

REFRIGERANT PIPING UP IN EXTERIOR WALL TO CEILING SPACE. OFFSET ACROSS CLG. TO AHU'S. CONTRACTOR SHALL SIZE ALL REFRIGERANT PIPING AS PER MANUFACTURERS RECOMMENDATIONS.

TWO 12X12 "POTTERFF" MODEL EPK-430 LOUVERS (1) HIGH 12" BL. CLG. AND (1) LOW 6" A.F.F. FOR MECHANICAL ROOM COMBUSTION AIR. COMBUSTION AIR CALCS. TOTAL BTU OF ALL APPLIANCES REQUIRING COMBUSTION AIR IS 200,000 BTU. ACCORDING TO NFPA 5.3.3(1) (c), 150 INCH PER 4,000 BTU IS REQUIRED WHICH EQUALS 50 SQ. INCHES. THE 12X12 LOUVER HAS 144 SQ. INCHES W/ A 47% FREE AREA FACTOR, OR 68 SQ. INCHES AVAILABLE.

MECHANICAL SPECIFIC NOTES

- 1 FIRE RATED WALL FROM CEILING LEVEL OF CORRIDOR UP TO UNDERSIDE OF ROOF STRUCTURE.
- 2 FULL HEIGHT FIRE RATED WALL UP TO UNDERSIDE OF ROOF STRUCTURE.
- 3 FIRE RATED WALL STOPS AT CEILING OF CORRIDOR. CORRIDOR IS A FIRE RATED TUNNEL.
- 4 RETURN AIR DUCT PLENUM SHALL BE FULL SIZE OF AHU RETURN AIR OPENING.
- 5 (2) 2" COMBUSTION AIR EXHAUST PIPES SHALL ROUTE UP TO A "CARRIER" CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.
- 6 22X10 POSITIVE PRESSURE RELIEF DAMPER SHALL BE A TITS MODEL 55FL. PROVIDE PRESSURE RELIEF REGISTER WITH A BACK DRAFT DAMPER WITH AIR FLOW TOWARDS CEILING SPACE. 22X10 PRESSURE RELIEF DUCT SHALL ROUTE THROUGH REGISTER THROUGH CEILING SPACE TO ROOF CAP.
- 7 4" GAS FLUE UP THRU ROOF TO ROOF CAP. REFER TO GAS FLUE DETAIL ON SHEET M-4.
- 8 12X12 COMBUSTION AIR DUCT SHALL ROUTE UP THRU ROOF TO ROOF CAP. TERMINATE DUCT 12" ABV. FINISHED FLOOR. PROVIDE 1/4 WIRE MESH AT OPENING.
- 9 12X12 COMBUSTION AIR DUCT SHALL ROUTE UP THRU ROOF TO ROOF CAP. TERMINATE DUCT 12" BELOW CEILING. PROVIDE 1/4 WIRE MESH AT OPENING.
- 10 12" OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
- 11 18X10 OUTSIDE AIR UP THRU ROOF TO ROOF CAP.
- 12 9" OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
- 13 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: "VESTIBULE"
 AHU #2 THERMOSTAT: "YOUTH ROOM"
 AHU #3 THERMOSTAT: "PASTOR OFFICES AND ADMINISTRATION"
 AHU #4 THERMOSTAT: "MEETING ROOMS LEFT"
 AHU #5 THERMOSTAT: "COFFEE SHOP"
 AHU #6 THERMOSTAT: "GATHERING AREA"
 AHU #7 THERMOSTAT: "STAGE AREA"
 AHU #8 THERMOSTAT: "SANCTUARY FRONT"
 AHU #9 THERMOSTAT: "SANCTUARY BACK"
 *THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO- HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE THERMOSTAT. * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. * PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT. IT IS RECOMMENDED THAT DURING OCCUPIED HOURS, THE FANS BE SET TO "ON" IN LIEU OF "AUTO".
- 14 SURFACE WALL MOUNTED REMOTE TEMPERATURE SENSOR WIRED TO CORRESPONDING AHU THERMOSTAT. MOUNT 5'-0" ABOVE FINISHED FLOOR.
- 15 10X8 TRANSFER DUCT FOR TOILET ROOM MAKE-UP AIR.

HVAC SYMBOLS LEGEND

- 1 THERMOSTAT, MTD +47" AFF
- 2 EXHAUST FAN
- 3 SECTION "A"- "A"
- 4 REMOTE BULB SENSOR
- 5 DUCT SMOKE DETECTOR
- 6 TRANSITION
- 7 TURNING VANE
- 8 45° BRANCH DUCT TAKE-OFF
- 9 FIRE DAMPER
- 10 VOLUME CONTROL DAMPER
- 11 RETURN REGISTER
- 12 SUPPLY DIFFUSER
- 13 RETURN AIR GRILLE
- 14 SUPPLY REGISTER
- 15 AIR FLOW DIRECTION
- 16 ROOF MTD. EXH. FAN
- 17 DUCT TURN DOWN
- 18 DUCT TURN UP
- 19 FLEXIBLE DUCT

SUPPLY DIFFUSER SCHEDULE

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	METAL*ARE SERIES 5000	6"	0 - 125	12X12 PERFORATED FACE
B	METAL*ARE SERIES 5000	8"	130 - 200	24X24 PERFORATED FACE
C	METAL*ARE SERIES 5000	10"	205 - 325	24X24 PERFORATED FACE
D	METAL*ARE SERIES 5000	12"	330 - 450	24X24 PERFORATED FACE
E	NAIROL IND. "RNS" SERIES	6"	80 - 175	12X12 LOUVERED FACE *

* GRILLE SHALL BE SUPPLIED WITH A NAIROL CEILING RADIATION FIRE DAMPER MODEL 0722A WITH ADJUSTABLE VOLUME CONTROL.

RETURN GRILLE SCHEDULE

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	METAL*ARE SERIES 4000VM	10X10	0 - 400	
2	METAL*ARE SERIES 4000VM	12X12	400 - 600	
3	METAL*ARE SERIES 4000VM	18X18	605 - 1200	
4	METAL*ARE SERIES 4000VM	24X24	1205 - 2000	
5	METAL*ARE SERIES 4000VM	24X48	2005 - 4000	
6	NAIROL IND. MODEL 61ECS	10X10	0 - 400	EGGCRATE FACE *

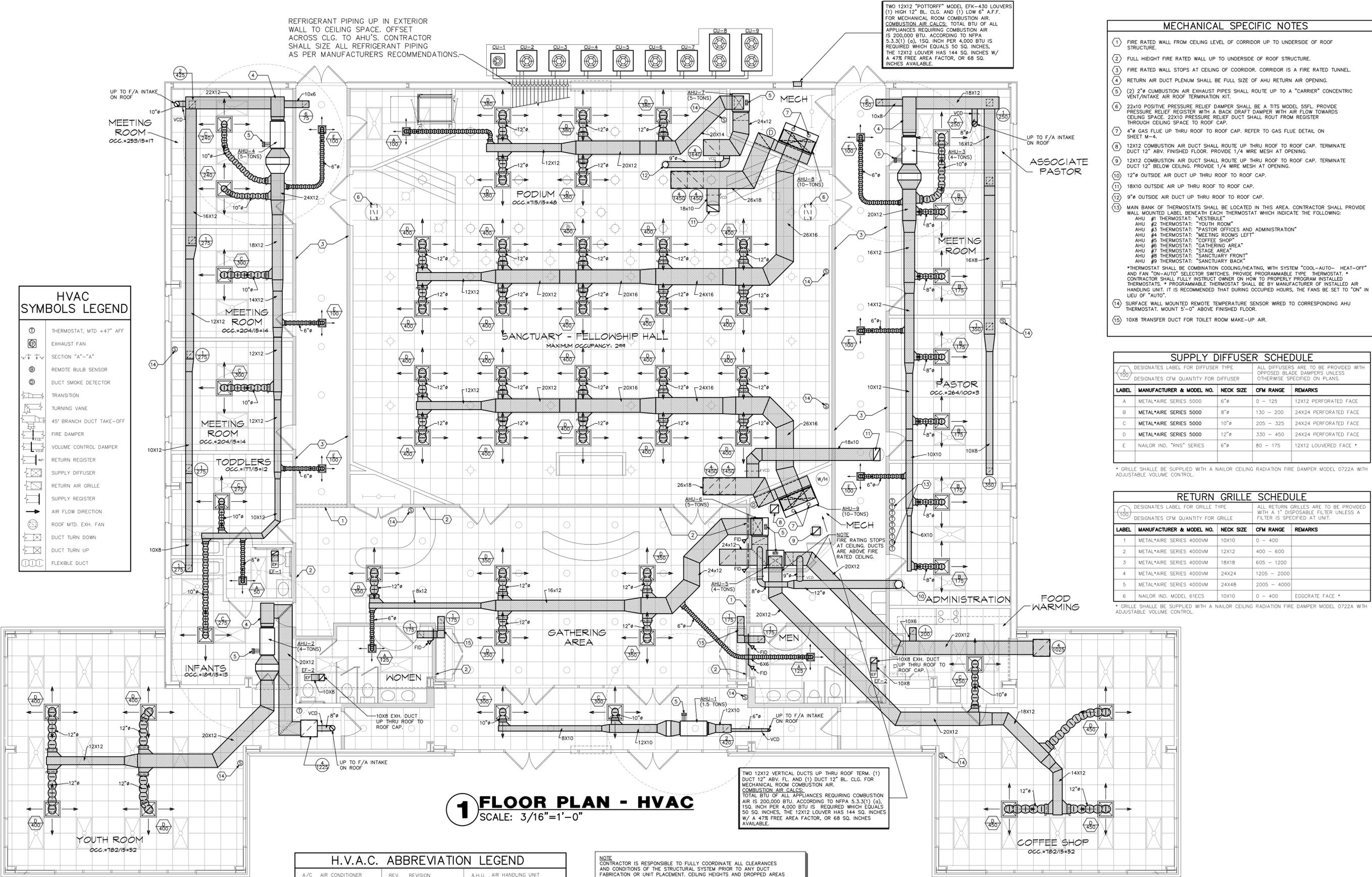
* GRILLE SHALL BE SUPPLIED WITH A NAIROL CEILING RADIATION FIRE DAMPER MODEL 0722A WITH ADJUSTABLE VOLUME CONTROL.

