

RETURN GRILLE SCHEDULE				
DESIGNATES LABEL FOR GRILLE TYPE			FILTER SHALL BE PROVIDED AT UNIT.	
DESIGNATES CFM QUANTITY FOR GRILLE				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 - 400	LOUVER FACE
2	TITUS 355FL	12X12	400 - 600	LOUVER FACE
3	TITUS 355FL	18X18	605 - 1200	LOUVER FACE
4	TITUS 355FL	24X24	1205 - 2000	LOUVER FACE
5	TITUS 355FL	24X48	2005 - 4000	LOUVER FACE
6	NAILOS IND. MODEL 6IECS	14X14	0 - 700	EGGCRATE FACE W/FIRE DAMPER
7	TITUS 355FL	30X6	280 - 400	SIDEWALL REGISTER
8	TITUS 355FL	30X10	405 - 650	SIDEWALL REGISTER

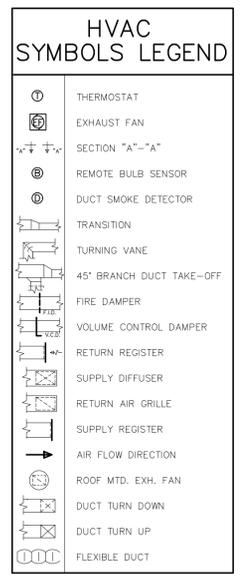
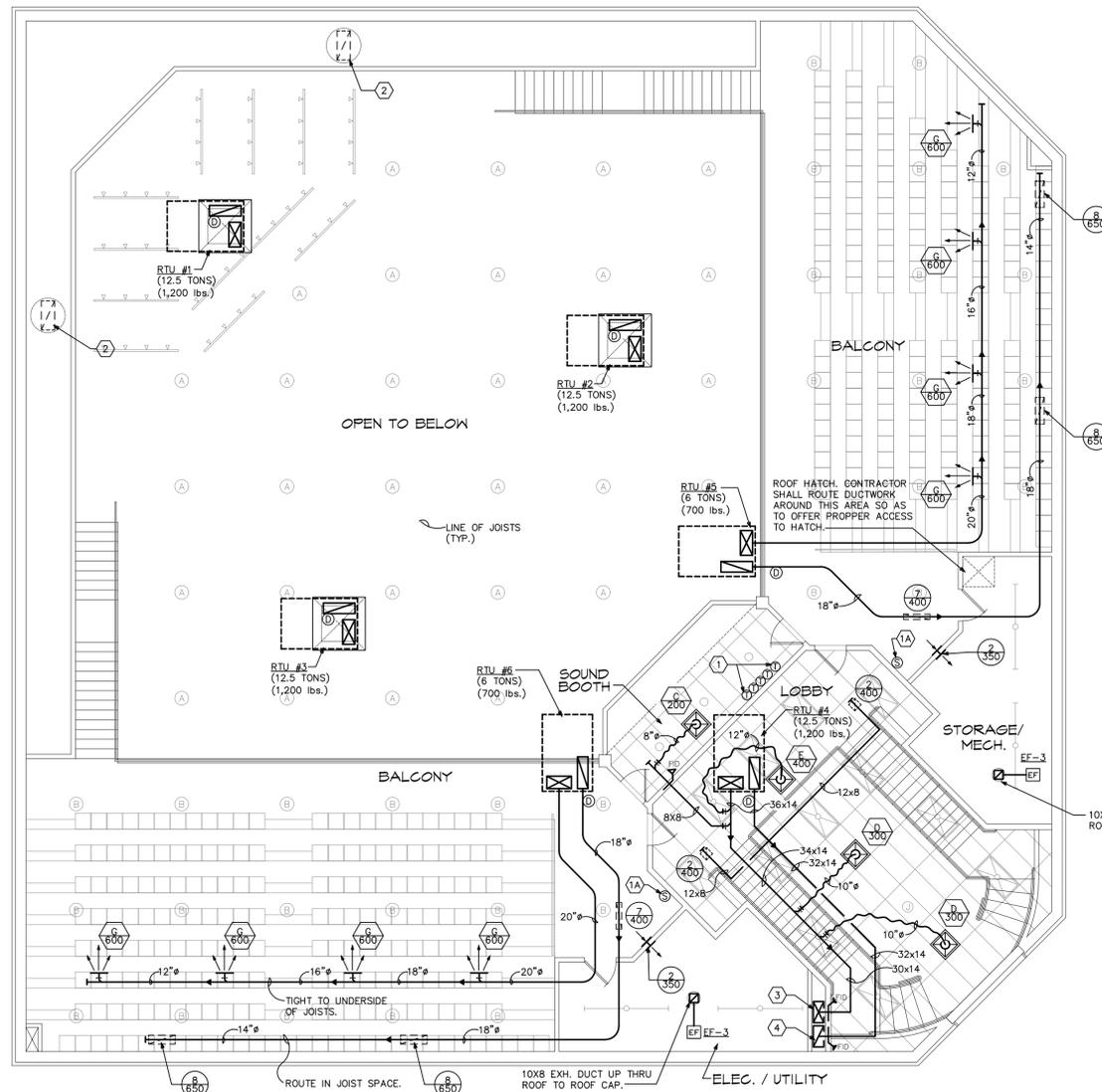
SUPPLY DIFFUSER SCHEDULE				
DESIGNATES LABEL FOR DIFFUSER TYPE			ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.	
DESIGNATES CFM QUANTITY FOR DIFFUSER				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS PCS-AA	6"ø	0 - 100	PERFORATED FACE
B	TITUS PCS-AA	6"ø	0 - 125	PERFORATED FACE
C	TITUS PCS-AA	8"ø	130 - 200	PERFORATED FACE
D	TITUS PCS-AA	10"ø	205 - 325	PERFORATED FACE
E	TITUS PCS-AA	12"ø	330 - 450	PERFORATED FACE
F	TITUS PCS-AA	14"ø	455 - 600	PERFORATED FACE
G	TITUS 300RL	20X10	405 - 650	SIDEWALL REGISTER

