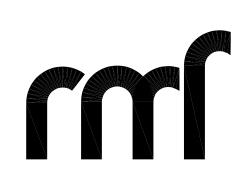
UNIVERSITY OF SOUTH CAROLINA

Gambrell Hall REFIT 4TH FLOOR OFFICE INTO CLASSROOM

USC Project No. CP00393371/FM00452461 Bidding Documents May 9, 2014

MECHANICAL/ELECTRICAL **ENGINEERS**



RMF ENGINEERING INC.

194 SEVEN FARMS RD., SUITE G CHARLESTON, SOUTH CAROLINA 29492 PHONE: 843-971-9639 FAX: 843-971-9641 http://www.rmf.com

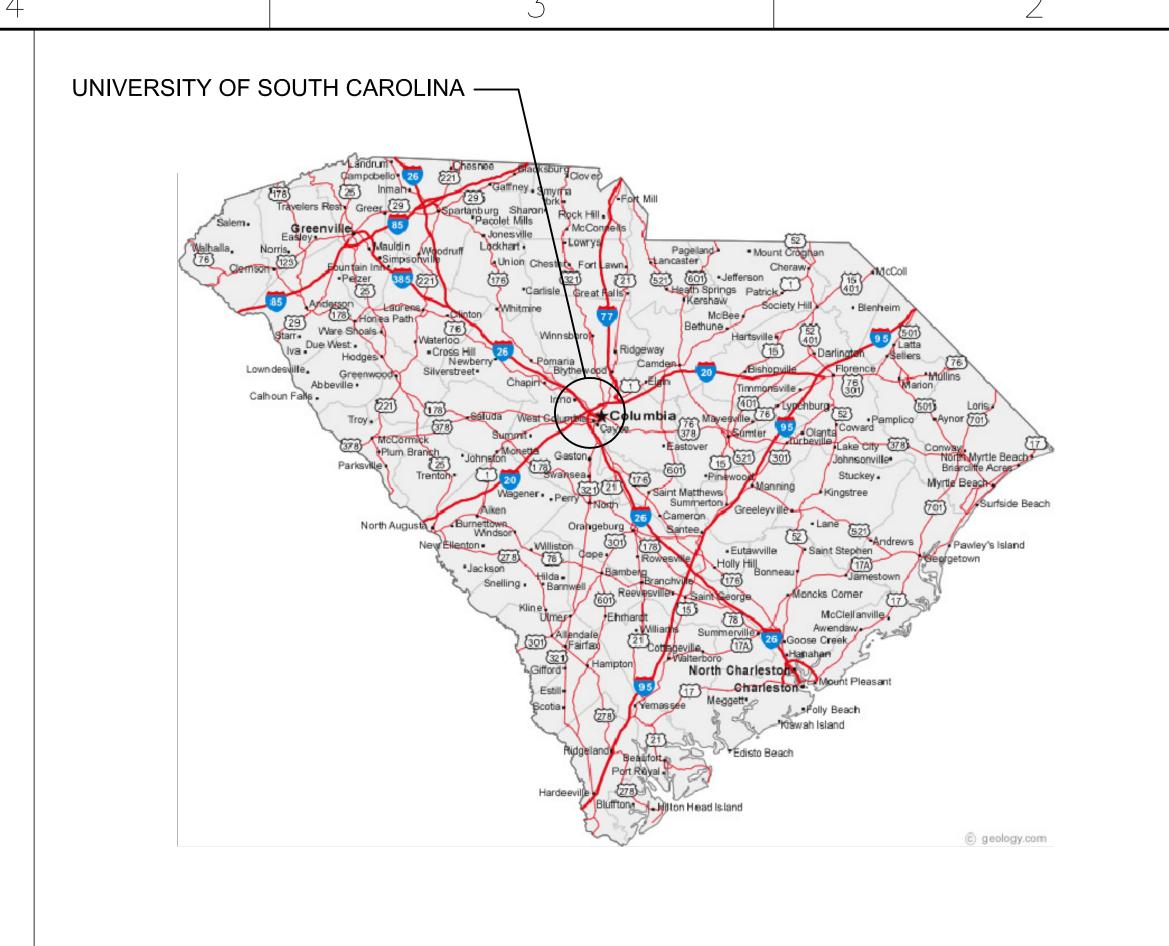
ARCHITECT



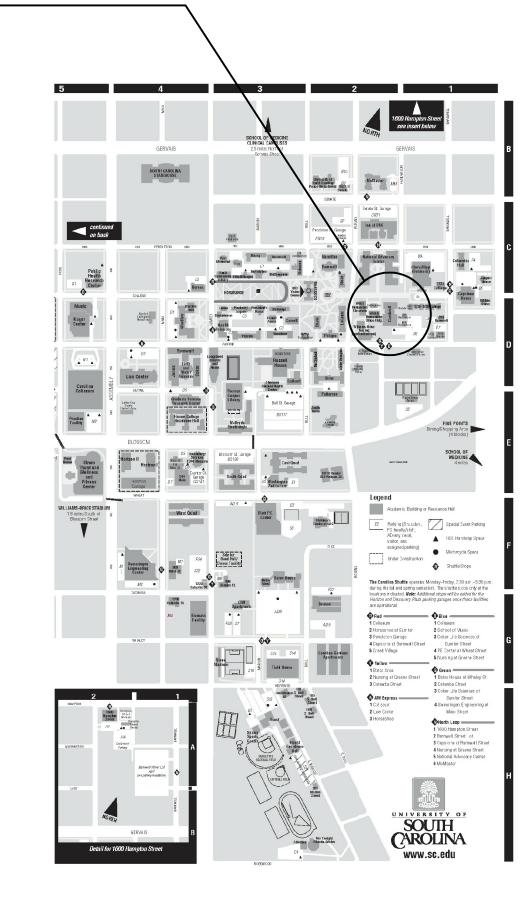
COMPASS 5 PARTNERS, LLC

1329 STATE STREET CAYCE, SOUTH CAROLINA 29033 PHONE: 803-765-0838 http://www.compass5partners.com

DRAWING INDEX CODE INFORMATION PROJECT DESIGNED IN ACCORDANCE WITH: SHEET DESCRIPTION T1.00 - TITLE SHEET 1. INTERNATIONAL BUILDING CODE (IBC), 2012 EDITION ARCHITECTURAL DRAWINGS . INTERNATIONAL EXISTING BUILDING CODE (IBEC), 2012 EDITION . INTERNATIONAL FIRE CODE (IFC), 2012 EDITION AD1.01 - DEMOLITION PLAN A1.01 - RENOVATION PLAN 4. INTERNATIONAL ENERGY CONSERVATION CODE, 2009 EDITION INTERNATIONAL MECHANICAL CODE (IMC), 2012 EDITION MECHANICAL DRAWINGS INTERNATIONAL PLUMBING CODE, 2012 EDITION NATIONAL ELECTRIC CODE (NEC) [NFPA-70], 2008 EDITION M1.01 - FOURTH FLOOR PLAN - HVAC NEW WORK 8. NATIONAL ELECTRIC SAFETY CODE, ANSI-C2-2007 EDITION 9. STATE FIRE MARSHALL RULES, REGULATIONS, AND POLICIES. E1.01 - FOURTH FLOOR PLAN - ELECTRICAL



VICINITY MAP



BIDDING DOCUMENTS

Compass 5 Partners, LLC

LOCATION MAP

ZONING CERTIFICATION

"I hereby certify that, to the best of my knowledge, these plans comply with applicable zoning ordinances, and that plans have been submitted to appropriate authority for their review and/or approval."

