SUPPLY DIFFUSER SCHEDULE

(A/100) DESIGNATES LABEL FOR DIFFUSER TYPE DESIGNATES CFM QUANTITY FOR DIFFUSER		ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.	

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS PCS-AA	6"ø	0 - 100	12X12 PERFORATED FACE
B	TITUS PCS-AA	6"ø	0 - 125	24X24 PERFORATED FACE
C	TITUS PCS-AA	8"ø	130 - 200	24X24 PERFORATED FACE
D	TITUS PCS-AA	10"ø	205 - 325	24X24 PERFORATED FACE
E	TITUS PCS-AA	12"ø	330 - 450	24X24 PERFORATED FACE
F	TITUS PCS-AA	14"ø	455 - 600	24X24 PERFORATED FACE

NOTE:
ALL SUPPLY DIFFUSERS SHALL BE PROVIDED WITH 4-WAY INTERNAL DEFLECTORS AND SHALL BE INSTALLED WITH A SURFACE MOUNT BORDER TYPE 1. ALL INTERNAL DEFLECTORS SHALL BE 4-WAY UNLESS INDICATED OTHERWISE ON PLAN WITH DIRECTIONAL ARROWS.

RETURN GRILLE SCHEDULE

(1/100) DESIGNATES LABEL FOR GRILLE TYPE DESIGNATES CFM QUANTITY FOR GRILLE		FILTER SHALL BE PROVIDED AT UNIT.	

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 8F	10X10	0 - 395	PERFORATED FACE
2	TITUS 8F	12X12	400 - 600	PERFORATED FACE
3	TITUS 8F	18X18	605 - 1000	PERFORATED FACE
4	TITUS 8F	24X24	1005 - 1725	PERFORATED FACE
5	TITUS 8F	24X48	1730 - 3000	PERFORATED FACE

H.V.A.C. ABBREVIATION LEGEND

A/C	AIR CONDITIONER	REV.	REVISION	A.H.U.	AIR HANDLING UNIT
DN.	DOWN	N.T.S.	NOT TO SCALE	D.G.	DOOR GRILLE
EXH.	EXHAUST	MFGR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER	F/A	FRESH AIR
F.F.	FINISH FLOOR	REG.	REGISTER	S.P.	SAFE PAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	CD.	CONDENSATE DRAIN

SPECIFIC MECHANICAL NOTES

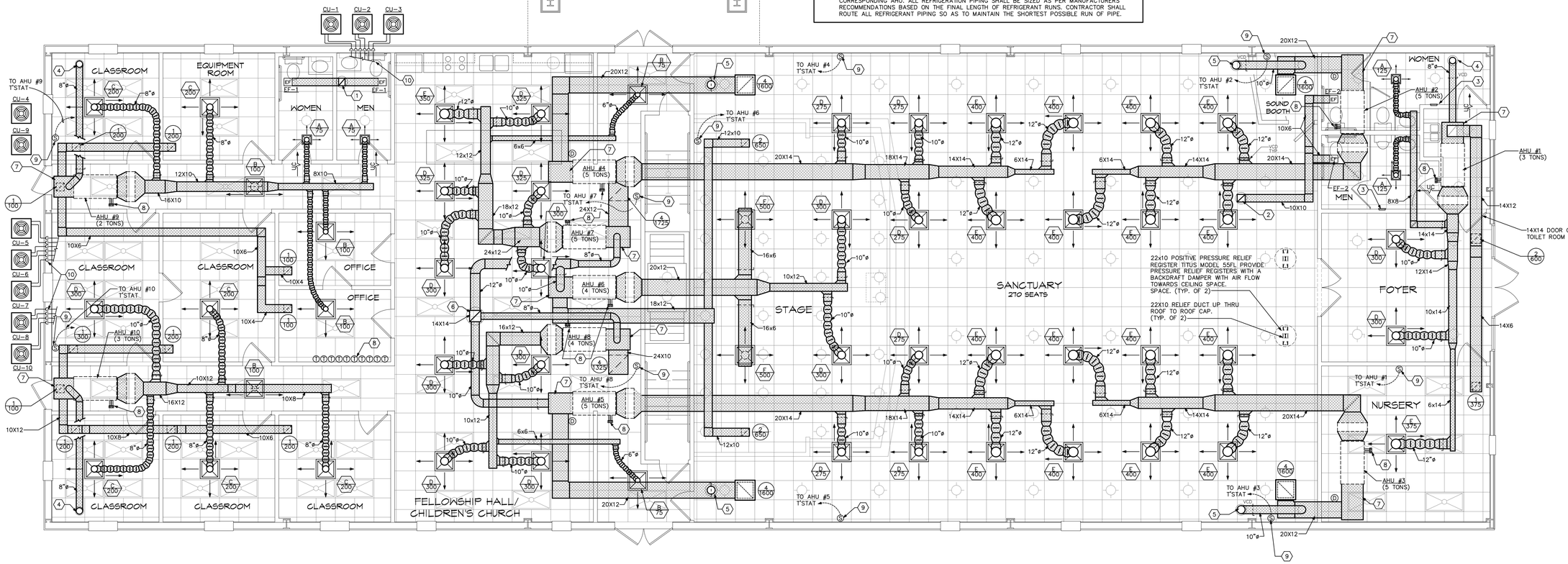
1. 10X6 EXHAUST DUCT UP THRU ROOF TO ROOF CAP.
2. 10X10 EXHAUST DUCT UP THRU ROOF TO ROOF CAP.
3. WALL MOUNTED ELECTRIC HEATER SHALL BE A "QMARK" GRAINGER STOCK NO. 3UG14, 2.0 KW, 8.3 AMPS, 240V/1ø.
4. 8"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
5. 10"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
6. 14X14 OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
7. RETURN AIR PLENUM FULL SIZE OF AHU RETURN AIR OPENING.
8. MAIN BANK OF THERMOSTATS SHALL BE LOCATED IN THIS AREA. CONTRACTOR SHALL PROVIDE WALL MOUNTED LABEL BENEATH EACH THERMOSTAT WHICH INDICATE THE FOLLOWING:
   - AHU #1 THERMOSTAT: "FRONT NURSERY / FOYER / TOILET ROOMS"
   - AHU #2 THERMOSTAT: "BACK SANCTUARY (NORTH)"
   - AHU #3 THERMOSTAT: "BACK SANCTUARY (SOUTH)"
   - AHU #4 THERMOSTAT: "FRONT SANCTUARY (NORTH)"
   - AHU #5 THERMOSTAT: "FRONT SANCTUARY (SOUTH)"
   - AHU #6 THERMOSTAT: "STAGE"
   - AHU #7 THERMOSTAT: "FELLOWSHIP HALL (NORTH)"
   - AHU #8 THERMOSTAT: "FELLOWSHIP HALL (SOUTH)"
   - AHU #9 THERMOSTAT: "CLASSROOM / OFFICES (NORTH)"
   - AHU #10 THERMOSTAT: "CLASSROOMS (SOUTH)"

   * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. COORDINATE FINAL LOCATION OF ALL THERMOSTATS WITH OWNER PRIOR TO CONSTRUCTION.
   THERMOSTAT SHALL BE A "LENNOX" INNOVATOR PROGRAMMABLE THERMOSTAT MODEL T8621D, 2 HEAT/2 COOL 7 DAY OR APPROVED EQUAL. REMOTE TEMPERATURE SENSOR SHALL BE AS PER MANUFACTURERS RECOMMENDATIONS.
8. "LENNOX" CONCENTRIC VENT/INTAKE COMBUSTION AIR TERMINATION KIT.
9. SURFACE WALL MOUNTED REMOTE TEMPERATURE SENSOR WIRED TO CORRESPONDING AHU THERMOSTAT. MOUNT 5'-0" ABOVE FINISHED FLOOR.
10. REFRIGERANT PIPING SHALL ROUTE UP IN EXTERIOR WALL TO ATTIC SPACE. OFFSET IN ATTIC TO CORRESPONDING AHU. ALL REFRIGERATION PIPING SHALL BE SIZED AS PER MANUFACTURERS RECOMMENDATIONS BASED ON THE FINAL LENGTH OF REFRIGERANT RUNS. CONTRACTOR SHALL ROUTE ALL REFRIGERANT PIPING SO AS TO MAINTAIN THE SHORTEST POSSIBLE RUN OF PIPE.