- ### SPECIFIC MECHANICAL NOTES
- 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: "SANCTUARY"
 AHU #2 THERMOSTAT: "SANCTUARY"
 AHU #3 THERMOSTAT: "SANCTUARY"
 AHU #4 THERMOSTAT: "OFFICE AREAS"
 AHU #5 THERMOSTAT: "BALCONY"
 AHU #6 THERMOSTAT: "BALCONY"
 * CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY OPERATE INSTALLED THERMOSTATS. COORDINATE FINAL LOCATION OF ALL THERMOSTATS WITH OWNER PRIOR TO CONSTRUCTION. THERMOSTAT SHALL BE SET TO "FAN ON" DURING OCCUPIED TIMES. THERMOSTAT SHALL BE A "LENNOX" SUMMINE DIGITAL THERMOSTAT MODEL DSL-700LX, 2 HEAT/2 COOL NON-PROGRAMMABLE THERMOSTAT. REMOTE TEMPERATURE SENSOR SHALL BE AS PER MANUFACTURERS RECOMMENDATIONS.
 - SURFACE WALL MOUNTED REMOTE TEMPERATURE SENSOR WIRED TO CORRESPONDING AHU THERMOSTAT. MOUNT 5'-0" ABOVE FINISHED FLOOR.
 - 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 ROUT FROM REGISTER THROUGH CEILING SPACE TO ROOF CAP.
 - 30X14 SUPPLY AIR DUCTWORK DOWN THRU CHASE TO FIRST FLOOR CEILING.
 - 32X14 RETURN AIR DUCTWORK DOWN THRU CHASE TO FIRST FLOOR CEILING.
 - TRANSFER DUCT FOR TOILET ROOM MAKE-UP AIR.