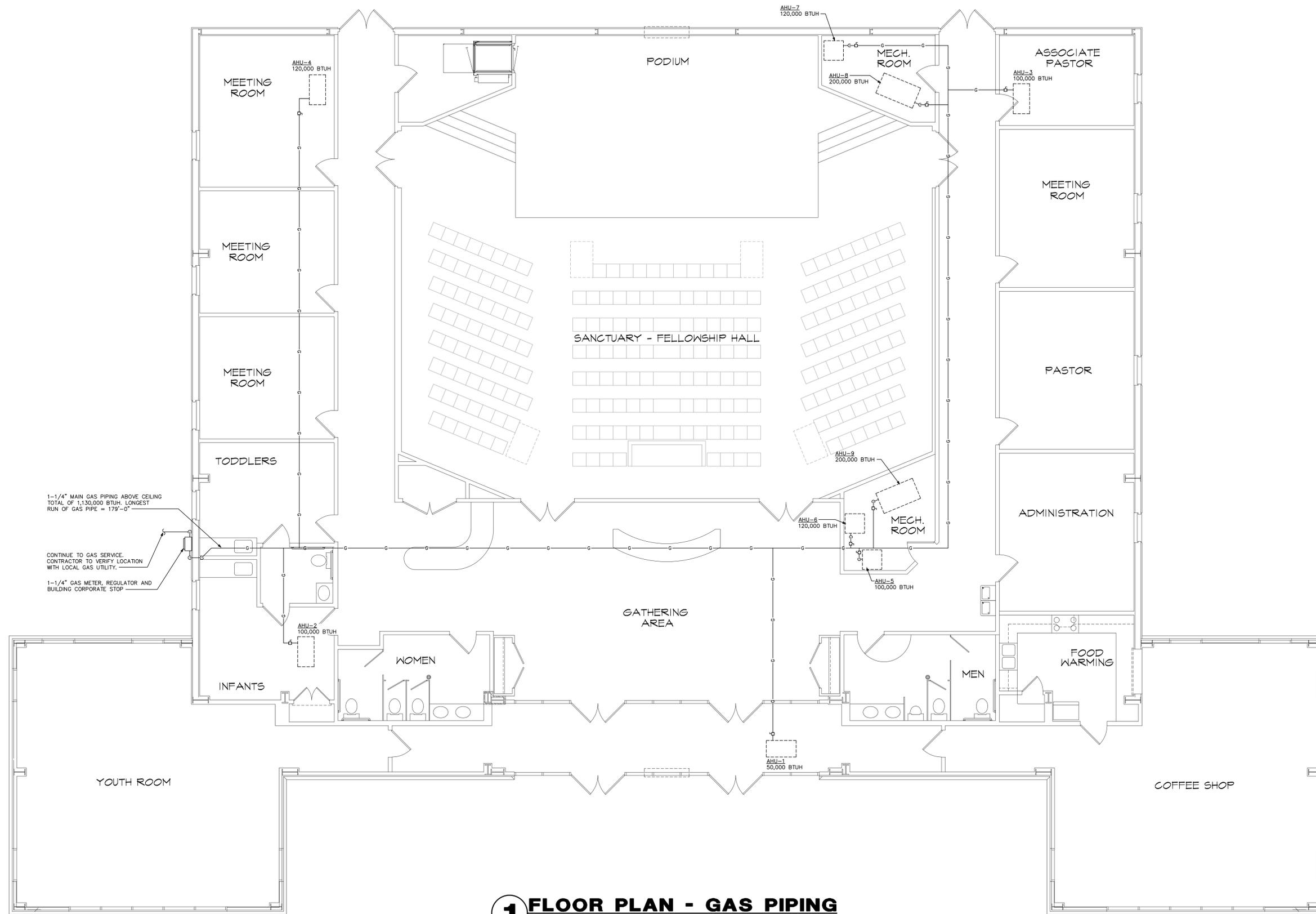
1 FLOOR PLAN - HVAC
SCALE: 3/16"=1'-0"

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	MFR.	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

NOTE
CONTRACTOR IS RESPONSIBLE TO FULLY COORDINATE ALL CLEARANCES AND CONDITIONS OF THE STRUCTURAL SYSTEM PRIOR TO ANY DUCT FABRICATION OR UNIT PLACEMENT. CEILING HEIGHTS AND DROPPED AREAS SHALL BE PROVIDED AS REQUIRED TO FIT THE DUCTWORK IN ALL AREAS. CONTRACTOR SHALL COORDINATE PROVIDED EQUIPMENT SERVICE REQUIREMENTS WITH ALL SYSTEMS TO INSURE ADEQUATE SERVICE AND ACCESS IS PROVIDED AS PER INSTALLATION INSTRUCTIONS. PROVIDE ACCESS DOORS, RATED IF REQUIRED, TO PROVIDE ACCESS TO SERVICE UNITS IF REQUIRED BY INSTALLATION REQUIREMENTS.

