GSA RENOVATION

OFFICES AT BELLE HALL

1671 BELLE ISLE AVENUE, SUITE 200, MT. PLEASANT, SOUTH CAROLINA

PERMIT DWG'S

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS.

2. THE CONTRACTOR SHALL VISIT AND INSPECT THE PREMISES PRIOR TO SUBMITTING THEIR PROPOSAL TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. NO SUBSEQUENT EXTRAS OR ADDITIONS WILL BE ALLOWED ON ANY CLAIM DUE TO LACK OF KNOWLEDGE OF CONDITIONS OR CIRCUMSTANCES ABOUT WHICH THE CONTRACTOR COULD HAVE INFORMED HIMSELF.

3. THE CONTRACTOR SHALL MAKE KNOWN TO THE ARCHITECT ANY VARIATIONS, EXCLUSIONS, OR SUBSTITUTIONS TO THE DOCUMENTS DURING THE PRICING PHASE OF THE PROJECT. UNLESS OTHERWISE OBSERVED IN WRITING BEFORE SUBMISSION OF THE PROPOSAL, THESE ITEMS SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.

4. THE INTENT OF THESE DRAWINGS IS TO INDICATE THE SCOPE OF WORK REQUIRED IN ORDER TO CONSTRUCT A COMPLETE AND FINISHED SPACE READY FOR TENANT OCCUPANCY. THE CONTRACTOR AND SUBCONTRACTORS ARE EXPECTED TO VISIT THE PROJECT SITE PRIOR TO CONSTRUCTION AND NOTIFY THE ARCHITECT — PRIOR TO CONSTRUCTION — OF ANY DISCREPANCIES WITHIN THE DRAWINGS OR POSSIBLE CONFLICTS THAT MAY AFFECT THE PROGRESS OF THIS PROJECT. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE PROJECT.

5. INFORMATION REQUIRED BY THE CONTRACTOR THAT IS NOT CONTAINED IN THE CONTRACT DOCUMENTS SHALL BE REQUESTED BY THE GENERAL CONTRACTOR FROM THE ARCHITECT.

6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF DRAWINGS TO THE SUBCONTRACTORS.

7. DIMENSIONS ARE FACE OF GYPSUM TO FACE OF GYPSUM U.N.O.

8. SEAL ALL PENETRATIONS OF FIRE-RATED ASSEMBLIES IN ACCORDANCE WITH U.L. PENETRATION DETAIL.

9. PROVIDE FIRE EXTINGUISHERS HAVING A MINIMUM RATING OF 2-A, 10-BC FOR EVERY 3,000 SQUARE FEET OF FLOOR AREA. MOUNT BOTTOM AT 2'-6" A.F.F.

10. ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE CODES AND LOCAL REQUIREMENTS.

11. APPROVED PLANS SHALL BE KEPT ON SITE AND SHALL BE USED BY SUPERINTENDENT ONLY. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA AND CHANGE ORDERS, ON THE JOB PREMISES AT ALL TIMES, UNDER THE CARE OF THE SUPERINTENDENT.

12. TAKE NECESSARY PRECAUTIONS TO ENSURE THE SAFETY OF THE OCCUPANTS AND WORKERS AT ALL TIMES.

13. CONTRACTOR TO SUBMIT (3) SAMPLES OF CARPET AND (3) SEALED DRAWINGS FOR ARCHITECT APPROVAL BEFORE PLACING THE CARPET ORDER.

14. SHOULD THE CONTRACTOR BY HIS OWN FAULT FAIL TO COMPLETE WORK BY THE AGREED UPON COMPLETION DATE, AT THE DISCRETION OF THE OWNER, SHALL PERFORM THE WORK ON PREMIUM TIME TO CONFORM TO THE SCHEDULE. EXPENSES INCURRED BY SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

15. A REPRESENTATIVE OF THE GENERAL CONTRACTOR WHO IS AUTHORIZED TO DISCUSS THE WORK AND RECEIVE INSTRUCTIONS SHALL BE ON THE SITE AT ALL TIMES WHEN THE WORK IS IN PROGRESS.

16. THE GENERAL CONTRACTOR SHALL MAINTAIN A JOB SITE TELEPHONE AT ALL TIMES.

17. THE CONTRACTOR IS TO PROVIDE ALL LABOR AND MATERIALS IN ORDER TO EXECUTE ALL WORK AS SHOWN ON THESE DRAWINGS WITH THE EXCEPTION OF ITEMS OR AREAS MARKED "NOT IN CONTRACT", "N.I.C.", OR "BY OTHERS".

18. THE CONTRACTOR SHALL STOP EXECUTING WORK ON THE JOB SITE AT ALL TIMES TO PERFORM THE WORK IN THE MOST EXPEDITIOUS MANNER CONSISTENT WITH GOOD WORKMANSHIP, SOUND BUSINESS PRACTICE, AND THE BEST INTERESTS OF THE END USER.

19. ALL FEES, TAXES, PERMITS, APPLICATIONS, CERTIFICATES OF INSPECTION, AND THE FILING OF ALL WORK WITH GOVERNMENTAL AGENCIES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

20. CONTRACTOR SHALL NOT PROCEED WITH ANY ADDITIONAL WORK OR CHANGES FOR WHICH HE EXPECTS ADDITIONAL COMPENSATION WITHOUT WRITTEN AUTHORIZATION TO PERFORM SUCH WORK.

21. CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY HIS OPERATIONS OR ANY OTHER CONTRACTORS WITHIN THE AREA OF WORK. METHODS FOR SUCH REMOVAL MUST BE AGREEABLE TO OWNER.

22. PREMISES SHALL BE SWEPT CLEAN DAILY OF CONSTRUCTION DEBRIS. GENERAL CONTRACTOR TO PROVIDE PHYSICAL AND DUST SIZE PROTECTION DURING CONSTRUCTION.

23. FINAL CLEANING PRIOR TO END USER OCCUPANCY SHALL INCLUDE (BUT NOT BE LIMITED TO), CLEANING OF ALL WOOD AND GLASS SURFACES, DUSTING OF ALL HORIZONTAL SURFACES, VACUUMING OF ALL CARPETED AREAS, REMOVAL OF ALL STAINS, SPOTS, SPILLS, ETC. ON ANY SURFACE, MOP CLEANING AND WAXING OF ALL RESILIENT FLOORS, AND CLEANING ALL VINYL WALL COVERINGS FREE FROM DIRT ADHESIVE, OR OTHER FOREIGN MATERIALS.

24. GENERAL CONTRACTOR AND HIS VENDORS SHALL DETERMINE AVAILABILITY OF ALL FINISH MATERIALS, TRADE, AND ITEMS SHOWN IN THESE DOCUMENTS. ANY DELIVERY THAT MAY CAUSE POTENTIAL PROBLEMS IN MEETING AGREED UPON CONSTRUCTION SCHEDULE SHALL BE BROUGHT TO KGWA'S ATTENTION FOR POSSIBLE RE-EVALUATION OF MATERIAL DESIGNATION.

25. THE DESIGN CONCEPT OF THIS PROJECT IS BASED ON THE COLOR, TEXTURE, AND DESIGN OF FINISHED PRODUCTS AS SPECIFIED. IF THE CONTRACTOR FAILS TO ORDER MATERIALS IN SUFFICIENT TIME FOR ORDERLY INSTALLATION WITHIN THE PROJECT, KGWA WILL NOT ENTERTAIN ANY REQUEST FOR VARIANCE, SUBSTITUTION. INSTEAD, THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY FINISHES OR MATERIALS SATISFACTORY TO KGWA, PROVIDE AND INSTALL THE SPECIFIED FINISHES OR MATERIALS UPON THEIR ARRIVAL, AND BEAR ALL COSTS ASSOCIATED WITH THE INSTALLATION.

26. THE CONTRACTOR SHALL BE ANSWERABLE FOR HIS WORK AND SHALL NOT ACCEPT INSTRUCTION FROM LOCAL PERSONNEL WITHOUT VERIFICATION FROM THE TENANT'S AGREED UPON REPRESENTATIVE. THE CONTRACTOR WILL BE LIABLE FOR ANY EXPENSE CAUSED BY THE EXECUTION AND REMOVAL OF SUCH WORK WITHOUT WRITTEN AUTHORIZATION FROM THE TENANT'S REPRESENTATIVE.

27. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL NOTIFY THE OWNER AND KGWA OF ANY AREAS THAT HAVE NOT BEEN SATISFACTORILY COMPLETED TO MEET BASE BUILDING STANDARDS, (I.E. FIREPROOFING, DUCTWORK, SLAB CONDITIONS, EXTERIOR WALLS, UTILITY HOOKUPS, ELECTRICAL PANELS, ETC.)

28. DO NOT SCALE DRAWINGS. DIMENSIONS SHALL GOVERN, DETAILS SHALL GOVERN OVER PLAN AND ELEVATION DRAWINGS. LARGE SCALE DETAILS SHALL GOVERN OVER SMALL DETAILS.

29. THERE SHALL BE NO SUBSTITUTION OF MATERIALS, WHERE A MANUFACTURER IS SPECIFIED. WHERE THE TERM "OR APPROVED EQUAL" IS USED, KGWA ALONE SHALL DETERMINE EQUALITY BASED UPON INFORMATION SUBMITTED BY THE CONTRACTOR.

30. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE GOVERNMENTAL AGENCY HAVING JURISDICTION AND SHALL CONFORM TO ALL SAFETY AND SANITARY LAWS, CITY, COUNTY, STATE, AND/OR FEDERAL ORDINANCES WHICH APPLY.

31. ALL WORK SHALL BE PERFORMED BY SKILLED WORKMEN AND IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADES INVOLVED.

32. ALL WORK SHALL BE ERECTED AND INSTALLED PLUMB, SQUARE, LEVEL, AND TRUE AND IN PROPER ALIGNMENT.

33. ALL MATERIAL SHALL BE NEW, UNUSED, AND OF THE HIGHEST QUALITY IN EVERY RESPECT UNLESS OTHERWISE NOTED. ALL MANUFACTURED EQUIPMENT, MATERIALS, AND FINISHES SHALL BE INSTALLED OR APPLIED ACCORDING TO THE MANUFACTURER'S WRITTEN RECOMMENDATIONS.
OTHER DOCUMENTS REQUIRED BY THIS WORK.

34. ALL INSTALLED PLUMBING, MECHANICAL, AND ELECTRICAL EQUIPMENT SHALL OPERATE QUIETLY AND FREE OF VIBRATION.

35. IT IS INTENDED THAT THE CONTRACTOR PROVIDE A COMPLETE JOB AND ANY OMISSIONS IN THE LISTS OR CONTRACT DOCUMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF SUCH RESPONSIBILITY EXCEPT FOR ITEMS SPECIFICALLY NOTED.

36. ALL "HOLD" OR "CLEAR" DIMENSIONS SHALL BE EXACT WITHIN A 1/8" TOLERANCE ALONG FULL DISTANCE OF DIMENSION.

37. GENERAL CONTRACTOR SHALL SUBMIT, PRIOR TO COMMENCING WORK, A LIST OF ALL SUBCONTRACTORS TO KGWA AND OWNER. THE NAME OF PRINCIPAL CONTACT, THE ADDRESS, AND THE PHONE NUMBER OF EACH SUBCONTRACTOR SHALL BE INCLUDED ON THIS LIST.

38. CONTRACTOR SHALL SUBMIT SAMPLES TO KGWA AND TENANT FOR REVIEW OF ALL MATERIALS TOGETHER WITH FINISHES AND INTENDED USE IN THE WORK PRIOR TO COMMENCEMENT OF WORK.

39. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN TRIPLICATE TO KGWA FOR REVIEW OF ALL TRADES INVOLVED BY THIS CONTRACT. SHOP DRAWINGS ENHANCE THESE DRAWINGS AND SPECIFICATIONS — APPROVAL OF SHOP DRAWINGS SHALL NOT RELEASE CONTRACTOR OF RESPONSIBILITY FOR WORK AS SPECIFIED.

40. WHEN THE JOB IS SUBSTANTIALLY COMPLETE, THE GENERAL CONTRACTOR SHALL PREPARE A PUNCHLIST OF ITEMS TO BE COMPLETED OR CORRECTED AND SUBMIT THIS LIST TO KGWA AND TO THE END USER. FAILURE TO INCLUDE ANY ITEMS ON THIS LIST DOES NOT ALTER THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE WORK IN ACCORDANCE WITH THESE DOCUMENTS.

41. THE GENERAL CONTRACTOR SHALL SUBMIT SCALED REPRODUCIBLE AS-BUILT DRAWINGS TO OWNER AT THE COMPLETION OF THE PROJECT. ALL MECHANICAL, ELECTRICAL, AND ARCHITECTURAL CHANGES MADE DURING THE COURSE OF THE PROJECT SHALL BE INDICATED ON THESE DRAWINGS.

42. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE END USER AND THE BUILDING OWNER WITH ALL MANUFACTURER'S MANUALS AND RECOMMENDED MAINTENANCE PROCEDURES AND SCHEDULES.

43. FINAL PAYMENT TO THE GENERAL CONTRACTOR SHALL BE APPROVED WITHIN (3) DAYS OF RECEIPT OF AS-BUILT DRAWINGS, COMPLETION OF ALL PUNCH LIST ITEMS TO THE SATISFACTION OF THE END USER, AND SUBMISSION OF ALL L.C.

PROJECT CRITERIA

MOUNT PLEASANT, SOUTH CAROLINA BUILDING PLAN REVIEW

INTERIOR FINISH CODE COMPLIANCE CHECKLIST

PROJECT NAME: GSA RENOVATION

PROJECT ADDRESS: 1671 BELLE ISLE DRIVE, SUITE 200, MT. PLEASANT, SOUTH CAROLINA

OCCUPANCY CLASSIFICATION	
Occupancy Group:	BUSINESS
Calculated Occupant Load:	9
INTERIOR FINISH FLOOR AREA	
(1) Floor Area (sq. ft.):	895
(2) Basement Floor Area (sq. ft.):	N/A
(3) Mezzanine Floor Area (sq. ft.):	N/A
Total Floor Area (sq. ft.)=(1)+(2)+(3):	14,825

CONSTRUCTION CLASSIFICATION	
Type of Construction:	II B
Sprinklered (YES or NO):	YES
FLOOR LOCATION	
Suite Floor Level Location:	2
Total Number of Stories in Building:	7
DESIGN LOADS	
Minimum Floor Live Loads (psf):	50

Scope of Interior Finish Permit – [X] Applicable Box

[X] INTERIOR FINISH — Interior Finish Construction (With Tenant)

[ ] WHITEBOX COMPLETE — Complete Interior Finish Construction (No Tenant)

[ ] WHITEBOX INCOMPLETE — Partial Interior Finish Construction (No Tenant)

No. of toilets (1 person) required per bldg.: 1

2013 COMMERCIAL BUILDING CODES

2006 Edition South Carolina Building Code (Fifth Printing)
2006 Edition South Carolina Mechanical Code (Third Printing)
2006 Edition South Carolina Energy Conservation Code (Fourth Printing)
2006 Edition South Carolina Property Maintenance Code (Second Printing)
2006 Edition South Carolina Fuel Gas Code (Fifth Printing)
2006 Edition South Carolina Plumbing Code (Fourth Printing)
2006 Edition South Carolina Performance Code (Second Printing)
2006 Edition South Carolina Existing Building Code (First Printing)
2006 Edition South Carolina Residential Code (FourthPrinting)
2006 Edition South Carolina Fire Code (Fifth Printing)

ABBREVIATIONS:

@ AT; A.F.F. ABOVE FINISHED FLOOR; ALUM. ALUMINUM; BLDG. BUILDING; CONC. CONCRETE; CONT. CONTINUOUS; DIA. DIAMETER; DIM. DIMENSION; DWG. DRAWING; ELEC. ELECTRIC; E.W.C. ELECTRIC WATER COOLER; F.F. FINISH FLOOR; FL. FLOOR; GYP. GYPSUM; HT. HEIGHT; MTL. METAL; N.I.C. NOT IN CONTRACT; N.T.S. NOT TO SCALE; O.C. ON CENTER; SIM. SIMILAR; STL. STEEL; STRUCT. STRUCTURAL; TYP. TYPICAL; U.N.O. UNLESS NOTED OTHERWISE; W/ WITH; [illegible]

ROOM BY ROOM EGRESS OCCUPANT LOAD CALCULATIONS

ROOM NO.	USE	OCC. CLASS	NET SQFT.	SQFT./PERSON	NO. PERSONS
		A	333	15n	23
		B	1794	100g	18
		B	1827	100g	19
		B	334	100g	3
		B	534	100g	7
		B	92	100g	1
		A	169	100g	2
		B	294	100g	3
200	NEW OFFICE	B	895	100g	9
			6434		
			10704		
TOTAL					95

BELLE HALL 2ND FLOOR – 14,825 USF

BELLE HALL TENANT SUITE 200: 10,704 USF
OCCUPANT LOAD OF SUITE: 105 PEOPLE
CALCULATED OCCUPANT LOAD OF SUITE: 80 PEOPLE (FROM CHART ABOVE)
EXIT CAPACITY OF SUITE 200: 340 PERSONS (2 DOORS @ 36" (34" ACTUAL) = 68"/.2" PER PERSON)

SECOND FLOOR TOTAL SF: GROSS 18,050 SF/NET 14,825 USF

SECOND FLOOR OCCUPANT LOAD 14,825/100 = 149 PEOPLE
SECOND FLOOR EXIT CAPACITY: STAIRS: (2) 44" WIDTH 88"/.3 = 293 PERSONS

CONSULTANTS

BUILDING OWNER:
1671 BELLE ISLE, LLC
1200 LAKE HEARN DRIVE, SUITE 275
ATLANTA, GA 30319
CONTACT: HUGH H. SCOTT III
404-252-1200
404-252-0600(FAX)

ARCHITECT:
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BRabinowitz@BarrettWoodyard.com

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CONTACT: CHARLES WOODYARD
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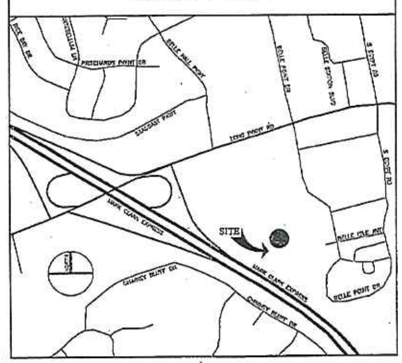
770-810-0808 (FAX)
CWoodyard@BarrettWoodyard.com

VICINITY MAP:



PROJECT DESCRIPTION

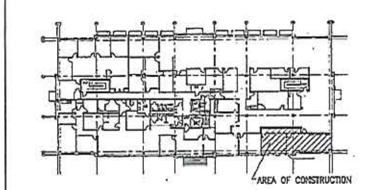
THE PROJECT CONSISTS OF 895 SF RENOVATION OF A SMALL PORTION OF AN EXISTING OFFICE SUITE. THE RENOVATION INCLUDES THE DEMOLITION OF TWO OFFICES ALONG THE WINDOW, INTO ONE LARGER WORK SPACE. THE BUILDING OF NEW 1 HOUR-RATED WALLS WITH RADIANT RFOIL TO ENCLOSE THE NEW SPACE WITH ONE NEW RATED DOOR. NEW SURFACE MOUNTED POWER/VOICE/DATA OUTLETS WILL BE PROVIDED. SOME DEMOLITION OF THE EXISTING CEILING GRID WILL BE REQUIRED, WITH NEW GRID TO ACCOMMODATE THE NEW LAYOUT. EXISTING FLUORESCENT LIGHT FIXTURES FOR REUSE, WITH SOME NEW. EXISTING FIRE ALARMS AND EMERGENCY LIGHTING ARE FOR REUSE IN THE NEW LAYOUT. EXISTING CARPET FOR DEMO. NEW FINISHES THROUGHOUT THE AREA OF CONSTRUCTION; ANTISTATIC CARPET, PAINT, AND RUBBER BASE.

NOTE: COPYING, DISSEMINATION, OR DISTRIBUTION OF THESE DRAWINGS, PLANS OR SPECIFICATIONS TO UNAUTHORIZED USERS IS PROHIBITED.
DO NOT REMOVE THIS NOTICE.
PROPERLY DESTROY DOCUMENTS WHEN NO LONGER NEEDED.

TENANT APPROVAL

SIGNATURE ____ DATE ____

KEY PLAN



SECOND FLOOR — NOT TO SCALE

INDEX OF DRAWINGS

ARCHITECTURAL:
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A0.1 UL DETAILS
A0.2 LIFE SAFETY PLAN
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A0.4 DETAILS
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MECHANICAL:
DM1.2 PARTIAL SECOND FLOOR DEMO PLAN – MECHANICAL
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ELECTRICAL:
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E0.2 ELECTRICAL RISER DIAGRAM & PANEL SCHEDULES
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E0.5 ELECTRICAL SPECIFICATIONS
E1.2 PARTIAL SECOND FLOOR PLAN – ELECTRICAL & LIGHTING

ISSUE HISTORY

NO	DATE	DESCRIPTION
1	01/22/13	ISSUED FOR SDS REVIEW
2	02/20/13	REVISED SDS REVIEW
3	04/11/13	ISSUED FOR SCS REVIEW
4	06/20/13	ISSUED FOR PRICING AND CONSTRUCTION

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REVISIONS

NO	DATE	DESCRIPTION

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE, SUITE 200
MT. PLEASANT, SOUTH CAROLINA 29464

GRACE IN DESIGN SERVICES, LLC.
11877 Douglas Road, Suite 103 #328, Alpharetta, Georgia 30005 404-217-6583

STATE OF SOUTH CAROLINA — REGISTERED ARCHITECT — JAMES P. VERKAIK — Mt. Pleasant, SC — 9/21/12

GRACE IN DESIGN.

ISSUED FOR CONSTRUCTION

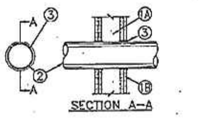
SHEET TITLE: COVER SHEET

PROJECT NO.: 13.019.02

ISSUE DATE: 03.20.13

SHEET NUMBER: A0.0 of 11

System No. W-L-1001



System No. W-L-1001 June 13, 2005

F Ratings - 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings - 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient - less than 1 CFM/sq ft

L Rating At 400 F - less than 1 CFM/sq ft

1. Wall Assembly - The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs - Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* - Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

2. Through-Penetrant - One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (point contact) to max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe - Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe - Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. Conduit - Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.

D. Copper Tubing - Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

F. Through Penetrating Product* - Flexible Metal Piping The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

TITEFLEX CORP A BUNDY CO

3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG INC

3. Fill, Void or Cavity Material* - Caulk or Sealant - Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as noted as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In. (mm)	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0*, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

*When copper pipe is used, T Rating is 0 h.

3M COMPANY - CP 25WB+ or FD-3000 WT.

*Bearing the UL Classification Mark

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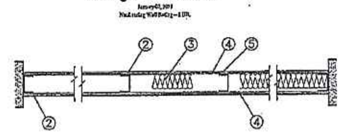
Design No. U465



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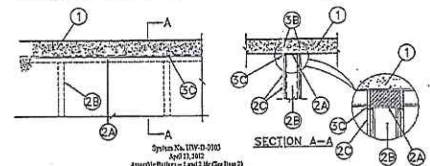
Design No. HW-D-0003



System No. HW-D-0003
April 13, 2012
Assembly Ratings - 1 and 2 Hr (See Item 2)
L Rating at Ambient - Less Than 1 CFM/Lin Ft
L Rating at 400°F - Less Than 1 CFM/Lin Ft
Joint Width - 3/4 In. Max
Class II Movement Capabilities - 25% Compression Only

1. Floor Assembly - Min 4-1/2 in. (114 mm) thick steel-reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete.
2. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 Series or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
A. Steel Floor and Ceiling Runners - Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B) with min 1-1/4 in. (32 mm) to max 2 in. (51 mm) flanges. When deflection channel (Item 3A) is used, flange height of ceiling runner is to be equal to or greater than flange height of deflection channel and the ceiling runner is to nest within the deflection channel with a 1/2 in. to 3/4 in. (13 to 19 mm) gap maintained between the top of the ceiling runner and the top of the deflection channel. When deflection channel is not used, ceiling runner is secured to concrete floor with steel fasteners spaced max 24 in. (610 mm) OC.
A1. Light Gauge Framing* - Slotted Ceiling Runner - As an alternate to the ceiling runner in Item 2A, ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Ceiling runner secured to bottom of concrete floor with steel fasteners spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used.
BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS - SLP-TRK

CALIFORNIA EXPANDED METAL PRODUCTS CO - CST

CLARKDIETRICH BUILDING SYSTEMS - Type SLT, SLT-H

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV - SDT250, SDT300

MARINOWARE, DIV OF WARE INDUSTRIES INC - Type SLT

METAL-LITE INC - The System

OLMAR SUPPLY INC - STT250, STT300

SCAFCO STEEL STUD MANUFACTURING CO
STEELER INC - Steeler Slotted Ceiling Runner

TELLING INDUSTRIES L L C - True-Action Deflection Track

A2. Light Gauge Framing* - Vertical Deflection Ceiling Runner - As an alternate to the ceiling runner in Item 2A, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clip provided with step bushings for pronounced fastening of steel studs. Flanges sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner secured to floor with steel fasteners spaced max 24 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item 3A) shall not be used.
THE STEEL NETWORK INC - VertiTrack VTD362, VTD400, VTD600 and VTD800

B. Studs - Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 in. to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and secured to floor runner and with top nesting in ceiling runner without attachment. When deflection channel (Item 3A) is used, steel studs attached to ceiling runner with steel metal screws located 1/2 in. (13 mm) below the bottom of the deflection channel. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. Stud spacing not to exceed 24 in. (610 mm) OC. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at midheight of each slot.
B1. Light Gauge Framing* - Slotted Studs - Slotted steel studs to be used in conjunction with Light Gauge Framing* - Floor and Ceiling Runners (Item 2A1). Slotted steel studs to be min 3-1/2 in. (89 mm) wide. Slotted steel studs cut 1/2 in. to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and secured to both ceiling and floor runners. Ceiling runner secured to prefomed slot within steel stud by means of No. 10 by 3/4 in. (19 mm) long low profile head steel screw. Floor runner attached to bottom of steel stud by means of No. 8 by 1/2 in. (13 mm) long pan head steel screw. Slotted steel stud spacing not to exceed 24 in. (610 mm) OC.
STEELER INC - Steeler Slotted Stud

C. Gypsum Board* - Gypsum board sheets installed to a min total thickness of 5/8 in. and 1-1/4 in. (16 and 32 mm) on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a min 3/4 in. (19 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the floor. The screws attaching the gypsum board to the studs along the top of the wall shall be located 1 in. (25 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner or into the optional deflection channel.
The hourly fire rating of the joint system is dependent on the hourly fire rating of the wall assembly in which it is installed.
3. Joint System - Max separation between bottom of floor and top of wall is 3/4 in. (19 mm). The joint system is designed to accommodate a max 25 percent compression from its installed width. The joint system consists of the following:
A. Deflection Channel - (Optional, Not Shown) - Min 2 in. (51 mm) deep min 25 gauge galv steel channel sized to accommodate ceiling runner (Item 2A). Deflection channel secured to bottom of concrete floor with steel fasteners spaced max 24 in. (610 mm) OC. The ceiling runner is installed within the deflection channel to maintain a 1/2 in. to 3/4 in. (13 to 19 mm) gap between the top of the ceiling runner and the top of the deflection channel. The ceiling runner is not fastened to the deflection channel.
B. Forming Material - (Optional, Not Shown) - In 2 hr fire rated wall assemblies, polyethylene backer rod, mineral wool batt insulation or fiberglass batt insulation friction fit into joint opening.
C. Fill, Void or Cavity Material* - Sealant - Min 1/2 in. (13 mm) thickness of fill material applied within clear opening on both sides of wall, flush with both surfaces of wall. In 1 hr fire rated walls, bond breaker tape applied to ceiling channel (Item 2A, 2A1, 2A2 or 3A) prior to installation of fill material.
SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant

*Bearing the UL Classification Mark
Last Updated on 2012-04-13
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ISSUE HISTORY		
NO.	DATE	DESCRIPTION
1	9/20/13	ISSUED FOR SDC REVIEW
2	9/28/13	ISSUED FOR DD REVIEW
3	9/9/13	ISSUED FOR 90% REVIEW
4	9/9/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS		
NO.	DATE	DESCRIPTION

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE, SUITE 200
MT. PLEASANT, SOUTH CAROLINA 29464

GRACE IN DESIGN SERVICES, LLC.
11877 Douglas Road, Suite 103 #328, Alpharetta, Georgia 30005 404-217-6583

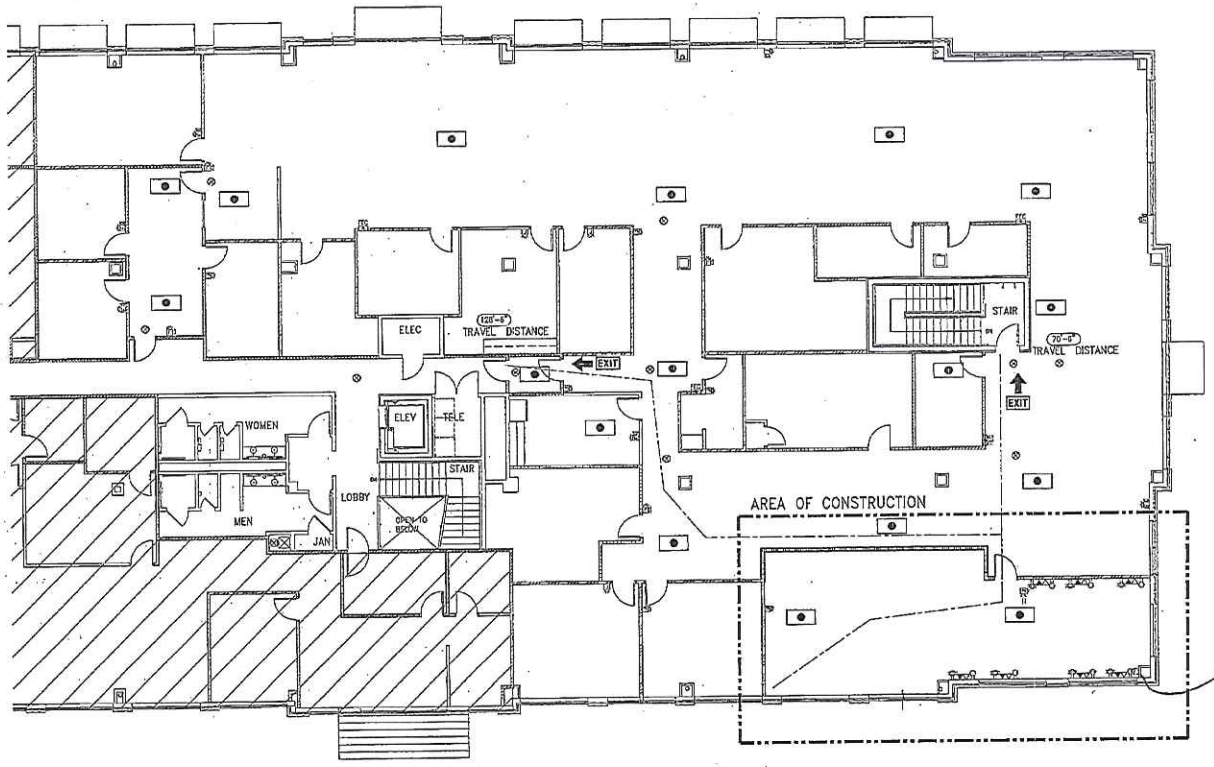
SOUTH CAROLINA REGISTERED ARCHITECT — JAMES I. VERHAIK — Mt. Pleasant, SC — 9/21/13

GRACE IN DESIGN

SHEET TITLE: UL DETAILS

PROJECT NO. 13.019.02 | SHEET NUMBER A0.1 of 11
ISSUE DATE 03.20.13

ISSUED FOR CONSTRUCTION



NEW ~~OR EXISTING~~?

