LUMEN OUTPUT AND GRID CLIPS FOR ACT CEILING INSTALLATION. 2'x4' RECESSED LAYIN LED LENSED TROFFER WITH 4800 LUMEN OUTPUT WITH DRYWALL FRAME KIT FOR RECESSED METALUX #24GR-LD5-48-F1-UNV-L840-CD-1-PAF-U-DF24W LED BY MFR. 43W MOUNTING IN HARD CEILING. A2E 2'x4' RECESSED LAYIN LED LENSED TROFFER WITH 4800 INSTALLATION. STEP DIMMING TO 50% LUMEN OUTPUT FOR U-EQCLIPU-PAF NIGHT LIGHT. PROVIDE EMERGENCY BATTERY PACK FOR LOSS METALUX #2SNLED-LD5-18SL-LC-UNV-L840-CD1-U LED BY MFR. 2' LED WALL MOUNTED FIXTURE WITH CLEAR ACRYLIC LENS. 2000 LUMEN OUTPUT. MOUNT 6" ABOVE TOP OF DOOR 2' LED WALL MOUNTED FIXTURE WITH CLEAR ACRYLIC LENS. METALUX #2SNLED-LD4-18SL-LC-1900 LUMEN OUTPUT. MOUNT 6" ABOVE TOP OF DOOR FRAME. UNV-EL-L840-CD1-U LED BY MFR. 1900 LUMEN OUTPUT. MOUNT 6" ABOVE TOP OF DOOR FRAME. PROVIDE EMERGENCY BATTERY PACK FOR LOSS OF POWER. 4' LED CEILING MOUNTED FIXTURE WITH CLEAR ACRYLIC LENS. 2800 LUMEN OUTPUT. METALUX #4SNLED-LD5-26SL-LC-UNV-L840-CD1-U HOUSING: HALO #H750T LED BY MFR. 10W 6" RECESSED LED DOWNLIGHT HOUSING AND LED MODULE, DAMP LOCATION LISTED. 700 LUMEN MODULE WITH WHITE BAFFLE TRIM. LED MODULE: HALO #LT560WH6940 CONNECT LINE SIDE OF ANY SWITCHING, RELAY, OR OTHER CONTROL. FACES AND DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS. LITHONIA #EDGR \* G EL SD LED EDGELIT EXIT LIGHT. WALL MOUNTED WITH DIRECTIONAL LED BY MFR. CHEVRONS AS INDICATED BY ARROWS WHERE APPLICABLE ON DRAWINGS. PROVIDE WITH 90 MINUTE MINIMUM BATTERY BACKUP. HOUSING FINISH AS DIRECTED BY ARCHITECT. CONNECT LINE SIDE OF ANY SWITCHING, RELAY, OR OTHER CONTROL. FACES AND DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS. MOUNT REMOTE EGRESS HEADS LITHONIA #EDGR \* G EL SD LED EDGELIT EXIT LIGHT. WALL MOUNTED WITH DIRECTIONAL LED BY MFR. CHEVRONS AS INDICATED BY ARROWS WHERE APPLICABLE ON DRAWINGS. HIGH OUTPUT BATTERY FOR POWERING REMOTE HOUSING FINISH AS DIRECTED BY 6" ABOVE TOP OF EXTERIOR DOOR FRAME. EXTERIOR EGRESS DUAL LAMP HEADS. PROVIDE WITH 90 ARCHITECT. MINUTE MINIMUM BATTERY BACKUP. OTHER MANUFACTURERS ACCEPTABLE WITH WHERE EQUIVALENT IN PERFORMANCE AND AESTHETICS. SUBMIT FOR APPROVAL WITH SHOP DRAWINGS. WHERE FIXTURES ARE INDICATED ON DRAWINGS TO BE CONNECTED AS NIGHTLIGHTS, CONNECT FIXTURE INPUT (AND BATTERY WHERE APPLICABLE) LINE SIDE OF ANY SWITCHING OR CONTROLS.

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OSE PROJECT NUMBER

H27-Z325

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**BIDDING** 

**REVISIONS** 

NO. DATE DESCRIPTION

PROJECT NUMBER

SHEET NUMBER

E2.1 SHEET NAME FIRST FLOOR LIGHTING PLAN

DATE 07/28/2017

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