HVAC SYMBOLS LEGEND

(S)	REMOTE TEMPERATURE SENSOR
(T)	THERMOSTAT
(EF)	EXHAUST FAN
A A	SECTION "A"-"A"
(B)	REMOTE BULB SENSOR
(D)	DUCT SMOKE DETECTOR
	TRANSITION
	TURNING VANE
	45° BRANCH DUCT TAKE-OFF
FFD	FIRE DAMPER
VCD	VOLUME CONTROL DAMPER
	RETURN REGISTER
	SUPPLY DIFFUSER
	RETURN AIR GRILLE
	SUPPLY REGISTER
	AIR FLOW DIRECTION
	ROOF MTD. EXH. FAN
	DUCT TURN DOWN
	DUCT TURN UP
	FLEXIBLE DUCT

DTIVE-THRU



1 FLOOR PLAN - MECHANICAL

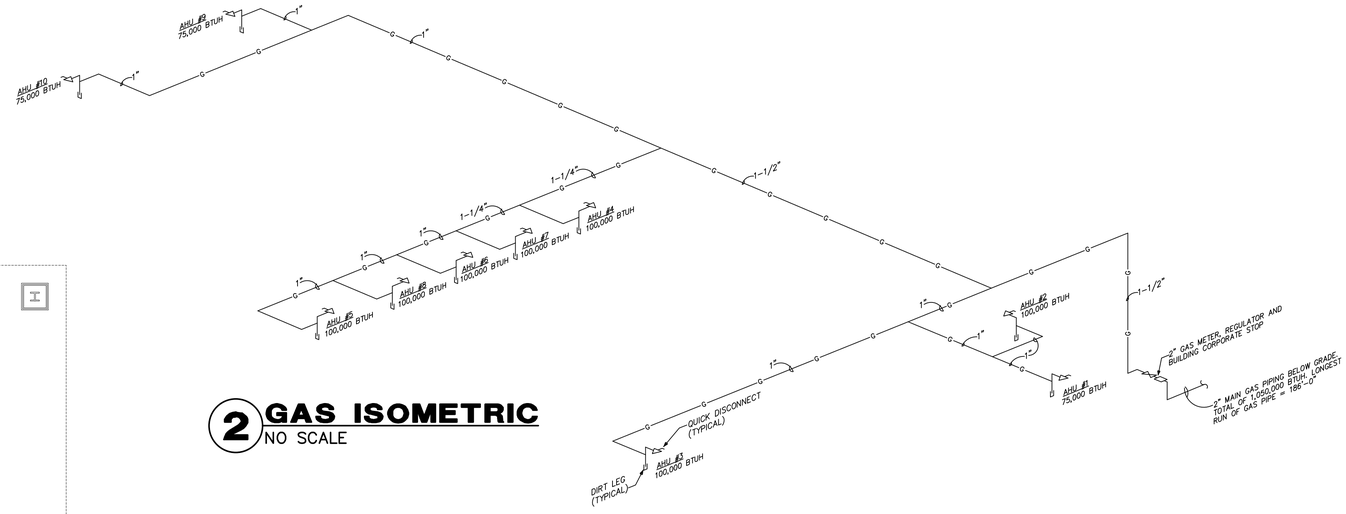
SCALE: 3/16"=1'-0"

NORTH

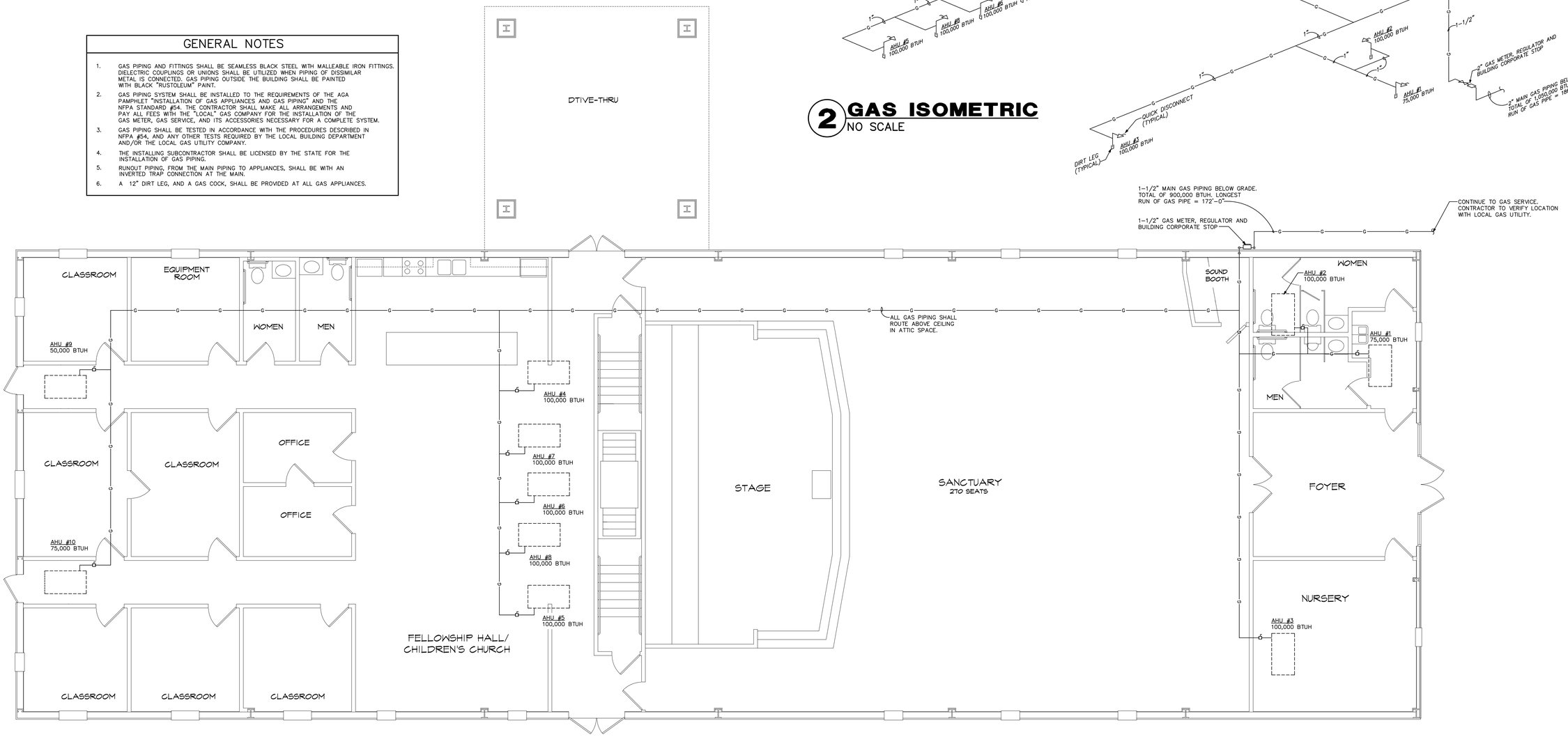
M1

GENERAL NOTES

1. GAS PIPING AND FITTINGS SHALL BE SEAMLESS BLACK STEEL WITH MALLEABLE IRON FITTINGS. DIELECTRIC COUPLINGS OR UNIONS SHALL BE UTILIZED WHEN PIPING OF DISSIMILAR METAL IS CONNECTED. GAS PIPING OUTSIDE THE BUILDING SHALL BE PAINTED WITH BLACK "RUSTOLEUM" PAINT.
2. GAS PIPING SYSTEM SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET "INSTALLATION OF GAS APPLIANCES AND GAS PIPING" AND THE NFPA STANDARD #54. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND PAY ALL FEES WITH THE "LOCAL" GAS COMPANY FOR THE INSTALLATION OF THE GAS METER, GAS SERVICE, AND ITS ACCESSORIES NECESSARY FOR A COMPLETE SYSTEM.
3. GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA #54, AND ANY OTHER TESTS REQUIRED BY THE LOCAL BUILDING DEPARTMENT AND/OR THE LOCAL GAS UTILITY COMPANY.
4. THE INSTALLING SUBCONTRACTOR SHALL BE LICENSED BY THE STATE FOR THE INSTALLATION OF GAS PIPING.
5. RUNOUT PIPING, FROM THE MAIN PIPING TO APPLIANCES, SHALL BE WITH AN INVERTED TRAP CONNECTION AT THE MAIN.
6. A 12" DIRT LEG, AND A GAS COCK, SHALL BE PROVIDED AT ALL GAS APPLIANCES.



2 GAS ISOMETRIC
NO SCALE



NOTE:
ALL GAS PIPING IS SIZED BASED ON GAS PIPING WITH AND INITIAL PRESSURE OF 1.0 PSI AND A GAS OF 0.6 SPECIFIC GRAVITY.