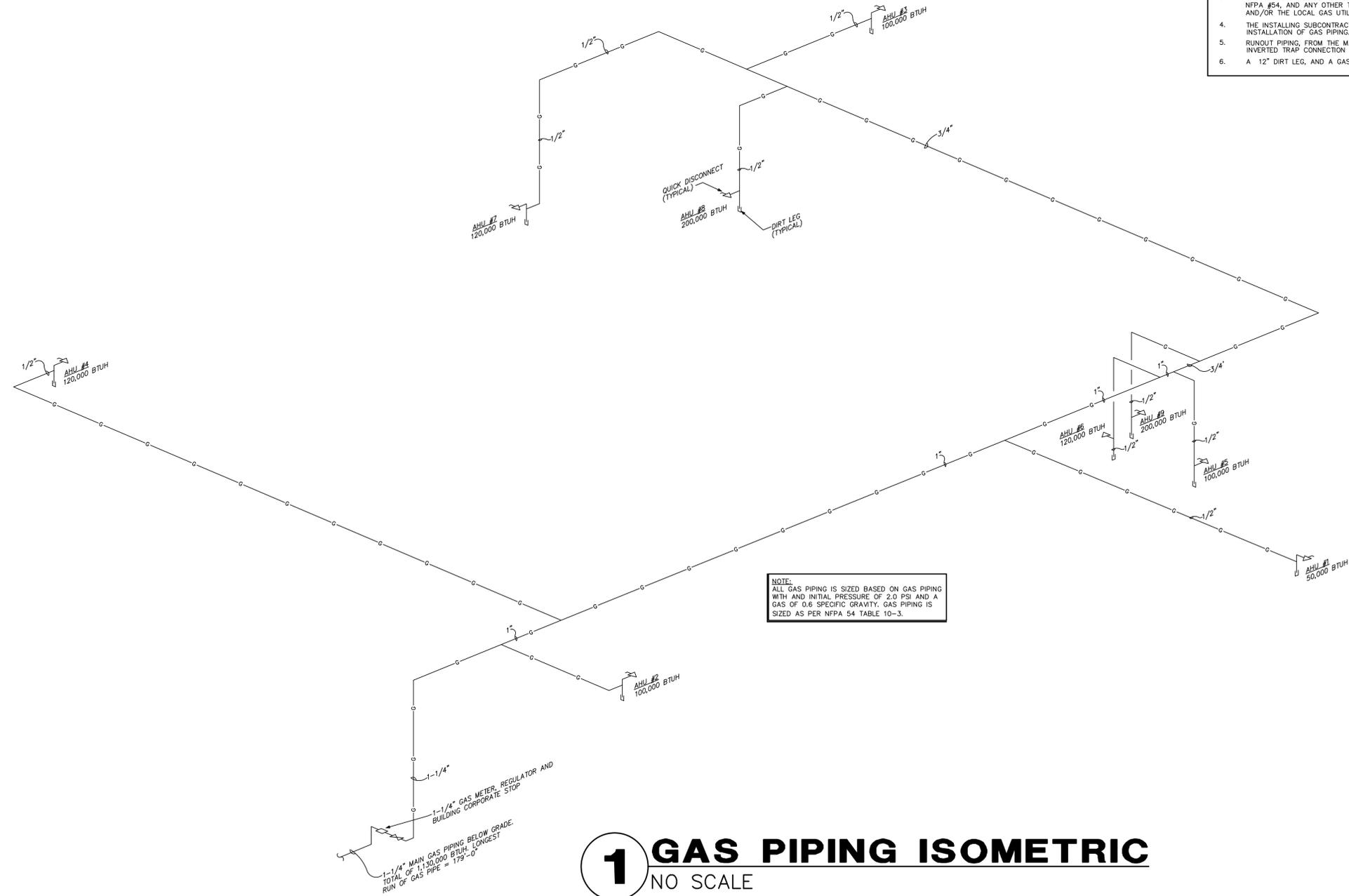




1 FLOOR PLAN - GAS PIPING
 SCALE: 3/16"=1'-0"

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.



1 GAS PIPING ISOMETRIC
NO SCALE

GENERAL MECHANICAL NOTES

- 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 EDITION OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-91 MECHANICAL REFRIGERATION. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
- THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
- THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES TO INSURE AN ORDERLY PROGRESS OF THIS WORK.
- ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- ALL NON-EXPOSED SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH 1" INSULATION WITH A 4.2 R VALUE OR HIGHER.
- ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
- DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
- 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, METALAIR, AIRGUIDE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
- THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE THERMOSTAT. * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. * PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT. IT IS RECOMMENDED THAT DURING OCCUPIED HOURS, THE FANS BE USED TO "ON" IN LIEU OF "AUTO".
- 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.
- ARMAFLEX 3/4" INSULATION SHALL BE USED FOR SUCTION LINES. PRE-INSULATED REFRIGERANT LINE KITS ARE ACCEPTABLE.
- PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
- 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.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
- 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.

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

Prescriptive [X] METHOD OF COMPLIANCE: Performance [] Energy Cost Budget []

Thermal Zone Zone 15

Exterior Design Conditions
 winter dry bulb -8° F
 summer dry bulb 90° F

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

Building Heating Load 957,000 BTU
 Building Cooling Load 585,700 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

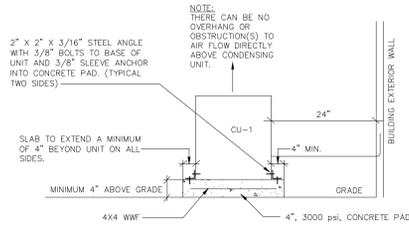
Equipment schedules with motors (mechanical systems) REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
 motor horsepower REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
 number of phases REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
 minimum efficiency REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.
 motor type REFER 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 ASHRAE Standard 90.1 1989.

SIGNED: _____
 NAME: _____
 TITLE: _____

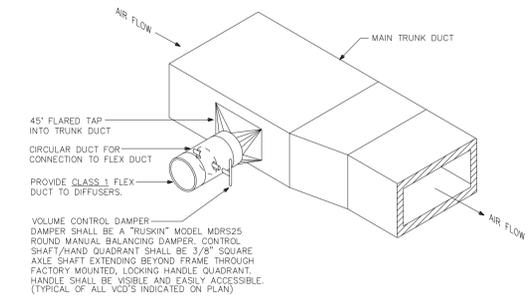
4 COND. UNIT MTG. DETAIL

NO SCALE



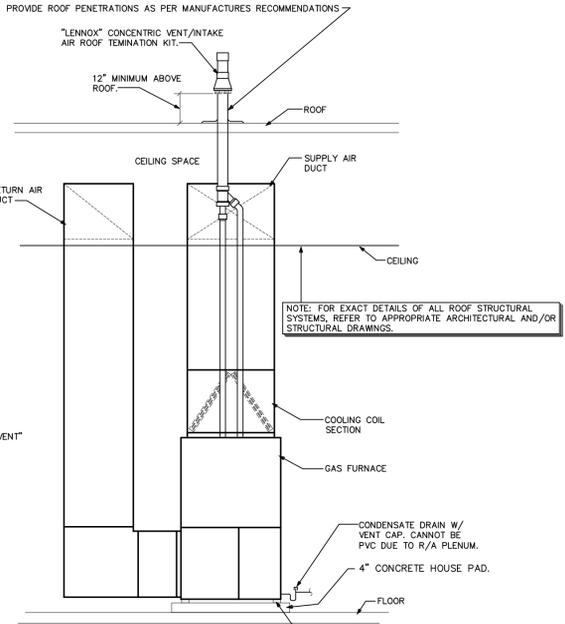
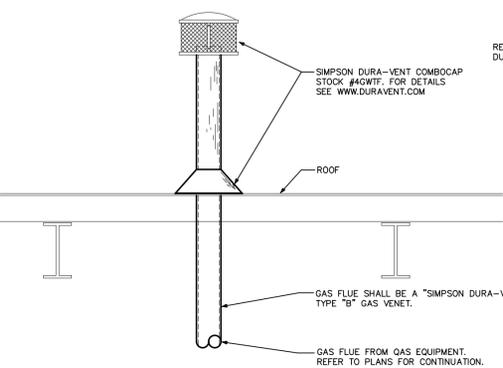
5 BRANCH DUCT DETAIL

NO SCALE



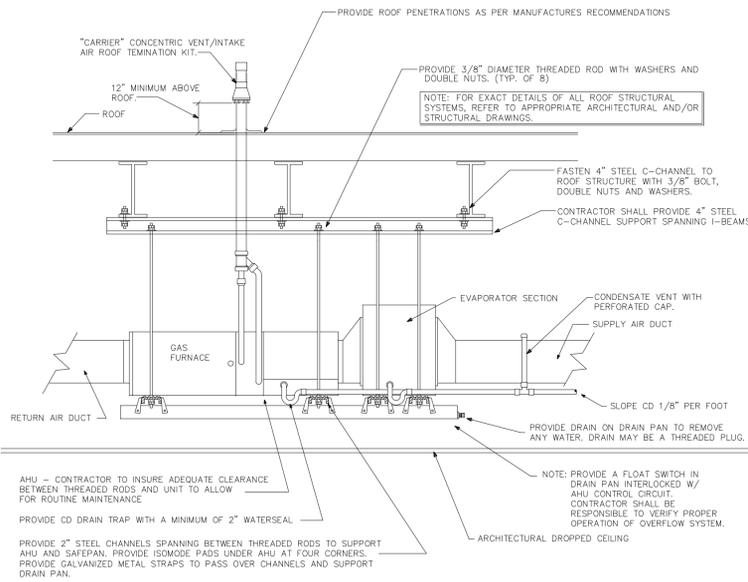
3 GAS FLUE DETAIL

NO SCALE



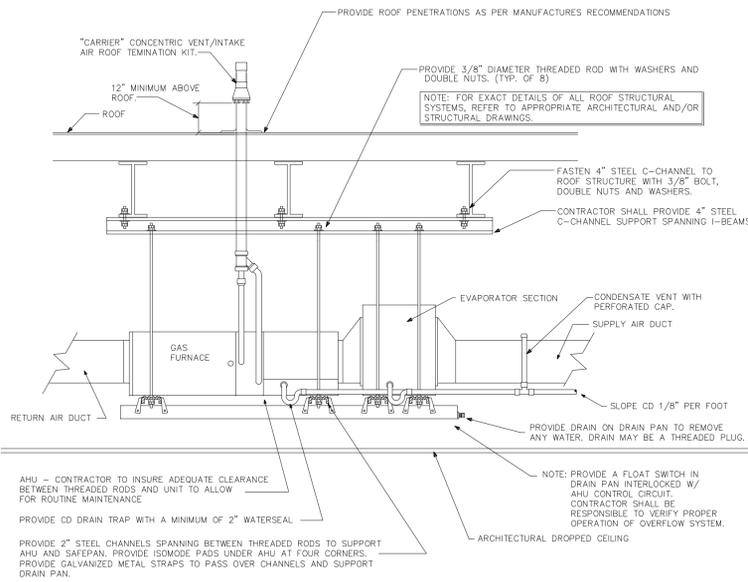
2 AIR HANDLING UNIT MOUNTING DETAIL

NO SCALE



1 GAS FURNACE/AHU MOUNTING DETAIL

NO SCALE



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

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #1	400	400 / 1000 X 30 = 12	12 X 15 = 180

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "ASSEMBLY" CATEGORY = 52 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #2	800	- / 1000 X - = -	52 X 15 = 780/2=390
AHU #5	800	- / 1000 X - = -	52 X 15 = 780/2=390

THE OCCUPANCY OF THIS FACILITY DOES NOT EXCEED THREE HOURS AT ANY TIME, THEREFORE THE FACILITY QUALIFIES 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.