Architect/Engineer

Date

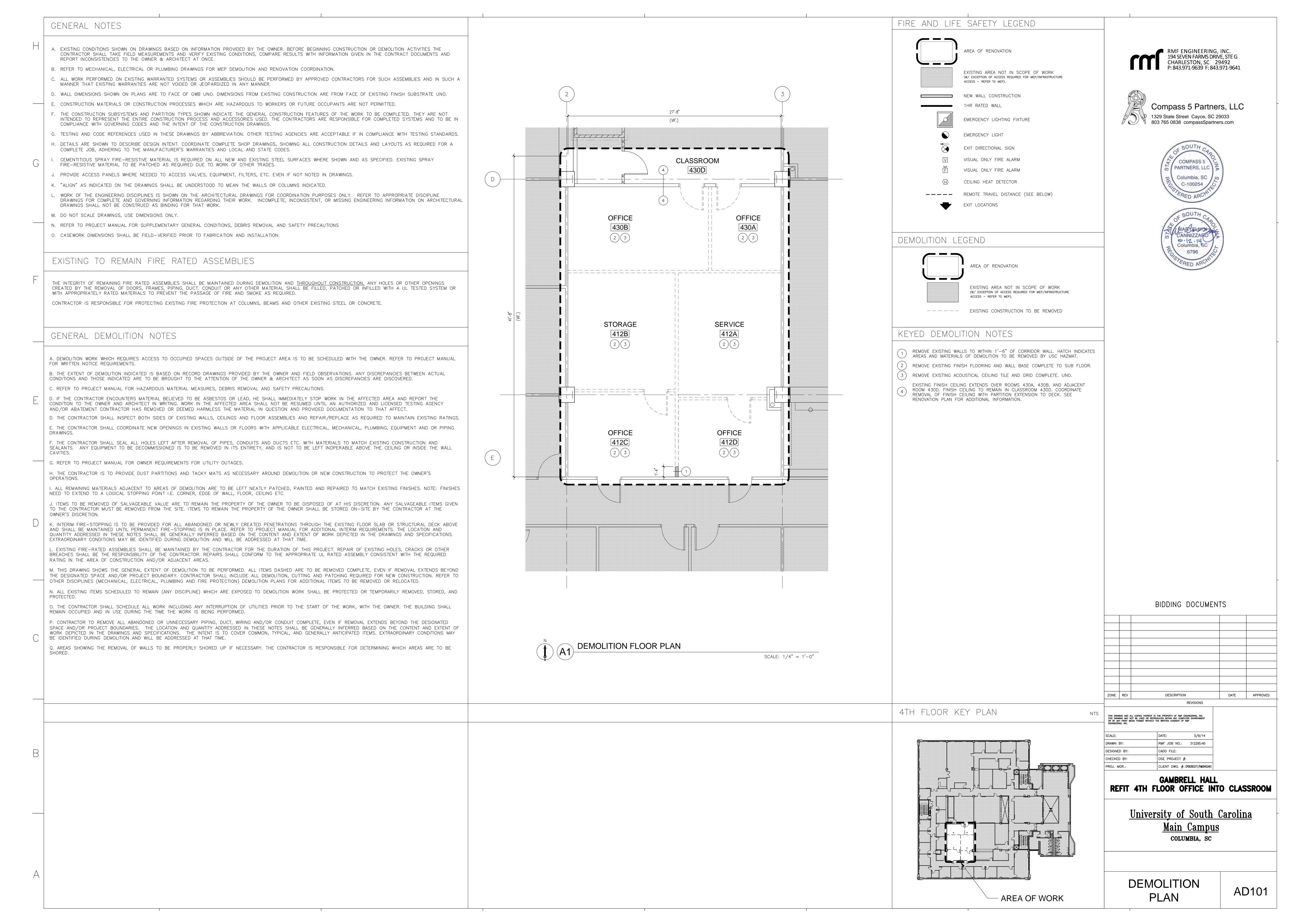
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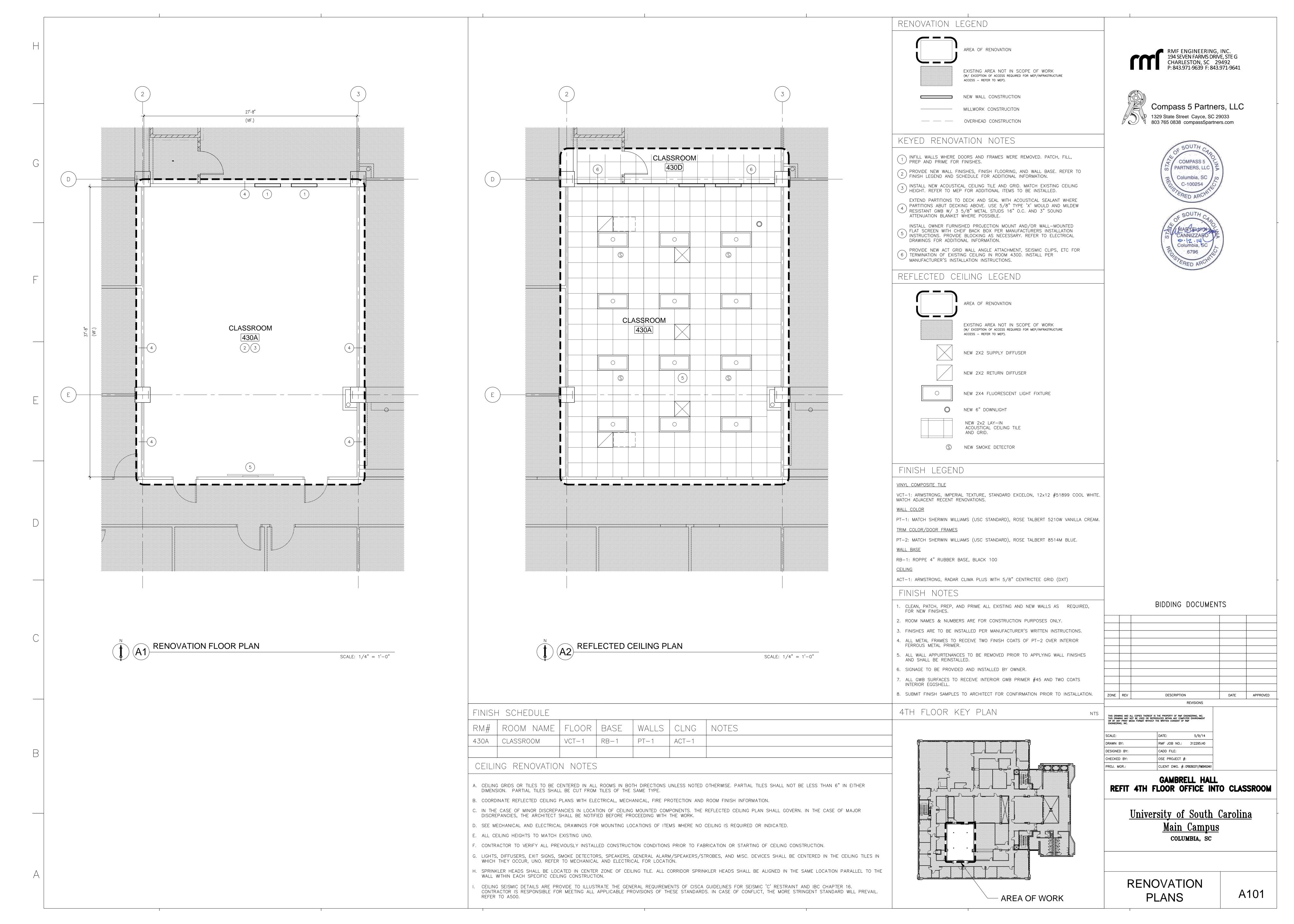
GAMBRELL HALL REFIT 4TH FLOOR OFFICE INTO CLASSROOM

> University of South Carolina Main Campus COLUMBIA, SC

> > TITLE SHEET

T1.00





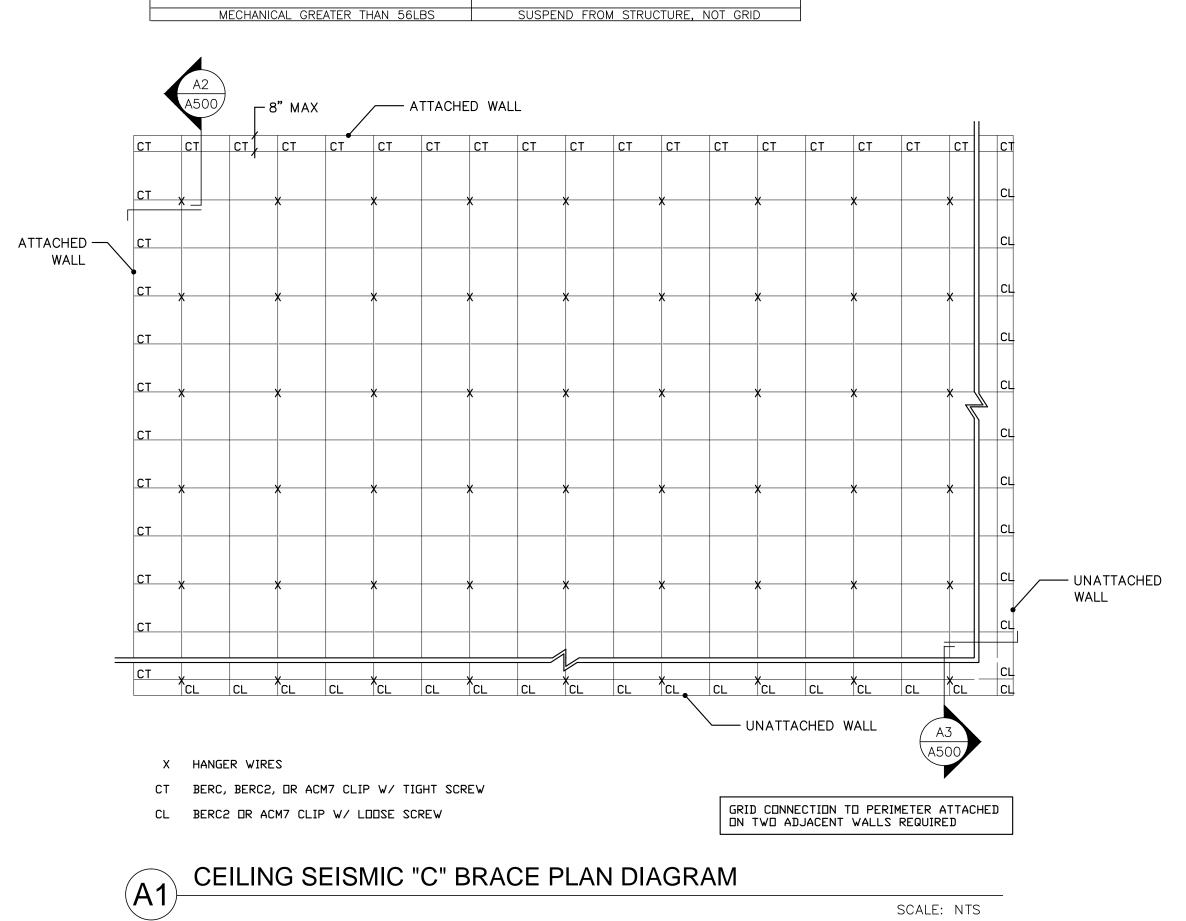
CEILING DETAILS SHOWN ARE DRAWN IN ACCORDANCE WITH PROPRIETARY MANUFACTURER'S SEISMIC RATED ASSEMBLIES BY ARMSTRONG AND USG.