1 / A0.2 LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"

0 4' 10' 20'

LIFE SAFETY PLAN GENERAL NOTES

1. CONTRACTOR TO RELOCATE/ADD SPRINKLERS AS REQUIRED FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL BUILDING/FIRE CODES. REFURBISH CEILINGS AS REQUIRED AND DIRECTED BY BUILDING OWNER.
2. PROVIDE NEW OR HIGHER/STROBES WITHIN AREA OF CONSTRUCTION WHICH COMPLIES WITH TENANT APPROVED DEVICES. CONTRACTOR TO REUSE EXISTING VISUAL STROBE AT LOCATIONS INDICATED, AND RELOCATE VISUAL/AUDIO ALARM AT LOCATION INDICATED. IF EXISTING STROBES DO NOT MEET TENANT APPROVED STANDARDS, REPLACE. REFERENCE ENGINEERING DRAWINGS FOR SPECIFIC COMPLIANT DEVICES.

LIFE SAFETY PLAN LEGEND

- 2 X 4 EMERGENCY FLUORESCENT LIGHT FIXTURE
- BUILDING STANDARD EXIT SIGN, CEILING MOUNTED (EXISTING)
- BUILDING STANDARD FIRE ALARM VISUAL DEVICE, WALL-MOUNTED
- BUILDING STANDARD FIRE ALARM AUDIO/VISUAL DEVICE, WALL-MOUNTED
- WALL-MOUNTED FIRE EXTINGUISHER
- 6'-0" TRAVEL DISTANCE

New ~~or existing~~?

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ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	01/07/13	ISSUED FOR SDC REVIEW
2	02/04/13	REVISED SDC REVIEW
3	03/19/13	ISSUED FOR SPR REVIEW
4	03/20/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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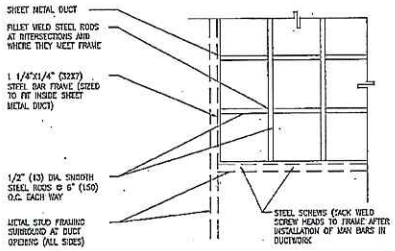
STATE OF SOUTH CAROLINA
JAMES P. LIVERMAIK
Mt. Pleasant, SC
6133
3/20/13
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
LIFE SAFETY PLAN

ISSUED FOR CONSTRUCTION

PROJECT NO. 13.019.02
ISSUE DATE 03.20.13
SHEET NUMBER A0.2
OF 11



1 A0.3 HVAC DUCT MAN BAR ELEVATION
NTS

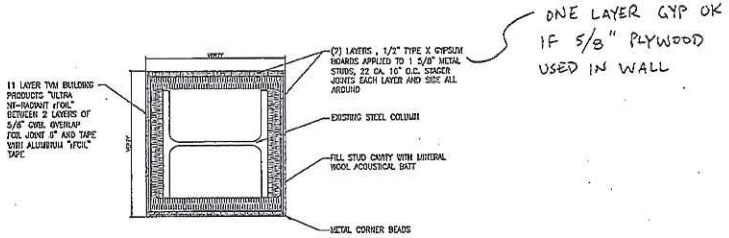
1. MAN BARS IN STEEL ANGLED FRAME WELDED OF SCREWED TO THE WALL FRAMING AT DUCT OPENING.

2. MAN BARS REQUIRED FOR DUCT OPENINGS GREATER THAN 96 SQ. INCHES, UNLESS ONE DIMENSION IS LESS THAN 6 INCHES, THAT PENETRATE PARTITION TYPES A2, 3, 6, 7, 8, 9, ROOF PENETRATIONS, AND EXTERIOR WALL PENETRATIONS.

3. IF CODE REQUIRES THE INSTALLATION OF FIRE DAMPER, INTEGRITY OF MAN BARS SHALL BE MAINTAINED.

ALL ~~SHOULD BE~~ EXISTING FROM 2008 FBI UPFIT *

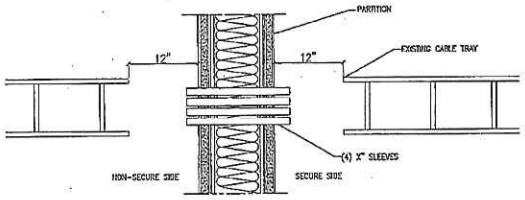
* MAN BARS



ONE LAYER GYP OK IF 5/8" PLYWOOD USED IN WALL

2 A0.3 SLAB TO SLAB COLUMN ENCLOSURE PLAN VIEW
NTS

NOTE:
ALL UTILITY (POWER & SIGNAL) DISTRIBUTION SHALL BE SURFACE MOUNTED, CONTAINED IN A RACEWAY, OR AN ADDITIONAL WALL SHALL BE CONSTRUCTED USING FURRING STRIP AS A STAND-OFF FROM THE EXISTING ASSEMBLY.

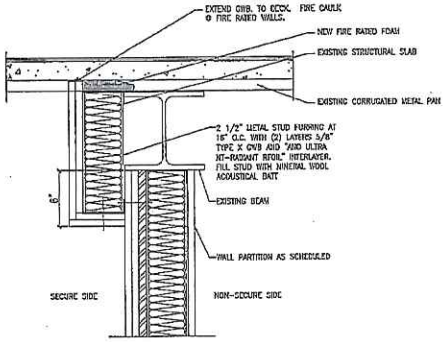


3 A0.3 CABLE TRAY THROUGH ACOUSTICAL WALL PLAN VIEW
NTS

1. CABLE TRAY SHALL BE CUT 12 INCHES ON EITHER SIDE OF THE PARTITION. EXISTING CABLES SHALL BE WRAPPED IN A (4) X" SLEEVES. COORDINATE SLEEVE SIZE WITH GOVERNMENT PM.

2. CABLE TRAY HOLE SHALL BE FILLED TO PARTITION REQUIREMENTS.

3. GC SHALL SEAL SLEEVES WITH RE-ENTRABLE FIRE PROOFING/SEALANT AFTER CONVENIENTS INSTALLATION OF CABLING. FIRE RATED MATERIAL SHALL MEET ASTM E84 AND NFPA 101 SECTION 8.3.5.1.



4 A0.3 WALL SECTION - BEAM ENCLOSURE
NTS

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ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	02/07/13	ISSUED FOR 90% REVIEW
2	02/08/13	REVISED 90% REVIEW
3	02/21/13	ISSUED FOR 100% REVIEW
4	03/20/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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GRACE IN DESIGN SERVICES, LLC.
11877 Douglas Road, Suite 103 #238, Alpharetta, Georgia 30005 404-217-5583

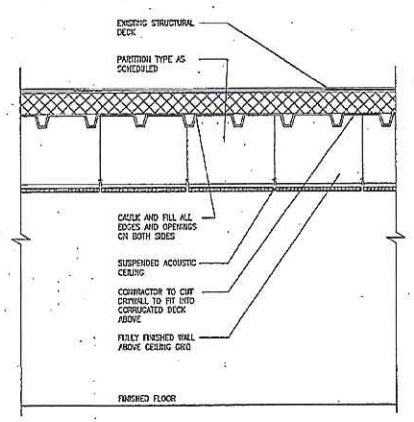
ARCHITECT OF SOUTH CAROLINA
STATE OF SOUTH CAROLINA
JAMES P. VURKAR
Mt. Pleasant, SC
03/20/13
REGISTERED ARCHITECT

GRACE IN DESIGN

ISSUED FOR CONSTRUCTION

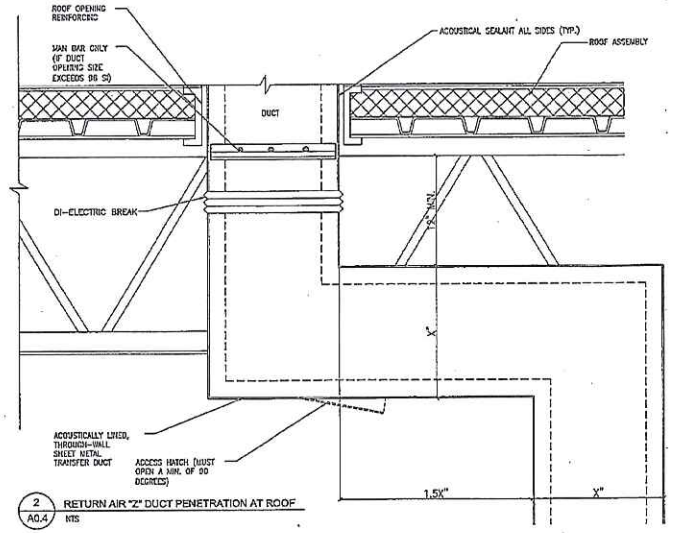
SHEET TITLE
DETAILS

PROJECT NO. 13.012.02
ISSUE DATE 03.20.13
SHEET NUMBER A0.3 OF 11



NOTE:
CONTRACTOR TO CUT PLYWOOD AND/OR MESH (IF USED) TO FIT CORRUGATED DECK ABOVE.

1 / A0.4 CORRUGATED DECK - WALL DETAIL
NTS



2 / A0.4 RETURN AIR "Z" DUCT PENETRATION AT ROOF
NTS

1. DESIGN AND INSTALLATION OF THE Z-DUCT SHALL NOT COMPROMISE THE STC RATING OF THE ROOF.

2. THE Z-DUCT SHALL HAVE TWO 90° BENDS AND ENSURE THERE IS NOT A DIRECT SOUND PATH THROUGH THE DUCT.

3. ENTIRE LENGTH OF DUCT SHALL BE LINED WITH 1" SOUND ATTENUATING MATERIAL.

4. REFER TO DETAIL 3/AM.2 ON MECHANICAL ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION.

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ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	10/01/12	ISSUED FOR SCE REVIEW
2	10/22/12	ISSUED FOR PERMIT AND CONSTRUCTION

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ISSUED FOR CONSTRUCTION

SHEET TITLE
DETAILS

PROJECT NO. 13.010.02
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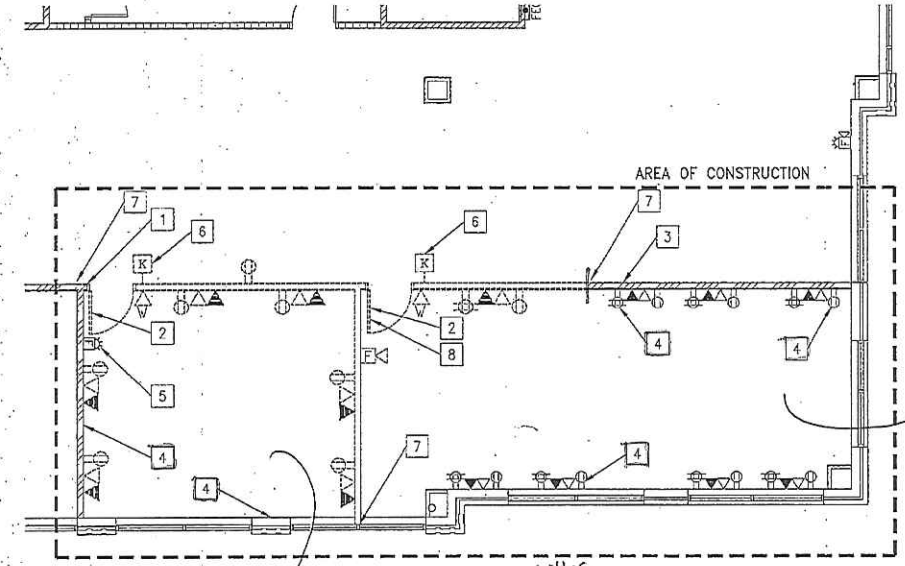
SHEET NUMBER A0.4 OF 11



- 4 ea desk setups / cubicles
- TV
- file cabinets
- couch

- 2 ea cubicles
- Shelf
- Table

1 A1.1 DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

0 2' 5' 10'

GENERAL NOTES

1. REMOVE AND DISPOSE OF EXISTING FLOOR FINISHES WITHIN SCOPE OF WORK.

2. CONTRACTOR TO ADVISE ARCHITECT AND ENGINEER OF EXISTING CONDITIONS WHICH DO NOT REFLECT AS-BUILT CONDITIONS SHOWN IN THESE DRAWINGS.

3. REMOVE EXISTING ACOUSTIC CEILING TILES THROUGHOUT THE SCOPE OF WORK.

4. EXISTING WINDOW BLINDS TO REMAIN. BAG AND PROTECT DURING WORK. TRIM NEW BLINDS TO FIT INTO NEW OPENING WHERE NEEDED. CONTRACTOR TO PRICE AS AN OPTION TO PROVIDE AND INSTALL NEW BLINDS IN LIEU OF MODIFYING EXISTING BLINDS.

5. CONTRACTOR TO TAKE RESPONSIBILITY FOR RELOCATION AND REINSTALLATION OF TENANT'S EXISTING FURNITURE IN AREA OF CONSTRUCTION, BY ENLISTING THE SERVICES OF A LOCAL FURNITURE VENDOR. THE INTENT IS TO CLEAR WORK AREA FOR CONSTRUCTION AND INSTALLATION OF NEW AND EXISTING FURNITURE, INCLUDING ALL REQUIRED ELECTRICAL WORK. SEE POWER AND COMMUNICATION PLAN FOR NEW FURNITURE LAYOUT.

DEMOLITION KEY NOTES

1. DEMO SHEET ROCK ON SECURE SIDE OF WALL 24" INTO EXISTING SPACE TO ENSURE PROPER OVERLAP AND CONTINUOUS SECURE WALL. SEE DETAIL SHEET 1/A4.1. POWER AND DATA ON WALLS NOT IMPACTED SHALL REMAIN AS IS.

2. REMOVE AND STORE DOORS SHOWN FOR DEMOLITION FOR RE-USE. SEE NEW PARTITION PLAN FOR NEW DOOR LOCATION.

3. PATCH AND REPAIR WALL TO MATCH ADJACENT WALL TO REMAIN.

4. REMOVE ALL EXISTING DATA AND POWER CONDUITS TO SURFACE OF WALL. FILL EXISTING CONDUITS AND J-BOXES WITH FOAM AND MINERAL WOOL. REPAIR WALL TO MATCH ADJACENT WALL ASSEMBLY. ENSURE OVERLAP BETWEEN R-FOIL.

Fill, recess, foil patch

5. EXISTING VISUAL ALARM STROBE TO REMAIN AT LOCATION INDICATED. UNLESS DEVICE DOES NOT MEET TENANT SPECIFICATIONS.
- WHEELOCK SA SERIES HORN/STROBES
- GE/INTEGRITY/GENESIS MODEL 757-7A-T TEMPORAL HORN/STROBE
- GE/ GENESIS TEMPORAL HORN STROBES MODEL G1F-HDVM
- SIEMENS ZH-MC-R FIRE ALARM STROBE AND ANNUNCIATOR
- SYSTEM SENSOR MODEL P2W FIRE ALARM STROBE AND HORN
- MULTI VOLTAGE R10 RELAYS
- GENTEX GEC3-24WW HORN/STROBE

6. TENANT'S KEY PADS AT LOCATIONS INDICATED FOR REMOVAL. TENANT REPRESENTATIVE TO REMOVE THE KEY PADS AND CONTRACTOR TO REMOVE ROUGH-IN BOXES FOR RE-USE. SEE PARTITION PLAN FOR NEW LOCATION OF KEY PAD AND ROUGH-IN BOX FOR RE-USE. ADDITIONAL KEY PAD AND ROUGH-IN BOX TO BE RELOCATED TO TENANT'S STORAGE AREA.

7. CONTRACTOR TO PATCH AND REPAIR ALL AREAS WHERE DEMOLITION HAS OCCURRED. PREPARE EXISTING WALLS TO REMAIN TO ACCEPT NEW WALL FINISHES AND ENSURE WALL FINISHES OVERLAP.

8. GC TO CONNECT CERTIFIED LOCKSMITH TO REMOVE AND REINSTALL HIGH SECURITY LOCKS.

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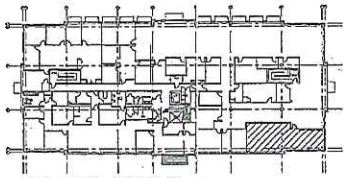

2ND FLOOR KEY PLAN
NOT TO SCALE

ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	02/27/13	ISSUED FOR SITE REVIEW
2	03/08/13	REVISED SITE REVIEW
3	03/15/13	ISSUED FOR SITE REVIEW
4	03/29/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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STATE OF SOUTH CAROLINA
JAMES P. VERKAIK
Mt. Pleasant, SC
5137
3/27/13
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
DEMOLITION PLAN

PROJECT NO. 13.019.02
ISSUE DATE 03.20.13
SHEET NUMBER A1.1
of 11

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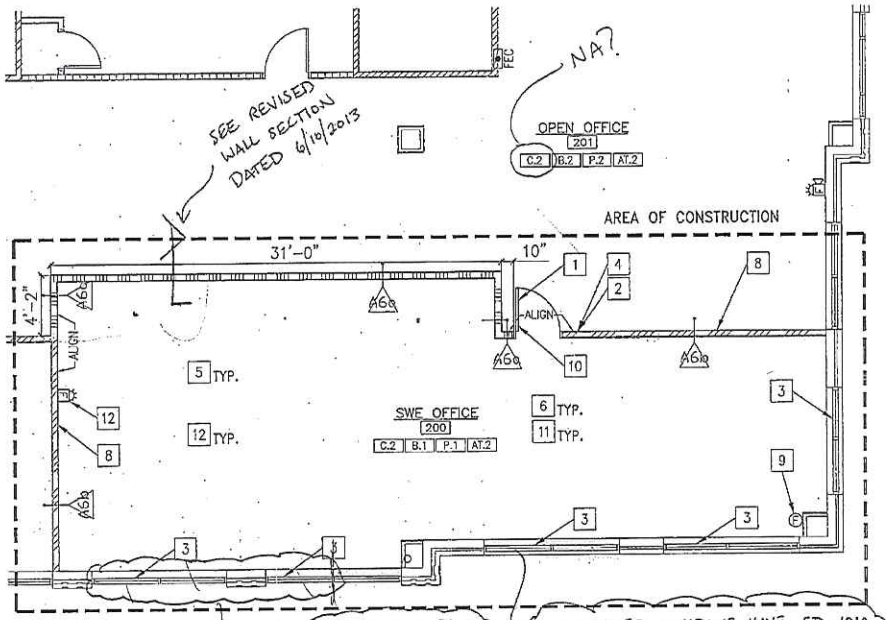


1 A1.2 PARTITION AND FINISH PLAN
SCALE: 1/4" = 1'-0"

0 2' 5' 10'

PARTITION GENERAL NOTES

1. NOT USED.

2. RELOCATE HIGH TEMPERATURE SPRINKLER HEADS IN AREA CONSTRUCTION AS NEEDED TO COMPLY WITH NEW LAYOUT.

3. WIRE MESH AND FOIL IN WALLS TO BE INSPECTED BY TENANT PRIOR TO BEING COVERED UP. FOIL-BACKED CEILING TILES TO BE INSPECTED BY TENANT PRIOR TO INSTALLATION.

PARTITION KEY NOTES:

1. PROVIDE AND INSTALL ONE (1) NEW ENTRANCE DOOR AT LOCATION INDICATED. SEE DOOR DETAIL 2/A1.2. DOOR SHALL SWING OUT OF SECURE SPACE AS INDICATED. ANY DEVIATION WILL REQUIRE APPROVAL BY TENANT REPRESENTATIVE.

2. PROVIDE A SECURITY SYSTEM ROUGH-IN FOR ACCESS CONTROL SYSTEMS. SEE DOOR DETAIL 2/A1.2 FOR SPECIFIC REQUIREMENTS. COORDINATE WITH TENANT'S SECURITY REPRESENTATIVE.

3. EXISTING FILM IS INSTALLED ON PERIMETER WINDOWS. PROVIDE CORNING 995/1190 3/4" STRUCTURAL WET GLAZE AT PERIMETER OF FILM EDGES AT ALL WINDOWS WITHIN THE SECURE AREA. → NEED TO REMOVE "KANE" SCREEN & REINSTALL

4. PROVIDE COMMERCIALLY KEYED LOCK BOX UNIT ON OUTSIDE OF SECURE SPACE ENTRY DOOR FOR TEMPORARY CALL PHONE AND PAPER STORAGE. REQUIRE NUMBER OF MODULES: 11. ACCEPTABLE MANUFACTURER: AUTHENTIC PARTS (TEL. 1-800-223-2884) AP (12 OF UNITS NEEDED) – 4 SERIES 4"x5" (WIDTH X HEIGHT) MODULE WITH ANODIZED FINISH (US28 OR APPROVED EQUIVALENT. ALL LOCK BOXES SHALL BE INSTALLED ON NON-SECURE PARTITIONS WHERVER POSSIBLE. PARTITION TYPE 6Ab SHALL BE FURRED OUT AS REQUIRED TO ACCOMMODATE DEPTH OF LOCK BOX BANK.

5. PROVIDE INSULATING FOAM ON ALL FLOOR AND CEILING POKE THROUGHS.

6. THE AREA OF CONSTRUCTION IS TO HAVE A SOUND PROOFING RATING OF STC 45.

7. NOT USED.

8. EXISTING SECURE WORK AREA PARTITIONS AT LOCATIONS INDICATED TO REMAIN.

9. CONTRACTOR TO PROVIDE AND INSTALL WALL MOUNTED FIRE EXTINGUISHER AT LOCATION INDICATED.

10. CONTRACTOR TO MATCH EXISTING DOOR FINISH ON SWE SIDE OF DOOR (I.E. IF EXISTING DOOR IS PAINTED, NEW DOOR TO BE PAINTED). MATCH FINISH OF EXISTING DOORS THROUGHOUT SUITE ON OPEN OFFICE SIDE OF DOOR. NEW PAINT COLOR TO BE SELECTED FOR DOOR FRAMES. → NA – NEW DOOR HM – EXISTING ARE WOOD

11. IF THE FLOOR IS NOT POURED CONCRETE IN A METALLIC PAN, IT IS REQUIRED TO ADD A LAYER OF ULTRA NT-RADIANT FROIL TO THE FLOOR WITH OVER LAP OF 3 INCHES. ?

12. EXISTING VISUAL ALARM STROBE TO REMAIN AT LOCATION INDICATED, UNLESS DEVICE DOES NOT MEET TENANT SPECIFICATIONS.
- WHELOCK SA SERIES HORN/STROBES
- GE/INTEGRITY/GENESIS MODEL 757-7A-T TEMPORAL HORN/STROBE
- GE/ GENESIS TEMPORAL HORN STROBES MODEL G1F-HDWH
- SIEMENS ZH-MC-R FIRE ALARM STROBE AND ANUNCIATOR
- SYSTEM SENSOR MODEL P2W FIRE ALARM STROBE AND HORN: HOLTI VOLTAGE R10 RELAYS
- CENTEX GECH-24WH HORN/STROBE

FINISHES LEGEND

CARPET:
C.2 BOLYU, STREET SMART, SS1146

RUBBER BASE:
B.1 4" ROPPE – 100 BLACK (WITHIN SWE AREA ONLY)
B.2 4" ROPPE – 139 DEEP IVORY (IN OPEN AREA ONLY)

PAINT:
P.1 SHERWIN WILLIAMS, EGGSHELL – REALIST EDGE 5/8 6078 (WITHIN SWE AREA ONLY)
P.2 SHERWIN WILLIAMS, EGGSHELL – SW6519 HINTING BLUE (IN OPEN AREA ONLY)

CEILINGS:
AT.1 24"X24"X5/8" USG FROST ACOUSTIC CEILING TILE, REGULAR EDGE, IN PAINTED METAL SUSPENSION SYSTEM (MATCH EXISTING IN 201)
AT.2 MATCH EXISTING – 24"X24"X5/8" USG FROST #4-0-2X2-SLB-FOIL FOIL-BACKED ACOUSTIC CEILING TILE, REGULAR EDGE, IN PAINTED METAL SUSPENSION SYSTEM (CONFIRM EXISTING IN 200) – IN OPEN AREA ONLY

PARTITION SCHEDULE

ALL FIRE RATED PARTITIONS SHALL CONFORM TO ASTM E814 FOR FIRE CAULK

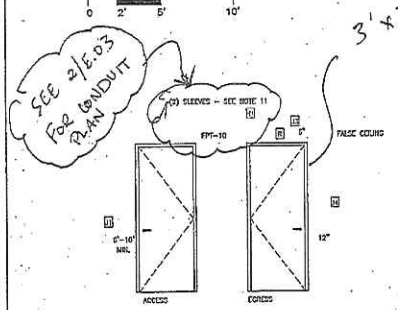
TYPE	SYMBOL	ASSEMBLY	WALL THK.	WALL HT.	FIRE RAT.	REMARKS
6		WALL TYPE 6 (ACOUSTICAL W/ EXPANDED METAL AND FOIL)	5-1/2" OR AS SHWN	TO ROOF DECK	NONE	STC 45 (MIN)
A6b		EXISTING WALL TYPE 6 (ACOUSTICAL W/ EXPANDED METAL AND FOIL – FIRE RATED)	5-1/2" OR AS SHWN	TO ROOF DECK	1 HR.	UL NO. U465
A6n		NEW WALL TYPE 6 (ACOUSTICAL W/ PLYWOOD AND FOIL – FIRE RATED)	5-1/2" OR AS SHWN	TO ROOF DECK	1 HR.	UL NO. U465

NOTES: FIRE BARRIERS SHALL BE PERMANENTLY IDENTIFIED WITH 2" STENCILING ABOVE ANY DECORATIVE CEILING AND CONCEALED SPACES (SMOKE/FIRE BARRIER – PROTECT ALL OPENINGS) @ 10'-0" ON CENTER ALONG WALL.

