STATEMENT OF SPECIAL INSPECTIONS (PER IBC CHAPTER 17)

SPECIAL INSPECTION COMPANY / COORDINATOR – TO BE RETAINED BY OWNER

BUILDING SYSTEM OR COMPONENT	MATERIAL SUBMITTAL	TESTING			INSPECTION (PER IBC)			QUALITY ASSURANCE (PER IBC)	
		REQUIREMENTS	FREQUENCY	AGENCY	MONITORING	FREQUENCY	AGENCY	PART OF WIND	PART OF SEISMIC
SOILS (COMPACTED FILL)	N/A	1. TEST IN PLACE DRY DENSITY OF COMPACTED FILL.	1. AS APPROVED GEOTECHNICAL ENGINEER.	TESTING LAB TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL	AS EXCAVATION AND FILL PLACEMENT BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH GEOTECHNICAL REPORT: 1. MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY AS SPECIFIED IN SOILS REPORT. 2. EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. 3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS. 4. USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. 5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	1. PERIODIC 2. PERIODIC 3. PERIODIC 4. CONTINUOUS 5. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL	1. COLUMNS AND SHEARWALLS ACCORDANCE WITH APPROVED SOILS REPORT PRIOR TO PLACEMENT OF FILL.	1. COLUMNS AND SHEARWALLS ACCORDANCE WITH APPROVED SOILS REPORT PRIOR TO PLACEMENT OF FILL.
CONCRETE FOUNDATIONS	1. SUBMIT CONCRETE MIX DESIGN. 2. SUBMIT FOUNDATION REINFORCEMENT SHOP DRAWINGS. 3. VERIFY PROPER CONCRETE STRENGTH.	1. TEST CONCRETE STRENGTH.	1. (1) SET OF CYLINDERS FOR EACH VERTICAL LIFT OR EACH 50 YARDS OF CONCRETE.	TESTING LAB TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL	AS CONCRETE AND REINFORCING STEEL CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE INSPECTED TO ENSURE COMPLIANCE: 1. VERIFY REINFORCING SIZE, QUANTITY & PLACEMENT 2. ANCHORS CAST IN CONCRETE 3. ANCHORS POST INSTALLED IN HARDENED CONCRETE 4. VERIFYING USE OF REQUIRED DESIGN MIX 5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TEST, AND DETERMINE THE TEMPERATURE OF CONCRETE 6. CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES 7. INSPECT FORMWORK FOR; SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	1. PERIODIC 2. PERIODIC 3. PERIODIC 4. PERIODIC 5. CONTINUOUS 6. CONTINUOUS 7. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL	1. SPREAD FOOTINGS AT BEARING WALLS AND SHEARWALL.	1. SPREAD FOOTINGS AT BEARING WALLS AND SHEARWALL.
CONCRETE MASONRY UNITS	1. SUBMIT TEST DATA ON CMU UNITS NET AREA OF COMPRESSIVE STRENGTH 2. SUBMIT MORTAR & GROUT MIX DESIGNS	1. TEST COMPRESSIVE STRENGTH OF MORTAR & GROUT.	1. (1) SET OF GROUT CUBES FROM EACH FLOOR AND/OR (1) SET OF CUBES FOR EACH 50 YARDS OF GROUT.	TESTING LAB TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	SEE MASONRY INSPECTION CHART	SEE MASONRY INSPECTION CHART	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. YES	1. YES
STRUCTURAL STEEL	1. SUBMIT MANUFACTURER'S CERTIFIED MILL TEST REPORTS FOR STRUCTURAL STEEL.	N/A	N/A	N/A	1. INSPECT STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS.	1. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. FLOOR AND ROOF SYSTEM FRAMING	1. FLOOR AND ROOF SYSTEM FRAMING
STRUCTURAL STEEL HIGH – STRENGTH BOLTING (AND MECHANICAL FASTENING OF METAL DECK)	1. SUBMIT MANUFACTURER'S CERTIFICATE OF COMPLIANCE FOR HIGH-STRENGTH BOLTS, NUTS, WASHERS AND/OR FASTENERS.	N/A	N/A	N/A	1. VERIFY BOLTING IN BEARING-TYPE CONNECTIONS ARE INSTALLED IN ACCORDANCE WITH AISC SPECIFICATIONS. 2. VERIFY BOLTING IN SLIP-CRITICAL CONNECTIONS ARE INSTALLED IN ACCORDANCE WITH AISC SPECIFICATIONS. 3. VERIFY IDENTIFICATION MARKING ON HIGH-STRENGTH BOLTS, NUTS AND WASHERS CONFORMING TO ASTM STANDARDS SPECIFIED. 4. VERIFY FASTENER TYPE AND ADHERENCE TO SPECIFIED FASTENER ATTACHMENT PATTERN. 5. VERIFY PROPER STORAGE AND HANDLING OF BOLTS, NUTS, WASHERS.	1. PERIODIC 2. CONTINUOUS (MAY BE PERIODIC IF TURN-OF-NUT WITH MATCH MARKING METHODS, DIRECT TENSION INDICATOR OR ALTERNATE DESIGN FASTENER (TWIST-OFF) METHODS ARE USED) 3. PERIODIC 4. PERIODIC 5. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. FLOOR AND ROOF SYSTEM BOLTING	1. FLOOR AND ROOF SYSTEM BOLTING
STRUCTURAL STEEL WELDING	1. SUBMIT MANUFACTURER'S CERTIFICATE OF COMPLIANCE FOR WELD FILLER MATERIAL.	N/A	N/A	N/A	VERIFY WELDING IS IN COMPLIANCE WITH AWS D1.1 1. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS. 2. MULTIPASS FILLET WELDS 3. SINGLE-PASS FILLET WELDS > 5/16" 4. SINGLE-PASS FILLET WELDS < OR = 5/16" 5. FLOOR AND DECK WELDS	1. CONTINUOUS 2. CONTINUOUS 3. CONTINUOUS 4. PERIODIC 5. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. FLOOR AND ROOF SYSTEM WELDING	1. FLOOR AND ROOF SYSTEM WELDING
COLD FORM FRAMING	1. SUBMIT MANUFACTURER'S CERTIFIED MILL TEST REPORTS FOR STRUCTURAL STEEL.	N/A	N/A	N/A	1. VERIFY ALL SIZES, SPACINGS, AND GAUGES ETC. CONFORM W/ CONSTRUCTION DOCUMENTS 2. VERIFY ALL CONNECTIONS AND FASTENERS CONFORM WITH CONSTRUCTION DOCUMENTS 3. VERIFY ALL BRIDGING AND BRACING CONFORMS WITH CONSTRUCTION DOCUMENTS	1. PERIODIC 2. PERIODIC 3. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. YES	1. YES
METAL BUILDING SYSTEM & COMPONENTS	1. SUBMIT MANUFACTURER'S CERTIFIED MILL TEST REPORTS FOR STRUCTURAL STEEL.	N/A	N/A	N/A	1. INSPECT STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS.	1. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. FLOOR AND ROOF SYSTEM FRAMING	1. FLOOR AND ROOF SYSTEM FRAMING
WALL PANELS OR GLAZING SYSTEM	1. SUBMIT MANUFACTURER'S LITERATURE FOR COMPLIANCE WITH DP RATINGS. 2. SUBMIT SHOP DRAWINGS FOR ANCHORAGE.	1. SUBMIT MANUFACTURERS TEST REPORTS ON ANCHORAGE.	N/A	N/A	1. VERIFY FASTENER LOCATION AND INSTALLATION.	1. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. YES	1. YES
ANCHORAGE OF ELECTRICAL EQUIPMENT USED FOR EMERGENCY OR STANDBY POWER	1. SUBMIT ANCHOR TYPE AND LITERATURE.	1. SUBMIT MANUFACTURERS TEST REPORTS.	N/A	N/A	1. VERIFY FASTENER LOCATION AND INSTALLATION.	1. PERIODIC	INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL PER IBC	1. NO	1. YES

NOTE: ALL TESTING, INSPECTION & RELATED REPORTS SHALL BE SENT TO THE SPECIAL INSPECTION COORDINATOR & THE OWNER.
ANY DEFICIENCIES SHALL BE CLEARLY NOTED & BROUGHT TO THE ATTENTION OF THE SPECIAL INSPECTION COORDINATOR BEFORE THE END OF THE INSPECTOR'S SHIFT.

DEFINITIONS:
- SPECIAL INSPECTOR: PER IBC "A QUALIFIED PERSON EMPLOYED OR RETAINED BY AN APPROVED AGENCY AND APPROVED BY THE BUILDING OFFICIAL AS HAVING THE COMPETENCE NECESSARY TO INSPECT A PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION".
- PERIODIC SPECIAL INSPECTION: PER IBC "SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED".
- CONTINUOUS SPECIAL INSPECTION: PER IBC "SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS PRESENT WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED". THIS IS INTENDED TO BE A CONTINUOUS INSPECTION.

1 / S1.2 STATEMENT OF SPECIAL INSPECTIONS
SCALE = = = = = = N/A

GENERAL NOTES

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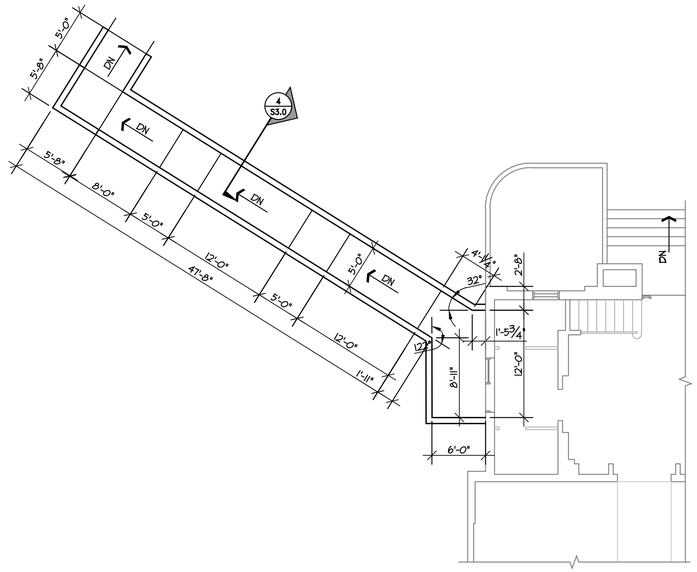
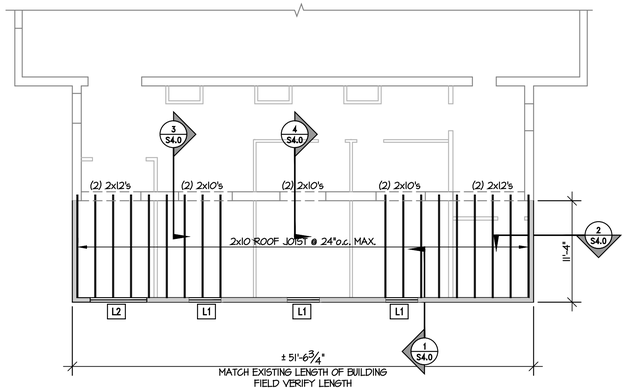
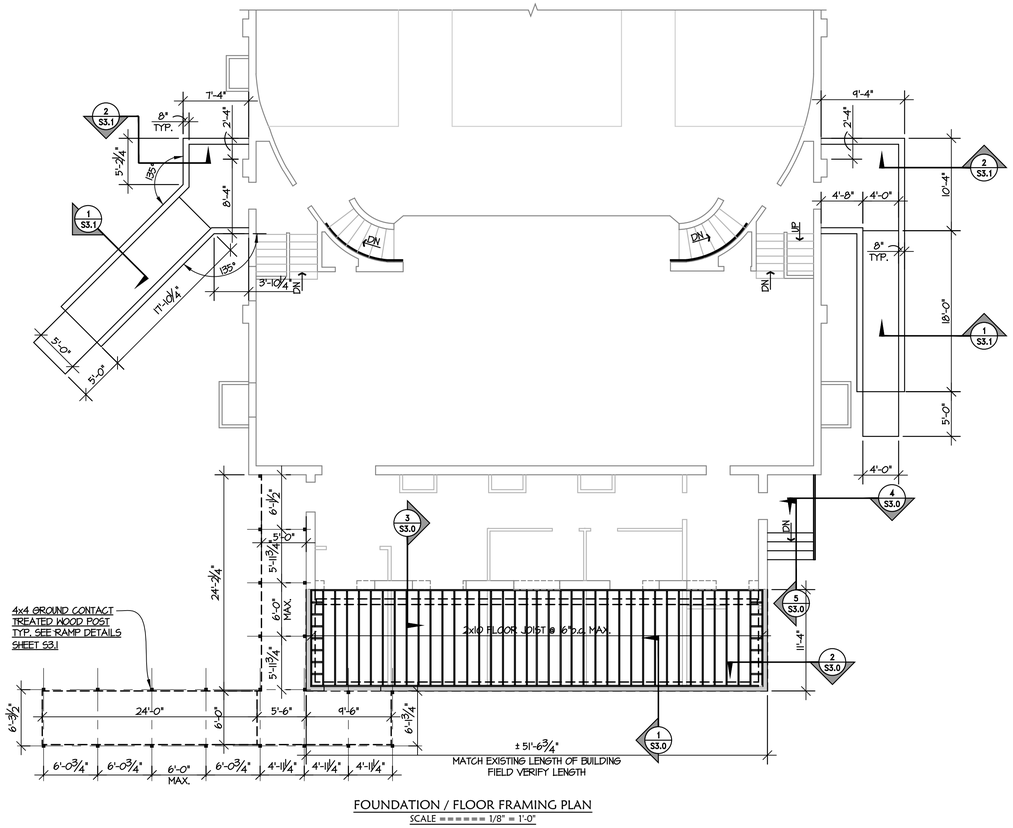
12/09/16

S1.2





ROOF FRAMING PLAN
SCALE = = = = = = 1/8" = 1'-0"



FOUNDATION / FLOOR FRAMING PLAN
SCALE = = = = = = 1/8" = 1'-0"

LOAD TABLE

2015 INTERNATIONAL BUILDING CODE AND ASCE 7-10

RISK CATEGORY: = III (ASCE Table 1.5-1)

LIVE LOADS:

1. FLOOR LOADS:
   A. First Floor & Stairs = 100 psf
2. ROOF LOADS:
   A. Basic roof live load = 20 psf

Note: It shall be unlawful to place, cause or permit to be placed, on any floor or roof of a building, structure, or portion thereof, a load greater than is permitted by these requirements. (per IBC 1603.2)

DEAD LOADS:

1. USE ACTUAL DEAD LOADS OF MATERIALS

SNOW LOADS:

GROUND SNOW LOAD – Pg = 10 psf	(ASCE Figure 7-1)
SNOW LOAD IMPORTANCE FACTOR – Is = 1.0	(ASCE Table 1.5-2)
SNOW EXPOSURE FACTOR – Ce = 0.9	(ASCE Table 7-2)
THERMAL FACTOR – Ct = 1.2	(ASCE Table 7-3)
FLAT-ROOF SNOW LOAD-Pf =10 psf	(ASCE Section 7.3)

WIND LOADS:

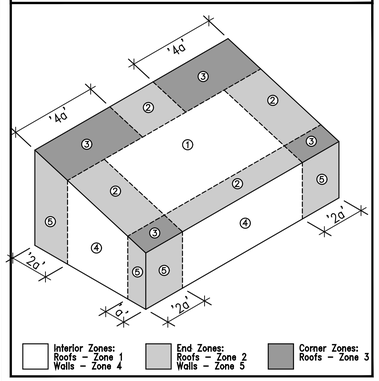
$V_{ultimate}$ = 146 (mph)	(ASCE Figure 26.5-1A)
V_{ASD} = 114 (mph)	
WIND EXPOSURE = C	(ASCE Section 26.7)
WIND BORN DEBRIS – NO	(ASCE Section 26.10.3.1)
If yes, exterior windows and doors shall have debris protection per ASCE 26.10.3.2	
INTERNAL PRESSURE COEFICIENT Enclosed Building +/- 18%	(ASCE Table 26.11-1)

1. ALLOWABLE WIND PRESSURES:
   A. Main Windforce Resisting System (ASCE Section 26.1.2.1)
   B. Components and Cladding (see chart below) (ASCE Section 26.1.2.2)

The wind pressures (and associated DP ratings) indicated below are considered as the minimum unless otherwise specified by code.

ZONE	ALLOWABLE C&C WIND PRESSURES BASED ON EFFECTIVE WIND AREA (psf)							
	$10ft^2$		$20ft^2$		$50ft^2$		$100ft^2$	
ROOF ①	+19.7	-31.3	+18.0	-30.5	+15.7	-29.3	+13.9	-28.4
ROOF ②	+19.7	-54.5	+18.0	-50.2	+15.7	-44.4	+13.9	-40.0
ROOF ③	+19.7	-80.6	+18.0	-75.4	+15.7	-68.5	+13.9	-63.2
WALL ④	+34.2	-37.1	+32.7	-35.6	+30.7	-33.6	+29.1	-32.0
WALL ⑤	+34.2	-45.8	+32.7	-42.7	+30.7	-38.7	+29.1	-35.6

a = width of pressure coeff. zone = 12 feet
Roof Net Uplift = (Zone Suction Reduced by Dead Load)
All pressures shown are based upon ASD Design (Load Factor = 0.6)



SEISMIC LOADS:

SOIL SITE CLASS – D	(ASCE Chapter 20)
SPECTRAL RESPONSE COEFFICIENTS	(ASCE Section 11.4.4)
Sds = .60 Sd1 = .30	
SEISMIC IMPORTANCE FACTOR – Ie = 1.2	(ASCE Table 1.5-2)
SEISMIC DESIGN CATEGORY = D	(ASCE Section 11.6)
BASIC SEISMIC-FORCE RESISTING SYSTEM= WOOD PANEL SHEAR WALLS	(ASCE Table 12.2-1)
SEISMIC RESPONSE COEFFICIENT – Cs = .12	(ASCE Section 12.8.1.1)
RESPONSE MODIFICATION FACTOR – R = 6.5	(ASCE Table 12.2-1)
DESIGN BASE SHEAR – 3.0 kips (Addition)	(ASCE Section 12.8)
ANALYSIS PROCEDURE – EQUIVALENT FORCE METHOD	

Much of the information presented in this load table originates from the applicable building code(s). The structural design for systems such as metal studs, exterior doors, windows, skylights, roofing systems, etc. will likely be more complicated and more building specific than indicated in this table. Designers and suppliers must refer to the applicable building codes, site conditions and architectural drawings to adequately design and / or specify their individual components and systems.

GENERAL NOTES

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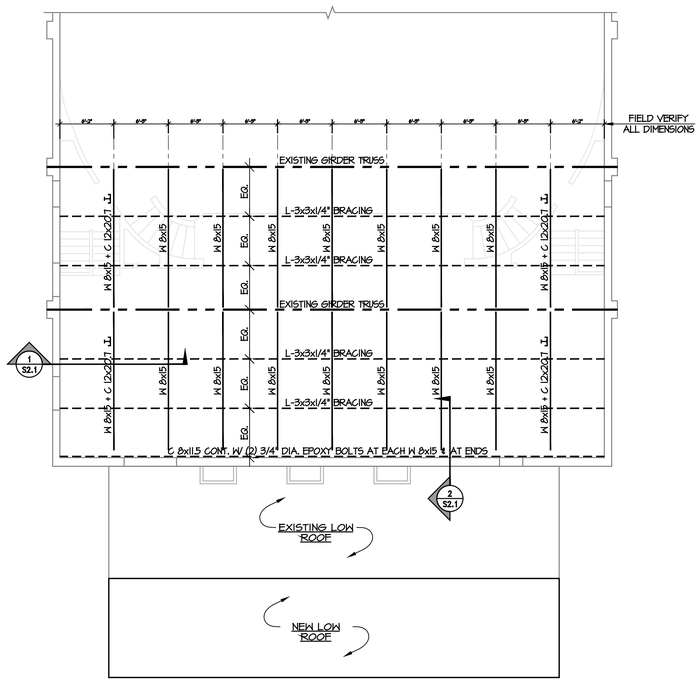
S2.0

1 / S2.0 FOUNDATION / FRAMING PLANS
SCALE = = = = = = 1/8" = 1'-0"



FLYLOFT FRAMING PLAN
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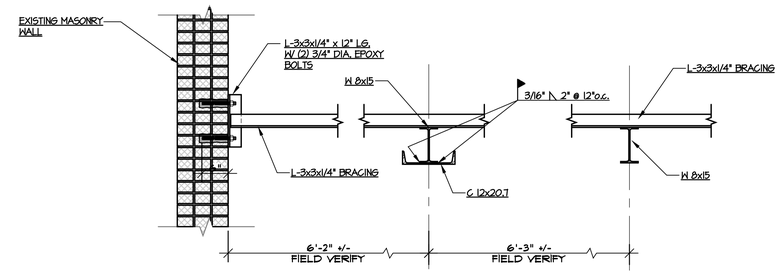
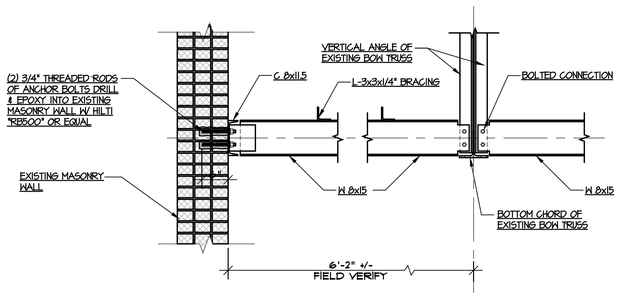
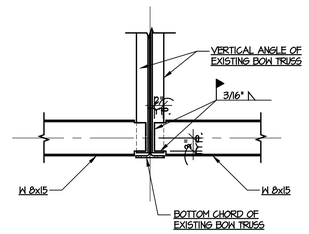


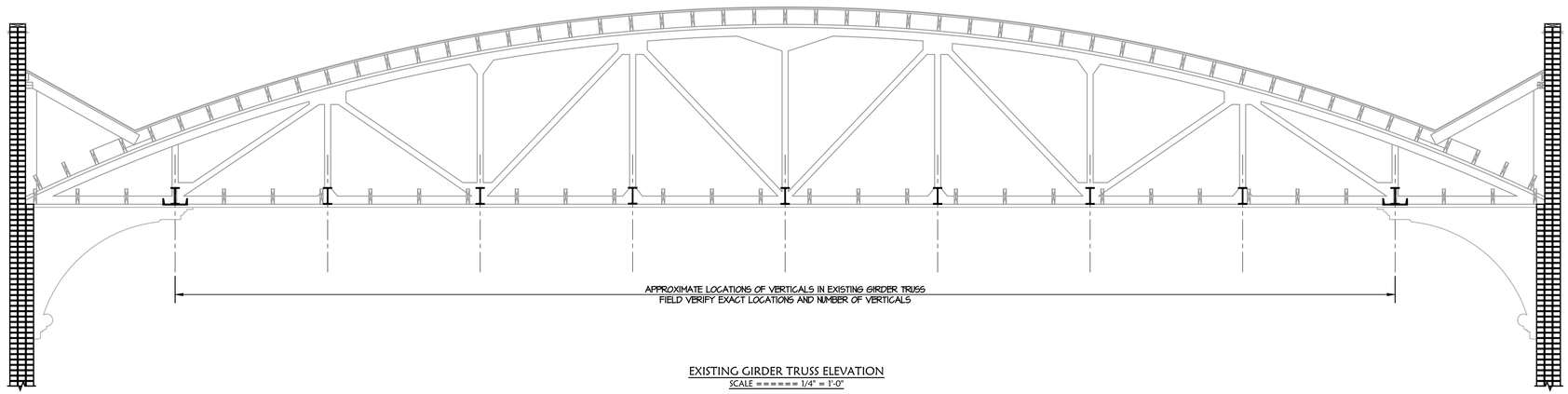
SECTION 1 S2.1
SCALE: 3/4"=1'-0"



SECTION 2 S2.1
SCALE: 3/4"=1'-0"



ALT. WELDED CONNECTION



EXISTING GIRDER TRUSS ELEVATION
SCALE = = = = = = 1/4" = 1'-0"

1 S2.1 MEZZANINE / ROOF SUPPORT PLAN
SCALE = = = = = = 1/8" = 1'-0"

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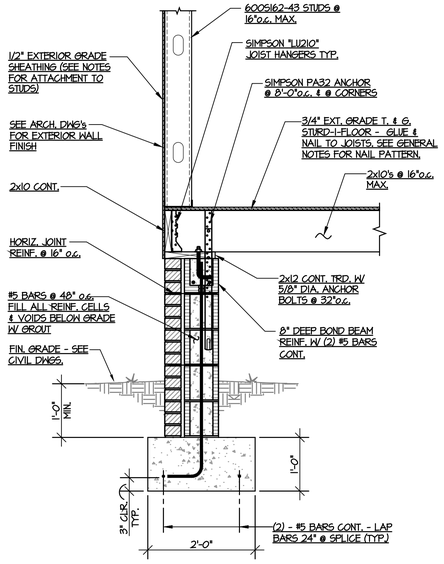
S2.1



SECTION 1 S3.0
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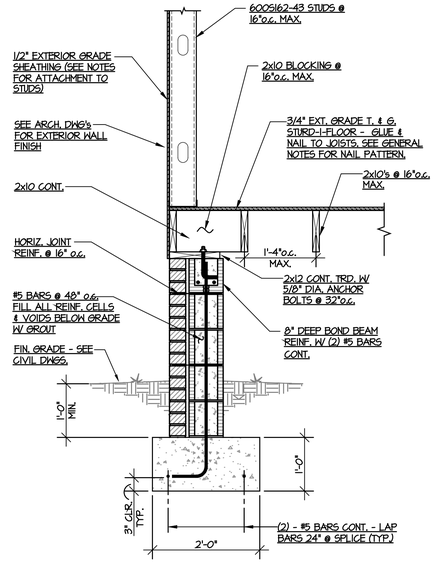

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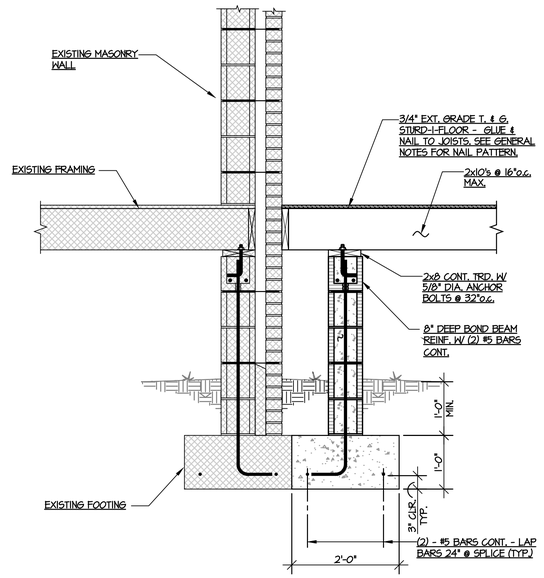

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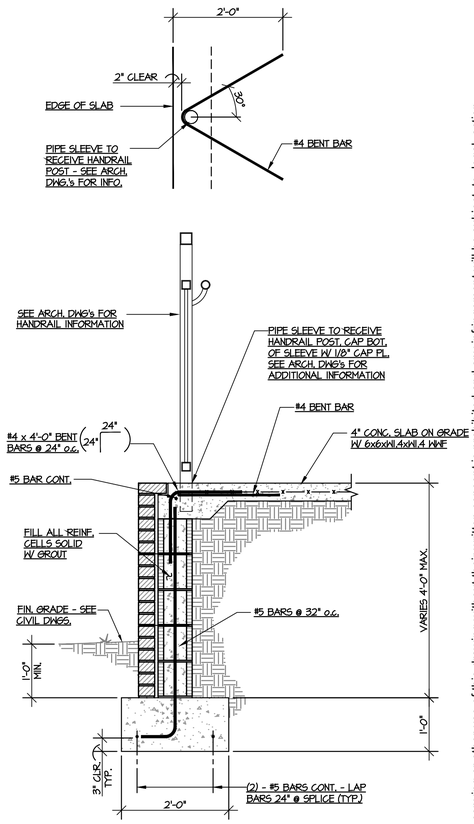
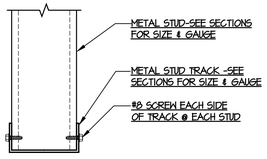


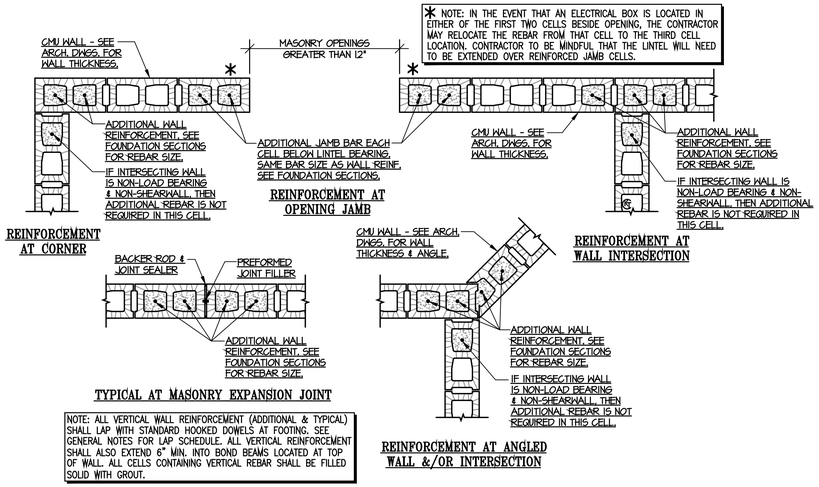
SECTION 4 S3.0
SCALE: 3/4"=1'-0"

SECTION 5 S3.0
SCALE: 3/4"=1'-0"



TYPICAL STUD TO TRACK CONNECTION
NO SCALE

REBAR LAP SPLICES IN REINFORCED MASONRY	
BAR SIZE	REQUIRED LAP
#4 BAR	24" LAP
#5 BAR	30" LAP
#6 BAR	48" LAP
#7 BAR	60" LAP
#8 BAR	90" LAP



NOTE: ALL VERTICAL WALL REINFORCEMENT (ADDITIONAL & TYPICAL) SHALL LAP WITH STANDARD HOOKED DOWELS AT FOOTING. SEE GENERAL NOTES FOR LAP SCHEDULE. ALL VERTICAL REINFORCEMENT SHALL ALSO EXTEND 6" MIN. INTO BOND BEAMS LOCATED AT TOP OF WALL. ALL CELLS CONTAINING VERTICAL REBAR SHALL BE FILLED SOLID WITH GROUT.

ADDITIONAL REINFORCEMENT DETAILS FOR LOAD-BEARING MASONRY WALLS
NO SCALE

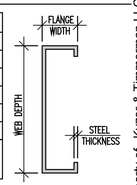
LIGHT STEEL FRAMING MATERIAL SIZING CHART

MEMBER SIZE	DESIGNATION
1 5/8"	162
2 1/2"	250
3 1/2"	350
3 5/8"	362
4"	400
5 1/2"	550
6"	600
7 1/4"	725
8"	800
9 1/4"	925
10"	1000
11 1/2"	1150
12"	1200

MEMBER DEPTH: (EXAMPLE: 6" = 600 x 1/100 INCHES) ALL MEMBER DEPTHS ARE TAKEN IN 1/100 INCH. FOR ALL "T" SECTIONS, MEMBER DEPTH IS INSIDE TO INSIDE DIMENSION.

FLANGE WIDTH	DESIGNATION
1 1/4"	125
1 3/8"	137
1 1/2"	150
1 5/8"	162
2"	200
2 1/2"	250

FLANGE WIDTH: (EX: 1 5/8" = 1.625 = 162 x 1/100 INCHES) ALL FLANGE WIDTHS ARE TAKEN IN 1/100 INCHES



STEEL THICKNESS REFERENCE CHART			
GAGE NO.	MIL THICKNESS	DESIGN (IN.)	MINIMUM (IN.)
25	18	0.0188	0.0179
22	27	0.0283	0.0269
20	33	0.0346	0.0329
18	43	0.0451	0.0428
16	54	0.0566	0.0538
14	68	0.0713	0.0677
12	97	0.1017	0.0966

600S162-54

STYLE: (EXAMPLE: STUD OR JOIST SECTION = S) THE FOUR ALPHA CHARACTERS UTILIZED BY THE DESIGNATOR SYSTEM ARE:
S = STUD OR JOIST SECTIONS
T = TRACK SECTIONS
U = CHANNEL SECTIONS
F = FURRING CHANNEL SECTIONS

MATERIAL THICKNESS: (EXAMPLE: 0.054" = 54 MILS; 1 MIL = 1/100 IN.) MATERIAL THICKNESS IS THE MINIMUM BASE METAL THICKNESS IN MILS. MINIMUM BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.