PROPRIETARY MANUFACTURER'S INSTALLATIONS SHALL COMPLY WITH CEILING DETAILS SHOWN ON SHEET A500 AND PER MANUFACTURER'S WRITTEN INSTALLATION REQUIREMENTS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CEILING INSTALLATION.

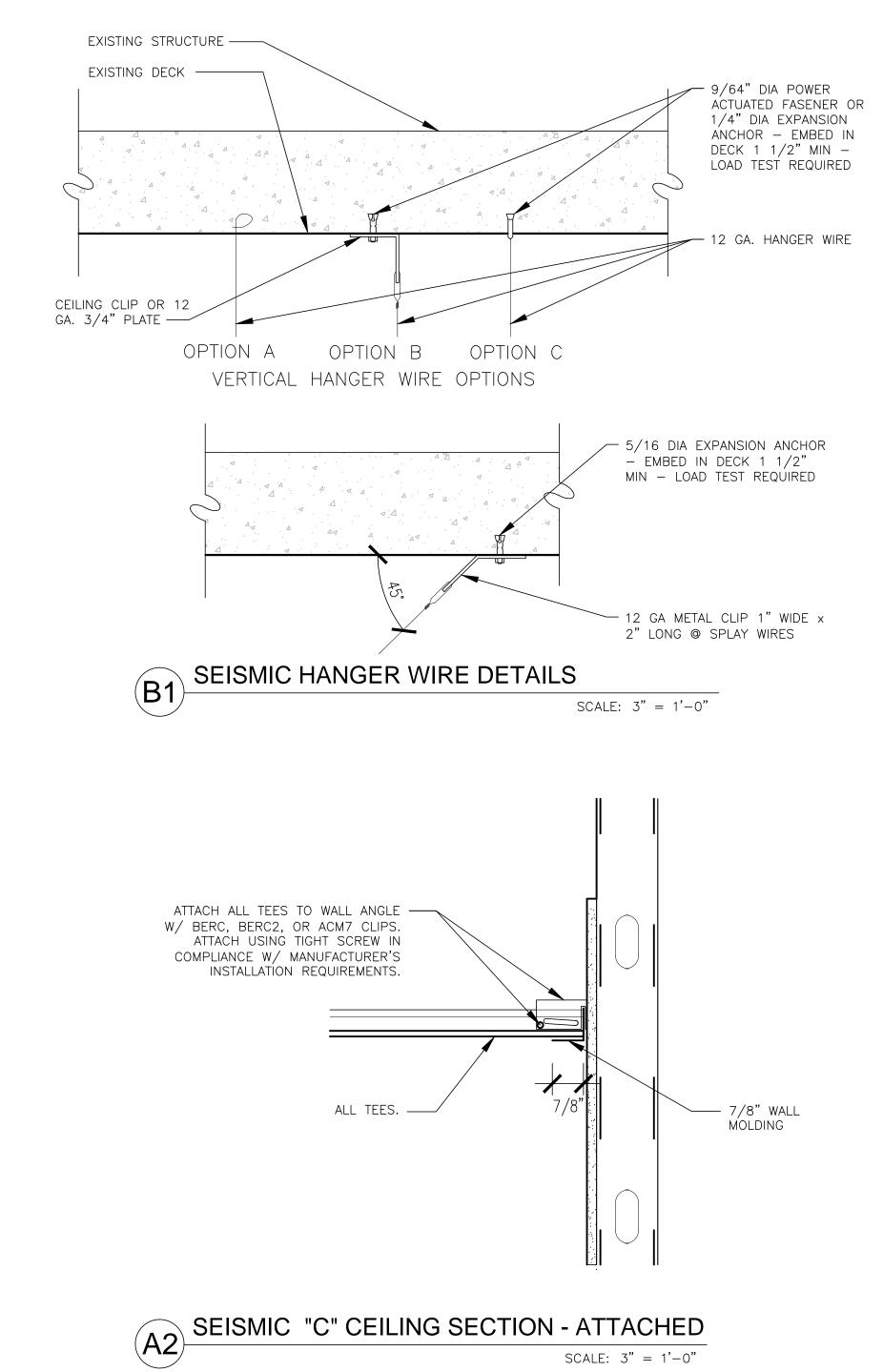
POP RIVETS ARE NOT PERMITTED IN ANY APPLICATION.

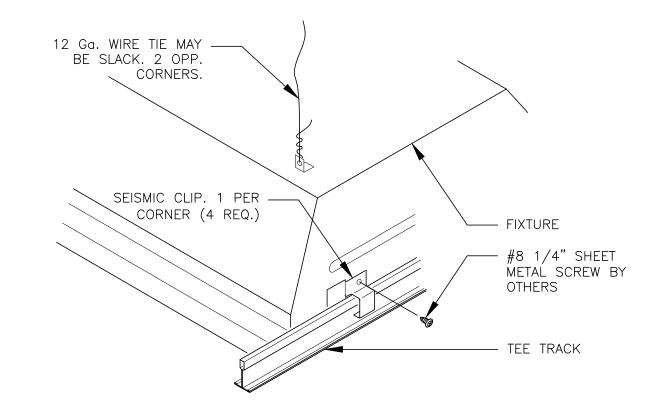
SEISMIC "C" REQUIREMENTS FOR CEILINGS 144 GSF OR GREATER CATEGORY REQUIREMENTS

-· ·· — · · ·	
CONNECTIONS/HANGERS	INTERMEDIATE OR HEAVY DUTY GRID
INTERSECTION STRENGTH	180 LBS
HANGERS	#12 @ 4' O.C./#10 @ 5' O.C.
PLUMB	NOT MORE THAN 1 IN 6 OR 10" FROM VERTICAL
CONNECTION DEVICES	NOT REQUIRED
PERIMETER WIRES — ALL WALLS	MAXIMUM 8" FROM ALL WALLS
SPLAY BRACING	NOT REQUIRED
4 WIRE CLUSTERS	N/A
FIRST POINT	N/A
SPACING	N/A
CONNECTION STRENGTH	N/A
COMPRESSION POSTS	N/A
MOLDING/PARTITIONS	INTERMEDIATE OR HEAVY DUTY GRID
MOLDING	MIN. 7/8"
ATTACHMENT (NO MOVEMENT)	REQUIRED @ 2 ADJACENT WALLS (USING CLIPS)
CLEARANCE (FREE TO MOVE)	3/8" @ 2 ADJACENT WALLS
SPACER BARS	NOT REQUIRED W/ CLIPS
PARTITION ATTACHMENT	ALLOWED ONLY IF CEILING IS ABLE TO MOVE LATERALLY, UNDER 2,500 SF
LIGHTING/FIXTURES	INTERMEDIATE OR HEAVY DUTY GRID
LIGHTS LESS THAN 56LBS	2 CONNECTORS/2 SLACK WIRES
LIGHTS GREATER THAN 56LBS	SUSPEND FROM STRUCTURE, NOT GRID
MECHANICAL LESS THAN 20LBS	ATTACHED TO GRID
MECH GREATER THAN 20LBS, LESS THAN 56LBS.	2 SLACK WIRES