ALL INSULATING MATERIAL SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 AS DETERMINED IN ACCORDANCE WITH ASTM E 84.

PARTITION PLAN LEGEND

- WALL-MOUNTED FIRE EXTINGUISHER
- PARTITION TYPE
- ALIGN FACES OF SURFACES AS SHOWN
- 110 ROOM NUMBER
- P.1 FINISH SYMBOL
- EXISTING WALLS
- NEW WALLS



2 A1.2 STC 45 PRIMARY SWE ENTRANCE DOOR
NTS

SWE ENTRANCE DOOR NOTES:

1. OVERLY DOOR COMPANY MODEL 7509589 OR APPROVED EQUAL. DOOR AND ASSEMBLY MUST MEET AN STC LAB RATING. STEEL DOORS SHALL MEET THE FOLLOWING SPECIFICATIONS:
- 1 3/4" THICK FACE STEEL EQUAL TO 18 GAA. PREPPED FOR INTERNAL WIRING
- HINGES REINFORCED TO 7 GA.
- DOOR CLOSURE REINFORCED 12 GA.
- LOCK AREA PREDRILLED AND/OR REINFORCED TO 10 GA.
- 16 GA. MIN. WELDED DOOR FRAME. FRAMES MUST BE FILLED AND PREPPED TO MANUFACTURER'S SPECIFICATIONS TO MEET REQUIRED STC RATING.
- CAM LIFT HINGES (NON-REMOVEABLE)
- THRESHOLD, DOOR SWEEP AND GASKETS AS RECOMMENDED BY DOOR MANUFACTURER

2. VONDUPRIN ELECTRIC POWER TRANSFER EPT10 (DOOR AND FRAME PREP REQUIRED AND PULL STRING)

3. HEAVY DUTY COMMERCIAL GRADE DOOR CLOSER – MATCH BUILDING STANDARD.

4. HIGH SECURITY LOCK CORE, CYLINDER WITH BLANK CORE & KEY (GOVERNMENT FURNISHED, GOVERNMENT INSTALLED)

5. COMBINATION LOCK (GOVERNMENT FURNISHED, GOVERNMENT INSTALLED)

6. SCHLAGE (L9080PEU) ELECTRIC MORTISE LOCKSET – FAIL SECURE (CONTRACTOR FURNISHED, CONTRACTOR INSTALLED)

7. RECESSED ROUGH-IN BOX (GOVERNMENT FURNISHED, GOVERNMENT INSTALLED) OR SINGLE GANG JUNCTION BOX (J1) 47" AFF., 6"-10" MIN. FROM DOOR FRAME. } SEE 2/E0.3

8. SINGLE GANG JUNCTION BOX (J3) ABOVE DOOR FRAME

SWE ENTRANCE DOOR NOTES (CONTINUED):

16A 9. SURFACE MOUNTED DOUBLE GANG DECORATIVE JUNCTION BOX (J4) 60"AFF. 12" MIN. FROM DOOR FRAME. SURFACE MOUNTED CIRCUITS SHALL BE PAINTED TO MATCH WALL COLOR.

16A 10. ALL CONDUITS (EPT-10 OR TRANSFER HINGE, J1,J3,J4) SHALL TERMINATE AT A HOFFMAN TERMINATION ENCLOSURE (H1) ABOVE THE FALSE CEILING.

16A 11. CONTRACTOR TO COORDINATE LOCATION AND SIZE OF TWO (2) 2" CONDUIT SLEEVES WITH GOVERNMENTS PROJECT MANAGER. SLEEVES SHALL NOT EXTEND MORE THAN 6" ON EITHER SIDE OF WALL. PROVIDE A 110V JUNCTION BOX ABOVE THE CEILING NOT MORE THAN 6" FROM (2) CONDUIT SLEEVES. } SEE 2/E0.3

12. PROVIDE EMERGENCY LIGHTING ON EGRESS SIDE OF DOOR.
16A

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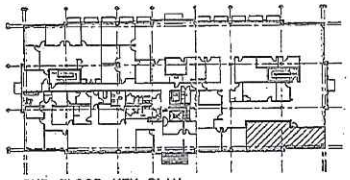

2ND FLOOR KEY PLAN
NOT TO SCALE

ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	02/07/13	ISSUED FOR 90% REVIEW
2	02/20/13	ISSUED SPEC REVIEW
3	03/19/13	ISSUED FOR 100% REVIEW
4	03/20/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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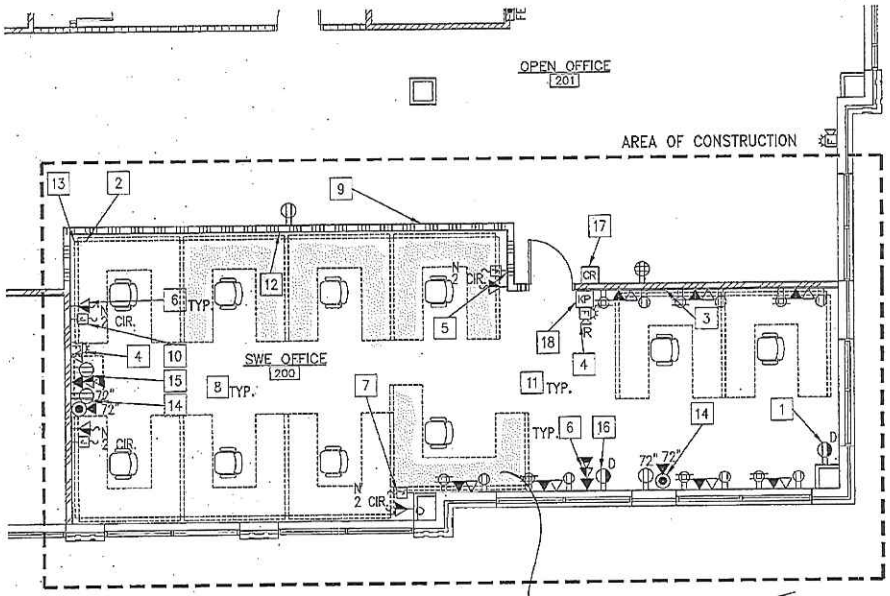
STATE OF SOUTH CAROLINA
JAMES P. VERKAIK
MT. PLEASANT, SC
5/23/13
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
PARTITION PLAN

ISSUED FOR CONSTRUCTION

PROJECT NO. 13.019.02
ISSUE DATE 03.20.13
SHEET NUMBER A1.2 OF 11



1 A1.3 POWER AND COMMUNICATION PLAN
SCALE: 1/4" = 1'-0"

0 2' 5' 10'

HIGHLIGHTED TO BE RELOCATED PER PREVIOUS DRAWINGS

ELECTRICAL GENERAL NOTES:

1. NOT USED.

2. CONTRACTOR TO PROVIDE 1" CONDUIT WITH PULL STRING FROM MAIN BUILDING COMMUNICATIONS ROOM TO TENANT EQUIPMENT ROOM.

3. CONTRACTOR TO PROVIDE JUNCTION BOXES AND 1" CONDUIT FOR COMMUNICATION OUTLETS IN RATED PARTITIONS. ALL OTHER COMMUNICATION OUTLETS ARE TO BE FINISHED WITH A LOW VOLTAGE MOUNTING BRACKET, SUCH AS CADDY #MB-1, U.N.O. ALL COMMUNICATION OUTLETS ARE TO BE PROVIDED WITH PULL STRING. ALL DATA/TELEPHONE WIRING TO BE DONE BY TENANT.

ELECTRICAL KEY NOTES:

1. ALL EXISTING AND NEW ELECTRICAL AND DATA OUTLETS LOCATED ON PERIMETER WALLS OF AREA OF CONSTRUCTION TO BE SURFACE MOUNTED ON THE SECURE SIDE OF THE PARTITION.

2. ALL CONDUIT PENETRATIONS SHALL BE FITTED WITH A NON-METALLIC DI-ELECTRIC BREAK WITHIN 6" OF WALL ON THE SECURE SIDE. SEAL PENETRATIONS WITH ACOUSTICAL CHALK AND/OR FOAM. SEE DETAIL 1/A4.1.

3. PROVIDE INSULATING FOAM AT ALL CEILING POKE THROUGHS.

4. PROVIDE NEW FA HORN/STROBES WITHIN AREA OF CONSTRUCTION WHICH COMPLIES WITH TENANT APPROVED DEVICES. CONTRACTOR TO REUSE EXISTING VISUAL STROBE AT LOCATION INDICATED, AND RELOCATE VISUAL/AUDIO ALARM AT LOCATION INDICATED. IF EXISTING STROBES DO NOT MEET TENANT APPROVED STANDARDS, REPLACE WITH TENANT APPROVED DEVICE:
- WHELOCK SA SERIES HORN/STROBES
- GE/INTEGRITY/GENESIS MODEL 757-7A-T TEMPORAL HORN/STROBE
- GE/ GENESIS TEMPORAL HORN STROBES MODEL 01F-HDWV
- SIEMENS 211-MC-R FIRE ALARM STROBE AND ANNUNCIATOR
- SYSTEM SENSOR MODEL P2W FIRE ALARM STROBE AND HORN: MULTI VOLTAGE R10 RELAYS
- GENTEX GECS-24WW HORN/STROBE

5. AT LOCATION INDICATED PROVIDE NEW JUNCTION BOX. COORDINATE SPECIFIC REQUIREMENTS WITH TENANT REPRESENTATIVE.

* DON'T NEED * 2" EXISTING TO BE REUSED PER PETE JANSEN

ELECTRICAL KEY NOTES (CONTINUED):

6. CONTRACTOR TO PROVIDE 1" CONDUIT (STUBBED TO CEILING PLENUM). JUNCTION BOX AND PULL STRING AT ALL TELE/DATA AND CABLE OUTLET LOCATIONS.

7. INSTALL NO MORE THAN TWO (2) WORKSTATIONS PER 20 AMP CIRCUIT PROVIDED.

8. FOR SERVER OUTLET REQUIREMENTS SEE ENGINEERING PLANS.

9. CONTRACTOR TO PROVIDE AND INSTALL ABOVE CEILING J-HOOK CABLE PATHWAY AT PERIMETER WALLS OF AREA OF CONSTRUCTION. LOCATIONS TO BE COORDINATED WITH TENANT REPRESENTATIVE.

10. CONTRACTOR TO COORDINATE SPECIFIC LOCATIONS FOR POWER AND VOICE/DATA LINES WITH APPROVED LAYOUT. FURNITURE LAYOUT TO BE PROVIDED BY OSI, TENANT'S APPROVED FURNITURE VENDOR. LOCATIONS TO BE COORDINATED WITH TENANT REPRESENTATIVE.

11. CONTRACTOR TO BE RESPONSIBLE FOR INSTALLING TENANT PROVIDED FURNITURE, POWER FEEDS AND MAKING FINAL SYSTEMS FURNITURE ELECTRICAL CONNECTIONS.

12. ALL POWER AND VOICE/DATA OUTLETS AND RACEWAYS TO BE SURFACE MOUNTED IN "WIREMOLD" RACEWAY SYSTEMS AT PERIMETER DEMISING WALLS.

13. CONTRACTOR TO PROVIDE AND INSTALL 2" PVC SLEEVE AT LOCATION INDICATED.

14. CONTRACTOR TO PROVIDE OUTLETS AND DATA PULLS AT 72" AFF. AT LOCATIONS INDICATED FOR GOVERNMENT PROVIDED, CONTRACTOR INSTALLED TELEVISIONS. DATA TO BE TERMINATED ON SECURE SIDE ABOVE CEILING.

15. CONTRACTOR TO PROVIDE OUTLET AND DATA PULL AT LOCATION INDICATED FOR TENANT PROVIDED FAX MACHINE.

16. CONTRACTOR TO PROVIDE DEDICATED 20 AMP CIRCUIT OUTLET AND DATA PULL AT LOCATION INDICATED FOR TENANT PROVIDED SHREDDER.

17. NEW LOCATION FOR TENANT'S CARD READER ACCESS. SEE 2/A1.2 FOR WIRING DETAILS AND REQUIREMENTS.

18. CONTRACTOR TO PROVIDE ROUGH-IN BOX FOR TENANT PROVIDED KEY PAD FOR RE-USE.

ELECTRICAL LEGEND

	ELECTRICAL DUPLEX OUTLET
	ELECTRICAL DOUBLE DUPLEX OUTLET
D	DEDICATED ELECTRICAL DUPLEX OUTLET
D	DEDICATED DOUBLE DUPLEX OUTLET
220V	ELECTRICAL OUTLET AS NOTED
	FLOOR-MOUNTED ELECTRICAL DUPLEX OUTLET
	TELEPHONE/FAX DROP
	TS DATA DROP
	S DATA DROP
	UNCLASSIFIED DATA DROP
	FLOOR-MOUNTED VOICE/DATA OUTLET
	POWER POLE
	CABLE TV DROP (COORDINATE WITH TV LOCATION)
	FURNITURE HARD WIRE BASE FEED-ELECTRICAL INDICATED NUMBER OF CIRCUITS
	FURNITURE HARD WIRE BASE FEED-DATA INDICATED NUMBER OF CIRCUITS
	BUILDING STANDARD FIRE ALARM - VISUAL
	BUILDING STANDARD FIRE ALARM - VISUAL/AUDIO
	CARD READER
	KEY PAD
S.P.B.	SECURITY PANEL BOARD
	HEAVY DUTY ROTATING BEACON

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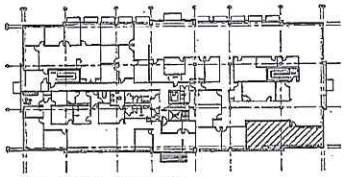

2ND FLOOR KEY PLAN
NOT TO SCALE

ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	02/04/13	ISSUED FOR SITE REVIEW
2	02/27/13	REVISED SITE REVIEW
3	03/13/13	ISSUED FOR SITE REVIEW
4	03/20/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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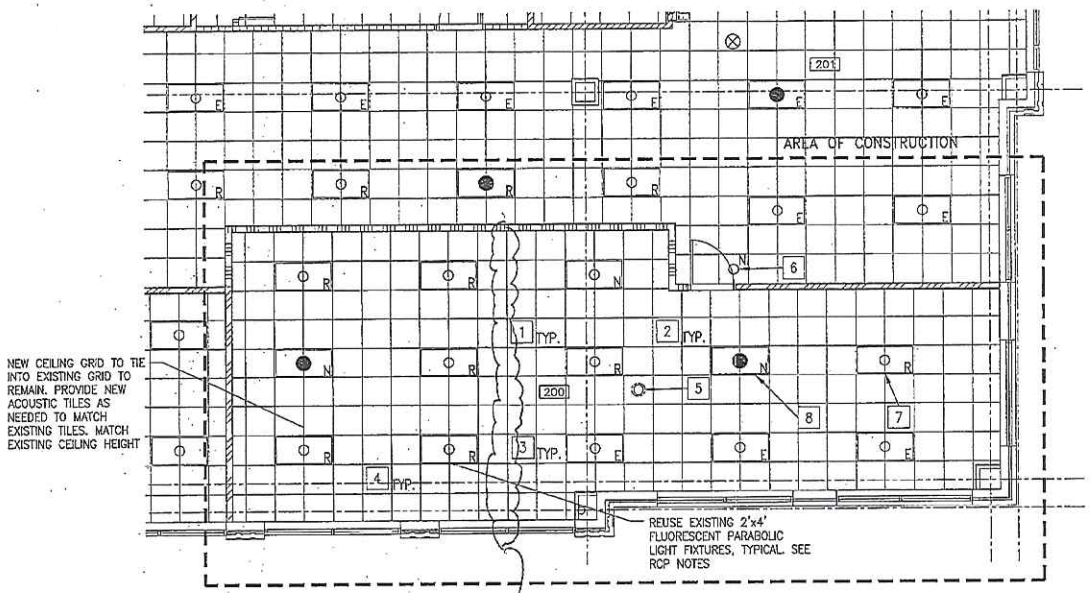
STATE OF SOUTH CAROLINA
JAMES P. VERKAIK
Mt. Pleasant, SC
3/21/13
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
POWER AND COMMUNICATION PLAN

ISSUED FOR CONSTRUCTION

PROJECT NO. 13.010.02
ISSUE DATE 03.20.13
SHEET NUMBER A1.3
OF 11



1 / A1.4 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

0 2' 5' 10'

PER QUAL'S OF 12/20/2012 PROPOSAL
NEW ACT & GRID WILL BE INSTALLED.

RCP KEY NOTES:

1. PROVIDE NEW FOIL BACKED ACOUSTICAL CEILING TILE IN AREA OF CONSTRUCTION TO MATCH EXISTING. DELID EXISTING GRID AND RECONFIGURE TO NEW LAYOUT AS INDICATED.

2. ALL CONDUIT, HVAC AND PIPE PENETRATIONS (PLUMBING AND SPRINKLER) SHALL BE FITTED WITH A NON-METALLIC DELECTRIC BREAK WITHIN 6" OF WALL ON THE SECURE SIDE. SEAL PENETRATIONS WITH ACOUSTICAL CHAULK AND/OR FOAM. SEE DETAILS 1/A4.1 AND 2/A6.1.

3. PROVIDE AND INSTALL "Z"-DUCTS ON ALL ROOF RETURN AIR GRILLS SEE DETAILS 5/A0.3 AND 2/A0.4.

4. PROVIDE INSULATING FOAM AT ALL CEILING POKE TROUGHS.

5. PROVIDE HEAVY DUTY ROTATING BEACON – UL CLASS 2, 120V, 15 WATT RED BULB, EVERY 400 FEET THROUGHOUT AREA OF CONSTRUCTION. CEILING MOUNT ACCORDING MANUFACTURER'S SPECIFICATIONS. INSTALL ACTIVATION SWITCH AT ENTRANCE TO AREA OF CONSTRUCTION. SEE ENGINEERING PLANS FOR APPROVED BEACON SPECIFICATION.

6. CONTRACTOR TO PROVIDE AND INSTALL NEW DOWN LIGHT WITH ADJUSTABLE LENS OF NON-SECURE SIDE OF ENTRY DOOR. ENSURE THAT COMBINATION LOCK IS ILLUMINATED. SEE ENGINEERING PLANS FOR DOWN LIGHT SPECIFICATION FOR TENANT APPROVAL.

7. CONTRACTOR TO REUSE EXISTING 2'X4' LIGHT FIXTURES THROUGHOUT AREA OF CONSTRUCTION. PROVIDE NEW AS NEEDED, MATCH EXISTING TENANT LIGHT FIXTURE STANDARDS.

8. CONTRACTOR TO PROVIDE AND INSTALL TWO (2) NEW 2'X4' EMERGENCY LIGHT FIXTURES AS INDICATED IN THE AREA OF CONSTRUCTION. MATCH EXISTING EMERGENCY FIXTURES.

REFLECTED CEILING PLAN LEGEND

"R" IN COMBINATION WITH SYMBOLS BELOW DENOTES RELOCATED
"N" IN COMBINATION WITH SYMBOLS BELOW DENOTES NEW
"E" IN COMBINATION WITH SYMBOLS BELOW DENOTES EXISTING

CEILING SYMBOL LEGEND	
	WALL TO UNDERSIDE OF CEILING
	WALL TO UNDERSIDE OF STRUCTURE
	2' x 2' LAY-IN LUMINAIRE
	2' x 4' LAY-IN LUMINAIRE
	LAY-IN LUMINAIRE
	RECESSED DOWNLIGHT
	EXIT LIGHT
	EMERGENCY LIGHT
	ROTATING BEACON

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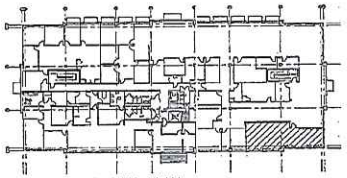

2ND FLOOR KEY PLAN
NOT TO SCALE

ISSUE HISTORY

NO	DATE	DESCRIPTION
1	02/07/13	ISSUED FOR CLIENT REVIEW
2	02/27/13	REVISED PER CLIENT REVIEW
3	03/07/13	ISSUED FOR PRICE REVIEW
4	03/27/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO	DATE	DESCRIPTION

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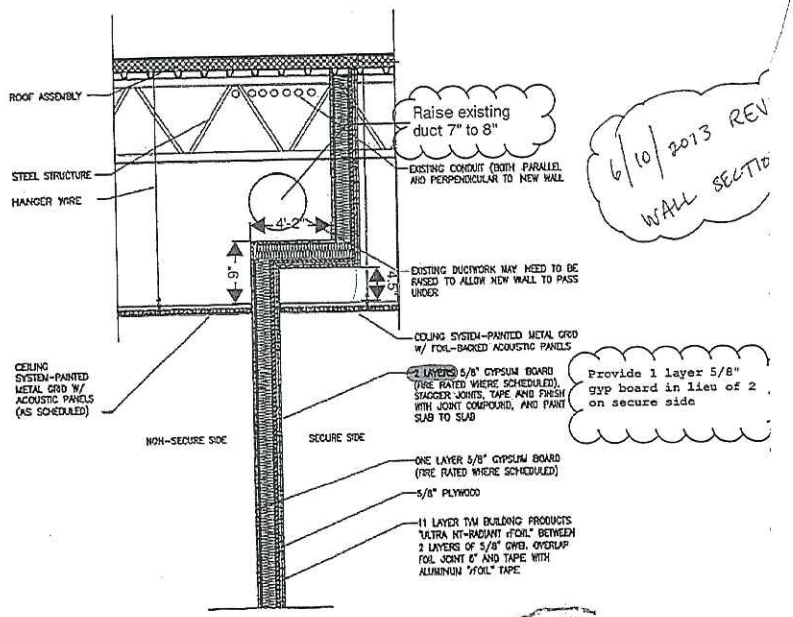
ARCHITECTURAL SOUTH CAROLINA
JAMES I. VERKAIK
Mt. Pleasant, SC
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
REFLECTED CEILING PLAN

PROJECT NO. 13.019.02
ISSUE DATE 03.20.13
SHEET NUMBER A1.4 OF 11

ISSUED FOR CONSTRUCTION



6/10/2013 REV WALL SECTIO

1 / A4.3 DETAIL FOR NEW PARTITION WALLS AND HVAC DUCT ABOVE
SCALE: 1/2" = 1'

PARTITION SHALL BE PROTECTED WITH MAN BARS. DUCTS WITH ANY DIMENSIONS LESS THAN 6" DO NOT REQUIRE MAN BARS ARE PROVIDED. A 12"X12" INSPECTION PORT AND ACCESS HATCH SHALL BE INSTALLED ON THE DUCT ON THE SECURE SIDE OF THE PARTITION. REFER TO DETAIL.

3. ALL RETURN AIR PENETRATIONS SHALL BE PROVIDED WITH SOUND ATTENUATING "Z"-DUCT. REFER TO DETAIL.

4. PARTITION SHALL BE SEALED CONTINUOUSLY WITH AN ACOUSTICAL SEALANT WHEREVER IT ABUTS ANOTHER ELEMENT. I.E. WALL, COLUMN, FLOOR OR CEILING SLAB, OR MULLION.

5. ALL GWB JOINTS SHALL BE TAPED, FINISHED WITH JOINT COMPOUND, AND PAINTED TO LEVEL 4 FINISH SLAB TO SLAB ON BOTH SIDES. JOINTS BETWEEN GWB AND PLYWOOD SHALL BE STAGGERED.

6. SCRIBE GWB AND PLYWOOD TO FIT CONTOUR OF STRUCTURAL DECK ABOVE.

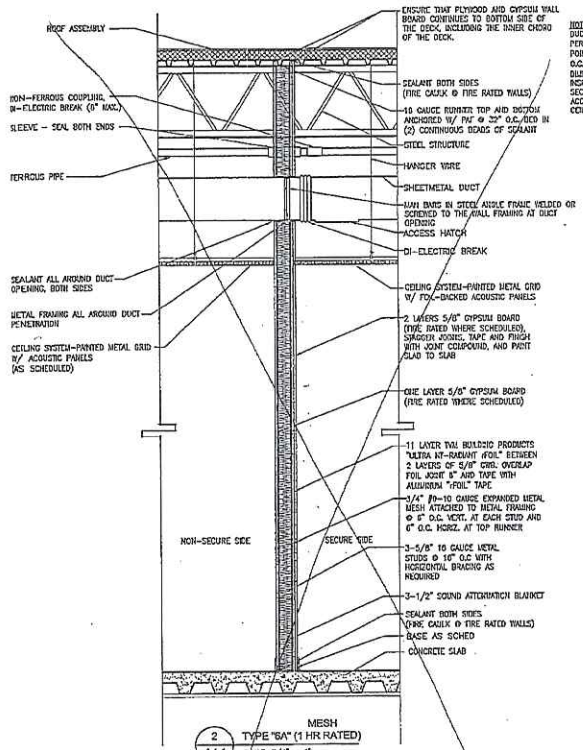
7. PROVIDE FIRE SAFE NON-SHRINK GROUT AT ALL VOIDS IN EXCESS OF 1/2" AT UNDERSIDE OF RUNNER AND TRACKS INSTALLED ON CONCRETE DECKS.

8. ONE LAYER OF "ULTRA-NT- RADIANT RFOIL" APPLIED BTWEEN THE TWO LAYERS OF GWB. OVERLAP FOIL JOINT 3" AND TAPE WITH 3" "RFOIL" TAPE.

9. ALL UTILITY (POWER & SIGNAL) DISTRIBUTION ON THE SECURE SIDE OF THE PARTITION SHALL BE SURFACE MOUNTED, CONTAINED IN A RACEWAY, OR AN ADDITIONAL WALL SHALL BE CONSTRUCTED USING FURRING STRIPS AS A STAND-OFFFROM THE BASE WALL ASSEMBLY.

10. ON THE SECURE SIDE OF THE OF THE PERIMETER WALL, INSTALL ONE LAYER OF 5/8" PLYWOOD ON 8" VERTICAL AND HORIZONTAL SECURE PLYWOOD TO THE METAL FRAMING WITH APPROVED CONSTRUCTION ADHESIVE AND STEEL #10 SELF-TAPPING SCREWS AT 12" O.C. MAX. VERTICALLY (AT TOP & BOTTOM TRACK). USE FIRE RATED PLYWOOD WHERE REQUIRED BY CODE.

SEE 4" WALL SECTION - ATTACHED



NOTE:
DUCTS OVER 86 SQUARE INCHES THAT PENETRATE THE SIDE PERIMETER WALL MUST HAVE 1/2" MAN BARS INSTALLED AT THE POINT OF ENTRY. MAN BARS SHALL BE SPACED AND WELDED AT 6" O.C. EACH WAY (SEE MAN BAR DETAIL). DUCTS WITH ANY DIMENSIONS LESS THAN 6" DO NOT REQUIRE MAN BARS. A 12"X12" INSPECTION PRT AND ACCESS HATCH MUST BE INSTALLED ON THE SECURE SIDE OF THE PARTITION. REFER TO DETAIL AB-3. ENSURE ACCESS HATCH IS NOT OBSTRUCTED. COORDINATE LOCATION WITH CEILING GRID, LIGHTS, PIPES CONDUITS AND OTHER DUCTS, ETC.

2 / A4.1 TYPE "6A" (1 HR RATED) MESH
SCALE: 3/4" = 1'

1. CONDUIT, HVAC, AND PIPE PENETRATIONS THROUGH PARTITION SHALL BE SEALED ALL AROUND ON BOTH SIDES TO ELIMINATE GAPS BETWEEN THE PENETRATION AND WALL.