GENERAL NOTES

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
Gerald B. Kyzer
No. 15317
12/09/16
KYZER & TIMMERMAN STRUCTURAL ENGINEERING COLA. S.C. No.C00773 CERTIFICATE OF AUTHORIZATION

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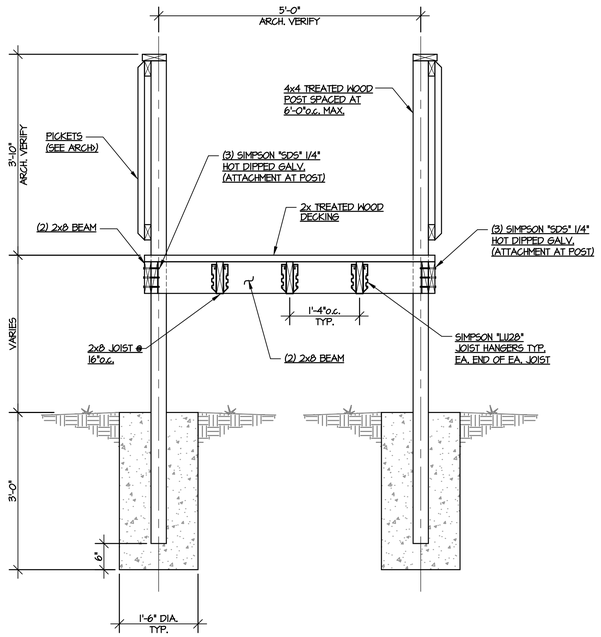
REVISION	DATE

A RENOVATION TO THE
HAMPTON STREET AUDITORIUM
WALTERBORO, SC

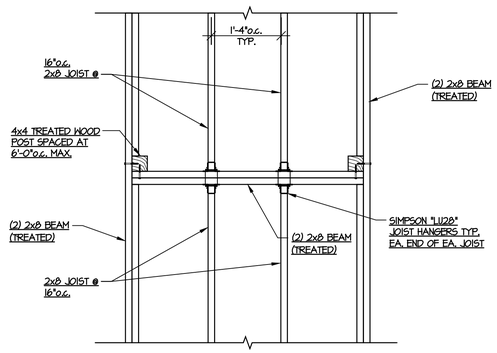
KT - 16-288
12/09/16

S3.0

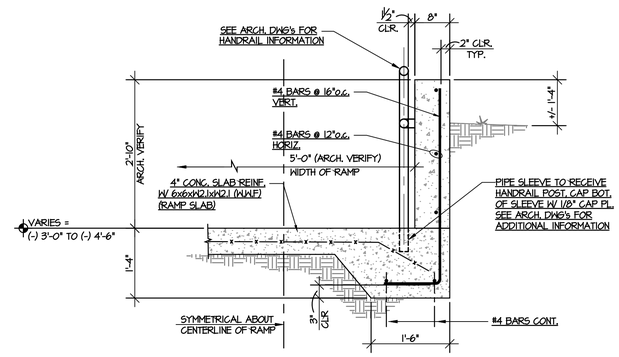
1 S3.0
SECTIONS & DETAILS
SCALE = = = = = = 3/4" = 1'-0"



TYP. SECTION THRU
WOOD RAMP



TYP. PLAN AT WOOD
RAMP FRAMING



SECTION 1 / S3.1
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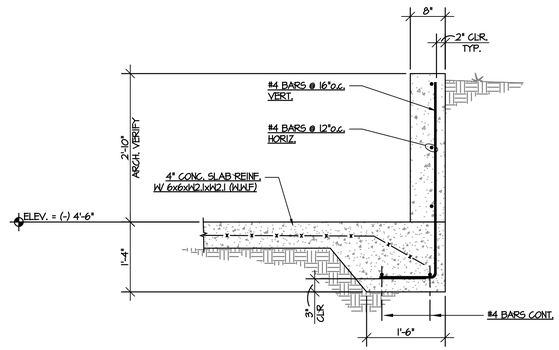

SECTION 2 / S3.1
SCALE: 3/4"=1'-0"

GENERAL NOTES

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KYZER & TIMMERMAN STRUCTURAL ENGINEERING
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S3.1

1 / S3.1 SECTIONS & DETAILS
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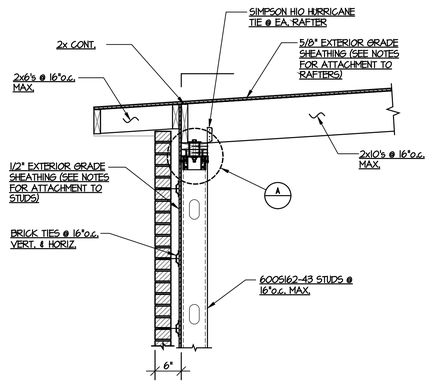

SECTION 1 S4.0
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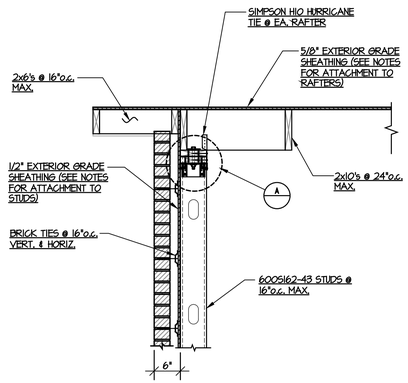

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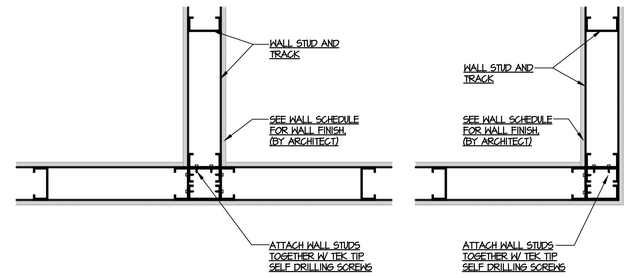
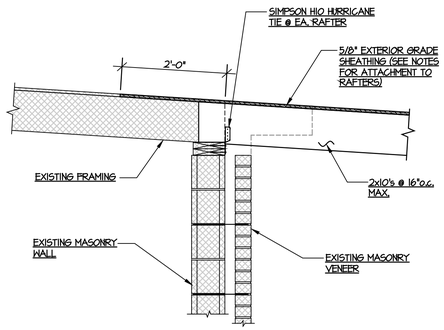


METAL STUD WALL INTERSECTION PERPENDICULAR TO WALL

METAL STUD WALL INTERSECTION @ CORNER



SECTION 3 S4.0
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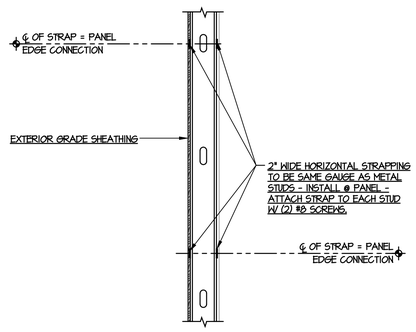
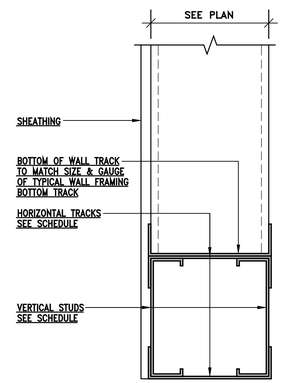


TYPICAL EXTERIOR METAL STUD WALL

LOAD BEARING METAL STUD LINTEL SCHEDULE

STUD WIDTH	MARK	LINTEL, JAMB, SILL (AS REQUIRED) DESCRIPTION	REFERENCE DIAGRAM
6" METAL STUD	L1	LINTEL: (2)-600S162-43 NESTED W/ (2)-600T150-54 (50 KSI)	DIAGRAM A
		JAMB STUDS: 600S250-54 (50 KSI)	
		SILL (AS REQUIRED): 600T150-43 (33 KSI)	
	L2	LINTEL: (2)-NESTED 800S162-54 (50 KSI)	DIAGRAM A
		JAMB STUDS: 600S250-54 (50 KSI)	
		SILL (AS REQUIRED): 600T150-43 (33 KSI)	

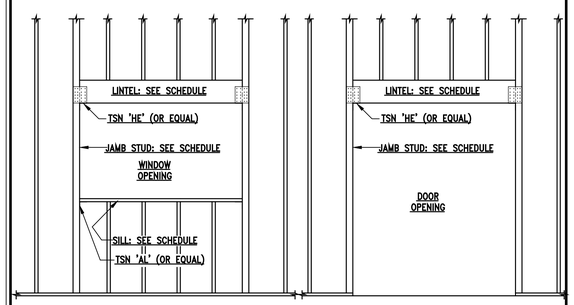
DIAGRAMS



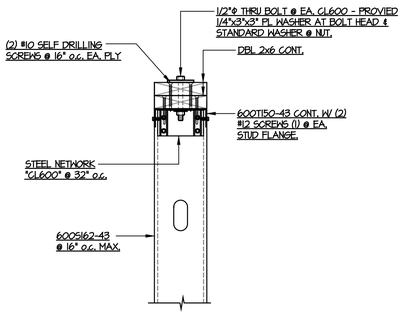
CONTRACTOR'S NOTES:

1. CONTRACTOR MAY USE A STEEL ANGLE OF THE SAME SIZE (OR GREATER) IN LIEU OF BENT PLATE. SEE DIAGRAM "D".
2. SOME LINTELS IN THIS SCHEDULE MAY NOT BE USED. CONTRACTOR MAY SELECT APPROPRIATE LINTEL ACCORDING TO OPENING SIZE AND WALL CONSTRUCTION, UNLESS NOTED OTHERWISE.
3. SEE ARCHITECTURAL DRAWINGS FOR WALL WIDTHS AND VENEER COURSING.
4. SEE LINTEL BEARING DETAIL FOR NUMBER OF JACK STUDS.
5. BRICK VENEER SUPPORT TO BEAR 8" MIN. ON EACH SIDE.

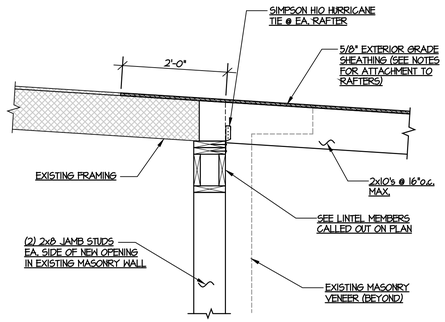
LINTEL BEARING DETAILS — A



TYPICAL METAL STUD LINTEL BEARING DETAIL
NO SCALE



DETAIL A S4.0



SECTION 4 S4.0
SCALE: 3/4"=1'-0"

TYP. LINTEL IN EXISTING MASONRY WALL

GENERAL NOTES

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1 S4.0 SECTIONS & DETAILS
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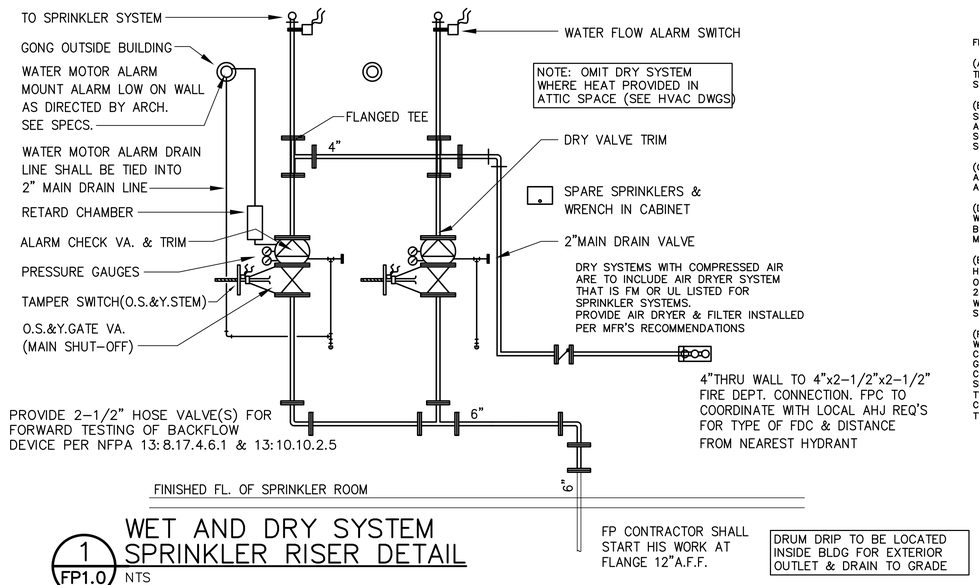
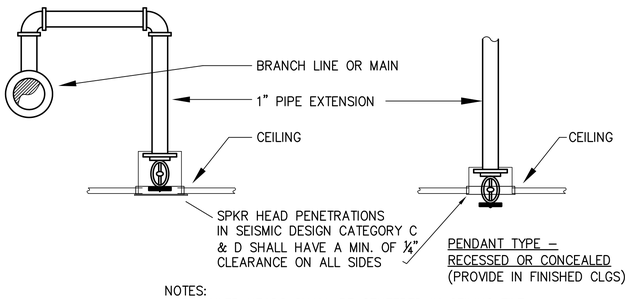


1 FP1.0 WET AND DRY SYSTEM SPRINKLER RISER DETAIL

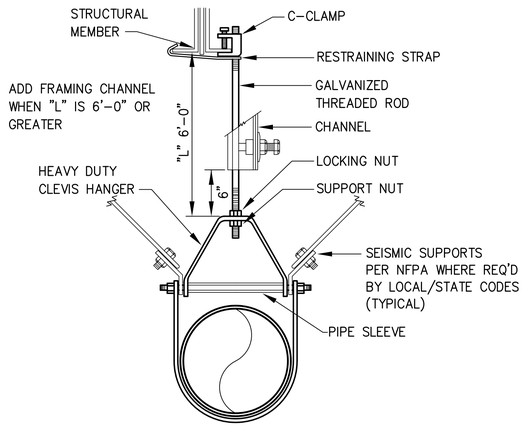
NTS



NOTES:
-SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILE; COORDINATE WITH ARCHITECT.
-PROVIDE APPROVED SPKR HEAD PROTECTION IN AREAS SUSCEPTIBLE TO DAMAGE; COORDINATE WITH A/E.

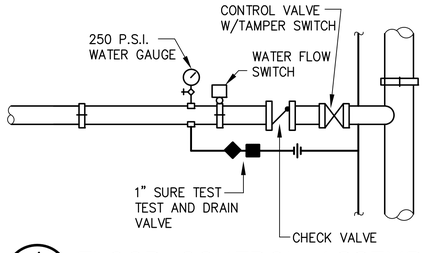
2 FP1.0 TYPICAL DROP TO SPRINKLER HEAD

NTS



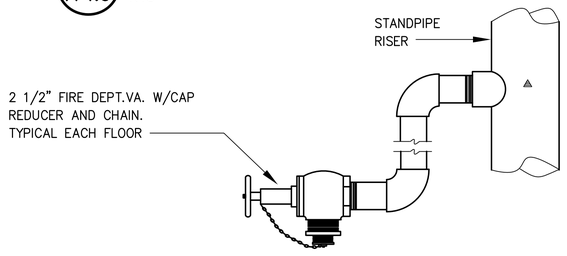
3 FP1.0 PIPE HANGER DETAIL

NTS



4 FP1.0 FLOOR CONTROL ASSEMBLY (FCV)

NTS



5 FP1.0 STANDPIPE & HOSE VA. DETAIL (FHV)

NTS

FIRE PROTECTION SPECIFICATION

(A) THE APPLICABLE CURRENT STANDARDS FOR THE FIRE PROTECTION SYSTEMS SHALL BE THE NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.), N.F.P.A. – 13, THE SOUTH CAROLINA STATE BUILDING CODE, AND ALL OTHER APPLICABLE STATE CODES AND ORDINANCES.

(B) PIPE SHALL BE NEW, DESIGNED FOR 175 PSI WORKING PRESSURE, CONFORMING TO ASTM SPECIFICATIONS, AND HAVE THE MANUFACTURER'S NAME OR BRAND, ALONG WITH THE APPLICABLE ASTM STANDARD, MARKED ON EACH LENGTH OF PIPE. PIPE SHALL BE STEEL, SCHEDULE 40, BLACK, AND IN ACCORDANCE WITH SPECIFICATIONS ASTM A120 OR A53 OR SCHEDULE 10, BLACK, AND IN ACCORDANCE WITH SPECIFICATIONS ASTM A135.

(C) SCREWED FITTINGS SHALL BE CAST IRON, 125 POUND CLASS, BLACK, AND IN ACCORDANCE WITH ANSI B16.4 OR MALLEABLE IRON, 150 POUND CLASS, BLACK, AND IN ACCORDANCE WITH ANSI B16.3.

(D) GROOVED COUPLINGS AND MECHANICAL FITTINGS SHALL BE MALLEABLE IRON, 500 PSI WORKING PRESSURE, IN ACCORDANCE WITH ASTM A47. COUPLING GASKET MATERIAL SHALL BE BUTYL RUBBER. GROOVED COUPLINGS SHALL BE TESTED AND LISTED BY UL AND/OR FM. MECHANICAL LOCKING FITTINGS SHALL NOT BE USED.

(E) SPRINKLER HEADS SHALL BE UPRIGHT, PENDENT, CONCEALED, VERTICAL SIDEWALL, HORIZONTAL SIDEWALL, AND/OR DRY PENDENT TYPE AS REQUIRED, 1/2" AND/OR 17/32" ORIFICE, 1/2" AND/OR 3/4" PIPE THREAD, RATED 165 DEGREES F., 212 DEGREES F., AND/OR 286 DEGREES F. SPRINKLERS IN AREAS WITH SUSPENDED CEILINGS SHALL BE CHROME PLATED WITH ESCUTCHEONS. SPRINKLERS SHALL BE TESTED AND LISTED BY UL AND/OR FM. FURNISH STEEL ENAMELED BOX HOUSING 12 SPARE HEADS AND A SPRINKLER WRENCH.

(F) SCHEDULE 40 BLACK STEEL PIPE SHALL BE JOINED BY SCREWED JOINTS IN ACCORDANCE WITH SPECIFICATION ANSI B2.1 AND BY MECHANICAL GROOVED COUPLINGS OR PUSH-ON COUPLINGS, JOINED BY A UL AND FM APPROVED COMBINATION OF COUPLINGS, GASKETS AND GROOVES. GROOVES MAY BE ROLLED OR CUT AND THEY SHALL BE DIMENSIONALLY COMPATIBLE WITH THE COUPLINGS. SCHEDULE 10 BLACK STEEL ASTM A135 SPRINKLER PIPE SHALL BE JOINED BY COUPLINGS OF THE ROLLED GROOVE TYPE OR THE MECHANICAL LOCKING TYPE (PUSH-ON). GROOVES FOR THE ROLLED GROOVE TYPE SHALL BE DIMENSIONALLY COMPATIBLE WITH THE COUPLING. PIPE END PREPARATION FOR THE MECHANICAL LOCKING TYPE COUPLINGS WILL BE IN ACCORDING WITH THE MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES & LEGEND

1. THESE DRAWINGS (CONTRACT DOCUMENTS) ARE FOR THE PURPOSE OF ESTABLISHING CRITERIA AND SUGGESTING PIPE ROUTING SOLUTIONS. THEY ARE NOT TO BE TAKEN AS SPRINKLER CONSTRUCTION DRAWINGS. FIRE PROTECTION CONTRACTOR (FPC) DESIGNER SHALL: MEET ALL NFPA, STATE & LOCAL CODE REQUIREMENTS AND ANY CRITERIA SET FORTH WITHIN THE ARCHITECTURAL/ENGINEERING (A/E) CONSTRUCTION DOCUMENTS THAT EXCEED CODE MINIMUMS.

2. CONTRACTOR IS REQUIRED TO OBTAIN A COMPLETE SET OF A/E DESIGN AND CONSTRUCTION DOCUMENTS AND BE FAMILIAR WITH ALL ASPECTS OF THE A/E DESIGN BEFORE SUBMITTING A BID. NO CHANGES WILL BE ALLOWED DUE TO CONTRACTOR'S LACK OF KNOWLEDGE OF BLDG CONSTRUCTION AND NFPA REQUIREMENTS. COORDINATE ALL PIPE ROUTING WITH P, M, &E CONTRACTORS

3. WHERE SPRINKLER LAYOUT SHOWN IS FOR A/E CEILING COORDINATION PURPOSES; FPC SHALL INCORPORATE A/E RCP COORDINATION IN SPRINKLER DESIGN. FPC IS RESPONSIBLE FOR DESIGN ADJUSTMENTS IN SPRINKLER HEAD LOCATIONS, SPRINKLER QUANTITY, AND PIPING REQUIRED FOR FULL COMPLIANCE WITH THE STATE & LOCAL BUILDING CODE, NFPA STANDARDS (SECTION 13: 4.1), PROJECT PLANS AND SPECIFICATIONS.

4. FPC SHALL OBTAIN AN UP TO DATE RCP PLAN FROM A/E. SPRINKLER HEAD LOCATIONS SHALL BE LOCATED IN CENTER OF TILE, UNLESS NOTED OTHERWISE, AND MAINTAIN A COORDINATED DESIGN EFFORT WITH OTHER CEILING COMPONENTS AND REVIEWED BY A/E FOR COMPLIANCE.

5. THE CONTRACTOR SHALL FURNISH ALL PARTS, MATERIALS AND LABOR REQUIRED FOR A COMPLETE AND OPERATING SYSTEM IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS, EVEN IF NEEDED ITEM IS NOT SPECIFICALLY INCLUDED IN PLANS OR SPECIFICATIONS.

6. THE CONTRACTOR MUST BE LICENSED BY THE STATE BOARD OF EXAMINERS AND MAY BE REQUIRED TO FURNISH EVIDENCE OF SATISFACTORY PERFORMANCE OF PREVIOUS AND COMPARABLE SPRINKLER SYSTEM DESIGN AND INSTALLATION. FPC DESIGNER SHALL HAVE A MINIMUM OF NICET III CERTIFICATION WITH STAMP AND SIGNATURE INDICATED ON SUBMITTED SHOP DWGS.

7. THE MINIMUM DESIGN CLASSIFICATION FOR THIS BLDG IS LIGHT HAZARD WITH 0.10GPM/SQFT WITH 1500 SQFT MINIMUM REMOTE AREA (225 SQFT PER HD).

STORAGE, MECHANICAL, RETAIL AREAS SHALL BE OH-1 WITH 0.15GPM/SQFT WITH 1500 SQFT MINIMUM REMOTE AREA (130 SQFT PER HD).

STAGE AREA SHALL BE OH-2 WITH 0.20GPM/1500 SQFT REMOTE AREA.

REMOTE AREA (1500 SQFT) OF DESIGN MAY BE MODIFIED AS ALLOWED AND/OR REQUIRED PER NFPA 13: 11.2.3.

8. STATIC: 56 PSI RESIDUAL: 40 PSI FLOW: 790 GPM

"HYDRANT" #108 LOCATED AT HAMPTON ST S. MILLER; SEE CIVIL/SITE DWGS FOR LOCATION INFORMATION. TESTS PROVIDED BY TYCH/WALKER ARCHITECTS. FPC TO CONFIRM BY TEST PRIOR TO DESIGN.

BEFORE DESIGN & INSTALLATION, FPC MUST VERIFY WATER SUPPLY BY TEST (PER NFPA 291 OR AS DIRECTED BY AHJ). USING 2 HYDRANTS AS CLOSE TO THE POINT OF CONNECTION AS POSSIBLE, PREFERABLY WITNESSED OR PERFORMED BY A FIRE OFFICIAL.

CONTACT WATER AUTHORITIES BEFORE TEST TO VERIFY NORMAL SYSTEM STATUS AND DETERMINE TYPICAL FLUCTUATIONS IN AVAILABLE PRESSURE/FLOW AT THAT LOCATION DUE TO TANK FILL, PUMP STATUS, LOCAL DEMAND, ETC.

BASE DESIGN ON A SAFETY FACTOR TO ACCOUNT FOR FLUCTUATIONS IN WATER SUPPLY. A MINIMUM 10% SAFETY FACTOR OR AS DIRECTED BY LOCAL AHJ WHERE LARGER MARGIN REQUIRED.

FPC CALCULATIONS TO START AT WATER MAIN CONNECTION UNDER STREET (UTILITY MAIN WHERE HYDRANT TESTS ARE PREFORMED) AND MUST INCLUDE ALL VALVES, FITTINGS, ETC. SHOP DRAWING SUBMITTAL MUST INCLUDE SITE PLAN REFERENCE INDICATING RELATIVE DISTANCE & ELEVATIONS OF TEST HYDRANTS FROM B.O.R. AND FINISH FLOOR OF BUILDING.

NOTE: FLOW DATA ON A/E DOCUMENTS ARE FOR BIDDING PURPOSES ONLY & SHALL NOT BE USED FOR THE FPC DESIGN. SHOP DWGS WILL NOT BE APPROVED WITHOUT AN UPDATED FLOW TEST OBTAINED BY THE FPC FOR THEIR DESIGN AND CALCULATION. INCLUDE A PARTIAL SITE PLAN INDICATING LOCATIONS OF HYDRANTS AND RELATIVE ELEVATIONS TO BASE OF RISER. FLOW TEST OBTAINED BY FPC/GC SHALL BE NO MORE THAN 1 YEAR FROM TIME OF SUBMITTAL TO A/E & AHJ FOR REVIEW.

NOTE: FOR DRY SYSTEMS – WHERE REQ'D BY NFPA 13: 7.2.3; FPC SHALL INCLUDE CALCULATIONS FOR WATER DELIVERY TIME AS NOTED IN NFPA 13: 7.2.3.6. WHERE A DRY SYSTEM IS USED FOR DWELLING UNITS, THE MAXIMUM ALLOWED DELIVERY TIME IS 15 SECONDS TO THE SINGLE MOST REMOTE SPRINKLER HEAD.

9. ONLY STEEL PIPING SHALL BE USED (CRR OF 1.0 OR GREATER) FOR THIS PROJECT. SCHEDULE 5 PIPING IS NOT ALLOWED.

ALL DRY, DELUGE, PRE-ACTION SYSTEM COMPRESSED AIR ARE TO INCLUDE AIR DRYER SYSTEM THAT IS FM OR UL LISTED FOR SPRINKLER SYSTEMS. (COALESCING FILTER AND MANUALLY REGENERATED DESICCANT DRYER: ONE REQUIRED FOR EACH 275 GALLON SYSTEM CAPACITY OR AS REQ'D BY MFR'S DOCUMENTATION – COMPONENTS SHALL BE EQUAL TO GENERAL AIR PRODUCTS F3500 AIR FILTER AND AD-3400 DRYER).
AT CONTRACTOR'S OPTION: NITROGEN SUPPLY SYSTEM MAY BE PROVIDED IN LIEU OF COMPRESSED AIR.

10. REFER TO 'A' & 'S' DWGS FOR BUILDING SEISMIC DESIGN CODE INFORMATION:

SEISMIC DESIGN CATEGORY 'C' & 'D' REQUIREMENTS: PROVIDE HANGING, BRACING, & RESTRAINT OF FIRE SPRINKLER PIPING SHALL BE IN ACCORDANCE WITH SECTION 13.1.3 OF ASCE/SEI-7-05, APPLICABLE LOCAL & STATE BLDG CODES AND SECTION 9.3 OF NFPA 13.

11. IF FPC ELECTS TO PREFABRICATE PIPING, ANY CHANGES BECAUSE OF CONFLICTS TO ACCOMMODATE EXISTING OR NEW CONSTRUCTION CONDITIONS SHALL BE CORRECTED AT NO COST TO THE OWNER. ANY WORK THAT IS INSTALLED PRIOR TO SPRINKLER PERMITTING & AHJ APPROVAL AND MUST BE REVISED BASED ON AHJ REVIEW, SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.

12. FPC IS REQUIRED TO VERIFY AND COORDINATE WITH ELECTRICAL CONTRACTOR ALL REQUIRED CONNECTIONS AND ELECTRICAL REQUIREMENTS FOR COMPLETE SPRINKLER SYSTEM.

13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY THE PROPER FIRE-SAFING DETAIL FOR ALL PIPE PENETRATIONS THRU RATED & NON-RATED WALL AND FLOOR/CEILING ASSEMBLIES. SEE SHEET CD101.

14. A) UNLESS NOTED OTHERWISE ON A/E PLANS OR SPECS: PROVIDE RECESSED PENDANT SPRINKLER HEADS IN ALL FINISHED CLGS.

B) WHERE DRY SYSTEM IS LOCATED IN AREAS WITH FINISHED CLGS; FPC SHALL PROVIDE DRY PENDANT HEADS.

C) SPRINKLER HEADS SHALL BE CENTERED IN TILE; COORDINATE WITH A/E CEILING PLAN.

D) WHERE SUSCEPTIBLE TO CORROSION OR MECHANICAL DAMAGE, PROVIDE APPROVED HEAD PROTECTION PER NFPA & SPRINKLER LISTING. AREAS INCLUDE; BUT NOT LIMITED; JANITORS CLOSETS, DATA/TELEPHONE ROOMS, TRASH, LINEN, MECHANICAL/ELECTRICAL SPACES. HEADS SUSCEPTIBLE TO OUTSIDE ENVIRONMENTAL CORROSIVE CONDITIONS SHALL BE CORROSIVE RESISTANT.

E) SPRINKLERS IN MECHANICAL ROOMS & UNCONDITIONED ATTIC SPACE SHALL BE AT LEAST 200-DEG F.

F) PROVIDE RETURN BEND FOR SPRINKLER CONNECTIONS.

G) FLEXIBLE PIPING TO HEADS ARE ALLOWED WHEN MEETING THE FOLLOWING MINIMUM REQUIREMENTS:

1) FM 1637 OR UL LISTED FLEXIBLE STAINLESS STEEL HOSE WITH THREADED FITTINGS.

2) STAINLESS STEEL BRAIDED JACKET. UNBRAIDED WILL NOT BE ACCEPTED.

3) MINIMUM 1-INCH TRUE BORE INTERNAL CORRUGATED HOSE DIAMETER.

4) FACTORY PRESSURE TESTED TO 400-PSI.

5) SHALL STRICTLY ADHERE TO MFR'S INSTALLATION REQUIREMENTS AND LIMITS; PIPING SHALL BE TAKEN OFF TOP OF BRANCH LINE/MAIN SAME AS A RETURN BEND.

15. FPC SHALL LOCATE ALL DEVICES, VALVES, DRAINS, EQUIPMENT, ETC. IN AN EASILY ACCESSIBLE LOCATION. WHERE ABOVE CEILING; FPC SHALL DESIGN PIPE ROUTING SUCH THAT ANY DEVICE, DRAIN, ETC. IS LOCATED ABOVE A LAY-IN OR ACCESSIBLE CEILING. WHENEVER SUCH DEVICE IS LOCATED WITHIN OR ABOVE A NON-ACCESSIBLE SPACE (CHASE, WALL, CLG, ETC.) FPC IS RESPONSIBLE FOR FURNISHING AND INSTALLATION OF ACCESS PANEL (COORDINATE LOCATION & A/P REQUIREMENTS WITH A/E SPECS & DWGS).

16. ALL DROPS FOR AUXILIARY DRAINS/TEST CONNECTIONS ARE TO SPILL TO GRADE. LOCATIONS SHALL NOT TO BE EXPOSED IN FINISHED AREAS & NOT ACCESSIBLE TO PUBLIC. PROVIDE FOR & COORDINATE DROPS IN WALLS, FURRED SPACES AS NEEDED AND PROVIDE ANY REQ'D ACCESS PANELS AS NOTED ABOVE.

17. AT RISER, FPC SHALL PROVIDE TEST HEADER (OR OTHER AHJ APPROVED METHOD) AS A MEANS FOR THE FORWARD FLOW BACKFLOW PREVENTION ASSEMBLY (PER NFPA 13 SECTION 8.17.4.6.1) TO BE DISCHARGED FOR ITS INITIAL AND ANNUAL FULL FLOW TESTS REQUIRED BY SECTION 10.10.2.5. THIS REQUIRED TEST IS PERFORMED TO SHOW THAT THERE IS NOTHING IN THE LINE IMPEDING FLOW THROUGH THE BACKFLOW PREVENTER, AND THE LARGE FLOW WHICH OCCURS DURING THESE TESTS NEEDS TO BE ABLE TO RUN OFF, OR BE DRAINED.

GENERAL NOTES

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DAVID G. PAGE — REGISTERED PROFESSIONAL ENGINEER — No. 27690 — 1-5-17

REVISION DATE

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA — McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926 — CERTIFICATE OF AUTHORIZATION

2015-04	
01/05/17	
NOTES AND DETAILS	
FP1.0	

PROVIDE SPRINKLER COVERAGE IN ALL SPACES PER NFPA 13 AND ALL APPLICABLE LOCAL & STATE CODES

JANITOR 104
VESTIBULE 103
LOBBY 101
STORAGE 133
TOILET 102
TOILET 117
CORRIDOR 116
FEC
STAIRS 118
GATHERING ROOM 119
OFFICE 120
STORAGE 121
EXISTING OFFICE 122
CORRIDOR 126
EXISTING ROOM 123
EXISTING STAIRWELL 124
SPRINKLER RISER; SEE SHEET FP1.0
LOBBY 125
PROVIDE SPRINKLER COVERAGE IN ELEVATOR SHAFT PER NFPA 13
EXISTING OFFICE 127
EXISTING OFFICE 128
STOR. 131
CLST. 129
WOMEN'S ROOM 130
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SCOPE OF WORK, THIS SIDE OF 2-HR FIRE WALL
AUDITORIUM 105
ALCOVE 108
ALCOVE 107
STAGE 106
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STORAGE 115
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MEN DRESSING 113
WOMEN DRESSING 112
TOILET 111

GENERAL NOTES

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REGISTERED ARCHITECT No. 27690 DAVID G. PEARCE
1-5-17
REVISION DATE

A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

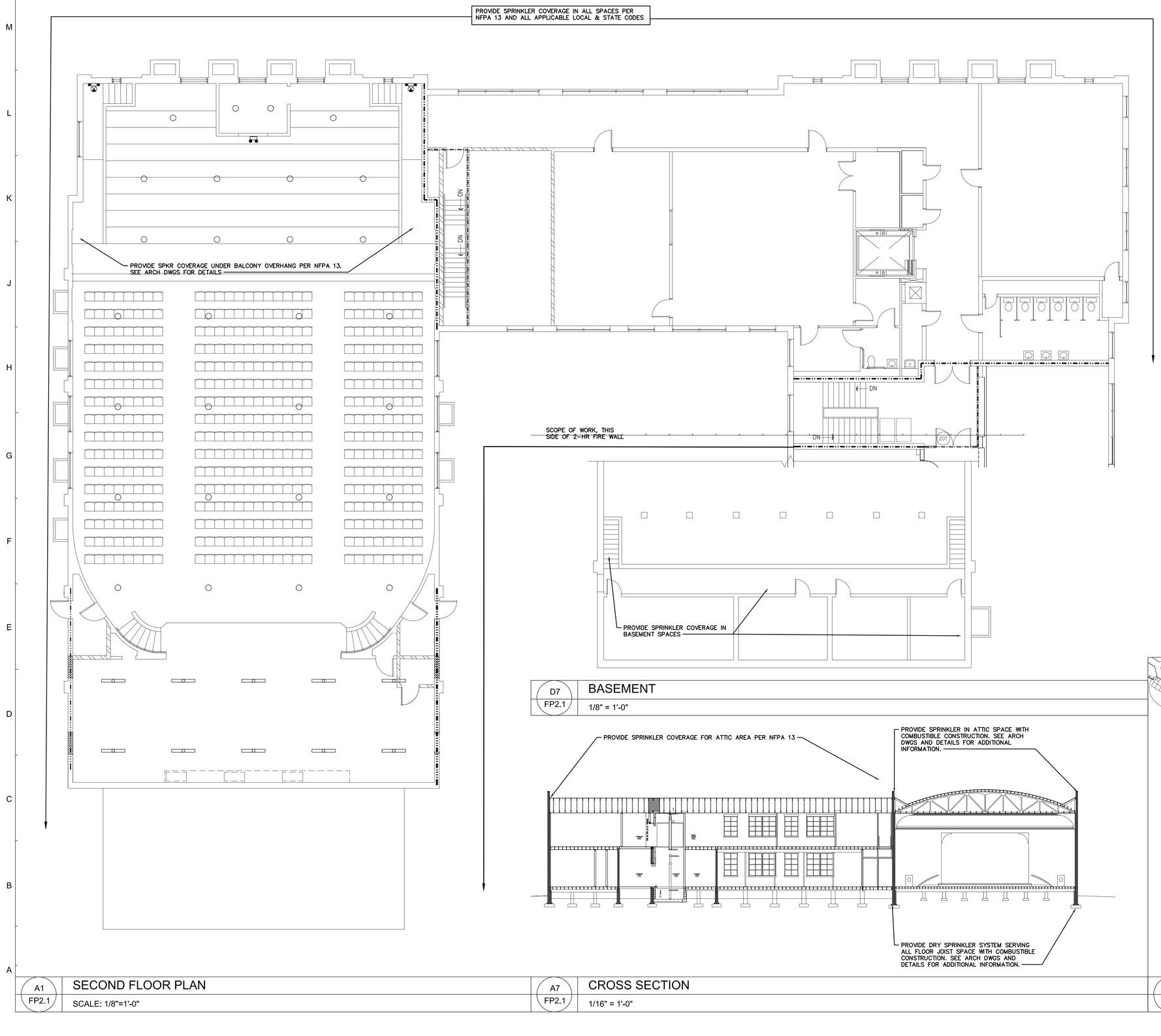
McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926 SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

2015-04
01/05/17
FIRST FLOOR PLAN

FP2.0

A1 FP2.0 — FIRST FLOOR PLAN
SCALE: 1/8"=1'-0"

A14 FP2.0 — KEY PLAN
NTS

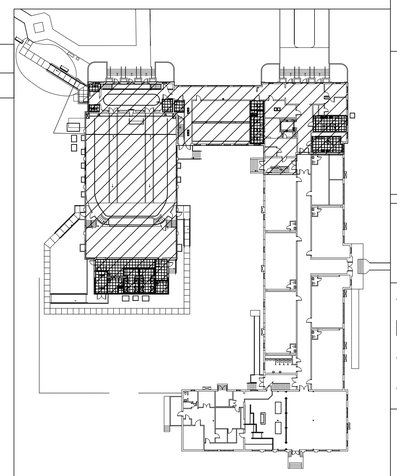


D7 / FP2.1 — BASEMENT

1/8" = 1'-0"

A7 / FP2.1 — CROSS SECTION

1/16" = 1'-0"



A14 / FP2.1 — KEY PLAN

NTS

A1 / FP2.1 — SECOND FLOOR PLAN

SCALE: 1/8"=1'-0"

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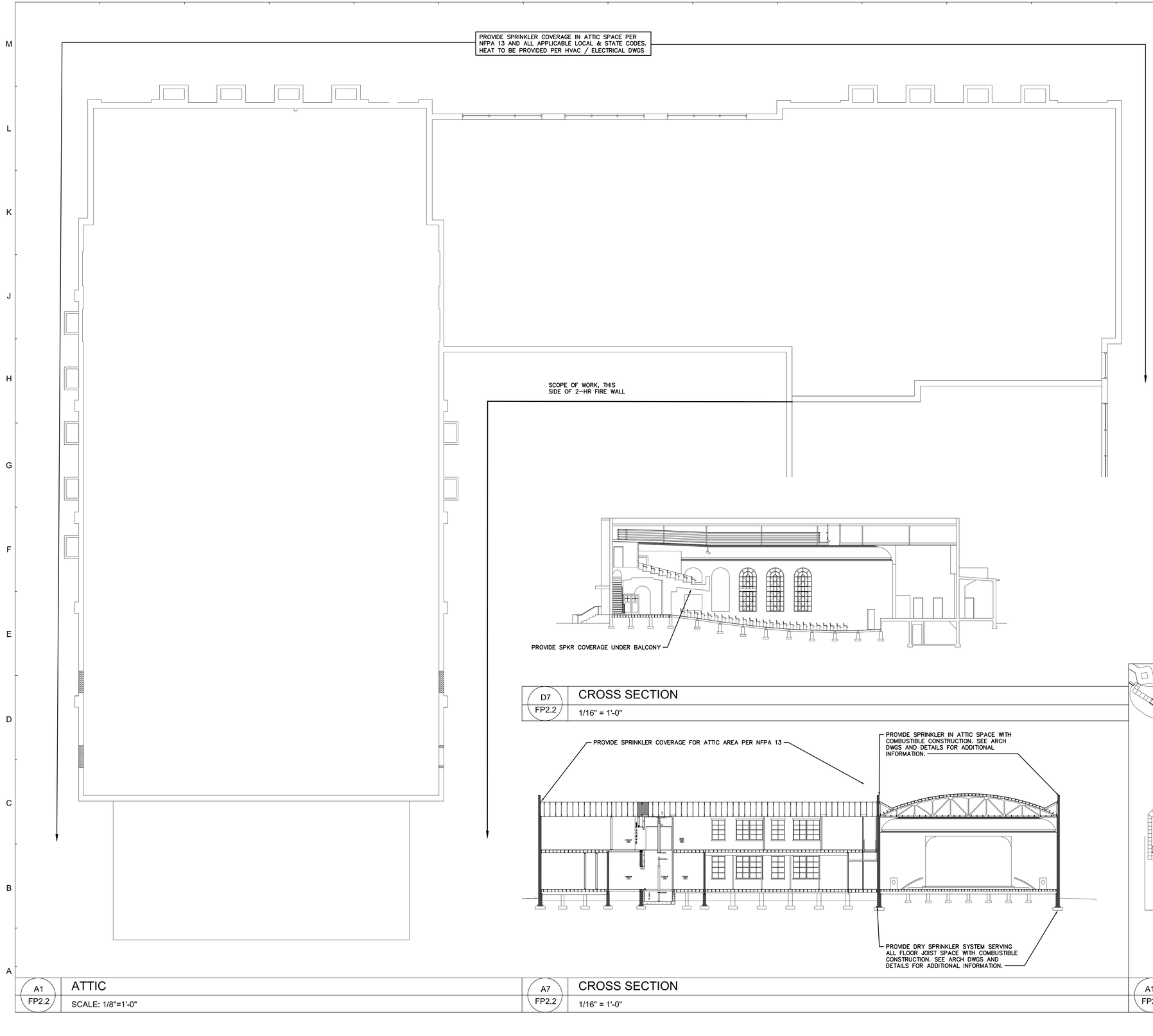
2015-04	
01/05/17	
SECOND FLOOR PLAN	