1 FLOOR PLAN - GAS PIPING
SCALE: 3/16"=1'-0"

NORTH

GENERAL MECHANICAL NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS; SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1 MECHANICAL REFRIGERATION. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
2. THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
3. THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES. TO INSURE AND ORDERLY PROGRESS OF THIS WORK.
4. THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT.
5. CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE [5] COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT.
6. ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
7. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH 1" INSULATION WITH A 4.2 R VALUE OR HIGHER.
8. ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
9. DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
10. ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE TITUS, METALAIRE, AIRGUIDE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
11. REFER TO SPECIFIC MECHANICAL NOTES ON SHEET M-1 FOR THERMOSTAT SPECIFICATIONS AND LOCATIONS.
12. REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS, USE 95/5 SOLDER. REFRIGERANT LINES SHALL SIZED AS PER MANUFACTURER RECOMMENDATIONS.
13. ARMAFLEX 3/4" INSULATION SHALL BE USED FOR SUCTION LINES, FILTER/DRYER AND SIGHT GLASS SHALL BE PROVIDED AT LIQUID LINES.
14. ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS. ALL ELBOWS AND TEE'S MUST BE FURNISHED W/TURNING VANES. PROVIDE 45° BRANCH TAKE-OFF AS PER BRANCH DUCT TAKE-OFF DETAIL.
15. PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
16. PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON PLENUM OF 2000 CFM OR ABOVE. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
17. PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, TENANT SEPARATION, PARTITIONS, FLOOR OR ROOF SLABS AND AT O/A INTAKES. PROVIDE RADIATION RADIATION DAMPERS IN RATED CEILINGS FOR ALL CEILING OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY.
18. HVAC CONTRACTOR SHALL PROVIDE AN INDEPENDENT TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHU'S AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (°F) FROM SUPPLY GRILLS AND EVAPORATORS.
19. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEERS BEFORE INSTALLATION.
20. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
21. MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
22. NO COMBUSTIBLE MATERIALS ARE ALLOWED IN RETURN AIR PLENUMS OR ABOVE CEILINGS USED AS RETURN AIR PLENUM. IF SPACE WITH RETURN AIR PLENUM HAS ANY DECK TO DECK PARTITIONS, AIR TRANSFER DUCTS MUST BE INSTALLED.
23. REFER TO PLUMBING PLANS FOR ALL CONDENSATE PIPING.
24. IF PROJECT IS A REMODEL OF AN EXISTING BUILDING, THE CONTRACTOR SHALL VISIT JOB SITE PRIOR TO CONSTRUCTION AND COORDINATE ALL EXISTING FIELD CONDITIONS. ARCHITECT AND/OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.
25. CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND A SUSTAINED 120 MPH WIND WITH A GUST FACTOR OF 30%. PROVIDE A LISTED PRE-ENGINEERED ASSEMBLY, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CERTIFICATION OF ROOF MOUNTING.
26. PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
27. THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE TENANT. THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
28. IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO FORM A GUIDE FOR A COMPLETE INSTALLATION. EVERYTHING NECESSARY FOR THE COMPLETION AND SUCCESSFUL OPERATION OF THE WORK, WHETHER OR NOT HEREIN DEFINITELY SPECIFIED OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED AS WELL AND AS FAITHFULLY AS IF SO SPECIFIED OR INDICATED WITHOUT ADDITIONAL COST TO THE TENANT. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LENGTHS PRIOR TO INSTALLATION.
29. NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LANDLORD AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
30. IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "LOBBY" CATEGORY = 30 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

FOYER	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
FOYER	272	272 / 1000 X 30 = 9	9 X 15 = 135/2=68

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "CLASSROOM" CATEGORY = 50 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

AREA	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
CLASS ROOMS	886	886 / 1000 X 50 = 44	44 X 15 = 660/2=330

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "OFFICE" CATEGORY = 7 PEOPLE PER 1,000 SQ. FT. & 20 CFM PER PERSON

AREA	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
OFFICES	190	190 / 1000 X 7 = 3	3 X 20 = 60/2=30

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "ASSEMBLY" CATEGORY = 15 CFM PER PERSON
SANCTUARY OCCUPANCY AS PER ARCHITECHTURAL PLANS 488 PEOPLE.

AREA	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
SANCTUARY	2,347	2,347 / 1000 X – = –	270 X 15 = 4,050/2=2,025

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "TOILET ROOM" CATEGORY = 50 CFM PER TOILET/URINAL.

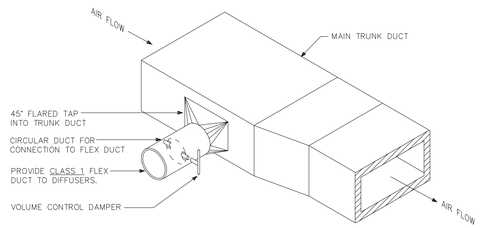
AREA	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
TOILETS	302	– / 1000 X – = –	4 X 50 = 200/2=100

OUTSIDE AIR CALCULATIONS

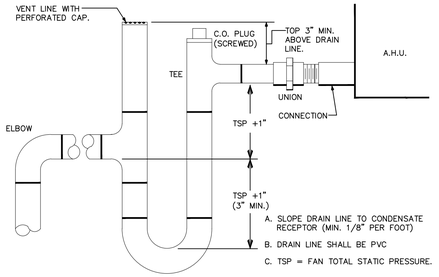
THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS:
OUTDOOR AIR REQUIREMENTS ARE BASED ON "STAGE" CATEGORY = 70 PEOPLE PER 1,000 SQ. FT. 15 CFM PER PERSON

AREA	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
TOILETS	777	777 / 1000 X 50 = 39	39 X 15 = 585/2=292

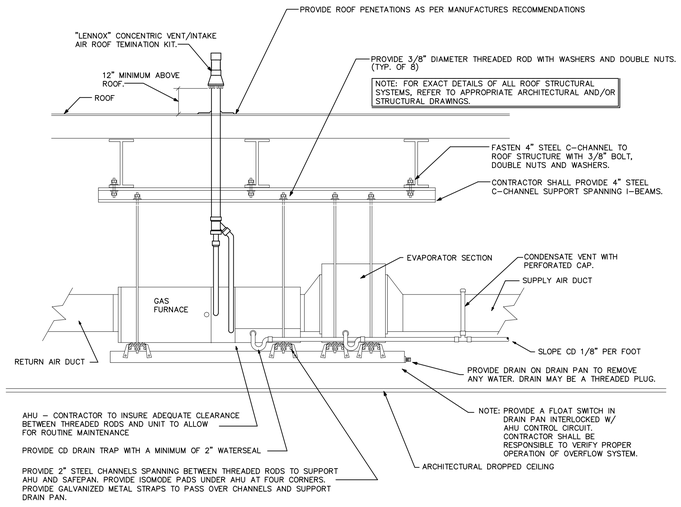
* THE OCCUPANCY OF THIS FACILITY DOES NOT EXCEED THREE HOURS AT ANY TIME, THEREFORE THE FACILITY QUAIFIES FOR REDUCTION OF OUTSIDE AIR IN ACCORDANCE WITH THE ASHRAE STANDARD 62 SECTION 6.1.3.4. THE AVERAGE OCCUPANCY IS LESS THAN 1/2 THE MAXIMUM CALCULATED OCCUPANCY, SO THE FRESH AIR PROVIDED WILL BE 1/2 THE CALCULATED IN ACCORDANCE WITH SECTION 6.1.3.4.



1 BRANCH DUCT DETAIL
NO SCALE



2 CONDENSATE P-TRAP DETAIL
NOT TO SCALE



3 GAS FURNACE/AHU MOUNTING DETAIL
NO SCALE

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT
METHOD OF COMPLIANCE:
Prescriptive [ ] Performance [X] Energy Cost Budget [ ]

Exterior Design Conditions
- winter dry bulb 20° F
- summer dry bulb 97° F

Interior Design Conditions
- winter dry bulb 68° F
- summer dry bulb 74° F
- relative humidity 52.9%

Building Heating Load 831,000 BTU
Building Cooling Load 479,700 BTU

Mechanical Spacing Conditioning System
Unitary
- Description of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- heating efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- cooling efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- heat output of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- cooling output of unit REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

Boiler N/A
total boiler output. If oversized, state reason.

Chiller N/A
total chiller capacity. If oversized, state reason.

List equipment efficiencies

Equipment schedules with motors (mechanical systems)
- motor horsepower REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- number of phases REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- minimum efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- motor type REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
- # of poles REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

DESIGNER STATEMENT:[1]

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of ASHREA Standard 90.1 1989.

SIGNED: _____
NAME: TODD W. CAREY
TITLE: ENGINEER

FAN SCHEDULE

LABEL	TYPE OF UNIT – AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1ø	1
EF-2	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z7	225	.125"	CEILING MOUNTED	68 WATTS	OPEN DRIP PROOF	1640	115V/1ø	1

NOTES: 1.) REFER TO ELECTRICAL PLANS FOR CONTROL.