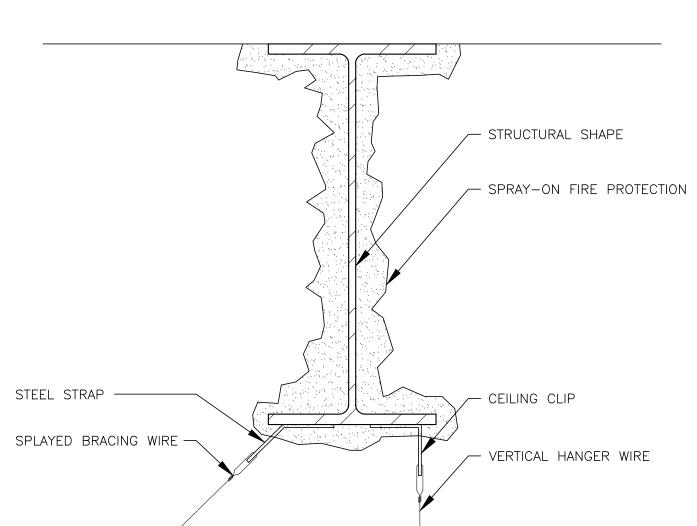
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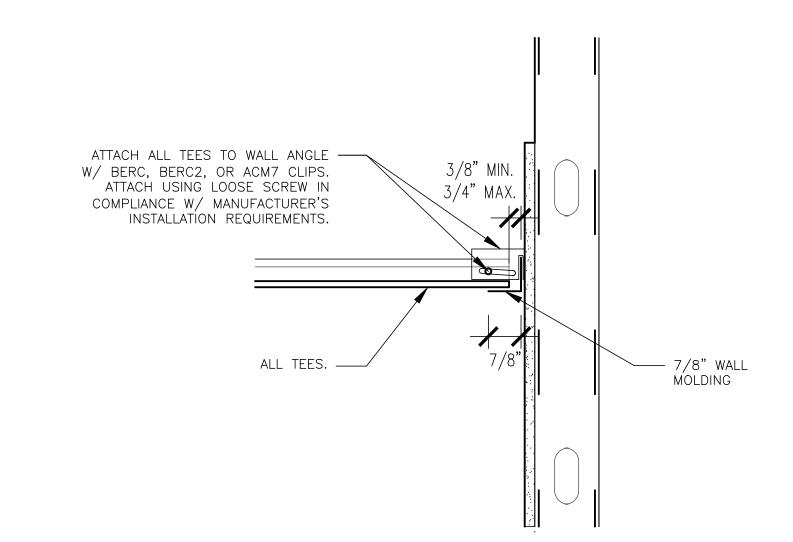


SCALE: NTS

FIXTURE SEISMIC TIE







SEISMIC "C" CEILING SECTION - UNATTACHED SCALE: 3'' = 1'-0''

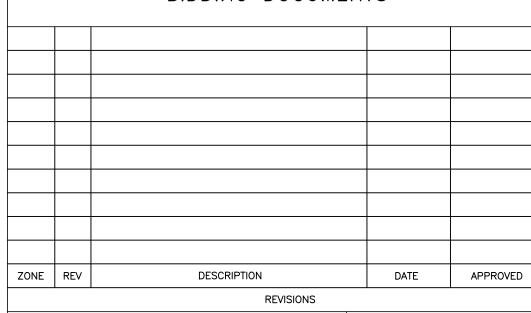








BIDDING DOCUMENTS



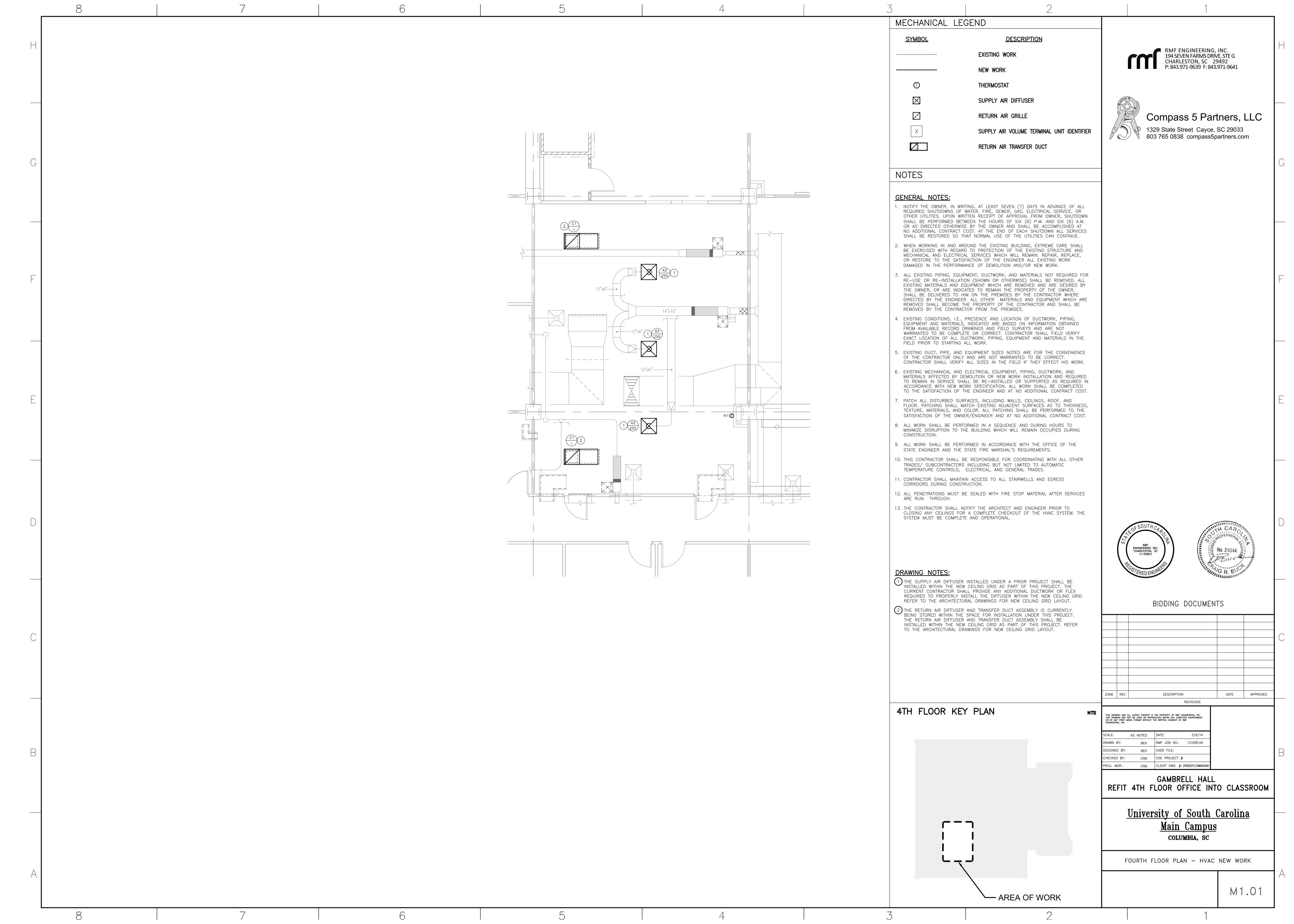
THIS DRAWING AND ALL COPIES THEREOF IS THE PROPERTY OF RMF ENGINEERING, INC. THIS DRAWING MAY NOT BE USED OR REPRODUCED WITHIN ANY COMPUTER ENVIRONMENT OR BY ANY PRINT MEDIA FORMAT WITHOUT THE WRITTEN CONSENT OF RMF ENGINEERING, INC.	
SCALE:	DATE: 5/9/14
DRAWN BY:	RMF JOB NO.: 312295.H0
DESIGNED BY:	CADD FILE:
CHECKED BY:	OSE PROJECT #:
PROJ. MGR.:	CLIENT DWG. #: CP00393371/FM00452461