FP2.1



A1 / FP2.2 — ATTIC

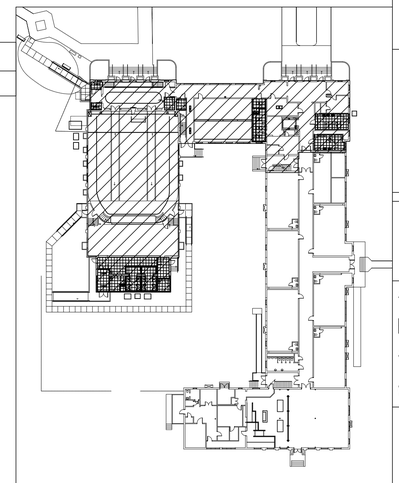
SCALE: 1/8"=1'-0"

D7 / FP2.2 — CROSS SECTION

1/16" = 1'-0"

A7 / FP2.2 — CROSS SECTION

1/16" = 1'-0"



A14 / FP2.1 — KEY PLAN

NTS

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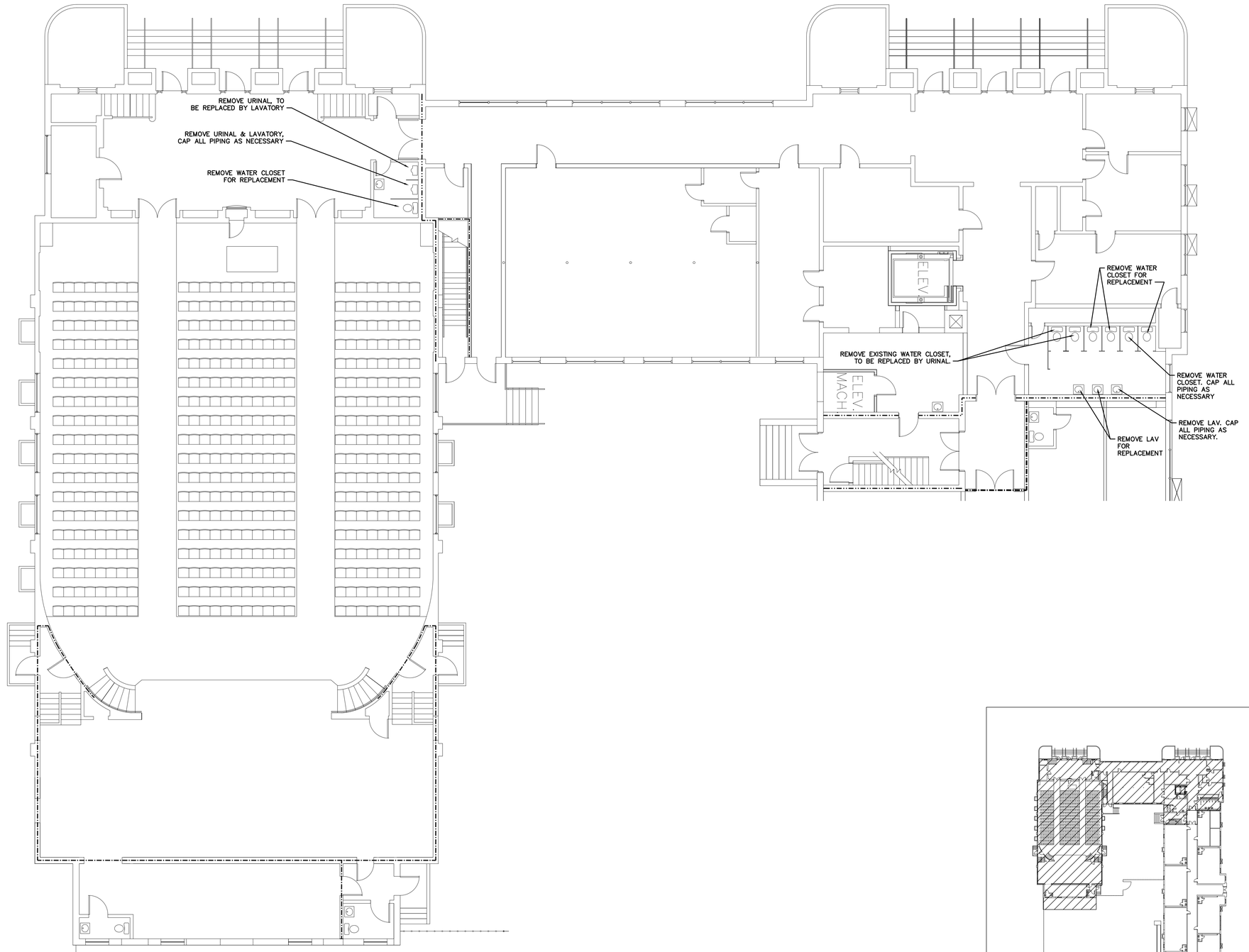
ATTIC FLOOR PLAN

FP2.2



A1	FIRST FLOOR DEMOLITION PLAN
P1.0	SCALE: 1/8"=1'-0"

A14	KEY PLAN
P1.0	NTS

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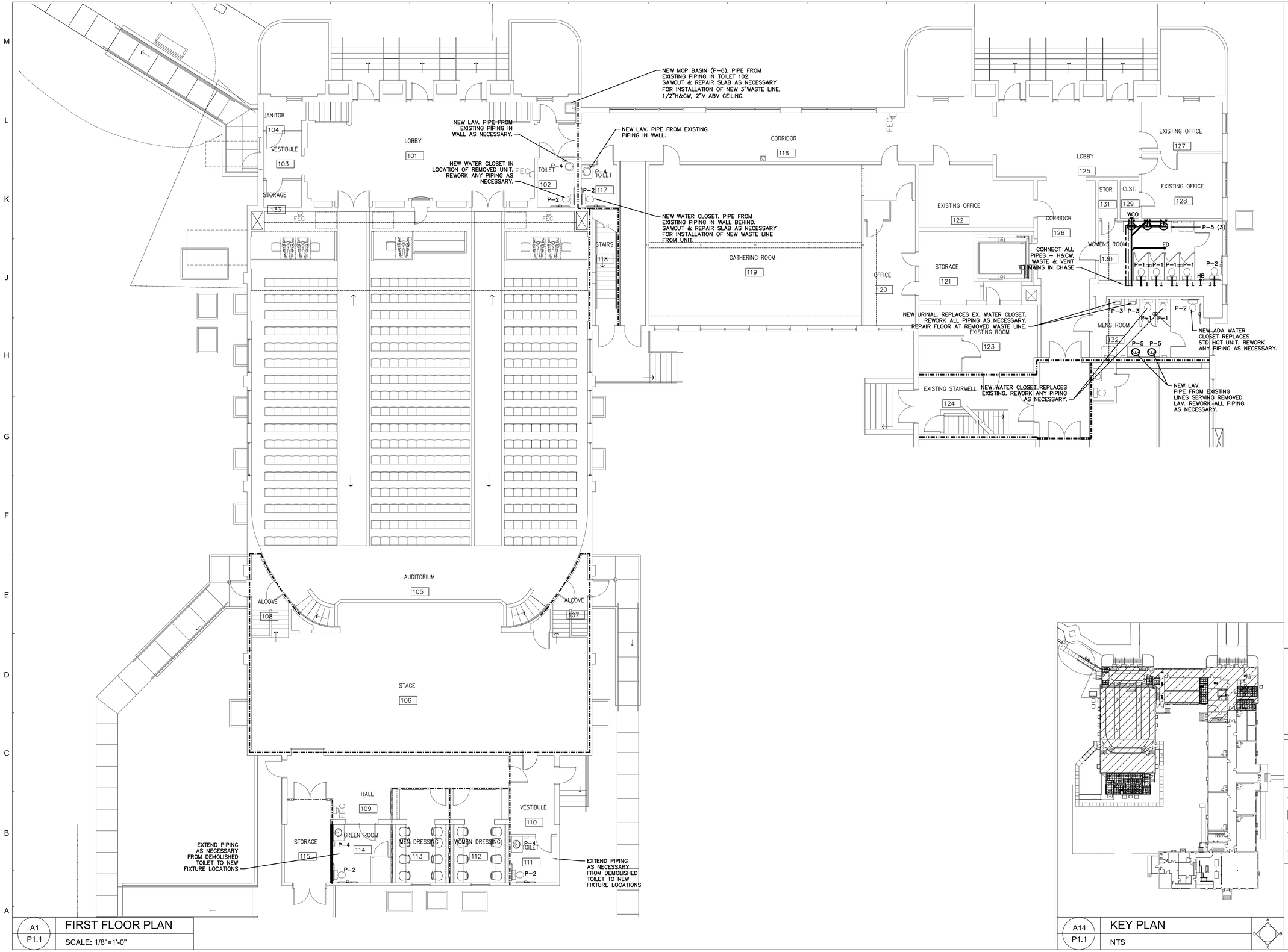
2015-04	
01/05/17	
FIRST FLOOR DEMOLITION	

P1.0



A1 / P1.1 — FIRST FLOOR PLAN

SCALE: 1/8"=1'-0"

A14 / P1.1 — KEY PLAN

NTS

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A RENOVATION TO THE

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2015-04	
01/05/17	
FIRST FLOOR PLAN	
P1.1	

PLUMBING SPECIFICATIONS

(1) TEST

(A) ALL PIPING SHALL BE TESTED BEFORE COVERING IS APPLIED OR WORK CONCEALED, AND ALL LEAKS CORRECTED BY REMOVAL OF DEFECTIVE MATERIAL AND/OR MAKING UP NEW JOINTS. EQUIPMENT SHALL BE PROTECTED FROM TEST PRESSURE BY CAPPING LINES OR WITH VALVES DURING TEST. CAULKING OF PIPING WILL NOT BE PERMITTED AND WHERE EVIDENT OF CAULKING IS NOTED, THE JOINTS SHALL BE REMOVED FORM THE PIPING SYSTEM REGARDLESS OF WHETHER OR NOT IT IS LEAKING.

(B) TEST ALL WATER PIPING AT 125 PSI.

(C) TEST ALL WASTE AND VENT PIPING WITH A 10 FOOT HEAD.

(2) PIPING

(A) SOIL, WASTE, VENT AND DRAIN PIPING SHALL BE SOLID WALL PVC PLASTIC PIPE AND FITTINGS CONFORMING TO ASTM D 2665.

(C) WATER PIPING SHALL BE HARD DRAWN COPPER TUBING ASTM B 88 TYPE "L". FITTINGS FOR COPPER TUBING SHALL BE ANSI B16.18 OR B16.22 SOLDER JOINT FITTINGS. ENDS OF PIPE SHALL BE REAMED, PIPE AND FITTINGS CLEANED. USE ONLY 95-5 (95% TIN AND 5% ANTIMONY) SOLDER WITH NON-CORROSIVE FLUX ON 1-1/4" AND SMALLER AND ON 1-1/2" AND LARGER USE SILVER SOLDER (MINIMUM 12% SILVER), WITH A MELTING POINT GREATER THAN 1000OF. SUBMIT SOLDER FOR APPROVAL.

(3) HANGERS

(A) ALL PIPING SHALL BE SUPPORTED ON NOT LESS THAN 10' CENTERS AND WITHIN 30" OF EACH CHANGE OF DIRECTION EXCEPT THAT PIPING 1 1/4" SIZE AND SMALLER SHALL BE SUPPORTED ON 8' 0" CENTERS.

(B) PIPE HANGERS SHALL BE SUPPORTED BY MEANS OF IRON HANGER RODS FROM THE BUILDING CONSTRUCTION OR FROM STRUCTURAL STEEL MEMBERS, AND IN AN APPROVED MANNER. WHERE REQUIRE, PIPING SHALL BE HUNG FROM ANGLE IRON CLIPS OR SUITABLE BRACKETS ATTACHED TO SIDES OF MASONRY CONSTRUCTION.

(4) PIPE INSULATION

(A) ALL WATER PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH AN ALL-SERVICE JACKET COMPOSED OF AN OUTER LAYER OF VINYL, FIBERGLASS SCRIM CLOTH, ALUMINUM FOIL, AND KRAFT PAPER, IN THAT ORDER, FROM OUTSIDE TO INSIDE OF PIPE COVERING. INSULATION THICKNESS SHALL BE 1"FOR ALL PIPING.

PLUMBING FIXTURE SCHEDULE

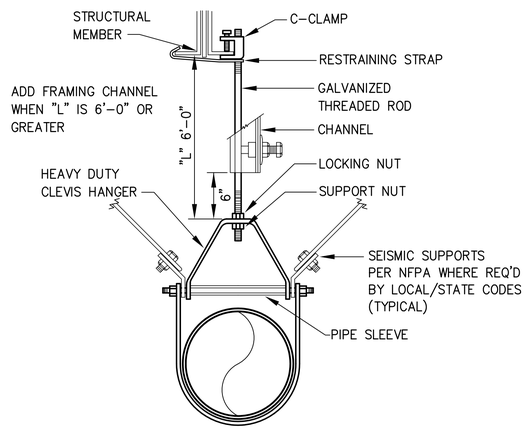
SYM	DESCRIPTION	CW	HW	W	V	MODEL NUMBER	REMARKS
P-1	WATER CLOSET	1/2"	–	3"	2"	KOHLER "WELLWORTH" K-3978; BENEKE 527SS SEAT; K-7637 ANGLE SUPPLY	1,4,5
P-2	WATER CLOSET (HDCP.)	1/2"	–	3"	2"	KOHLER "HIGHLINE" K-3979; BENEKE 527SS SEAT; K-7637 ANGLE SUPPLY	1,4,5,8
P-3	URINAL	3/4"	–	2"	2"	KOHLER "DEXTER" K-5016-ET W/SLOAN ROYAL 186-1 FLUSH VALVE	1,3,4,6
P-4	LAVATORY (COUNTER GRID)	1/2"	1/2"	2"	2"	KOHLER "FARMINGTON" K-2905-4; DELTA 501LF-HGMHDF FAUCET; K-7607 SUPPLY; K-8998 TRAP, K-7129-A DRAIN.	1,2,7,9,10
P-5	LAVATORY (COUNTER GRID)	1/2"	1/2"	2"	2"	KOHLER "FARMINGTON" K-2905-4; SLOAN SF-2350-BDM FAUCET; K-7607 SUPPLY; K-8998 TRAP, K-7129-A DRAIN.	1,2,7,9,10
P-6	MOP BASIN	1/2"	1/2"	3"	2"	FIAT MSB-2424 W/ 830-AA FAUCET, 832-AA HOSE BRACKET, 889-CC MOP HANGER & SEALANT AS REQUIRED. INCLUDE SS WALL GUARDS.	1,11

1. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL FIXTURES.
2. PROVIDE TRUEBRO MODEL 102 INSULATION KIT, PLUMBEREX MODEL PRO-2000 OR McGUIRE PWV8902 PREWRAPPED CAST P-TRAP ASSEMBLY KIT ON ALL HANDICAP ACCESSIBLE LAVATORIES AND/OR SINKS.
3. PROVIDE CARRIERS FOR ALL WALL MOUNTED FIXTURES. FOR LAVATORIES: SINGLE HANGER FOR BLOCK WALLS; FOR GYPBOARD WALL, PROVIDE FLOOR-MOUNT ARM CARRIERS (CONCEALED OR EXPOSED PER MFR'S REQUIREMENTS).
4. EQUAL CHINA FIXTURE BY AMERICAN STANDARD, ZURN & SLOAN.
5. EQUAL TOILET SEAT BY BEMIS, OLSONITE & BENEKE.
6. EQUAL FLUSH VALVES BY ZURN & TOTO.
7. EQUAL CAST IRON LAVATORIES BY CECO & ZURN.
8. FLUSH VALVE MECHANISM SHALL BE LOCATED OPPOSITE OF HAND RAIL AS PER ADA REQUIREMENT.
9. EQUAL FAUCETS BY SYMMONS, CHICAGO FAUCETS, DELTA, MOEN & AMERICAN STANDARD.
10. WHEN ASTERISK ("*") PREFIX IS USED, PROVIDE TRAP PRIMER AND PIPE 1/2" LINE BELOW SLAB TO FLOOR DRAIN.
11. EQUAL MOP BASIN BY SWANSTONE, E.L.MUSTEE. PROVIDE INTEGRAL CHECK STOPS AT ALL WALL FAUCETS.

PLUMBING SPECIALTIES SCHEDULE

SYM	DESCRIPTION	MODEL NUMBER	REMARKS
FD	FLOOR DRAIN	ZURN ZN-415-S (-P WHERE TRAP PRIMER REQ'D)	1
HB	HOSE BIBB	WOODFORD #26 WITH LOOSE KEY, CHROME PLATED, VACUUM BREAKER (ASSE 1052).	2,3
WCO	WALL CLEANOUT	ZURN Z-1446 W/STAINLESS STEEL COVER	1
◯	SHOCK ABSORBER	SIOUX CHIEF, A=652-A, B=653-B, C=654-C, D=655-D	4

1. EQUALS BY JOSAM, JAY R. SMITH, ZURN, MIFAB, WATTS.
2. EQUALS BY JOSAM, JAY R. SMITH, WADE & PRIER.
3. PROVIDE INTEGRAL CHECK STOPS AT ALL WALL FAUCETS.
4. EQUALS BY JOSAM, JAY R. SMITH, WATTS – ASSE 1010 APPROVED



1 P2.0 PIPE HANGER DETAIL
NTS

GENERAL NOTES

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A RENOVATION TO THE
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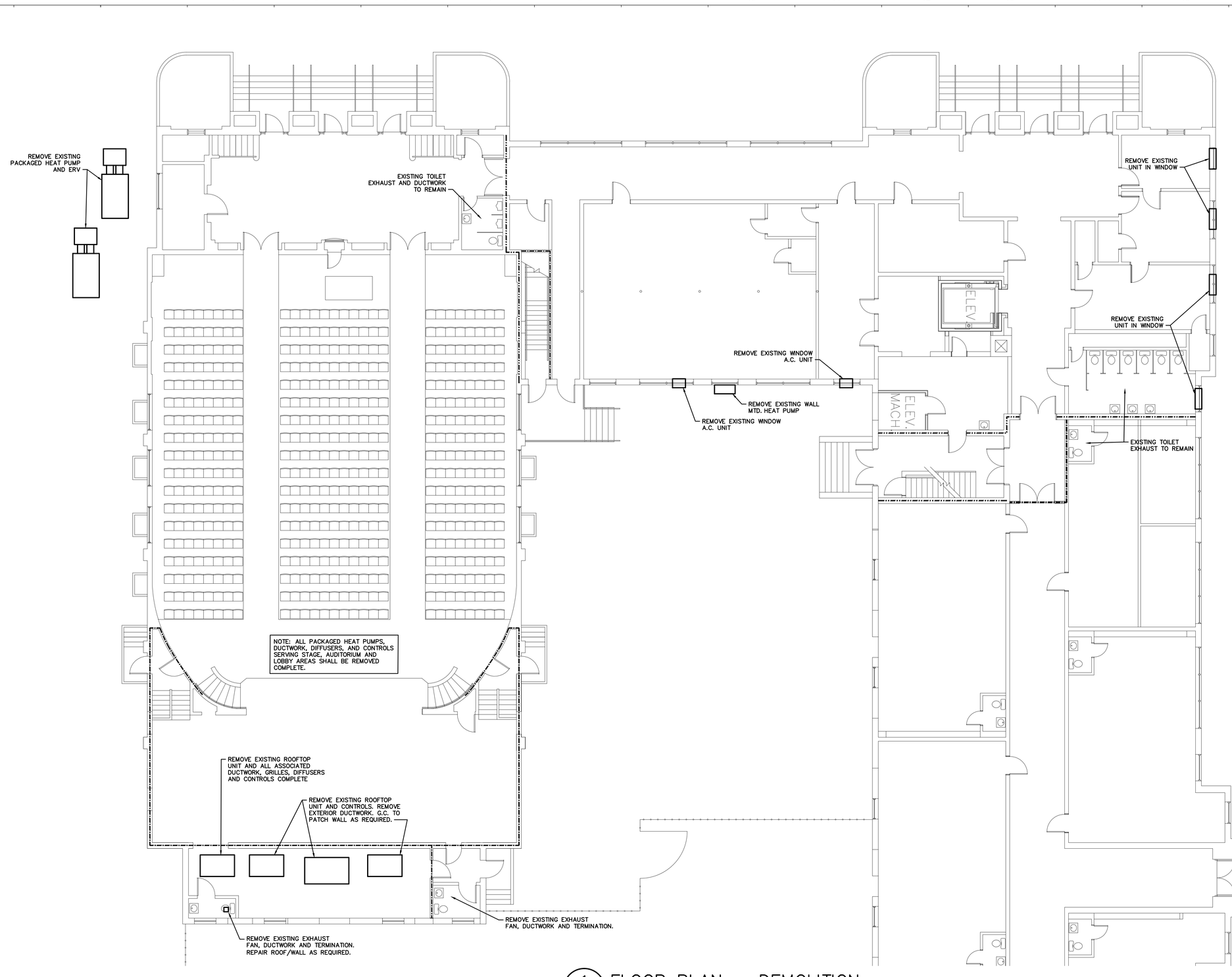
WALTERBORO, SC

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926

2015-04
01/05/17
SCHEDULES & DETAILS

P2.0



1 / M0.1 FLOOR PLAN – DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES

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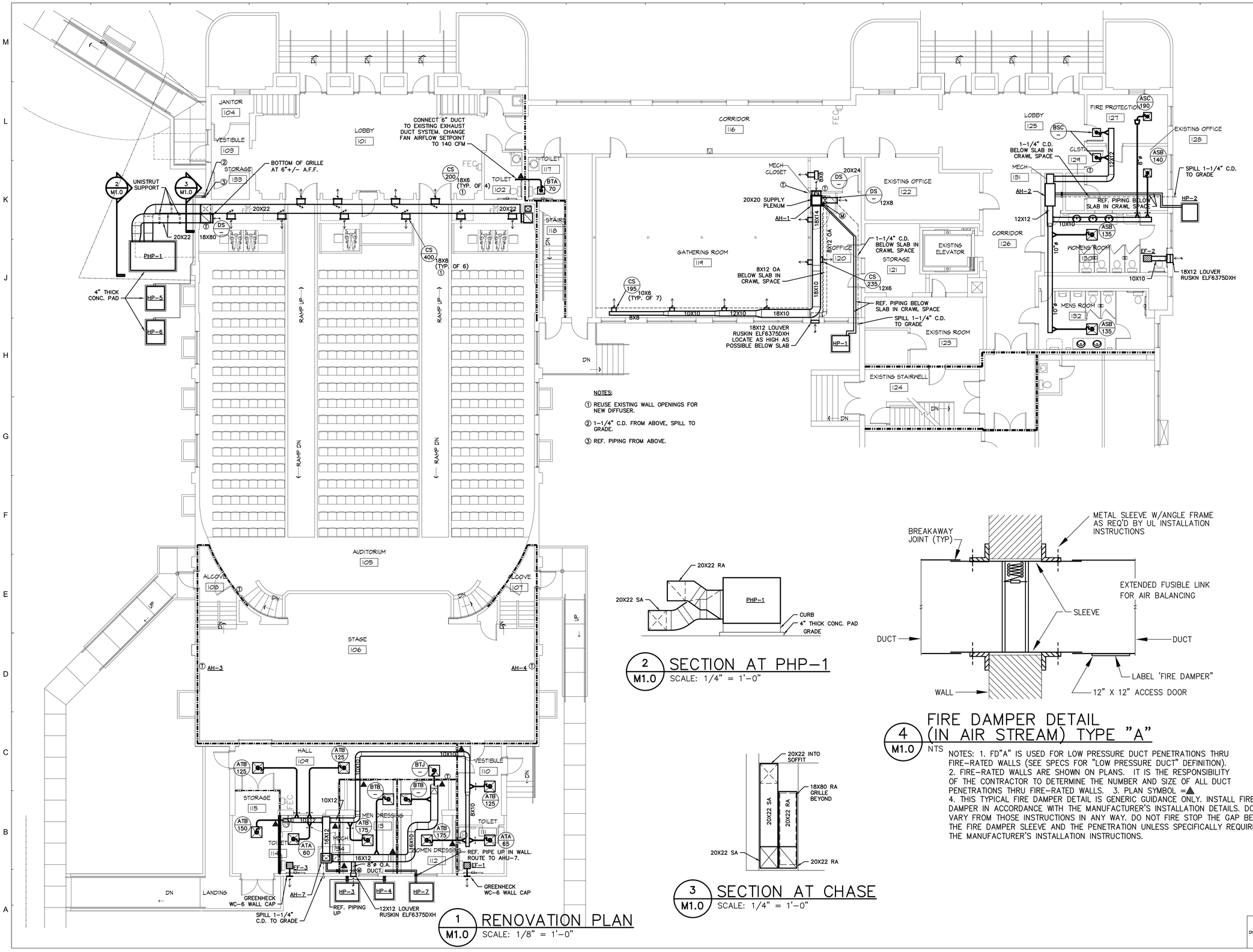
2015-04
01/05/17
DEMOLITION PLAN
M0.1



NOTES:

① REUSE EXISTING WALL OPENINGS FOR NEW DIFFUSER.

② 1-1/4" C.D. FROM ABOVE, SPILL TO GRADE.

③ REF. PIPING FROM ABOVE.

1 M1.0 RENOVATION PLAN
SCALE: 1/8" = 1'-0"

2 M1.0 SECTION AT PHP-1
SCALE: 1/4" = 1'-0"

3 M1.0 SECTION AT CHASE
SCALE: 1/4" = 1'-0"

4 M1.0 FIRE DAMPER DETAIL (IN AIR STREAM) TYPE "A"
NTS

NOTES: 1. FD"A" IS USED FOR LOW PRESSURE DUCT PENETRATIONS THRU FIRE-RATED WALLS (SEE SPECS FOR "LOW PRESSURE DUCT" DEFINITION). 2. FIRE-RATED WALLS ARE SHOWN ON PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE NUMBER AND SIZE OF ALL DUCT PENETRATIONS THRU FIRE-RATED WALLS. 3. PLAN SYMBOL =▲ 4. THIS TYPICAL FIRE DAMPER DETAIL IS GENERIC GUIDANCE ONLY. INSTALL FIRE DAMPER IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION DETAILS. DO NOT VARY FROM THOSE INSTRUCTIONS IN ANY WAY. DO NOT FIRE STOP THE GAP BETWEEN THE FIRE DAMPER SLEEVE AND THE PENETRATION UNLESS SPECIFICALLY REQUIRED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

GENERAL NOTES

SIZE ALL REFRIGERANT PIPING PER MFG. RECOMMENDATIONS.

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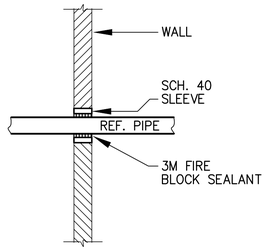
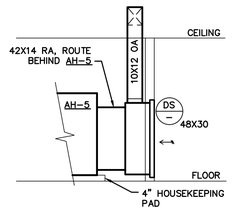
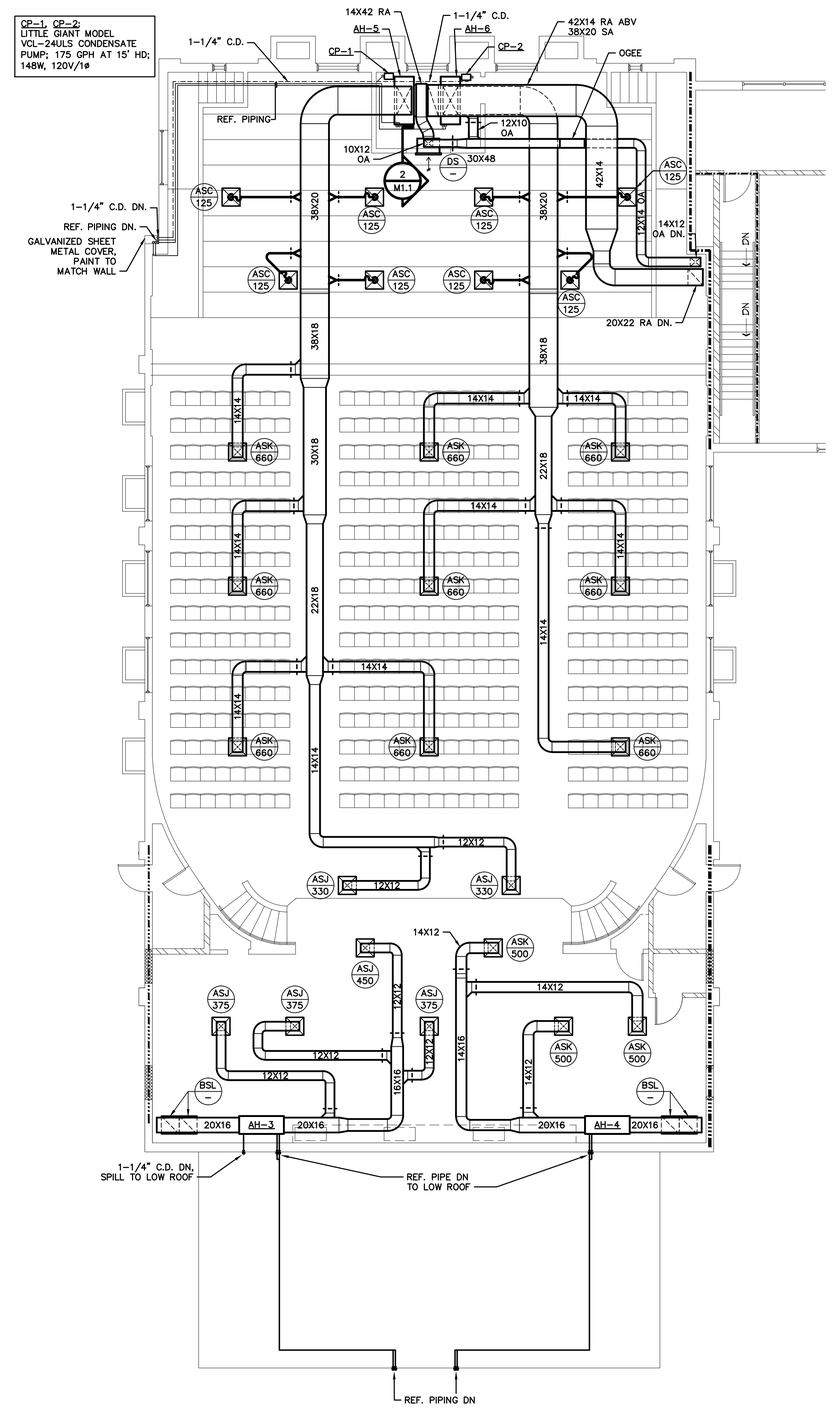
2015-04	
01/05/17	
RENOVATION PLAN	
M1.0	



3 / M1.1 TYPICAL PIPE PENETRATION
NTS



2 / M1.1 SECTION AT AH-5
SCALE: 1/4" = 1'-0"



1 / M1.1 SECOND FLOOR RENOVATION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

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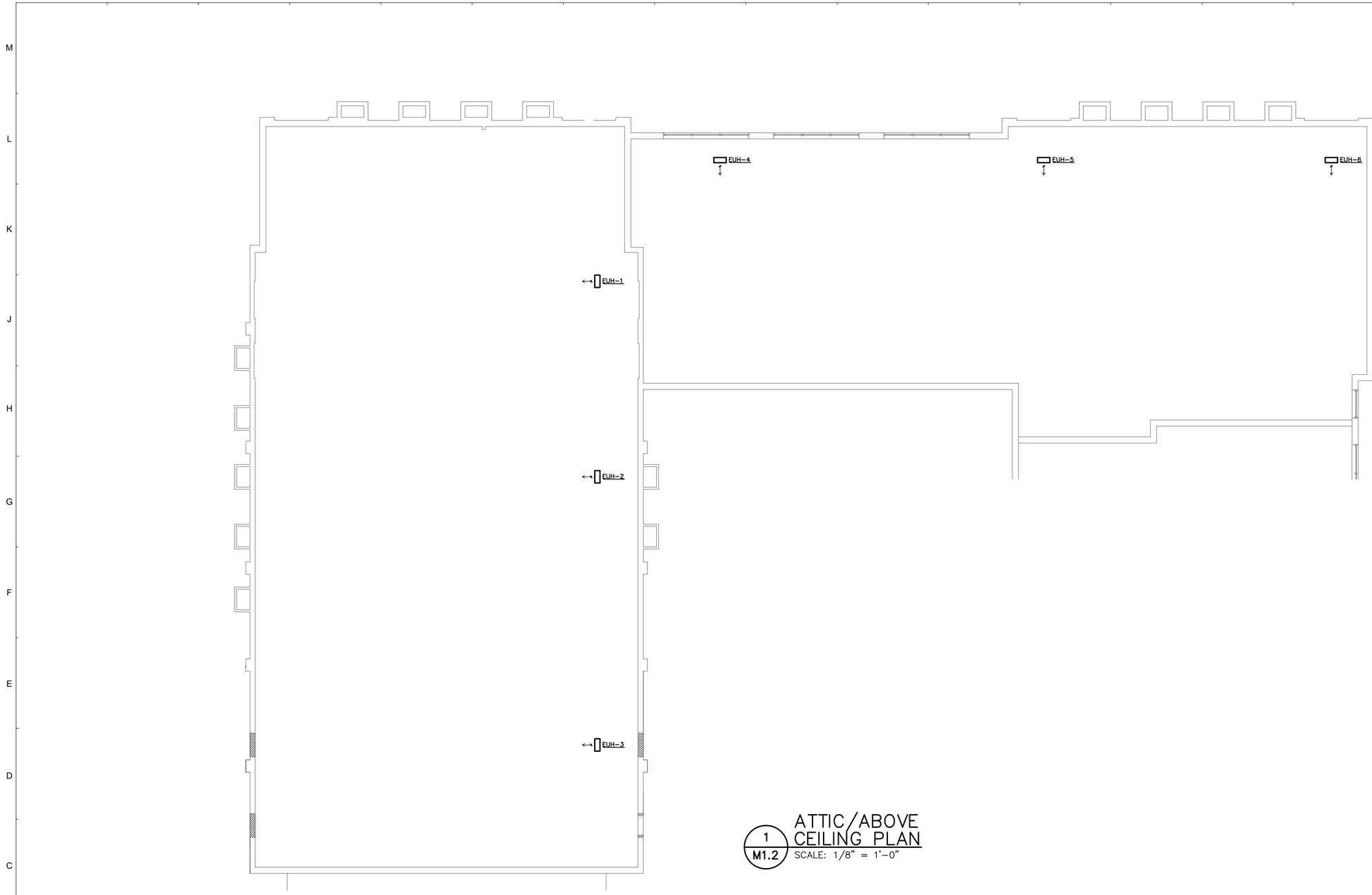
RENOVATION PLAN	
M1.1	



1 / M1.2 ATTIC/ABOVE CEILING PLAN
SCALE: 1/8" = 1'-0"

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01/05/17	
RENOVATION PLAN	
M1.2	

SPLIT SYSTEM HEAT PUMP SCHEDULE

Unit Tag	Nom. Tons	SEER (EER)	CFM SA	CFM O.A.	ESP	Fan Motor HP	Fan Motor Volts	Fan Motor Phase	DX Coil Performance EAT	DX Coil Performance MBH Total	DX Coil Performance MBH Sens.	DX Coil Performance Suction Temp.(F)	Electric Heating Coil kW	Electric Heating Coil Steps	Electric Heating Coil Volts	Electric Heating Coil Phase	Heating Performance EAT	Heating Performance MBH	Heating Performance COP	Indoor Unit Electrical MCA	Indoor Unit Electrical MOCP	Indoor Unit Electrical Volt/Phs	Outdoor Unit Tag	Outdoor Unit Fan No.	Outdoor Unit Fan FLA	Outdoor Unit Compressor No.	Outdoor Unit Compressor LRA	Outdoor Unit Compressor RLA	Outdoor Unit MCA	Outdoor Unit MOCP	Outdoor Unit Volts	Outdoor Unit Phase	Outdoor Unit Model	Model (Indoor Unit)	Indoor Unit Weight	Remarks
AH-1	4	13	1600	300	0.6	3/4	208	1	80/67	48	34.8	45	10.8	1	208	3	70	48	3.4	44	45	208/3	HP-1	1	1.3	1	91	16	21	35	208	3	4TWA3048	GAM5B0C48	200 LBS.	1-3
AH-2	1.5	14	600	100	0.5	1/3	208	1	80/67	17.8	13.2	45	3.6	1	208	1	70	17	3.7	25	25	208/1	HP-2	1	0.77	1	38.6	6.4	9	15	208	1	4TWR4018	GAM5B0A18	175 LBS.	1-3
AH-3	4	13	1600	-	0.5	3/4	208	1	80/67	48	34.8	45	10.8	1	208	3	70	48	3.4	44	45	208/3	HP-3	1	1.3	1	91	16	21	35	208	3	4TWA3048	GAM5B0C48	200 LBS.	1-3
AH-4	4	13	1600	-	0.5	3/4	208	1	80/67	48	34.8	45	10.8	1	208	3	70	48	3.4	44	45	208/3	HP-4	1	1.3	1	91	16	21	35	208	3	4TWA3048	GAM5B0C48	200 LBS.	1-3
AH-5	10	(11.0)	3800	400	0.75	3	208	3.	80/67	123.1	93.5	45	26.2	2	208	3	70	100.9	3.3	98.7	100	208/3	HP-5	1	5.0	1	267	33	47	70	208	3	TWA120	TWE120	500 LBS.	1-4
AH-6	10	(11.0)	3800	400	0.75	3	208	3.	80/67	123.1	93.5	45	26.2	2	208	3	70	100.9	3.3	98.7	100	208/3	HP-6	1	5.0	1	267	33	47	70	208	3	TWA120	TWE120	500 LBS.	1-4
AH-7	2.5	13	1000	120	0.5	1/3	208	1	80/67	30.4	21.3	45	7.2	1	208	3	70	27.2	3.4	28	30	208/3	HP-7	1	0.7	1	54.9	7.9	11	15	208	3	4TWA3030	GAM5B0B30	175 LBS.	1-3

1. MODELS BY TRANE UNLESS SHOWN OTHERWISE. EQUALS BY CARRIER, YORK OR APPROVED EQUAL.
2. HEATING PERFORMANCE AT 47 DEG F.
3. SINGLE POINT ELECTRICAL CONNECTION AT AIR HANDLING UNIT.
4. PROVIDE PHENOMENAL AIR (OR EQUAL) MODEL TPI SERIES C10.0 COLD PLASMA GENERATOR TO BE INSTALLED IN THE UNIT BETWEEN THE DX COIL AND THE SUPPLY FAN.