H.V.A.C. ABBREVIATION LEGEND

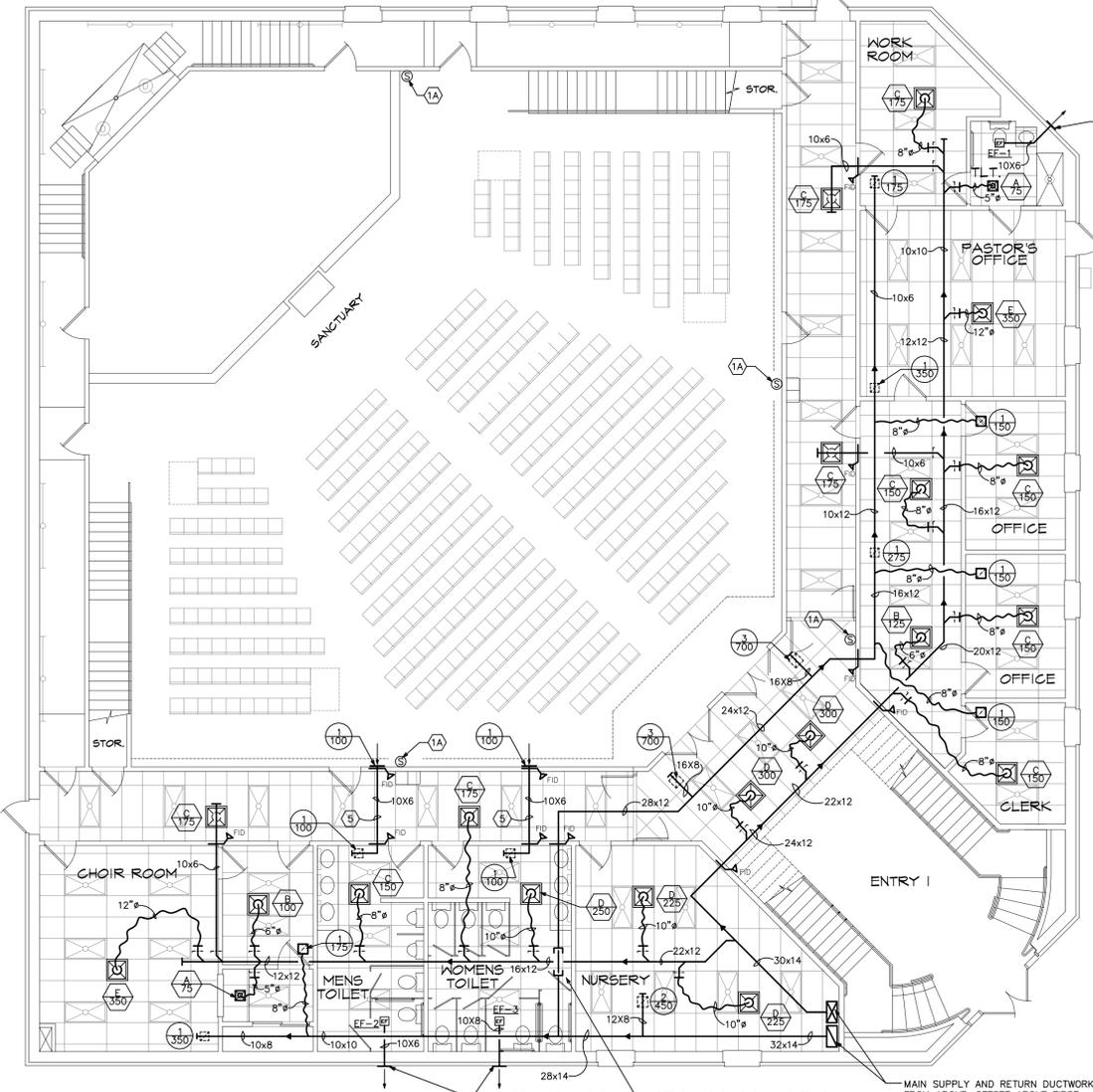
A/C	AIR CONDITIONER	REV.	REVISION	A.H.U.	AIR HANDLING UNIT
DN.	DOWN	N.T.S.	NOT TO SCALE	D.G.	DOOR GRILLE
EXH.	EXHAUST	MFR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER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

NOTES:
 1) SUPPLY DIFFUSERS "A-F" SHALL BE PROVIDED WITH 4-WAY INTERNAL DEFLECTORS AND SHALL BE INSTALLED WITH A SURFACE MOUNT BORDER TYPE 1.

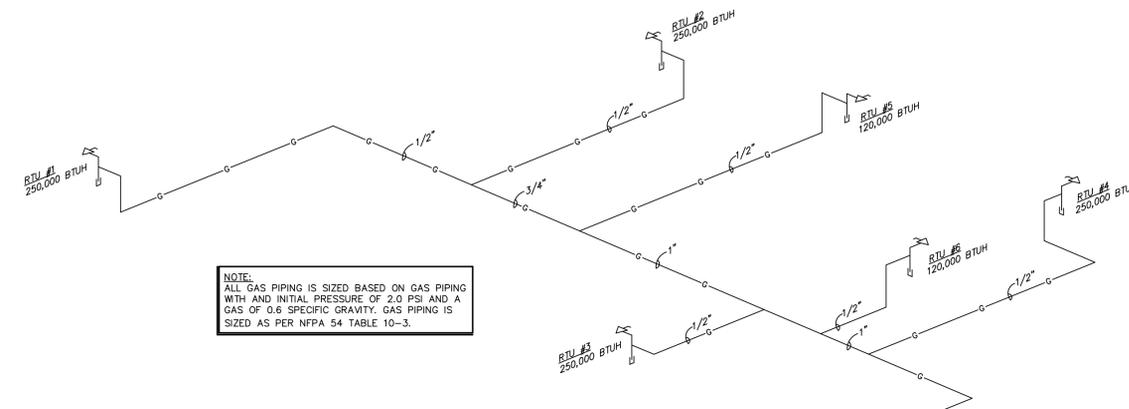


2 SECOND FLOOR PLAN - MECHANICAL
 SCALE: 1/8"=1'-0"

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 FIRST FLOOR PLAN - MECHANICAL
 SCALE: 1/8"=1'-0"