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

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #3	975	975 / 1000 X 7 = 7	7 X 20 = 140

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "ASSEMBLY" CATEGORY = 72 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #4	1,125	- / 1000 X - = -	72 X 15 = 1,080/2=540

THE OCCUPANCY OF THIS FACILITY DOES NOT EXCEED THREE HOURS AT ANY TIME, THEREFORE THE FACILITY QUALIFIES 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.

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

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #6	1,100	1,100 / 1000 X 30 = 33	33 X 15 = 495/2=248

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "STAGE" CATEGORY = 48 PEOPLE PER ARCHITECTURAL PLANS & 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #7	715	- / 1000 X - = -	48 X 15 = 720/2=360

THE OCCUPANCY OF THIS FACILITY DOES NOT EXCEED THREE HOURS AT ANY TIME, THEREFORE THE FACILITY QUALIFIES 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.

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "ASSEMBLY" CATEGORY = 299 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #8&9	2,209	- / 1000 X - = -	299 X 15 = 4,485/2=2,242

AHU #8 = 1,121 CFM O/A AND AHU #9 = 1,121 O/A CFM

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/1#	1
EF-2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1#	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 LABELS	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SEMI-CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCP	ESR/SEER	MANUFACTURER & MODEL NO.	AHU LABELS	MANUFACTURER & MODEL NO.	TOTAL CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES									
CU #1	LENNOX C082B	19,300	14,375	7.9	1.1	208V/3#	20	10.8	LENNOX CH23-31	AHU #1	LENNOX GH2802/3-50	600	.30"	MED-HIGH	1/3	120V/1#	35,000	47,000	2"	1 THRU 4									
CU #2	LENNOX H529-048	47,000	33,300	13.5	1.9	208V/3#	30	10.0	LENNOX CH23-31	AHU #2	LENNOX GH2803/4-100	1,600	.30"	MED-HIGH	1/2	120V/1#	100,000	92,000	2"	1 THRU 4									
CU #3	LENNOX H529-048	47,000	33,300	13.5	1.9	208V/3#	30	10.0	LENNOX CH23-31	AHU #3	LENNOX GH2803/4-100	1,600	.30"	MED-HIGH	1/2	120V/1#	100,000	92,000	2"	1 THRU 4									
CU #4	LENNOX H529-060	58,000	39,300	17.3	1.9	208V/3#	40	10.0	LENNOX CH23-65	AHU #4	LENNOX GH2804/5-125	2,000	.30"	MED-HIGH	3/4	120V/1#	125,000	111,000	2"	1 THRU 4									

GENERAL NOTES:
 * ALL RATINGS ARE AT AIR 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 3/4" ARMAFLEX OR APPROVED EQUAL.
 3) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.
 4) FURNACE SHALL BE PROVIDED WITH CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.

UPFLOW GAS FURNACE W/SPLIT SYSTEM AIR CONDITIONING SYSTEM SCHEDULE

CONDENSING UNIT										EVAPORATOR COIL UNIT										GAS FURNACE									
CU LABELS	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SEMI-CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCP	ESR/SEER	MANUFACTURER & MODEL NO.	AHU LABELS	MANUFACTURER & MODEL NO.	TOTAL CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES									
CU #5	LENNOX H529-048	47,000	33,300	13.5	1.9	208V/3#	30	10.0	LENNOX C23-31	AHU #5	LENNOX G2803/4-100	1,600	.30"	MED-HIGH	1/2	120V/1#	100,000	93,000	2"	1 THRU 4									
CU #6	LENNOX H529-060	58,000	39,300	17.3	1.9	208V/3#	40	10.0	LENNOX C23-65/85	AHU #6	LENNOX G2804/5-125	2,000	.30"	MED-HIGH	3/4	120V/1#	125,000	117,000	2"	1 THRU 4									
CU #7	LENNOX H529-060	58,000	39,300	17.3	1.9	208V/3#	40	10.0	LENNOX C23-65/85	AHU #7	LENNOX G2804/5-125	2,000	.30"	MED-HIGH	3/4	120V/1#	125,000	117,000	2"	1 THRU 4									

GENERAL NOTES:
 * ALL RATINGS ARE AT AIR 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 3/4" ARMAFLEX OR APPROVED EQUAL.
 3) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.
 4) FURNACE SHALL BE PROVIDED WITH CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.

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

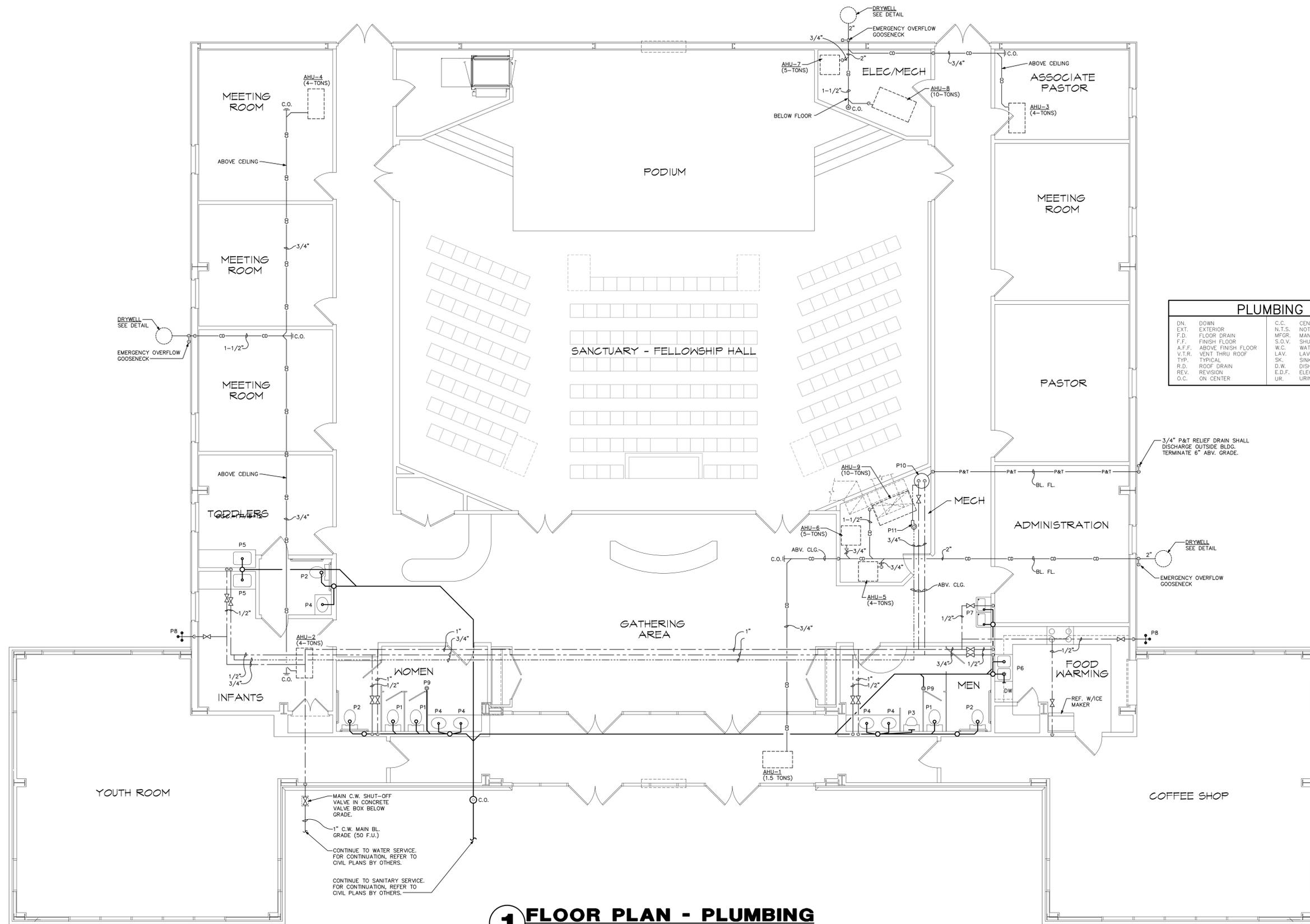
CONDENSING UNIT										EVAPORATOR COIL UNIT										GAS FURNACE									
CU LABELS	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SEMI-CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCP	ESR/SEER	MANUFACTURER & MODEL NO.	AHU LABELS	MANUFACTURER & MODEL NO.	TOTAL CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES									
CU #8	LENNOX H5291201Y	131,000	98,200	37.8	(2)98.0	208V/3#	90A	10.4	LENNOX C17-120	AHU #8	REZNER CAUA-300	4,000	.30"	645 RPM	1.0	208V/3#	200,000	160,000	(2) 8" x 8"	1 THRU 3									
CU #9	LENNOX H5291201Y	131,000	98,200	37.8	(2)98.0	208V/3#	90A	10.4	LENNOX C17-120	AHU #9	REZNER CAUA-300	4,000	.30"	645 RPM	1.0	208V/3#	200,000	160,000	(2) 8" x 8"	1 THRU 3									

GENERAL NOTES:
 * ALL RATINGS ARE AT AIR ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
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 * CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

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SPECIFIC NOTES:
 1) SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.
 2) INSULATE REFRIGERANT SUCTION LINE WITH 3/4" ARMAFLEX OR APPROVED EQUAL.
 3) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.