PACKAGED HEAT PUMP SCHEDULE SCHEDULE

Unit Tag	TONS	EER	CFM SA	CFM OA	ESP	Fan Motor HP	Fan Motor Volts	Fan Motor Phase	Cooling Performance EAT	Cooling Performance MBH Total	Cooling Performance MBH Sens.	Cooling Performance Suction Temp.(F)	Heat Pump CAP.	Heat Pump COP	Electric Heating Performance EAT	Electric Heating Performance kW	Electric Heating Performance Steps	Electric Heating Performance Temp. Rise(F)	Electric Heating Performance Volts	Electric Heating Performance Phase	Condensing Unit Performance Fan No.	Condensing Unit Performance Fan FLA(ea)	Condensing Unit Performance Compressor No.	Condensing Unit Performance Compressor LRA(ea)	Condensing Unit Performance Compressor RLA(ea)	Condensing Unit Performance MCA	Condensing Unit Performance MOCP	Condensing Unit Performance Volts	Condensing Unit Performance Phase	Model	Weight Lbs.	Remarks
PHP-1	10	11.2	3600	450	0.75	3.8	208	3	80.6/69	123.4	92.1	45	111	3.6	70	27	2	23.7	208	3	1	2.7	1	137	18.1	145.8	150	208	3	WSC120	1400	1-3

1. MODELS BY TRANE. EQUALS BY YORK AND McQUAY.
2. HEAT PUMP CAPACITIES BASED ON A 47 DEG F OUTDOOR TEMPERATURE.
3. PROVIDE PHENOMENAL AIR (OR EQUAL) MODEL TPI SERIES C10.0 COLD PLASMA GENERATOR TO BE INSTALLED IN THE UNIT BETWEEN THE DX COIL AND THE SUPPLY FAN.

HVAC SPECIFICATIONS

(1) DUCTWORK

(A) DUCTWORK SHALL BE CONSTRUCTED OF ZINC COATED SHEET STEEL AND SHALL CONFORM TO THE 1ST EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS –METAL AND FLEXIBLE, 1985 AS FOLLOWS:

RECTANGULAR DUCT: 1" W.G. PRESSURE CLASS – TABLE 1–4.

ROUND DUCT: 2" W.G. PRESSURE CLASS – TABLE 3–2.

(B) ALL DUCTWORK MUST BE SEALED IN ACCORDANCE WITH SEAL CLASS C AS DEFINED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS–METAL AND FLEXIBLE, 1985.

(C) DUCT HANGERS AND SUPPORTS SHALL CONFORM TO THOSE SHOWN IN TABLES 4–1 AND 4–2 OF SMACNA HVAC DUCTWORK 1985, 1ST EDITION.

(3) DUCT INSULATION

(A) INSULATION SHALL BE OWENS–CORNING, CERTAIN–TEED/ST. GOBAIN, MANVILLE OR APPROVED EQUIVALENT. ADHESIVES SHALL BE AS MANUFACTURED BY 3–M FOSTER OR INSULATION MANUFACTURER. INSULATION SHALL HAVE COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED BY ASTM E–84, NOT EXCEEDING FLAME SPREAD –25 AND SMOKE DEVELOPED –50.

(B) ALL VAPOR BARRIERS AND JOINTS SHALL BE SEALED TO PREVENT CONDENSATION. CLEAN AND DRY ALL DUCTWORK BEFORE INSTALLING INSULATION. ALL WELD JOINTS SHALL BE WIRE BRUSHED AND GIVE ONE (1) COAT OF RED LEAD BEFORE INSULATING. STAPLES WILL NOT BE PERMITTED IN INSULATION.

(C) ALL SUPPLY AND OUTSIDE AIR DUCTS UNLESS NOTED OTHERWISE ON PLANS SHALL BE INSULATED BY WRAPPING WITH 2" THICK, ¾LB. DENSITY FIBERGLASS WITH VAPOR BARRIER JACKET WITH JOINTS OVERLAPPED A MINIMUM OF TWO INCHES. INSULATION SHALL BE ADHERED TO DUCT WITH NON–COMBUSTIBLE INSULATION BONDING ADHESIVE APPLIED IN 4" STRIPS, 8" ON CENTER. ALL JOINTS SHALL BE SECURED WITH FLARE DOOR STAPLES ON 3" CENTERS THROUGH ALL LAPS OVER DUCT TAPE.

(D) DUCTWORK EXPOSED TO WEATHER SHALL BE INSULATED AS FOLLOWS: SEAL ALL JOINTS WITH HARD CAST SEALER, APPLY 2" THICK POLYSTYRENE INSULATION, COVER WITH TWO (2) INDIVIDUAL LAYERS OF GLASSFAB AND WHITE MASTIC. PAINT TO MATCH BACKGROUND COLOR. ALUMINUM JACKET MAY BE PROVIDED IN LIEU OF MASTIC.

(4) REFRIGERANT PIPING

(A) CONNECT SPLIT SYSTEM AIR HANDLING UNITS TO HEAT PUMPS WITH REFRIGERANT PIPING, TYPE "K" HARD DRAWN COPPER "ACR" TUBING WITH WROUGHT COPPER SWEAT FITTINGS. ALL JOINTS ARE TO BE MADE WITH HARD SOLDER SUCH AS "SIL–FOS" OR "SILVER SOLDER."

(B) PIPE INSULATION – REFRIGERANT SUCTION PIPING – FLEXIBLE FOAMED ELASTOMERIC PLASTIC TUBING WITH A DENSITY OF 6 LBS./CF, K OF 0.27 @ 70 DEGREES F., SELF–EXTINGUISHING, AND A WATER VAPOR TRANSMISSION OF LESS THAN 0.05 PERM IN., FLAME SPREAD RATING 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS (ASTM E84–75).

(5) CONTROLS

(A) PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM.

(7) CONDENSATE DRAIN PIPING

(A) ALL DRAIN LINES SHALL BE SOLID WALL PVC DRAIN PIPE CONFORMING TO ASTM D 2665. DRAINS SHALL BE RUN IN A NEAT MANNER AND DISCHARGED TO FLOOR DRAINS (IF UNIT IN MECHANICAL ROOM) OR EXTENDED FIVE FEET FROM BUILDING FOR CONNECTION TO STORM DRAIN PIPING.

(8) TESTING AND BALANCING

(A) WORK SHALL BE PERFORMED BY TECHNICIANS COMPETENT IN THE TRADE OF TESTING AND BALANCING ENVIRONMENTAL SYSTEMS AND SHALL BE DONE IN AN ORGANIZED MANNER UTILIZING APPROPRIATE TEST AND BALANCE FORMS. ALL EQUIPMENT SHALL BE BALANCED TO WITHIN +/– 10% OF THE SCHEDULED VALUE.

(B) INSTRUMENTS FOR USE IN THE TEST AND BALANCING PROCEDURES SHALL BE OF FIRST QUALITY AND BE ACCURATELY CALIBRATED AT THE TIME OF USE. ALL FIELD INSTRUMENTS USED IN THE BALANCE SHOULD HAVE BEEN CALIBRATED AT LEAST WITHIN THE PREVIOUS THREE MONTHS.

(C) STARTING DATE FOR MECHANICAL SYSTEM SHALL BE SCHEDULED WELL IN ADVANCE OF EXPECTED COMPLETION DATE AND SHALL BE ESTABLISHED A MINIMUM OF TWO WEEKS PRIOR TO ACCEPTANCE DATE. THE SYSTEM SHALL BE IN FULL OPERATION WITH ALL EQUIPMENT FUNCTIONAL PRIOR TO ACCEPTANCE DATE.

(D) PERFORMANCE READINGS SHALL BE TAKEN AND RECORDED ON ALL AIR DISTRIBUTION DEVICES AND THE SYSTEM SHALL BE BALANCED OUT PRIOR TO ACCEPTANCE. BALANCING OF THE SYSTEM SHALL BE ACCOMPLISHED WITH DUCT DAMPERS AND ONLY MINOR ADJUSTMENTS MADE WITH GRILLE DAMPERS. RECORD AND SUBMIT RESULTS IN TABLE FORM ALONG SIDE OF SCHEDULED QUANTITIES.

(E) ALL CONTROLS SHALL BE CAUBRATED BY QUALIFIED PERSONNEL PRIOR TO ACCEPTANCE DATE. THERMOSTATS SHALL BE IN CLOSE CALIBRATION WITH ONE ANOTHER AND SHALL OPERATE THEIR RESPECTIVE UNITS WITHOUT INTERFERENCE FROM ADJACENT UNITS.

(F) ALL UNITS SHALL BE CHECKED OUT THOROUGHLY AND THE INFORMATION RECORDED ON EACH MACHINE. CHECK SHEETS SHALL BE INCLUDED IN OPERATING AND MAINTENANCE INSTRUCTIONAL MANUAL.

GRILLE & DIFFUSER SCHEDULE

SYM	TYPE	USE	CFM RANGE	NECK SIZE	OVER-ALL SIZE	FINISH	FRAME	PRICE MODEL NO	REMARKS
A--	LOUVER FACE	SUPPLY 4-WAY	SEE PLANS & RMK 5	RMK 5	RMK 4	OFF WHITE	RMK 3	SMDA	1-6
BT-	PERF.	RETURN/ EXHAUST	SEE PLANS & RMK 6	RMK 7	RMK 4	OFF WHITE	RMK 3	PDDR	1-4, 7-10
BS-	PERF.	RETURN/ EXHAUST	SEE PLANS & RMK 6	RMK 7	RMK 4	OFF WHITE	RMK 3	PDDR	1-4, 7-10
C-	SIDEWALL	SUPPLY	SEE PLANS	SEE PLANS	RMK 4	RMK 12	SEE PLANS	520D	1-4, 9, 11-13
D-	SIDEWALL	RETURN/ EXHAUST	SEE PLANS	SEE PLANS	RMK 4	RMK 12	SEE PLANS	530	1-4, 9, 12, 13
E--	EGGCRATE	EXH, RA, OA	SEE PLANS	SEE PLANS	RMK 4	OFF WHITE	S	80	1-4, 7, 14

REMARKS

1. EQUALS: METALAIRE, TITUS, KRUEGER, TUTTLE & BAILEY, NAIL-OR, CARNES. SCHEDULE IS GENERAL, SOME MAY NOT BE USED. PAINT ALL INSIDE VISIBLE SURFACES FLAT BLACK.
2. SYMBOL EXPLANATION: XXX/CFM = SYMBOL, FRAME (RMK 3), NECK (RMK 5,7)/CFM
3. FRAME TYPES: S = FLUSH SURF. MTD.. PLASTER FRAME FOR CEILING MOUNTING. T = T-BAR E = DUCT MOUNTED: V-BEVELED DROP SURF. (TYPE "A" DIFFUSER) D = DROPPED FRAME NOTE: VERIFY FRAME/CEILING COMPATIBILITY.
4. OVERALL SIZE: LAY-IN = 2'x2', OTHER GRILLES = NECK + 2"+/-.
5. LOUVER FACE SUPPLY NECK SIZES

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	H	6x6	125
B	8"	175	I	9x9	280
C	10"	275	J	12x12	500
D	12"	400	K	15x15	780
E	14"	535	L	18x18	1125
F	16"	700	M	21x21	1530
G	18"	885	N	24x24	2000

NOTE: VERIFY CFM / NECK SIZE.

6. ADJUSTABLE: HORIZONTAL/VERTICAL - "PIANO HINGE" DEVICE.
7. "B" & "E" EXH/RETURN NECK SIZES ("E" = SQ. NK. ONLY)

NO.	ROUND NK SIZE	CFM	NO.	SQUARE NK SIZE	CFM
A	6"	100	G	8x8	220
B	8"	175	H	10x10	345
C	10"	275	I	12x12	500
D	12"	400	J	14x14	680
E	14"	535	K	16x16	885
F	16"	700	L	18x18	1125
NOTE: VERIFY			M	22x22	1680
CFM / NECK SIZE.			N	22x46	2600

8. NO NECK SIZE INDICATES NON-DUCTED, LAY-IN PANEL.
9. OBD IF USED AS SUPPLY OR EXHAUST.
10. ALL ALUM. CONSTRUCTION (INCLUDING BACKPAN) IF SHOWN ON PLANS.
11. VOLUME EXTRACTOR WHERE SHOWN ON PLANS.
12. PAINT TO MATCH WALL.
13. VERTICAL FRONT BLADES.
14. IF LAY-IN CEILING: EXACT GRILLE SIZE BY MFGR., OMIT SCREW HOLES.
15. LINEAR DIFFUSER CALLOUTS: LENGTH, XX/XX = OVERALL LENGTH/ACTIVE LENGTH
16. 1.125" BORDER.

FAN SCHEDULE

UNIT TAG	CFM	ESP (IN.)	FAN RPM	SONES	DRIVE	HP (W)	VOLTS	PHASE	TYPE	MODEL	REMARKS
EF-1	75	0.3	756	1.1	DIRECT	(80)	115	1	C	SP-B110	1 - 7
EF-2	375	0.35	1034	3.3	DIRECT	(224)	115	1	C	SP-A510	1 - 6, 8
EF-3	75	0.3	756	1.1	DIRECT	(80)	115	1	C	SP-B110	1 - 7

1. MODEL NUMBERS BASED ON GREENHECK. EQUALS BY PENN BARRY, LOREN COOK, AND ILG.
2. TYPES: C = CEILING
3. SOLID STATE SPEED CONTROL SWITCH ON FAN OR NEARBY FOR ALL DIRECT DRIVE SINGLE PHS MOTORS.
4. VERIFY FAN INLET/OUTLET SIZE, TRANSITION TO FIRST DUCT SIZE IF NECESSARY.
5. DISCONNECT SWITCH (NEMA TYPE 3R OR PLUG) BY MFGR. FOR ALL SINGLE PHASE MOTORS (U.N.O.).
6. LISTED SONES IS MAX ALLOWED. FANS MUST BE AMCA CERTIFIED FOR AIR AND SOUND.
7. INTERLOCK WITH LIGHT SWITCH.
8. INTERLOCK WITH OCCUPANCY SENSOR.

MECHANICAL EQUIPMENT LEGEND

SYMBOL SINGLE LINE	SYMBOL DOUBLE LINE	DESCRIPTION
LOW PRESSURE DUCTWORK		
10 X 12	10 X 12	DUCT SECTION–1ST FIGURE WIDTH, 2ND DEPTH
		SQUARE TO ROUND TRANS.
		FLEX DUCTWORK
		ELBOW W/TURNING VANES
		LONG RADIUS ELBOW
EXH		EXHAUST DUCT SECTION
SA		SUPPLY DUCT SECTION
OA		OUTSIDE AIR DUCT SECTION
RA		RETURN/RELIEF AIR DUCT SECTION
		SHORT RADIUS VANED ELBOW
		CONICAL DUCT TAKE–OFF
		RECTANGULAR–TO–ROUND TAKE–OFF WITH DAMPER
		RECTANGULAR–TO–ROUND TAKE–OFF WITHOUT DAMPER
		RECTANGULAR TAKE–OFF
MISCELLANEOUS		
T	T	THERMOSTAT
H	H	HUMIDISTAT
CO2	CO2	CARBON DIOXIDE SENSOR
S	S	SMOKE DETECTOR
— CD —	— CD —	CONDENSATE DRAIN
- - -	- - -	DAMPER
$	$	MANUAL SWITCH

ELECTRIC UNIT HEATER SCHEDULE

Unit Tag	Area Served	Type	Watts	Volts	Phase	Model	Remarks
EUH-1, EUH-2, EUH-3	ATTIC	UNIT	5000	208	3	MARKEL F2FUH05C03	1 - 4
EUH-4, EUH-5, EUH-6	ATTIC	UNIT	3300	208	3	MARKEL F3FUH03C03	1 - 4

1. EQUALS BY SINGER AND CHROMALOX.
2. UNIT MOUNTED DISCONNECT BY MANUFACTURER.
3. UNIT MOUNTED THERMOSTAT (MFGR SUPPLIED).
4. SEE DETAIL 9/M3.0.

GENERAL NOTES

McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INCORPORATED
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Charlotte, NC · 704/527–2112
15–097

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL No. 27690 DAVID G. PEARCE
1-5-17
REVISION DATE

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843-651-7151
mwalker@tychwalker.com

A RENOVATION TO THE

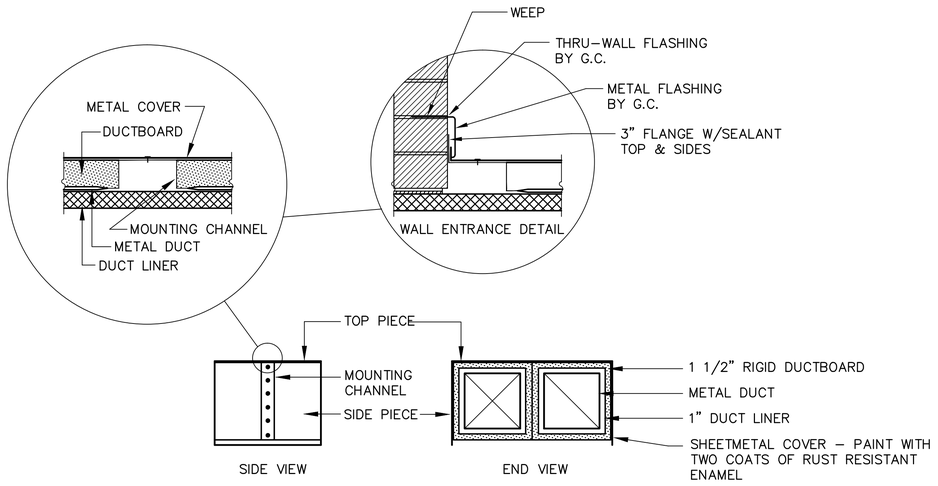
HAMPTON STREET AUDITORIUM

WALTERBORO, SC

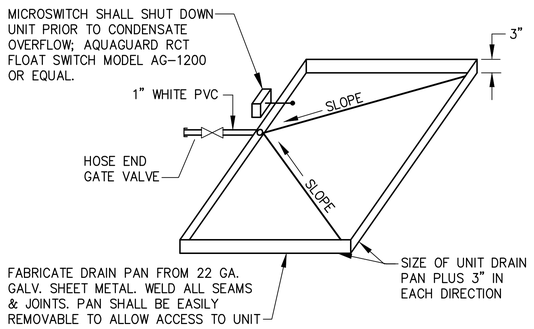
SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC. No. C00926 CERTIFICATE OF AUTHORIZATION

2015-04	
01/05/17	
SCHEDULES □ LEGEND	

M2.0



7 M3.0 WEATHERPROOF DUCT COVER
NTS



8 M3.0 AUXILIARY DRAIN PAN DETAIL
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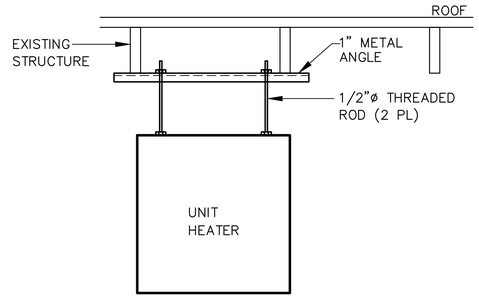

9 M3.0 ELECTRIC UNIT HEATER DETAIL
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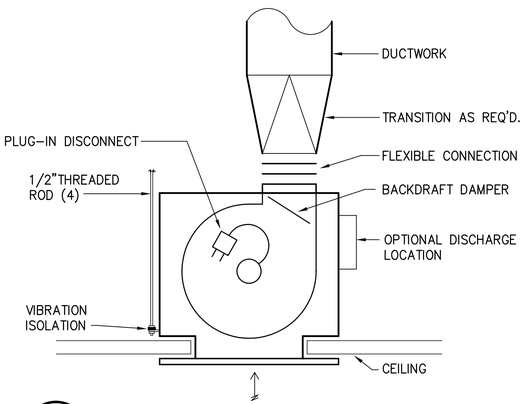
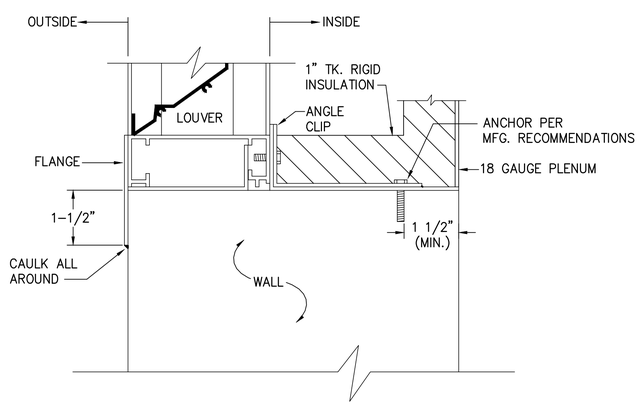


4 M3.0 CEILING EXHAUST FAN DETAIL
NTS



5 M3.0 LOUVER ATTACHMENT DETAIL
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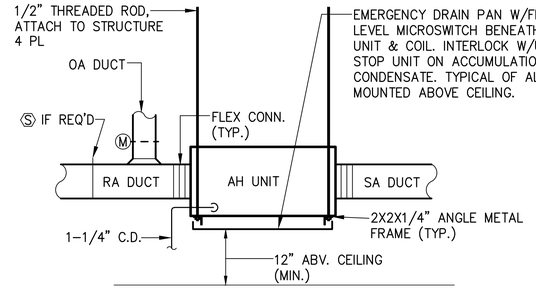
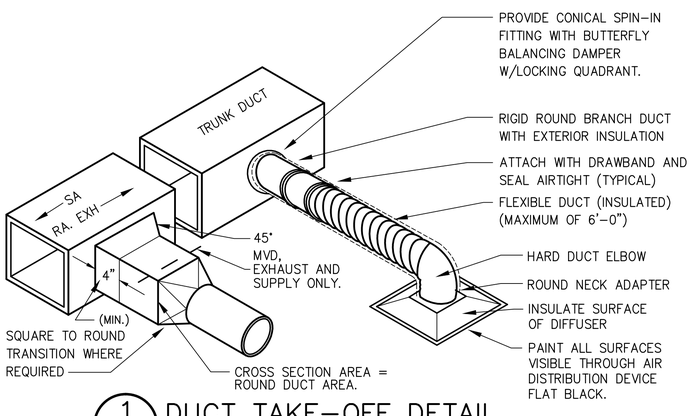


6 M3.0 SECTION AT AHU
NTS



1 M3.0 DUCT TAKE-OFF DETAIL
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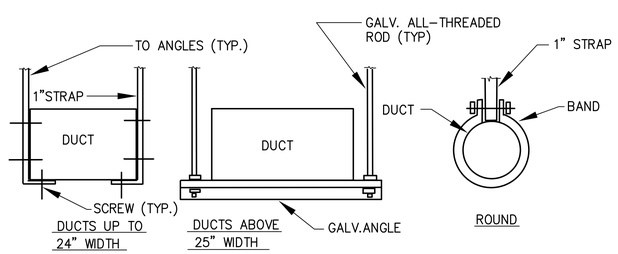
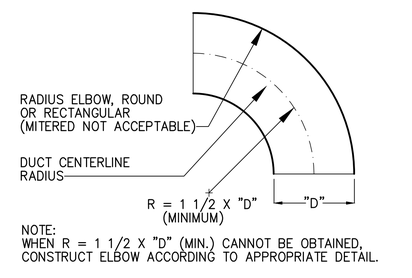


2 M3.0 DUCTWORK HANGER DETAILS
NTS



3 M3.0 RADIUS ELBOW DETAIL
NTS

GENERAL NOTES

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No. C00926

2015-04
01/05/17
DETAILS

M3.0

SYMBOL SCHEDULE

GENERAL SYMBOLS

SYMBOL	DESCRIPTION
———	CONDUIT RUN CONCEALED ABOVE CEILINGS OR IN WALLS.
- - - - - - -	CONDUIT RUN CONCEALED IN OR BELOW FLOORS OR UNDERGROUND.
—·—·—	CONDUIT RUN EXPOSED.
———o	CONDUIT TURNING UP
———•	CONDUIT TURNING DOWN
———■———	SQUARE ON CONDUIT SYMBOL INDICATES THAT CIRCUIT CONTINUES BUT NOT SWITCHLEG.
———▶▶▶	HOMERUN TO PANEL AND CIRCUIT(S) DESIGNATED. ARROW(S) INDICATE QUANTITY OF CIRCUITS.
J	JUNCTION BOX PER N.E.C.
◇	SPECIAL NOTE, NUMERALS IDENTIFY, SEE SCHEDULE.
1	SPECIAL CONNECTION TO A SPECIFIC ITEM OF EQUIPMENT. SEE CONNECTION SCHEDULE.
M	MOTOR CONNECTION. RATING AS NOTED.

LIGHTING

SYMBOL	DESCRIPTION
▭	LED LIGHTING FIXTURE, DRAWN TO SCALE.
▭•	LED LIGHTING FIXTURE, CONNECTED TO AN EMERGENCY CIRCUIT (SWITCHED)
▨	LED LIGHTING FIXTURE, UTILIZED AS A NIGHT–LIGHT. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
▨•	LED LIGHTING FIXTURE, CONNECTED TO AN EMERGENCY CIRCUIT, CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
———	LED STRIP FIXTURE.
———•	LED STRIP FIXTURE CONNECTED TO AN EMERGENCY CIRCUIT. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
○	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE, CEILING MOUNTED.
●	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE, CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST.
⌑	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE. UTILIZED AS A NIGHT–LIGHT. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
■	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE. CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
⊸○	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE, WALL MOUNTED.
⊸●	COMPACT FLUORESCENT, LED OR HID LIGHTING FIXTURE, WALL MOUNTED. CONNECTED TO AN EMERGENCY CIRCUIT OR EMERGENCY BALLAST.
⊗	EXIT SIGN, CEILING MOUNTED. SHADING INDICATES FACE ORIENTATION. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
⊸⊗	EXIT SIGN, WALL MOUNTED. SHADING INDICATES FACE ORIENTATION. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
	COMBINATION EMERGENCY BATTERY/EXIT SIGN. WALL OR CEILING MOUNTED. SHADING INDICATES FACE ORIENTATION. CONNECT TO THE UNSWITCHED LEG OF THE CIRCUIT.
	PROVIDE ARROWS AS SHOWN ON PLAN BESIDE SYMBOL
⊸	EMERGENCY BATTERY PACK FIXTURE, CEILING MOUNTED. CONNECT TO UNSWITCHED LEG OF THE CIRCUIT.
	EMERGENCY BATTERY PACK FIXTURE, WALL MOUNTED. CONNECT TO UNSWITCHED LEG OF THE CIRCUIT.
◉	POLE–MOUNTED, POST–TOP PEDESTERAN AREA LIGHTING FIXTURE.
P	PHOTOCELL CONTROL DEVICE. MOUNT ON ROOF FACING NORTH.

DISTRIBUTION

SYMBOL	DESCRIPTION
	ELECTRICAL PANELBOARD, FLUSH MOUNTED.
	ELECTRICAL PANELBOARD, SURFACE MOUNTED.
	CONTROL CABINET, FLUSH OR SURFACE MOUNTED.
	ENCLOSED CIRCUIT BREAKER
	DISCONNECT SWITCH, NON–FUSIBLE.
	DISCONNECT SWITCH, FUSIBLE.
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT.
	GROUND CONNECTION.

WIRING DEVICES

SYMBOL	DESCRIPTION
⊖	DUPLEX RECEPTACLE, 125V, 3–WIRE GROUNDING TYPE.
⊖EWC	DUPLEX RECEPTACLE, 125V, GROUND FAULT CIRCUIT INTERRUPTING, 3–WIRE GROUNDING TYPE. LOCATE WITHIN OR BEHIND AN ELECTRIC WATER COOLER. COORDINATE WITH PLUMBER FOR EXACT LOCATION.
⊖GFI	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTING.
⊖WP	DUPLEX GFCI RECEPTACLE. PROVIDE WITH OPERABLE, IN–USE WEATHERPROOF COVER.
⊖C	DUPLEX RECEPTACLE, 125V, 3–WIRE GROUNDING TYPE. CEILING MOUNTED.
⊖H	DUPLEX RECEPTACLE, 125V, 3–WIRE GROUNDING TYPE. HOSPITAL GRADE.
⊖⊖	TWO DUPLEX RECEPTACLES, 125V, 3–WIRE GROUNDING TYPE, IN A TWO–GANG BOX WITH TWO–GANG FACEPLATE.
⊸⊗	SPECIAL PURPOSE RECEPTACLE, WITH SPECIAL NEMA CONFIGURATION AS NOTED.
	HEAVY–WALL METAL CONDUIT STUB–UP FROM FLOOR, AT HEIGHT INDICATED, WITH CAST FS–TYPE BOX AND WIRING DEVICE AS INDICATED.
▼	WALL OUTLET FOR TELECOMMUNICATIONS. SEE SPECIFICATIONS AND/OR DRAWINGS FOR CONDUIT AND CABLING REQUIREMENTS.
	DOT ABOVE OUTLETS INDICATES THAT THE DEVICE IS TO BE INSTALLED ABOVE CASEWORK OR OTHER OBSTACLE. COORDINATE.
S	LIGHT SWITCH, SINGLE–POLE,
S3	LIGHT SWITCH, 3–WAY,
S4	LIGHT SWITCH, 4–WAY,
SS	WHERE TWO SWITCHES ARE SHOWN CONTROLLING A SINGLE OR COMMON GROUP OF FLUORESCENT LIGHTING FIXTURES, EACH WITH 3 OR MORE LAMPS, THE SWITCH CLOSEST TO THE DOOR SHALL CONTROL THE INNER LAMP(S) IN EACH FIXTURE, AND THE OTHER SWITCH SHALL CONTROL THE OUTER LAMPS IN EACH FIXTURE. WHERE INDICATED, MASTER–SLAVE BALLAST WIRING SHALL BE UTILIZED TO ACHIEVE THIS CONTROL.
SP	LIGHT SWITCH WITH NEON TOGGLE (LIT WHEN LOAD IS ON).
ST	PROGRAMMABLE LIGHT SWITCH, WALL MOUNTED.
SD	DIMMER LIGHT SWITCH.
⊡	FLOOR BOX WITH DUPLEX RECEPTACLE.
▽	FLOOR BOX FOR TELECOMMUNICATIONS.
⊡▽	WHERE MULTIPLE FLOOR BOXES ARE SHOWN, USE APPROPRIATE MULTI–COMPARTMENT BOX.
OS	OCCUPANCY SENSOR, CEILING MOUNTED. PROVIDE WITH 10 FEET WHIP TO ALLOW FIELD ADJUSTMENT OF LOCATION. COORDINATE EXACT LOCATION WITH MANUFACTURERS RECOMMENDATION.

TELEVISION SYSTEM

SYMBOL	DESCRIPTION
⊸T	TV SIGNAL JACK. REFER TO DETAIL FOR ADDITIONAL INFORMATION.

FIRE ALARM SYSTEM

SYMBOL	DESCRIPTION
FACP	FIRE ALARM SYSTEM CONTROL PANEL.
ANN	FIRE ALARM SYSTEM REMOTE ANNUNCIATOR.
F	FIRE ALARM SYSTEM MANUAL 'PULL' STATION.
S	FIRE ALARM SYSTEM CEILING MOUNTED PHOTOELECTRIC TYPE SMOKE DETECTOR.
H	FIRE ALARM SYSTEM FIXED–TEMPERATURE THERMAL DETECTOR.
	FIRE ALARM SYSTEM COMBINATION AUDIBLE/VISUAL NOTIFICATION APPLIANCE DEVICE. PROVIDE SYNCHRONIZED STROBES WHERE 2 OR MORE STROBES ARE LOCATED IN ONE ROOM OR VISIBLE FROM ONE LOCATION.
	FIRE ALARM SYSTEM VISUAL ONLY NOTIFICATION APPLIANCE DEVICE. PROVIDE SYNCHRONIZED STROBES WHERE 2 OR MORE STROBES ARE LOCATED IN ONE ROOM OR VISIBLE FROM ONE LOCATION.
FS	FIRE ALARM SYSTEM CONNECTION TO SPRINKLER WATER–FLOW SWITCH.
TS	FIRE ALARM SYSTEM CONNECTION TO SPRINKLER VALVE TAMPER SWITCH.