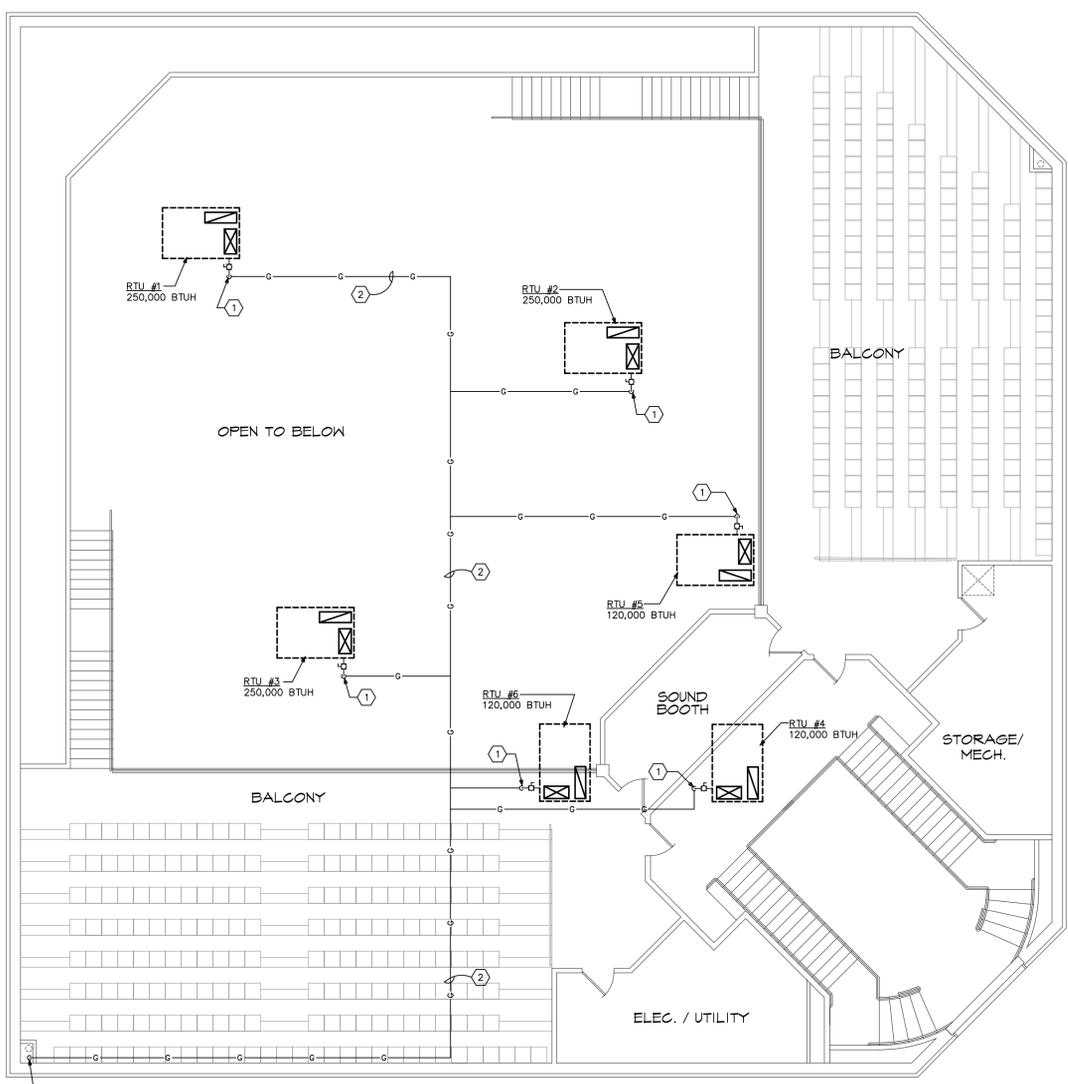


NOTE:
ALL GAS PIPING IS SIZED BASED ON GAS PIPING WITH AN INITIAL PRESSURE OF 2.0 PSI AND A GAS OF 0.6 SPECIFIC GRAVITY. GAS PIPING IS SIZED AS PER NFPA 54 TABLE 10-3.

- 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 COOK, SHALL BE PROVIDED AT ALL GAS APPLIANCES.

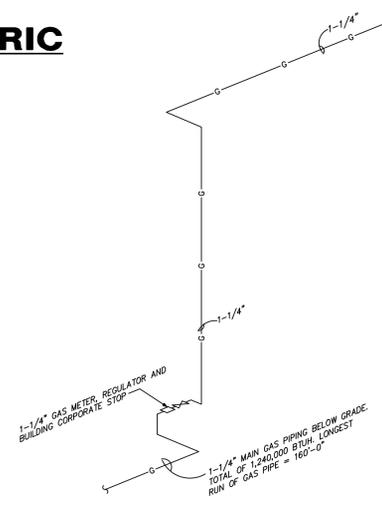
- SPECIFIC GAS PIPING NOTES**
- ① 1/2" GAS LINE UP THRU ROOF TO RTU.
 - ② GAS PIPING SHALL RUN IN JOISTS SPACE.