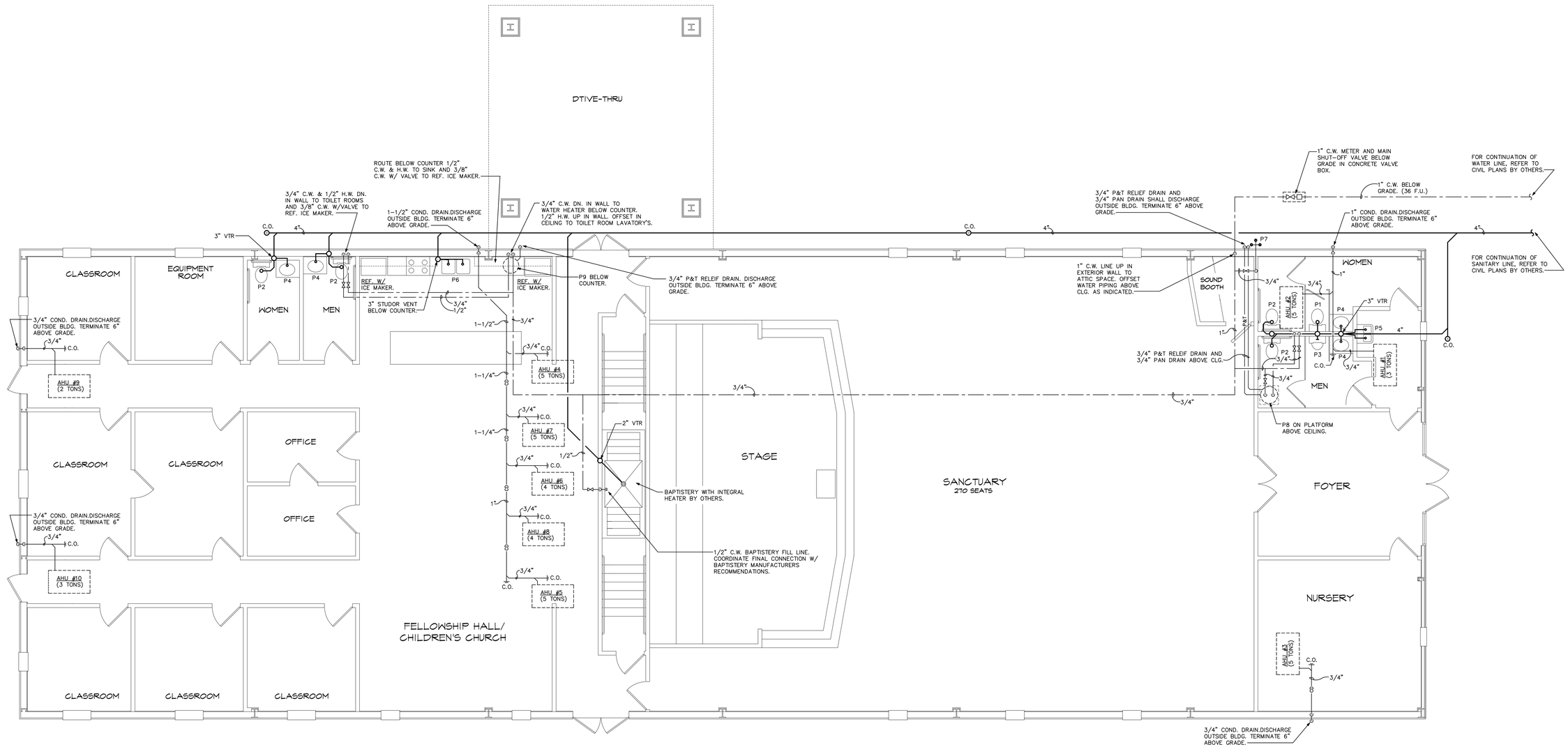
HORIZONTAL-FLOW GAS FURNACE W/SPLIT SYSTEM AIR CONDITIONING SYSTEM SCHEDULE

CONDENSING UNIT									EVAPORATOR COIL UNIT	GAS FURNACE								
CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SENSIBLE CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCP	EER/SEER	MANUFACTURER & MODEL NO.	AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES
CU #1	LENNOX HS29-036	35,600	29,000	10.3	1.1	208V/3ø	20	10.0	LENNOX CH23-41	AHU #1	LENNOX GHR26Q3-75	1,200	.30"	MED.-HIGH	1/3	120V/1ø	75,000	70,000	2"	1 THRU 4
CU #2	LENNOX HS29-060	58,000	39,300	17.3	1.9	208V/3ø	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GHR26Q3/5-100	2,000	.30"	MEDIUM	3/4	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #3	LENNOX HS29-060	58,000	39,300	17.3	1.9	208V/3ø	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GHR26Q3/5-100	2,000	.30"	MEDIUM	3/4	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #4	LENNOX HS29-060	58,000	39,300	17.3	1.9	208V/3ø	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GHR26Q3/5-100	2,000	.30"	MEDIUM	3/4	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #5	LENNOX HS29-060	58,000	39,300	17.3	1.9	208V/3ø	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GHR26Q3/5-100	2,000	.30"	MEDIUM	3/4	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #6	LENNOX HS29-048	47,000	33,300	13.5	1.9	208V/3ø	30	10.0	LENNOX CH23-51	AHU #3	LENNOX GHR26Q3/4-100	1,600	.30"	MED.-HIGH	1/2	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #7	LENNOX HS29-060	58,000	39,300	17.3	1.9	208V/3ø	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GHR26Q3/5-100	2,000	.30"	MEDIUM	3/4	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #8	LENNOX HS29-048	47,000	33,300	13.5	1.9	208V/3ø	30	10.0	LENNOX CH23-51	AHU #3	LENNOX GHR26Q3/4-100	1,600	.30"	MED.-HIGH	1/2	120V/1ø	100,000	92,000	2"	1 THRU 4
CU #9	LENNOX 10ACB24	24,500	18,375	10.1	1.1	208V/1ø	20	10.6	LENNOX CH23-31	AHU #1	LENNOX GHR26Q2/3-50	850	.30"	LOW	1/3	120V/1ø	50,000	47,000	2"	1 THRU 4
CU #10	LENNOX HS29-036	35,600	29,000	10.3	1.1	208V/3ø	20	10.0	LENNOX CH23-41	AHU #1	LENNOX GHR26Q3-75	1,200	.30"	MED.-HIGH	1/3	120V/1ø	75,000	70,000	2"	1 THRU 4

GENERAL NOTES:
* ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
* PROVIDE VIBRATION ISOLATION FOR UNITS.
* EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.
* CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

ABBREVIATION LEGEND:
O/A – OUTSIDE AIR
HP – HORSE POWER
RLA – RUNNING LOAD AMPS
FLA – FULL LOAD AMPS
MOCP – MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE)
E.S.P. – EXTERNAL STATIC PRESSURE
EER – ENERGY EFFICIENCY RATIO
SEER – SEASONAL ENERGY EFF. RATIO

SPECIFIC NOTES:
1) SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.
2) INSULATE REFRIGERANT SUCTION LINE WITH 2/4" ARMAFLEX OR APPROVED EQUAL.
3) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1YEAR WARRANTY ON ALL PARTS AND LABOR.
4) FURNACE SHALL BE PROVIDED WITH CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.

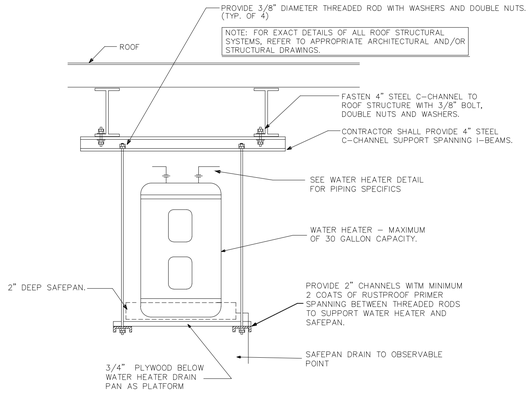


1 FLOOR PLAN - PLUMBING

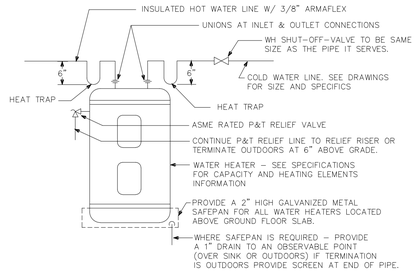
SCALE: 3/16"=1'-0"