ABBREVIATIONS

A	AMPERES
ACC	ARMORED CLAD CABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANN	FIRE ALARM ANNUNCIATOR CABINET
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
DN	DOWN
DW	DISHWASHER
EC	EMPTY CONDUIT
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON–METALLIC TUBING
EWC	ELECTRIC WATER COOLER
FACP	FIRE ALARM CONTROL PANEL
FMC	FLEXIBLE METAL CONDUIT
G	GROUND
GFI	GROUND FAULT INTERRUPTER
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HX	HIGH REACTANCE
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IS	INSTANT START
JB	JUNCTION BOX
KVA	KILOVOLT–AMPERES
FPN	FUSE PER NAMEPLATE
KW	KILOWATTS
LFNC	LIQUIDTIGHT FLEXIBLE NON–METALLIC CONDUIT
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LVC	LOW VOLTAGE CONTROL CABINET
MCB	MAIN CIRCUIT BREAKER
MCC	METAL CLAD CABLE
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NMC	NON–METALLIC CLAD CABLE
PB	PULLBOX
PNL	PANELBOARD
PRS	PROGRAM RAPID START
PS	PROGRAM START
PWR	POWER
REC	RECEPTACLE
RMC	RIGID METAL CONDUIT
RS	RAPID START
SC	FIRE ALARM PULL STATION
SW	SWITCH
SWBD	SWITCHBOARD
TTB	TELEPHONE TERMINAL BOARD
TEL	TELEPHONE
TV	TELEVISION
TYP	TYPICAL
V	VOLTS
VP	VAPOR PROOF
W	WALL MOUNTED
WG	WIRE GUARD
WP	WEATHER PROOF
XFMR	TRANSFORMER

MOUNTING HEIGHTS

(DISTANCE FROM FINISHED FLOOR TO CENTER OF DEVICE UNLESS OTHERWISE NOTED)

RECEPTACLE	
GENERAL	18" AFF. (UNLESS OTHERWISE NOTED)
ABOVE COUNTER TOP	46" AFF. (UNLESS OTHERWISE NOTED)
LIGHT SWITCH	46" AFF. (UNLESS OTHERWISE NOTED)
TELECOMMUNICATIONS	
GENERAL	18" AFF. (UNLESS OTHERWISE NOTED)
ABOVE COUNTER TOP	46" AFF. (UNLESS OTHERWISE NOTED)
WALL	46" AFF.
TELEVISION	18" AFF. (UNLESS OTHERWISE NOTED)
FIRE ALARM	
PULL STATION	46" AFF.
AUDIBLE/STROBE COMBINATION OR STROBE DEVICE ONLY	THE BOTTOM OF THE APPLIANCE SHALL BE: 80" ABOVE THE FINISHED FLOOR.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	VOLT.	LAMPS QTY	LAMPS TYPE	LAMPS BULB	LAMPS BASE	LAMPS TEMP	LAMPS CRI	LAMPS LUMENS	DRIVER/BALLASTS QTY	DRIVER/BALLASTS TYPE	WATTS	MOUNTING	MANUF. CATALOG NO.
A2	2'X4' LED TROFFER. GRID TYPE FOR LAY–IN CEILING. HOUSING AND REFLECTORS ARE DIE FORMED COLD ROLLED STEEL, EXTRUDED ACRYLIC LENS, CONTOUR SHIELDING, WHITE POWDER COAT FINISH.	120	–	LED	LED	–	4000 K	82	3000	1	STANDARD 0–10V DIMMING DRIVER	31	CEILING, RECESSED	LITHONIA #2VTL4 WILLIAMS OR APPROVED EQUAL
A3	2'X4' LED TROFFER. GRID TYPE FOR LAY–IN CEILING. HOUSING AND REFLECTORS ARE DIE FORMED COLD ROLLED STEEL, EXTRUDED ACRYLIC LENS, CONTOUR SHIELDING, HIGH LUMEN OUTPUT, STEP–LEVEL DIMMING DRIVER. WHITE POWDER COAT FINISH.	120	–	LED	LED	–	4000 K	82	4800	1	STEP–LEVEL DIMMING	47	CEILING, RECESSED	LITHONIA #2VTL4 WILLIAMS OR APPROVED EQUAL
BS	LED STRIP LIGHT, LOW PROFILE STRIP CHANNEL, MEDIUM DIFFUSE LENS, 4 FOOT NOMINAL LENGTH, COLD ROLLED STEEL HOUSING, HIGH GLOSS BAKED WHITE ENAMEL FINISH.	120	–	LED	LED	–	4000 K	80	3000	1	DIMMING DRIVER STANDARD	41	CEILING, SURFACE	LITHONIA #ZL2N SERIES WILLIAMS OR APPROVED EQUAL
BS2	LED STRIP LIGHT, LOW PROFILE STRIP CHANNEL, MEDIUM DIFFUSE LENS, 2 FOOT NOMINAL LENGTH, COLD ROLLED STEEL HOUSING, HIGH GLOSS BAKED WHITE ENAMEL FINISH.	120	–	LED	LED	–	4000 K	80	2000	1	DIMMING DRIVER STANDARD	34	CEILING, SURFACE	LITHONIA #ZL2N SERIES WILLIAMS OR APPROVED EQUAL
D1	ROUND 6" DIAMETER RECESSED LED DOWNLIGHT, HIGH QUALITY ANODIZED ALUMINUM REFLECTOR, LOW BRIGHTNESS PARABOLIC SPUN ALZAK ALUMINUM CONE, SOFT SATIN GLOW CLEAR FINISH, 70° BEAM ANGLE STANDARD, SUITABLE FOR DAMP LOCATIONS.	120	–	LED	LED	–	3500 K	90	1100 DILIVERED	–	DIMMABLE	18	CEILING, RECESSED	CREE #CR6 SERIES–13L OR APPROVED EQUAL
D1E	ROUND 6" DIAMETER RECESSED LED DOWNLIGHT, HIGH QUALITY ANODIZED ALUMINUM REFLECTOR, LOW BRIGHTNESS PARABOLIC SPUN ALZAK ALUMINUM CONE, SOFT SATIN GLOW CLEAR FINISH, 70° BEAM ANGLE STANDARD, SUITABLE FOR DAMP LOCATIONS. PROVIDE WITH EMERGENCY BACKUP.	120	–	LED	LED	–	3500 K	90	1100 DILIVERED	–	DIMMABLE	18	CEILING, RECESSED	CREE #CR6 SERIES–13L WITH EMERGENCY BACKUP OPTION OR APPROVED EQUAL
D2E	ROUND 6" DIAMETER RECESSED LED DOWNLIGHT, HIGH QUALITY ANODIZED ALUMINUM REFLECTOR, LOW BRIGHTNESS PARABOLIC SPUN ALZAK ALUMINUM CONE, SOFT SATIN GLOW CLEAR FINISH, 70° BEAM ANGLE STANDARD, SUITABLE FOR DAMP LOCATIONS. PROVIDE WITH EMERGENCY BACKUP.	120	–	LED	LED	–	3500 K	90	1700 DILIVERED	–	DIMMABLE	30	CEILING, RECESSED	CREE #CR6 SERIES–20L WITH EMERGENCY BACKUP OPTION OR APPROVED EQUAL
D6	8" DIAMTER HIGH LUMEN RECESSED LED DOWNLIGHT, SPUN ALUMINUM SELF–FLANGED REFLECTOR, NOMINAL 45° CUTOFF, 6000 LUMEN PACKAGE. 8" ALZAK TRIM REFLECTOR, SPECULAR REFLECTOR FINISH, CLEAR ALZAK REFLECTOR COLOR, NO LENS.	120	1	LED	LED	–	4000K	80	6000	1	0–10V DIMMING	67	CEILING RECESSED	PRESCOLITE #MDBLED–6L
D12	8" DIAMTER HIGH LUMEN RECESSED LED DOWNLIGHT, SPUN ALUMINUM SELF–FLANGED REFLECTOR, NOMINAL 45° CUTOFF, 12000 LUMEN PACKAGE. 8" ALZAK TRIM REFLECTOR, SPECULAR REFLECTOR FINISH, CLEAR ALZAK REFLECTOR COLOR, NO LENS.	120	1	LED	LED	–	4000K	80	12000	1	0–10V DIMMING	132	CEILING RECESSED	PRESCOLITE #MDBLED–12L
L1	LED ARCHITECTURAL LIGHTING FOR AISLES, ALUMINUM BASE, 4" LED SPACING, CONTINUOUS POLYCARBONATE LENS, PROVIDE WITH 240 WATT FACTORY SUPPLIED POWER SUPPLIES AND ALL REQUIRED HARDWARE FOR INSTALLATION AS REQUIRED.	120		LED	LED		3500 K		–		–	.36 PER MODULE	FLOOR	TIVOLI #SATT OR APPROVED EQUAL
SL1	LED POST TOP LIGHT, #118 ACRYLIC GLOBE WITH #110 FINIAL, TYPE V DISTRIBUTION, LIGHT SHIELD FOR DOWNLIGHT ONLY DISTRIBUTION, FULL–CUTOFF, PROVIDE 12'–2" IRON LAMP POLE AND ALL NECESSARY MOUNTING HARDWARE.	120	–	LED	LED	–	4000 K	–	4000	1	LED DRIVER	50	POST TOP, GROUND MOUNTED, REFER TO POLE BASE DETAIL –SL1	VISCO GLOBE: VISCO #118 POLE: VISCO #M–CI–146
SL2	8 FOOT LONG, LED SLIM LOW PROFILE LINEAR SIGN FIXTURE, DIE–CAST ALUMINUM HOUSING AND END CAPS, INTEGRAL WEATHER–TIGHT LED DRIVER COMPARTMENT, FIELD ADJUSTABLE EXTRUDED MOUNTING ARMS, 360° ROTATABLE LUMINAIRE BODY IN 5° INCREMENTS, SUITABLE FOR WET LOCATION.	120	–	LED	LED	–	4000 K	–	8742	1	FIXED OUTPUT DRIVER	126	WALL, SURFACE	CREE #FLD–QL–SN–D8–14–D–UL–XX–350–40K AAL– PV PIVOT LED SERIES OR APPROVED EQUAL
VL	LED VANITY STRIP LIGHTING, 12V VERSION, HIGH CRI ULTRA BRIGHT SERIES, REEL CUTTABLE TO DESIRED LENGTH, WARM WHITE SERIES, ADHESIVE BACKING, PROVIDE ALL NECESSARY COMPONETS FOR A COMPLETE SYSTEM INCLUDING POWER SUPPLIES, DIMMABLE DRIVER AND CONNECTORS. MAX LENGTH PER RUN SHALL BE 52".	120 (12V)		LED	LED	–	3200 K	93	402/FT	1	0–10V DIMMING DRIVER	5.8/FT	MIRROR, SURFACE	FLEXFIRE #ULTRABRIGHT SERIES OR APPROVED EQUAL
WF	LED WALL BRACKET, 4 FOOT NOMINAL LENGTH, ROLL FORMED CODE GAUGE STEEL HOUSING, HIGH IMPACT ACRYLIC DIFFUSER, WHITE POLYESTER POWDER COAT FINISH.	120	–	LED	LED	–	4100 K	82	4100	1	FIXED OUTPUT DRIVER	43	WALL, SURFACE	LITHONIA #WL SERIES WILLIAMS #WA LED OR APPROVED EQUAL
WLE	DECORATIVE EXTERIOR WALL MOUNTED LED FIXTURE, TRAPEZOID SHAPE DIE–CAST, ALUMINUM HOUSING, ACRYLIC LENS, TWO LIGHT ENGINES (10 LED'S EACH), ELECTRONIC DRIVERS, WIDE DISTRIBUTION (SR2), PROVIDE WITH INTEGRAL BATTERY PACK FOR 90 MINUTE MINIMUM ILLUMINATION, UL, LISTED FOR WET LOCATION. FINISH AS SELECTED BY ARCHITECT.	120	–	LED	–	–	4000 K	70	3944	–	FIXED OUTPUT DRIVER	47	WALL, SURFACE	LITHONIA #WST LED SERIES OR APPROVED EQUAL
	EXIT SIGN, WHITE THERMOPLASTIC HOUSING, UNIVERSAL MOUNTING, RED STENCIL FACE, SINGLE FACE, DIRECTIONAL ARROWS AS INDICATED, WITH SELF–CONTAINED BATTERY RESERVE, LESS LAMP HEADS, CONNECT FIXTURE AHEAD OF ALL LOCAL AREA SWITCHING, FIXTURE SHALL NOT BE SWITCHED.	120	–	LED DIFFUSE	–	–	–	–	–	–	–	5	WALL OR CEILING AS INDICATED BY SYMBOL	LITHONIA #LHOM–LESS LAMP HEADS WILLIAMS #EXIT LED SERIES OR APPROVED EQUAL
	EMERGENCY BATTERY/EXIT SIGN COMBO UNIT, WHITE THERMOPLASTIC HOUSING, UNIVERSAL MOUNTING, RED STENCIL FACE, SINGLE FACE, DIRECTIONAL ARROWS AS INDICATED, WITH SELF–CONTAINED HIGH–OUTPUT BATTERY RESERVE, TWIN LAMP HEADS, CONNECT FIXTURE AHEAD OF ALL LOCAL AREA SWITCHING, FIXTURE SHALL NOT BE SWITCHED.	120	–	LED DIFFUSE	–	–	–	–	–	–	–	5	WALL OR CEILING AS INDICATED BY SYMBOL	LITHONIA #LHOM–HO–TWIN LAMP HEADS HUBBELL #COMPASS CC SERIES WILLIAMS #EXIT/EM/LED SERIES EMERG–LITE #ELXN400 LED SERIES OR APPROVED EQUAL
	LED EMERGENCY LIGHTING UNIT, WITH SELF–CONTAINED NI–CAD BATTERY RESERVE, WHITE THERMOPLASTIC HOUSING, FOR WALL OR CEILING MOUNTING, CONNECT FIXTURE AHEAD OF ALL LOCAL AREA SWITCHING. FIXTURE SHALL NOT BE SWITCHED.	120	2	LED	LED	–	–	–	–	–	–	3	WALL, 1 FT. BELOW CEILING EXCEPT 8 FT. AFF. MAX.	LITHONIA #ELM2 LED SERIES EXITRONIX #LED–90 SERIES LSI #LTEM LED SERIES WILLIAMS #EMER/LED SERIES

GENERAL NOTES

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

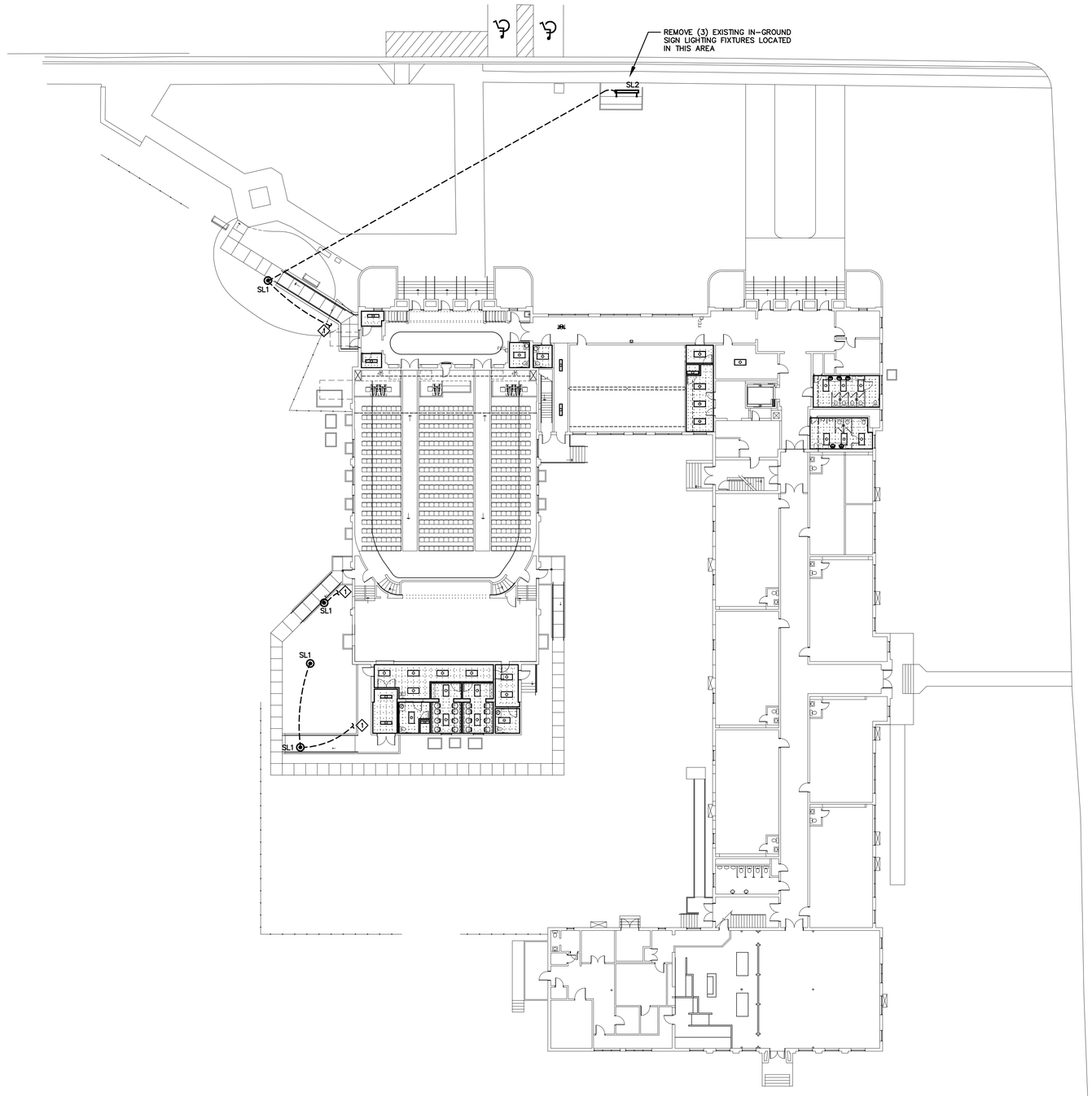
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926

2015-04
01/05/17
SYMBOLS AND SCHEDULES

E1.0

A1
E1.0

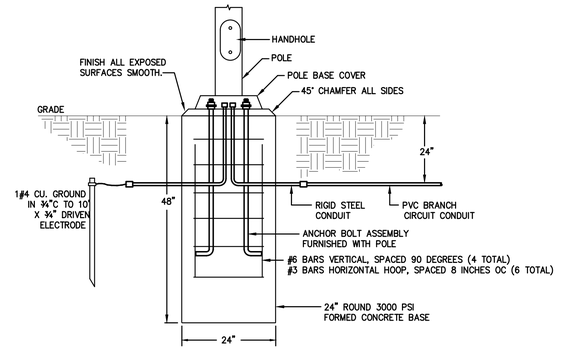
SYMBOLS AND SCHEDULES
NO SCALE



A1
E1.01

SITE PLAN

SCALE□1" = 20'-0"

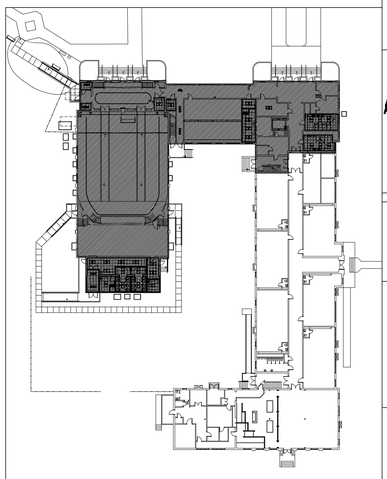


CONSTRUCTION OF POLE BASE MUST COMPLY WITH ALL REQUIREMENTS OF ACI 318.

F12
E1.01

POLE BASE DETAIL - SL1

NOT TO SCALE



A14
E2.0

KEY PLAN

NTS

GENERAL NOTES

NOTES:

1. CONNECT TO NEW EXTERIOR WALL MOUNTED FIXTURE. REFER TO FIRST FLOOR LIGHTING PLAN FOR CONTINUATION OF CIRCUIT.

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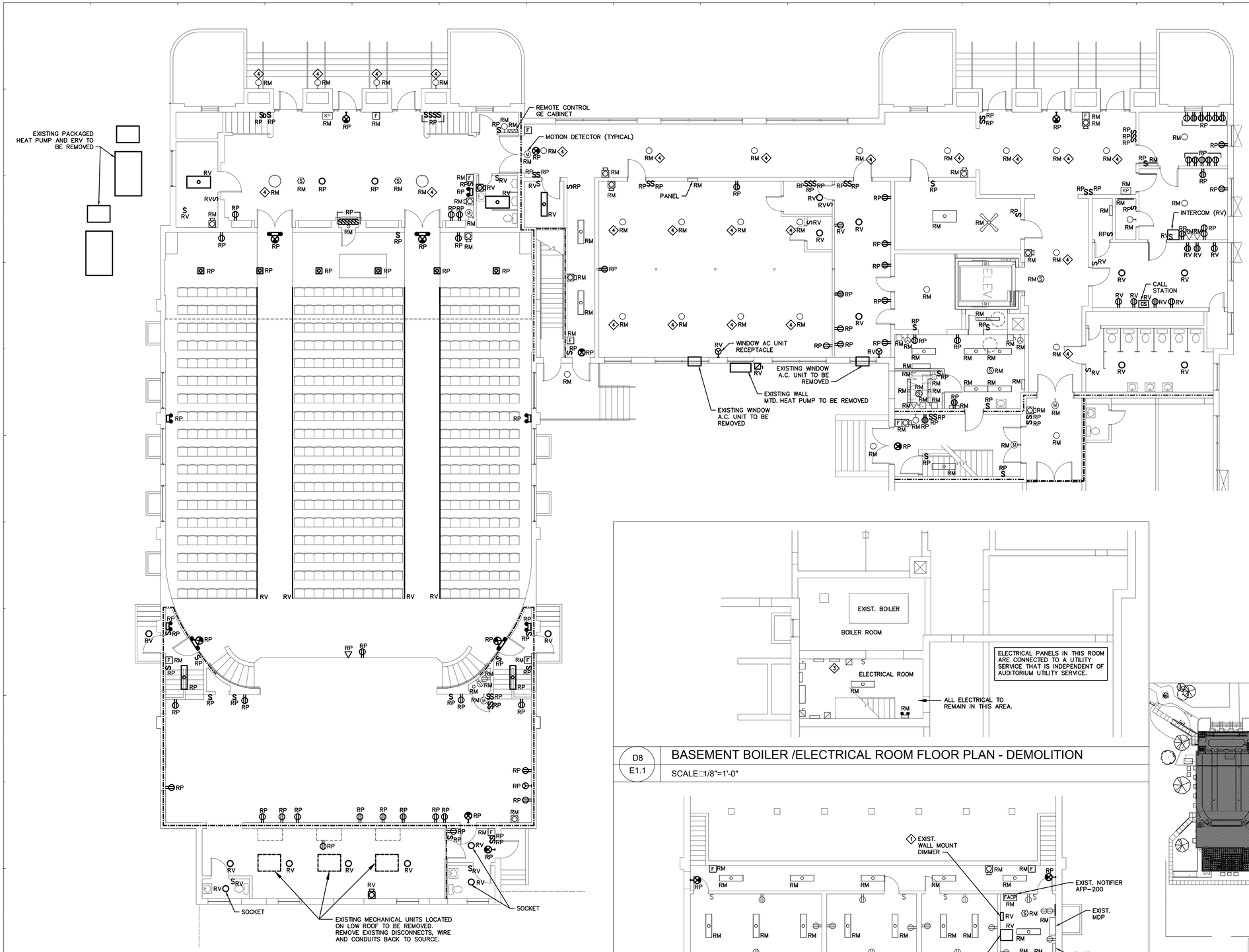
2015-04	
01/05/17	
SITE PLAN	

E1.01



A1 / E1.1 — FIRST FLOOR PLAN - DEMOLITION

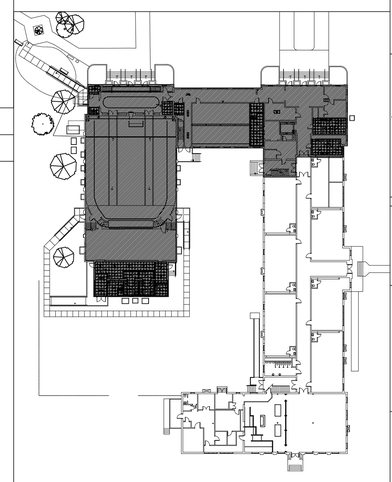
SCALE 1/8"=1'-0"

D8 / E1.1 — BASEMENT BOILER /ELECTRICAL ROOM FLOOR PLAN - DEMOLITION

SCALE 1/8"=1'-0"

A8 / E1.1 — BASEMENT FLOOR PLAN - DEMOLITION

SCALE 1/8"=1'-0"



A14 / E1.1 — KEY PLAN

NTS

GENERAL NOTES

1. REMOVE EXISTING WALL MOUNT AND RACK MOUNTED DIMMERS.
2. IN EXISTING PANEL BB1 REMOVE (5) 80/2 CIRCUIT BREAKERS. PROVIDE NEW 20/1 CIRCUIT BREAKERS AS INDICATED FOR NEW WORK.
3. EXISTING PANEL LOCATED IN BASEMENT ELECTRICAL ROOM (CALLED PANEL "X" FOR THIS WORK ONLY)
4. FIXTURE TO REMAIN. RELAMP AS INDICATED ON NEW WORK DOCUMENTS.

DEMOLITION NOTES:

1. ELECTRICAL MATERIALS WHICH ARE BEING REMOVED, UNLESS OTHERWISE INDICATED, SHALL BE COME THE PROPERTY OF THE CONTRACTOR.
2. ALL ABANDONED CONDUCTORS SHALL BE REMOVED BACK TO POINT OF SUPPLY.
3. WHERE ACCESSIBLE, ALL ABANDONED CONDUIT SHALL BE REMOVED. ALL CONDUIT REMAINING SHALL BE MECHANICALLY SECURED.
4. WHERE DEVICES ARE REMOVED, CIRCUIT WIRING AND CONDUIT SHALL BE RE-WORKED AS REQUIRED TO PERMIT REMAINING DEVICES TO CONTINUE TO FUNCTION AS NECESSARY.
5. ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT NOT SHOWN AS BEING ABANDONED SHALL BE RECONNECTED.
6. MATERIALS NOTED TO BE REUSED IN THE NEW WORK SHALL BE CLEANED, REPAIRED, STORED AND PROTECTED ON THE SITE.
7. TEMPORARY CONNECTIONS SHALL BE PROVIDED TO ALLOW UNINTERRUPTED SERVICE DURING THE PERIOD OF CONSTRUCTION EXCEPT AS SCHEDULED. ALL INTERRUPTIONS SHALL BE SCHEDULED AND MUST HAVE PRIOR APPROVAL FROM THE OWNER.
8. RELOCATE ANY EXISTING CONDUITS, CONDUCTORS, FIXTURES AND OUTLETS AS INDICATED BY THE DRAWINGS.
9. BACKBOXES OF OUTLETS AND SWITCHES SHOWN TO BE REMOVED FROM WALLS AND FLOORS REMAINING SHALL BE REMOVED AND THE WALLS AND FLOORS PROPERLY PATCHED.
10. WHERE NEW WALL FINISHES REQUIRE ADDITIONAL BOX DEPTH, PROVIDE OUTLET BOX EXTENSIONS OF THE NECESSARY DEPTH.
11. ALL ELECTRICAL PANELS AFFECTED BY THIS WORK SHALL HAVE THEIR PANEL DIRECTORIES UPDATED. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPED UPDATED PANEL DIRECTORY FOR EVERY PANEL WHERE ELECTRICAL LOAD IS REMOVED OR ADDED BY THIS WORK.

DEMOLITION LEGEND

RV – EXISTING TO BE REMOVED
RL – EXISTING TO BE RELOCATED
RM – EXISTING TO REMAIN
RP – EXISTING DEVICE TO BE REPLACED WITH NEW

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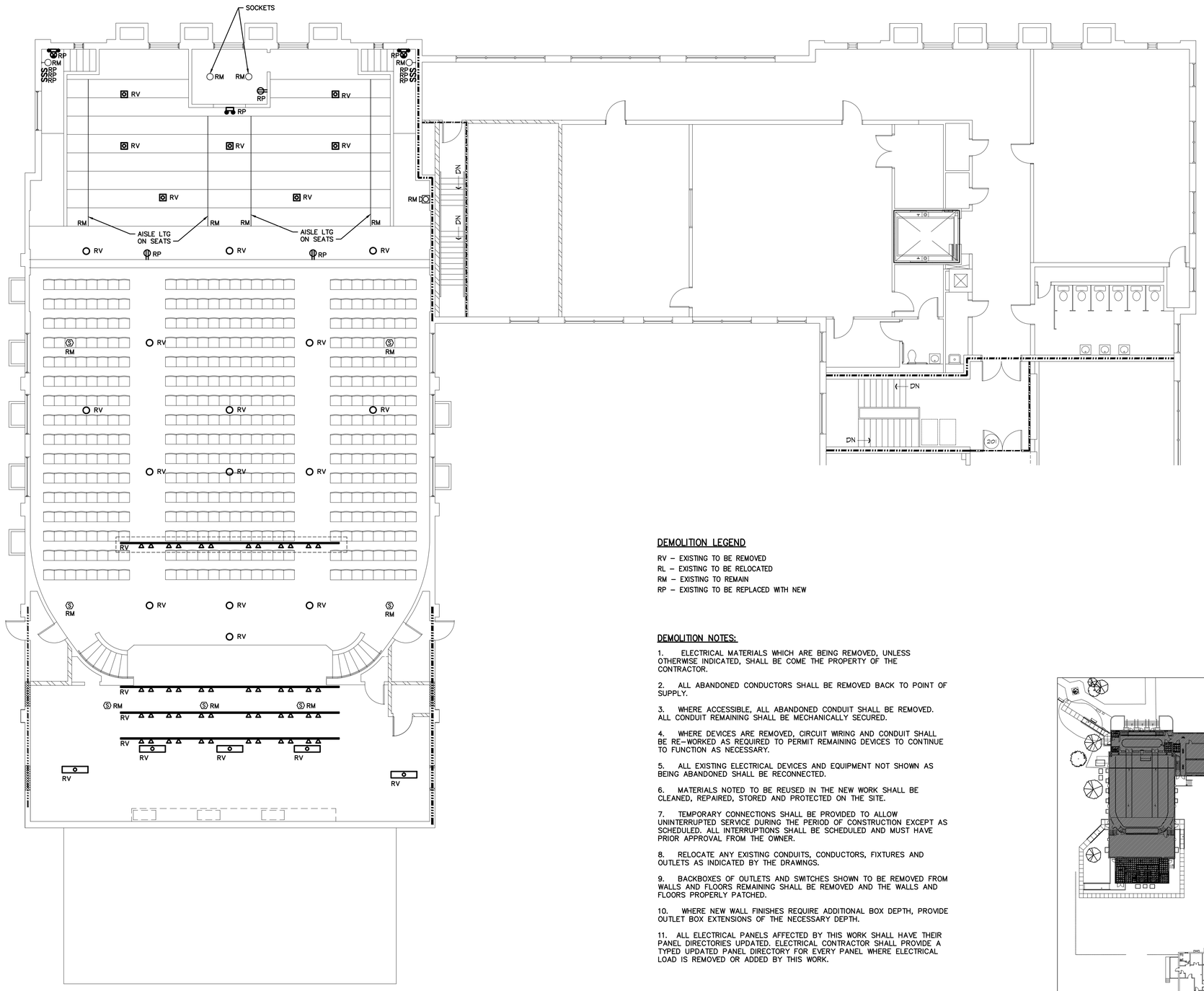
2015-04	
01/05/17	
FIRST FLOOR PLAN	
E1.1	



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4. WHERE DEVICES ARE REMOVED, CIRCUIT WIRING AND CONDUIT SHALL BE RE-WORKED AS REQUIRED TO PERMIT REMAINING DEVICES TO CONTINUE TO FUNCTION AS NECESSARY.

5. ALL EXISTING ELECTRICAL DEVICES AND EQUIPMENT NOT SHOWN AS BEING ABANDONED SHALL BE RECONNECTED.

6. MATERIALS NOTED TO BE REUSED IN THE NEW WORK SHALL BE CLEANED, REPAIRED, STORED AND PROTECTED ON THE SITE.

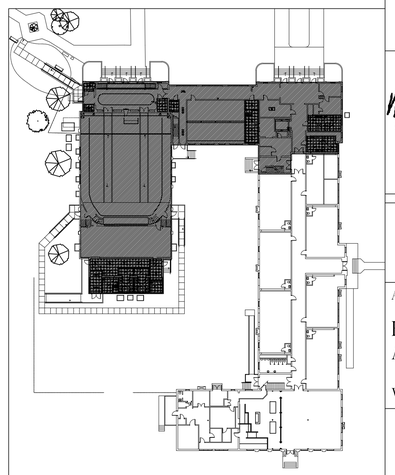
7. TEMPORARY CONNECTIONS SHALL BE PROVIDED TO ALLOW UNINTERRUPTED SERVICE DURING THE PERIOD OF CONSTRUCTION EXCEPT AS SCHEDULED. ALL INTERRUPTIONS SHALL BE SCHEDULED AND MUST HAVE PRIOR APPROVAL FROM THE OWNER.

8. RELOCATE ANY EXISTING CONDUITS, CONDUCTORS, FIXTURES AND OUTLETS AS INDICATED BY THE DRAWINGS.

9. BACKBOXES OF OUTLETS AND SWITCHES SHOWN TO BE REMOVED FROM WALLS AND FLOORS REMAINING SHALL BE REMOVED AND THE WALLS AND FLOORS PROPERLY PATCHED.

10. WHERE NEW WALL FINISHES REQUIRE ADDITIONAL BOX DEPTH, PROVIDE OUTLET BOX EXTENSIONS OF THE NECESSARY DEPTH.

11. ALL ELECTRICAL PANELS AFFECTED BY THIS WORK SHALL HAVE THEIR PANEL DIRECTORIES UPDATED. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPED UPDATED PANEL DIRECTORY FOR EVERY PANEL WHERE ELECTRICAL LOAD IS REMOVED OR ADDED BY THIS WORK.



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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926 CERTIFICATE OF AUTHORIZATION

2015-04	
01/05/17	
SECOND FLOOR PLAN	

E1.2

A1 / E1.2 — SECOND FLOOR PLAN - DEMOLITION
SCALE 1/8"=1'-0"

A14 / E1.2 — KEY PLAN
NTS

CLEAN AND RELAMP (4) EXISTING FRONT ENTRANCE WALL MOUNTED LIGHTS WITH EQUIVALENT 2700'K COLOR TEMPERATURE LED LAMPS.

JANITOR 104
VESTIBULE 103
LOBBY 101
STORAGE 133
TOILET 102
TOILET 117
STAIRS 118
CORRIDOR 116
GATHERING ROOM 119
MECH CLOSET
OFFICE 120
EXISTING OFFICE 122
STORAGE 121
EXISTING ELEVATOR
LOBBY 125
CORRIDOR 126
EXISTING ROOM 123
EXISTING STAIRWELL 124
FIRE PROTECTION 127
MECH 131
CLST. 124
EXISTING OFFICE 128
WOMEN'S ROOM 130
MEN'S ROOM 132
AUDITORIUM 105
STAGE 106
ALCOVE 108
ALCOVE 107
HALL 109
STORAGE 115
TOILET 114
MEN DRESSING 113
WOMEN DRESSING 112
VESTIBULE 110
MECH. 134
TOILET 111
LANDING
RAMP UP
RAMP DN
DIM-1
BB1-19
BB1-21
BB1-23
BB1-17

GENERAL NOTES

NOTES:

1. REPLACE EXISTING LIGHT FIXTURE WITH NEW AS INDICATED. UTILIZE EXISTING JUNCTION BOX, WIRE AND CONDUIT TO EXTENT POSSIBLE. FIXTURES TO BE DISCONNECTED FROM EXISTING CIRCUIT. FIXTURES TO BE CIRCUITED TO NEW PANEL "DIM" AS INDICATED ON DRAWINGS.
2. CONNECT TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA PRIOR TO DEMOLITION.
3. CONNECT TO NEW SL1 FIXTURE ON SITE. REFER TO SITE PLAN FOR CONTINUATION OF CIRCUIT.
4. ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTACTOR ELC. REFER TO EXTERIOR LIGHTING CONTROL DIAGRAM FOR ADDITIONAL INFORMATION.
5. REPLACE EXISTING LIGHT FIXTURE WITH NEW AS INDICATED. UTILIZE EXISTING JUNCTION BOX, WIRE AND CONDUIT TO EXTENT POSSIBLE.
6. EXISTING (8) LAMP FIXTURE TO REMAIN. CLEAN AND RELAMP WITH NEW LED LAMPS. LED CHANDELIER BULB: 5W, 300 LUMENS, 2700'K, 80 CRI, CLEAR, FLAME TIP, CANDELABRA BASE, 120V. TCP OR EQUAL.
7. EXISTING FIXTURE TO REMAIN. CLEAN AND RELAMP WITH NEW LED LAMPS. LED BULB: A21 SIZE, 24W, 2300 LUMENS, 3000'K, 85 CRI, 120V. LIGCOM LED GROUP OR EQUAL.
8. EXISTING FIXTURE TO REMAIN. CLEAN AND RELAMP WITH NEW LED LAMPS. LED BULB: A21 SIZE, 18W, OMNI-DIRECTIONAL, 1600 LUMENS, 2700'K, 82 CRI, 120V. TCP OR EQUAL.