3 GAS ISOMETRIC
NO SCALE

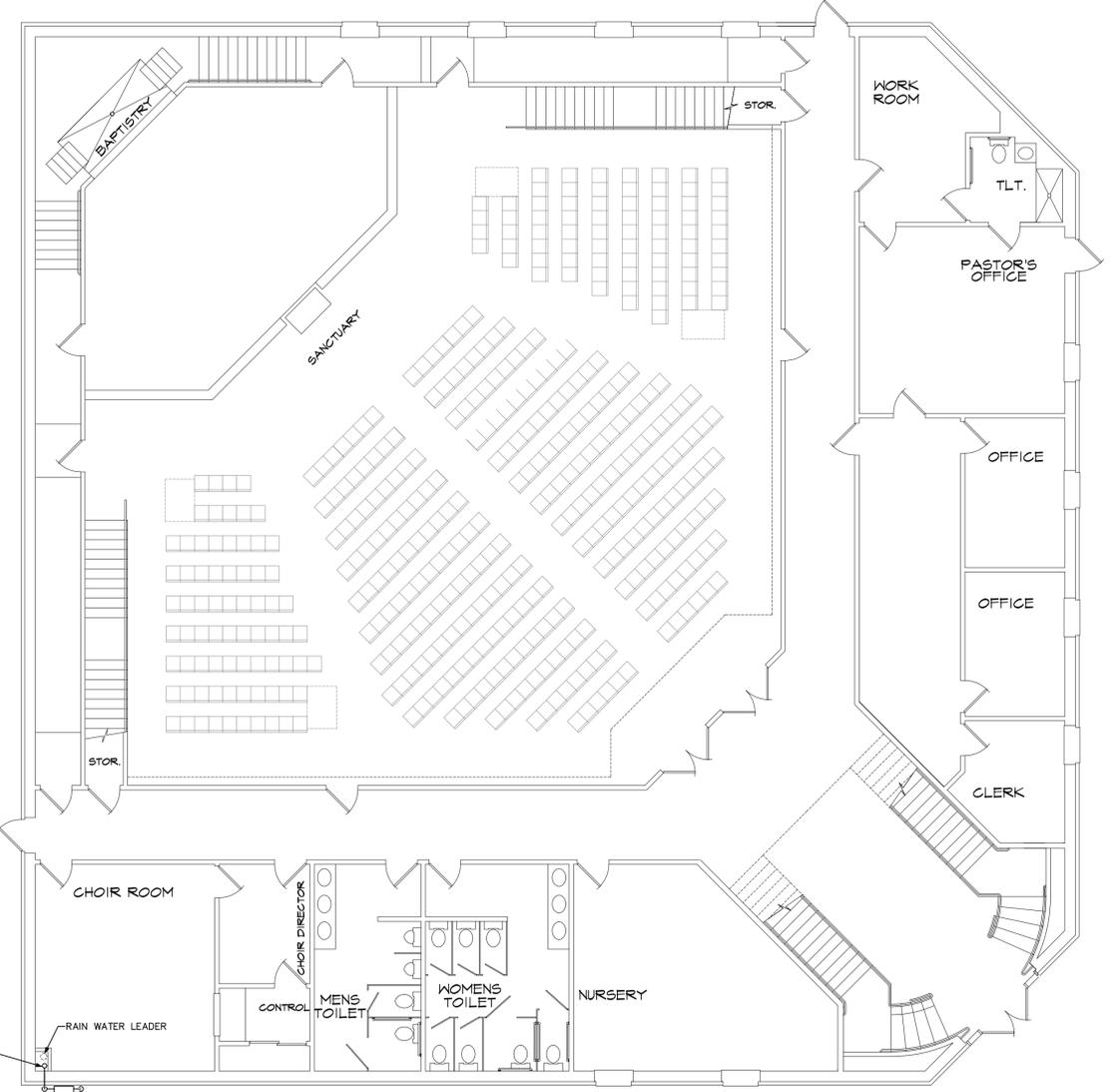


1-1/4" MAIN GAS LINE FROM BELOW. OFFSET TIGHT TO UNDERSIDE ROOF STRUCTURE.

2 SECOND FLOOR PLAN - GAS PIPING
SCALE: 1/8"=1'-0"



1-1/4" MAIN GAS PIPING BELOW GRADE. TOTAL OF 1,240,000 BTUH. LONGEST RUN OF GAS PIPE = 160'-0"



1-1/4" GAS PIPING UP THRU CHASE TO BALCONY.