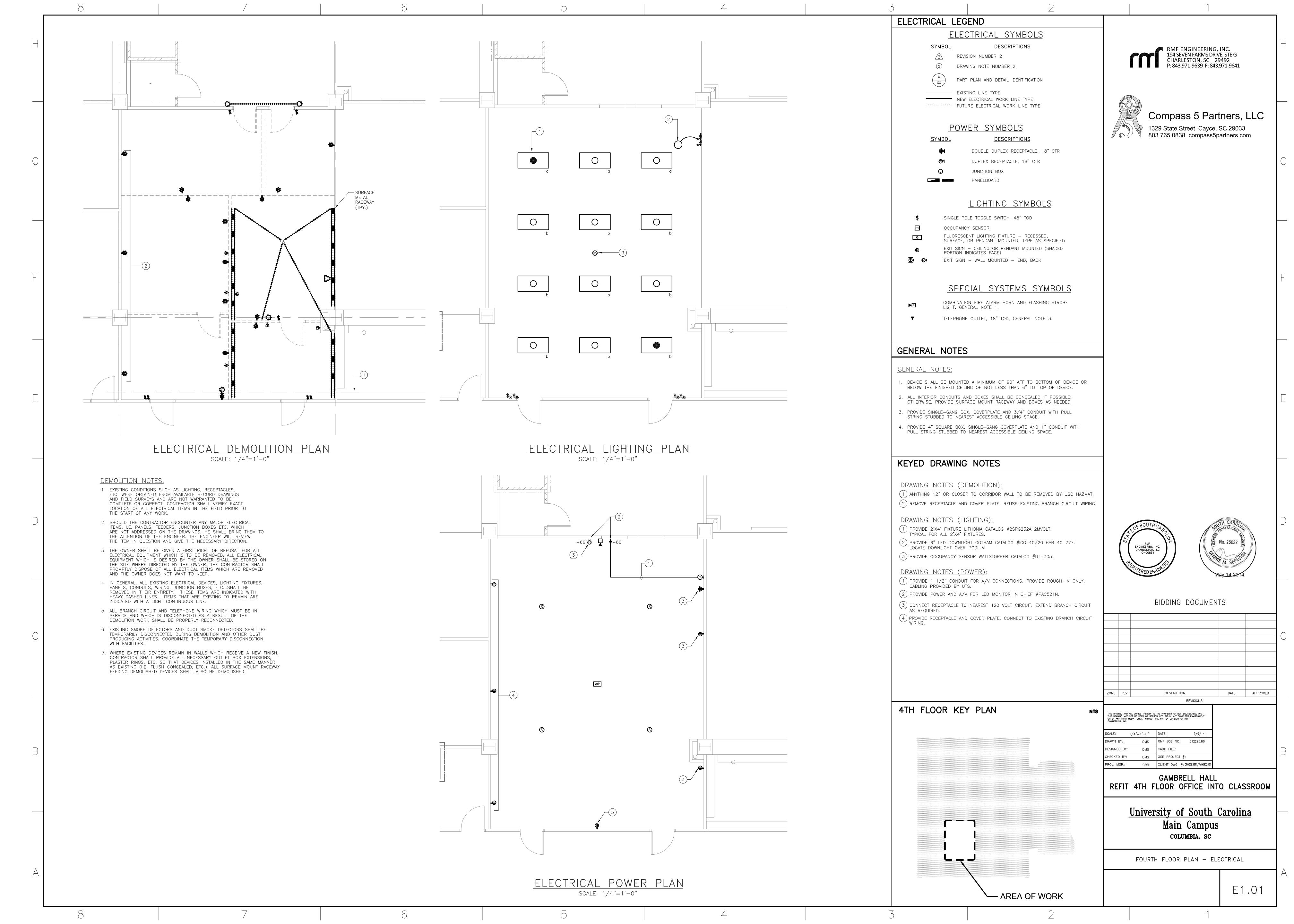
GAMBRELL HALL REFIT 4TH FLOOR OFFICE INTO CLASSROOM

University of South Carolina <u>Main Campus</u> COLUMBIA, SC

CEILING **DETAILS**

A500





260500 COMMON WORK RESULTS FOR ELECTRICAL

- 1. ALL WORK SHALL BE MANUFACTURED, TESTED AND INSTALLED IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES. IN ADDITION, ALL WORK SHALL BE IN ACCORDANCE WITH AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), AMERICAN WITH DISABILITIES ACT (ADA), 2009 INTERNATIONAL BUILDING CODE (IBC), ILLUMINATING ENGINEERING SOCIETY (IES), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATES (NEMA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE) AND UNDERWRITERS LABORATORY, INC. (UL). THE CONTRACTOR SHALL FURNISH A FIRE UNDERWRITERS CERTIFICATE OF INSPECTION COVERING THE WORK INSTALLED UNDER THIS SPECIFICATION. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CERTIFICATES.
- 2. THOROUGHLY EXAMINE THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS PRIOR TO COMMENCEMENT OF ANY WORK. COORDINATE WORK WITH ALL OTHER TRADES.
- 3. ALL ELECTRICAL EQUIPMENT SHALL BE NEW, OF FIRST QUALITY, AND SHALL BE
- 4. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING COMPLETE ITEMS OR SYSTEMS: INCOMING SECONDARY ELECTRIC SERVICE, INCOMING TELEPHONE SERVICE RACEWAY, INCOMING CABLE SERVICE RACEWAY, A SYSTEM OF INTERIOR WIRING, FIRE ALARM SYSTEM, LIGHTING FIXTURES, LAMPS AND CONNECTION TO EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THE SPECIFICATION.

FURNISHED, DELIVERED, ERECTED, CONNECTED, AND FINISHED IN EVERY DETAIL.

- 5. CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED DURING CONSTRUCTION.
- 6. ALL MATERIALS REQUIRED FOR THE WORK SHALL BE NEW, OF FIRST QUALITY, AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL, AND SHALL BE SO SELECTED AND ARRANGED AS TO FIT PROPERLY INTO BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY OF MATERIAL IS GIVEN, A FIRST-CLASS STANDARD ARTICLE AS APPROVED BY THE ENGINEER SHALL BE
- 7. THESE PLANS AND SPECIFICATIONS ARE INTENDED TO PROVIDE A BROAD OUTLINE OF THE WORK AND EQUIPMENT REQUIRED, BUT ARE NOT INTENDED TO INCLUDE ALL THE DETAILS OF CONSTRUCTION.
- 8. ALTHOUGH THE LOCATION OF EQUIPMENT MAY BE SHOWN ON THE ELECTRICAL PLANS IN A CERTAIN PLACE, THE CONSTRUCTION OF THE BUILDING, MAY DISCLOSE THE FACT THAT THE LOCATION FOR THIS ELECTRICAL WORK DOES NOT MAKE ITS POSITION EASILY AND QUICKLY ACCESSIBLE. IN SUCH CASES, THE CONTRACTOR SHALL CALL ATTENTION TO THIS FACT BEFORE INSTALLING HIS WORK FOR ACTION BY THE ARCHITECT AND SHALL BE GUIDED BY HIS WRITTEN INSTRUCTIONS.
- 9. IT SHALL BE NOTED THAT A REASONABLE SHIFTING IN LOCATION OF OUTLETS (BEFORE INSTALLATION) WILL BE EXPECTED AND THIS WORK SHALL BE DONE AT NO INCREASED COSTS TO THE OWNER. CONTRACTOR SHALL VERIFY DOOR SWINGS PRIOR TO ROUGHING—IN LIGHT SWITCHES.
- 10. THE CONTRACTOR SHALL VERIFY THE SERVICE REQUIREMENTS OF ALL PIECES OF EQUIPMENT BEFORE MAKING FINAL PROVISIONS. SHOP DRAWINGS SHALL BE AVAILABLE FOR CHECKING BEFORE INSTALLATION.
- 11. THE CONTRACTOR SHALL MAINTAIN A SET OF WHITE PRINTS THROUGHOUT THE WORK UPON WHICH HE SHALL CAREFULLY RECORD THE ACTUAL LOCATIONS INCLUDING DIMENSIONS TO LOCATE WHEN DIFFERENT FROM CONTRACT DRAWINGS, EACH PIECE OF ELECTRICAL EQUIPMENT, CONTROL DEVICES, SWITCHES, OUTLETS, WIRES, CABLES, CONDUITS, ETC. UPON COMPLETION OF THE WORK, HE SHALL DELIVER THIS SET OF PRINTS TO THE ARCHITECT. THE ARCHITECT RESERVES THE RIGHT TO WITHHOLD FINAL PAYMENTS UNTIL RECORD "AS—BUILT" DRAWINGS ARE RECEIVED.
- 12. PRIOR TO ACCEPTANCE OF THE FINISHED PROJECT THE CONTARCTOR SHALL PROVIDE TO THE ARCHITECT THREE (3) COPIES OF AN ELECTRICAL SYSTEMS MAINTENANCE MANUAL. EACH COPY SHALL BE BOUND IN A DURABLE, HARDBACK BINDER WITH DATA SHEETS INDIVIDUALLY PUNCHED OR PERFORATED AND ENTERED. DATA SHEETS SHALL BE GROUPED, AND SECTION DIVIDERS SHALL BE PROVIDED AT THE CONTRACTOR'S OPTION, THE MANUAL MAY CONTAIN HEAVY MANILA TIE—FLAP ENVELOPES, PUNCHED AND BOUND IN WITH DATA SHEETS INSERTED IN THE ENVELOPE TO IDENTIFY ITS CONTENTS. THE MANUAL SHALL HAVE AN IDENTIFYING LABEL ON THE FRONT COVER AND SHALL INCLUDE THE FOLLOWING.
 - ONE (1) ACCEPTED COPY OF THE MATERIALS LIST.
 ONE (1) ACCEPTED COPY OF EACH SHOP DRAWING.

ONE (1) COMPLETE COPY OF EACH PANELBOARD DIRECTORY.

- EACH DIRECTORY SHALL BE A SEPARATE SHEET.