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 18963 MARK E. ARRINGTON
01-05-17
REVISION DATE

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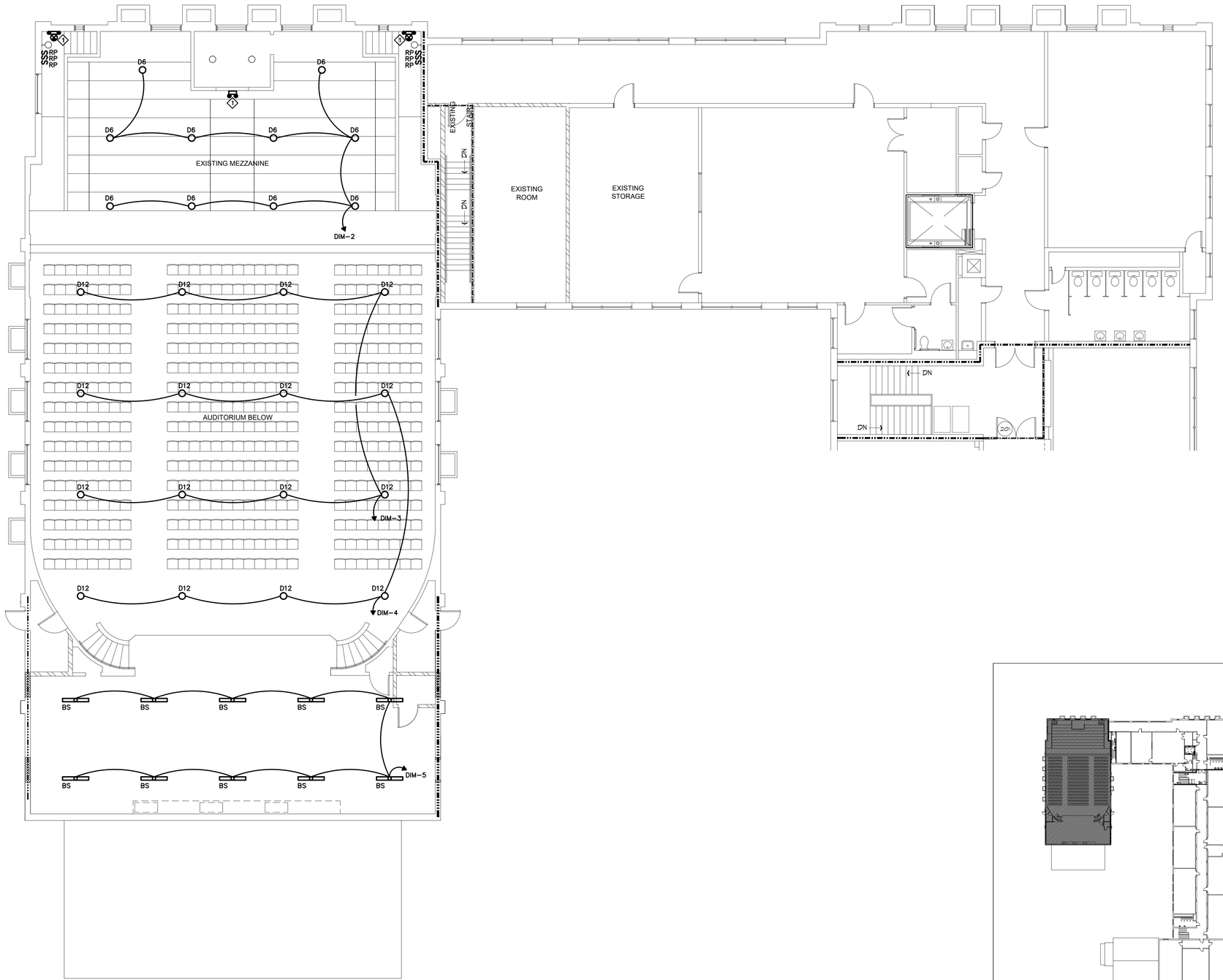
2015-04
01/05/17
FIRST FLOOR - LIGHTING

E2.1

A1 / E2.1 — FIRST FLOOR PLAN - LIGHTING
SCALE: 1/8"=1'-0"

A14 / E2.1 — KEY PLAN
NTS



GENERAL NOTES

NOTES:

1. REPLACE EXISTING EXIT/BATTERY SIGN WITH NEW AS INDICATED.

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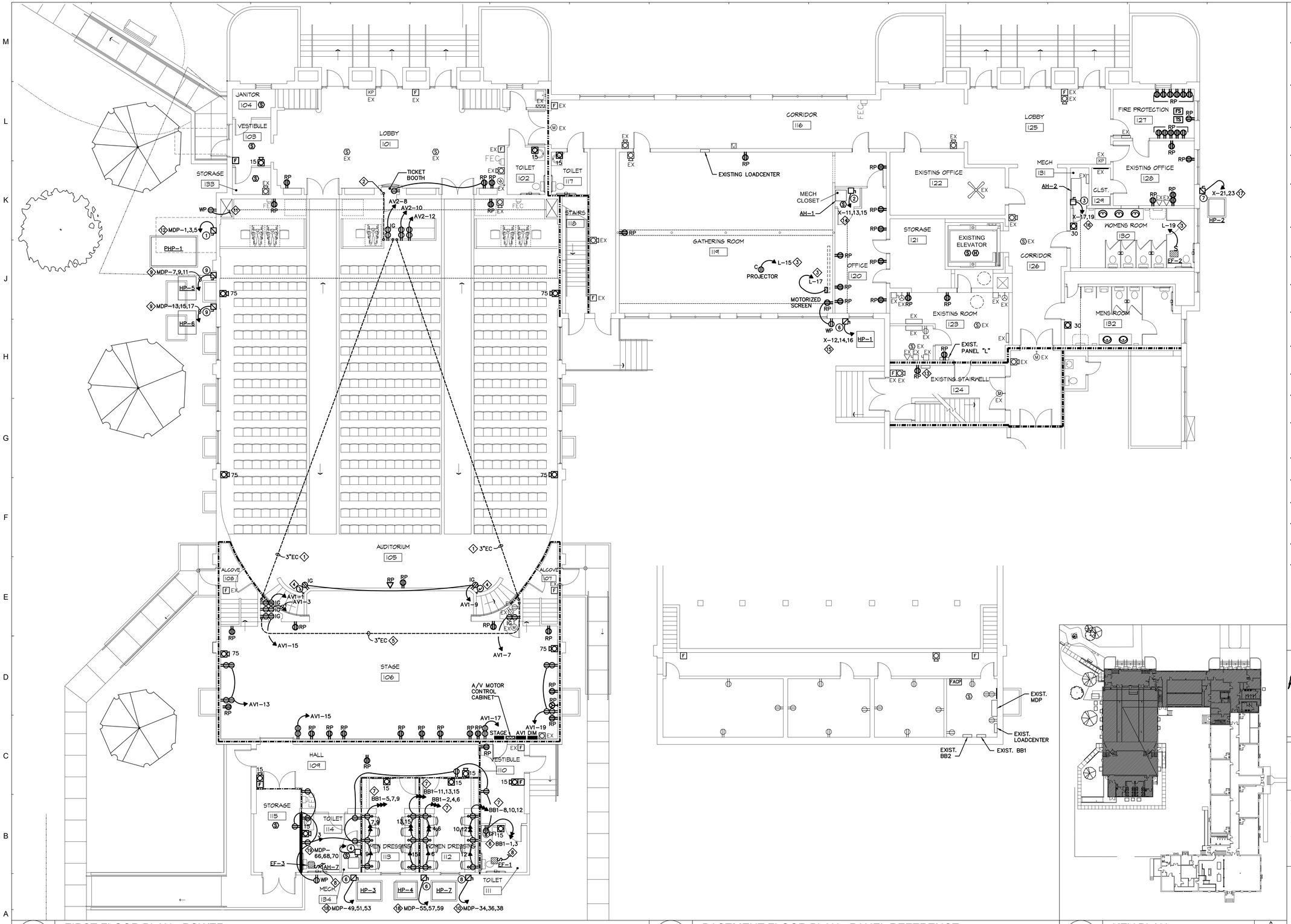
2015-04	
01/05/17	
SECOND FLOOR - LIGHTING	

E2.2

A1 / E2.2 — SECOND FLOOR PLAN - LIGHTING
SCALE 1/8"=1'-0"

A14 / E2.2 — KEY PLAN
NTS



GENERAL NOTES

1. PROVIDE 3" EC UNDER AUDITORIUM FLOOR FROM SOUND BOOTH CONTROL STATION TO BOTH A/V CLOSETS ON STAGE. COORDINATE TERMINATION POINT WITH A/V CONTRACTOR. TERMINATE WITH PLASTIC BUSHINGS.
2. PROVIDE 1-1/2" EC FROM CONTROL BOOTH TO FRONT RAIL OF BALCONY. ROUTE CONDUIT IN TICKET BOOTH TO BALCONY. COORDINATE EXACT TERMINATION POINT WITH A/V INSTALLER. TERMINATE WITH PLASTIC BUSHINGS.
3. IN EXISTING PANEL "L" PROVIDE NEW 20/1 CIRCUIT BREAKER IN SPACE INDICATED WITH 2#12,1#12G,1/2"C.
4. PROVIDE SINGLE GANG JUNCTION BOX FOR A/V. COORDINATE EXACT LOCATION WITH A/V CONTRACTOR.
5. PROVIDE 3" EC UNDER STAGE FLOOR FROM A/V CLOSET TO A/V CLOSET. COORDINATE TERMINATION POINT IN A/V CLOSET WITH A/V CONTRACTOR. TERMINATE WITH PLASTIC BUSHINGS.
6. IN SPACE AVAILABLE PROVIDE (2) 20/1 CIRCUIT BREAKERS AND CONNECT TO CIRCUITS INDICATED WITH 2#12,1#12G, 1/2" C.
7. IN SPACE AVAILABLE PROVIDE (3) 20/1 CIRCUIT BREAKERS AND CONNECT TO CIRCUITS INDICATED WITH 3#12,1#12G, 1/2" C.
8. CONNECT TO LIGHTING CIRCUIT SERVING THIS ROOM. EXHAUST FAN SHALL BE INTERLOCKED WITH LIGHT SWITCH.
9. IN EXISTING PANEL MDP REPLACE EXISITNG 175/3 CIRCUIT BREAKER WITH NEW 70/3 CIRCUIT BREAKER. USE EXISTING CONDUIT TO EXTENT POSSIBLE.
10. IN EXISTING PANEL MDP REPLACE EXISITNG 20/3 CIRCUIT BREAKER WTH NEW 15/3 CIRCUIT BREAKER.
11. CONNECT RECEPTACLE TO NEAREST RECEPTACLE CIRCUIT IN THIS AREA.
12. IN EXISTING PANEL MDP REPLACE EXISITNG 225/3 CIRCUIT BREAKER WITH NEW 150/3 CIRCUIT BREAKER.
13. APPROXIMATE LOCATION OF EXISTING PANEL LOCATED IN BASEMENT ELECTRICAL ROOM BELOW. (CALLED PANEL "X" FOR THIS WORK ONLY)
14. IN SPACE AVAILABLE IN EXISTING PANEL "X" PROVIDE NEW 45/3 CIRCUIT BREAKER.
15. IN SPACE AVAILABLE IN EXISTING PANEL "X" PROVIDE NEW 35/3 CIRCUIT BREAKER.
16. IN SPACE AVAILABLE IN EXISTING PANEL "X" PROVIDE NEW 25/2 CIRCUIT BREAKER.
17. IN SPACE AVAILABLE IN EXISTING PANEL "X" PROVIDE NEW 15/2 CIRCUIT BREAKER.
18. IN SPACE AVAILABLE IN EXISTING PANEL MDP PROVIDE NEW 35/3 CIRCUIT BREAKER.
19. IN SPACE AVAILABLE IN EXISTING PANEL MDP PROVIDE NEW 30/3 CIRCUIT BREAKER.

EC TO COORDINATE LOCATION OF ALL A/V RELATED EQUIPMENT PRIOR TO ROUGH-IN. EC TO PROVIDE ALL CONDUIT FOR A/V SYSTEMS.

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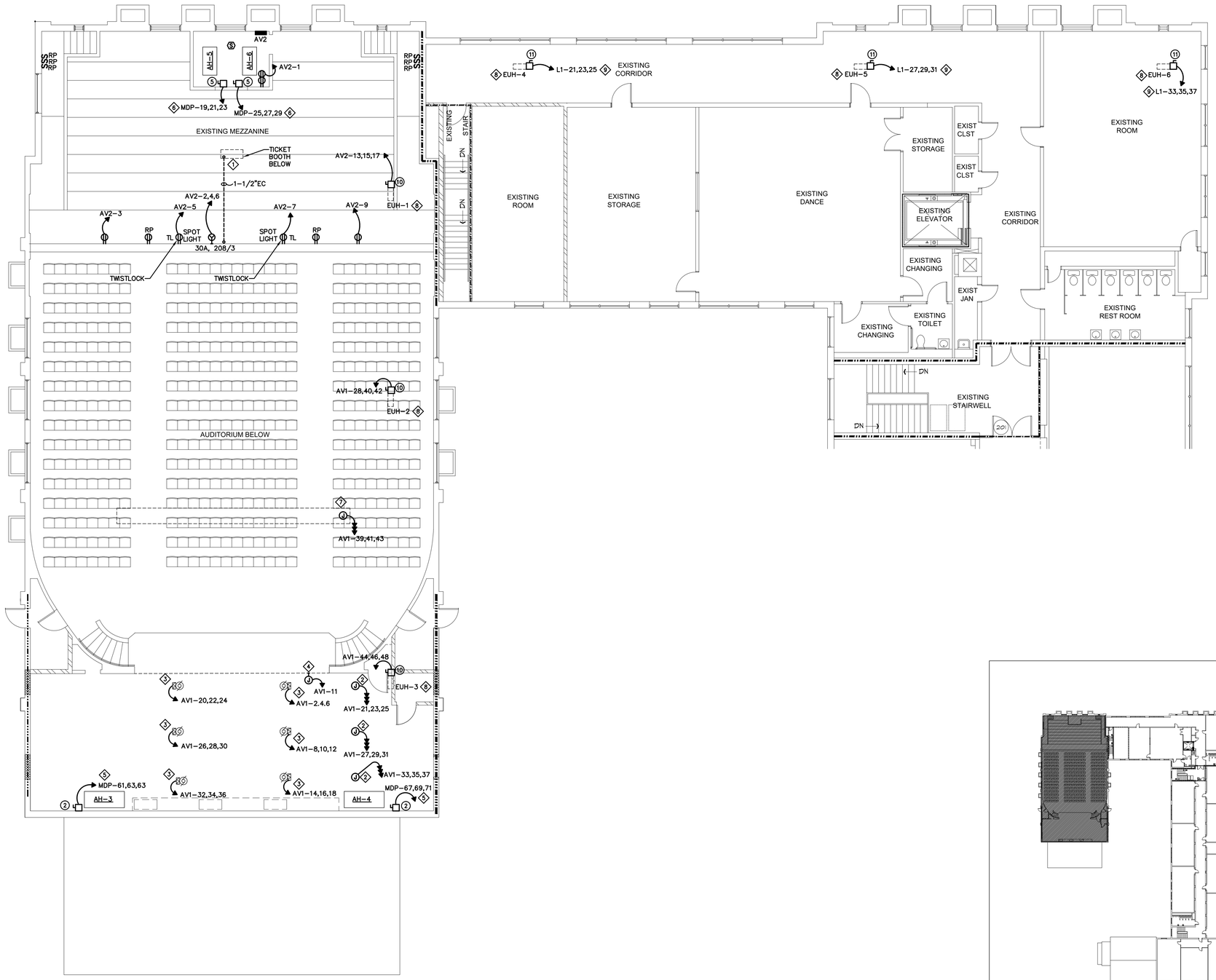
2015-04	
01/05/17	
FIRST FLOOR - POWER	

E3.1

A1 / E3.1 — FIRST FLOOR PLAN - POWER
SCALE: 1/8"=1'-0"

A9 / E3.1 — BASEMENT FLOOR PLAN - PANEL REFERENCE
SCALE: 1/8"=1'-0"

A14 / E3.1 — KEY PLAN
NTS



GENERAL NOTES

NOTES:

1. PROVIDE 1-1/2" EC FROM CONTROL BOOTH TO FRONT RAIL OF BALCONY. TURN CONDUIT UP AT FRONT RAIL. COORDINATE EXACT TERMINATION POINT WITH A/V INSTALLER.
2. CEILING MOUNT JUNCTION BOX. CONNECT TO (2)THEATRICAL LIGHT BARS AND (1)QUAD BOX. PROVIDE SOOW FEXIBLE SOFT CABLE TO EACH DEVICE. LENGTH OF SOOW CABLE AS REQUIRED FOR RAISING AND LOWERING LIGHT BARS PER A/V INSTALLER. COORDINATE EXACT LOCATION WITH A/V INSTALLER.
3. CEILING MOUNTED RIGGING MOTOR. COORDINATE EXACT LOCATION WITH A/V INSTALLER.
4. WALL MOUNT JUNCTION BOX FOR ROLL DOWN SCREEN ABOVE THE PROSCENIUM ARCH AT APPROXIMATELY 24'-0". COORDINATE EXACT LOCATION WITH A/V INSTALLER.
5. IN SPACE AVAILABLE IN EXISTING PANEL MDP PROVIDE NEW 45/3 CIRCUIT BREAKER.
6. IN EXISTING PANEL MDP REPLACE EXISITNG 175/3 CIRCUIT BREAKER WITH NEW 100/3 CIRCUIT BREAKER.
7. CEILING MOUNT JUNCTION BOX. CONNECT TO (2)THEATRICAL LIGHT BARS AND (1)QUAD BOX. RUN CONDUIT FROM JUNCTION BOX TO EACH LIGHT BAR AND QUAD BOX WITH 2#12,1#12G,1/2"C.
8. ELECTRIC UNIT HEATER LOCATED IN ATTIC SPACE. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION.
9. IN EXISTING PANEL "L" PROVIDE NEW 20/3 CIRCUIT BREAKER IN SPACE INDICATED WITH 3#12,1#12G,1/2"C.

A1 / E3.2 — SECOND FLOOR PLAN - POWER
SCALE 1/8"=1'-0"

A14 / E3.2 — KEY PLAN
NTS

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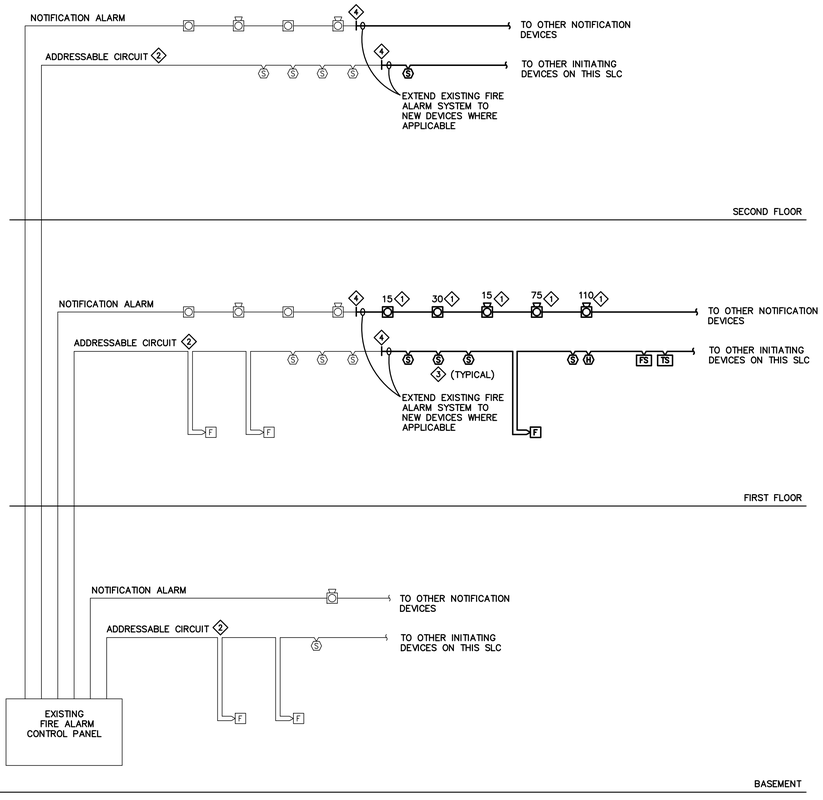
2015-04
01/05/17
SECOND FLOOR - POWER

E3.2



1 PARTIAL FIRE ALARM RISER DIAGRAM
E4.0 SCALE: NO SCALE

NOTES:

1. SUB-SCRIPT INDICATES THE CANDELLA RATING OF THE STROBE UNIT CONTAINED IN THE FIRE ALARM INDICATING DEVICE.
2. CONNECT DEVICES INDICATED TO THE SAME FIRE ALARM SIGNAL LOOP. LOOP NUMBER INDICATES DESIRED QUANTITY AND GROUPING OF FIRE ALARM DEVICES.
3. SMOKE DETECTORS SHALL NOT BE LOCATED IN DIRECT AIR FLOW NOR CLOSER THAN 3 FEET FROM AN AIR SUPPLY DIFFUSER.
4. EXTEND EXISTING FIRE ALARM SYSTEM TO PICK UP NEW AND/OR RELOCATED FIRE ALARM DEVICES.
5. ROUTE ALL CABLE IN CONDUIT.

EQUIPMENT CONNECTION SCHEDULE

SYMBOL	EQUIPMENT	LOAD	VOLTAGE/ PHASE	DISCONNECT TYPE	DISCONNECT RATING	DISCONNECT POLES	DISCONNECT TRIP/FUSE	DISCONNECT ENCLOSURE	CONDUCTORS	RACEWAY TYPE	RACEWAY SIZE	NOTES
1	PHP-1	27 KW, 18.1 RLA, 2.7 FLA, 8.5 FLA	208/3	FDS	200	3	150	3	3#1/0,1#6G	LFMC	1-1/2"	
2	AH-1, AH-3, AH-4	10.8 KW, 6.0 FLA	208/3	NFDS	60	3	–	1	3#8,1#10G	FMC	3/4"	
3	AH-2	3.6 KW, 2.8 FLA	208/1	NFDS	30	2	–	1	2#10,1#10G	FMC	1/2"	
4	AH-7	7.2 KW, 2.8 FLA	208/3	NFDS	30	3	–	1	3#10,1#10G	FMC	1/2"	
5	AH-5, AH-6	26.2 KW, 9.4 FLA	208/3	MFDS	100	3	–	1	3#3,1#8G	FMC	1-1/4"	
6	HP-1, HP-3, HP-4	16.0 RLA, 1.3 FLA	208/3	FDS	60	3	35	3	3#12,1#12G	LFMC	1/2"	
7	HP-2	6.4 RLA, 0.77 FLA	208/1	FDS	30	2	15	3	2#12,1#12G	LFMC	1/2"	
8	HP-7	7.9 RLA, 0.7 FLA	208/3	FDS	30	3	15	3	3#12,1#12G	LFMC	1/2"	
9	HP-5, HP-6	33.0 RLA, 5.0 FLA	208/3	FDS	100	3	70	3	3#8,1#10G	LFMC	3/4"	
10	EUH-1, EUH-2, EUH-3	5 KW	208/3	NFDS	30	3	–	1	3#12,1#12G	FMC	1/2"	
11	EUH-4, EUH-5, EUH-6	3.3 KW	208/3	NFDS	30	3	–	1	3#12,1#12G	FMC	1/2"	
12	–	–	–	–	–	–	–	–	–	–	–	
13	–	–	–	–	–	–	–	–	–	–	–	
14	–	–	–	–	–	–	–	–	–	–	–	

LEGEND

DISCONNECT TYPES
- ETCB = ELECTRONIC-TRIP CIRCUIT BREAKER
- FDS = FUSIBLE DISCONNECT SWITCH
- MCP = MOTOR CIRCUIT PROTECTOR
- NFDS = NON-FUSIBLE DISCONNECT SWITCH
- ST/DS = COMBINATION STARTER/DISCONNECT SWITCH
- TMCB = THERMAL-MAGNETIC CIRCUIT BREAKER
- TOG = TOGGLE SWITCH
- C/DS = COMBINATION CONTACTOR/DISCONNECT SWITCH

DISCONNECT ENCLOSURE TYPES
- 1 = NEMA 1 ENCLOSURE
- 3R = NEMA 3R ENCLOSURE
- 4 = NEMA 4 ENCLOSURE
- 4X = NEMA 4X ENCLOSURE

RACEWAY TYPES
- EMT = ELECTRIC METALLIC TUBING
- FMC = FLEXIBLE METAL CONDUIT
- IMC = INTERMEDIATE METAL CONDUIT
- LFMC = LIQUID-TIGHT FLEXIBLE METAL CONDUIT
- PVC = NON-METALLIC PVC CONDUIT
- RMC = RIGID METAL CONDUIT

STARTER TYPES
- CFVNR = COMBINATION FULL VOLTAGE, NONREVERSING

CONTROL DEVICES
- HOA = HAND-OFF-AUTO
- RPL = RED PILOT LIGHT
- AUX = AUXILLARY CONTACTS (2 N.O., 1 N.C.)
- CT50 = 50 VA CONTROL TRANSFORMER

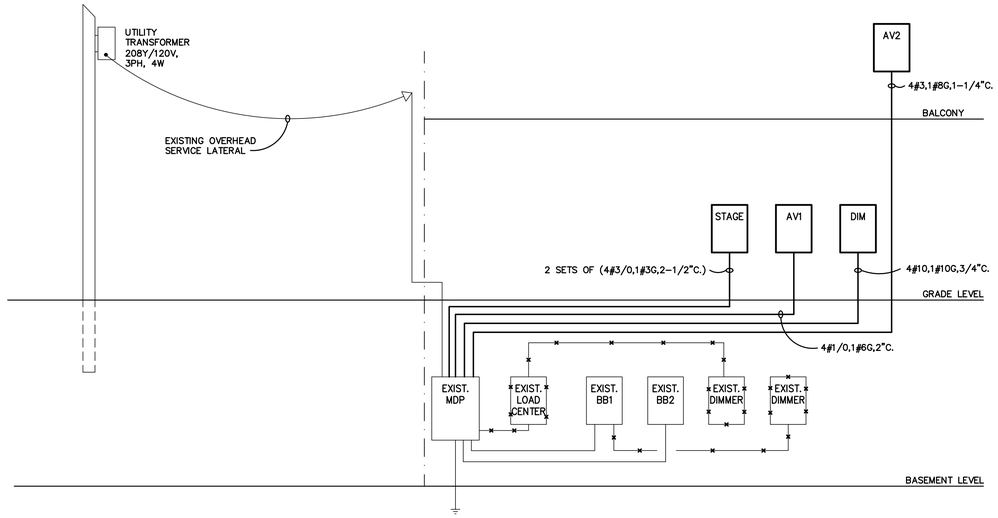
NOTES

ALL ELECTRICAL CHARACTERISTICS SCHEDULED ABOVE ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT WITH EQUIPMENT SUPPLIER(S) PRIOR TO ROUGHING, AND SHALL VERIFY EXACT LOCATION AND EXACT TYPE OFCONNECTION. ALL EQUIPMENT SHALL BE PROPERLY AND SECURELY GROUNDED. ANY SIGNIFICANT CHANGES IN LOCATION, ELECTRICAL REQUIREMENTS, OR TYPE OF CONNECTION REQUIRED FOR ANY EQUIPMENT SCHEDULED ABOVE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO PROCEEDING.

CONDUCTORS AND RACEWAY SPECIFIED IN THE ABOVE SCHEDULE ARE FOR FINAL CONNECTION TO UNIT AND SHALL BE EXTENDED FROM THE DISCONNECT SHOWN ON THE FLOOR PLANS TO THE EQUIPMENT TERMINATION BOX.

CONDUIT AND BOXES REQUIRED FOR EQUIPMENT CONNECTIONS SHALL BE INSTALLED IN SUCH A WAY AS TO NOT COVER UP EQUIPMENT NAMEPLATES, SERVICE AREAS, AIR FLOW AREAS, ETC.

1 UTILIZE ONLY ONE POLE OF TWO POLE DISCONNECT SWITCH FOR CIRCUIT DISCONNECTION. DO NOT SWITCH CIRCUIT NUETRAL.



2 POWER RISER DIAGRAM
E4.0 SCALE: NO SCALE

GENERAL NOTES

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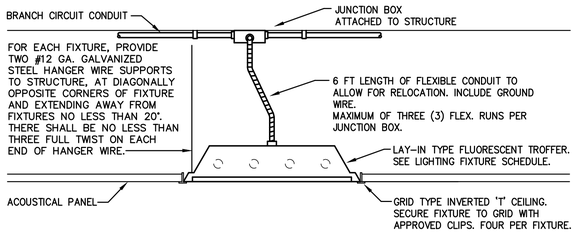
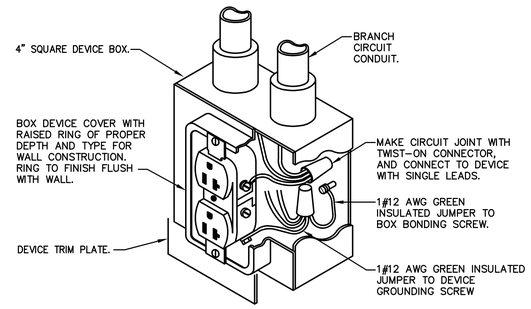
2015-04
01/05/17
RISER DIAGRAMS

E4.0

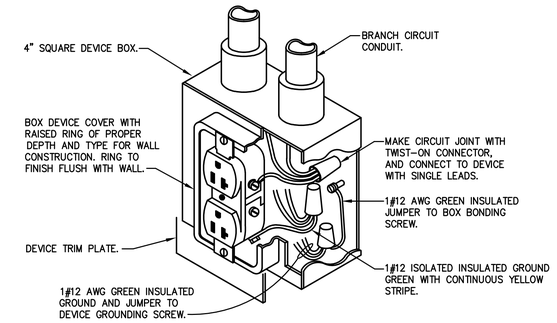
A1 / E4.0 — RISER DIAGRAMS AND SCHEDULES — NO SCALE



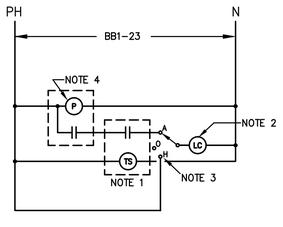
1 E4.1 DETAIL – TYPICAL LAY-IN FIXTURE INSTALLATION
Not To Scale



2 E4.1 DETAIL – TYPICAL DUPLEX RECEPTACLE INSTALLATION
NOT TO SCALE



3 E4.1 DETAIL – TYPICAL ISOLATED GROUND DUPLEX RECEPTACLE INSTALLATION
NOT TO SCALE

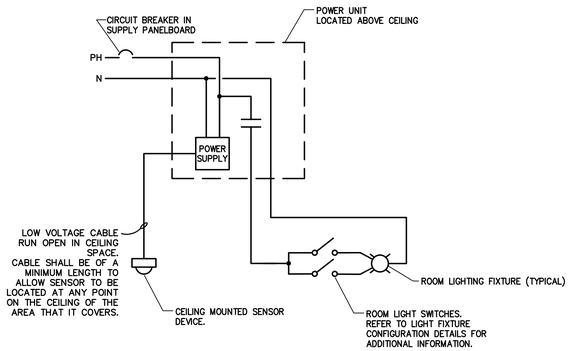


BB1-23 — EXTERIOR LIGHTING
SPARE
SPARE
SPARE

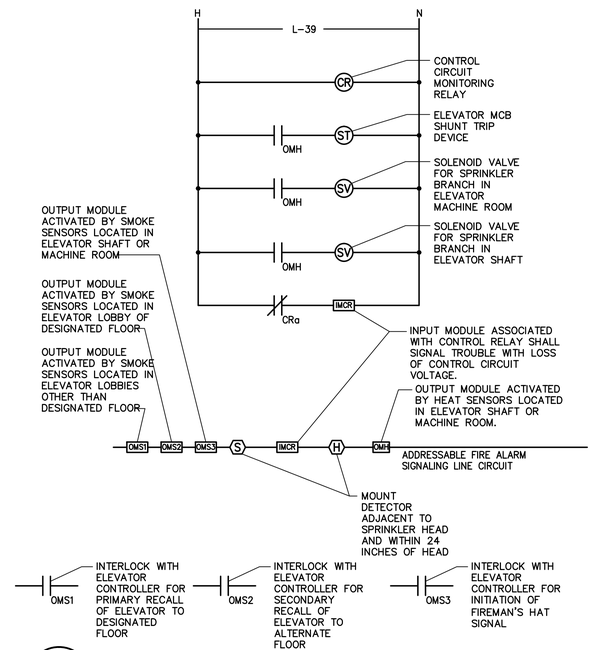
NOTES:

1. DIGITAL TIME SWITCH. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. ELECTRICALLY HELD LIGHTING CONTACTOR WITH 20A BALLAST RATED CONTACTS. CONTACTOR SHALL BE OPEN TYPE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. HAND-OFF-AUTOMATIC SELECTOR SWITCH. SWITCH SHALL BE HEAVY-DUTY, OIL TIGHT, MAINTAINED CONTACT TYPE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. PHOTOCELL CONTROL DEVICE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. MOUNT TIME SWITCH AND CONTACTOR IN 18"x 18"x 6" DEEP NEMA 1 ENCLOSURE WITH HINGED DOOR. MOUNT SELECTOR SWITCH ON DOOR. PROVIDE PERMANENT NAMEPLATE ON DOOR TO READ: "EXTERIOR LIGHTING CONTROL".

4 E4.1 EXTERIOR LIGHTING CONTROL DIAGRAM–ELC
NO SCALE



5 E4.1 DETAIL – OCCUPANCY SENSOR CONTROL
NOT TO SCALE



6 E4.1 DIAGRAM – ELEVATOR CONTROL
NOT TO SCALE

1 REFER TO DIAGRAM "SMOKE AND HEAT DETECTION IN ELEVATOR SHAFTS" FOR ADDITIONAL INFORMATION.

GENERAL NOTES

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2015-04
01/05/17
DIAGRAMS AND DETAILS

E4.1

A1 E4.1 DETAILS
NO SCALE

Bill Of Materials

LUTRON GRAFIK-EYE DIMMING SYSTEM

Item	Lutron Model No.	Description	□ty
1□	CGP8-1204T6-ML-20-CGP368	120/208V, 3Ø-4 Wire Main Lugs GP Dimming Panel containing 1 20A-1Pole branch breaker rated at 10,000AIC for each of the 8 dimming circuits. Ma□input feed = 60A	1
2□	GRX-4504-T-WH	4 Zone GRAFIK Eye 4000 Control Unit with PC Setup Capability and Translucent Top Co□er. For use with Lutron GP, LP, and XP Power Panels. 4 Gang US Backbo□	1
3□	NT-DMXJ-IN	DMX INPUT JACK FOR 2-LINK GP PANEL □DMX INPUT□	1
4□	NTS-TV-DV	NOVA T□0-10V DIMMER	1
5□	GRX-PCBL-46L-500	LUTON CONTROL CABLE 500' ROLL	1
6□	-	All electrical de□ices should match system controls. Use Lutron No□aT□dimmers, switches, receptacles, jacks and faceplates as re□uired.	0

www.lutron.com

Toll Free□800 523 9466

Project Name□	HAMPTON STREET AUDITORIUM
Location□	WALTERBORO, SC
Design By□	Da□ld Feus
Project □□	
Project Filename□	HAMPTON STREET AUDITORIUM0.gdf
GRAFIK Eye Designer 7.2.0	
Date□	27-Sep-2016

AUDITORIUM GP Dimming Panel Load Schedule

Panel Name□ DIM

Lutron Model No.□ CGP8-1204T6-ML-20-CGP368

Panel Address / Location□ 1 /

Area/Room	Customer Circuit □	Customer Zone	Lutron Circuit □	Lutron Zone	Zone/Circuit Description	Load Type	Actual Load □W/VA□	Ma□ Load □W/VA□	BRKR Size	Phase
AUDITORIUM	3	Zone 3		A1-3	AUDITORIUM	FL - 0-10V	990	2000	20A-1P	A
AUDITORIUM	2	Zone 2		A1-2	BALCONY	FL - 0-10V	838	2000	20A-1P	B
AUDITORIUM	4	Zone 3		A1-3	AUDITORIUM	FL - 0-10V	990	2000	20A-1P	C
AUDITORIUM	1	Zone 1		A1-1	BELOW BALCONY	FL - 0-10V	255	2000	20A-1P	A
AUDITORIUM	5	Zone 4		A1-4	STAGE	FL - 0-10V	525	2000	20A-1P	B
			6		Spare		0	2000	20A-1P	
			7		Spare		0	2000	20A-1P	
			8		Spare		0	2000	20A-1P	

120/208V, 3Ø-4 Wire Main Lugs GP Dimming Panel containing 1 20A-1Pole branch breaker rated at 10,000AIC for each of the 8 dimming circuits. Ma□input feed = 60A

Feed Type□ Normal

Phase A□ 1245 W/VA

Phase B□ 1363 W/VA

Phase C□ 990 W/VA

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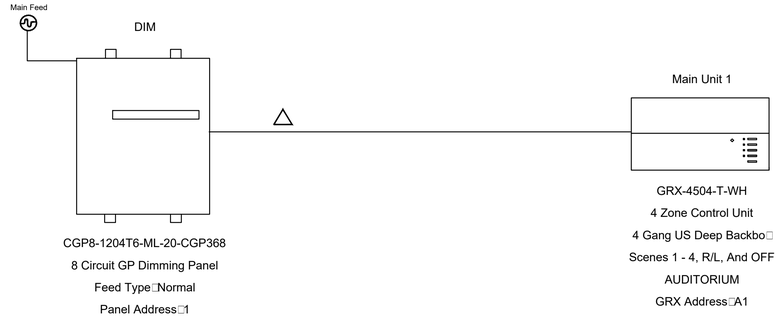
Toll Free□800 523 9466

Project Name□	HAMPTON STREET AUDITORIUM
System□	LUTRON GRAFIK-EYE DIMMING SYSTEM
Location□	WALTERBORO, SC
Design By□	Da□ld Feus
Project □□	
Project Filename□	HAMPTON STREET AUDITORIUM0.gdf
GRAFIK Eye Designer 7.2.0	
Date□	27-Sep-2016

△

Lutron cable GRX-CBL-46L □Non-Plenum□or GRX-PCBL-46L □Plenum rated□ Otherwise use 2 □12AWG □2.5mm2□, 1 Belden □9461 □or e□ui□alent□ and between panels add 1 □18AWG □1.0mm2□for emergency sensing.