PLUMBING ABBREVIATION LEGEND			
DN.	DOWN	C.C.	CENTER TO CENTER
EXT.	EXTERIOR	N.T.S.	NOT TO SCALE
F.D.	FLOOR DRAIN	MFR.	MANUFACTURER
F.F.	FINISH FLOOR	S.O.V.	SHUT OFF VALVE
A.F.F.	ABOVE FINISH FLOOR	W.C.	WATER CLOSET
V.T.R.	VENT THRU ROOF	LAV.	LABORATORY
TYP.	TYPICAL	SK.	SINK
R.D.	ROOF DRAIN	D.W.	DISH WASHER
REV.	REVISION	E.D.F.	ELECTRIC DRINKING FOUNTAIN
O.C.	ON CENTER	UR.	URINAL
F.U.	FIXTURE UNITS	H.B.	HOSE BIBBS
C.O.	CLEANOUT	E.W.H.	ELECTRIC WATER HEATER
JAN.S.K.	JANITOR SINK	P & T	PRESSURE & TEMPERATURE
R.W.L.	RAIN WATER LEADER		

PLUMBING SYMBOLS LEGEND	
	FLOOR DRAIN
	HOSE BIBB
	CLEANOUT
	RELIEF VALVE
	AIR CHAMBER
	UNION
	SOIL OR WASTE LINE
	SANITARY VENT LINE
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC WATER RECIRCULATION
	PRESSURE & TEMP. RELIEF LINE
	CONDENSATE DRAIN LINE
	RAIN WATER LEADER
	GAS LINE
	SAFEWASTE LINE
	FIRE PROTECTION
	SHUT OFF VALVE
	SAFEPAN LINE
	FIRE SPRINKLER HEAD
	PIPE TURN UP
	PIPE TURN DOWN
	P-TRAP

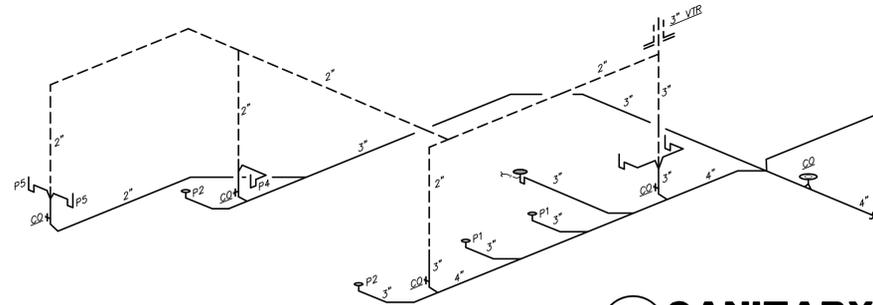
1 FLOOR PLAN - PLUMBING
SCALE: 3/16"=1'-0"

MAIN C.W. SHUT-OFF VALVE IN CONCRETE VALVE BOX BELOW GRADE.
1" C.W. MAIN BL. GRADE (50 F.U.)
CONTINUE TO WATER SERVICE. FOR CONTINUATION, REFER TO CIVIL PLANS BY OTHERS.
CONTINUE TO SANITARY SERVICE. FOR CONTINUATION, REFER TO CIVIL PLANS BY OTHERS.

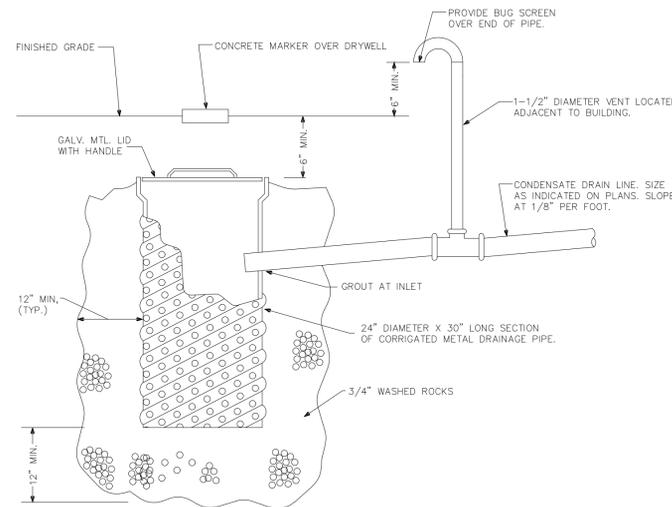
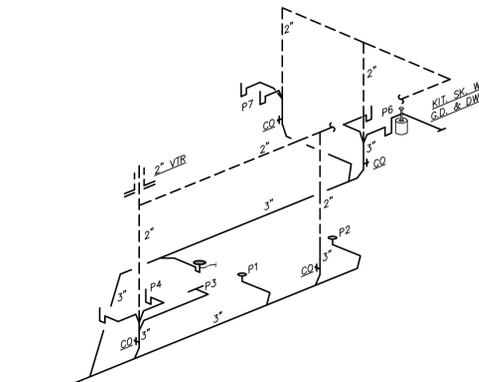
3/4" P&T RELIEF DRAIN SHALL DISCHARGE OUTSIDE BLDG. TERMINATE 6" ABV. GRADE.

DRYWELL SEE DETAIL
EMERGENCY OVERFLOW GOOSENECK

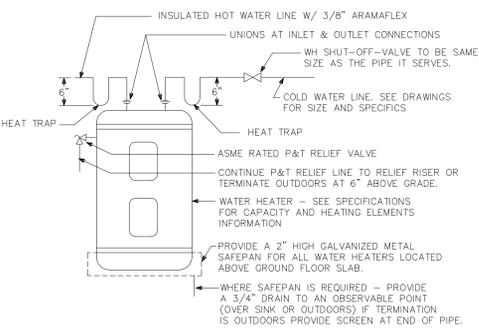
PLUMBING FIXTURE CONNECTION SIZES			
FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE
P-1,2	1/2"	-	3"
P-3	3/4"	-	1-1/2"
P-4	1/2"	1/2"	1-1/4"
P-5,6	1/2"	1/2"	1-1/2"
P-7	1/2"	-	1-1/4"