 ONE (1) COPY OF EACH CIRCUIT BREAKER TIME—CURRENT CURY
- ONE (1) COPY OF EACH CIRCUIT BREAKER TIME—CURRENT CURVE. ONE (1) COPY OF EACH OPERATION DESCRIPTION.
- 13. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR INSPECTION FOR THE PROJECT.
 UPON COMPLETION OF THE WORK, A FINAL INSPECTION CERTIFICATE SHALL BE
 SUBMITTED TO THE ARCHITECT IN TRIPLICATE. THIS CERTIFICATE SHALL BE
 SUBMITTED PRIOR TO REQUEST FOR FINAL PAYMENT. THE CONTRACTOR SHALL PAY
- ALL FEES REQUIRED FOR INSPECTION.

 14. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID DATE TO EXAMINE THE CONDITIONS UNDER WHICH HIS WORK IS TO BE PERFORMED. NO EXTRAS SHALL
- 15. USE NEMA TYPE 1 GENERAL PURPOSE ENCLOSURES FOR ALL INDOOR EQUIPMENT, NEMA 3R FOR OUTDOOR EQUIPMENT UNLESS OTHERWISE NOTED.

BE ALLOWED FOR FAILURE TO NOTE EXISTING CONDITIONS.

- 16. PROVIDE ENGRAVED PLASTIC PHENOLIC LAMINATED NAMEPLATES FOR EACH PANELBOARD, CONTROLLER AND DISCONNECT. ENGRAVED NAMEPLATES SHALL BE PROVIDED WITH 1/4" HIGH VERTICAL BLACK LETTERS ON A WHITE BACKGROUND. NAMEPLATES SHALL BE SECURED BY MEANS OF STAINLESS STEEL METAL SCREWS.
- 17. SUBMIT DRAWINGS AND DATA SHEETS OF THE FOLLOWING APPARATUS GIVING FULL INFORMATION AS TO DIMENSIONS, MATERIALS, FITNESS AND OTHER PERTINENT FACTS SPECIFIC TO THIS PROJECT. WHERE OPTIONAL EQUIPMENT, FUNCTIONS OR ITEMS ARE REQUIRED TO MEET THESE SPECIFICATION THEY SHALL BE SPECIFICALLY NOTED. OBTAIN APPROVAL BEFORE THE FOLLOWING APPARATUS INVOLVED IS ORDERED, BUILT, OR INSTALLED: SWITCHBOARD, PANELBOARDS AND CIRCUIT BREAKERS, FUSES, FIRE ALARM SYSTEM, WIRING DEVICES AND PLATES, MOTOR STARTERS, AND LIGHTING FIXTURES.
- 18. ALL CONDUITS PASSING THROUGH FIRE RATED, FIRE RESISTANT OR FIRE STOPPED WALLS, CEILINGS OR FLOORS SHALL BE SEALED WITH FOAM TYPE FIRE RESISTANT SEALANT.

260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- 1. ALL WIRING SHALL BE SINGLE CONDUCTOR ANNEALED COPPER WITH TYPE THHN, OR THWN INSULATION UNLESS OTHERWISE NOTED OR HEREINAFTER SPECIFIED. WIRING SHALL BE RATED 600 VOLTS, AND SHALL COMPLY WITH FEDERAL SPECIFICATION J-C-30. BRANCH CIRCUIT WIRING, NO. 10 AND SMALLER, CONNECTED TO INTERIOR RECEPTACLES, LIGHTING FIXTURES, AND SWITCHES SHALL BE SOLID CONDUCTOR AND MAY BE TYPE THW OR THHN. ALL WIRING NO. 8 AWG AND LARGER SHALL BE STRANDED. WHERE ALLOWED BY THE LOCAL CODES METAL CLAD (M.C.) OR NON-METALLIC (NM) CABLE MAY BE UTILIZED WHERE SPECIFIED HEREINAFTER UNDER WIRING METHODS.
- MINIMUM SIZE OF BRANCH CIRCUIT WIRING IS NO. 12 AWG. MINIMUM SIZE OF NORMAL BRANCH CIRCUIT WIRE IS NO. 10 AWG WHERE USED FOR 120 VOLT BRANCH CIRCUIT HOMERUNS SEVENTY—FIVE (75) FEET AND LONGER.
- 3. ALL PHASE CONDUCTORS SHALL BE FACTORY COLOR CODED TAPE OR COLOR CODED "SLIPPERS", APPLIED AT EACH SPLICE AND TERMINATION IN ACCORDANCE WITH THE FOLLOWING SCHEDULES:
 - 208/120V. SYSTEMS

 PHASE COLOR

 480/277V. SYSTEMS

 PHASE COLOR
- PHASE COLOR PHASE COL

 A BLACK A BROWN
 B RED B ORANGE
 C BLUE C YELLOW
- N WHITE N GRAY GRD — GREEN GRD — GREEN
- ALL FEEDERS AND FOR ALL BRANCH CIRCUITS.

 5. FOR WIRE IDENTIFICATION, USE BRADY "QUICK-LABELS" ON ALL CONDUCTORS AT THE TERMINATION OF THE RUN AND IN ALL OUTLETS. CODING SCHEME IS THE RESPONSIBILITY OF THE CONTRACTOR, BUT IS GENERALLY TO FOLLOW THE TERMINAL NUMBERING SCHEME OF THE PANELBOARD. ARRANGE THIS CODING SCHEME SO AS TO PROVIDE QUICK AND EASY IDENTIFICATION OF THE CONDUCTORS. IDENTIFY EACH FEEDER CONDUCTOR IN PULL AND JUNCTION BOXES WITH A STAMPED FIBRE TAG.

4. GREEN COLORED INSULATED EQUIPMENT GROUND CONDUCTOR SHALL BE PROVIDED FOR

- 6. INSTALL ALL WIRING IN EMT RACEWAY, EXCEPT WHERE OTHERWISE SPECIFIED. M.C. OR N.M. CABLE MAY BE UTILIZED, WHERE ALLOWED BY THE LOCAL CODE, FOR BRANCH CIRCUIT WIRING ONLY. ALL FEEDERS FROM SWITCHBOARD TO BRANCH CIRCUIT PANELS SHALL BE IN CONDUIT.
- 7. RUN ALL GROUNDING CONDUCTORS IN RACEWAYS.

BY CROUSE HIND SERIES LA.

RGS CONDUIT.

- 8. ALL 120V BRANCH CIRCUITS SHALL HAVE AN INDIVIDUAL NEUTRAL.
- 9. NO MORE THAN 3 PHASE WIRES IN ANY BRANCH CIRCUIT CONDUIT.

260533 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

RACEWAYS:

- 1. ALL RACEWAYS RUN IN CEILING OR WALL SPACE AND EXPOSED ON INTERIOR WALLS SHALL BE EMT. ALL CIRCUIT RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE AND A MINIMUM SIZE OF 3/4" UNLESS OTHERWISE NOTED. ALL RACEWAYS RUN IN SLAB OR EXPOSED ON EXTERIOR WALLS SHALL BE RIGID STEEL OR IMC. IN INTERIOR SPACES ONLY 1/2" CND MAY BE UTILIZED UON AND WHERE ALLOWED BY LOCAL CODE. ALL EMERGENCY POWER WIRING SHALL BE INSTALLED IN CONDUIT.
- PROVIDE TRAPEZE TYPE CONDUIT HANGERS EVERY EIGHT (8) FEET FOR STRAIGHT RUNS AND WITHIN THREE (3) FEET OF EACH TERMINATION.
- 3. ELECTRICAL METALLIC TUBING SHALL BE AS MANUFACTURED BY ALLIED CONDUIT OR APPROVED EQUAL. ALL CONDUIT FITTINGS SHALL BE STEEL COMPRESSION FITTINGS.
- 4. RIGID GALVANIZED STEEL CONDUIT SHALL BE THREADED, GALVANIZED OR SHERARDIZED INSIDE AND OUT, AS MANUFACTURED BY ALLIED, TRIANGLE, WESTERN OR WHEATLAND. CONTRACTOR MAY USE INTERMEDIATE GRADE CONDUIT (IMC).
- 5. CONNECTIONS TO VIBRATING EQUIPMENT AND TO LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE CONDUIT, GALVANIZED TYPE AS MANUFACTURED BY NATIONAL-FLEX STEEL OR APPROVED EQUAL.
- 6. CONNECTIONS TO EQUIPMENT OR MOTORS LOCATED OUTDOORS SHALL BE MADE WITH LIQUID TIGHT SEAL—TITE CONDUIT WITH COMPRESSION TYPE FITTINGS, AS MANUFACTURED
- 7. CONDUIT IN DIRECT CONTACT WITH EARTH OR IN CORROSIVE ATMOSPHERE SHALL BE POLYVINYL CHLORIDE CONDUIT. POLYVINYL CHLORIDE CONDUIT SHALL BE SCHEDULE 40 AS MANUFACTURED BY CARLON OR APPROVED EQUAL.
- 8. PROVIDE DRIVE-ON BUSINGS FOR ENDS OF PVC CONDUIT FOR SECONDARY INCOMING
- 9. MAINTAIN SIX (6) INCH MINIMUM CLEARANCE BETWEEN ALL RACEWAY AND PARALLEL RUNS OF WATER PIPES.
- 10. ALL FEEDERS FROM SWITCHBOARD TO BRANCH CIRCUIT PANELBOARDS SHALL BE IN
- 11. USE OZ/GEDNEY COMPANY TYPE B INSULATING BUSHINGS ON ALL RACEWAY FREE ENDS AND ENTERING PANELS, PULL BOXES, DISCONNECTS, ETC.
- 12. VERTICAL ELBOWS STUBBED OUT OF FLOORS OR EQUIPMENT PADS SHALL BE IMC OR