GENERAL NOTES

McKNIGHT · SMITH · WARD · GRIFFIN
ENGINEERS, INCORPORATED
PO Box 240826 · 4223 South Boulevard
Charlotte, NC · 704/527-2112
15-097

SOUTH CAROLINA
No. 18963
MARK P. ARRINGTON
01-05-17

REVISION DATE

TYCH & WALKER
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PO BOX 509
PAWLEYS ISLAND, SC 29585
843-650-7151
mwalker@tychwalker.com

A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA
McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00926
CERTIFICATE OF AUTHORIZATION

2015-04	
01/05/17	
DIMMING DIAGRAMS	
E4.2	

A1
E4.2

AUDITORIUM DIMMING SCHEDULES AND DIAGRAM

NO SCALE

PANELBOARD: (EXISTING) BB1 | GROUND BUS | SC RATING: 22 KAMPS RMS SYMM.
SERVICE: 208Y/120V 3PH 4W | MOUNTING: SURFACE
MAINS: 100 AMP MLO | TYPE: BRANCH | ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
LIGHTTRONICS		*80/2	1A	0.0	0.0			2A	/1		SPACE ONLY
PACKS 3 & 4		/	3B			0.0	0.0	4B	/1		SPACE ONLY
SPACE ONLY		/1	5C	0.0			0.0	6C	/1		SPACE ONLY
LIGHTTRONICS		*80/2	7A	0.0	0.0			8A	/1		SPACE ONLY
PACKS 3 & 4		/	9B			0.0	0.0	10B	*80/2		LIGHTTRONICS
SPACE ONLY		/1	11C				0.0	12C	/		PACKS 1 & 2
SPARE		*80/2	13A	0.0	0.0			14A	/1		SPACE ONLY
		/	15B			0.0	0.0	16B	/1		SPACE ONLY
SPACE ONLY		/1	17C	0.0			0.0	18C	/1		SPACE ONLY
SPACE ONLY		/1	19A	0.0	0.0			20A	/1		SPACE ONLY
SPACE ONLY		/1	21B	0.0		0.0		22B	*80/2		LIGHTTRONICS
SPACE ONLY		/1	23C	0.0			0.0	24C	/		PACKS 1 & 2
SPACE ONLY		/1	25A	0.0	0.0			26A	/1		SPACE ONLY
SPACE ONLY		/1	27B	0.0		0.0		28B	/1		SPACE ONLY
SPACE ONLY		/1	29C	0.0			0.0	30C	/1		SPACE ONLY
SPACE ONLY		/1	31A	0.0	0.0			32A	/1		SPACE ONLY
SPACE ONLY		/1	33B	0.0		0.0		34B	/1		SPACE ONLY
SPACE ONLY		/1	35C	0.0			0.0	36C	/1		SPACE ONLY
SPACE ONLY		/1	37A	0.0	0.0			38A	/1		SPACE ONLY
SPACE ONLY		/1	39B	0.0		0.0		40B	/1		SPACE ONLY
SPACE ONLY		/1	41C	0.0			0.0	42C	/1		SPACE ONLY
				0.0	0.0	0.0	0.0				

NOTES:
* REMOVE EXISTING 80/2 CIRCUIT BREAKER AND MAKE SPACE AVAILABLE.

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	0.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	0.0	KVA
TOTAL	0.0	KVA

PANELBOARD: EXISTING BB1 * | GROUND BUS | SC RATING: 22 KAMPS RMS SYMM.
SERVICE: 208Y/120V 3PH 4W | MOUNTING: SURFACE
MAINS: 100 AMP MLO | TYPE: BRANCH | ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
REC: HALL/VESTIBULE	12	*20/1	1A	0.9	0.9			2A	*20/1	12	REC: WOMEN DRESSING
REC: GREEN ROOM	12	*20/1	3B	1.0		0.9		4B	*20/1	12	REC: WOMEN DRESSING
REC: MEN DRESSING	12	*20/1	5C	1.0			1.0	6C	*20/1	12	REC: WOMEN DRESSING
REC: MEN DRESSING	12	*20/1	7A	1.0	1.0			8A	*20/1	12	REC: WOMEN DRESSING
REC: MEN DRESSING	12	*20/1	9B	1.0		1.0		10B	*20/1	12	REC: WOMEN DRESSING
REC: MEN DRESSING	12	*20/1	11C	1.0			1.0	12C	*20/1	12	REC: WOMEN DRESSING
REC: MEN DRESSING	12	*20/1	13A	1.0	1.0			14A	/1		SPACE ONLY
REC: MEN DRESSING	12	*20/1	15B	1.0		1.0		16B	/1		SPACE ONLY
LTG: HALL/VESTIBULE	12	*20/1	17C	0.8			0.8	18C	*20/1		SPARE
LTG: DRESSING ROOMS	12	*20/1	19A	1.0	1.0			20A	*20/1		SPARE
LTG: AISLE AUDITORIUM	10	*20/1	21B	0.5		0.5		22B	*20/1		SPARE
LTG: EXTERIOR	6	*20/1	23C	0.7			0.7	24C	/1		SPACE ONLY
SPARE		*20/1	25A	0.0	0.0			26A	/1		SPACE ONLY
SPARE		*20/1	27B	0.0		0.0		28B	/1		SPACE ONLY
SPARE		*20/1	29C	0.0			0.0	30C	/1		SPACE ONLY
SPACE ONLY		/1	31A	0.0	0.0			32A	/1		SPACE ONLY
SPACE ONLY		/1	33B	0.0		0.0		34B	/1		SPACE ONLY
SPACE ONLY		/1	35C	0.0			0.0	36C	/1		SPACE ONLY
SPACE ONLY		/1	37A	0.0	0.0			38A	/1		SPACE ONLY
SPACE ONLY		/1	39B	0.0		0.0		40B	/1		SPACE ONLY
SPACE ONLY		/1	41C	0.0			0.0	42C	/1		SPACE ONLY
				16.8	5.9	5.4	5.5				

NOTES:
* EXISTING PANEL BB1 WITH NEW BREAKERS AS INDICATED.

LIGHTS	3.0	KVA
RECEPTS	1.8	KVA
MOTORS	0.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	12.0	KVA
TOTAL	16.8	KVA

PANCLBOARD: EXISTING MDP | GROUND BUS | SC RATING: 22 KAMPS RMS SYMM.
SERVICE: 208Y/120V 3PH 4W | MOUNTING: SURFACE
MAINS: 60 AMP MCB | TYPE: DISTRIBUTION | ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
A/C MIDDLE REAR		225/3	1A		0.0			2A	1200/3		MCB
EXISTING		/	3B			0.0		4B	/		
		/	5C				0.0	6C	/		
A/C MIDDLE REAR		175/3	7A		0.0			8A	/		
EXISTING		/	9B			0.0		10B	/		
		/	11C				0.0	12C	/		
A/C MIDDLE REAR		175/3	13A		0.0			14A	/		
EXISTING		/	15B			0.0		16B	/		
		/	17C				0.0	18C	/		
A/C FRONT		175/3	19A		0.0			20A	/		
EXISTING		/	21B			0.0		22B	225/3		PANEL BB1
		/	23C				0.0	24C	/		EXISTING
A/C FRONT		175/3	25A		0.0			26A	/		
EXISTING		/	27B			0.0		28B	150/3		PANEL BB2
		/	29C				0.0	30C	/		EXISTING
EXISTING		20/3	31A		0.0			32A	/		
		/	33B			0.0		34B	20/3		LIGHTRONICS RACK
		/	35C				0.0	36C	/		EXISTING
EXISTING		20/3	37A		0.0			38A	/		
		/	39B			0.0		40B	100/3		AURORA DIMMER
		/	41C				0.0	42C	/		EXISTING
EXISTING		20/3	43A		0.0			44A	/		
		/	45B			0.0		46B	/3		SPACE ONLY
		/	47C				0.0	48C	/		
SPACE ONLY		/3	49A		0.0			50A	/		
		/	51B			0.0		52B	/3		SPACE ONLY
		/	53C				0.0	54C	/		
SPACE ONLY		/3	55A		0.0			56A	/		
		/	57B			0.0		58B	/3		SPACE ONLY
		/	59C				0.0	60C	/		
SPACE ONLY		/3	61A		0.0			62A	/		
		/	63B			0.0		64B	/1		SPACE ONLY
		/	65C				0.0	66C	/3		SPACE ONLY
SPACE ONLY		/3	67A		0.0			68A	/		
		/	69B			0.0		70B	/		
		/	71C				0.0	72C	/1		SPACE ONLY
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
				0.0	0.0	0.0	0.0				

NOTES:
PANEL TYPE: SQUARE D – I LINE 208Y/120 3 PH 4W

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	0.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	0.0	KVA
TOTAL	0.0	KVA

PANCLBOARD: EXISTING MDP ** | GROUND BUS | SC RATING: 25 KAMPS RMS SYMM.
SERVICE: 208Y/120V 3PH 4W | MOUNTING: SURFACE
MAINS: 1200 AMP MCB | TYPE: DISTRIBUTION | ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
PHP-1	1/0	**150/3	1A		12.5			2A	1200/3		(EXISTING) MCB
	1/0	/	3B			12.5		4B	/		
	1/0	/	5C				12.5	6C	/		
HP-5	8	**70/3	7A		4.6			8A	/		
	8	/	9B			4.6		10B	/		
	8	/	11C				4.6	12C	/		
HP-6	8	**70/3	13A		4.6			14A	/		
	8	/	15B			4.6		16B	/		
	8	/	17C				4.6	18C	/		
AH-5	3	**100/3	19A		9.8			20A	/		
	3	/	21B			9.8		22B	225/3		EXISTING PANEL A (BB1)
	3	/	23C	5.9			9.8	24C	/		
AH-6	3	**100/3	25A	5.4	9.8			26A	/		
	3	/	27B	5.5	5.5	9.8		28B	150/3		EXISTING PANEL B (BB2)
	3	/	29C				9.8	30C	/		
EXISTING		20/3	31A		1.4			32A	/		
		/	33B		12.0	1.4		34B	**15/3	12	HP-7
		/	35C				1.4	36C	/	12	
EXISTING		20/3	37A		1.4			38A	/	12	
		/	39B	3.0	1.0	1.4		40B	*100/3	3	PANEL "AV2"
		/	41C	3.0			1.4	42C	/	3	
EXISTING		20/3	43A	2.0	1.4			44A	/	3	
		/	45B		6.0	1.4		46B	**400/3	3/0	PANEL "STAGE"
		/	47C			0.0	1.4	48C	/	3/0	
HP-3	12	**35/3	49A		1.6			50A	/	3/0	
	12	/	51B	0.0	0.0	1.6		52B	**30/3	10	PANEL "DIM"
	12	/	53C	0.0			1.6	54C	/	10	
HP-4	12	**35/3	55A	0.0	1.6			56A	/	10	
	12	/	57B	11.6	1.1	1.6		58B	**150/3	1/0	PANEL "AV1"
	12	/	59C	10.6		16.6	1.6	60C	/	1/0	
AH-3	8	**45/3	61A	10.6	4.3		15.6	62A	/	1/0	
	8	/	63B		15.6	4.3		64B	/1		SPACE ONLY
	8	/	65C			0.0	4.3	66C	**30/3	10	AH-7
AH-4	8	**45/3	67A		4.3		2.7	68A	/	10	
	8	/	69B		2.7	4.3		70B	/	10	
	8	/	71C			0.0	4.3	72C	/1		SPACE ONLY
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
				57.6	101.2	104.0	102.2				

NOTES:
PANEL TYPE: SQUARE D – I LINE 208Y/120 3 PH 4W
* REUSE EXISTING 100/3 CIRCUIT BREAKER MADE AVAILABLE BY DEMOLITION.
** EXISTING MDP WITH NEW BREAKERS INDICATED.

LIGHTS	6.8	KVA
RECEPTS	1.8	KVA
MOTORS	67.2	KVA
HEAT	123.3	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	108.3	KVA
TOTAL	307.4	KVA

GENERAL NOTES

McKNIGHT · SMITH · WARD · GRIFFIN
ENGINEERS, INCORPORATED
PO Box 240526 · 4223 South Boulevard
Charlotte, NC · 704/527-2112
15-097

SOUTH CAROLINA LICENSED No. 18963 REGISTERED MARK P. ARRINGTON
01-05-17

REVISION	DATE

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION McKNIGHT • SMITH WARD • GRIFFIN ENGINEERS, INC. No. C00926

2015-04
01/05/17
PANEL SCHEDULES

E4.3

A1
E4.3

SCHEDULES
NO SCALE

PANCLBOARD: AV1 GROUND BUS SC RATING: 22 KAMPS RMS SYMM.

SERVICE: 208Y/120V 3PH 4W MOUNTING: SURFACE

MAINS: 225 AMP MLO TYPE: BRANCH ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
				CONNECTED LOAD (KVA)							
REC: RACK	12	20/1	1A	1.0	1.0 0.3			2A	15/3	12	RIGGING MOTOR
REC: RACK	12	20/1	3B	1.0		1.0 0.3		4B	/	12	
REC: RACK	12	20/1	5C	1.0			1.0 0.3	6C	/	12	
REC: CLOSET	12	20/1	7A	1.0	1.0 0.3			8A	15/3	12	RIGGING MOTOR
REC: FRONT OF STAGE	12	20/1	9B	1.0		1.0 0.3		10B	/	12	
ROLL DOWN SCREEN	12	20/1	11C	1.0			1.0 0.3	12C	/	12	
REC: STAGE	12	20/1	13A	1.0	1.0 0.3			14A	15/3	12	RIGGING MOTOR
REC: STAGE	12	20/1	15B	1.0		1.0 0.3		16B	/	12	
REC: STAGE	12	20/1	17C	1.0			1.0 0.3	18C	/	12	
REC: STAGE	12	20/1	19A	1.0	1.0 0.3			20A	15/3	12	RIGGING MOTOR
A/V LIGHTBAR	12	20/1	21B	1.9		1.9 0.3		22B	/	12	
A/V LIGHTBAR	12	20/1	23C	1.9			1.9 0.3	24C	/	12	
A/V QUAD BOX	12	20/1	25A	1.9	1.9 0.3			26A	15/3	12	RIGGING MOTOR
A/V LIGHTBAR	12	20/1	27B	1.9		1.9 0.3		28B	/	12	
A/V LIGHTBAR	12	20/1	29C	1.9			1.9 0.3	30C	/	12	
A/V QUAD BOX	12	20/1	31A	1.9	1.9 0.3			32A	15/3	12	RIGGING MOTOR
A/V LIGHTBAR	12	20/1	33B	1.9		1.9 0.3		34B	/	12	
A/V LIGHTBAR	12	20/1	35C	1.9			1.9 0.3	36C	/	12	
A/V QUAD BOX	12	20/1	37A	1.9	1.9 1.7			38A	20/3	12	EUH-2
A/V LIGHTBAR	12	20/1	39B	1.9		1.9 1.7		40B	/	12	
A/V LIGHTBAR	12	20/1	41C	1.9			1.9 1.7	42C	/	12	
A/V QUAD BOX	12	20/1	43A	1.9	1.9 1.7			44A	20/3	12	EUH-3
SPARE		20/1	45B	0.0		0.0 1.7		46B	/	12	
SPARE		20/1	47C	0.0			0.0 1.7	48C	/	12	
SPACE ONLY		/3	49A		0.0 0.0			50A	/3		SPACE ONLY
		/	51B			0.0 0.0		52B	/		
		/	53C				0.0 0.0	54C	/		
				32.8	16.6	15.6	15.6				

NOTES:

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	4.7	KVA
HEAT	10.2	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	32.8	KVA
TOTAL	47.7	KVA

PANELBOARD: AV2 GROUND BUS SC RATING: 22 KAMPS RMS SYMM.

SERVICE: 208Y/120V 3PH 4W MOUNTING: SURFACE

MAINS: 100 AMP MLO TYPE: BRANCH ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
				CONNECTED LOAD (KVA)							
REC: SOUND BOOTH	12	20/1	1A	1.0	1.0 2.3			2A	30/3	10	REC: A/V
REC: BALCONY	12	20/1	3B	1.0		1.0 2.3		4B	/		
REC: SPOT LIGHT	12	20/1	5C	1.0			1.0 2.3	6C	/		
REC: SPOT LIGHT	12	20/1	7A	1.0 1.0	1.0 1.0			8A	20/1	12	REC: SOUND BOOTH
REC: BALCONY	12	20/1	9B	1.0 1.0		1.0 1.0		10B	20/1	12	REC: SOUND BOOTH
SPARE		20/1	11C	0.0 1.0			0.0 1.0	12C	20/1	12	REC: SOUND BOOTH
EUH-1	12	20/3	13A	0.0	1.7 0.0			14A	20/1		SPARE
	12	/	15B	0.0		1.7 0.0		16B	20/1		SPARE
	12	/	17C	0.0			1.7 0.0	18C	20/1		SPARE
SPACE ONLY		/3	19A		0.0 0.0			20A	/3		SPACE ONLY
		/	21B			0.0 0.0		22B	/		
		/	23C				0.0 0.0	24C	/		
		/							/		
		/							/		
		/							/		
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		/							/		
		/							/		
		/							/		
				8.0	7.0	7.0	6.0				

NOTES:

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	0.0	KVA
HEAT	5.1	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	14.9	KVA
TOTAL	20.0	KVA

PANELBOARD: STAGE GROUND BUS SC RATING: 22 KAMPS RMS SYMM.

SERVICE: 208Y/120V 3PH 4W MOUNTING: SURFACE

MAINS: 400 AMP MLO TYPE: DISTRIBUTION ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
				CONNECTED LOAD (KVA)							
STAGE		200/3	1A		0.0 0.0			2A	60/3		STAGE
		/	3B			0.0 0.0		4B	/		
		/	5C				0.0 0.0	6C	/		
STAGE		100/3	7A		0.0 0.0			8A	30/3		STAGE
		/	9B			0.0 0.0		10B	/		
		/	11C				0.0 0.0	12C	/		
SPACE ONLY		/3	13A		0.0 0.0			14A	/		SPACE ONLY
		/	15B			0.0 0.0		16B	/		
		/	17C				0.0 0.0	18C	/		
SPACE ONLY		/3	19A		0.0 0.0			20A	/		SPACE ONLY
		/	21B			0.0 0.0		22B	/		
		/	23C				0.0 0.0	24C	/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
		/							/		
				0.0	0.0	0.0	0.0				

NOTES:
PROVIDE (2) 3" NIPPLES FROM BOTTOM OF PANEL WITH CAP FOR FUTURE FEEDER WIRING BY OTHERS.

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	0.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	0.0	KVA
TOTAL	0.0	KVA

ZE

PANCLBOARD: (EXISTING) L GROUND BUS SC RATING: 22 KAMPS RMS SYMM.

SERVICE: 208Y/120V 3PH 4W MOUNTING: SURFACE

MAINS: 250 AMP MCB TYPE: BRANCH ENCLOSURE: NEMA 1

LOAD DESCRIPTION	WIRE	BKR	CKT	NEUT	A	B	C	CKT	BKR	WIRE	LOAD DESCRIPTION
				CONNECTED LOAD (KVA)							
EXISTING	??	20/1	1A	0.0	0.0 0.0			2A	15/2	??	EXISTING
EXISTING	??	20/1	3B	0.0		0.0 0.0		4B	/	??	
EXISTING	??	20/1	5C	0.0			0.0 0.0	6C	15/2	??	EXISTING
EXISTING	??	20/1	7A	0.0	0.0 0.0			8A	/	??	
EXISTING	??	20/1	9B	0.0 0.0		0.0 0.0		10B	20/1	??	EXISTING
EXISTING	??	20/1	11C	0.0			0.0 0.0	12C	50/2	??	EXISTING
EXISTING	??	20/1	13A	0.0	0.0 0.0			14A	/	??	
PROJECTOR	12	**20/1	15B	0.0 0.0		0.0 0.0		16B	/		SPACE ONLY
SCREEN	12	**20/1	17C	0.0 0.0			0.0 0.0	18C	/		SPACE ONLY
EF-2	12	**20/1	19A	0.0 0.0	0.0 0.0			20A	/		SPACE ONLY
EUH-4	12	**20/3	21B	0.0		0.0 0.0		22B	/		SPACE ONLY
	12	/	23C	0.0			0.0 0.0	24C	/		SPACE ONLY
	12	/	25A	0.0	0.0 0.0			26A	/		SPACE ONLY
EUH-5	12	**20/3	27B	0.0		0.0 0.0		28B	/		SPACE ONLY
	12	/	29C	0.0			0.0 0.0	30C	20/1	??	EXISTING
	12	/	31A	0.0	0.0 0.0			32A	20/1	??	EXISTING
EUH-6	12	**20/3	33B	0.0		0.0 0.0		34B	20/1	??	EXISTING
	12	/	35C	0.0			0.0 0.0	36C	20/1	??	EXISTING
	12	/	37A	0.0 0.0	0.0 0.0			38A	/		SPACE ONLY
ELEV. CONTROL	12	**20/1	39B	0.0 0.0		0.0 0.0		40B	/		SPACE ONLY
SPACE ONLY		/1	41C	0.0 0.0			0.0 0.0	42C	/		SPACE ONLY
		/	43A		0.0 0.0			44A	*200/3	??	ELEVATOR
		/	45B			0.0 0.0		46B	/	??	(SUB-FEED BREAKER)
		/	47C				0.0 0.0	48C	/	??	
		/	49A		0.0 0.0			50A	/		
		/	51B			0.0 0.0		52B	/		
		/	53C				0.0 0.0	54C	/		
				0.0	0.0	0.0	0.0				

NOTES:
* ADD SHUNT TRIP DEVICE TO 200A ELEVATOR CIRCUIT BREAKER FOR SHUNT TRIPPING OF BREAKER WITH INITIATION OF SHAFT HEAT DETECTOR.

** EXISTING PANEL L WITH NEW BREAKERS AS INDICATED.

LIGHTS	0.0	KVA
RECEPTS	0.0	KVA
MOTORS	0.0	KVA
HEAT	0.0	KVA
KITCHEN	0.0	KVA
CMPTR	0.0	KVA
OTHER	0.0	KVA
TOTAL	0.0	KVA

GENERAL NOTES

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SOUTH CAROLINA
REGISTERED
No. 18963
PROFESSIONAL ENGINEER
MARK P. ARRINGTON
01-05-17

REVISION	DATE

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION
McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC.
No. C00326

2015-04

01/05/17

PANEL SCHEDULES

E4.4

A1
E4.4

SCHEDULES

NO SCALE

ELECTRICAL GENERAL REQUIREMENTS

1.1 SCOPE:

a. Applicable requirements of the General Conditions of the Contract, Amendments, Supplementary General Conditions, and Special Conditions govern work under this Division.

b. Work covered by this Division consists of providing all labor, equipment, supplies, and materials; and performing all operations, including trenching, backfilling, cutting, patching, and chasing necessary for the installation of complete electrical systems in strict accordance with these specifications and the applicable drawings.

c. Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work, the same as if herein specified or shown.

d. This Contractor is referred to the General and Special Conditions of the contract which shall form a part and be included in this section of the specification and shall be binding on this Contractor.

e. Some items of equipment are specified in the singular; however, the Contractor shall provide and install the number of items or equipment as indicated on the drawings, and as required for complete systems.

1.2 RECORD DRAWINGS:

a. During construction of this project, the Contractor shall maintain one complete set of electrical contract drawings, on which shall be recorded all significant changes. This set of drawings shall be used for no other purpose. Upon completion of the work, the Contractor shall submit these drawings to the Architect/Engineer for approval and presentation to the Owner.

1.3 REGULATIONS AND COMPLIANCE:

a. The requirements of the North Carolina State Building Code which includes the National Electrical Code, and of all other State and Local codes, ordinances, regulations and interpretations by authorities having jurisdiction are binding upon this Contractor, and nothing contained in, or inferred by, these specifications or the applicable drawings may be construed as waiving those requirements. The latest edition of the National Electrical Code, referred to herein and on the drawings as "N.E.C.", forms a part of these specifications; and under no circumstances may the installation fail to meet the minimum requirements therein.

b. This Contractor shall secure and pay for all permits, fees, inspections and licenses required. It is the responsibility of the Contractor to notify the Local Electrical Inspector to schedule the required inspections. Upon completion of the project and prior to his request for final payment he shall present to the Architect/Engineer a certificate of inspection and approval from the inspection authorities.

c. All materials and equipment shall bear the approval label, and shall be listed by the Underwriters' Laboratories, Inc.

2.1 GENERAL:

a. Except where reuse of existing items are specifically indicated or permitted, all materials and equipment shall be new and shall conform with the standards of the National Electrical Manufacturer's Association and Underwriter's Laboratories, Inc. in every instance where such a standard has been established for the item involved.

b. Materials shall be inspected by the Contractor upon their arrival at the site to be sure they are correct. Material and equipment stored on the site shall be protected against physical damage, dirt and damage caused by precipitation, wind, condensation, excessive humidity, and extremes of temperature. Materials shall be stored in their original cartons within substantial, clean and dry storage facilities provided under this Contract. Conduit, large galvanized boxes, and lighting poles may be stored outdoors on suitable blocks or racks clear of the earth and undergrowth, and pitched to drain. Large electrical equipment intended for ultimate installation outdoors may be stored in the weather on suitable blocks or platforms clear of the earth and undergrowth, and with interior lamps or space heaters continuously energized to prevent condensation. Alternate storage provisions may be submitted to the Architect/Engineer for approval prior to the arrival of the material. Under no circumstances shall equipment be stored in the weather under a cover of polyethylene or tarpaulin. The Architect/Engineer will be the sole judge as to the acceptability of storage facilities, and when directed by the Architect/Engineer, improperly stored or damaged material shall be removed from the site and replaced with new material.

c. The Contractor shall coordinate the work and equipment of this Division with the work and equipment specified elsewhere in order to assure a complete and satisfactory installation. Work such as excavation, backfill, concrete, flashing, wiring, etc., which is required by the work of this section shall be performed in accordance with the requirements of the applicable section of the specifications.

d. It is the intention of these specifications and drawings to call for finished work, tested and ready for operation. Whenever the work "provide" is used, it shall mean "furnish and install complete and ready for use".

3.1 COORDINATION:

a. This Contractor coordinate the work of all subs and shall furnish any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

b. Where the work will be installed in close proximity to, or may interfere with the work of other trades, the Contractor shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Engineer, the Contractor shall prepare composite working drawings and sections at a suitable scale not less than 3/8" = 1'–0", clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordination, or so as to cause any interference with work of any subs, he shall make the necessary changes in his work to correct the condition without extra charge.

c. The Contractor shall furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

3.3 SLEEVES, CUTTING, AND PATCHING:

a. Contractor shall place his own sleeves and advise other trades of required chases and openings so they can be properly built in. Where any raceway supports installed under this Contract pierce the roof, suitable pitch pockets shall be provided and coordinated with the roofing contractor as necessary to be acceptable to the Architect. Provide suitable fittings where any raceways or equipment cross expansion joints.

b. Permitted cutting or patching necessary shall be done by Contractor. Structural members shall not be cut except by written permission of Architect/Engineer.

3.4 PROTECTION AND CLEAN–UP:

a. Protect all material and work from damage during construction. Equipment installed in the building prior to its being closed in and dried out shall be protected from the elements in the same manner as previously specified for stored materials. Protect finished surfaces from splattering of mortar, paint, dirt, plaster, etc.. Do not install device plates, face plates, canopies, flush cabinet trims, or fixtures on walls or ceilings until after painting or cleaning of the surface has been completed, and arrange for such items that are required to be field painted to be painted before being mounted. Repair, clean and touch–up or replace, all damaged material. At the completion of the project, remove all dust from finished surfaces, including lighting fixtures, lenses and lamps.

b. The Contractor shall keep premises free of debris resulting from his work.

3.5 PAINTING AND FINISHING:

a. Suitable finishes shall be provided on all items of electrical equipment and materials which are exposed. This shall consist of either an acceptable finish as manufactured and supplied to the job or application of suitable finishes after installation.

b. Where installed in finished areas, exposed equipment and materials shall be supplied with prime coat, and shall be professionally painted or enameled as directed to match or blend with adjacent surfaces.

c. In unfinished areas such as equipment rooms, exposed equipment shall be furnished with suitable factory applied finishes (e.g. standard gray enamel finish for panelboards, etc.).

3.6 OBSERVATION:

a. The project will be observed periodically as construction progresses.The Contractor will be responsible for notifying the Architect at least 72 hours in advance when any work to be covered up is ready for inspection. No work will be covered up until after observation has been completed on such items as piping and insulation, etc.

EQUIPMENT CONNECTIONS AND COORDINATION

1.1 GENERAL:

a. Heating, Ventilating, Air Conditioning, Refrigeration and Plumbing Equipment: Unless otherwise indicated, provide all power wiring, including feeders and branch circuits, to the terminals of the equipment, including mounting of motor starters; feeder and branch circuit over–current protection; disconnecting means within sight of each motor and each starter, whether of not specifically indicated on drawings; and Motor Control Centers indicated, complete as scheduled and specified.

BASIC MATERIALS AND METHODS

1.1 WIRING METHOD:

a. Unless otherwise indicated or specified, the Wiring Method for this project shall consist of copper conductors with 600 volt insulation installed in metal raceways.

b. The word "Raceway" and the word "Conduit" (or abbreviation "C") used herein or on the drawings indicate Rigid Metal Conduit, and where permitted, Intermediate Metal Conduit, Electrical Metallic Tubing, Rigid Nonmetallic Conduit, Flexible Metal Conduit, or Liquidtight Flexible Metal Conduit.

c. Reference to "Rigid Conduit" or "RMC" indicates heavy–wall Rigid Metal Conduit only.

d. Reference to "IMC" indicates Intermediate Metal Conduit.

e. Reference to "PVC" indicates Rigid Nonmetallic Conduit.

f. Reference to "EMT" or "Tubing" indicates Electrical Metallic Tubing.

g. Reference to "Flex" or "Flexible Conduit" indicates Flexible Metal Conduit, or, where required, Liquidtight Flexible Metal Conduit.

1.2 FASTENINGS METHODS:

a. Acceptable fastening methods include wood screws and nails on wood construction, toggle bolts on hollow masonry, expansion bolts and lead anchors on brick and concrete, and machine screws on metal surfaces.

b. Explosive fasteners may be used in steel and concrete in accordance with the manufacturer's recommendations.

c. Wire, perforated metal strap, and wooden plugs are not acceptable as fastening material.

d. Materials used shall be good quality, made of zinc or cadmium coated steel or other non–corroding material.

e. Materials, whether exposed or concealed, shall be firmly and adequately held in place. Fastening and support shall afford safety factor of three or higher, and shall be in full compliance with the seismic protection requirements of the N.C. State Building Code.

f. Fixtures, raceways, and equipment shall be supported from the structure. Nothing may be supported on suspended ceiling unless definitely noted so on the Drawings or specifically permitted by the Architect/Engineer.

g. Equipment and raceways attached to outside walls, or interior walls subject to permanent moisture, shall be shimmed out with non–corrodible material so as to provide 1/4" air space between wall and equipment or raceway.

1.3 NAMEPLATES:

a. Suitable nameplates shall be provided for the identification of electrical equipment including Switchboards, Panelboards, Motor Control Centers, Motor Starters, Safety Switches, and Circuit Breakers.

b. Nameplates shall be of engraved white core plastic laminate, not less than 1/16" thick. For 120/208 volt systems, nameplates shall have white letters on black backgrounds. For 277/480 volt systems, nameplates shall have white letters on red background.

c. Engraving shall be of professional quality, with block style letters, minimum 1/4" high.

d. Nameplates shall be attached with sheet metal screws. They shall be sized to allow for installation of screws without obscuring text.

RACEWAYS AND FITTINGS

1.1 MATERIALS AND APPLICATIONS:

a. Rigid Metal Conduit shall be zinc coated steel or alloy 6063–T42 aluminum with threaded couplings and fittings. Termination at sheet metal enclosures shall consist of double locknuts and insulating bushings. Rigid Steel conduit shall be used for all exposed and concealed work except where other raceways are indicated or permitted. Aluminum conduit complete with aluminum fittings may be used in lieu of steel conduit except in wet locations, underground, or in poured concrete. Steel and aluminum shall not be mixed in the same run of conduit.

b. Intermediate Metal Conduit (IMC) with threaded couplings and fittings may be used for exposed and concealed work in lieu of rigid metal conduit except underground outside the building foundation, or where supporting lighting fixtures, or in hazardous locations, or where exposed to severe impact or injury. Termination at sheet metal enclosures shall consist of double locknuts and insulating bushings.

c. Electrical Metallic Tubing (EMT) of 2" maximum size may be used for concealed work in lieu of Rigid Metal Conduit except underground or in poured concrete. EMT of 2" maximum size may be used for exposed work in lieu of Rigid Metal Conduit except outdoors, or above a roof, or where supporting lighting fixtures, or where exposed to severe impact or injury, or in hazardous locations, or less than 10 feet above a floor or platform in other than in electrical, mechanical, or communications closets or equipment rooms.

d. Flexible Metal Conduit shall be of zinc coated steel of minimum length, and shall be used in lieu of Rigid Metal Conduit except for connections to moving or vibrating apparatus, recessed lighting fixtures, dry–type transformers, and motors. Flexible Metal Conduit may be used where rigid connections are impractical due to obstructions or space limitations. Flexible Metal Conduit used in wet, damp, or corrosive location shall be PVC jacketed liquid–tight complete with liquid–tight connectors.

e. Fittings for steel conduit and tubing shall be of zinc coated steel or malleable iron. Insulating bushings of plastic provided for Rigid and Intermediate Metal Conduits shall be rated for 150oC. Bonding bushings shall be steel or malleable iron with non–removable plastic throats rated 150oC. EMT fittings shall be of the compression type. Set–screw, indentor, pressure cast, and die cast fittings are not acceptable. Connectors for EMT, Flexible Metal Conduit and Liquid–tight Flexible Metal Conduit shall be the insulated throat type. Connectors for Flexible Metal Conduits shall be of the "Tite–Bite" design.

f. Conduit expansion fittings shall be of zinc coated cast or malleable iron and steel conduit, complete with flexible bonding straps. Expansion fittings shall allow longitudinal conduit movement of 4 inches.

g. Minimum raceway size shall be 1/2". Other raceway sizes, unless indicated on the drawings, shall be determined by the Contractor in accordance with NEC requirements for type THW insulated conductors, or the actual insulation used if it is thicker than type THW.

2.1 INSTALLATION:

a. Rigid and Intermediate Metal Conduits shall be made up with full threads, to which a conductive pipe compound (T & B Kopr–Shield or equal) has been applied, and butted in coupling. Terminations at sheet metal enclosures in indoor dry locations shall be made with double locknuts and an insulating bushing. Terminations at sheet metal enclosures in outdoor, damp, and wet locations shall be made with threaded conduit hubs of zinc coated malleable iron.

b. Conduits shall be rigidly supported not more than 8 feet on center and shall be concealed within walls, ceilings, and floors, except as indicated or specifically approved by the Architect/Engineer; kept at least 6" from flues and steam or hot water pipes; and protected against the entry of dirt, plaster, or trash. Raceways shall be supported independently of suspended ceiling members and suspension wires.

c. Suspended EMT shall be provided with additional hangers at elbows and bends, and where necessary to avoid strain at couplings and connectors.

d. Exposed conduits, where permitted, shall be run parallel or perpendicular to walls, structural members and ceilings; with right–angle turns consisting of symmetrical bends or cast metal fittings with threaded hubs. Offsets may be used where necessary provided that they are of minimum length.

e. Conduits crossing expansion and contraction joints shall cross perpendicular to the joint and shall be provided with expansion fittings. Conduits shall not be embedded in the concrete slabs at the expansion and contraction joints.

CONDUCTORS

1.1 MATERIALS:

a. Unless otherwise indicated, all wire and cable conductors shall be copper.

b. Conductors shall be not smaller than #12 AWG except that #10 AWG minimum is required for the entire length of 120 volt branch circuits whose distance to the center of the load exceeds 75 feet. #14 AWG may be used for signal and remote control circuits. #16 AWG may be used for taps to individual recessed lighting fixtures on circuits protected by over–current devices rated at 20 amperes or less and contained within flexible metal conduits that do not exceed 6 feet in length. Other conductors smaller than #14 AWG may be used only where specifically indicated on the drawings or specified herein.

c. Conductors #10 AWG and smaller shall be solid, dual rated type THWN/THHN.

d. Conductors #8 AWG and larger shall be stranded, dual rated type THWN\THHN.

e. Each conductor shall bear easily readable markings along entire length, indicating size and insulation type.

f. Insulation on conductors #10 AWG and smaller shall be suitably colored in manufacture.

g. Conductors in any location subject to abnormal temperature shall be furnished with an insulation type suitable for temperature encountered.

h. Where no indication is made of wire size, the conductor shall be of N.E.C. size to match its overcurrent protective device, but in no case smaller than #12 AWG.

2.1 SPLICES, TAPS, AND CONNECTIONS:

a. Splices in conductors #10 AWG and smaller shall be made with twist–on spring steel devices UL listed as Pressure Cable Connectors, with integral insulating covers rated 75oC. at 600 volts.

b. Splices in copper conductors #8 AWG and larger shall be made with mechanical devices UL listed as Pressure Cable Connectors and insulated with thermoplastic tape UL listed for use as sole insulation. Tape may be omitted from connectors supplied with securely fastened insulating covers which completely enclose the connector and the conductors. Insulating covers shall be rated 75oC at 600 volts.

2.2 COLOR CODING:

a. All wiring shall be color coded.

b. On 120/208V, 3 phase, 4 wire power systems, conductors shall be color coded Black (Phase A), Red (Phase B), Blue (Phase C), and White (Neutral).

c. Conductors #8 AWG and larger may be identified with two or more bands of proper color plastic tape applied near each splice and termination. Painting of wire will not be acceptable.

d. Phase sequence shall be "A", "B" and "C" from left to right, top to bottom or front to back when facing equipment.

2.3 BRANCH CIRCUIT RACEWAY WIRING:

a. A neutral shall not serve more than one circuit connected to the same phase. The neutral carrying all or any part of the current of any specific load shall be contained in the same raceway or enclosure with the phase wire or wires also carrying that current.

b. Circuits shall be connected to panels as shown in the panel schedules.