NORTH

P1



2 WATER HEATER MOUNTING DETAIL
NO SCALE



3 WATER HEATER DETAIL
NO SCALE

GENERAL PLUMBING NOTES

1. Drawings are diagrammatic and shall not be scaled. Refer to architectural plans and elevations for exact location of all plumbing fixtures, equipment, etc.. Plumbing contractor shall furnish and install all items required for a complete and acceptable working installation.
2. All work and materials shall comply with the latest edition of the National, State, and all local codes and Ordinances having jurisdiction.
3. The plumbing contractor shall visit the site and thoroughly familiarize himself with all existing conditions. All execution and backfill as required for this phase of construction shall be a part of this contract.
4. All material shall be new.
5. All work shall be performed by a licensed plumbing contractor in a first class workmanlike manner. The completed system shall be fully operative and accepted by engineer/architect.
6. All required insurance shall be provided for protection against public liability or property damage for the duration of the work.
7. The plumbing contractor shall secure and pay all permit fees, inspections, and tests.
8. All work shall be coordinated with other trades to avoid interference with the progress of construction.
9. The plumbing contractor shall guarantee all materials and workmanship free from defects for a period of not less than (1) one year from date of acceptance. Correction of any defects shall be completed without additional charge and shall include replacement or repair of any other phase of the installation which may have been damaged thereby.
10. Verify location, size and inverts of all existing utilities prior to start of construction. Advise architect/engineer of any discrepancies.
11. All fixtures shall be provided with readily accessible stops.
12. Water piping shall be type "L" copper for up to and including 2" and shall be type "K" for 2 1/2" and larger.
13. Soil, wastes and vent piping shall be PVC #40 DMV. Waste and vent piping above slab shall be PVC, if approved by local authorities having jurisdiction, otherwise cast iron. PVC shall not be installed in A/C return air plenum or penetrate fire rated walls or floors.
14. Air conditioning condensate drain piping shall be PVC #40 or copper drain waste and bent pipe and fittings. Insulate all condensate piping except exterior piping.
    Install all condensate piping for air conditioning units as required per local codes.
15. Furnish and install approved air chambers at each plumbing fixture and PDI approved shock arresters on main lines and risers.
16. Provide chrome plated combination covered plate and cleanout plug for all wall cleanouts, Josam 58890.
17. Insulate lines as follows:
    a) Hot water supply and return: 1" thick fiberglass.
    b) Condensate piping: 1/2" thick armaflex preformed.

PLUMBING FIXTURE SCHEDULE

P-1 (WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL NEW CADET MODEL 2798.012 ELONGATED 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.

P-2 (HANDICAPPED WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET ADA MODEL 2998.012 16-1/2"" HIGH, 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.

P-3 (URINAL)
SHALL BE AN AMERICAN STANDARD ALLBROOK MODEL 6541.132. FLUSH VALVE SHALL BE SLOAN ROYAL MODEL 180-YB.

P-4 (HANDICAPPED COUNTER TOP LAVATORY)
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A MONTERRY 5502.170 W/4" WRIST BLADE HANDLES. PROVIDE 0.5 GPM FLOW RESTRICTOR.

P-5 (HANDICAPED ELECTRIC WATER COOLER COMBINATION HI/LO)
SHAL BE AN OASIS SPLIT LEVEL MODEL P8AMSL, 7.8 GPM, 5.0 FLA AT 120 VOLT WITH A 1/5 HP COMPRESSOR.

P-6 (DOUBLE BOWL STAINLESS STEEL SINK)
SHALL BE AN ELKAY LUSTERTONE MODEL LR-3322-C SELF RIMMING DOUBLE COMPARTMENT STAINLESS STEEL SINK WITH LK2433 HI-ARC FAUCET TO INCLUDE AN OMNI PRESSURE COMPENSATING 2.0 GPM FLOW RESTRICTOR.

P-7 (HOSE BIBB, NON-FREEZE)
SHALKL BE A JOSAM SERIES 71050 CAST BRONZE NON-FREEZE WALL HYDRANT WITH A SATIN FINISH NIKALOY FACE, 3/4" H.P.T. OUTLET, INTREGAL VACUUM BREAKERM BACKFLOW PREVENTER AND PRESSURE RELIEF VALVE.

P-8 (JUNIOR WATER HEATER BELOW COUNTER)
WATER HEATER SHALL BE A LOCHINVAR MODEL JRC006E, 6 GALLON GLASSLINED STORAGE TANK, JUNIOR TYPE WATER HEATER WITH (1) - 1.5 KW ELECTRIC ELEMENT AT 115 VOLTS, SINGLE PHASE INCOMING POWER. 5 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.

P-9 (WATER HEATER)
SHALL BE A LOCHINVAR MODEL ESA 030 KK, 30 GALLON GLASSLINED STORAGE TANK, STUBBY TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 240 VOLTS, SINGLE PHASE INCOMING POWER. 5 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.

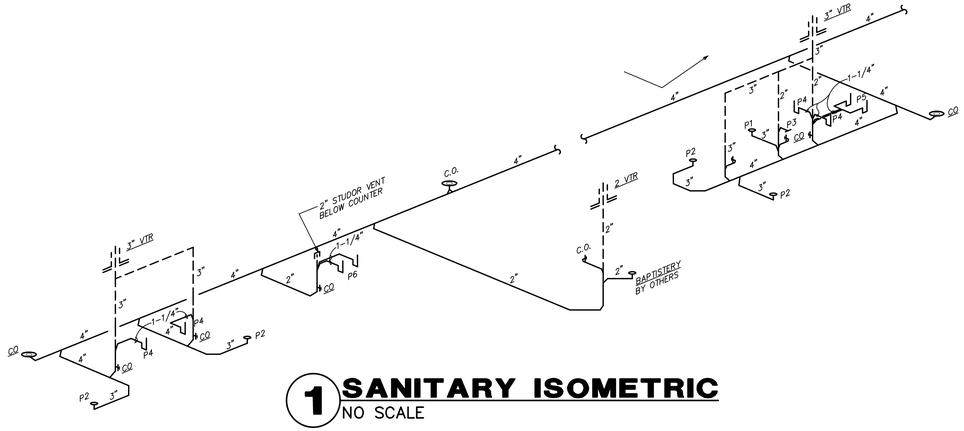
NOTES:

1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.

2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.

3.) ALL HANDICAP PLUMBING FIXTURES SHALL BE INSTALLED AS PER LATEST A.D.A. REQUIREMENTS.

4.) ALL PLUMBING FIXTURES SHALL COMPLY WITH SFBC TABLE 46-R2.



1 SANITARY ISOMETRIC
NO SCALE

ELECTRICAL SYMBOLS LEGEND

NOTE – NOT ALL SYMBOLS MAY BE USED ON PROJECT

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF	T	TRANSFORMER – SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL – SIZE AS NOTED
	QUADRUPLEX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"	F	F–FAN; M–MOTOR; P–PUMP
$	SINGLE POLE SWITCH		SPECIAL OUTLET – AS REQUIRED
$3	THREE–WAY SWITCH	B–2	CKT. HOMERUN (B INDICATES PANEL) "2" DESIGNATES CIRCUIT NUMBER
$M	MANUAL STARTER SWITCH		EXIT SIGN; ONE SIDED, OR TWO SIDED
$D	DIMMER SWITCH		EMERGENCY LIGHTING
$L	SWITCH W/ ILLUMINATION WHEN ON	B	RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
J	JUNCTION BOX	B	HIGHBAY HID LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	TELEPHONE JACK	B	FLUORESCENT LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	COMPUTER DATA TERMINAL OUTLET	B NL	FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH W/ STARTER	B	FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH	IG	ISOLATED GROUND
	FLR. MTD. FLUSH DUPLEX RECEPTACLE	WP	WEATHER–PROOF
	FLR. MTD. FLUSH QUAD. RECEPTACLE	BC	BELOW COUNTER
	FLR. MTD. FLUSH TELEPHONE JACK	BFG	BELOW FINISH GRADE
	FLR. MTD. FLUSH COMPUTER TERMINAL	GFI	GROUND FAULT INTERRUPTER
SD	SMOKE DETECTOR	AFF	ABOVE FINISHED FLOOR
H	HEAT DETECTOR	EWC	ELECTRIC WATER COOLER
D	DUCT SMOKE DETECTOR	ASW	ABOVE SHOW WNDOW
F	MANUAL PULL STATION	BSW	BELOW SHOW WNDOW
	HORN WITH STROBE LIGHT, MTD. +80"	FACP	FIRE ALARM CONTROL PANEL
L	STROBE LIGHT ONLY, MTD. +80"	FAAP	FIRE ALARM ANNUNCIATOR PANEL

ELECTRICAL NOTES:

1. GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.

   THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.

   THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.

   COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST–IN–PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.

2. SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE", "BY OTHERS", OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.

3. EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

4. MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITTERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.

5. GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC. PROVIDE GROUND WIRES IN ALL CONDUITS UNLESS OTHERWISE NOTED.

6. CONDUITS: ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.

   CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT–BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC–40–PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC–80–PVC (SCHEDULE 80).

7. CONDUCTORS: CONDUCTORS SHALL BE THWN COPPER. POWER, LIGHTING AND GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG. EXCEPT WHERE OTHERWISE INDICATED, CONTROL CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.