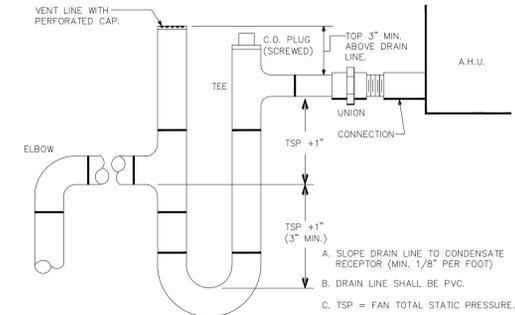
1 SANITARY ISOMETRIC NO SCALE



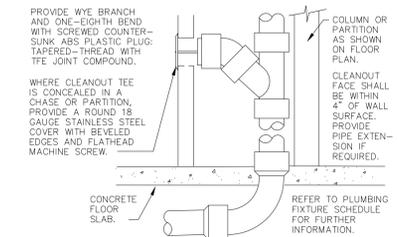
2 DRYWELL DETAIL NO SCALE



4 WATER HEATER PIPING DETAIL NO SCALE



3 CONDENSATE P-TRAP DETAIL NO SCALE

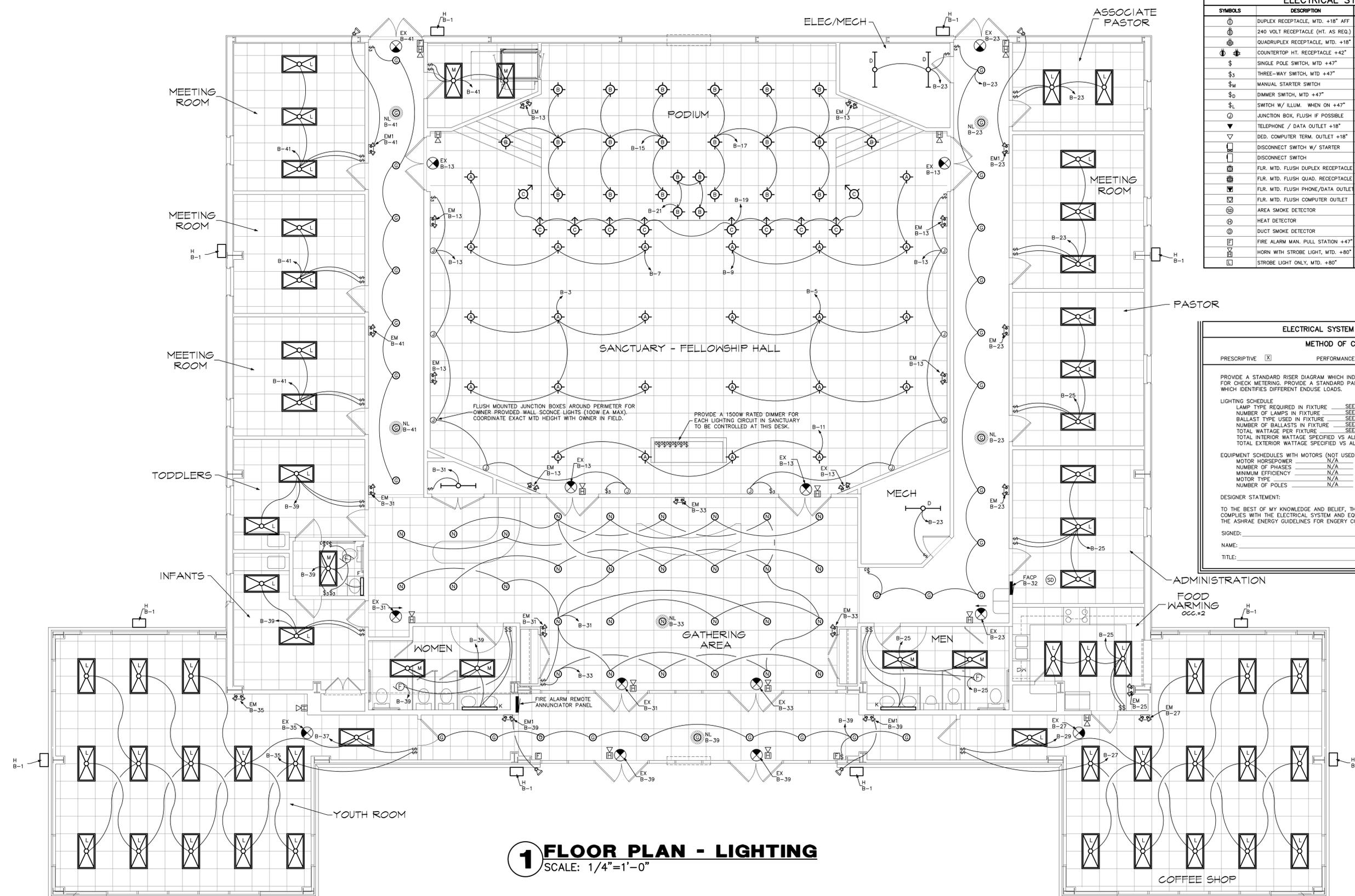


5 WALL CLEANOUT DETAIL NO SCALE

- ### GENERAL PLUMBING NOTES
- 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.
 - All work and materials shall comply with the latest edition of the National, State, and all local codes and Ordinances having jurisdiction.
 - 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.
 - All material shall be new.
 - 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.
 - All required insurance shall be provided for protection against public liability or property damage for the duration of the work.
 - The plumbing contractor shall secure and pay all permit fees, inspections, and tests.
 - All work shall be coordinated with other trades to avoid interference with the progress of construction.
 - 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.
 - Verify location, size and inverts of all existing utilities prior to start of construction. Advise architect/engineer of any discrepancies.
 - All fixtures shall be provided with readily accessible stops.
 - Water piping shall be type "L" copper for up to and including 2" and shall be type "K" for 2 1/2" and larger.
 - 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.
 - Air conditioning condensate drain piping shall be PVC #40 or copper drain waste and vent pipe and fittings. Insulate all condensate piping except exterior piping. Install all condensate piping for air conditioning units as required per local codes.
 - Furnish and install approved air chambers at each plumbing fixture and PDI approved shock arresters on main lines and risers.
 - Provide chrome plated combination covered plate and cleanout plug for all wall cleanouts, Josam 58890.
 - Insulate lines as follows:
 - Hot & Cold water piping: 1" thick fiberglass.
 - Condensate piping: 1/2" thick aramflex preformed.

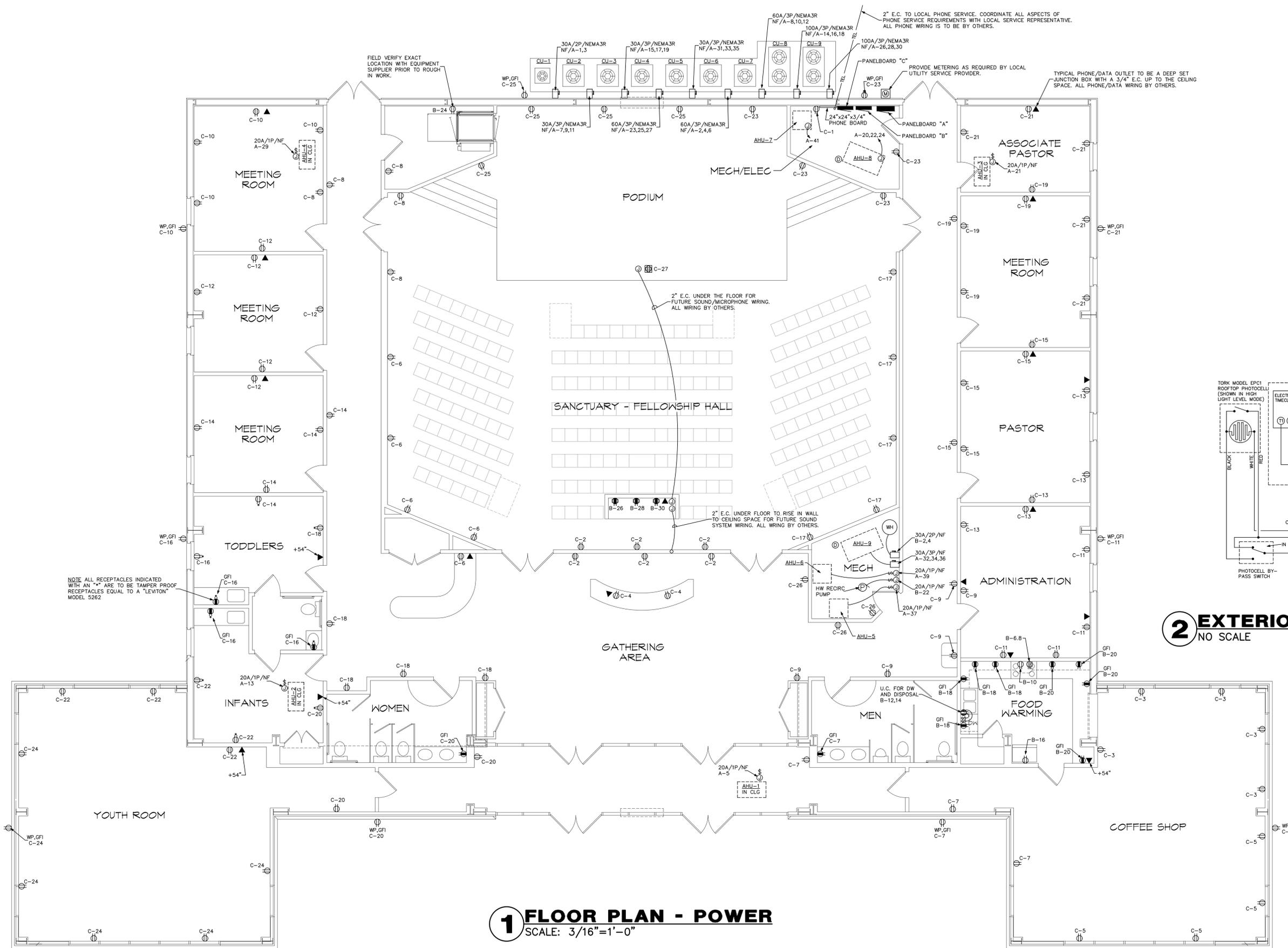
- ### PLUMBING FIXTURE SCHEDULE
- P-1 (WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET 2898.014 ELONGATED 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.
- P-2 (HANDICAPPED WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET II 2216.143 ELONGATED 18" 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)
WALL MOUNTED BLOWOUT, VITREOUS CHINA WATER SAVER WITH WALL HANGERS 1-1/4" TOP SPUD AND PRIVACY SHIELDS. AMERICAN STANDARD #6531.019 LYNBROOK. FLUSH VALVE: EXPOSED CHROME PLATED METAL OSCILLATING HANDLE ESCUTCHEON, SEAT BUMPER, INTEGRAL SCREWDRIVER STOP AND VACUUM BREAKER. SLOAN ROYAL 180-YB.
- P-4 (HANDICAPPED COUNTER TOP LAVATORY)
SHALL BE AN AMERICAN STANDARD MODEL RONDALYN 0491.019 VITREOUS CHINA SELF-RIMMING STYLE CLASSIC ROUND SHAPE. PROVIDE A 5401.172H HERITAGE CENTERSET FAUCET WITH 4" WRIST BLADE HANDLES TO INCLUDE AN OMNI PRESSURE COMPENSATING 0.5 GPM FLOW RESTRICTOR AQUASEAL VALVES AND CHROME FINISH. GRID DRAIN: OFFSET PERFORATED WHEELCHAIR LAVATORY DRAIN ASSEMBLY WITH 1-1/2" TAILPIECE. MCGUIRE #155WC.
- P-5 (SINGLE BOWL STAINLESS STEEL SINK - LARGE)
SHALL BE AN ELKAY LUSTERTONE MODEL DLH-2222-10-C SINGLE BOWL STAINLESS STEEL SELF-RIMMING SINK WITH LK2432 HI-ARC FAUCET TO INCLUDE AN OMNI PRESSURE COMPENSATING 2.0 GPM FLOW RESTRICTOR.
- 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 (HANDICAPPED COMBINATION H/LO ELECTRIC WATER COOLER)
OASIS MODELS PLF6WQSL, H/LO COMBINATION, SELF CONTAINED, WALL-HUNG ELECTRIC REFRIGERATED WATER COOLERS. ACCEPTABLE ALTERNATE MANUFACTURERS - ELKAY AND HALSEY TAYLOR.
- P-8 (EXTERIOR HOSE BIBB W/HANDWHEEL)
SHALL BE A "NIBCO" SERIES 63LS, GRAINGER STOCK NO. 5E407, 3/4" SOLID BRONZE HOSE BIBB WITH ALUMINUM HANDWHEEL.
- P-9 (FLOOR DRAIN WITH TRAP PRIMER)
SHALL BE A JOSAM 30000-A-50 SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WELOUC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALLOY ROUND SUPER-FLO STRAINER.
- P-10 (WATER HEATER)
SHALL BE A LOCHINVAR MODEL ESA 050 KK, 47 GALLON GLASSLINED STORAGE TANK, STUBBY TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 208 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-11 (HOT WATER RECIRCULATING PUMP)
SHALL BE A TEEL MODEL 1P903 HOT WATER RECIRCULATING PUMP. 1/6 HP MOTOR RUNNING AT 1725 RPM AND 115 VOLTS SINGLE PHASE INCOMING POWER.
- 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.