OUTLET BOXES:

- 1. AT ALL OUTLETS OF WHATEVER KIND, FOR ALL SYSTEMS, PROVIDE A SUITABLE BOX SPECIALLY DESIGNED TO RECEIVE THE TYPE OF FIXTURE OR DEVICE TO BE MOUNTED THEREON. PROVIDE FIXTURE OUTLET BOXES WITH SUITABLE FIXTURE SUPPORTS OF SIZE AND KIND REQUIRED FOR THE FIXTURE TO BE HUNG.
- 2. PROVIDE BOX COVERS TO FIT OUTLET BOX INSTALLED OF THE REQUIRED DEPTH SO THAT THE EDGE OF THE RING IS FLUSHED WITH THE FINISHED PLASTER, MASONRY, ACOUSTICAL MATERIAL, OR OTHER FINISH.
- 3. PROVIDE JUNCTION OR PULL BOXES WHERE EVER INDICATED OR WHERE REQUIRED TO FACILITATE WIRE PULLING OR CONNECTION. FABRICATE BOXES WITH TWELVE (12) GAUGE MINIMUM GALVANIZED STEEL AND EQUIP WITH SCREW COVER. SIZE BOX PER NEC. LABEL ALL CIRCUITS INSIDE BOX AND ON EXTERIOR OF COVER WITH ONE (1) INCH HIGH STENCILED LETTERS.
- 4. PROVIDE SINGLE GANG FS TYPE DEVICE BOX WITH WATERPROOF RECEPTACLE COVER. DEVICE BOX SHALL BE CAST COPPER FREE ALUMINUM WITH DIE CAST ALUMINUM COVERPLATE WITH SCREW SIMPLEX RECEPTACLE COVER. PROVIDE RUSSELLSTOLL TYPE FSWS-62 BOX.
- 5. PROVIDE CONDULET TYPE CAST DEVICE BOXES FOR ISOLATED EQUIPMENT IN THE KITCHEN AND AS OTHER WISE REQUIRED. PROVIDE KINDORF SUPPORTS AS REQUIRED BY CODE. CAST BOXES SHALL BE MADE OF FERALOY OR COPPER FREE ALUMINUM. CAST BOXES SHALL HAVE THREADED HUBS SUITABLE FOR 3/4" IMC OR RGS CONDUIT. CAST DEVICE BOXES SHALL BE CROUSE—HINDS CATALOG NO. FDD2, TWO GANG CATALOG NO. FDS222.
- 6. PROVIDE FLOOR BOXES AS INDICATED ON DRAWINGS. PROVIDE AMERICAN ELECTRIC STEEL CITY BOX NO. 68—D OR APPROVED EQUAL. PROVIDE POLISHED BRASS COVERPLATE NO. P60—CACP FOR A FLUSH SERVICE.
- 7. BOXES INSTALLED FLUSH IN WALLS SHALL BE SUPPORTED RIGIDELY ON TWO (2) SIDES.

260548 VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS

- 1. PROVIDE SEISMIC SUPPORTS AND ANCHORS FOR ELECTRICAL EQUIPMENT, AND SEISMIC BRACING FOR RACEWAY SYSTEMS IN COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE 2009.
- 2. SEISMIC DESIGN CATEGORY AS DEFINED IN IBC: X. SEISMIC OCCUPANCY CATEGORY AS DEFINED IN IBC: X.

262726 WIRING DEVICES

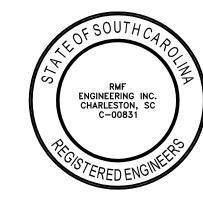
- 1. STANDARDS COMPLIANCE: COMPLY WITH REQUIREMENTS OF APPLICABLE LOCAL CODES, NEC, UL, NEMA, AND IEEE STANDARDS PERTAINING TO WIRING DEVICES. PROVIDE WIRING DEVICES WHICH ARE U.L. LISTED AND LABELED. PROVIDED DEVICE PLATES WHICH ARE U.L. LISTED.
- 2. ALL WALL SWITCHES SHALL BE TOGGLE, QUIET TYPE, FULLY ENCLOSED IN COMPOSITION CASE, 20 AMPERES 120/277 VOLT RATING AS MANUFACTURED BY HUBBELL, PASS AND SEYMOUR, ARROW—HART, LEVITON OR APPROVAL EQUAL.
- 3. ALL RECEPTACLES SHALL BE 20 AMPERES, 120 VOLT, HEAVY DUTY, GROUNDING TYPE, BACK AND SIDE WIRED FULLY ENCLOSED IN COMPOSITION CASE AS MANUFACTURED BY HUBBELL, PASS AND SEYMOUR, ARROW—HART, LEVITON OR APPROVED EQUAL. RECEPTACLES SHALL BE SINGLE OR DUPLEX AS INDICATED ON DRAWINGS.
- 4. SPECIAL RECEPTACLES SHALL BE AS FOLLOWS:
- 20 AMPERES, GROUND FAULT DUPLEX, NEMA 5-20R: HUBBELL GF-5352 OR APPROVED EQUAL.
- 15 AMPERES, 250 VOLT, SINGLE, NEMA 6-15R: HUBBELL 5661 OR APPROVED EQUAL.
- 20 AMPERES, 250 VOLT, SINGLE, NEMA 6-20R: HUBBELL 5461 OR APPROVED EQUAL.
- 30 AMPERES, 250, VOLT, SINGLE, NEMA 6-30R: HUBBELL 9330 OR APPROVED EQUAL.
- 15 AMPERES, CLOCK HANGER, NEMA 5-15R: HUBBELL 5235 OR APPROVED EQUAL.
- 5. SWITCHES AND RECEPTACLES SHALL BE IVORY IN COLOR FOR 120 VOLT. RECEPTACLES 250 VOLT SHALL BE BLACK.
- 6. SWITCH AND RECEPTACLE COVER PLATES SHALL BE SMOOTH THERMOPLASTIC IVORY IN COLOR. COVER PLATES FOR 250 VOLT RECEPTACLES SHALL BE STAINLESS STEEL.
- 7. PLATES FOR WEATHERPROOF GFCI DUPLEX RECEPTACLES SHALL BE HUBBELL CWP26H, PASS AND SEYMOUR WPH25 OR APPROVED EQUAL.
- 8. PROVIDE MULTI-GANG SWITCH COVERPLATES WHERE TWO (2) OR MORE SWITCHES OR RECEPTACLES ARE INDICATED ADJACENT ON THE DRAWINGS. WHERE DIMMER SWITCHES ARE SHOWN ADJACENT TO TOGGLE SWITCHES THEY SHALL HAVE SEPARATE COVERPLATES. WHERE TWO (2) OR MORE DIMMERS ARE INDICATED TOGETHER THEY SHALL HAVE A COMMON COVERPLATE. DIMMER COVERPLATES SHALL BE AS MANUFACTURED BY THE DIMMER MANUFACTURER TO MATCH THE STYLE OF DIMMERS.
- 9. PROVIDE MINIMUM #12 AWG GREEN INSULATED GROUND WIRE FROM DEVICE GROUND LUG TO DEVICE BOX GROUND LUG.
- 10. TIME CLOCKS SHALL BE PARAGON ED71 SERIES SUNTRACKER. TIME CLOCKS SHALL BE AS MANUFACTURED BY PARAGON, TORK, OR APPROVED EQUAL.
- 11. INCANDESCENT DIMMERS SHALL BE PROVIDED WHERE INDICATED ON DRAWINGS. DIMMERS SHALL HAVE THE WATTAGE RATING CAPABLE OF CONTROLLING THE TOTAL WATTAGE OF LAMPS BEING CONTROLLED. DIMMERS SHALL BE FULL RANGE ROTORY DIMMER AS MANUFACUTED BY LEVITON OR APPROVED EQUAL. DIMMER SHALL WHITE IN COLOR.