2. DUCT PENETRATIONS OVER 86 SQUARE INCHES THROUGH THE PARTITION SHALL BE PROTECTED WITH MAN BARS. DUCTS WITH ANY DIMENSIONS LESS THAN 6" DO NOT REQUIRE MAN BARS ARE PROVIDED. A 12"X12" INSPECTION PORT AND ACCESS HATCH SHALL BE INSTALLED ON THE DUCT ON THE SECURE SIDE OF THE PARTITION. REFER TO DETAIL.

3. ALL RETURN AIR PENETRATIONS SHALL BE PROVIDED WITH SOUND ATTENUATING "Z"-DUCT. REFER TO DETAIL.

4. PARTITION SHALL BE SEALED CONTINUOUSLY WITH AN ACOUSTICAL SEALANT WHEREVER IT ABUTS ANOTHER ELEMENT. (I.E. WALL, COLUMN, FLOOR OR CEILING SLAB, OR MULLION).

5. ALL GWB JOINTS SHALL BE TAPED, FINISHED WITH JOINT COMPOUND, AND PAINTED TO LEVEL 4 FINISH SLAB TO SLAB ON BOTH SIDES. JOINTS BETWEEN GWB AND PLYWOOD SHALL BE STAGGERED.

6. SCRIBE GWB AND PLYWOOD TO FIT CONTOUR OF STRUCTURAL DECK ABOVE.

7. PROVIDE FIRE SAFE NON-SHRINK GROUT AT ALL VOIDS IN EXCESS OF 1/2" AT UNDERSIDE OF RUNNER AND TRACKS INSTALLED ON CONCRETE DECKS.

8. ONE LAYER OF "ULTRA-NT- RADIANT RFOIL" APPLIED BTWEEN THE TWO LAYERS OF GWB. OVERLAP FOIL JOINT 3" AND TAPE WITH 3" "RFOIL" TAPE.

9. ALL UTILITY (POWER & SIGNAL) DISTRIBUTION ON THE SECURE SIDE OF THE PARTITION SHALL BE SURFACE MOUNTED, CONTAINED IN A RACEWAY, OR AN ADDITIONAL WALL SHALL BE CONSTRUCTED USING FURRING STRIPS AS A STAND-OFFFROM THE BASE WALL ASSEMBLY.

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ISSUE HISTORY

NO	DATE	DESCRIPTION
1	02/01/13	ISSUED FOR BOID REVIEW
2	02/04/13	ISSUED FOR BOID REVIEW
3	02/21/13	ISSUED FOR BOID REVIEW
4	03/20/13	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION OFFICES AT BELLE HALL

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STATE OF SOUTH CAROLINA
JAMES F. VERRANK
Mt. Pleasant, SC
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE: PARTITION SECTIONS

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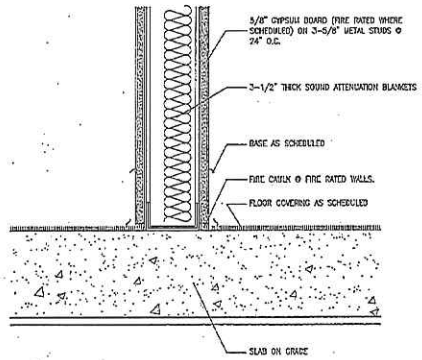
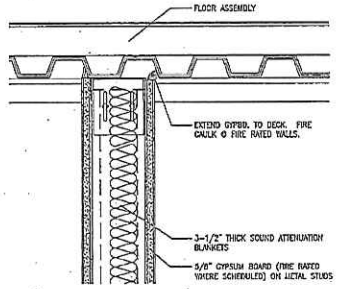
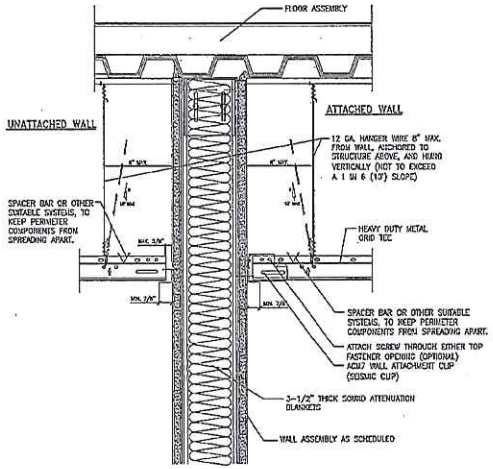
PROJECT NO. 13.010.02
ISSUE DATE 03.20.13
SHEET NUMBER A4.1 OF 11



A / A4.2 DETAIL – PARTITION @ FLOOR SLAB
SCALE: 3" = 1'-0"

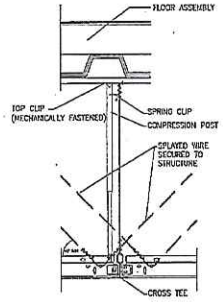


B / A4.2 DETAIL – PARTITION @ CEILING
SCALE: 3" = 1'-0"



C / A4.2 DETAIL – PARTITION @ CEILING (CISCA DETAILS)
SCALE: 3/4" = 1'-0"

NOTE:
GRID TO BE ATTACHED TO WALL MOLDING ON TWO ADJACENT WALLS AND UNATTACHED ON THE OPPOSITE TWO WALLS WITH A 3/4" MIN GAP BETWEEN THE WALL AND THE END OF THE TEE



D / A4.2 COMPRESSION POST DETAIL
SCALE: 3/4" = 1'-0"

NOTE:
FOR CEILINGS OVER 1,000 SF PROVIDE COMPRESSION POSTS A MAXIMUM OF 8' FROM WALLS, SPACED A MAXIMUM OF 12' O.C. THROUGHOUT.

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ISSUE HISTORY

NO.	DATE	DESCRIPTION
1	10/29/12	ISSUED FOR GSA REVIEW
2	10/29/12	REVISED GSA REVIEW
3	10/29/12	ISSUED FOR VOC REVIEW
4	11/29/12	ISSUED FOR PERMIT AND CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

GSA RENOVATION
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GRACE IN DESIGN SERVICES, LLC.
11877 Douglas Road, Suite 103 6328, Alpharetta, Georgia 30005 404-217-6533

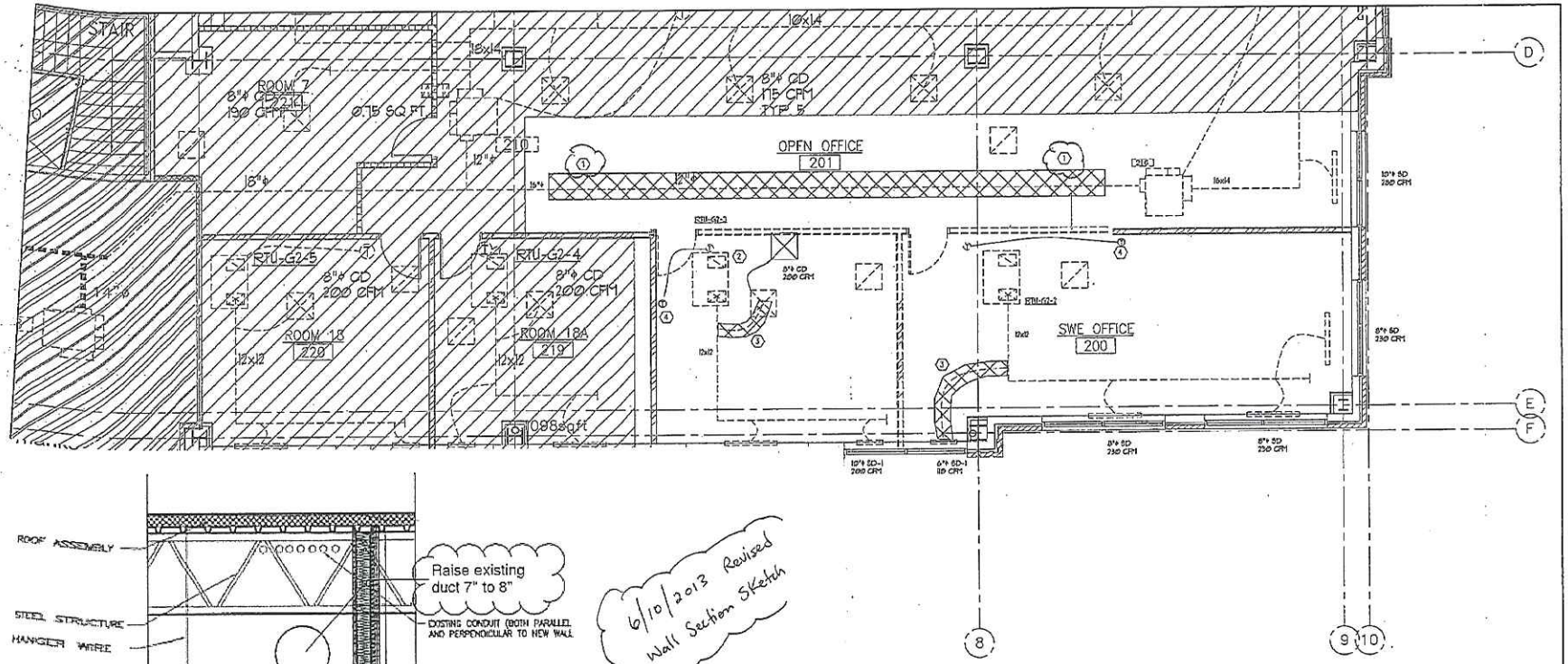
STATE OF SOUTH CAROLINA
JAMES F. VERKAIK
Mt. Pleasant, SC
5123
REGISTERED ARCHITECT

GRACE IN DESIGN

SHEET TITLE
DETAILS

PROJECT NO. 13.019.02
ISSUE DATE 05.20.13
SHEET NUMBER A4.2 OF 11

ISSUED FOR CONSTRUCTION

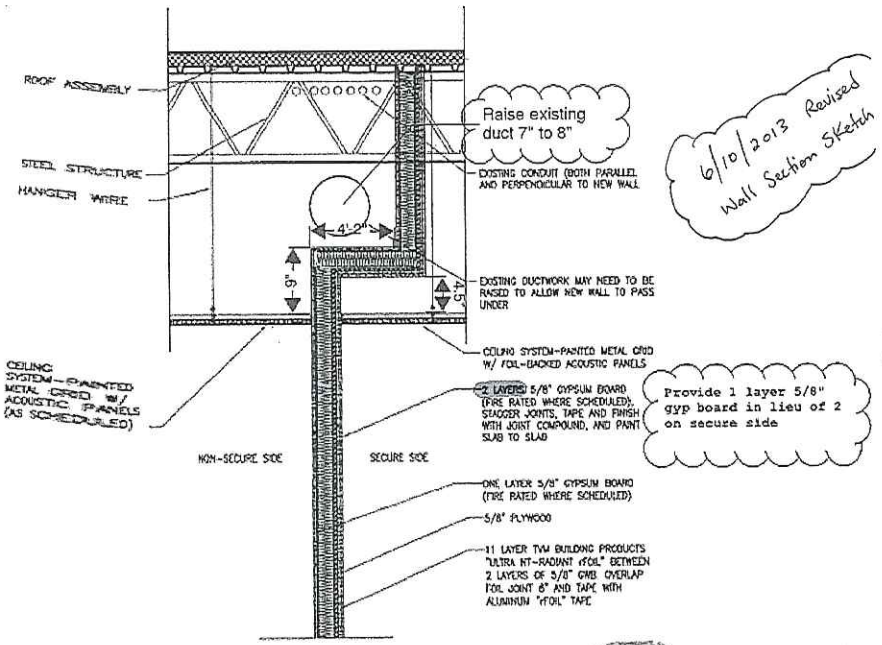


1 DM1.2 PARTIAL SECOND FLOOR DEMO PLAN – MECHANICAL
1/4"=1'-0"

KEY NOTES:

1. DEMOLISH EXISTING MEDIUM PRESSURE DUCTWORK AS SHOWN. PREPARE EXISTING TO REMAIN DUCTWORK FOR RECONNECTION.
2. RELOCATE EXISTING CEILING DIFFUSER AS SHOWN.
3. DEMOLISH EXISTING LOW PRESSURE DUCTWORK AS SHOWN. SEAL EXISTING TO REMAIN DUCTWORK AIRTIGHT WITH SHEET METAL AND HARDCAST.
4. RELOCATE EXISTING THERMOSTAT AS SHOWN. COORDINATE FINAL LOCATION WITH ARCHITECT.

SEE 6/13/2013



6/10/2013 Revised Wall Section Sketch

1 A4.3 DETAIL FOR NEW PARTITION WALLS AND HVAC DUCT ABOVE
SCALE: 1/2" = 1'

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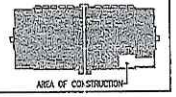
KEY PLAN



AREA OF CONSTRUCTION

BW&A
Barrett, Woodyard & Associates, Inc.
3495 Holcomb Bridge Road
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1	ISSUE FOR REVIEW – 50% SET	03/20/13
2	ISSUE FOR REVIEW – 90% SET	04/10/13
3	ISSUED FOR PERMIT & CONSTRUCTION	05/28/13

No.	Drawing Issue Description	Date

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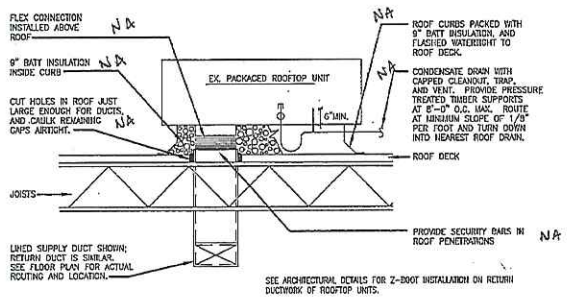
PARTIAL SECOND FLOOR DEMO PLAN - MECHANICAL

R. ROSENTHAL	13235
PROJECT MANAGER	PROJECT NO.
T. MESSIT	AS NOTED
PRINCIPAL INVESTIGATOR	SCALE
T. MESSIT	05/20/13
DRAWN BY	DATE

DM1.2

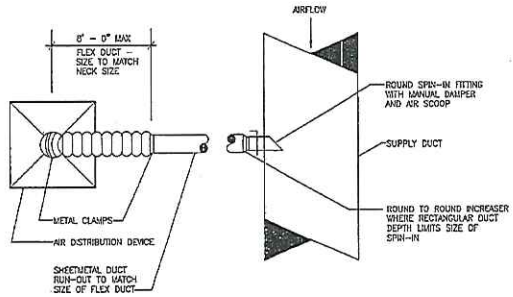
FILE PLOT DATE | DRAWING NO.

ISSUED FOR CONSTRUCTION



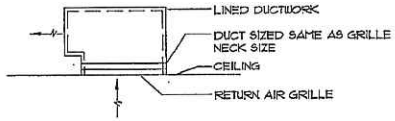
3 / M0.1 ROOFTOP UNIT DETAIL

NO SCALE



1 / M0.1 DIFFUSER CONNECTION DETAIL

NO SCALE



2 / M0.1 RETURN AIR BOOT DETAIL

NO SCALE

LEGEND

	CEILING DIFFUSER
	CEILING RETURN AIR GRILLE or EXHAUST GRILLE
	SIDE-WALL or DUCT MOUNTED REGISTER
	SLOT DIFFUSER
	MANUAL VOLUME DAMPER
	FIRE DAMPER
T	THERMOSTAT
H	HUMIDISTAT
S	NIGHT SET-BACK
	MOTOR OPERATED DAMPER
	EXISTING WORK
	NEW WORK
	WORK TO BE REMOVED
R	FLOOR DRAIN
	HOSE BIBB
	FLOOR CLEAN-OUT
	WALL CLEAN-OUT

GENERAL NOTES

1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE TENANT MECHANICAL SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, ACCESSORIES, OPTIONS AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL ITEMS AND LABOR REQUIRED FOR A COMPLETE TENANT MECHANICAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THE BASE BUILDING CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ADDITIONS TO THE CONTRACT.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT PARTITION LAYOUTS, REFLECTED CEILING PLANS, DIMENSIONS, ETC.
3. EXISTING MECHANICAL EQUIPMENT AND DUCTWORK ARE SHOWN BY DASHED LINES. NEW WORK AND RELOCATED WORK ARE SHOWN BY SOLID LINES. EXISTING WORK TO BE REMOVED IS SHOWN CROSSHATCHED. WHEN ANY DUCTWORK OR AIR DISTRIBUTION DEVICE IS REMOVED, THE ASSOCIATED TRUNK DUCT SHALL BE SEALED AIRTIGHT WITH A SHEET METAL PATCH OR CAP.
4. VISIT SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. THE EXISTING CONDITIONS SHOWN ARE BASED ON DOCUMENTS PROVIDED BY OTHERS AND HAVE NOT BEEN VERIFIED BY THE ENGINEER. IF EXISTING CONDITIONS DIFFER FROM DRAWINGS IN SUCH A MANNER THAT WILL AFFECT PRICING, (I.E., DUCTWORK, VAV OR FPU ARE NOT IN THE SHOWN LOCATION) CONTRACTOR WILL NOTIFY OWNER SO THAT A RESOLUTION CAN BE MADE PRIOR TO SUBMITTING BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS
5. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES. IF ANY ITEMS ARE NOT SHOWN ON THE REFLECTED CEILING PLANS, PREPARE A DRAWING OF THE PROPOSED LOCATION AND PRESENT IT TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
6. ALL ROUND AND FLEXIBLE DUCTWORK EXTENDING TO DIFFUSERS SHALL BE SIZED FULL SIZE OF DISTRIBUTION DEVICE INLET, AND TAPS TO THE EXISTING LOW-PRESSURE DUCTWORK SHALL BE MADE WITH SPIN-IN FITTINGS HAVING INTEGRAL SCOOPS AND VOLUME DAMPERS. ALL NEW RECTANGULAR DUCTWORK TAPS SHALL BE MADE WITH SPLITTERS OR EXTRACTORS. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA DUCT STANDARDS. (NEW LOW PRESSURE SPIN-IN FITTINGS AND TAPS SHALL NOT BE MADE WITHIN 5 FT. OF OUTLET OF HEAT PUMP. NEW LOW PRESSURE SPIN-IN FITTINGS SHALL BE MADE NO CLOSER THAN 2'-0" ON CENTERS.)
7. ALL CEILING SUPPLY DIFFUSERS SHALL BE LOUVERED FACE, BASE BUILDING STANDARD TYPE. FACE AREA SHALL BE APPROXIMATELY 24" x 24" EXCEPT AS OTHERWISE NOTED. FINISH SHALL BE BAKED ENAMEL IN A COLOR TO MATCH THE CEILING GRID. FRAME SHALL BE SUITABLE FOR THE CEILING TYPE IN WHICH IT IS INSTALLED. NECK SIZE SHALL BE 8" DIAMETER EXCEPT AS SHOWN OTHERWISE ON THE DRAWINGS. EACH DIFFUSER SHALL HAVE ADJUSTABLE AIRFLOW PATTERN CONTROLLERS. SEE 1/M0.1 FOR TYPICAL CD CONNECTION DETAIL.
8. RETURN AIR GRILLES (R.A.G.) SHALL BE PERFORATED FACE BASE BUILDING STANDARD TYPE. FACE AREA SHALL BE APPROXIMATELY 24" x 24". FINISH SHALL BE BAKED ENAMEL IN A COLOR TO MATCH CEILING GRID. FRAME SHALL BE SUITABLE FOR THE CEILING TYPE IN WHICH IT IS INSTALLED.
9. FLEXIBLE DUCTS SHALL BE INSTALLED FREE OF SAGS AND KINKS; SUPPORTED AT NOT MORE THAN 48" O.C.
10. TEST AND BALANCE ALL DIFFUSERS, BOXES, FANS, ETC. TO THE AIRFLOWS AND CONDITIONS INDICATED. ALL EXISTING DIFFUSERS, BOXES, FANS, ETC. WHICH ARE NOT NOTED OTHERWISE SHALL BE BALANCED TO THEIR PRIOR DESIGN AIRFLOWS; REFERENCE THE EXISTING RECORD DRAWING AVAILABLE FROM THE OWNER. TESTING AND BALANCING OF HVAC SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF AABC AND SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN AABC CERTIFIED TEST AND BALANCE ENGINEER. SUBMIT 4 COPIES OF THE REPORT TO THE OWNER. NEBB AGENCIES ARE NOT ACCEPTABLE AND ARE CAUSE FOR REJECTION.
11. ALL CONTROL WIRING AND TUBING INSTALLED ABOVE THE CEILING SHALL BE LOCATED AS HIGH ABOVE THE CEILING AS POSSIBLE AND SHALL FOLLOW THE DESIGNATED GENERAL ROUTING OF THE DUCTWORK. DO NOT HANG WIRING OR TUBING FROM DUCTWORK; RATHER, SUSPEND FROM THE STRUCTURE.
12. THERMOSTATS SHALL BE LOCATED IN EACH ZONE AS SHOWN. THE EXACT LOCATION ON THE WALL INDICATED SHALL BE AS DIRECTED BY THE ARCHITECT. NEW THERMOSTATS SHALL BE SELECTED TO MATCH EXISTING BASE BUILDING THERMOSTATS AND SHALL BE COMPATIBLE WITH EQUIPMENT SERVED.
13. ADJUST ALL DIFFUSERS IN CORRIDORS OR WITHIN 3 FEET OF A WALL TO PROVIDE 2-WAY OR 3-WAY BLOW AWAY FROM OR PARALLEL TO WALLS. ALL LAY-IN DIFFUSERS SHALL HAVE 4-WAY BLOW UNLESS NOTED OTHERWISE.
14. PORTIONS OF DUCTWORK VISIBLE THROUGH GRILLES AND REGISTERS IN FINISHED AREA SHALL BE PAINTED FLAT BLACK.
15. SHEET METAL SUPPLY DUCTWORK SHALL BE INSULATED WITH 2" THICK FIBERGLASS DUCT INSULATION WITH FOIL VAPOR BARRIER U/L LISTED. EXHAUST DUCTWORK SHALL NOT BE INSULATED UNLESS OTHERWISE NOTED.
16. LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.
17. PER GSA SPECIFICATIONS, FURNISH AND INSTALL DIELECTRIC BREAK ON PIPING AND DUCTWORK PENETRATING SECURE WALLS. THE DIELECTRIC BREAK SHALL BE LOCATED ON THE SECURE SIDE OF THE WALL. SEE GSA SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.

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No.	Drawing Issue Description	Date

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

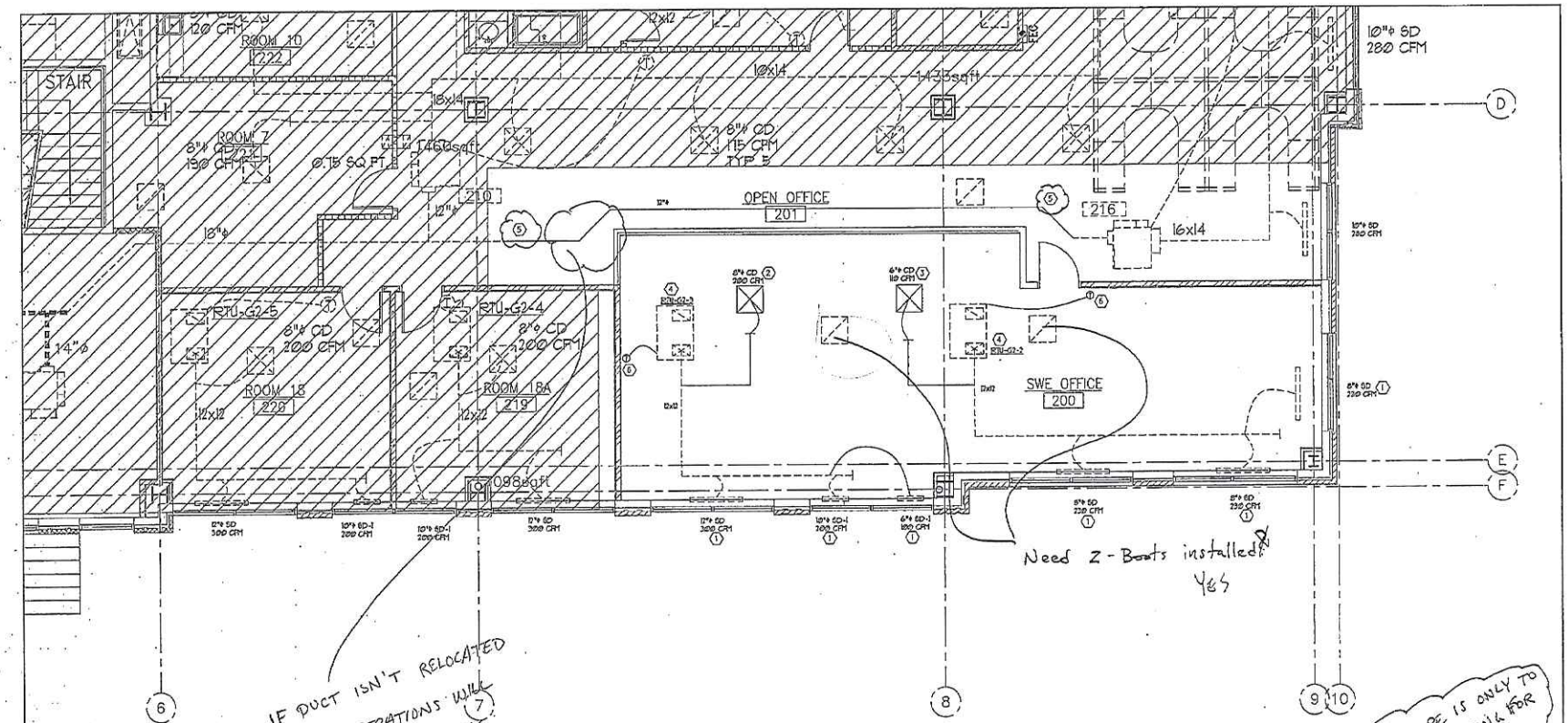
LEGEND, NOTES AND DETAILS - MECHANICAL

R. ROSENTHAL — 13205
PROJECT MANAGER — PROJECT NO.
T. HESSNT — AS NOTED
PROJECT ARCHITECT — SCALE
T. HESSNT — 03/29/13
DRAWN BY — DATE

M0.1

FILE PLOT DATE — DRAWING NO.

ISSUED FOR CONSTRUCTION



Need Z-Boots installed?
Yes

IF DUCT ISN'T RELOCATED WALL PENETRATIONS WILL REQUIRE DI-ELECTRIC, INSPECTION PORT & MAN BARS

FP SCOPE IS ONLY TO MODIFY EXISTING FOR NEW ROOM LAYOUT

1 / M1.2 PARTIAL SECOND FLOOR PLAN – MECHANICAL

1/4"=1'-0"

GENERAL NOTES:

1. PLENUM RETURN AIR SYSTEM IS BEING USED. COMBUSTIBLE MATERIALS PROHIBITED IN PLENUM.
2. INSTALL DUCTWORK TIGHT TO STRUCTURE.
3. SEE DETAIL 1/M0.1 FOR CEILING DIFFUSER CONNECTION.
4. ADJUST LOCATIONS OF EXISTING TO REMAIN AIR DISTRIBUTION DEVICES AS NECESSARY TO MATCH THE NEW RCP PER ARCHITECTURAL PLANS.
5. FURNISH AND INSTALL Z-BOOTS WITHIN RETURN AIR SYSTEMS PER TENANT REQUIREMENTS. SEE ARCHITECTURAL FOR Z-BOOT DETAIL.

KEY NOTES:

1. REBALANCE EXISTING TO REMAIN AIR DISTRIBUTION DEVICE TO AIRFLOW NOTED.
2. REBALANCE RELOCATED AIR DISTRIBUTION DEVICE TO AIRFLOW NOTED.
3. FURNISH AND INSTALL NEW BASE BUILDING STANDARD CEILING DIFFUSER WITH NECK SIZE AND AIRFLOW AS SHOWN.
4. REBALANCE EXISTING TO REMAIN ROOFTOP UNIT TO AIRFLOW OF CONNECTED AIR DISTRIBUTION DEVICES.
5. CONNECT TO EXISTING MEDIUM PRESSURE DUCTWORK AND REROUTE MEDIUM PRESSURE DUCTWORK AS SHOWN.
6. RELOCATE THERMOSTAT AS SHOWN. COORDINATE FINAL LOCATION WITH ARCHITECT.