1-1/4" GAS METER, REGULATOR AND BUILDING CORPORATE STOP

1-1/4" MAIN GAS PIPING BELOW GRADE. TOTAL OF 1,240,000 BTUH. LONGEST RUN OF GAS PIPE = 160'-0"

CONTINUE TO GAS SERVICE. CONTRACTOR TO VERIFY LOCATION WITH LOCAL GAS UTILITY.

1 FIRST FLOOR PLAN - GAS PIPING
SCALE: 1/8"=1'-0"

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 ADDITION 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.
- THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT.
- CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT.
- ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- ALL 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, HONEYWELL OR EQUAL.
- 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, FILTER/DRYER AND SIGHT GLASS SHALL BE PROVIDED AT LIQUID LINES.
- 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.
- PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
- 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.
- 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.
- 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.
- THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEERS BEFORE INSTALLATION.
- ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- 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.
- 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.
- REFER TO PLUMBING PLANS FOR ALL CONDENSATE PIPING.
- 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.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND A SUSTAINED 120 MPH WIND WITH A GUST FACTOR OF 30X. PROVIDE A LISTED PRE-ENGINEERED ASSEMBLY, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CERTIFICATION OF ROOF MOUNTING.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
- 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.
- 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.
- 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.
- 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 "ASSEMBLY" CATEGORY = 800 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
SANCTUARY + BALCONY	7,200	- / 1000 X - = -	800 X 15 = 12,000/2=6000

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.

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

Prescriptive [X] METHOD OF COMPLIANCE: Performance [] 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	652,000 BTU
Building Cooling Load	1,040,000 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

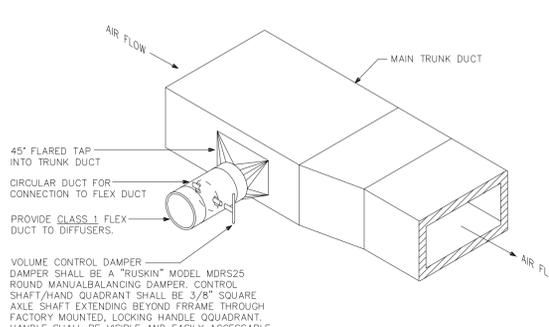
Equipment schedules with motors (mechanical systems)

motor horsepower	minimum efficiency	motor type	# of poles
REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.			

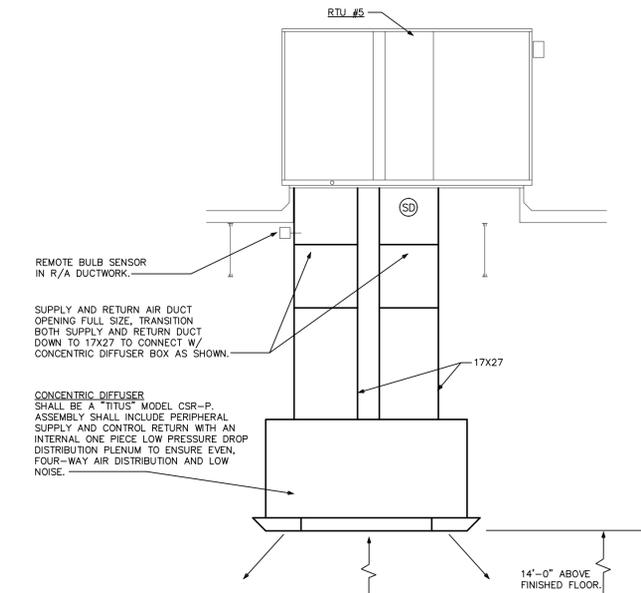
DESIGNER STATEMENT: 1

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the applicable ASHRAE energy standards.

SIGNED: _____
NAME: _____
TITLE: _____



2 BRANCH DUCT DETAIL
NO SCALE



1 CONCENTRIC DIFFUSER DETAIL
NO SCALE

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
350	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1Ø	1