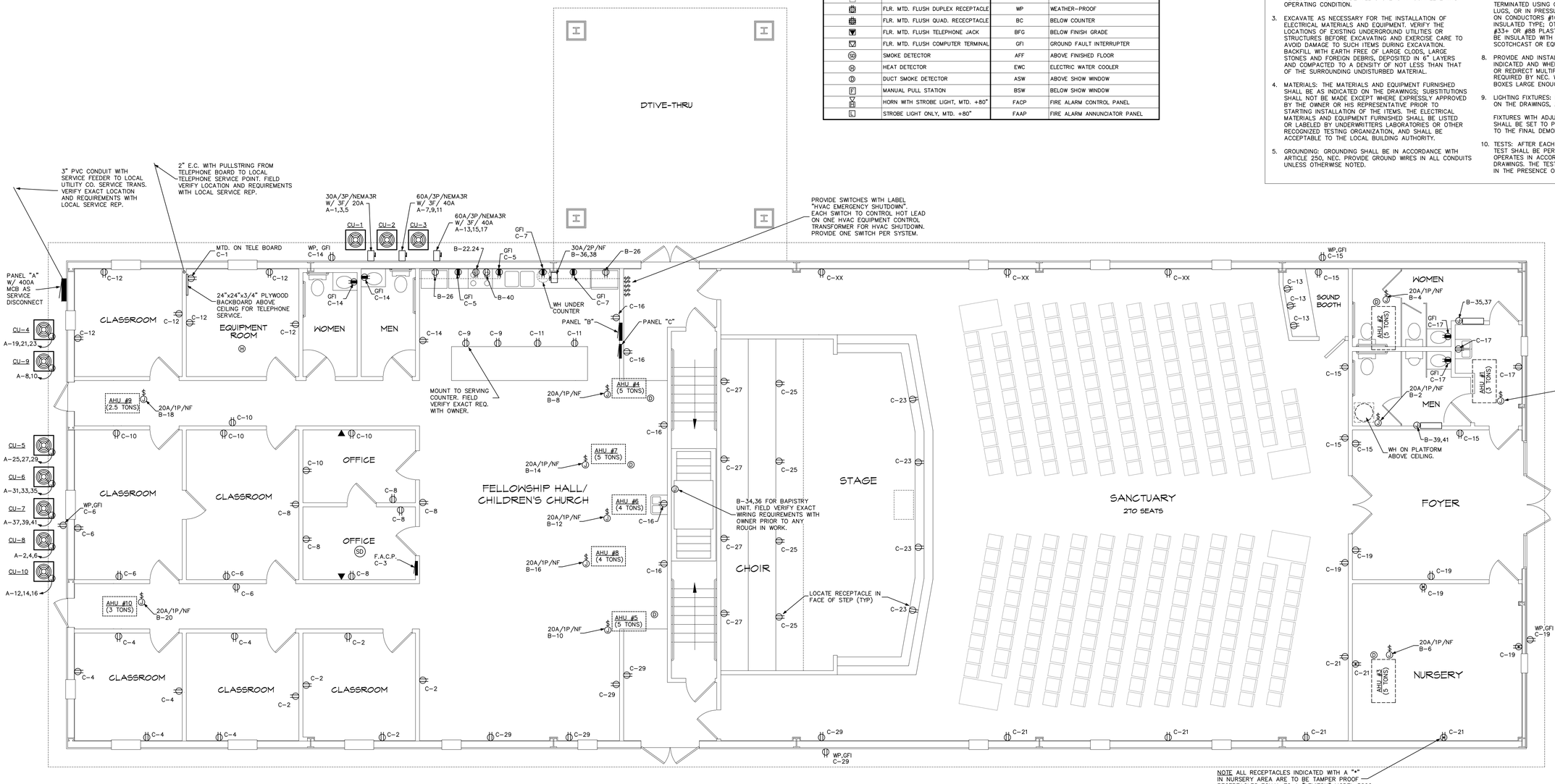
   CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG. AND SMALLER, SHALL BE THE SELF–INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.

8. PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.

9. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS.

   FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.

10. TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.



1 FLOOR PLAN - POWER

SCALE: 3/16"=1'–0"

NORTH

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

PRESCRIPTIVE ☐ PERFORMANCE ☑ ENERGY COST BUDGET ☐

PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDUSE LOADS.

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE	SEE SCHEDULE ON DRAWINGS
NUMBER OF LAMPS IN FIXTURE	SEE SCHEDULE ON DRAWINGS
BALLAST TYPE USED IN FIXTURE	SEE SCHEDULE ON DRAWINGS
NUMBER OF BALLASTS IN FIXTURE	SEE SCHEDULE ON DRAWINGS
TOTAL WATTAGE PER FIXTURE	SEE SCHEDULE ON DRAWINGS
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	2.25 VS 2.50
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED	N/A

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)

MOTOR HORSEPOWER	N/A
NUMBER OF PHASES	N/A
MINIMUM EFFICIENCY	N/A
MOTOR TYPE	N/A
NUMBER OF POLES	N/A

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME X-ENERGY.

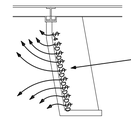
SIGNED: _____

NAME: TODD W. CAREY, P.E.

TITLE: SOUTH CAROLINA PROFESSIONAL ENGINEER #16140

DIMMER CIRCUIT LEGEND FOR SANCTUARY

DESIGNATION	FIXTURE / USAGE	DIMMER WATTAGE	FEED CIRCUIT
a	INCANDESCENT DOWNLIGHTS FOR ENTRY/MAINTENANCE LIGHTING	1000W (4 WAY)	B-1
b	INCANDESCENT DOWNLIGHTS REAR SEATING	1000W	B-3
c	INCANDESCENT DOWNLIGHTS CENTER AREA SEATING	1000W	B-5
d	INCANDESCENT DOWNLIGHTS FRONT AREA SEATING	1000W	B-7
e	INCANDESCENT DOWNLIGHTS PULPIT SPOT LIGHTS	600W	B-9
f	PLATFORM DOWNLIGHTS FRONT AREA	1000W	B-9
g	PLATFORM DOWNLIGHTS MIDDLE AREA	1000W	B-11
h	CHOIR DOWNLIGHTS FRONT AREA	1000W	B-13
j	CHOIR DOWNLIGHTS REAR AREA	1000W	B-15
k	INCANDESCENT DOWNLIGHTS BAPISTRY	600W	B-17



CONTROL PANEL SHALL BE MODULAR IN DESIGN. ENCLOSURE SHALL BE FOR FLUSH OR SEMI-FLUSH WALL MOUNTING, AND SHALL CONTAIN ALL REQUIRED MODULES AND COMPONENTS FOR SPECIFIED AND REQUIRED FUNCTIONS, WITH SPACE AND PROVISIONS FOR THREE ADDITIONAL TWO-ZONE MODULES. CONTROL PANEL SHALL INCLUDE BATTERY CAPACITY TO OPERATE THE SYSTEM 24 HRS IN STANDBY PLUS 5 MINUTES IN ALARM PLUS 25% SPARE.

2 SOUND BOOTH DETAIL

SCALE: 3/16"=1'-0"

LIGHTING FIXTURE SCHEDULE

LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(4) 32W T8	LITHONIA 2SP-G-432-FW-A12-120	W/ ELECTRONIC BALLAST OPTION
B	RECESSED INCANDENSENT	WHITE		120	(1) 150W PAR38	LITHONIA D-7ACT	DIRECTIONAL WALL WASH
C	RECESSED INCANDENSENT	WHITE		120	(1) 150W PAR38	LITHONIA R-7AC	
D	WALL MOUNTED FLUORESCENT	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 11854	
EM	WALL MTD EMERG EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA F2RE S W 2 R 120 ELN	W/ NICAD BATTERY BACKUP
F	EXTERIOR SECURITY LIGHT	BRONZE	POLYCARBONATE	120	(1) 100W MH	LITHONIA TWP100M-120	VANDAL RESISTANT LENS
G	RECESSED MTD HID	WHITE	FLAT FRESNEL	120	(1) 100W MH	LITHONIA LGH-100M-7RWFFL-120	WET LOCATION LISTED
H	4' FLUORESCENT STRIP	WHITE		120	(2) 32W T8	LITHONIA C-232-120	
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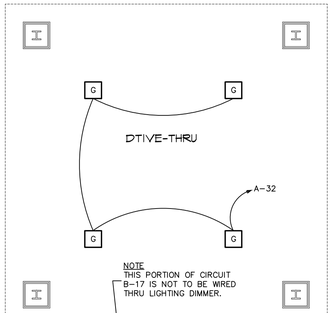
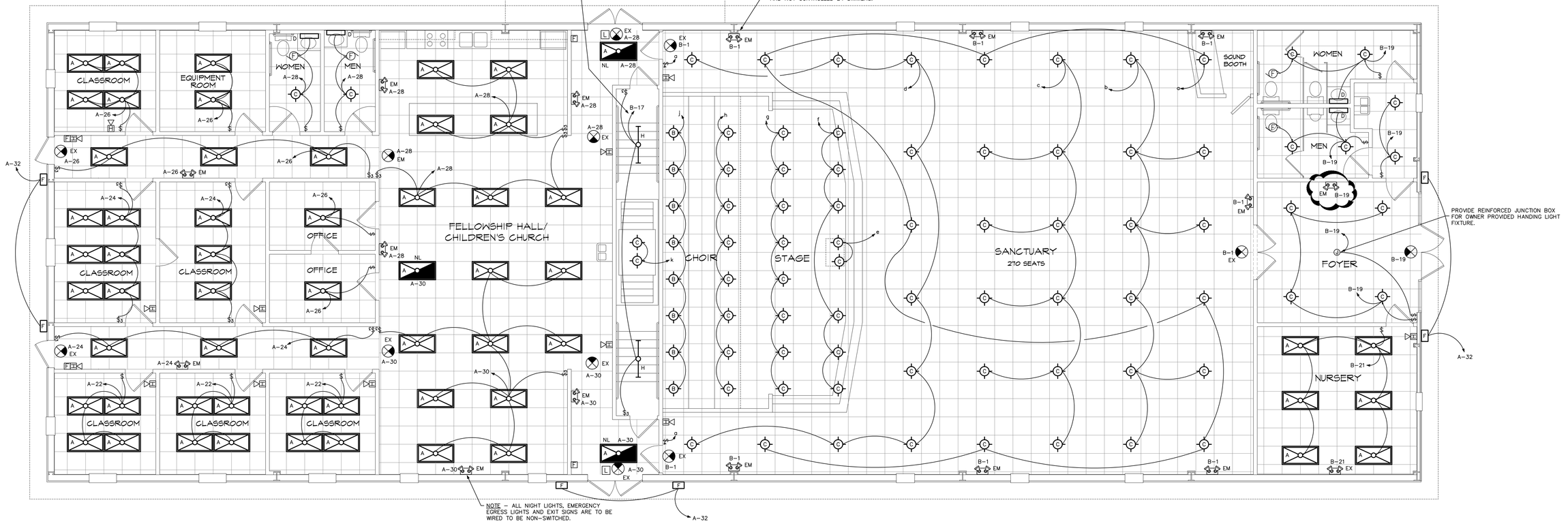