SEE 6/10/2013 REVISED WALL SECTION

FIRE PROTECTION NOTES:

1. SPRINKLER HEADS SHALL BE RELOCATED AS NECESSARY TO COMPLY WITH NEW FLOOR PLAN AND RCP.
2. PLENUM IS USED FOR RETURN AIR. ALL MATERIALS USED SHALL MEET FLAME/SMOKE SPREAD REQUIREMENTS.
3. PROVIDE CONCEALED TYPE SPRINKLER HEADS IN HARD CEILINGS. PROVIDE UPRIGHT HEADS IN EXPOSED AREAS, AND SEMI-RECESSED HEADS IN TILED CEILING EQUAL TO BASIC BUILDING STANDARD. COORDINATE COLOR WITH ARCHITECT.

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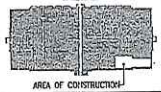
KEY PLAN



AREA OF CONSTRUCTION

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GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
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MT. PLEASANT, SC 29464

PARTIAL SECOND FLOOR PLAN - MECHANICAL

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
T. HESBIT	AS NOTED
PROJECT ENGINEER	SCALE
T. HESBIT	03/28/13
DRAWN BY	DATE
	M1.2
PLOT DATE	DRAWING NO.

ISSUED FOR CONSTRUCTION

SECTION 15010

MECHANICAL GENERAL

1.0 GENERAL

1.01 DESCRIPTION

A. This Division 15 and the accompanying drawings cover the provision of all labor, equipment, appliances, and materials and performing all operations in connection with the construction of the air conditioning, ventilating, heating, fire suppression and plumbing systems as specified herein and as shown.

B. The General Provisions and Division 1, including the general, supplementary and other conditions and other Divisions, as appropriate, apply to work specified in this Division.

1.02 EXISTING CONDITIONS

A. Attention is called to the fact that the work is to be performed within an existing, operational facility. Prior to the submission of bids, each bidder shall visit the project site, thoroughly investigate and be familiar with all existing conditions which will affect their work, especially the work to be performed above the existing ceilings.

B. Connect new work to existing work in a neat and workmanlike manner. Where an existing structure must be cut or existing utilities interfere, such obstructions shall be bypassed, removed, replaced or relocated, patched and repaired. Work disturbed or damaged shall be replaced or repaired to its prior condition.

1.03 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The implied and stated intent of the drawings and specifications is to establish minimum acceptable standards for materials, equipment and workmanship, and to provide operable mechanical systems complete in every respect.

B. The engineering drawings are diagrammatic, intended to show general arrangement and sizes of system components, and shall not be scaled. Rather, the architectural and structural drawings shall govern space constraints, dimensions and finishes. All offsets and fittings which will be necessary to accomplish the finished installation shall be provided at no additional cost or increase in the Contract.

1.04 SPACE PRIORITY

A. Ensure optimum use of available space for materials and equipment installed above ceilings. Allocate space in the order of priority as listed below except as otherwise detailed. Items are listed in the order of priority, with items of equal importance listed under a single priority number.

1. Gravity flow piping systems
2. Vent piping systems
3. Recessed lighting fixtures
4. Concealed HVAC terminals and equipment
5. Air duct systems
6. Sprinkler piping systems
7. Pressurized piping systems
8. Electrical conduit, wiring, control air tubing

B. Order of space priority does not dictate installation sequence. Installation sequence shall be as required to install all affected trades.

C. The work of this Division 15 shall not obstruct access for installation, operation and maintenance of the work of any other Division.

D. All major items of equipment shall be arranged so as to provide a minimum of 28" clear aisle space. Additional space shall be provided between and around equipment for maintenance and proper operation as shown in the equipment manufacturer's literature.

1.05 COORDINATION

A. Coordinate all work under this Division 15 with work under all other Divisions, providing adjustment as necessary.

B. Coordination of space requirements with respect to Division 16 shall be performed such that:

1. No equipment, piping or ductwork, other than electrical, shall be installed within 42" of switchboards or panelboards.

2. No piping or ductwork which ever operates at a temperature in excess of 120 degrees F. shall be installed within 3" of any electrical conductor.

C. All items mounted in or below the ceiling, and all items penetrating the ceiling, shall be coordinated with the architectural reflected ceiling plans. If any items are not shown on these plans, or any items need to be relocated for coordination purposes, prepare a reflected ceiling plan and submit it to the Architect for approval.

1.06 CODE COMPLIANCE

A. All workmanship and materials provided under this Division 15 shall comply with all laws, ordinances, codes and regulations of all Federal, State and Local Authorities having jurisdiction.

B. All fire suppression, plumbing, heating, ventilating, and air conditioning materials and workmanship shall comply with all applicable codes and standards enforced by all Authorities Having Jurisdiction as minimum requirements.

C. Secure and pay all fees associated with all permits and licenses required for execution of the Contract. Arrange for all inspections required by city, county, state and other authorities having jurisdiction, and deliver certificates of approval to the Architect.

D. The code requirements are strictly a minimum and shall be met without incurring additions to the Contract. Where requirements of the drawings or specifications exceed the code requirements, the work shall be provided in accordance with these drawings or specifications. In the event of conflict or ambiguity between the various codes, the most stringent requirement shall govern.

1.07 ELECTRICAL REQUIREMENTS AND INTERFACE

A. All electrical equipment and wiring provided under this Division 15 shall comply with the electrical system characteristics indicated on the electrical drawings and specified in Division 16.

B. Electric controls, contactors, starters, pilot lights, push buttons, etc., shall be provided complete as part of the motor, heater or other equipment which it operates. All electrical components shall be in conformance with the requirements of the National Electrical Code and Division 16. Reference Division 16 and the electrical engineering drawings for those motor starters provided under that Division 16. All starters not shown shall be provided under this Division 15. Unless specified otherwise under other individual equipment Sections, motor starters shall conform to the following minimum requirements:

1. Starters for motors 1/3 horsepower or smaller shall be manual unless remote or automatic starting is required, in which case the starters shall be magnetic, full voltage, non-reversing, single-speed, unless otherwise indicated. All other starters shall be magnetic.

2. Each starter for a three-phase motor shall be furnished with three (3) overload relays sized for the full load running current of the motor actually provided. Provide an external "HAND-OFF-AUTO" selector switch with red "RUNNING" light. Provide a green pilot light to indicate motor "STOPPED". Each pilot light shall have a legend plate indicating reason for signal.

3. Each overload relay shall have a normally open alarm contact which will close only when actuated by an overload (not to be confused with N.O. or N.C. auxiliary contacts). These contacts shall be properly wired to their respective blue pilot light provided on the starter front cover and having a "TRIPPED" legend plate.

4. Individually mounted motor starters shall be in a NEMA Type 1 general purpose enclosure in unfinished areas and shall be flush mounted in all finished areas. All starters mounted in exterior areas shall have a NEMA 3R enclosure. Each starter shall have a laminated nameplate to indicate equipment unit number, function and circuit number.

5. All motor starters, push buttons and pilot lights shall be of the same manufacturer as the switchboard and shall be General Electric, Square D, Siemens I.T.E., or Westinghouse.

C. Motor starters for the following equipment shall be provided under this Division 15 by the manufacturer of the equipment:

1. Packaged air conditioning equipment
2. Water chillers
3. Fire pumps
4. Packaged booster pump systems
5. Other equipment hereinafter specified in other Sections to be provided with integral starters.

D. Unless otherwise noted or specified in individual Sections, all 3-phase motors shall be standard NEMA continuous duty "B" type, with Class B insulation, open drip-proof frame for indoor service, TEFC for outdoor service and a service factor of 1.15. All motors 5 HP and larger shall be U.S. Motors Hi-Efficiency Model or Reliance XE Hi-Efficiency Model.

E. All power wiring and final connections to equipment shall be provided under Division 16.

F. Control components, all interlocks (motor-operated dampers, fire alarm motors, etc.) and control wiring (120 volt, single phase and less) shall be provided under this Division 15 as required to achieve the specified control sequences.

G. All control wiring over 30 volts shall be installed by a licensed electrician working under this Division 15.

1.08 SLEEVES, SEALS AND ESCUTCHEONS

A. Sleeves shall be provided through all pipe penetrations of concrete or masonry walls, elevated floors and roofs, except those plumbing piping penetrations for fixtures, vents, etc.

B. Sleeves shall be fabricated from Schedule 40 steel pipe through 10" and Standard Wall steel pipe for sleeve sizes 12" and larger. All sleeves penetrating exterior walls, underground walls, pit or vault walls shall be provided with a 3" x 3/8" thick waterstop ring welded completely to the midpoint of the sleeve.

C. All sleeves penetrating exterior walls, underground walls, pit or vault walls and elevated floors shall be packed and sealed watertight.

D. Sleeves through roofs shall extend above the roof surface and be flashed watertight.

E. Sleeves through walls shall be cut and finished flush with each surface of the wall in which they are installed.

F. Sleeves shall be sized to provide a minimum of 1/2" clearance between the inside surface of the sleeve and the outside finished surface of the pipe plus any insulation specified.

G. Fire-stops shall be provided as specified herein. All annular spaces between piping and sleeves, which do not require fire-stops, shall be packed with mineral wool and caulked.

H. Provide round, chrome-plated escutcheons on all exposed piping penetrations passing through walls, floors, partitions and ceilings.

1.09 FIRE-STOPS

A. Where ductwork, piping, conduit, etc. pass through fire partitions, fire walls and floors, a fire-stop shall be provided that will ensure an effective barrier against the spread of fire, smoke and gases. Fire-stop material shall be packed tight and completely fill gaps between the ductwork, piping, conduit, etc. and the perimeter of their rough openings.

B. Fire-stopping material shall maintain its dimensions and integrity while preventing the passage of flame, smoke and gases under conditions of installation and use when exposed to the ASTM E119 time-temperature curve for a time period equivalent to the rating of the assembly penetrated. Fire-stopping material shall be noncombustible as defined by ASTM E136; and, for insulation materials, melt point shall be a minimum of 1700 degrees F. for 1-hour protection and 1850 degrees F. for 2-hour protection. Fire-stopping material shall be Dow-Corning RTV Foam or 3M Fire Barrier Products or Sohio Carborundum Fyre Putty.

C. See Section 15400 for fire stopping of PVC piping.

1.10 CORE DRILLING

A. Cutting of holes through concrete and masonry shall be by diamond core or concrete saw. Pneumatic hammer, impact electric and hand or manual hammer type drills will not be allowed, except as permitted by the Architect where required by limited working space. Locate holes such that they will not affect structural sections such as ribs or beams. Holes shall be laid out well in advance of the installation. These layout locations shall be approved by the Architect prior to drilling.

2.0 PRODUCTS

2.01 BID BASIS AND SUBSTITUTION PROCEDURES

A. Manufacturers names, series and model numbers, as noted or specified, are for the purpose of describing type, capacity, and quality of equipment, materials and products to be used. Unless "or equal" is specifically stated, bids shall be based only on the specified "basis of design" manufacturer. The listing of a particular manufacturer as an "equal" or "acceptable substitute" manufacturer shall not be misconstrued as approving nor allowing the substitution of that manufacturer's standard product in place of the basis of design. No consideration will be given to a product, which would require dimensional, spatial or aesthetic changes to the project. "Acceptable substitute" and "equal" manufacturers shall only bid those products, which exactly match the size and other characteristics of the specified basis of design. Any changes to other disciplines and trades of work required by an "or equal" or "substitute" product shall be duly considered and priced accordingly prior to bidding or pricing. The decision as to whether or not a proposed substitute or "equal" product is actually equal to that specified shall rest solely with the Architect.

B. Requests to provide "equal" products in lieu of those specified shall be submitted to the Architect in writing at least ten (10) days prior to final pricing and execution of the Contract. No consideration will be given to substitute products after final pricing and execution of the Contract.

C. Any "or equal" product or proposed product substitution which will cause a change in the appearance, dimensions or design of any part of the building, it structure, electrical system or any other engineered systems shall be accompanied by a scaled drawing and written description of the required change(s) for approval by the Architect. If deemed necessary by the Architect, design changes shall be signed and sealed by a registered Professional Engineer, currently licensed in this State.

2.02 MINIMUM STANDARDS

A. Every piece of energy consuming equipment, all fire suppression products and life safety equipment shall comply with the following standards as applicable; especially in regard to prevailing codes:

1. Factory Mutual Laboratories (FM)
2. Industrial Risk Insurers (IRI)
3. Underwriters Laboratories, Inc. (UL)
4. ADC: Air Diffusion Council
5. AGA: American Gas Association
6. AMCA: Air Moving and Conditioning Association, Inc.
7. ANSI: American National Standards Institute
8. API: American Petroleum Institute
9. ARI: American Refrigeration Institute
10. ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers
11. ASME: American Society of Mechanical Engineers
12. ASTM: American Society of Testing and Materials
13. AWWA: American Water Works Association
14. IBR: Institute of Boiler and Radiator Manufacturers
15. MSS: Manufacturers Standardization Society
16. NBBPVI: National Board of Boiler and Pressure Vessel Inspectors
17. NEMA: National Electrical Manufacturer's Association
18. OSHA: Occupational Safety & Health Administration
19. PDI: Plumbing Drainage Institute
20. PPI: Plastic Pipe Institute
21. SMACNA: Sheet Metal and Air Conditioning Contractors National Association, Inc.

3.0 EXECUTION

3.01 SUBMITTALS

A. Before preparing submittals, study all Contract Drawings and specifications in detail, obtain manufacturer's recommended instructions, and have submittals prepared based on specific equipment and material proposed for installation. An officer of the contracting firm shall sign all shop drawings (certifying conformance with plans and specifications) before submitting to the Architect or releasing to the field.

B. The submittal process shall not be utilized as an avenue to substitute products after the execution of the contract. Should an unspecified or unequal product be submitted, it will be rejected. If a second attempt at substitution is made during the resubmittal of the same product, then no more reviews of that product will be performed without direct compensation to the Engineer being paid for the additional services required for the third review and any further reviews.

C. No more than four (4) copies of submittal data will be reviewed. Any additional copies will be returned unmarked. The responsibility of copying review comments on any additional copies will rest solely with the Contractor.

D. Submittals will not be accepted for review unless they:

1. Comply with the requirements of Division 1.

2. Include complete information pertaining to all appurtenances and accessories.

3. Are submitted as complete packages which pertain to all related items in Division 15. Separate packages shall be submitted as follows:

a. All HVAC equipment and components
b. All plumbing equipment, fixtures and components
c. The fire suppression system
d. The automatic controls and EMS

4. Are properly marked with equipment, service or function identification as related to the project and are marked with pertinent specification paragraph number.

E. Submit catalog information, factory assembly drawings, field installation drawings and certifications as required for complete explanation and description of all items of equipment. The submittal data shall provide ample, unquestionable compliance with the Contract Documents.

F. Review of submittals shall not be construed as authorizing any deviations from the plans and specifications unless such deviations are clearly identified and separately submitted in the form of a letter that is enclosed with the submittals.

G. Submittals are required on all manufactured equipment, especially energy consuming equipment. Submittals shall include, but are not limited to, the following items of equipment:

1. Insulation
2. Air Distribution Devices
3. Ductwork Accessories

3.02 INSTALLATION REQUIREMENTS

A. All equipment shall be installed in strict conformance with the recommendations of the equipment manufacturer, as indicated on the Drawings and as specified.

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No.	Drawing Issue Description	Date
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No.	Drawing Issue Description	Date

GSA RENOVATION
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1671 BELLE ISLE AVENUE,
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SPECIFICATIONS - MECHANICAL

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
T. NESBIT	AS NOTED
PROJECT ENGINEER	SCALE
T. NESBIT	03/20/13
DRAWN BY	DATE

M9.1

FILE PLOT DATE | DRAWING NO.

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B. Provide installation manuals for each piece of equipment. Submit in separately bound volumes after review of submittals.

C. Provide supplementary steel framing and welded steel equipment support stands as required for proper hanging and support of the mechanical systems. Steel angles, channels and tubing utilized for such framing shall be selected for a maximum deflection of 1/360th of the span.

3.03 CLEANING, LUBRICATION AND ADJUSTMENT

A. The exterior surfaces of all mechanical equipment, piping, ductwork, conduit, etc., shall be cleaned and free of all dirt, grease, oil, paint splatter, and other construction debris.

B. Ducts, plenums, and air unit casings shall be cleaned of all debris and either vacuumed or blown free of all rubbish, dirt, and dust before installing grilles, registers or diffusers.

C. Bearings that require lubrication shall be lubricated in strict accordance with the manufacturers recommendations.

D. All control equipment shall be adjusted to the settings required for the performance specified.

3.04 PAINTING

A. All uncoated and uninsulated steel surfaces exposed to sight inside the building, such as piping, equipment hangers and supports which are not provided with factory prime coat or galvanizing, shall be cleaned and painted with one coat of rust inhibiting primer. In addition, all surfaces in finished spaces shall also be painted with two coats of finish paint in a color selected by the Architect.

B. All ductwork surfaces visible through grilles, registers and diffusers in finished areas shall be painted flat black.

C. Steel items exposed outside the building, such as equipment supports, uninsulated piping and hangers, which are not factory painted or galvanized, shall be cleaned and painted with one coat of rust inhibiting primer and two coats of asphaltic base aluminum paint. Insulated steel pipes outside the building shall be cleaned and painted with one coat of rust inhibiting primer before installing insulation.

D. Factory painted equipment that has been scratched or marred shall be repainted to match the original factory color.

3.05 DUCTWORK AND PIPING LEAK TESTING

A. Underground, concealed and insulated ductwork and piping shall be tested for leaks in place before backfilling, concealing or covering. Tests shall be conducted in the presence of the Architect or his designated representative.

B. All low pressure ductwork (design operating pressure of 1.0" W.C. E.S.P. or less) shall be tested by the operation of the system to which it is connected.

C. All visible and audible air leaks from the ductwork systems shall be repaired.

3.07 RECORD (AS-BUILT) DRAWINGS

A. At the completion of the project, provide a set of reproducible copies to the Architect which reflect all changes, deviations and revisions made to the original design documents. Locations of all underground piping and utilities shall be clearly shown and dimensioned from permanent reference points such as building column lines.

3.08 OPERATING AND MAINTENANCE MANUALS AND INSTRUCTIONS

A. Complete operating and maintenance manuals shall be provided to the Owner. Four copies shall be provided. Each copy shall be bound in a separate 3-ring, loose-leaf notebook. Operating instructions shall be provided for each mechanical system, and shall each include a brief system description, a simple schematic and a sequence of operation. Operating and maintenance instructions shall be provided for each piece of equipment. A control system wiring diagram shall be included in each operating and maintenance manual.

B. Prior to final acceptance or beneficial occupancy, provide the services of a competent technician for not less than one (1) day to instruct the Owner in the operation of the mechanical systems.

3.09 TESTING AND BALANCING

A. Testing and balancing of the HVAC system shall be performed as specified in Section 15043. Note that this work is to be performed under a separate Contract directly under the General Contractor. Submit four (4) copies of the test and balance report directly to the Architect.

3.10 WARRANTY

A. All work provided under this Division 15 shall be subject to a minimum one year warranty. The warranty shall include prompt repair or replacement of equipment or system failures and shall include all parts and labor. In addition, all reciprocating air conditioning compressors shall carry an additional four year parts-only warranty. Extended warranties shall be provided on all other equipment so specified in other Sections.

END OF SECTION

SECTION 15043

HVAC TEST & BALANCE

1.0 GENERAL

1.01 DESCRIPTION

A. All work specified in this Section is governed by the Mechanical General Section 15010.

B. This Section 15043 and the accompanying drawings cover the provision of all labor, equipment, appliances, and materials and performing all operations in connection with the testing and balancing (T&B) of the heating, ventilating and air conditioning (HVAC) systems as specified herein and as shown. These systems include, but are not limited to, the following:

1. Supply distribution systems
2. Return and exhaust air systems
3. Heating, ventilating and air conditioning equipment

1.02 INTENT

A. It is the intent of this Section of the specifications to provide a complete operable and balanced HVAC system as shown and specified which is reasonably airtight, comfortable and free of objectionable noise and vibration.

1.03 SCOPE OF WORK

A. HVAC test and balance shall be performed by an independent agency certified by the Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) under direct contract to the General Contractor. All work performed by this agency shall be performed by qualified technicians under the direct supervision of an AABC or NEBB certified test and balance engineer. The agency shall be independent and shall not be associated in any way with the installing HVAC subcontractor.

B. HVAC Test and Balance shall be performed in accordance with the 6th edition of the AABC National Standards, 2002 for Total System Balance or the NEBB Procedural Standards for TAB of Environmental Systems, 7th Edition, 2005 together with the NEBB TAB Manual for Technicians, 2nd Edition.

C. The final Test and Balance report shall serve to substantiate compliance with the intent of the Contract Documents, specifically the HVAC systems.

D. HVAC Test and Balance shall not begin until the systems are substantially complete.

E. Upon the completion of the Test and Balance work, the Agency shall submit four (4) copies of the complete HVAC Test and Balance Report directly to the Architect.

F. The Agency, as a part of its contract with the General Contractor, shall act as an authorized inspection agency, responsible to the General Contractor and the Architect and shall, during the test and balance, list those items which require correction or have not been installed in accordance with the Contract Documents.

G. The Agency shall plainly mark the settings of all valves, dampers and other adjustable devices. If a balancing device is provided with a memory stop, it shall be set, locked and marked.

H. The Agency shall record all of the final set points on all variable speed drives.

1.04 SUBMITTALS

A. The name and certification of the Agency, along with the name and certification of the Certified Test and Balance Engineer, shall be submitted to the Architect for review within 30 days after the award of the general contract.

B. The selected Agency shall submit to the Owner:

1. Procedural Manual
2. Report Forms
3. AABC or NEBB Performance Guaranty
4. Instrument List and Calibration Dates
5. Schedule

C. A reviewed copy of each of the above shall be returned to the Agency before the HVAC Test and Balance begins.

D. If a complete submittal in accordance with these requirements is not received within 60 days from award of the general contract, then the Architect reserves the right to select the Agency.

2.0 PRODUCTS

2.01 (Not applicable).

3.0 EXECUTION

3.01 GENERAL CONTRACTOR'S DUTIES

A. The General Contractor shall provide the following, within 10 days after his receipt, to the Agency:

1. Contract drawings
2. Contract applicable specification Division 15 (others as applicable)
3. Addenda
4. Change orders
5. Reviewed submittals

B. The General Contractor shall start-up and maintain the HVAC systems and shall continue the operation of the HVAC systems during each day of testing and balancing. Start-up and operation shall include, as a minimum, the following:

1. All equipment operable and in safe condition.
2. Temperature control system complete.
3. Proper thermal overload protection in place for electrical equipment.
4. Ductwork leakage rates not exceeding those specified and all duct systems clean of debris.
5. Air transfer systems shall have:
   a. Correct fan rotation and RPM.
   b. Coil fins cleaned and combed.
   c. Filters clean and in place.
   d. Access doors closed.
   e. All dampers in place and open.
   f. All grilles, registers and diffusers installed.

C. Provide sufficient time before final completion date so that testing and balancing can be accomplished. Coordinate the submitted T&B schedule.

D. Provide immediate labor and tools to make required corrections and repairs without undue delay.

E. The General Contractor and his subcontractors shall cooperate fully with the Agency to provide the following:

1. Access to HVAC system components.
2. The right to adjust the systems.

F. Any conditions which prevent a proper HVAC Test and Balance shall be reported by the Agency to the General Contractor and Architect within 7 days of their discovery.

G. If it is determined by the Agency and confirmed by the Architect that drive changes or additional balancing dampers are required, the Contractor shall obtain and install all necessary components.

H. The Agency shall cooperate with the Architect and the Contractor and all his subcontractors to perform the work in such a manner as to meet the job schedule.

I. The Agency shall verify that all system components are in place and in proper working order prior to leaving the project.

J. All reported, recorded data shall represent true measured conditions.

END OF SECTION

SECTION 15840

DUCTWORK

1.0 GENERAL

1.01 DESCRIPTION

A. All work specified in this Section is governed by the Mechanical General Section 15010.

B. This Section 15840 and the accompanying drawings cover the provisions of all labor, equipment, appliances, and materials and performing all operations in connection with the construction of the ductwork systems as specified herein and as shown. These systems include, but are not limited to, the following:

1. Supply air ductwork
2. Return, transfer and relief air ductwork

1.02 INTENT

A. It is the intent of this Section of the specifications to provide a complete operable duct system as shown and specified which is reasonably airtight, free of noise, vibration and sweating, and fabricated so as to fit into the space allotted and to exhibit a minimum resistance to airflow.

1.03 DESIGN AND CONSTRUCTION

A. Ductwork shall be provided in strict accordance with the first edition -- 1985 -- of the SMACNA HVAC Duct Construction Standards -- Metal and Flexible, NFPA No. 90A, 90B, 91 and 96, and UL 181.

B. Ductwork dimensions shown are net, clear, inside dimensions with no allowance shown for duct liner. All ductwork specified to be lined shall be 2" larger than shown in each dimension to compensate for the liner. Ductwork shall be square, rectangular, round, spiral or flat oval as noted. Conversion of duct shapes and sizes shown shall be accomplished without increasing air velocities or friction losses and is subject to prior approval by the Architect.

C. Elbows shall be either full radius type (inside radius equal to duct width), five-gore radiused flat-oval type or, in low pressure systems only, mitered with double-thickness turning vanes.

D. Abrupt changes in duct sizes and shapes shall not be permitted. The total angle of diverging transitions shall be not more than 15 degrees; converging transitions shall be not more than 30 degrees unless otherwise noted or required due to structural constraints.

E. Offsets, transitions, rises and drops are not individually called out on the design drawings. They shall be provided as required to fit the ductwork into the allocated spaces.

F. Transition rectangular ductwork on bottom and sides. Maintain top of ductwork level and as high as possible.

G. Provide the following types of ductwork material for the services indicated:

TYPE OF MATERIAL	SERVICE
1. Galvanized sheetmetal	Supply, return, exhaust and relief of comfort conditioned and outside air.

2.0 PRODUCTS

2.01 GALVANIZED SHEETMETAL

A. Galvanized sheetmetal shall be lock-forming grade G90-ASTM A 525 hot dip galvanized steel sheets. Sheetmetal shall be galvanized on each side with not less than 1.25 ounces of zinc per square foot.

2.02 SPIRAL DUCT

A. Spiral duct shall be utilized for all flat-oval and round ductwork in medium and high-pressure systems.

B. Spiral duct shall be the product of United McGill Corporation, R.V. Money or an approved equal.

C. Spiral ribbed duct is not acceptable.

2.03 DAMPERS

A. Manual Volume Dampers

1. Single blade butterfly dampers are acceptable up to 12" round or 12" x 12" square. Dampers larger than these dimensions shall be multi-blade type. Single blade dampers shall be constructed of 16 gauge or heavier galvanized sheetmetal.

2. No multi-blade damper blade shall exceed 8" in width. All multiple blade dampers shall be constructed of 16 gauge galvanized steel or heavier. The damper frame shall be 16 gauge or heavier. The damper action shall be opposed-blade type.

3. Each blade shall pivot on a 1/2" cadmium plated, cold-rolled steel axle which pivots within self-lubricating, oilite bronze bearings.

4. The top and bottom edges of each rectangular damper blade shall be crimped for stiffness.

5. The operating rod for all dampers shall be extended outside the damper frame for attachment of an operator. Each operator shall have a position indicator and locking quadrant.

6. All dampers utilized for introduction of outside air shall have flexible, gasketed edge and end seals. The leakage rate shall be less than 4 CFM per sq. ft. of face area against a 1" W.G. differential pressure, based on a nominal 48" x 48" damper size.

7. Manual volume dampers shall be as manufactured by Louvers & Dampers, Inc. or an approved equal.

B. Control Dampers

1. Control dampers shall be of the same construction as manual volume dampers, except that no manual operator and quadrant is required. The operating rod shall be suitable for operation by an automatic pneumatic or electric operator.

C. Fire Dampers

1. Fire dampers shall be UL-listed and labeled for 1 1/2 hours and shall be provided with 160 degrees F. links. Dampers installed within ducts shall be Type B or Type C with the blades out of the air stream. Areas indicated shall be net, clear, open areas.

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GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

SPECIFICATIONS - MECHANICAL

R. ROSENTHAL	13295
PROJECT MANAGER	PROJECT NO.
T. NESBIT	AS NOTED
DRAWN BY	SCALE
T. NESBIT	05/20/13
CHECKED BY	DATE
	M9.2
FILE PLOT DATE	DRAWING NO.