ELECTRICAL SYMBOLS LEGEND			
NOTE - NOT ALL SYMBOLS MAY BE USED ON PROJECT		NOTE - NOT ALL SYMBOLS MAY BE USED ON PROJECT	
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF		TRANSFORMER - SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL - SIZE AS NOTED
	QUADRUPLUX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"		F-FAN; M-MOTOR; P-PUMP
	SINGLE POLE SWITCH, MTD +47"		SPECIAL OUTLET - AS REQUIRED
	THREE-WAY SWITCH, MTD +47"		CKT. HOMERUN (B INDICATES PANEL)
	MANUAL STARTER SWITCH		"2" DESIGNATES CIRCUIT NUMBER
	DIMMER SWITCH, MTD +47"		EXIT SIGN; ONE SIDED, OR TWO SIDED
	SWITCH W/ ILLUM. WHEN ON +47"		EMERGENCY LIGHTING
	JUNCTION BOX, FLUSH IF POSSIBLE		RECESSED MOUNTED LIGHTING FIXTURE
	TELEPHONE / DATA OUTLET +18"		HIGH BAY LIGHTING FIXTURE
	DED. COMPUTER TERM. OUTLET +18"		FLUORESCENT LIGHTING FIXTURE
	DISCONNECT SWITCH W/ STARTER		FLUORESCENT LIGHTING NIGHT LIGHT
	FLR. MTD. FLUSH DUPLEX RECEPTACLE		FLUORESCENT STRIP LIGHTING FIXTURE
	FLR. MTD. FLUSH QUAD. RECEPTACLE		ISOLATED GROUND
	FLR. MTD. FLUSH PHONE/DATA OUTLET		WP WEATHER-PROOF
	FLR. MTD. FLUSH COMPUTER OUTLET		BC BELOW COUNTER
	AREA SMOKE DETECTOR		BFG BELOW FINISH GRADE
	HEAT DETECTOR		GFI GROUND FAULT INTERRUPTER
	DUCT SMOKE DETECTOR		AFF ABOVE FINISHED FLOOR
	FIRE ALARM MAN. PULL STATION +47"		EWC ELECTRIC WATER COOLER
	HORN WITH STROBE LIGHT, MTD. +80"		ASW ABOVE SHOW WINDOW
	STROBE LIGHT ONLY, MTD. +80"		BSW BELOW SHOW WINDOW
			FACP FIRE ALARM CONTROL PANEL
			FAAP FIRE ALARM ANNUNCIATOR PANEL



ELECTRICAL SYSTEM AND EQUIPMENT		
METHOD OF COMPLIANCE		
PREScriptive	<input checked="" type="checkbox"/>	PERFORMANCE <input type="checkbox"/>
		ENERGY COST BUDGET <input type="checkbox"/>
<p>PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDUSE LOADS.</p> <p>LIGHTING SCHEDULE</p> <p>LAMP TYPE REQUIRED IN FIXTURE _____ SEE SCHEDULE ON DRAWINGS</p> <p>NUMBER OF LAMPS IN FIXTURE _____ SEE SCHEDULE ON DRAWINGS</p> <p>BALLAST TYPE USED IN FIXTURE _____ SEE SCHEDULE ON DRAWINGS</p> <p>NUMBER OF BALLASTS IN FIXTURE _____ SEE SCHEDULE ON DRAWINGS</p> <p>TOTAL WATTAGE PER FIXTURE _____ SEE SCHEDULE ON DRAWINGS</p> <p>TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED 1,21 VS 1,30</p> <p>TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED N/A</p> <p>EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)</p> <p>MOTOR HORSEPOWER _____ N/A</p> <p>NUMBER OF PHASES _____ N/A</p> <p>MINIMUM EFFICIENCY _____ N/A</p> <p>MOTOR TYPE _____ N/A</p> <p>NUMBER OF POLES _____ N/A</p> <p>DESIGNER STATEMENT:</p> <p>TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE ASHRAE ENERGY GUIDELINES FOR ENERGY CONSERVATION.</p> <p>SIGNED: _____</p> <p>NAME: _____</p> <p>TITLE: _____</p>		

1 FLOOR PLAN - LIGHTING
SCALE: 1/4"=1'-0"



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

2 EXTERIOR LIGHTING CONTROL
NO SCALE

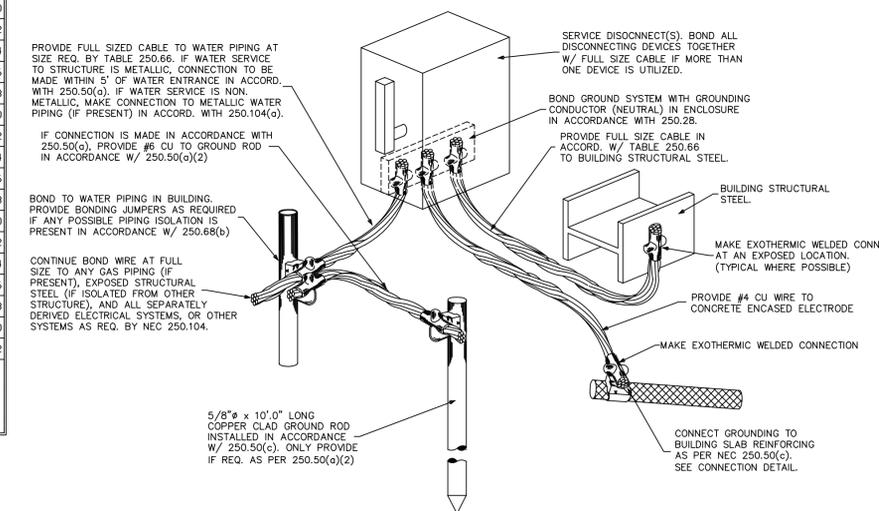
CIRCUIT BREAKER PANEL SCHEDULE A														SQUARE D TYPE NODD, OR APPROVED EQUAL		
600 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 600A, M.C.B., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 1 ENCLOSURE																
#	BKR.	WIRE AND CONDUIT			LOAD DESCRIPTION	WIRE AND CONDUIT			BKR.	#						
		COND.	NEUTRAL	GND		KEYS	C.	GND			NEUTRAL	COND.				
1	20/2	#12	---	#12	1/2	CHAL	CONDENSING UNIT #1									
3	20/3	#12	---	#12	1/2	CHAL	CONDENSING UNIT #6	CHAL	3/4	#10	---	#8	40/3			
5	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #1									
7	9	30/3	#10	---	#10	1/2	CHAL	CONDENSING UNIT #2								
11	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #2									
13	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #2									
15	17	30/3	#10	---	#10	1/2	CHAL	CONDENSING UNIT #3								
19	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #3									
21	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #3									
23	25	40/3	#8	---	#10	3/4	CHAL	CONDENSING UNIT #4								
27	29	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #4								
31	33	30/3	#10	---	#10	1/2	CHAL	CONDENSING UNIT #5								
35	37	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #5								
39	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #6									
41	20/1	#12	#12	#12	1/2	CHAL	AIR HANDLING UNIT #7									
							PANLBOARD "C"	CHAL	1-1/4	#8	#3	#3	100/3			