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

ROOFTOP PACKAGE UNIT W/GAS HEAT SCHEDULE

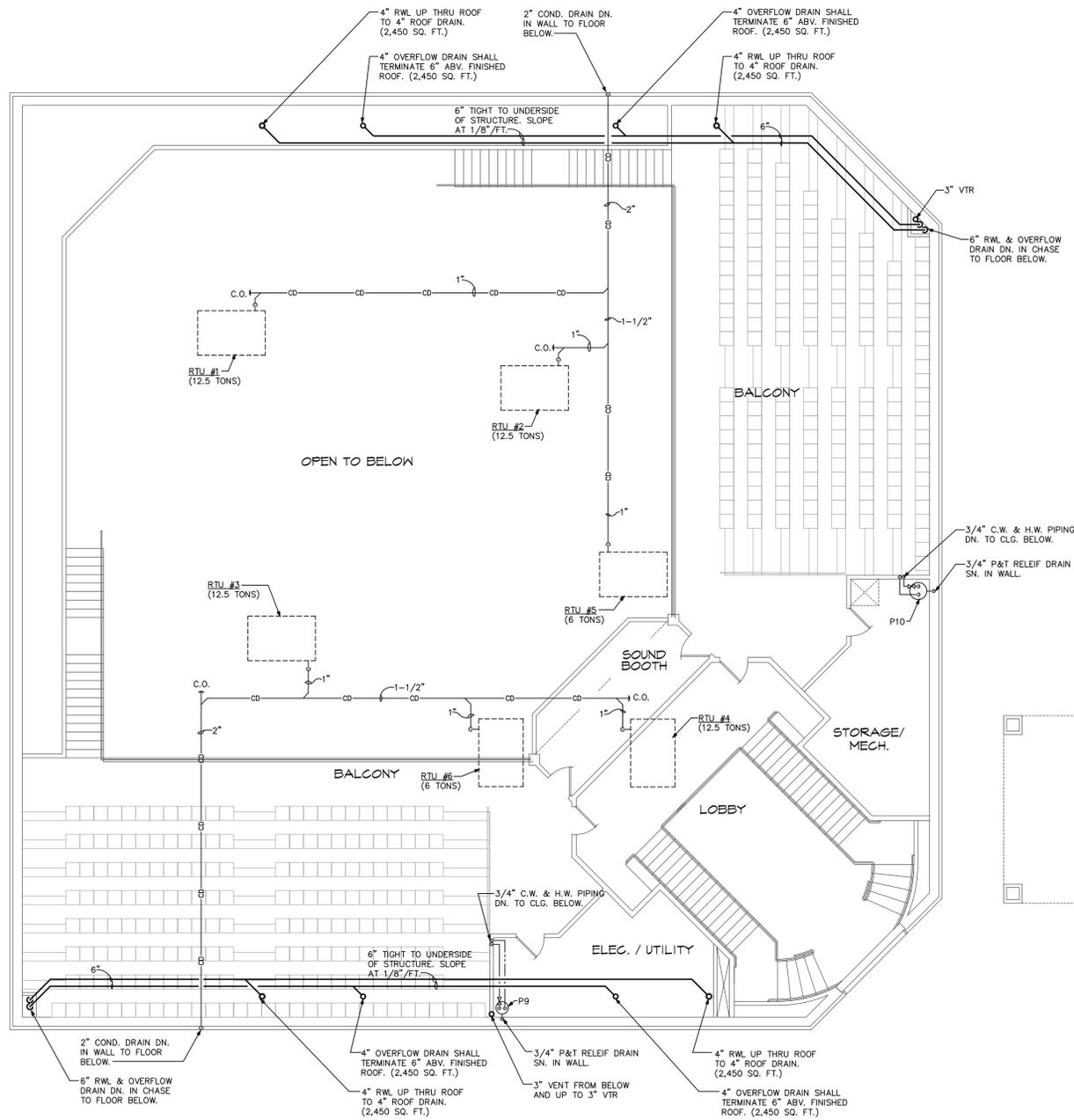
SYS. LABEL	MANUFACTURER	MODEL NO.	TOTAL CAPACITY	SENSIBLE CAPACITY	TOTAL CFM	O/A CFM	E.S.P.	FAN SPEED	COMP. RLA	OUTDOOR FAN FLA	INDOOR FAN HP	HEATER BTU OUTPUT	VOLTAGE	MOCP	EER/SEER	NOTES	HEATER BTU INPUT
RTU #1	CARRIER	48TFF014	153,500	111,100	5,000	1,500	.4"	993	(2) Ø 23.0	(2) Ø 1.4	5 HP	200,000	208V/3Ø	80	9.0	1 THRU 11	250,000
RTU #2	CARRIER	48TFF014	153,500	111,100	5,000	1,500	.4"	993	(2) Ø 23.0	(2) Ø 1.4	5 HP	200,000	208V/3Ø	80	9.0	1 THRU 11	250,000
RTU #3	CARRIER	48TFF014	153,500	111,100	5,000	1,500	.4"	993	(2) Ø 23.0	(2) Ø 1.4	5 HP	200,000	208V/3Ø	80	9.0	1 THRU 11	250,000
RTU #4	CARRIER	48TFF014	153,500	111,100	5,000	600	.4"	993	(2) Ø 23.0	(2) Ø 1.4	5 HP	200,000	208V/3Ø	80	9.0	1 THRU 11	250,000
RTU #5	CARRIER	48TFF007	73,500	51,800	2,400	750	.4"	1292	23.6	1.4	2.0 HP	120,000	208V/3Ø	40	9.0	1 THRU 11	150,000
RTU #6	CARRIER	48TFF007	73,500	51,800	2,400	750	.4"	1292	23.6	1.4	2.0 HP	120,000	208V/3Ø	40	9.0	1 THRU 11	150,000