ISSUED FOR CONSTRUCTION

D. Smoke Dampers

1. Smoke dampers shall be UL-listed as Class 1 low-leakage smoke dampers and shall be products of Prefco.

2.04 LOW-PRESSURE DUCT BRANCHES

A. Splitter dampers shall be provided at all low-pressure ductwork branches. All low-pressure ductwork branches shall be radiused or 45 degree take-offs: straight taps are unacceptable. The length of the damper blade shall be the same as the width of the widest duct section at the split, but in no case shall blade length be less than 12". Each operator rod shall have a locking swivel joint.

2.05 FLEXIBLE DUCT

A. Flexible ductwork shall be Class 1, UL 181 air duct and meet NFPA 90A and 90B Standards.

B. The internal duct surface shall be acoustically rated, black CPE bonded to a coated steel wire helix. The external jacket shall be a fiberglass, bi-directionally reinforced, metallized vapor barrier with a standing, triple ply seam. Fiberglass insulation shall be provided between the duct surface and the jacket to achieve a maximum thermal conductance of 0.23 BTU/Hr./sq. ft./degree F. at 75 degrees F. mean.

C. Flexible ductwork shall be suitable for 10" W.G. positive pressure and 1" W.G. negative pressure.

D. Flexible ductwork, insulation and insulation cover shall be suitable for ceiling return air plenum installation and shall comply with all applicable codes and standards regarding such ceiling plenum installations.

E. Flexible duct shall be Thermaflex M-KE or an approved equal.

F. The maximum allowable installed length of flexible ductwork shall be as follows:

1. 8'-0" on low-pressure supply air systems limited to short runouts and end of runs connected to round neck supply diffusers and registers.

2. 2'-0" on connections from round neck grilles to sheetmetal ductwork on return, exhaust and transfer ductwork.

G. Provide a spin-in fitting with integral scoop and volume damper at all flexible run-out connections in low-pressure supply air ductwork only.

2.06 FLEXIBLE CONNECTIONS

A. Provide flexible duct connections at the inlet and outlet of each belt-driven fan, indoor unit, fan coil unit, air handling unit, etc., and at all other locations indicated. Flexible connections shall be fabricated from a glass fabric coated on both sides with neoprene. Minimum weight shall be 30 oz. per sq. yard.

2.07 DUCT HARDWARE

A. Duct hardware shall be as manufactured by Young Regulator or an approved equal.

2.08 ACCESS DOORS

A. A duct access door shall be provided at each fire damper. Access doors shall be designed for 1.5 times the pressure of the duct in which they are mounted. Access doors shall be of sufficient size to provide access to the dampers for resetting the blades and replacing the links. Access doors in medium and high-pressure ductwork shall be installed downstream of fire dampers and shall be implosion type. Where access is provided through gypsum board walls or ceilings, furnish access door for installation under Division 9. Each door shall match the fire-rating of the wall or ceiling indicated.

2.09 DUCT LINER

A. Duct liner shall be one inch thick, 1 1/2 lb. density (3 lb. density on medium- and high-pressure supply air systems) fibrous glass with one face coated with a black fire retardant compound. The permanent composite fire and smoke hazard rating of the liner shall be stenciled on the liner face and shall be:

1. Maximum flame spread 25

2. Maximum smoke developed 50

2.10 DUCT INSULATION

A. Duct insulation shall be 2" thick, minimum 3/4 lb. density fiberglass with an FSKL 0.00035" thick aluminum foil jacket, reinforced with fiberglass scrim. Thermal conductivity shall be a maximum of K = 0.24 at 75 degrees F. mean temperature.

B. Insulation adhesive shall be Benjamin Foster 85-20. Tape shall be aluminum foil and shall be SMACNA listed and labeled.

C. The composite NFPA 90A and 90B, ASTM E84, UL rating of the installed insulation shall not exceed 25/50.

D. The grease exhaust ductwork shall have zero-clearance to combustibles wrap throughout. Coordinate the insulation with all required access panels, drains, etc as required by NFPA 96.

3.0 EXECUTION

3.01 INSTALLATION

A. Ductwork shall be installed in strict accordance with SMACNA, UL and NFPA standards.

B. Duct liner shall be provided for the following minimum distances or through the first elbow(s) or as otherwise indicated on the drawings, whichever is greater, downstream of each unit indicated below:

1. Packaged rooftop unit 25 feet

Duct liner shall also be provided throughout all return air, transfer and plenums.

C. Duct liner shall be cut to provide overlapped and compressed longitudinal corner joints. Liner shall be installed with the coated surface facing the air stream. Duct liner shall be adhered to the ductwork with a 100% coverage of the sheet metal surfaces using a fire retardant adhesive applied by spraying. Coat all exposed leading edges and all transverse joints with fire retardant adhesive. The liner shall be additionally secured using metal pins welded to the duct and speed washers. All leading edges shall be secured with sheet metal airfoils.

D. All supply air ductwork which is not lined shall be insulated. All outside air ductwork shall be insulated. Insulation shall be cut slightly longer than circumference of duct to insure full thickness at corners. All insulation shall be applied with edges tightly bonded. Insulation shall be adhered to duct with fire resistant adhesive. Adhesive shall be applied so that insulation conforms to duct surfaces uniformly and firmly. In addition to the adhesive, the insulation shall be additionally secured to the bottom of all ducts 18" or wider by means of welded pins and speed clips. The protruding end of the pins shall be cut off flush after the speed clips have been applied. The vapor-barrier facing shall be thoroughly sealed with tape where the pins have pierced through. All joints shall be sealed with 2" wide SMACNA tape. Any cuts or tears shall be sealed with SMACNA tape.

E. Flexible ducts utilized in the low-pressure ductwork systems shall be installed without kinks or bends which are less than a centerline radius equal to or greater than twice the diameter of the flexible duct being installed.

F. All intersections (crossing) of low-pressure and medium-pressure ductwork shall be made with offsets in the low-pressure ductwork only. The medium pressure ductwork shall be run straight and level.

END OF SECTION

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SPECIFICATIONS - MECHANICAL

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PROJECT MANAGER	PROJECT NO.
T. NESBIT	AS NOTED
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T. NESBIT	05/28/13
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FILE PLOT DATE	DRAWING NO.

ISSUED FOR CONSTRUCTION

ELECTRICAL GENERAL NOTES

1. ALL WORK THIS DIVISION SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF THE 2011 NATIONAL ELECTRICAL CODE.
2. THE CONTRACTOR SHALL KEEP A RECORD OF THE CHANGES WHICH ARE IN CONFLICT WITH THESE DRAWINGS AND SPECIFICATIONS. AT THE COMPLETION OF HIS WORK HE SHALL SUBMIT "AS BUILT" PRINTS TO THE OWNER.
3. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. ALL WORK SHALL BE INSTALLED SO THAT JUNCTION BOXES AND COMPONENTS WILL BE ACCESSIBLE FOR SERVICE.
4. ALL SYSTEMS, EQUIPMENT, COMPONENTS, WORK, ETC. PROVIDED UNDER THIS DIVISION SHALL BE COVERED BY A ONE YEAR GUARANTEE STARTING AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. ANY DEFECTS IN THE WORK, SYSTEMS, EQUIPMENT, OR COMPONENTS FOUND DURING THIS YEAR SHALL BE CORRECTED AT NO CHARGE. THE GUARANTEE SHALL INCLUDE PROVIDING ALL NECESSARY CUTTING, PATCHWORK, REPAINTING, ETC. TO MAKE THE WORK COMPLETE AND NEW.
5. NEUTRAL CONDUCTORS FOR CONNECTIONS TO ALL FURNITURE SYSTEMS TO BE #10 AWG.
6. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THW" OR "THHN" INSULATION AND THE MINIMUM WIRE SIZE SHALL BE #12 A.W.G. WITH A 167 DEGREE TEMPERATURE RATING.
7. ALL WORK MUST BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED PRINCIPALS OF FIRST CLASS WORKMANSHIP.
8. REUSE ALL AVAILABLE AND ABANDONED CIRCUITS AND BREAKERS IN EXISTING PANELS.
9. STUB UP 1" EMT 6" ABOVE CEILING IN NEAREST WALL AT EACH TELEPHONE OUTLET AND COMPUTER OUTLET.
10. FASTEN ALL RECESSED LIGHTING FIXTURES TO STRUCTURE OR GRID PER N.E.C. 410-16.
11. RECESSED INCANDESCENT FIXTURES SHALL BE SUPPORTED IN COMPLIANCE WITH N.E.C. 410-65(C).
12. ALL PENETRATIONS THRU RATED WALLS, FLOORS AND CEILINGS SHALL BE FIRE STOPPED PER N.E.C. 300-21.
13. PROVIDE ALL GROUNDING AS REQUIRED BY N.E.C.
14. ALL UPPER LEVEL FLOOR SLAB PENETRATIONS SHALL BE CORE DRILLED, SLEEVED & SEALED PER LANDLORDS REQUIREMENTS.
15. DEVICE MOUNTING HEIGHTS ARE TO BE MEASURED TO THE DEVICE CENTERLINE.
16. ALL SWITCHES FOR FANS, LIGHTS, ETC. WHICH ARE SHOWN TO BE MOUNTED IN THE SAME GENERAL AREA SHALL SHARE A MULTI-GANG COVER PLATE AS REQUIRED.
17. REUSE ALL REMOVED, EXISTING UNDAMAGED RECEPTACLES WHERE POSSIBLE.
18. REUSE EXISTING HOMERUNS WHERE APPLICABLE WITHIN THE DESIGN CRITERIA OF THESE DRAWINGS. ALL HOMERUNS ARE TO BE PROTECTED BY 20A/1P BREAKERS UNLESS OTHERWISE NOTED.
19. REMOVE ALL ABANDONED WIRE.
20. WHERE DEMOLITION DISRUPTS ELECTRICAL CONTINUITY OF EXISTING TO REMAIN RECEPTACLES/LIGHTS, AND NO RECONNECTION IS SHOWN, RECONNECT TO ITS EXISTING CIRCUIT.
21. ALL CONDUIT SHALL BE 1/2" EMT WITH 2#12AWG CONDUCTORS UNLESS OTHERWISE NOTED.
22. UPDATE EACH PANEL DIRECTORY NOTING ALL CHANGES AND ADDITIONS.
23. PROVIDE #12AWG GND. FOR ALL MECHANICAL EQUIPMENT UNLESS SHOWN OTHERWISE. ALL EQUIPMENT SHALL BE GROUNDED AT THE PANEL WHICH FEEDS THE EQUIPMENT.
24. COORDINATE RECEPTACLE NEMA TYPE AND VOLTAGE WITH COPIERS AND EQUIPMENT.
25. PROVIDE A NEW DIRECTORY FOR ALL PANELS. CORRECTLY LABEL ALL EXISTING CIRCUITS, NEW CIRCUITS, SPARES AND SPACES.
26. PROVIDE A SEPARATE GREEN, INSULATED, #12AWG EQUIPMENT GROUNDING CONDUCTOR ROUTED WITH THE BRANCH CIRCUIT HOMERUN CONDUCTORS.
27. WHERE RECEPTACLES ARE REMOVED OR MOVED, REUSE EXISTING CIRCUITRY IF POSSIBLE.
28. WHERE WORK BY THE GENERAL CONTRACTOR (WALL REMOVAL, NEW OR RELOCATED WALL OPENING, ETC.) RESULTS IN THE REMOVAL, RELOCATION OR REFEEDING OF ELECTRICAL DEVICES OR LIGHTING FIXTURES, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT OR RECONNECT AS REQUIRED ALL ACTIVE DEVICES REMAINING ON THAT CIRCUIT SYSTEM.
29. RING OUT ALL CIRCUITS IN EXISTING PANEL AFFECTED BY THIS RENOVATION. WHERE ADDITIONAL CIRCUITS ARE NEEDED, REUSE CIRCUITS AVAILABLE FOR REUSE, OR PROVIDE NEW BREAKERS, TAG ALL UNUSED CIRCUITS AS SPARE. REPLACE ALL INOPERATIVE OR DEFECTIVE CIRCUIT BREAKERS. TIGHTEN ALL CONNECTIONS.

FIRE ALARM GENERAL NOTES

1. ALL NEW FIRE-ALARM DEVICES SHALL BE ADA APPROVED. COORDINATE COLOR WITH ARCHITECT AND BASE BUILDING. PROVIDE ANY ADDITIONAL POWER AMPLIFIERS REQUIRED FOR INSTALLATION OF NEW ADA APPROVED DEVICES.
2. ALL FIRE ALARM DEVICES, INCLUDING SPEAKERS, VISUALS, SMOKE DETECTORS, ETC. SHALL BE CONNECTED TO THE BASE BUILDING FIRE ALARM SYSTEM BY A LICENSED FIRE ALARM CONTRACTOR. COORDINATE CONNECTIONS WITH SYSTEM MANUFACTURER.
3. ALL DEVICES SHALL BE 110 CANDELA UNLESS OTHERWISE NOTED.
4. THE ENTIRE LENS OF VISUAL FIRE ALARM DEVICES SHALL BE MOUNTED AT LEAST 80" AFF.
5. COORDINATE FIRE ALARM SYSTEM SHUTDOWNS AND REPROGRAMMING WITH LANDLORD.

SECURITY & FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	ON CENTER MTG. HT. (AFF)	NOTES ①
	ACCESS CONTROL KEYPAD. PROVIDE JUNCTION BOX WITH 3/4"C. TO SECURE SIDE OF DOOR. COORDINATE INSTALLATION AND TERMINATION POINT IN SECURE SPACE WITH SECURITY VENDOR/CONTRACTOR.	48"	
	CARD READER FOR ACCESS CONTROL. PROVIDE JUNCTION BOX WITH 3/4"C. TO SECURE SIDE OF DOOR. COORDINATE INSTALLATION AND TERMINATION POINT IN SECURE SPACE WITH SECURITY VENDOR/CONTRACTOR.	48"	
	ALARM CONTROL KEYPAD. PROVIDE JUNCTION BOX WITH 3/4"C. TO SECURE SIDE OF DOOR. COORDINATE INSTALLATION AND TERMINATION POINT IN SECURE SPACE WITH SECURITY VENDOR/CONTRACTOR.	48"	
	WALL-MOUNTED FIRE ALARM ADA APPROVED AUDIO/VISUAL ALARM - SELECTABLE TO 110cd U.N.O.	80"	③
	WALL-MOUNTED FIRE ALARM ADA APPROVED VISUAL ALARM	80"	③
	FIRE ALARM SMOKE DETECTOR - CEILING / WALL MOUNT		⑤
	FIRE ALARM DUCT-MOUNTED SMOKE DETECTOR. COORDINATE WITH DIVISION 15 TO PROVIDE INSTALLATION TO COMPLY WITH NFPA 72.		
	DUCT-MOUNTED SMOKE DETECTOR IN RETURN AIR PATH PER NFPA. COORDINATE WITH DIVISION 15 TO PROVIDE INSTALLATION TO COMPLY WITH NFPA 72.		

LIGHTING CONTROL SYMBOL LEGEND

SYMBOL	DESCRIPTION	ON CENTER MTG. HT. (AFF)	NOTES
	WALL-MOUNTED OCCUPANCY SENSOR SWITCH - NOVITAS 01-250 OR PRE-APPROVED EQUAL	48"	
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE. (SENSOR SHALL BE SENSOR SWITCH - (CM-PDT-9) OR BE APPROVED EQUAL). PROVIDE POWER PACK, QUANTITY AS REQUIRED.		
	POWER PACK FOR LOW-VOLTAGE OCCUPANCY SENSOR (SENSOR SWITCH PP-20 OR PRE-APPROVED EQUAL).		
LV	PLENUM RATED LOW-VOLTAGE CABLING FOR OCCUPANCY SENSOR 24 Vdc POWER AND CONTROLS. CONTRACTOR SHALL COORDINATE CABLING SPECIFICATION WITH OCCUPANCY SENSOR/POWER PACK MANUFACTURER'S DOCUMENTATION.		

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION
A	RECESSED GRID 2'x4', 3" DEEP, 18 CELL (3x6), PARABOLIC, 3-LAMP FLUORESCENT TROFFER. PROVIDE WITH SILVER SEMI-SPECULAR/HAZE LOW IRIDESCENT LOUVER, PROVIDE 277 VOLT FACTORY INSTALLED LESS THAN 10% THD ELECTRONIC BALLAST. LAMPS: (3) F32T8/SPX35 MANUFACTURER: MATCH BASE BUILDING STANDARD. FIXTURE WATTAGE: 96W
A1	SAME AS TYPE "A" EXCEPT PROVIDE WITH 90-MINUTE, 1100 LUMEN EMERGENCY BATTERY INVERTER.
B	RECESSED LOW VOLTAGE ADJUSTABLE DOWNLIGHT WITH 3" APERTURE. PROVIDE WITH INTEGRAL 277/12V TRANSFORMER. COORDINATE EXACT FINISH OPTIONS AND LOCATION WITH ARCHITECT. LAMPS: (1) 50W MR16 MANUFACTURER: HALO H3ELVTAT277-3003, OR EQUAL BY LITHONIA, DAY BRITE, LIGHTOLIER FIXTURE WATTAGE: 50W

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	ON CENTER MTG. HT. (AFF)	NOTES ①
	CONCEALED CONDUIT IN CEILING OR WALL		
	CONCEALED CONDUIT IN OR UNDERNEATH FLOOR SLAB		
	EXPOSED CONDUIT		
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD = 1 CIRCUIT		
	NO. OF CONDUCTORS IN CONDUIT; EACH TICKMARK = 1 WIRE		
	FLEXIBLE CONDUIT OR S.O. CORD		
	CONDUIT CONTINUATION		
	CONDUIT TERMINATION POINT		
	CONDUIT STUBBED UP OR TURNED DOWN		
	SURFACE MOUNTED RACEWAY (WIREMOLD ALM800 DUAL-CHANNEL U.N.O.) REFER TO PLANS FOR EXACT SPECIFICATION AND LENGTH.		②③
	PLUGMOLD MULTIOUTLET SURFACE MOUNTED RACEWAY. (WIREMOLD AL 2000 U.N.O. 6" SPACING) REFER TO PLANS FOR EXACT SPECIFICATION AND LENGTH.		②③
	3/4" PLYWOOD BACKBOARD OVER WALLS AS INDICATED ON PLANS WITH 1/6 GROUND WIRE FROM COPPER GROUND BAR (SIZE AS REQUIRED) TO BUILDING GROUNDING ELECTRODE SYSTEM. COAT WITH FIRE-RETARDANT SEALING WITH FINISH TO MATCH WALLS		
	WALL-MOUNTED DUPLEX RECEPTACLE OUTLET - NEMA 5-15R U.N.O.	18"	③
	WALL-MOUNTED DEDICATED DUPLEX RECEPTACLE OUTLET - NEMA 5-20R U.N.O.	18"	③
	WALL-MOUNTED DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT CIRCUIT INTERRUPTER - NEMA 5-20R	18"	③
	WALL-MOUNTED DOUBLE-DUPLEX ("QUAD") RECEPTACLE OUTLET - NEMA 5-15R U.N.O.	18"	③
	CEILING MOUNTED DUPLEX RECEPTACLE OUTLET - NEMA 5-15R U.N.O.	18"	③
	WALL-MOUNTED DOUBLE-DUPLEX ("QUAD") RECEPTACLE OUTLET, TELEPHONE AND DATA OUTLET. ALL ELECTRICAL DEVICES SHALL BE SHIELDED.	18"	③
	JUNCTION BOX - CEILING / WALL-MOUNTED - SIZE AS REQUIRED	18"	
	WALL-MOUNTED TELEPHONE/FAX DATA DROP. PROVIDE JUNCTION BOX WITH 1"C. STUB-UP TO 6" ABOVE ACCESSIBLE CEILING FOR CABLING.	18"	③
	WALL-MOUNTED 'TS' DATA OUTLET. PROVIDE JUNCTION BOX WITH 1"C. STUB-UP TO 6" ABOVE ACCESSIBLE CEILING FOR CABLING.	18"	③
	WALL-MOUNTED 'S' DATA OUTLET. PROVIDE JUNCTION BOX WITH 1"C. STUB-UP TO 6" ABOVE ACCESSIBLE CEILING FOR CABLING.	18"	③
	WALL-MOUNTED UNCLASSIFIED DATA DROP. PROVIDE JUNCTION BOX WITH 1"C. STUB-UP TO 6" ABOVE ACCESSIBLE CEILING FOR CABLING.	18"	③
	WALL-MOUNTED TELEVISION OUTLET (FOR CATV, SATELLITE, ETC.). PROVIDE JUNCTION BOX WITH 1"C. STUB-UP TO 6" ABOVE ACCESSIBLE CEILING FOR CABLING.	18"	③
	TWO (2) SURFACE-MOUNTED JUNCTION BOXES FOR MODULAR FURNITURE FEED. ONE (1) FOR POWER CONNECTIONS AND ONE (1) FOR COMMUNICATIONS CONNECTION AND 1¼" CONDUIT WITH PULLSTRING. ALL CONDUITS SHALL BE SURFACE MOUNTED AND CONTINUE TO 6" ABOVE ACCESSIBLE CEILING. PROVIDE WHIP FOR FINAL CONNECTION TO FURNITURE AS REQUIRED. ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT WITH FURNITURE VENDOR/TENANT PRIOR TO INSTALLATION.		
	WALL-MOUNTED S.P.S.T. TOGGLE SWITCH	48"	③④
	HEAVY DUTY ROTATING BEACON	AS REQ'D.	
	2'x4' FLUORESCENT LIGHTING TROFFER		⑥
	DOWNLIGHT		⑥
	LIGHTING FIXTURE WITH EMERGENCY GENERATOR OR BATTERY BACKUP		⑥
	DOUBLE-FACED EXIT SIGN - CEILING / WALL MT. - DIRECTIONAL ARROWS AS INDICATED ON PLANS		⑥
	MOTOR RATED TOGGLE SWITCH	AS REQ'D.	
	277/480 VOLT PANELBOARD		
	120/208 VOLT PANELBOARD		
	MOTOR - NUMBER INDICATES HORSEPOWER (F=FRACTIONAL)		
AFF/AFG	ABOVE FINISHED FLOOR/ABOVE FINISHED GRADE		
E/R/N	EXISTING/RELOCATED/NEW		
IC	ISOLATED GROUND		
NL	INDICATES "NIGHT LIGHT". LIGHTING FIXTURE TO REMAIN UNSWITCH FOR CONTINUOUS 24 HOUR OPERATION		
U.N.O.	UNLESS NOTED OTHERWISE		
C.	CONDUIT		
G.	GROUND		

NOTES:
① UNLESS NOTED OTHERWISE ON PLANS
② PROVIDE ALL ACCESSORIES AND FITTINGS NEEDED FOR COMPLETE INSTALLATION
③ COORDINATE FINISH OF DEVICES AND COVERPLATES WITH ARCHITECT
④ GANG ADJACENT SWITCHES UNDER ONE COVERPLATE
⑤ COORDINATE EXACT QUANTITY AND LOCATION WITH SPRINKLER SHOP DRAWINGS.
⑥ REFER TO LIGHTING FIXTURE SCHEDULE FOR SPECIFICATION

NOTE: COPYING, DISSEMINATION, OR DISTRIBUTION OF THESE DRAWINGS, PLANS OR SPECIFICATIONS TO UNAUTHORIZED USERS IS PROHIBITED. DO NOT REMOVE THIS NOTICE. PROPERLY DESTROY DOCUMENTS WHEN NO LONGER NEEDED.

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No.	Drawing Issue Description	Date
1	ISSUE FOR REVIEW - 50% SET	03/20/13
2	ISSUE FOR REVIEW - 90% SET	04/19/13
3	ISSUED FOR PERMIT & CONSTRUCTION	05/28/13

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE, SUITE 200
MT. PLEASANT, SC 29464

ELECTRICAL LEGEND SCHEDULE & NOTES

R. ROSENTHAL (PROJECT MANAGER)	13205 (PROJECT NO.)
S. WILKINS (PROJECT ENGINEER)	AS NOTED (SCALE)
S. ACOSTA (DRAWN BY)	03/20/13 (DATE)
(FILE PLOT DATE)	E0.1 (DRAWING NO.)

ISSUED FOR CONSTRUCTION

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(EXISTING) PANEL H2

VOLTAGE: 277/480 AMP: 100
PHASE: 3 MAIN: MLO

DESCRIPTION	KW	BRK	CK	PH	CK	BRK	KW	DESCRIPTION
LIGHTING*	1.3	20/1	1	A	2	20/1	4.5	WATER HEATER*
LIGHTING*	1.1	20/1	3	B	4	20/1	0.4	EF-1*
LIGHTING*	1.7	20/1	5	C	6	20/1	0.4	EF-2*
LIGHTING*	2.0	20/1	7	A	8	20/1	0.4	EF-3*
LIGHTING*	2.0	20/1	9	B	10			SPACE
LIGHTING*	3.2	20/1	11	C	12			SPACE
LIGHTING*	3.3	20/1	13	A	14			SPACE
OPEN OFF. LTS.*	2.3	20/1	15	B	16			SPACE
OFFICE LIGHTS*	1.3	20/1	17	C	18			SPACE
OFFICE LIGHTS*	2.2	20/1	19	A	20			SPACE
SPACE			21	B	22			SPACE
SPACE			23	C	24			SPACE
SPACE			25	A	26			SPACE
SPACE			27	B	28			SPACE
SPACE			29	C	30			SPACE
SPACE			31	A	32			SPACE
SPACE			33	B	34			SPACE
SPACE			35	C	36			SPACE
SPACE			37	A	38			SPACE
SPACE			39	B	40			SPACE
SPACE			41	C	42			SPACE

*INDICATES EXISTING CIRCUIT BREAKER TO REMAIN AS IS.
**INDICATES EXISTING CIRCUIT LOAD MODIFIED BY RENOVATION

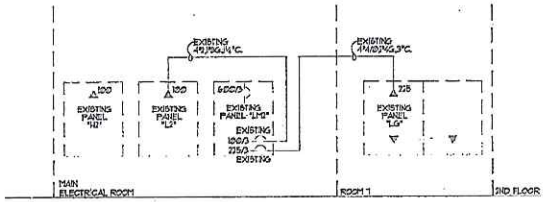
A TOTAL	13.66
B TOTAL	6.36
C TOTAL	6.6
CONN. kw	26.64
CONN. amps	32.05

VOL	PH
480	3

RECEPTACLES
HEATING
AIR COND.
LIGHTING
MISC.

TOTAL DEMAND LOAD – PANEL H2

RECEPTACLES: 100% 1ST 10KW + 50% REMAINING	=	0.00 KW
HEAT: 100%	=	0.00 KW
AC/MOTORS: 125% LARGEST + 100% REMAINING	=	1.17 KW
LIGHTING: 125%	=	20.33 KW
MISC: 100%	=	0.00 KW
WATER HEATER: 125%	=	5.63 KW
ELEVATORS: PER NEC:	=	0.00 KW
KITCHEN EQUIPMENT: PER NEC:	=	0.00 KW
TOTAL DEMAND LOAD KW:	=	33.13
TOTAL DEMAND LOAD AMPS:	=	39.92



1 / 1D.2 PARTIAL ELECTRICAL RISER DIAGRAM
NOT TO SCALE

EXISTING PANEL L2

VOLTAGE: 120/208 AMP: 100
PHASE: 3 MAIN: MLO

DESCRIPTION	KW	BRK	CK	PH	CK	BRK	KW	DESCRIPTION
GENERAL REC*	1.26	20/1	1	A	2	20/1	0.4	RECEPTACLES*
OFFICE REC*	0.36	20/1	3	B	4	20/1	1	RECEPTACLES*
FURN FEED*	0.04	20/1	5	C	6	20/1	0.4	RECEPTACLES*
---	0.04	---	7	A	8	20/1	1	RECEPTACLES*
---	0.90	---	9	B	10	20/1	1	TEL. EQPMT*
FURN FEED*	0.72	20/1	11	C	12	20/1	1	TEL. EQPMT*
GENERAL REC*	1.26	20/1	13	A	14	20/1	1	TEL. EQPMT*
OFFICE REC*	0.72	20/1	15	B	16	20/1	0.5	FAX*
WORK RM REC.*	1	20/1	17	C	18	20/1	0.5	DDC CNTRL PNL*
WORK RM REC.*	1	20/1	19	A	20	20/1	1	WORK RM. REC.*
SERVER RM REC.*	1	20/1	21	B	22	20/1	0.04	CORRIDOR REC.*
EF-1*	0.11	20/1	23	C	24	20/1	0.36	FURN OFC 206**
WH-1*	2	30/2	25	A	26	---	0.36	---
---	2	---	27	B	28	20/1	0.36	D-REC OFC 206**
REFRIGERATOR*	1	20/1	29	C	30	20/1	0.36	D-REC OFC 206**

*-INDICATES EXISTING CIRCUIT TO REMAIN AS IS.
**-INDICATES NEW CIRCUIT BREAKER AND CIRCUIT ADDED FOR TENANT RENOVATION

A TOTAL	6.62
B TOTAL	7.66
C TOTAL	5.84
CONN. kw	23.29
CONN. amps	64.72

VOL	PH
208	3

RECEPTACLES
HEATING
AIR COND.
LIGHTING
MISC.