NOTE
THIS PORTION OF CIRCUIT B-17 IS NOT TO BE WIRED THRU LIGHTING DIMMER.

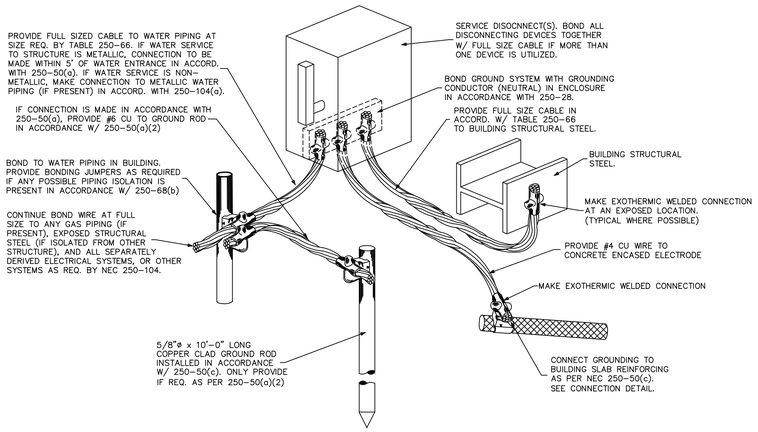
ALL EMERGENCY LIGHTS IN SANCTUARY ARE TO BE WIRED DIRECTLY TO PANEL AND NOT CONTROLLED BY DIMMERS.



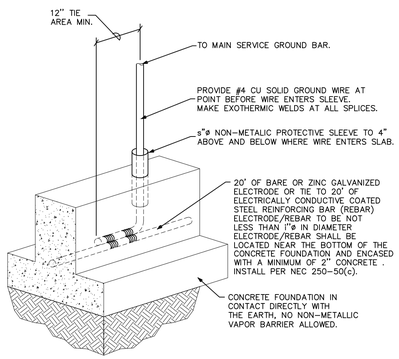
1 FLOOR PLAN - LIGHTING

SCALE: 3/16"=1'-0"

NORTH



4 GROUNDING DETAIL
NO SCALE

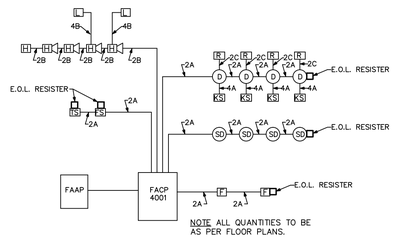


3 GROUNDING DETAIL
NO SCALE

WIRE LEGEND
A = 18 AWG. SOLID ALARM
B = 14 AWG SOLID CONTROL
C = 18 AWG SOLID CONTROL

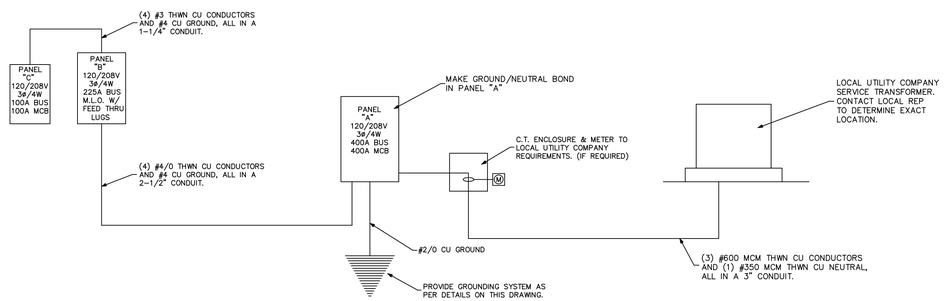
NOTE: ALL WIRING TO BE EXPOSED EXCEPT VERTICAL RUN FROM CEILING TO DEVICE.

LEGEND	
FACP 4001	4001-9403 HONEYWELL POWER LIMITED CONTROL PANEL W/ REMOTE ANNUNCIATOR
F	2099-9695 PULL STATION
H	4901-9705 HORN
L	4904-9501 STROBE ONLY
D	2098-9649 DUCT DETECTOR
R	MR801/T RELAY
KS	2908-9806 KEY SWITCH
FS	FLOW SWITCH (FURNISHED BY F.S. CONTRACTOR)
TS	TAMPER SWITCH (FURNISHED BY F.S. CONTRACTOR)



NOTE ALL QUANTITIES TO BE AS PER FLOOR PLANS.

2 FIRE ALARM RISER DIAGRAM
NO SCALE



1 ELECTRICAL RISER DIAGRAM
NO SCALE

CIRCUIT BREAKER PANEL SCHEDULE C — SQUARE D TYPE NQOD, OR APPROVED EQUAL

100 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 100A. M.C.B., 10000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT C.	GND	NEUTRAL	COND.	BKR.	##
1	15/1	#14	#14	#14	1/2	TELEPHINE BACKBOARD	180	180	------	------							
							900	900	------	------	RECEPTACLES	1/2	#14	#14	#14	15/1	2
3	15/1	#14	#14	#14	1/2	FIRE ALARM SYSTEM	200	------	200	------							
							1080	------	1080	------	RECEPTACLES	1/2	#14	#14	#14	15/1	4
5	20/1	#12	#12	#12	1/2	COUNTERTOP RECEPTACLES	360	------	------	360							
							900	------	------	900	RECEPTACLES	1/2	#14	#14	#14	15/1	6
7	20/1	#12	#12	#12	1/2	COUNTERTOP RECEPTACLES	360	360	------	------							
							1080	1080	------	------	RECEPTACLES	1/2	#14	#14	#14	15/1	8
9	20/1	#12	#12	#12	1/2	COUNTERTOP RECEPTACLES	360	------	360	------							
							900	------	900	------	RECEPTACLES	1/2	#14	#14	#14	15/1	10
11	20/1	#12	#12	#12	1/2	COUNTERTOP RECEPTACLES	360	------	------	360							
							1080	------	------	1080	RECEPTACLES	1/2	#14	#14	#14	15/1	12
13	15/1	#14	#14	#14	1/2	SOUND BOOTH RECEPT.	540	540	------	------							
							720	720	------	------	RECEPTACLES	1/2	#14	#14	#14	15/1	14
15	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	------	1080	------							
							900	------	900	------	RECEPTACLES	1/2	#14	#14	#14	15/1	16
17	15/1	#14	#14	#14	1/2	RECEPTACLES	720	------	------	720							
							0	------	------	0	SPACE						18
19	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	1080	------	------							
							0	0	------	------	SPACE						20
21	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	------	1080	------							
							0	------	0	------	SPACE						22
23	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	------	------	1080							
							0	------	------	0	SPACE						24
25	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	1080	------	------							
							0	0	------	------	SPACE						26
27	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	------	1080	------							
							0	------	------	1080	SPACE						28
29	15/1	#14	#14	#14	1/2	RECEPTACLES	1080	------	------	1080							
							0	------	------	0	SPACE						30
NOTES : DATA IS BASED ON COPPER WIRE WITH THWN INSULATION WITH EMT CONDUIT						TOTALS IN VA		5940	6680	5580	PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 55.7 AMPS NON DIVERSIFIED LOAD @ 208 V, THREE PHASE = 50.6 AMPS						
								18,200			PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4015						