265100 INTERIOR LIGHTING

- 1. REGARDLESS OF CATALOG NUMBER IN LIGHTING FIXTURE SCHEDULE, EVERY FIXTURE SHALL BE OF THE TYPE FOR THE CEILING CONSTRUCTION IN WHICH IT IS TO BE INSTALLED AND MOUNTING CONDITIONS. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE THIS WITH THE CEILING CONTRACTOR.
- 2. BEFORE ANY OF THE FIXTURES ARE FABRICATED, COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL. WHEN REQUESTED BY THE ARCHITECT COMPLETE SAMPLES OF ANY OR ALL FIXTURES SPECIFIED SHALL BE SUBMITTED.
- 3. UPON COMPLETION OF THE INSTALLATION, ALL LIGHTING FIXTURES SHALL BE CLEANED TO THE SATISFACTION OF THE ARCHITECT. SEE SCHEDULE OF FIXTURES ON THE DRAWINGS.
- 4. THE LIGHTING DESIGN WAS BASED ON THE LIGHTING FIXTURE TYPE AND MANUFACTURERS AS SPECIFIED. ONLY THOSE FIXTURES SPECIFIED ARE APPROVED FOR INSTALLATION. IF THE CONTRACTOR ELECTS TO SUBSTITUTE AN ALTERNATIVE FIXTURE HE SHALL SUBMIT IN DETAIL COMPLETE CATALOG INFORMATION ON THE PROPOSED SUBSTITUTION AS WELL AS THE SPECIFIED FIXTURE AND PROVIDE LIGHTING CALCULATIONS OF AREAS AFFECTED BY THE PROPOSED SUBSTITUTIONS. THE PROPOSED SUBSTITUTION SHALL BE IN ALL DETAILS COMPLETELY EQUAL TO OR BETTER THAN THE SPECIFIED FIXTURE. IF REQUESTED BY THE ENGINEER THE CONTRACTOR SHALL PROVIDE AT NO COST A SAMPLE OF EACH PROPOSED SUBSTITUTION AND EACH SPECIFIED FIXTURE FOR EVALUATION.
- 5. FLUORESCENT LAMPS SHALL BE ENERGY SAVING TYPE WARM WHITE SP30 SPX30 COLOR AS MANUFACTURED BY GENERAL ELECTRIC, SYLVANIA, OR
- 6. FLUORESCENT LAMPS 2', 3', OR 4' SHALL BE T8 DIAMETER.
- 7. FIXTURES SHALL BE AS INDICATED ON THE SCHEDULE OF FIXTURES AND INDICATE THE QUALITY OF EQUIPMENT THAT IS TO BE PROVIDED.
- 8. ALL LENSES FOR FLUORESCENT FIXTURES SHALL BE 100% ACRYLIC WITH A MINIMUM OF 0.125 LENS OVERALL THICKNESS.
- 9. ALL FIXTURES SHALL BE COMPLETELY WIRED AT THE FACTORY.
- 10. EACH RECESSED AND SEMI-RECESSED FIXTURE SHALL BE FINISHED WITH A MOUNTING FRAME OR RING COMPATIBLE WITH THE CEILING IN WHICH THEY ARE TO BE INSTALLED. THE FRAMES AND RINGS SHALL BE ONE (1) PIECE OR CONSTRUCTED WITH ELECTRICALLY—WELDED BUTT JOINTS, AND OF SUFFICIENT SIZE AND STRENGTH TO SUSTAIN THE WEIGHT OF THE FIXTURE.
- 11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE CERTAIN THAT ALL RECESSED FIXTURES HAVE TRIMS AND MOUNTING COMPONENTS COMPATIBLE WITH THE CEILING IN WHICH THEY ARE TO BE INSTALLED. SHOP DRAWINGS SHALL CLEARLY INDICATE THE COMPATIBILITY OF THE FIXTURE TO THE CEILING. LIGHTING FIXTURES SHALL MAINTAIN THE FIRE RATING OF THE CEILING.
- 12. LIGHT LEAKS BETWEEN CEILING TRIMS OF RECESSED LIGHTING EQUIPMENT AND THE CEILING WILL NOT BE TOLERATED. YOKES, BRACKETS AND SUPPLEMENTARY SUPPORTING MEMBERS NEEDED TO MOUNTING LIGHTING FIXTURES TO TWO (2) INCH CARRIER CHANNELS OR OTHER SUITABLE CEILING MEMBERS SHALL BE FURNISHED AND INSTALLED BY THE
- 13. YOKES, BRACKETS AND SUPPLEMENTARY SUPPORTING MEMBERS NEEDED TO MOUNTING LIGHTING FIXTURES TO TWO (2) INCH CARRIER CHANNELS OR OTHER SUITABLE CEILING MEMBERS SHALL BE FURNISHED AN INSTALLED BY THE CONTRACTOR.
- 14. RECESSED LIGHTING FIXTURES OF A DIMENSION TWENTY—FOUR (24) INCHES OR LONGER SHALL BE SUPPORTED ON TWO (2) DIAGONAL CORNERS INDEPENDENT OF CEILING CONSTRUCTION. RODS SHALL BE ALL—THREAD, MINIMUM OF 3/8" DIA. GALVANIZED CARBON STEEL WIRE SHALL BE A MINIMUM OF #12 GAUGE. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CHANNELS, SUPPORT WIRES OR RODS, ETC. TO PROVIDE A STRUCTURALLY SOUND SYSTEM.
- 15. REFLECTORS, REFLECTOR CONES AND VISIBLE TRIM OF ALL LIGHTING FIXTURES SHALL NOT BE INSTALLED UNTIL COMPLETION OF PLASTERING, CEILING TILE WORK, PAINTING AND GENERAL CLEANUP. THEY SHALL BE CAREFULLY HANDLED TO AVOID SCRATCHING OR FINGERPRINTING AND SHALL BE, AT THE TIME OF ACCEPTANCE BY THE OWNER, COMPLETELY CLEAN. ALL ALZAK PARABOLIC CONES SHALL BE GUARANTEED AGAINST DISCOLORATION FOR A MINIMUM OF TWO (2) YEARS, AND, IN THE EVENT OF PREMATURE DISCOLORATION, SHALL BE REPLACED BY THE MANUFACTURER, INCLUDING BOTH MATERIALS AND THE COST OF LABOR.
- 16. ALL BALLASTS SHALL BE COVERED BY A FIVE (5) YEAR WARRANTY AGAINST DEFECTS. WARRANTY SHALL INCLUDE PAYMENT FOR NORMAL LABOR COSTS AND REPLACEMENT OF IN WARRANTY BALLASTS.
- 17. LUMINAIRE ASSEMBLIES, INCLUDING BALLASTS, SHALL BE REASONABLY DEVOID OF OBJECTIONAL "HUM", IN THE NORMAL AMBIENT NOISE OF THE APPLICATION, AS JUDGED BY THE ENGINEER. FLUORESCENT BALLASTS SHALL HAVE A CLASS A SOUND RATING.
- 18. FLUORESCENT BALLASTS SHALL BE ENERGY SAVING RAPID START ELECTRONIC TYPE AS MANUFACTURED BY ADVANCE MARK V, OR APPROVED EQUAL BY MOTOROLA MXRN-T8-1LL OR MAGNETEK TRIAD HP SERIES. ELECTRONIC BALLASTS SHALL HAVE A TOTAL HARMONIC DISTORTION (THD) RATING LESS THAN 13%. ELECTRONIC BALLASTS SHALL MEET THE FEDERAL COMMUNICATIONS COMMISSION (FCC) STANDARDS SPECIFIED IN PART 18 OF THE FCC RULES CONCERNING INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT.
- 19. FLUORESCENT BALLASTS SHALL MEET THE REQUIREMENTS OF SECTION 410–73 (E) OF THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR AND HIS SUPPLYING LIGHTING FIXTURE MANUFACTURER SHALL BE RESPONSIBLE FOR THE PROPER SELECTION OF BALLASTS FOR OPERATION IN THEIR ENVIRONMENT. BALLASTS SHALL HAVE ETL AND CBM CERTIFICATION LABELS AND SHALL BE HIGH POWER FACTOR TYPE OF 90% OR GREATER.
- 20. A UL LISTING SHALL BE PROVIDED FOR EACH FIXTURE TYPE, AND THE APPROPRIATE LABEL OR LABELS SHALL BE AFFIXED TO EACH FIXTURE IN A POSITION CONCEALING IT FROM NORMAL VIEW.
- 21. UL LABELS SHALL NOT BE INSTALLED ON REFLECTORS.
- 22. INSTALL A BATT DONUT AROUND RECESSED LIGHTING FIXTURES PRIOR TO BLOWN—IN INSULATION INSTALLATION. REMOVE ALL INSULATION FROM TOP OF LIGHTING FIXTURES TO PREVENT OVERHEATING.









BIDDING DOCUMENTS

ONE REV DESCRIPTION DATE APPROVED

REVISIONS

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ELECTRICAL SPECIFICATIONS

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