TOTAL DEMAND LOAD – PANEL L2

RECEPTACLES: 100% 1ST 10KW + 50% REMAINING	=	12.60 KW
HEAT: 100%	=	0.00 KW
AC/MOTORS: 125% LARGEST + 100% REMAINING	=	0.14 KW
LIGHTING: 125%	=	0.00 KW
MISC: 100%	=	4.00 KW
WATER HEATER: 125%	=	5.00 KW
ELEVATORS: PER NEC:	=	0.00 KW
KITCHEN EQUIPMENT: PER NEC:	=	0.00 KW
TOTAL DEMAND LOAD KW:	=	21.74
TOTAL DEMAND LOAD AMPS:	=	60.39

EXISTING PANEL L1

VOLTAGE: 120/208 AMP: 225
PHASE: 3 MAIN: MCB

DESCRIPTION	KW	BRK	CK	PH	CK	BRK	KW	DESCRIPTION
MODULAR FURN.*	0.9	20/3	1	A	2	20/1	0.9	OFFICE RECEPT.*
---	0.9	---	3	B	4	20/1	0.72	OFFICE RECEPT.*
---	0.9	---	5	C	6	20/1	0.72	OFFICE RECEPT.*
MODULAR FURN.*	0.9	20/1	7	A	8	20/1	0.5	RM 209 DED. REC.*
MODULAR FURN.*	1.44	20/3	9	B	10	20/1	0.5	RM 209 DED. REC.*
---	1.44	---	11	C	12	20/1	0.72	OFFICE RECEPT.*
---	1.44	---	13	A	14	20/1	0.5	RM 205 DED. REC.*
MODULAR FURN.*	0.72	20/1	15	B	16	20/1	0.9	OFFICE RECEPT.
MODULAR FURN.*	0.72	20/1	17	C	18	20/1	1.44	OFFICE RECEPT.*
MODULAR FURN.*	1.20	20/3	19	A	20	20/1	0.5	RM 208 DED. REC.*
---	1.20	---	21	B	22	20/1	0.5	RM 208 DED. REC.*
---	1.20	---	23	C	24	20/1	0.5	RM 207 DED. REC.*
MODULAR FURN.*	0.72	20/1	25	A	26	20/1	0.5	RM 207 DED. REC.*
MODULAR FURN.*	0.72	20/1	27	B	28	20/1	0.5	RM 207 DED. REC.*
MODULAR FURN.*	1.20	20/3	29	C	30	20/1	0.5	RM 207 DED. REC.*
---	1.20	---	31	A	32	20/1	0.36	OFFICE RECEPT.*
---	1.20	---	33	B	34	20/1	1.26	OFFICE RECEPT.*
MODULAR FURN.*	0.72	20/1	35	C	36	20/1	0.36	RM 216 DED. REC.*
MODULAR FURN.*	0.72	20/1	37	A	38	20/1	0.72	OFFICE RECEPT.*
RM 204 DED. REC.*	0.5	20/1	39	B	40	20/1	0.72	OFFICE RECEPT.*
RM 204 DED. REC.*	0.5	20/1	41	C	42	20/1	0.36	GENERAL RECEPT.*

*INDICATES EXISTING CIRCUIT BREAKER TO REMAIN AS IS.

A TOTAL	11.18
B TOTAL	11.0
C TOTAL	11.4
CONN. kw	34.18
CONN. amps	95.65

VOL	PH
208	3

RECEPTACLES
HEATING
AIR COND.
LIGHTING
MISC.

TOTAL DEMAND LOAD – PANEL L1 SECTIONS 1 & 2

RECEPTACLES: 100% 1ST 10KW + 50% REMAINING	=	28.94 KW
HEAT: 100%	=	0.00 KW
AC/MOTORS: 125% LARGEST + 100% REMAINING	=	34.45 KW
LIGHTING: 125%	=	0.23 KW
MISC: 100%	=	0.00 KW
WATER HEATER: 125%	=	0.00 KW
ELEVATORS: PER NEC:	=	0.00 KW
KITCHEN EQUIPMENT: PER NEC:	=	0.00 KW
TOTAL DEMAND LOAD KW (SECTIONS 1 & 2):	=	64.62
TOTAL DEMAND LOAD AMPS (SECTIONS 1 & 2):	=	179.50

EXISTING PANEL L1

(SECTION 2)

DESCRIPTION	KW	BRK	CK	PH	CK	BRK	KW	DESCRIPTION
RTU-02-3*	5.3	60/2	43	A	44	20/2	0.36	FURN OFC 206**
---	5.3	---	45	B	46	---	0.36	---
SHUNT TRIP*		---	47	C	48	20/2	0.36	FURN OFC 206**
RTU-02-4*	5.3	60/2	49	A	50	---	0.36	---
---	5.3	---	51	B	52	20/2	0.36	FURN OFC 206**
SHUNT TRIP*		---	53	C	54	---	0.36	---
RTU-02-5*	5.3	60/2	55	A	56	20/1	0.36	RM 217 DED. REC.*
---	5.3	---	57	B	58	20/1	0.36	RM 217 DED. REC.
SHUNT TRIP*		---	59	C	60	20/1	0.36	REC OFC 206**
REC OFC 206**	0.36	---	61	A	62	20/1	0.36	RM 217 DED. REC.*
RM 229 DED. REC.*	0.5	20/1	63	B	64	20/1	0.36	RM 217 DED. REC.*
RM 229 DED. REC.	0.5	20/1	65	C	66	20/1	0.36	RM 217 DED. REC.
RM 229 DED. REC.*	1	30/2	67	A	68	20/1	0.36	RM 217 DED. REC.*
---	1	---	69	B	70	20/1	0.36	RM 217 DED. REC.*
RM 228 DED. REC.*	1	30/1	71	C	72	20/1	0.5	RM 215 R.O.*
RM 219 DED. REC.*	0.18	20/1	73	A	74	20/1	0.5	RM 215 MISC.*
RM 219 DED. REC.*	0.18	20/1	75	B	76	20/1	1.08	GENERAL REC.*
RM 219 DED. REC.*	0.18	20/1	77	C	78	20/1	0.5	BREAK RM REC.*
RM 219 DED. REC.*	0.18	20/1	79	A	80	20/1	0.5	MICROWAVE*
RM 219 DED. REC.*	0.18	20/1	81	B	82	20/1	0.5	COFFEE MAKER*
RM 219 DED. REC.*	0.18	20/1	83	C	84	20/1	0.5	REFRIGERATOR*

*-INDICATES EXISTING CIRCUIT TO REMAIN AS IS.
**-INDICATES NEW CIRCUIT BREAKER AND CIRCUIT ADDED FOR TENANT RENOVATION

A TOTAL	20.94
B TOTAL	21.34
C TOTAL	5.1
CONN. kw	47.18
CONN. amps	131.1

VOL	PH
208	3

RECEPTACLES
HEATING
AIR COND.
LIGHTING
MISC.

TOTAL DEMAND LOAD – PANEL L1 SECTION 2

RECEPTACLES: 100% 1ST 10KW + 50% REMAINING	=	12.70 KW
HEAT: 100%	=	0.00 KW
AC/MOTORS: 125% LARGEST + 100% REMAINING	=	34.45 KW
LIGHTING: 125%	=	0.23 KW
MISC: 100%	=	0.00 KW
WATER HEATER: 125%	=	0.00 KW
ELEVATORS: PER NEC:	=	0.00 KW
KITCHEN EQUIPMENT: PER NEC:	=	0.00 KW
TOTAL DEMAND LOAD KW (SECTION 2):	=	47.15
TOTAL DEMAND LOAD AMPS (SECTION 2):	=	130.97

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No.	Drawing Issue Description	Date
1	ISSUE FOR REVIEW – 50% SET	03/20/13
2	ISSUE FOR REVIEW – 90% SET	04/19/13
3	ISSUED FOR PERMIT & CONSTRUCTION	05/28/13

No.	Drawing Issue Description	Date

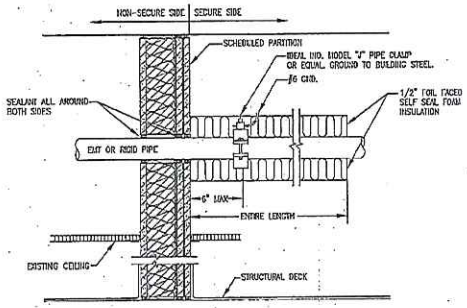
GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

ELECTRICAL RISER
DIAGRAM & PANEL
SCHEDULES

R. ROSENTHAL	13285
PROJECT MANAGER	PROJECT NO.
S. NUNES	AS NOTED
DRAWN BY	SCALE
S. ACOSTA	03/20/13
DRAWN BY	DATE
FILE PLOT DATE	DRAWING NO.

E0.2

ISSUED FOR CONSTRUCTION

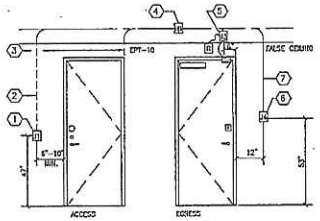


1 / E0.3 GROUNDING & WRAPPING

NOT TO SCALE

GENERAL NOTES:
(APPLY TO DETAIL 1/E0.3 ONLY)

1. GROUNDING AND WRAPPING REQUIRES TENANT APPROVAL.
2. IF RACEWAY DIAMETER IS GREATER THAN 2" THEN USE A SENNOR IND. SI-0954 SERIES UNIV. GROUND STRAP CLAMP WITH PENETRATOR. ("P" SUFFIX TO P/N).

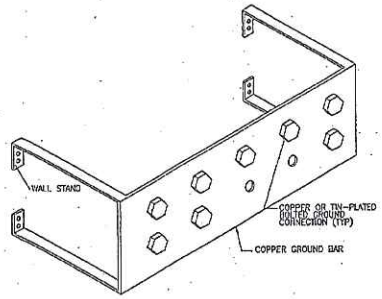


2 / E0.3 ELECTRICAL REQUIREMENTS AT ACCESS CONTROLLED DOORS

NOT TO SCALE

LEGEND NOTES
(APPLY TO DETAIL 2/E0.3 ONLY)

1. RECESSED ROUGH-IN BOX: GOVERNMENT FURNISHED, CONTRACTOR INSTALLED OR SINGLE GANG JUNCTION BOX.
2. PROVIDE 3/4" EMT CONDUIT WITH PULL STRING. CONDUIT SHALL BE TERMINATED AT HOFFMAN TERMINATION ENCLOSURE (H1).
3. PROVIDE EMT CONDUIT WITH PULLSTRING FOR VONDUPRIN ELECTRIC POWER TRANSFER (EPT10). COORDINATE EXACT CONDUIT SIZE WITH GOVERNMENT REPRESENTATIVE. CONDUIT SHALL BE TERMINATED AT HOFFMAN TERMINATION ENCLOSURE (H1).
4. HOFFMAN TERMINATION ENCLOSURE.
5. SINGLE GANG JUNCTION BOX (J3) ABOVE DOOR FRAME.
6. SURFACE MOUNTED DECORATIVE DOUBLE GANG JUNCTION BOX (J4).
7. PROVIDE SURFACE MOUNTED EMT CONDUIT WITH PULLSTRING. CONDUIT SHALL BE PAINTED TO MATCH WALL COLOR. COORDINATE EXACT CONDUIT SIZE WITH GOVERNMENT REPRESENTATIVE. CONDUIT SHALL BE TERMINATED AT HOFFMAN TERMINATION ENCLOSURE (H1).

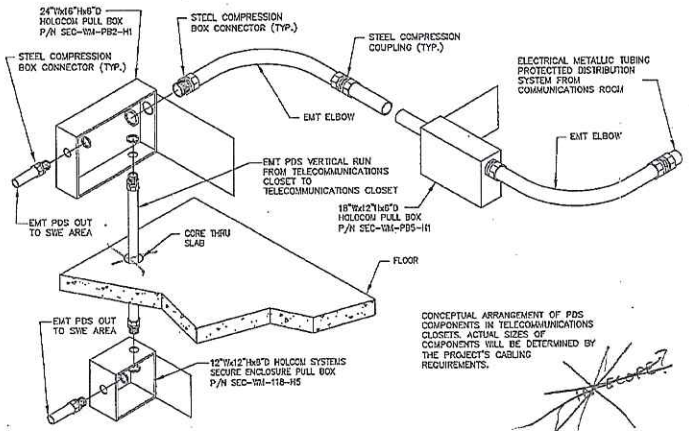


4 / E0.3 TYPICAL GROUND BAR DETAIL

NOT TO SCALE

GENERAL NOTES:
(APPLY TO DETAIL 4/E0.3 ONLY)

1. GROUNDING SYSTEM SHALL BE IN COMPLIANCE WITH ANSI/TIA/EIA-607, NFPA 70 AND ALL APPLICABLE CODES.



CONCEPTUAL ARRANGEMENT OF PDS COMPONENTS IN TELECOMMUNICATIONS CLOSETS. ACTUAL SIZES OF COMPONENTS WILL BE DETERMINED BY THE PROJECT'S CABLING REQUIREMENTS.

3 / E0.3 PROTECTED DISTRIBUTION SYSTEM

NO SCALE

GENERAL NOTES:
(APPLY TO DETAIL 3/E0.3 ONLY)

1. EXISTING AND/OR SITE PROVIDED EQUIPMENT AND COMPONENTS.
2. A PROTECTED DISTRIBUTION SYSTEM (PDS) IS A CONDUIT PATHWAY FOR THE CONVEYANCE OF SECURE DATA CABLING BETWEEN CONTROLLED ACCESS AREAS. AS SUCH, ALL PDS INSTALLATION METHODS SHALL COMPLY WITH THE MINIMUM REQUIREMENTS SET FORTH IN THE NATIONAL ELECTRICAL CODE. ADDITIONALLY, ALL PDS WILL COMPLY WITH ALL OF THE REQUIREMENTS DESCRIBED BELOW IN NOTES 3-20 WHICH ARE SPECIFIC TO PDS.
3. PDS SPECIFICATIONS ALLOW THE PENETRATION OF A METALLIC PATHWAY COMPONENT INTO A SECURE SPACE A MAXIMUM OF 6" WITHOUT A DIELECTRIC BREAK.
4. ALL PENETRATIONS IN SWE BARRIERS SHALL BE FIRESTOPPED USING A UL APPROVED FIRESTOP SYSTEM FOR THE SPECIFIC BOUNDARY TYPE IN QUESTION TO MAINTAIN FIRE RESISTANCE RATINGS AND SWE ACOUSTIC INTEGRITY.
5. THE ENTIRE PDS SHALL BE IDENTIFIED BY PROVIDING A CLEARLY VISIBLE RED MARKING AROUND THE ENTIRE CIRCUMFERENCE OF THE PIPE EVERY 4-FEET ALONG ITS ENTIRE LENGTH.
6. WITH THE EXCEPTION OF REQUIRED DIELECTRIC BREAKS PROTECTED DISTRIBUTION SYSTEMS (PDS) SHALL BE CONSTRUCTED END-TO-END USING ELECTRICAL METALLIC TUBING (EMT) OR RIGID GALVANIZED STEEL (RGS) CONDUIT.
7. ALL ELBOWS USED IN A PDS SHALL BE EMT OR RGS COMPATIBLE WITH OTHER SYSTEM MATERIALS. THE USE OF PREFORMED FACTORY BENT ELBOWS IS ENCOURAGED AND RECOMMENDED. WHEN CONDUIT BENDS ARE FIELD FORMED THEY SHALL MEET THE REQUIREMENTS OF NOTES 8-10.
8. FOR CONDUIT SIZES WITH AN OUTSIDE DIAMETER (OD) LESS THAN 2-INCHES FIELD FORMED CONDUIT BENDS SHALL HAVE A MINIMUM BEND RADIUS OF 6x THE OD OF THE CONDUIT.
9. FOR CONDUIT SIZES WITH AN ID EQUAL TO OR GREATER THAN 2-INCHES FIELD FORMED CONDUIT BENDS SHALL HAVE A MINIMUM BEND RADIUS OF 1-6x THE OD OF THE CONDUIT.
10. ALL FIELD FORMED CONDUIT BENDS SHALL BE MADE SO THAT THERE ARE NO KINKS OR OTHER DISCONTINUITIES THAT MAY HAVE A DETRIMENTAL EFFECT ON CABLE SHEATHING DURING CABLE PULLING OPERATIONS. PULL BOX MAY NOT BE USED IN PLACE OF 90 DEGREE ELBOW.
11. ALL FITTINGS USED TO COUPLE AND/OR JOIN THE COMPONENTS OF THE SYSTEM SHALL BE COMPRESSION TYPE, SHALL BE PROPERLY TIGHTENED, AND SHALL BE SEALED OVER THEIR ENTIRE MATING SURFACE AT THE PIPE WITH AN APPROVED TAMPER EVIDENT MATERIAL SUCH AS GLYPTOL RED PAINT, EPOXY, OR HIGH VISCOSITY ENAMEL.
12. ACCESS POINTS SHALL BE INSTALLED AT MAXIMUM INTERVALS OF 100-FEET IN ANY SECTION OF ANY CONDUIT RUN EXCEEDING THAT LENGTH.
13. NO SECTION OF ANY CONDUIT RUN SHALL CONTAIN MORE THAN (2) 90-DEGREE BENDS, OR THEIR EQUIVALENT, BETWEEN ACCESS POINTS.
14. ACCESS POINTS SHALL BE SECURE STEEL PULL BOXES. THE USE OF CONDULETS OR CONDUIT BODIES IS NOT PERMITTED.
15. ALL PULL BOXES INSTALLED AS PART OF A PDS SHALL COMPLY WITH THE REQUIREMENTS OUTLINED IN NOTES 16-19.
16. BOXES SHALL BE CONSTRUCTED OF A MINIMUM OF 16-GUAGE STEEL.
17. BOXES SHALL NOT HAVE PREPUNCHED KNOCKOUTS.
18. SCREW COVER BOXES ARE NOT ACCEPTABLE. BOXES SHALL HAVE HINGED COVERS: THE COVER HINGES SHALL BE ON THE INTERIOR OF THE BOX AND SHALL BE NON-REMOVABLE WITH THE COVER IN ITS CLOSED POSITION.
19. BOXES SHALL BE FITTED WITH A HELDER IN PLACE PADLOCK HASP OR OTHER SECURING METHOD THAT IS NOT REMOVABLE WITH THE COVER IN ITS CLOSED POSITION AND SHALL BE SECURED WITH A CHANGEABLE COMBINATION PADLOCK APPROVED BY THE GENERAL SERVICES ADMINISTRATION (GSA).
20. OTHER ALTERNATIVE DESIGNS AND COMPONENTS MAY ACCEPTABLE FOR THE CONSTRUCTION OF A PDS: HOWEVER, ANY DEVIATIONS FROM THE REQUIREMENTS SPELLED OUT ABOVE WILL REQUIRE THE REVIEW OF AND APPROVAL BY THE APPROVING AUTHORITY.
21. IN CASE OF ANY CONFLICT OR MISUNDERSTANDING WITH THE ABOVE PDS REQUIREMENTS REFER TO THE UNITED STATES NAVY INFORMATION ASSURANCE PUBLICATION 10 PUB-5239-22 DATED OCTOBER 2003. THIS DOCUMENT AND THE APPROVING AUTHORITY FOR THE FEDERAL BUREAU OF INVESTIGATION WILL SERVE AS THE ULTIMATE AUTHORITIES CONCERNING REQUIREMENTS FOR THE PDS.
22. PDS TO TERMINATE AT THE EXISTING SERVICE ENTRANCE BOX FOR THE COMMUNICATIONS VAULT. MINIMAL DETAILS ON THE CONFIGURATION OF THIS ENTRANCE ARE AVAILABLE: CONTRACTOR IS TO DETERMINE SPECIFIC PATHWAY DETAILS AT TIME OF INSTALLATION.

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No.	Drawing Issue Description	Date

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

ELECTRICAL DETAILS

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
S. WILKINS	AS NOTED
PROJECT DIRECTOR	SCALE
S. ACOSTA	03/20/13
DRAWN BY	DATE
FILE PLOT DATE	DRAWING NO.

E0.3

ISSUED FOR CONSTRUCTION

SECTION 16010
ELECTRICAL GENERAL

1.0 GENERAL

1.01 SCOPE

A. Division 16 includes all Specifications in the 16000 series and the accompanying Electrical Drawings. Provide all labor, materials and equipment, and all necessary operations to provide the complete scope of the electrical systems intended under this Division. Division 16 is not a stand alone document, but a part of the complete Project Documents.

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

1.02 EXISTING CONDITIONS

A. Attention is called to the fact that the work is to be performed within an existing, operational facility. Prior to the submission of bids, each bidder shall visit the project site, thoroughly investigate and be familiar with all existing conditions which will affect their work; especially the work to be performed above the existing ceilings.

B. When this project is finished, the work under this Division shall be complete in every respect, completely integrated with all the existing systems, and left in perfect operating condition. The electrical service to the building shall not be interrupted at any time without written coordination of the building's Owner. All existing electrical equipment removed during the project shall be removed from the site after inspection of the building's Owner. All existing electrical systems required to be operating at the project's completion or required to remain in use during the project shall be reconnected, replaced, rerouted or otherwise made to fit with proper workmanship techniques and left in safe working order.

C. Connect new work to existing work in a neat and workmanlike manner. Where an existing structure must be cut or existing utilities interfere, such obstructions shall be bypassed, removed, replaced or relocated, patched and repaired. Work disturbed or damaged shall be replaced or repaired to its prior condition.

1.03 CODES AND REGULATIONS

A. All work under this Division shall comply with all local building codes, laws, regulations, ordinances and the requirements of the 2011 National Electrical Code.

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

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

1.04 DEFINITIONS

A. Contract Documents: The complete set of project Drawings and Specifications.

B. Provide: Furnish, install and connect.

C. Work: All materials installed, including all labor to provide complete system.

D. Wiring or Wired: All wire or cable installed in conduit from panelboard to equipment and connected at both ends with all required boxes, connectors, couplings, etc.

E. Conduit: Rigid steel conduit intermediate metal conduit (I.M.C.), electrical metallic tubing (EMT) plastic conduit (PVC), electrical non-metal tubing (ENT), or flexible steel conduit.

1.05 DRAWINGS AND SPECIFICATIONS

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

B. Should any conflicts exist between the Drawings and Specifications or there is an item shown/called for which is not clearly defined, immediately submit a request for clarification. No additional monies will be granted later when a conflict is resolved or an item is more clearly defined.

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

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

1.06 SITE VISIT

A. Visit the site and become familiar with all aspects of the site and existing conditions before submitting Contract price.

B. No allowance will be made for lack of knowledge of existing conditions.

1.07 DEVIATIONS

A. No deviations from the Contract Documents shall be made without the full knowledge and written consent of the Architect.

B. If the existing conditions make it desirable to modify the Contract Documents in regard to any item, provide a written request to the Architect.

2.0 PRODUCTS

2.01 STANDARDS FOR MATERIALS AND WORKMANSHIP

A. All materials used shall be new and shall be stamped with the label of Underwriters Laboratories, Inc. (UL).

B. All materials shall meet the standards of the following associations and institutes where applicable:

1. National Fire Protection Association (NFPA)
2. American Society of Testing Materials (ASTM)
3. American National Standards Institute (ANSI)
4. National Electrical Manufacturer's Association (NEMA)
5. Institute of Electrical and Electronic Engineers (IEEE)

C. Manufacturers names and catalog numbers specified herein are intended to describe the material and set the standard of quality. All bids shall be based on material specified. Requests for approval of material not specified shall be considered if the request is in written form and submitted to the Architect no later than fourteen (14) days before bid date. All requests shall conform with the provisions of the general and supplementary conditions.

D. Samples of materials requested to be substituted shall be furnished upon the request of the Architect.

2.02 SHOP DRAWINGS AND SUBMITTAL

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

B. The following items shall be submitted for review:

1. Conduit and wire
2. Devices
3. Coverplates
4. Motor starters
5. Lighting fixtures
6. Fuses
7. Overcurrent devices
8. Disconnect switches

C. All shop drawings and submittals shall be submitted in compliance with the requirements of the general and supplementary conditions. No more than four (4) copies of submittal data will be reviewed. Any additional copies will be returned unmarked. The responsibility of copying review comments on any additional copies will rest solely with the contractor.

D. All submittals shall bear the name of the manufacturer to be used.

E. All shop drawings and submittals shall include a stamped indication signifying that the submittal has been reviewed for compliance with the Contract Documents by the Contractor. This stamped indication also represents the fact that the Contractor has checked this submittal for its interaction with all other Divisions and certifies by his signature or initials that all coordination has taken place. The stamp shall include the date, name of the Contracting Firm, the signature of the Contractor, certification of compliance and approval. This stamp shall be on the submittal before the Engineer will review it.

F. The engineer will review an individual submittal not more than twice. If the submittal is rejected again on the second review, the contractor will bare all responsibility for paying for the engineer's time for additional reviews. Such payments to the engineer shall be withheld from the next monthly pay application.

2.03 RECORD (AS-BUILT) DRAWINGS AND MAINTENANCE MANUALS

A. At job completion, submit to the Architect, a set of mylar sepias showing all deviations from the Contract Documents. The Drawings shall also have dimensions locating all underground conduits.

B. At job completion, submit to the Architect, three (3) sets of maintenance and instruction manuals for all equipment furnished on the project.

3.0 EXECUTION

3.01 COORDINATION

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

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

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

3.02 PROTECTION OF MATERIALS

A. All equipment shall have the original finish when the building is turned over to the Owner.

B. Protect equipment during construction from dirt, water, chemical, mechanical damage, etc. Protect all conduit openings so that no foreign material will enter the conduit.

3.03 TESTS, DEMONSTRATION AND INSTRUCTIONS

A. Test all systems described in this Division in the presence of the Owner or a designated representative upon completion of the work. Demonstrate that the installation is in accordance with Contract Documents.

B. Any work found not-to be in compliance with the Contract Documents shall be repaired or replaced without incurring any additions to the Contract price.

C. Provide to the Owner, all instruction on maintenance and operation of all systems and equipment provided under this Division. Provide all necessary tools and personnel to thoroughly present these instructions.

3.04 GUARANTEE

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

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

SECTION 16100
ELECTRICAL BASIC MATERIALS & METHODS

1.0 GENERAL

1.01 DESCRIPTION

A. All work specified in this Section shall comply with the provisions of Section 16010.

B. This Section describes the basic electrical materials and installation methods that are acceptable and applicable to Division 16.

2.0 PRODUCTS

2.01 CONDUIT

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

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

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

D. Plastic conduit (PVC) shall be schedule 40 PVC heavy wall type. A grounding conductor shall be provided.

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

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

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

H. PVC and ENT conduit approved manufacturers are Carlon and Triangle.

2.02 CONDUIT FITTINGS

A. Rigid conduit and IMC conduit fittings shall be zinc-coated, ferrous metal and taper threaded type.

B. EMT fittings shall be zinc-coated steel and hexnut compression or set-screw type. EMT connectors shall have insulated throats.

C. PVC fittings, elbows and cement shall be produced by the same manufacturer. All joints shall be solvent welded in accordance with the manufacturer's recommendations.

D. Conduit connections to switchboards, motor control centers, transformers, panel cabinets, and pull boxes shall have grounding wedge lugs between the bushing and the box or locknuts designed to bite into the metal.

E. Each conduit end shall be provided with either an insulated throat connector or separate locknut and insulated bushing. Bushing shall be installed before any wire is pulled.