2.4 SERVICE & FEEDER CONDUCTORS:

a. Unless specifically shown otherwise, each feeder and each set of service conductors shall be installed in a separate raceway.

b. Where paralleling of conductors is shown for feeders or service entrance, it is absolutely required they be exactly the same length between terminations.

c. Where service or feeder conductors are so installed that the conductor markings cannot be read without moving or twisting conductors, they shall be provided with suitable tags indicating the conductor size and insulation.

GROUNDING AND BONDING

1.1 SCOPE:

a. The electric system neutral, the neutral of each separately derived system, and all non–current–carrying metal parts, raceways, and enclosures shall be permanently and effectively grounded.

b. Grounding and bonding shall be provided in strict accordance with the National Electrical Code, and as specified herein and on the drawings.

c. The Contractor shall note that required grounding conductors and connections are not all shown on the drawings. NEC requirements apply.

2.1 MATERIALS AND APPLICATIONS:

a. Grounding conductors shall be of THWN insulated copper, unless otherwise indicated.

b. Grounding bus bars in distribution equipment shall be bare copper.

c. Clamps for attaching conductors to water pipes and ground rods shall be of bronze. Ground rod clamps shall be U.L. listed for direct burial.

d. Clamps for attaching conductors to building steel shall be of steel, bronze, or malleable iron.

e. Threaded hubs for bonding metal raceways to the contained grounding electrode conductors and to the water pipe clamps shall be of bronze or malleable iron. Similar hubs shall be used to bond the same raceways to the conductors and to sheet metal equipment enclosures.

f. Driven grounding electrodes shall consist of copper clad steel rods. Rods shall be 8 feet long and 5/8" diameter unless otherwise indicated.

g. Bonding bushings shall be of steel or malleable iron with non–removable plastic throats rated 150°C.

h. Bonding locknuts and wedges for service conduits shall be of zinc coated steel.

3.1 EQUIPMENT GROUNDING:

a. All non–current–carrying metal parts, raceways, and enclosures of the electrical system and of equipment supplied through the electrical system shall be permanently and effectively grounded.

b. Equipment grounding conductors shall be provided for each feeder and for each branch circuit and shall be contained within the same raceways as the feeder and branch circuit conductors. The equipment grounding conductor shall be THWN insulated copper, not smaller than #12 AWG.

c. Copper bonding strips normally included in small sizes of liquid–tight flexible metal conduit and dependent upon the terminal connectors for bonding continuity will not be accepted in lieu of the equipment grounding conductors specified herein.

d. Where metal raceways enter sheet metal enclosures through knockouts provide bonding bushings and jumpers to the enclosure under any of the following conditions:

1. Voltage exceeds 250 volts to ground.

2. Branch circuit conduit exceeds 1" in size.

3. Feeder conduit regardless of voltage and size.

BOXES

1.1 MATERIALS AND APPLICATIONS:

a. Unless specifically noted or approved otherwise, boxes shall be of zinc coated steel or cast ferrous alloy as manufactured by Steel City, Raco, Crouse–Hinds, Appleton, or approved equal.

b. For exposed work on the exterior of the building, and in damp or wet interior locations, boxes shall be of cast metal with threaded conduit hubs and gasketed covers; or of zinc coated sheet steel of NEC gauge and size with screw fastened gasketed covers and threaded conduits hubs of zinc coated malleable iron and no knockouts or extraneous openings. Cover screws shall be stainless steel.

c. For exposed work Equipment Rooms; or, in other dry areas, 8 feet or more above a floor or platform, boxes 5" square and larger shall be NEC gauge and size of zinc coated sheet steel. 4" octagonal, 4" square and 4–11/16" square "knockout" boxes shall be of zinc coated steel, NEC gauge and size. Box extensions are not permitted on exposed "knockout" boxes, and covers shall be of the raised surface type. "Handy" boxes are not permitted.

GENERAL NOTES

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SOUTH CAROLINA
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No. 18963
PROFESSIONAL ENGINEER
MARK P. ARRINGTON
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REVISION DATE

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION
McKNIGHT · SMITH
WARD · GRIFFIN
ENGINEERS, INC.
No. C00926

2015-04

01/05/17

SPECIFICATIONS

E5.0

WIRING DEVICES

1.1 MANUFACTURERS:

a. Wiring devices and device plates shall be manufactured by General Electric, Hubbell, Bryant, Arrow Hart, Pass and Seymour, Leviton, or Eagle.

1.2 DEVICES AND PLATES – GENERAL:

a. Unless otherwise indicated or directed, devices shall be gray in color.

b. Unless otherwise indicated, plates for flush outlets shall be of #302 stainless steel. Those for surface cast boxes shall be of steel, of shape and finish to match the box. Screws shall be steel to match the plate.

c. Each device (including each switch) shall be equipped with a Hex–Head green grounding screw for grounding the device and plate to the outlet box and to the equipment grounding conductor run with the circuit conductors. "Self–Grounding" type mounting screws will not be accepted as the device grounding method.

1.3 SWITCHES:

a. Switches used for lighting control shall be rated 20 amps, 120–277 VAC, side wired, Pass and Seymour 521–G series.

b. Switches used for disconnecting small single–phase motors and appliances shall be rated 20 or 30 amps to match the branch circuit rating and comply with their horsepower ratings, 120–277 VAC, side wired, Pass and Seymour 521–G series and 30 ACI series.

c. Pilot lights shall be neon.

d. Weatherproof switches shall be equipped with stainless steel covers UL listed for wet locations with cover closed, Pass and Seymour WP–1.

1.4 RECEPTACLES:

a. Unless otherwise indicated or required, receptacles shall be the duplex type, side and back wired, with nylon face. On circuits supplying two or more such receptacles, they shall be rated 15 amps, 125 volts, NEMA 5–15R. Duplex receptacles on individual circuits shall be rated 20 amps, 125 volts, NEMA 5–20R.

b. Where no other features are indicated on the drawings provide Hubbell 5262 and 5362 series for 5–15R and 5–20R respectively.

c. Where indicated on the drawings provide Ground Fault Circuit Interrupter receptacles, Hubbell GF5262 and GF5362 series for 5–15R and 5–20R respectively.

d. Where indicated on the drawings provide Weatherproof receptacles consisting of Ground Fault Circuit Interrupter receptacles as specified above with stainless steel covers UL listed for wet locations with cover closed, Pass and Seymour WP–26.

MISCELLANEOUS MATERIALS

1.1 CONTROL RELAYS:

a. The relay coil shall operate satisfactorily with coil voltages within 85% to 110% of its voltage rating. Unless otherwise noted, contact rating shall be 10 amps, continuous for the applied voltage level.

b. Control relays shall be GE CR120 Series, or approved equal.

c. Time delay relays shall be electropneumatic Agastat Series 7000, or approved equal with on–delay or off–delay as required, potted coil for protection against moisture, and repetitive accuracy of plus or minus 5% on range of 5 to 200 seconds and 10% on range above 200 seconds.

d. Relays shall be installed in a suitable enclosure to fit the environment of their location.

1.2 CONTACTORS:

a. Contactors shall be "electrically held" or "mechanically held" type, as indicated on drawings.

b. Electrically held contactors shall include auxiliary contacts as indicated and line and load terminal connectors.

c. Mechanically held contactors shall be industrial type, single or dual solenoid operator, with mechanism capable of withstanding reduction or loss of control voltage without change of position. Contactor shall incorporate control power cut–out contacts so that the magnetic solenoid operator is only momentarily energized during the instant the switch changes position.

d. Contactor core and coil assembly, or operators, shall operate satisfactorily with coil voltage within 85% or 110% of its voltage rating.

e. All contacts shall be of non–welding, non–corroding silver alloy.

f. Rating of contactors shall be as indicated on drawings. Auxiliary relays shall be provided as applicable. Contactors shall be contained in a suitable enclosure for the environment of their location. Contactors shall be suitable for a continuous load not less than 100% of their electrical rating.

g. Contactors shall be Square D Type L or LX Series, or approved equal.

1.3 INDIVIDUAL PUSHBUTTONS, SELECTOR SWITCHES AND INDICATING LIGHTS:

a. Pushbuttons shall be heavy–duty, oil–tight, momentary or maintained contact, as applicable, devices rated 600 volts with the number of buttons and the marking of nameplates in accordance with NEMA Publication No. ICS.

b. Pushbuttons shall be designed with the indicated number of normally open circuit closing contacts, normally closed circuit opening contacts, or combination thereof. Pushbuttons shall have positive make and break non–welding, non–corroding silver alloy contacts.

c. Selector switches for control circuits shall be heavy–duty, oil–tight maintained contact devices with the number of positions and the marking of nameplates as indicated on drawings or otherwise specified.

d. Indicating lights for control circuits shall be oil–tight, instrument type devices with threaded base and collar for flush mounting and translucent convex lens. Indicating lights shall be long life type, rated 7500 hours, minimum. Provide Owner with two spare indicating lights of each size and type used.

e. Pushbuttons, selector switches and indicating lights shall be contained in an enclosure suitable for the environment of their location, and shall be Square D Class 9001, Type T Series, or equivalent as accepted by the A–E, and shall be Square D Class 9001, Type T Series, or approved equal.

1.4 CONTROL CIRCUIT TRANSFORMERS:

a. Control circuit transformers shall be provided within the enclosure of magnetic contactors when indicated on drawings or specified otherwise and the line voltage is in excess of 120 volts. The transformer shall be dry type single phase, 60 hertz alternating current with a 120 volt isolated secondary winding in accordance with NEMA Publication No. STL "Specialty Transformers".

b. The rated primary voltage of the transformer shall be not less than the rated voltage of the controller. The rated secondary current of the transformer shall be not less than continuous duty current of the control circuit.

c. The voltage regulation of the transformer shall be such that with rated primary voltage and frequency the secondary voltage will not be less than 95% or more than 105% of rated secondary voltage.

d. The source of supply for control circuit transformers shall be taken from the load side of the main disconnecting device. The primary and secondary windings of the transformer and control circuit wiring shall be protected against overloads and short circuits with properly selected fuses. The secondary winding of the control circuit transformer shall be grounded.

1.5 TIME SWITCHES:

a. Time switches for the control of tungsten–lamps loads, fluorescent –lamp loads, resistive heating loads, motors and magnetically operated devices shall consist of a digital programmable timer and switch assembly in a suitable enclosure, as indicated and herein specified.

b. Timer shall operate from either 120, 208, 240 or 277.

c. Battery reserve power shall be provided which will automatically operate the timer in case of electric power failure for a period of not less than 30 days.

d. The switch mechanism shall include a heavy–duty, general purpose, precision snap–action switch. Provision shall be made for manual "OFF" and "ON" operation of the switch.

e. Time switches shall be manufactured by Tork, Sangamo, General Electric, or approved equal.

f. Photo control devices shall be as manufactured by Tork, Sangamo, General Electric, or approved equal.

1.6 PHOTOCELL CONTROL DEVICES:

a. Photocell control devices for control of outdoor fixtures and natural daylight utilization for indoor spaces shall be fixture mounted or individually mounted as indicated on drawings, or otherwise specified.

b. Fixture mounted photocell control devices shall include a snap–action switch with a rating of not less than 1000 watts incandescent load and 1200 volt–amp reactive or HID load at rated voltage and frequency. Device also shall have an inherent time delay in excess of 5 seconds, built–in surge protection, and the appropriate lock type receptacle base. The device shall be enclosed in a weatherproof enclosure. Device rating shall be 120 or 277 volts, as applicable, 60 hertz. The device shall be factory preset to turn "ON" lights at approximately 3 foot–candles with a ratio of "ON" to "OFF" of about 1 to 2.

c. Individually mounted photo control devices shall have the same characteristics as fixture mounted devices, except that they shall be field adjustable for "ON" "OFF" operation from 2 to 50 foot–candles, have a capacity of up to 2000 watts of incandescent load, be outlet box mounted, and not require surge protection.

d. Photo control devices shall be as manufactured by Tork, Sangamo, General Electric, or approved equal.

1.7 WALL BOX DIMMERS:

a. Wall box dimmers shall be flush mounted, with built–in push–push switch and rotary dimming control, or sliding knob, as applicable. Dimmers shall be continuously rated for AC (60 hz) loads of wattage as shown on drawing, except that no single dimmer rating shall be less than 1000 watts. Dimmers required at the same location shall be ganged. The Contractor shall provide dimmers that once ganged shall be capable of handling the rating in watts indicated on drawings.

b. Incandescent dimmers shall be suitable for dimming 120 volt incandescent and resistive loads and shall be single pole or 3–way type as indicated on drawing. Dimmers shall be Lutron N series or equivalent.

c. Fluorescent dimmers shall be suitable for dimming 120 volt or 277 volt magnetic or electronic ballasted fluorescent lighting loads as indicated on the drawings. Provide single pole or 3–way type as indicated. When a fluorescent dimmer is required, suitable dimming ballasts, compatible with dimmer unit, shall be provided even if not specifically called for in the fixture schedule. Dimmers shall be Lutron NF series or equivalent.

1.8 PROGRAMMABLE LIGHT SWITCHES:

a. The digital time switch shall be programmable to turn lights off after a preset time.

b. Time switch shall be a completely self–contained control system. It shall have a ground wire and ground strap for safety. Switching mechanism shall be a latching air gap relay.

c. Time switch shall be compatible with all electronic ballasts, motor loads, compact fluorescent and inductive loads.

d. Time switch shall operate at universal voltages of 100–300 VAC; 50/60 Hz.

e. Time switch shall have no minimum load requirement and shall be capable of controlling 0 to 800 watt incandescent, fluorescent @ 100/120 VAC, 50/60 Hz; 0 to 1200 watts fluorescent @ 230/277 VAC, 50/60 Hz; 1/6 hp @ 125 VAC.

f. Time scroll feature shall allow manual overriding of the preset time–out period.

g. Time switch shall have the option for a one second light flash warning at five minutes before the timer runs out and twice when the countdown reaches one minute (when used to control lighting loads).

h. Time switch shall have the option for a beep warning that shall sound every five seconds once the time switch countdown reaches one minute.

i. Time switch shall have manual feature for timer reset where pressing the ON/OFF switch for more than 2 seconds resets the timer to the programmed time–out period.

j. Time switch shall have an electroluminescent backlit Liquid Crystal Display that shows the timer's countdown.

k. Time–out period shall be adjustable increments of 5 minutes from 5 minutes to 1 hour, and in increments of 15 minutes from 1 hour to 12 hours.

l. Time switch shall be capable of operating as an ON/OFF switch.

m. The time switch shall have a 100% OFF override switch with no leakage current to the load.

n. In the event there is an open circuit in the AC line such as a ballast or lamp failure, the time switch shall automatically switch to OFF mode.

o. Time switch shall have 5 year warranty and shall be UL and CUL listed.

1.9 SPECIAL ENCLOSURES:

a. Special enclosures designed in accordance with UL and NEMA Standards shall be provided as required to protect devices and equipment from wet, dusty, corrosive, hazardous or flammable atmospheres. Enclosures shall be NEMA Type 3R, 3S, 4X, 7, 9, 12, or 13 in accordance with the environment present in the specific location.

b. Enclosures shall be made of metal unless otherwise specifically noted.

c. NEMA Type 4X enclosure shall be made of corrosion–resistant, chromium nickel stainless steel conforming with UL Standard No. 50 "Cabinet and Boxes".

d. NEMA Type 7 and 9 enclosures shall be made of cast iron, bolted–type UL listed for the use intended. Cast metal enclosures shall be not less than 1/8" thick at every point, except that it shall be not less than 1/4" thick at tapped holes for conduits.

1.10 OCCUPANCY SENSORS:

a. Occupancy sensors shall be provided where indicated on the drawings. Sensors shall be the dual technology type suitable for sensing both passive infrared and ultrasonic waves type, complete with a self–contained power/switch unit to avoid the need for low–voltage wiring to a remote sensor. Each sensor shall have a time delay circuit adjustable from 6 – 15 minutes with a shortened 30 second time delay feature for set–up purposes and a manual time delay bypass feature. In addition, each sensor shall have a LED walk test indicator for set–up purposes.

b. The power/switch pack shall consist of a control transformer and rectifier circuit and a relay with contacts rated 277 VAC, 20 Amp, 4800 Watts.

c. The sensor shall be sensitive to 9 – 10 micron/meter wave length infrared heatwaves.

d. Upon detection of the heatwaves or motion, the relay contacts shall instantly close to activate the room lighting. The contacts shall remain closed until no motion or presence of waves is sensed for the full length of time set by the adjustable time delay circuit.

e. The sensor shall be ceiling mounted and located as recommended by the manufacturer. The sensor shall be provided complete with all necessary hardware, brackets, special boxes and covers.

f. Unless otherwise indicated, all fluorescent lighting within the room where the occupancy sensor is located shall be controlled by the occupancy sensor.

g. Occupancy sensors shall provide 95% coverage of space where shown. Provide additional sensors as required to achieve this coverage.

h. Submit layout of all occupancy sensors specific for this project as developed by the sensor manufacturer prior to installation of sensors.

SECONDARY DISTRIBUTION EQUIPMENT

1.1 OVERCURRENT PROTECTION DEVICES:

a. Unless otherwise indicated, circuit breakers shall be provided as the overcurrent protection devices for services, separately derived systems, feeders, and branch circuits. Fuses may be used only where indicated on the drawings, or required by the nameplate for equipment connected, or specified herein.

b. Molded–case and insulated–case circuit breakers shall be the static or thermal–magnetic type, quick–make and quick–break for manual and automatic operation. Multipole breakers shall be common trip. Circuit breakers shall be bolted in place where possible. Thermal–magnetic breakers shall be calibrated at 40oC. or ambient compensated. Ampere ratings, frame sizes, and short circuit ratings shall be as indicated on the drawings. Series ratings may be applied only where specifically indicated on the drawings. Individual enclosures shall be NEMA 1 indoors, 3R outdoors, unless otherwise indicated. Other circuit breakers shall be suitable for installation in Switchboards, Panelboards, and Motor Control Centers as hereinafter specified.

c. Single–pole 15 and 20 amp circuit breakers shall be SWD rated.

d. Fuses shall be the non–renewable, time delay, cartridge type, UL Class RK5 unless otherwise indicated; for installation in Safety Switches, Panelboards, Switchboards, and/or Motor Control Centers as hereinafter specified.

1.2 SWITCHING EQUIPMENT:

a. Fusible switches shall be incorporated into Safety Switches, as hereinafter specified. Manual operation shall be quick–make and quick–break. Fuse holders shall be the Class R rejection type unless otherwise indicated.

b. Safety Switches shall be the NEMA heavy duty type, horsepower rated, with interlocked covers, non–fusible except where fused switches are indicated or fuses are required. Switch mechanisms shall be quick–make and quick–break. Enclosures shall be NEMA 1 indoors, NEMA 3R outdoors unless otherwise indicated. Fuse holders, where required, shall be as specified above for fusible switches.

c. Switches for disconnecting small single–phase motors and appliances shall comply with SECTION 16150 WIRING DEVICES.

2.1 INSTALLATION:

a. Distribution Equipment shall be installed in strict accordance with the manufacturer's instructions for handling, support, connections, assembly, protection, energization, adjustment, and similar procedures.

b. Fastening methods shall comply with SECTION 16100 BASIC MATERIALS AND METHODS.

c. Floor mounted equipment such as Switchboards, Motor Control Centers, and Dry–Type Transformers shall be provided with 4" high concrete pads and shall be secured to the concrete pad. Pads shall have a 3/4 inch chamber on each accessible side.

d. Equipment interiors shall be thoroughly cleaned of dust, dirt, trash, and other foreign material prior to energization of the equipment.

e. Exterior Safety Switches that are readily accessible to unauthorized persons shall have their covers padlocked closed by the Contractor. Keys shall be identified and delivered to the Owner.

f. Upon completion or the project, furnish to the Owner one complete set of replacement fuses, consisting of three fuses of each type and rating used.

g. Directory cards for Panelboards and for group mounted Switchboard sections shall be neatly filled–in with a typewriter to indicate the type and location of the load on each circuit or feeder.

PANELBOARDS

1.1 SUBMITTALS:

a. Submit for approval panelboard shop drawings which include as a minimum the following information:

1. Cabinet dimensions.
2. Mounting requirements.
3. Bussing arrangement.
4. Circuit breaker arrangement.
5. Accessories.

2.1 BRANCH CIRCUIT PANELBOARDS:

a. Equipment shall be built to NEMA Standard PB–1, UL Standards UL50 and UL67, and NEC requirements.

b. Panelboard backboxes shall be constructed of galvanized sheet steel and shall be securely fabricated with screws, bolts, rivets, or by welding. Backboxes shall be a minimum 20" wide and 5–3/4" deep, unless noted otherwise, and heights shall not exceed 72" overall. Top or bottom gutter space shall be increased 6" where feeder loops through panel. End plates shall be supplied without knockouts.

c. Covers shall be constructed of high grade flat sheet steel with:

1. Door–in–door construction shall be provided. The inside hinge door shall allow access to device handles only. Door shall close flush with cover and against a full inside trim stop. Hinges shall be inside type. The outer hinged door shall allow access to wiring gutter.

2. A flush latch and tumbler type lock, so panel door may be held closed without being locked. All such locks shall be keyed alike. Furnish to the Owner two keys with each lock, or a total of 10 keys for the project.

3. Four or more cover fasteners of a type which will permit mounting plumb on box. Cover shall also have inside support studs to rest on lower edge of backbox while being fastened. For flush mounted panelboards, cover fastening hardware shall be concealed behind the hinged door.

d. Panelboard phase and neutral bus buswork shall be of copper. A copper ground bus shall be provided in each panel.

e. Minimum short circuit rating of any panelboard assembly shall be 10,000A. Furnish panelboards with higher rating where so noted or where evidently intended by specification of circuit breakers with higher interrupting capacity.

f. Ampacity of mains shall be equal to, or greater than, the ampacity of the feeder unless otherwise indicated.

g. Where drawings schedules indicate spaces for addition of future circuit breakers, furnish all necessary buswork, strap, brackets, hardware, and removable blank covers.

h. Breakers in panelboards shall be physically arranged in locations shown in panel schedules on the drawings where possible. They shall be connected to the phases as shown.

i. Unless otherwise indicated and where available for the panelboard type specified, circuit breakers shall be of the bolt–on type.

2.2 DISTRIBUTION PANELBOARDS

a. Panelboards required to have two or more subfeed breakers rated 100 amperes or greater shall be Distribution Type.

b. Description: NEMA PB 1, circuit breaker type.

c. Panelboard Bus: Copper. One continuous fully rated bus bar per phase with ratings as indicated. Provide copper ground bus and aluminum neutral in each panelboard equipped with lugs to accommodate all conductors to be connected. Unless otherwise noted, neutral bus shall be sized 100% of phase bus rating and the ground bus shall be sized a minimum of 25% of the phase bus rating. Where more than one ground bar is furnished, each ground bar will be interconnected with a conductor sized not less than the panelboard feeder ground conductor. Ground bar shall be bonded to enclosure.

d. Interior trim shall be dead front construction. Main lugs shall be mounted in the mains compartment.

e. Main circuit breaker and main lug interiors shall be field convertible for top or bottom incoming feed.

f. Enclosure: NEMA PB 1, Type 1 unless otherwise indicated on drawings. In compliance with UL 50.

1. Panelboard backbox shall be constructed without pre–punched knockouts.

2. Cabinet front shall be a four piece surface trim for surface mount standard. Where specifically indicated on the drawings, either a single hinged door or door–in–door construction shall be provided. For door–in–door construction, the inner hinged door shall allow access to the device handles only and the outer hinged door shall allow access to wiring gutter.

3. Enclosure and front shall be either galvanized steel or stainless steel and shall be finished in manufacturer's standard gray enamel.

4. The enclosure shall be minimum 26 inches wide.

g. Minimum fully rated short circuit rating: RMS symmetrical amperage shall be minimum 22,000 amperes unless otherwise indicated on drawings.

h. Molded Case Circuit Breakers: NEMA AB 1, UL 489 listed circuit breakers.

GENERAL NOTES

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SOUTH CAROLINA REGISTERED No. 18963 PROFESSIONAL ENGINEER MARK P. ARRINGTON 01-05-17

REVISION	DATE

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

2015-04	
01/05/17	
SPECIFICATIONS	

SOUTH CAROLINA REGISTERED McKNIGHT · SMITH WARD · GRIFFIN ENGINEERS, INC. No. C00928 CERTIFICATE OF AUTHORIZATION

E5.1

LIGHTING FIXTURES AND ACCESSORIES

1.1 SCOPE:

a. The Contractor shall furnish and completely install Lighting Fixtures and Accessories as indicated on the drawings and as herein specified.

b. All fixtures shall be equipped with lamps.

c. A lighting fixture shall be provided for each lighting outlet indicated. Outlets lacking fixture designations shall be brought to the attention of the Architect/Engineer before submitting proposal; otherwise units selected by the Architect/Engineer shall be furnished and installed at no additional charge.

1.2 SUBMITTALS:

a. Submit for approval complete manufacturer's data sheets for all fixtures. Indicate all components, characteristics, and options.

b. Submit for approval manufacturer's data sheets for all lamps to be furnished.

c. Submit for approval Lighting Fixture samples as requested by the Architect/Engineer. Samples shall be equipped with lamps, cords, plugs, and ballasts for 120 volt operation.

2.1 LIGHTING FIXTURES:

a. All fixtures shall be labeled by Underwriters' Laboratories, Inc.

b. It is the Contractor's responsibility to properly determine and provide correct components, accessories, and hardware required for the installation.

c. Plastic materials indicated to be "acrylic" shall be of 100% virgin methyl methacrylate producted by Rohm and Haas, DuPont, or Cyanimid.

d. Recessed Fixtures (Troffers) shall conform to the following minimum requirements unless modified by notes and schedules on the Drawings:

1. Housings shall be of 4–3/8" minimum, 5" maximum depth, and of 22 gauge minimum steel, with deeply formed transverse ribs for rigidity, primed, and finished in baked white enamel. The use of pre–painted steel is acceptable.

2. Lenses shall be of flat clear K–12 type acrylic of .125" nominal (.115" minimum) thickness in rigid hinged steel or extruded aluminum door frames finished in baked white enamel and secured with inconspicuous spring–loaded or rotary cam type steel latches. Lenses shall be maintained in a flat position with invisible clips, and shall be removable from the door frames using a screwdriver without damaging the lens or the frame.

3. Joints between housings and door frames shall be totally free of light leaks. Gaskets, if used, shall be invisible and in compression when the door is closed. Gasketing material subjected to rubbing when the door is opened or closed will not be accepted. Flexible and/or removable black baffles will not be accepted.

4. Top access plates to facilitate wiring are optional with the Contractor. Each fixture shall be individually connected to a concealed junction box with #16 TFN conductors in 6 feet of 3/8" flexible metal conduit.

5. Troffers for inverted tee exposed grid ceilings shall be designed to be raised through the ceiling opening, and be supported and framed by the ceiling tees. They shall be secured to the ceiling grid with four "earthquake clips" furnished by the fixture manufacturer.

6. Troffers for plaster and gypsum board ceilings shall be furnished with plaster frames.

7. Troffers for ceilings with concealed suspension systems including plaster, gypsum board, and acoustical tile shall be equipped with suitable adjustable yokes or brackets designed to hook onto the plaster frame or ceiling channels, prevent the channels from spreading, and support the fixture.

8. Fixtures shall be a regularly cataloged and commonly manufactured product of an established, recognized lighting fixture manufacturer, with published photometric data and Zonal Cavity Coefficients of Utilization based on tests conducted by an independent photometric testing laboratory. Tests and calculations shall be in accordance with current IES standards.

2.2 LED DRIVERS:

a. General
1. Ten–year operational life while operating at maximum case temperature and 90 percent non–condensing relative humidity.
2. Designed and tested to withstand electrostatic discharges up to 15,000 V without impairment per IEC801–2.
3. Electrolytic capacitors to operate at least 20 degrees C below the capacitor's maximum temperature rating when the driver is under fully–loaded conditions and under maximum case temperature.
4. Maximum inrush current of 2 amperes for 120V and 277V drives.
5. Withstand up to a 4,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
6. Manufactured in a facility that employ ESD reduction practices in compliance with ANSI/ESD S20.20.
7. Class A Sound Rating – Inaudible in a 27 dBA ambient.
8. No visible change in light output with a variation of plus/minus 10 percent line voltage input.
9. Total Harmonic Distortion less than 20 percent and meet ANSI C82.11 maximum allowable THD requirements.
10. Drives to track evenly across:
a. Multiple fixtures.
b. All light levels.
11. Constant current drives must provide models to:
a. Support from 200mA to 2.1 Amps (in 10mA steps) to ensure a compatible driver exists.
b. Support LED arrays up to 40W or 50W (710mA to 1.05A in 10mA steps).
12. Constant voltage drives must provide models to:
a. Support from 10V to 40V (in 0.5V steps) to ensure a compatible driver exists.
b. Support LED arrays up to 40W.
13. Configuration tool must be available to optimize the following for LED fixtures:
a. Light level.
b. Efficacy.
c. Thermal performance.
14. Driver must be capable of operating from a supply voltage of 120 through 277VAC at 60Hz for digitally addressable and 3–wire models.

b. 3–Wire Control
1. Continuous dimming from 100 percent to 1 percent relative light output.
2. Provide integral fault protection to prevent driver failure in the event of an input mis–wire.

c. Digitally Addressable Control
1. Continuous dimming from 100 percent to 1 percent relative light output.
2. Ability to operate with installed or specified building control system.
3. Lights automatically return to the setting prior to power interruption.
4. Each driver responds independently to:
a. Up to 32 occupant sensors.
b. Up to 16 daylight sensors.
5. Responds to digital load shed command.
a. Sets high end trim.
b. Automatically scales light output proportional to load shed command.

d. Forward Phase Control (Neutral Wire Required)
1. Continuous dimming from 100 percent to 1 percent relative light output.

3.1 COORDINATION:

a. Contractor shall verify ceiling or wall type in or on which each fixture is to be mounted, and shall furnish unit with appropriate trim type, mounting hardware, and accessories to fit the construction; and feed through junction boxes as required to maintain proper access to system wiring.

3.2 INSTALLATION:

a. Lighting fixtures shall be installed in accordance with the manufacturer's instructions.

b. Lighting fixtures shall be supported from the building structure using corrosion resistant steel hardware. 10 gauge minimum steel wire may be used for support from the structure where concealed above suspended ceilings.

c. In addition to the supports from the structure, fixtures shall also be secured to suspended ceilings on which they are mounted, or in which they are recessed. Where fixtures are secured to suspended ceilings, the primary supports from the building structure shall be slack.

d. A minimum of two supports from the structure shall be provided for each lighting fixture unless otherwise indicated or approved by the Architect/Engineer. The supports shall be located at diagonal corners of rectangular fixtures.

e. Where installed recessed in grid type ceilings, attach each fluorescent fixture to the grid with a minimum of four "earthquake clips" furnished by the Lighting Fixture manufacturer.

f. Conductors in fixture taps shall be #16 AWG minimum, type TFN, in 3/8" flexible metal conduit of 72" maximum length. A green insulated equipment grounding conductor shall be included.

g. Mount fixtures plumb and square. Keep rows in perfect line.

h. At time of project completion, fixtures and lamps shall be clean and fully operational.

EXTENSION OF EXISTING FIRE ALARM SYSTEM, ADDRESSABLE

1.1 SCOPE:

a. Contractor shall extend the building's existing Fire Detection and Alarm System as indicated on the drawings and as specified herein.

b. Extension shall include all devices, wiring, equipment, raceways, and connections required for a complete and satisfactorily operating system, whether or not every such item is specifically shown or mentioned.

c. All initiation devices shall be analog addressable devices. The notification devices shall be installed where required to meet ADA, NFPA 72 and the North Carolina State Building Code.

d. All devices and installation methods used shall match that of the existing system.

1.2 CONTRACTOR QUALIFICATIONS:

a. Equipment and materials shall be provided by a factory–authorized distributor to ensure proper specification adherence, final connection, test, turnover, warranty compliance, and service. The factory–authorized distributor is required to have been in the fire alarm industry (service and installation) for a minimum of 5 years.

1.3 SUBMITTALS:

a. Shop drawings shall be submitted for each item of equipment to be furnished.

b. Submittal shall include a complete wiring and conduit diagram overlaid on a building floor plan system battery calculations and notification circuits voltage drop calculations, prepared by an authorized representative of the system manufacturer. Diagram shall indicate conductor sizes, quantities, and color coding for each conduit run, as well as required conduit sizes.

1.4 CLOSEOUT DOCUMENTS:

a. Complete set of record wiring schematics, drawn to scale; showing all device locations, wire routing and connections, etc. shall be provided prior to final inspection.

b. Warranty Statement from the manufacturer: Warranty statement will state the period of warranty for all of the products proposed for the project, and shall include the name and address of the authorized manufacturers' agent who will honor any and all warranty claims.

c. A scaled plan of the building showing the placement of each individual item of fire alarm equipment as well as raceway size and routing, junction boxes, and conductor size, quantity, and color in each raceway.

1.5 SYSTEM FUNCTION:

a. In general, system function shall be as evidently intended by selection of equipment indicated herein.

b. Activation of any manual station, smoke detector, sprinkler system flow switch, or other alarm initiating device shall cause:

1. The sounding of audible signals throughout the facility.

2. The flashing of alarm indicating signal lights.

3. Indication of the alarm condition at the control panel indicating type of alarm (e.g. whether manual station, smoke detector, etc.) as well as location of initiating device.

4. Release of magnetic door holders, shut–down of air handling systems, closing of smoke dampers and other control functions as indicated or required.

5. A local sounding device in the panel shall be activated.

6. Activation (Alarm, Trouble, Supervisory) of the existing Fire Alarm System remaining for the existing building.

7. All automatic programs assigned to the alarm point shall be executed and the associated notification appliance circuits and control relays addressed and activated.

8. Other functions as noted on the drawings or as evidently intended or required.

c. All strobes shall be synchronized in common spaces.

d. Provide a horn silence function with an adjustable delay of 2 minutes to 15 minutes. Delay shall prevent silence function from engaging. Silence function shall be manually activated only and shall not prevent visual alarm from flushing.

3.1 INSTALLATION:

a. Wiring shall be in accordance with manufacturer's recommendations for proper system operation.

b. Cable for monitoring and control of addressable devices shall be not less than a #18 AWG twisted shielded pair. Unless specifically noted or approved otherwise, other conductors shall be of stranded copper not smaller than #14 AWG, with THWN/THHN insulation.

c. All wiring shall be in metal raceway, unless specifically shown otherwise. Raceways shall be sized for the wiring requirements of the system proposed, with maximum conduit fill of 40%.

d. Wall–mounted system devices shall be flush mounted where construction permits. Where necessary and approved by the Architect/Engineer, surface mounting enclosures may be utilized. Contractor shall coordinate trim types.

e. Automatic detectors shall be located at least three feet from any HVAC diffuser.

f. All junction and connection boxes shall be painted red for easy identification.

g. Field connected devices must be installed and wired by a factory– trained and authorized fire alarm system Sub–Contractor or a licensed Electrical Contractor under direct supervision of a factory–trained and authorized fire alarm system Sub–Contractor.

h. All auxiliary Power Supplies or other Fire Panels shall be located in electrical or mechanical rooms. They shall be mounted at a height between 48 to 60 inches from floor level. All such panels shall be "supervised" by the main Fire Alarm Panel.

i. All communications with remote fire alarm system monitoring shall continue to be performed by the existing fire alarm system. The new fire alarm system shall notify the existing system with all alarm, trouble and supervisory signals. In addition, the existing fire alarm system shall notify the new fire alarm system with all alarm trouble and supervisory signals.

3.2 MANUFACTURER'S RESPONSIBILITIES:

a. Final system connections shall be made by or under the direct supervision of an authorized representative of the manufacturer, who shall verify to the Architect/Engineer that the system has been left in full and proper operating condition.

b. Manufacturer shall supply a 2 year warranty from date of manufactured Control System and Field Devices and appliances.

3.3 SURGE PROTECTION AND GROUNDING:

a. All equipment shall be properly grounded. Main panel shall be grounded directly to 'earth ground'. Surge protection and lightning arrestors shall be installed on the AC supply and all initiating, notification and monitoring circuits. All surge protection shall be Ditek or equivalent.

1. Ditek DTK–LVLP Series for low voltage data and signal line protection.

2. Ditek DTK–HW Series for hard wire AC protection for 120 VAC.

3.4 SYSTEM TEST AND CERTIFICATION/DEMONSTRATION:

a. The fire alarm system shall be fully tested in compliance with Testing Procedures for Signaling Systems (NFPA 72) under the supervision of a trained manufacturer's representative. The system shall be demonstrated to perform all the functions as specified.

b. The Fire Alarm System Sub–Contractor shall test:

1. Every alarm initiating device for proper response and program execution.

2. Every notification appliance for proper operation and audible/visual output.

3. All auxiliary control functions such as elevator capture, smoke door and damper release, and functional override of HVAC, ventilation, and pressurization controls.

GENERAL NOTES

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A RENOVATION TO THE

HAMPTON STREET AUDITORIUM

WALTERBORO, SC

SOUTH CAROLINA
McKNIGHT · SMITH · WARD · GRIFFIN ENGINEERS, INC.
No. C00926
CERTIFICATE OF AUTHORIZATION

2015-04
01/05/17
SPECIFICATIONS

E5.2