CIRCUIT BREAKER PANEL SCHEDULE C														SQUARE D TYPE NODD, OR APPROVED EQUAL		
100 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 10000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE																
#	BKR.	WIRE AND CONDUIT			LOAD DESCRIPTION	WIRE AND CONDUIT			BKR.	#						
		COND.	NEUTRAL	GND		KEYS	C.	GND			NEUTRAL	COND.				
1	20/1	#12	#12	#12	1/2	CHAL	PHONE BOARD OUTLET									
3	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	2		
5	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	4		
7	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	6		
9	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	8		
11	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	10		
13	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	12		
15	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	14		
17	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	16		
19	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	18		
21	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	20		
23	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	22		
25	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	24		
27	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	26		
29	31						SPACE									
31	33						SPACE									
33	35						SPACE									
35	37						SPACE									
37	39						SPACE									
39	41						SPACE									

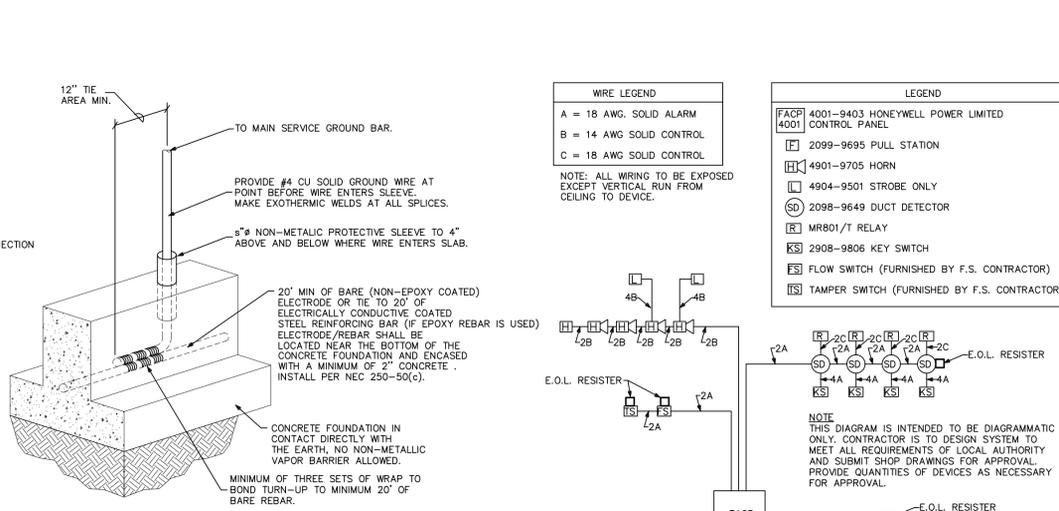
- ### ELECTRICAL NOTES:
- GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES. THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH 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. UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY. SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.
 - 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.
 - 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.
 - 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 UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
 - GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.
 - CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. 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). ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.
 - CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL). CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. 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 SPOCKAST OR EQUAL POTTING COMPOUND.
 - 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.
 - 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.
 - 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.
 - TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

CIRCUIT BREAKER PANEL SCHEDULE B														SQUARE D TYPE NODD, OR APPROVED EQUAL		
200 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 200A, M.C.B., 10000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE																
#	BKR.	WIRE AND CONDUIT			LOAD DESCRIPTION	WIRE AND CONDUIT			BKR.	#						
		COND.	NEUTRAL	GND		KEYS	C.	GND			NEUTRAL	COND.				
1	20/1	#12	#12	#12	1/2	CHAL	EXTERIOR LIGHTING **									
3	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY PENDENT LTG ***									
5	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY PENDENT LTG ***									
7	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY PENDENT LTG ***									
9	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY PENDENT LTG ***									
11	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY PENDENT LTG ***									
13	20/1	#12	#12	#12	1/2	CHAL	SANCTUARY SCENCE LTG									
15	20/1	#12	#12	#12	1/2	CHAL	PODIUM DOWN LIGHTS ***									
17	20/1	#12	#12	#12	1/2	CHAL	PODIUM DOWN LIGHTS ***									
19	20/1	#12	#12	#12	1/2	CHAL	PODIUM DOWN LIGHTS ***									
21	20/1	#12	#12	#12	1/2	CHAL	PODIUM DOWN LIGHTS ***									
23	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
25	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
27	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
29	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
31	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
33	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
35	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
37	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
39	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									
41	20/1	#12	#12	#12	1/2	CHAL	LIGHTING									

PANEL A DIVERSIFICATION CALCULATIONS	PANEL B DIVERSIFICATION CALCULATIONS	PANEL C DIVERSIFICATION CALCULATIONS
RECEPTACLES (127) - 22860 VA TOTAL FIRST 10 KVA AT 100% - 10000 REMAINDER AT 50% - 6450 HVAC LOAD AT 100% - 83032 PLUS 25% OF THE LARGEST MOTOR - 3402 TOTAL DIVERSIFIED PANEL LOAD - 102864 LOAD AT 120/208V/3-PHASE/4-WIRE - 285.7A	RECEPTACLES (8) - 1440 VA TOTAL FIRST 10 KVA AT 100% - 1440 REMAINDER AT 50% - 6450 MOTOR LOADS AT 100% - 2721 PLUS 25% OF THE LARGEST MOTOR - 281 MISC NEM-CONTINUOUS LOADS AT 100% - 18500 TOTAL DIVERSIFIED PANEL LOAD - 53317 LOAD AT 120/208V/3-PHASE/4-WIRE - 148.1A	RECEPTACLES (127) - 22860 VA TOTAL FIRST 10 KVA AT 100% - 10000 REMAINDER AT 50% - 6450 TOTAL DIVERSIFIED PANEL LOAD - 16438 LOAD AT 120/208V/3-PHASE/4-WIRE - 45.6A



2 GROUNDING DETAIL
NO SCALE



3 GROUNDING DETAIL
NO SCALE

WIRE/CONDUIT KEY
1234
TEMP RATING
CONDUIT TYPE
INSULATION
WIRING TYPE

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REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA

PANELBOARD "A" TO BE PROVIDED WITH FEED THRU LUGS

LIGHTING FIXTURE SCHEDULE							
LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	PENDENT MTD DNLIGHT	BRONZE		120	(1) 150W R40	HUBBEL C145-6CM	
B	SLOPED SURFACE MTD DNLT	WHITE		120	(1) 150W PAR38	LITHONIA L16-SSC-6501	
C	DIRECTIONAL CAN, SURF MTD	WHITE		120	(1) 150W PAR38	LITHONIA D6PDD	
D	4' FLUORESCENT STRIP	WHITE		120	(2) 32W T8	LITHONIA C-232-120	
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	W/ BATTERY BACKUP
EM1	EMERG EGRESS w/ REM HEAD	WHITE		120	INCLUDED	LITHONIA 6ELM2	W/ MODEL NX, PAR38, NEMA 3R REMOTE HEAD
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP
F	2' FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 17W T8	LITHONIA WC-217-A12-120	
G	RECESSED FLUOR. CAN	WHITE		120	(1) 32TRT	LITHONIA AFV-32TRT-6AR-120	PROVIDE FIRE RATED TENTING IN FIRE RATED CEILING - SEE DETAILS
H	EXTERIOR SECURITY LTG	BRONZE	POLYCARBONATE	120	(1) 100W MH	LITHONIA TWP-100M-120	
K	4' FLUORESC						