F. Conduit fittings approved manufacturers are Raco, Steel City, O.Z. Gedney, Thomas & Betts and Appleton.

G. Expansion fittings shall be provided in all conduit which crosses and expansion joint.

2.03 CONDUCTORS

A. Conductors shall be copper of 98% conductivity, 600 volt insulation. Sizes specified are AWG gauge for No. 4/0 and smaller and circular mils (MCM) for all sizes larger than no. 4/0. Conductors No. 10 and smaller shall be solid and type "THHN" or "THWN" insulation. No. 8 and larger shall be stranded and type "THW" or "XHHW" insulation. Aluminum conductors may be used for service lateral conductor if the same or larger capacity of the conductors specified. Aluminum conductors shall be Alcan 8000 series, Stabiloy or approved equal.

2.04 OUTLETS

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

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

C. All outlet boxes in plaster or masonry walls or ceiling shall be provided with plaster rings.

D. Junction boxes and all outlets not indicated as containing wiring devices or lighting fixtures shall have covers. Covers for outlets in walls shall be as specified for wall switches and receptacles.

E. Outlet boxes exposed to the weather and outlet boxes for vaportight lighting fixtures and devices shall be of cast iron corrosion resistant type.

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

2.05 DISCONNECT SWITCHES

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

B. Padlocking provisions shall be provided for padlocking in the OFF position.

C. Switches shall be furnished in NEMA 1 General purpose enclosure unless noted otherwise. Switches located on the exterior of the building or in "wet" locations shall have NEMA 3R enclosures.

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

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

2.06 NAMEPLATES

A. Nameplates shall have 3/8" high engraved letters.

B. 120 or 208 volts: white core laminated bakelite with black finish.

B. 277 or 480 volts: white core laminated bakelite with red finish.

2.07 WALL SWITCHES

A. Wall switches shall be plastic, totally enclosed, quiet type, self-grounding, 120 volts or 277 and 20A rating and shall match existing if possible and equal the following:

Single Pole: Hubbell No. CS1221, or equal by Leviton, P&S or Cooper.

Double Pole: Hubbell No. CS1222, or equal by Leviton, P&S or Cooper.

Three-Way: Hubbell No. CS1223, or equal by Leviton, P&S or Cooper.

Four-Way: Hubbell No. CS1224, or equal by Leviton, P&S or Cooper.

B. Color shall be as selected by architect.

C. Flush motor switches with red pilot light and with overload protection for fractional horsepower motors shall be Hubbell No. HBL1221PL.

D. Key switches shall be Hubbell No. HBL1221L 20A Series or approved equal by P&S or Leviton.

2.08 RECEPTACLES

A. Duplex receptacles shall be plastic, two-pole, three wire, self-grounding, side wired, 125 volts and 15A rating and shall match existing if possible and be equal to the following: Duplex receptacles shall be Hubbell No. CR5262 Series, or equal by Leviton, P&S or Cooper. Isolated ground type shall be Hubbell No. CR5252IG Series, or equal by Leviton, P&S or Cooper.

B. Single receptacles shall be two-pole, three wire, self-grounding, side wired, 125 volts and 20A rating and shall be equal to the following: Single receptacles shall be Hubbell No. HBL5361 Series, or equal by Leviton, P&S or Cooper. Isolated ground type to be Hubbell No. IG-5361 Series, or equal by Leviton, P&S or Cooper.

C. Ground fault circuit interrupt (GFI) receptacles shall be Hubbell GFR5352, or equal by P&S Leviton or Cooper.

D. Color shall be as selected by the Architect.

2.09 COVERPLATES

A. Coverplates for flush mounted devices shall be brushed finished stainless steel standard size, Hubbell "P" Series or equal by Leviton, P&S or Cooper.

B. Telephone outlet coverplates shall have same finish as above and have a bushed hole in the center.

C. Coverplates for exterior devices shall be self closing, die cast aluminum Hubbell WPEU or equal by Leviton, P&S or Cooper.

2.10 SMOKE AND FIRE STOP FITTINGS

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

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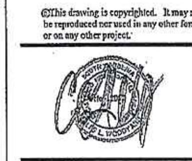

No.	Drawing Issue Description	Date
1	ISSUE FOR REVIEW - 50% SET	03/20/13
2	ISSUE FOR REVIEW - 90% SET	04/19/13
3	ISSUED FOR PERMIT & CONSTRUCTION	05/28/13
No.	Drawing Issue Description	Date

GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

ELECTRICAL SPECIFICATIONS

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
S. WILKINS	AS NOTED
PROJECT ENGINEER	SCALE
S. ACOSTA	03/20/13
DRAWN BY	DATE
FILE PLOT DATE	DRAWING NO.

E0.4

ISSUED FOR CONSTRUCTION

2.12 FUSES

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

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

C. Circuits 601 to 6000 amperes shall be protected by current limiting BUSSMANN HI-CAP Time-Delay Fuses KRP-C. Fuses shall employ "S" clips as positive seals between the end bells and the glass melamine fuse barrel. The terminals shall be opened. Fuses shall be time-delay and must hold 500% of rated current for a minimum of 4 seconds, clear 20 times rated current in 0.1 seconds or less and be listed by Underwriter's Laboratories, Inc. with an interrupting rating of 200,000 amperes RMS symmetrical. The fuses shall be UL Class L.

D. Furnish and turn over to the Owner a minimum of one (1) set of spare fuses (set consisting of three fuses) for each type and rating of fuse used. When the number of fuse sets of the same type and rating actually installed exceeds five (5) sets, furnish an additional spare set of fuses for each five (5) or fraction thereof.

E. Provide a cabinet in which to store all spare fuses, Bussman Catalog No. SFC

F. Acceptable manufacturers are Bussman or equal by Littelfuse.

3.0 EXECUTION

3.01 CONDUIT

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

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

C. Schedule 40 PVC may be used for all underground feeders, service entrance conductors when encased in 4" of concrete on all sides, or under the lowest floor slab.

D. Conduit shall be continuous from outlet to outlet, from outlet to cabinet, junction box and pull box. Conduit shall enter and be secured to all boxes, etc., in such a manner that each system will be electrically continuous from service to all outlets such that a good ground is provided. All conduit from cabinets and junction boxes shall terminate in approved outlet boxes or conduit fittings. Conduit connections to any box which has no threaded hub shall be double lockonuted.

E. Provide junction boxes or pull boxes where shown and where necessary to avoid excessive runs or too many bends between outlets. The conduit sizes shown may increase if desired to facilitate the pulling of cables.

F. All conduit shall be concealed unless indicated otherwise. Install exposed conduit parallel with or at right angles to the building walls and support from walls or ceilings at intervals required by Code with approved galvanized iron clamps or hangers. Concealed conduit above the ceiling shall be supported independent of ceiling construction. Where ceilings of lay-in type are used, conduit must be installed high enough to permit removal of ceiling panels and lighting fixtures. Use threaded rods and hangers for supporting single conduit. Use trapeze hangers consisting of double-nutted threaded rods and "Unistrut" channels or angles of 12 gauge minimum steel for supporting multiple conduit.

G. Minimum size conduit for branch circuits shall not be smaller than 1/2". Home runs shall extend from outlets shown to panel designated. Home runs shown shall not be combined. Home run conduit shall not be smaller than 3/4".

H. At couplings, conduit ends shall be threaded so that they meet in the coupling. Right and left hand couplings shall not be used; conduit couplings of the Erlecon Type shall be used at locations requiring such joints.

I. All conduit for future use, for telephone wire, or for data communication cable, shall be left with No. 10 gauge wire pulled in them or a pull line as manufactured by Ideal, and the ends securely corked or capped.

J. Expansion fittings shall be installed in all conduit which pass through the cross-sectional area of expansion joints.

K. Provide non-hardening elastic type duct seal compound, Near No. OC, 3M Co. "Scotchfil", or Gardner Bender duct seal, for each conduit entering the building from outside and for each conduit passing from one space into another which is normally at a lower temperature.

L. Provide watertight conduit hubs on conduit terminating in a box or cabinet exposed to the weather.

M. Space in sleeves or around conduit that pass through fire - resistive or fire rated walls, partitions, floors or ceilings shall be closed by packing with an unbaffled fire resistive material that will maintain the rating of the barrier penetrated.

3.02 FLEXIBLE CONDUIT

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

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

C. Flexible metal (MC) conduit system may be utilized where concealed in walls and/or ceilings only. MC Cable shall run from point of exit from wall or ceiling to nearest structurally support junction box. MC cable will not be permitted to be installed in the above ceiling space and shall not pass through a fire rated partition. Conductor colors of the MC cable shall comply with 16180 3.04 C

3.04 WIRING

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

B. Conductors shall be continuous from outlet to outlet and from outlet to junction box or pull box. All splices and joints shall be carefully and securely made to be mechanically and electrically solid with pressure type connectors, Gardner Bender "Wingnut" or Ideal "Wagnut". Tape shall be "Scotch" No. 33 for indoor and No. 88 for outdoor or Gardner Bender No. 95-561. Where connection is made to any terminals of more than 20 amperes capacity and where conductors larger than No. 10 are connected to any terminal, copper terminal lugs shall be bolted to the conductors. Where multiple connections are made to the same terminal, individual taps for each conductor shall be used. Aluminum conductors, if used for service conductors, shall be made with high compression lugs as manufactured by Burndy D, Ideal or IMC.

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

D. Conductors for lighting and receptacle circuits shall have color coded jackets. The wiring shall be color coded with the same color used with its respective phase through the entire job as follows:

208/120 Volt System	480/277 Volt System
Phase A – Black	Phase A – Brown
Phase B – Red	Phase B – Orange
Phase C – Blue	Phase C – Yellow
Neutral – White	Neutral – Gray
Ground – Green	Ground – Green

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

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

G. For branch circuits terminating in outlet without device, leave minimum of 12" of slack wire coiled for connection of equipment. All conductors shall be identified with proper circuit numbers at terminals, junction boxes of panelboards within 6" of conductor ends.

3.05 OUTLETS

A. Provide galvanized steel or cast type boxes for all outlets.

B. Where outlet boxes are used to support lighting fixtures, the outlet box shall be anchored to the structural members of the building per NEC 370-13.

C. Outlet boxes shall be flush mounted unless they are specifically shown as being used with exposed conduit or are located above a ceiling.

D. Where outlets are supplied from conduit run in or below floor slabs, the conduit shall be stubbed up at the location shown and the wall built up around the conduit.

E. Cute for outlet boxes in masonry walls shall be made so that the coverplate will completely cover the cut. The mounting height of switch, receptacle and other outlets may be varied slightly, with the Architects approval, so that the outlet box, top or bottom, will occur at a masonry joint.

F. The edge of all outlet boxes shall be flush with the surface in which they are recessed. The devices that fit into the outlet boxes shall be screwed tight before the coverplate is installed and the coverplate shall not be used as a means of tightening the devices in place.

G. Where outlets are shown as being adjacent and different mounting heights are specified for each, they shall be mounted one directly over the other, on the centerline of the group.

3.06 NAMEPLATES

A. Provide specified nameplates on the distribution panels feeder switches, feeder breakers, panelboards, disconnect switches, contactors, starters, transformers, start-stop push buttons and motor switches.

B. Provide nameplates on every device in the main switchboard, distribution panels and motor control centers.

C. Nameplates for surface mounted equipment shall be installed on the exterior of equipment with sheetmetal screws. Nameplates for flush or recessed mounted equipment shall be installed on the inside of the panel door or cover with epoxy cement.

3.07 WALL SWITCHES AND RECEPTACLES

A. Where more than one device is indicated at a location, the devices shall be gang-mounted in combined multi-gang boxes and covered jointly by a common coverplate. Provide barriers as required by the devices and voltages being used.

3.08 COVERPLATES

A. All junction boxes, outlet boxes, multi-gang switch boxes, utility boxes, etc., shall be covered with a coverplate. The coverplate shall be a finished plate as specified unless designated otherwise.

B. Coverplates shall be mounted vertically unless designated otherwise.

3.09 GROUNDING

A. Ground connections shall be in accordance with the 2011 National Electrical Code.

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

C. Provide 1 ß8-3/4" conduit from the system ground to the telephone company main distribution frame or service cabinet and to each telephone backboard.

3.10 TELEPHONE CONDUIT SYSTEM

A. Telephone service shall include wood backboards and equipment cabinets with service entrance conduit as shown.

B. Telephone service entrance cable, all branch cabling and telephone instruments shall be provided by the telephone equipment vendor.

C. Provide an outlet and conduit system for the telephones as shown and leave the same in readiness for wiring by others. Provide pull line in all telephone conduit. Terminate at conduit at a uniform height with smooth insulated bushings at the telephone wood backboards.

D. Telephone wall outlets shall be pressed steel sectional switch boxes, wall mounted at the locations indicated. Coverplate shall have a brushed hole.

E. Telephone floor outlets shall be floor boxes as specified at the locations indicated.

3.11 CONNECTION TO EQUIPMENT

A. Equipment furnished by the Owner or under other Sections, such as mechanical equipment, printer equipment, signs, etc., will be installed by others. Provide electrical service and make the electrical circuit connection to this equipment.

B. Provide PVC insulated flexible cord sets for all cord and plug connected building appliances and equipment. Cords shall be sized in accordance with electrical circuits indicated. Multiple conductor cords shall be "SO" cable with PVC jacket and green insulated ground conductor.

3.12 CORING, CUTTING AND PATCHING

A. Set sleeves for conduit accurately before the concrete floors are poured, or set boxes on the forms so as to leave openings in the floors in which the required sleeves can be subsequently located. Fill in the voids around the sleeves with concrete.

B. Should the performance of this preliminary work be neglected and should cutting be required in order to install conduit, then the expense of the cutting and restoring of surfaces to their original conditions shall be accomplished without incurring additions to the Contract.

3.13 EQUIPMENT ANCHORING

A. All items of electrical equipment, such as switchboards, motor control centers, transformers, standby generator, etc., shall be securely anchored to the building structure. The anchoring shall be accomplished by utilizing a minimum size of 3/8" steel anchor bolts in the structure and to the item of equipment. A minimum of two (2) anchor bolts shall be provided on each side of each item of equipment with the following exceptions:

SECTION 16500
LIGHTING

1.0 GENERAL

N/A

2.0 PRODUCTS

2.01 LIGHTING FIXTURES

A. Each lighting fixture shall be as specified in the Lighting Fixture Schedule corresponding with its fixture type indication (letter).

2.02 LAMPS

A. The type lamps shall be as specified for each lighting fixture in the lighting fixture schedule.

B. The lamp catalog number is the catalog number for General Electric and is given as a standard of the quality and performance required. Equal lamps by Sylvania or Westinghouse will be acceptable. When a lamp manufacturer's name is used along with the catalog number in the lighting fixture schedule, it is considered unequaled by any other lamp and shall not be substituted for. The lamp performance with energy conserving ballasts furnished under this Section shall be certified by a nationally recognized independent testing laboratory.

3.0 EXECUTION

3.01 SUPPORT OF LIGHTING FIXTURES

A. All lighting shall be supported from the building structure. The fixtures shall be supported in a manner that will insure the fixture weight being equally distributed from each support and the fixture remaining in a level position.

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GSA RENOVATION
OFFICES AT BELLE HALL
1671 BELLE ISLE AVENUE,
SUITE 200
MT. PLEASANT, SC 29464

ELECTRICAL
SPECIFICATIONS

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
S. VILINUS	AS NOTED
PROJECT ARCHITECT	SCALE
S. ACOSTA	03/20/13
DRAWN BY	DATE

E0.5

FILE PLOT NAME — DRAWING NO.

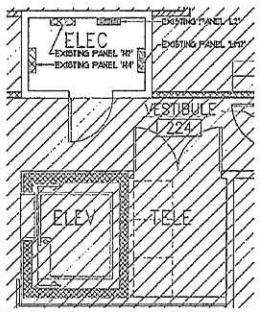
ISSUED FOR CONSTRUCTION

GENERAL NOTES:
(APPLY TO THIS PLAN ONLY)

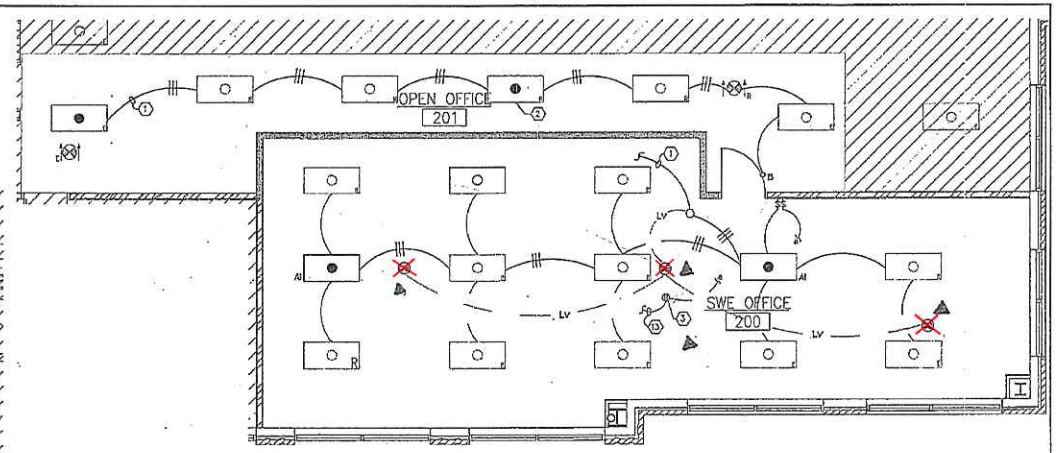
1. COORDINATE EXACT LOCATION OF ALL ELECTRICAL DEVICES AND LIGHT FIXTURES WITH ARCHITECT AND TENANT PRIOR TO INSTALLATION.
2. PROVIDE INSULATING FOAM AT ALL CEILING POKE THROUGHS.
3. PROVIDE A CONTINUOUS UNSWITCHED "HOT" CONNECTION TO ALL EMERGENCY EGRESS FIXTURES.
4. MODIFICATIONS TO FIRE ALARM SYSTEM SHALL BE FULLY COMPLIANT WITH NFPA 72, ARTICLE 760 OF NFPA 70, 2010 ADA STANDARDS, MANUFACTURER'S LISTING AND INSTALLATION CRITERIA, AND REQUIREMENTS SPECIFIC TO THE FBI. SEE LEGEND NOTE 4 FOR MORE INFORMATION.
5. DIVISION 16 CONTRACTOR SHALL COORDINATE WITH DIVISION 15 TO MAKE SURE RETURN AIR OPENINGS ARE KEPT CLEAR OF ANY CONDUITS.
6. HATCHED AREA INDICATES AREA OUT OF SCOPE OF WORK.
7. ELECTRICAL CONTRACTOR SHALL REFER TO ALL OWNER SPECIFICATIONS FOR ADDITIONAL AND REQUIRED ELECTRICAL INFORMATION.
8. ALL CONDUIT PENETRATIONS SHALL BE FITTED WITH A NON-METALLIC DI-ELECTRIC BREAK WITHIN 6" OF WALL ON THE SECURE SIDE. SEAL PENETRATIONS WITH ACOUSTICAL CHALK AND/OR FOAM. SEE SHEET A4.1 FOR MORE INFORMATION.
9. CONTRACTOR TO PROVIDE SURFACE MOUNTED 1" CONDUIT WITH PULLSTRING STUBBED UP 6" ABOVE ACCESSIBLE CEILING AT ALL TELE/DATA AND CABLE OUTLETS.
10. ALL ELECTRICAL DEVICE, LIGHT SWITCHES, TELEPHONE AND DATA COVERPLATES SHALL MATCH.
11. ALL CONDUITS SHALL BE PROVIDED WITH PULLSTRINGS WITH PULL RINGS.
12. ALL POWER AND TELE/DATA OUTLETS AND RACEWAYS TO BE SURFACE MOUNTED IN "WIREMOLD" RACEWAY SYSTEM AT PERIMETER DEMISING WALLS.
13. GENERAL CONTRACTOR TO PROVIDE ABOVE CEILING J-HOOK CABLE PATHWAY AT PERIMETER WALLS. COORDINATE PLACEMENT WITH TENANT.
14. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TENANT PROVIDED FURNITURE POWER FEED AND MAKING FINAL SYSTEMS FURNITURE ELECTRICAL CONNECTIONS.
15. FILL ALL ABANDONED CONDUITS AND JUNCTION BOXES LOCATED WITHIN WALLS WITH FOAM AND MINERAL WOOL, OR DEMOLISH CONDUITS BACK TO SOURCE AND DEMOLISH JUNCTION BOXES.

KEYNOTE NOTES:
(APPLY TO THIS PLAN ONLY)

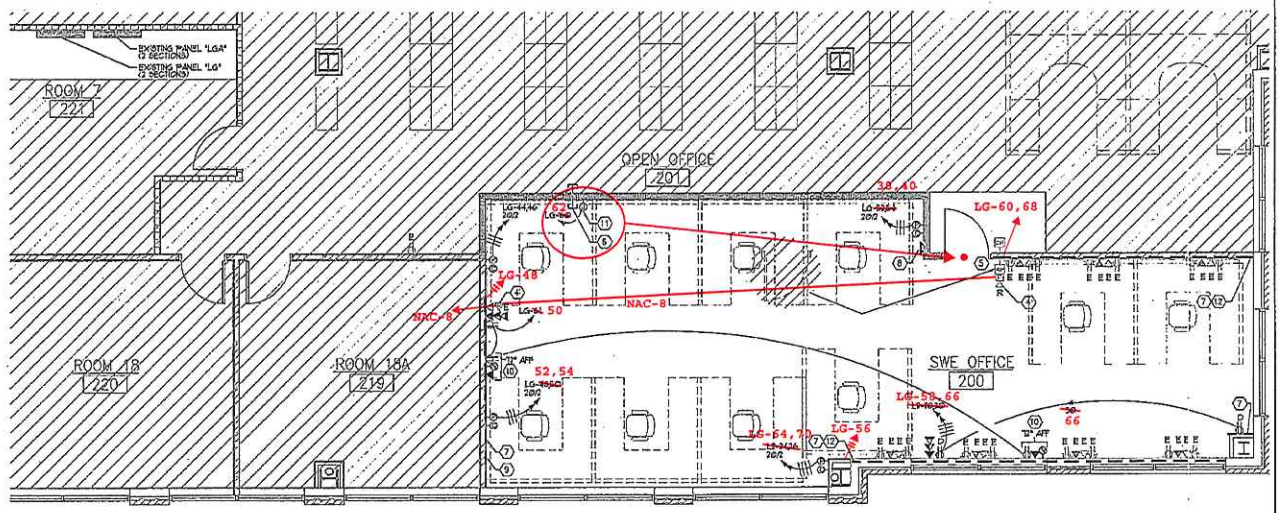
1. CONNECT TO EXISTING 277V GENERAL LIGHTING CIRCUIT SERVING THIS AREA. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THAT CIRCUIT WILL NOT BE OVERLOADED BY ADDITION AND ADD AN ADDITIONAL CIRCUIT IF NECESSARY.
2. FIELD VERIFY RELOCATED LIGHT FIXTURE IS EQUIPPED WITH 90-MINUTE, 1100 LUMEN, EMERGENCY BATTERY BACKUP INVERTER AND DEVICE IS OPERABLE. REPAIR OR PROVIDE NEW BATTERY BACKUP INVERTER AS NECESSARY.
3. PROVIDE AND INSTALL HEAVY DUTY ROTATING BEACON WITH RED POLYCARBONATE DOME – FEDERAL SIGNAL CORPORATION, ELECTRAVAY ROTATING WARNING LIGHT, MODEL 225-120R.
4. FIELD VERIFY EXISTING FIRE ALARM HORN/STROBE OR STROBE IS A TENANT APPROVED DEVICE. IF EXISTING DEVICE IS NOT AN APPROVED DEVICE, REPLACE. COORDINATE WITH TENANT FOR EXACT REPLACEMENT SPECIFICATION. APPROVED HORN/STROBES FOR TENANT FACILITIES:
   - WHEELOCK SA SERIES HORN/STROBES
   - GE/INTEGRITY/GENESIS MODEL 757-7A-T TEMPORAL HORN/STROBE
   - GE/GENESIS TEMPORAL HORN STROBE, MODEL G1F-MRWU
   - SIEMENS 2H-MC-B FIRE ALARM STROBE AND ANNUNCIATOR
   - SYSTEM SENSOR MODEL P2W FIRE ALARM STROBE AND HORN
   - MULTI VOLTAGE R10 RELAYS
   - GENTEX GEC3-24HW HORN/STROBE
5. ALL DEMOLISHED DOOR ACCESS EQUIPMENT SHALL BE SALVAGED AND RELOCATED TO NEW DOORWAY FOR REUSE. TENANT SHALL APPROVE REUSE OF KEYPAD AND CARD READER. PROVIDE NEW ROUGH-IN BOXES, NEW ELECTRICAL EQUIPMENT, CONDUCTORS, CABLING AND CONDUIT(S) AS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM. SEE DETAIL 2/E0.3 FOR ACCESS DOOR ELECTRICAL AND COMMNT REQUIREMENTS. COORDINATE WITH TENANT SECURITY DIVISION PRIOR TO INSTALLATION.
6. PROVIDE AND INSTALL TWO (2) 2" PVC SLEEVES FOR COMMUNICATIONS CABLING. SLEEVES SHALL NOT EXTEND MORE THAN 6" ON EITHER SIDE OF WALL. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH TENANT "IT" STAFF.
7. PROVIDE AND INSTALL WIREMOLD 6500 SERIES, THREE CHANNEL RACEWAY WITH INTEGRATED RECEPTACLES AND COMMUNICATION OUTLETS AS INDICATED ALONG WALL AS SHOWN ON PLAN. PROVIDE WITH THREE PARTITIONS, ONE (1) CHANNEL FOR POWER, ONE (1) CHANNEL FOR VOICE CABLING, AND ONE (1) CHANNEL FOR DATA CABLING.
8. IF ABOVE CEILING GROUND BAR IS NOT EXISTING WITHIN NEW "SWE OFFICE 200", PROVIDE ONE (1) 20"X4" GROUNDING BUS BAR (ABOVE CEILING) CONNECTED VIA A #6 GROUND WIRE TO BUILDING GROUND. COORDINATE EXACT ELECTRICAL REQUIREMENTS AND EXACT LOCATION WITH ARCHITECT/TENANT.
9. ALL EXISTING ELECTRICAL RECEPTACLES, VOICE/DATA OUTLETS, AND FIRE DEVICES SERVING THIS WALL SHALL BE DEMOLISHED UNLESS NOTED OTHERWISE. REUSE EXISTING CIRCUITS THAT BECOME AVAILABLE DUE TO DEMOLITION AND DEMOLISH ALL ABANDONED COMMUNICATIONS CABLING BACK TO POWER SOURCE.
10. COORDINATE EXACT LOCATION FOR TENANT PROVIDED, CONTRACTOR INSTALLED, TELEVISION WITH TENANT PRIOR TO INSTALLATION.
11. PROVIDE SURFACE MOUNTED JUNCTION BOX AND CIRCUIT AS SHOWN MOUNTED WITHIN SIX INCHES OF NEW PVC SLEEVES. COORDINATE EXACT LOCATION WITH TENANT/ARCHITECT.
12. ALL EXISTING ELECTRICAL DEVICES (RECEPTACLES, VOICE/DATA OUTLETS, JUNCTION BOXES, ETC.) THIS WALL TO BE DEMOLISHED. PROVIDE NEW RECEPTACLES AND VOICE/DATA OUTLETS MOUNTED WITHIN NEW WIREMOLD RACEWAY SYSTEM, TO REPLACE EXISTING DEVICES, AS INDICATED. ALL ELECTRICAL CIRCUITS SHALL REMAIN CONNECTED AS PRIOR TO DEMOLITION.
13. CONNECT TO 120V GENERAL RECEPTACLE CIRCUIT SERVING THIS AREA.



3 E1.2 2ND FLOOR MAIN ELECTRICAL ROOM 1/4"=1'-0"



2 E1.2 PARTIAL SECOND FLOOR PLAN – LIGHTING 1/4"=1'-0"



1 E1.2 PARTIAL SECOND FLOOR PLAN – ELECTRICAL 1/4"=1'-0"

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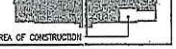
KEY PLAN



AREA OF CONSTRUCTION

BW&A

Barrett, Woodward & Associates, Inc.

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PARTIAL SECOND FLOOR PLAN - ELECTRICAL & LIGHTING

R. ROSENTHAL	13205
PROJECT MANAGER	PROJECT NO.
S. WILKINS	AS NOTED
PROJECT DESIGNER	SCALE
S. ACOSTA	03/20/13
DRAWN BY	DATE
FILE PLOT DATE	DRAWING NO.

E1.2

ISSUED FOR CONSTRUCTION