PANEL C DIVERSIFICATION CALCULATIONS	
RECEPTACLES (100) - 18000 VA TOTAL	
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	4000
MISC NON-CONTINUOUS LOADS AT 100% -	200
TOTAL DIVERSIFIED PANEL LOAD -	14200
LOAD AT 120/208v/3-Phase/4-Wire -	39.4A

PANELS B & C DIVERSIFICATION CALCULATIONS	
RECEPTACLES (109) - 19620 VA TOTAL	
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	4810
LIGHTING - 18550 X 125% -	23188
HVAC LOAD AT 100% -	16097
MOTOR LOADS AT 100% -	730
PLUS 25% OF THE LARGEST MOTOR -	395
MISC NON-CONTINUOUS LOADS AT 100% -	19900
TOTAL DIVERSIFIED PANEL LOAD -	75120
LOAD AT 120/208v/3-Phase/4-Wire -	208.7A

PANEL A DIVERSIFICATION CALCULATIONS	
RECEPTACLES (109) - 19620 VA TOTAL	
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	4810
LIGHTING - 18550 X 125% -	23188
HVAC LOAD AT 100% -	72283
MOTOR LOADS AT 100% -	730
PLUS 25% OF THE LARGEST MOTOR -	395
MISC NON-CONTINUOUS LOADS AT 100% -	19900
TOTAL DIVERSIFIED PANEL LOAD -	131306
LOAD AT 120/208v/3-Phase/4-Wire -	364.7A

CIRCUIT BREAKER PANEL SCHEDULE A — SQUARE D TYPE NQOD, OR APPROVED EQUAL

400 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 400A. M.C.B., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT C.	GND	NEUTRAL	COND.	BKR.	##
1							0	1368	------	------							
3	20/3	#12		#12	1/2	CONDENSING UNIT #1	0	1848	------	------							2
5							0	------	1368	------							
							0	------	1848	------							4
7							0	------	------	1368							
9	40/3	#8		#10	3/4	CONDENSING UNIT #2	0	2304	------	1848							6
11							0	1165	2304	------	CONDENSING UNIT #8	1/2	#12		#12	20/2	8
							0	------	1165	------							10
13							0	------	------	2304							
15	40/3	#8		#10	3/4	CONDENSING UNIT #3	0	2304	------	1368							12
17							0	------	2304	------	CONDENSING UNIT #10	1/2	#12		#12	20/3	14
							0	------	1368	------							16
19							0	------	------	2304							
21	40/3	#8		#10	3/4	CONDENSING UNIT #4	19636	------	------	26612							18
23							0	2304	------	------							
							19476	22589	------	------	PANELBOARD 'B' AND 'C'	2-1/2	#4	#4/0	#4/0	225/3	20
25							0	------	2304	------							22
27	40/3	#8		#10	3/4	CONDENSING UNIT #5	21835	------	25698	------							
29							0	------	------	2304							24
							0	2304	------	0	SPACE						24
31							0	0	------	------							
33	30/3	#10		#10	1/2	CONDENSING UNIT #6	0	------	2304	------	SPACE						26
35							0	1848	------	------							
							0	0	1848	------	SPACE						28
37							0	------	------	2304							
39	40/3	#8		#10	3/4	CONDENSING UNIT #7	0	------	------	0	SPACE						30
41							0	2304	------	------							
							0	0	2304	------	SPACE						32
							0	------	------	1848							
							0	------	0	------	SPACE						34
							0	------	------	1848							
							0	------	------	0	SPACE						36
							0	2304	------	------							
							0	0	------	------	SPACE						38
							0	------	2304	------							
							0	------	0	------	SPACE						40
							0	------	------	2304							
							0	------	------	0	SPACE						42
NOTES : DATA IS BASED ON COPPER WIRE WITH THWN INSULATION WITH EMT CONDUIT						TOTALS IN VA		41706	44815	44564	PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 182. AMPS NON DIVERSIFIED LOAD @ 208 V, THREE PHASE = 364.1 AMPS						
								131,085			PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4015						

CIRCUIT BREAKER PANEL SCHEDULE B — SQUARE D TYPE NQOD, OR APPROVED EQUAL

PROVIDE FEED THRU LUGS ON THIS PANELBOARD

225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT C.	GND	NEUTRAL	COND.	BKR.	##
1	15/1	#14	#14		1/2	SANCTUARY LIGHTING *	800	800	------	------							
							832	832	------	------							
3	15/1	#14	Shared	Sh	S 1	SANCTUARY LIGHTING *	900	------	900	------							
							1581	------	1581	------							
5	15/1	#14	Shared	Sh	S 1	SANCTUARY LIGHTING *	1000	------	------	1000							
							1581	------	------	1581							
7	15/1	#14	#14	Sh	S 1	SANCTUARY LIGHTING *	900	900	------	------							
							1581	1581	------	------							
9	15/1	#14	Shared	Sh	S 1	PLATFORM LIGHTING *	800	------	800	------							
							1581	------	1581	------							
11	15/1	#14	Shared	Sh	S 1	PLATFORM LIGHTING *	800	------	------	800							
							1123	------	------	1123							
13	15/1	#14	#14	Sh	S 1	PLATFORM LIGHTING *	800	800	------	------							
							1581	1581	------	------							
15	15/1	#14	Shared	Sh	S 1	PLATFORM LIGHTING *	800	------	800	------							
							1123	------	1123	------							
17	15/1	#14	Shared	Sh	S 1	BAPISTRY AREA LIGHTING *	500	------	------	500							
							832	------	------	832							
19	20/1	#12	#12	#12	1/2	FRONT FOYER / BATHS LTG.	1600	1600	------	------							
							832	832	------	------	AIR HANDLING UNIT #10	1/2	#12	#12	#12	20/1	20
21	15/1	#14	#14	#14	1/2	NURSERY LIGHTING	840	------	840	------							
							3000	------	6000	------							22
23	20/1	#12	#12	#12	1/2	CLASSROOM LIGHTING	1680	------	------	1680	COOKTOP	3/4	#10	#8	#6	60/2	
25	20/1	#12	#12	#12	1/2	CLASSROOM LIGHTING	3000	------	------	6000							24
							1680	1680	------	------							
27	20/1	#12	#12	#12	1/2	CLASSROOM LIGHTING	850	850	------	------	REFRIGERATOR	1/2	#14	#14	#14	15/1	26
							1540	------	1540	------							
29	20/1	#12	#12	#12	1/2	FELLOWSHIP AREA LTG.	1500	------	------	1500	REFRIGERATOR	1/2	#14	#14	#14	15/1	28
							540	------	------	540							
31	20/1	#12	#12	#12	1/2	FELLOWSHIP AREA LTG.	1540	1540	------	------	COUNTERTOP RECEPTACLES	1/2	#12	#12	#12	20/1	30
							540	540	------	------							
33	15/1	#14	#14	#14	1/2	EXT SECURITY LTG VIA T.C.	1350	------	1350	------	COUNTERTOP RECEPTACLES	1/2	#12	#12	#12	20/1	32
							540	------	540	------							
35							0	------	------	863	COUNTERTOP RECEPTACLES	1/2	#12	#12	#12	20/1	34
	15/2	#14		#14	1/2	ELECTRIC WALL HEATER	0	------	------	2250							
37							0	863	------	------	KITCHEN WATER HEATER	1/2	#10		#10	30/2	36
							0	2250	------	------							38
39	15/2	#14		#14	1/2	ELECTRIC WALL HEATER	0	------	863	------							
41							250	------	250	------	COOKTOP HOOD/LIGHT	1/2	#14	#14	#14	15/1	40
							0	------	------	863							
							1500	------	------	1500	WATER HEATER #2	S 2	Sh	Shared	#14	15/1	42
NOTES : DATA IS BASED ON COPPER WIRE WITH THWN INSULATION WITH EMT CONDUIT						TOTALS IN VA		16649	19018	21032	PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 126.3 AMPS NON DIVERSIFIED LOAD @ 208 V, THREE PHASE = 157.5 AMPS						
								56,699			PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4015						

NOTES
* - THIS CIRCUIT IS TO BE FED THRU LIGHTING DIMMER/CONTROLLER IN SOUND BOOTH.
- ALL CIRCUITS SHOWING AN 'SH' IN THE CONDUIT INFORMATION COLUMN ARE TO BE SHARED. WHERE 'SH 2' IS SHOWN, IT IS TO INDICATE THAT THE CIRCUIT #2 CONDUIT IS TO BE USED TO FEED FROM PANEL TO THIS LOAD. IF NEUTRAL OR GROUND IS SHOWN AS 'SHARED' OR 'SH', IT IS TO BE A SHARED WIRE WITH THE TARGET CIRCUIT. THE SCHEDULE IS SET TO ALLOW ONLY ONE PHASE PER NEUTRAL.. CONDUIT FILL AND DERATING OF CONDUCTORS HAS BEEN TAKEN INTO CONSIDERATION.