GENERAL NOTES:
 * ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
 * PROVIDE VIBRATION ISOLATION FOR UNIT.
 * EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.
 * APPROVED EQUALS SHALL BE TRANE, LENNOX AND YORK. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

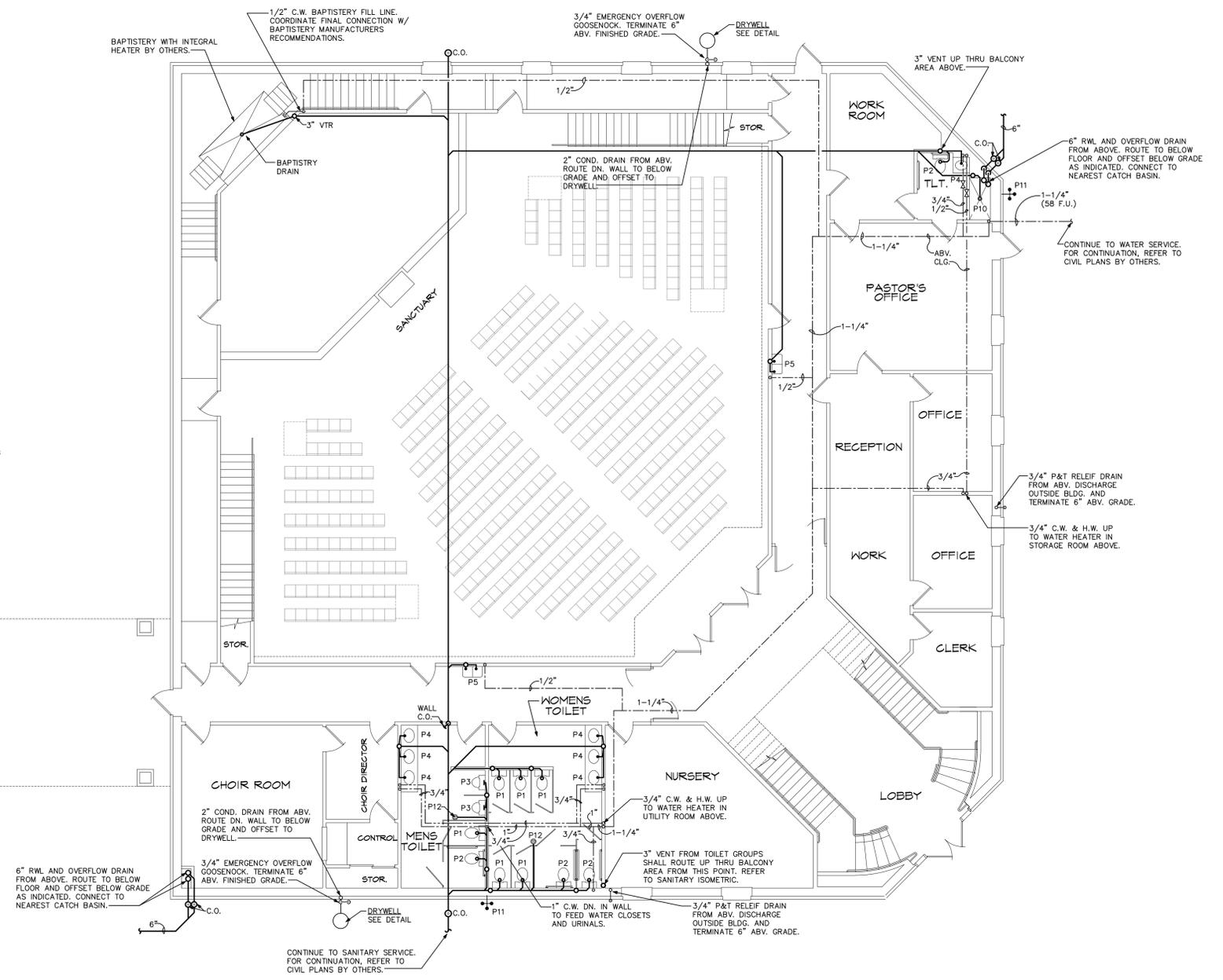
ABBREVIATION LEGEND:
 O/A - OUTSIDE AIR
 HP - HORSE POWER
 RLA - RUNNING LOAD AMPS
 FLA - FULL LOAD AMPS

MOCP - MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE)
 E.S.P. - EXTERNAL STATIC PRESSURE
 EER - ENERGY EFFICIENCY RATIO
 SEER - SEASONAL ENERGY EFF. RATIO

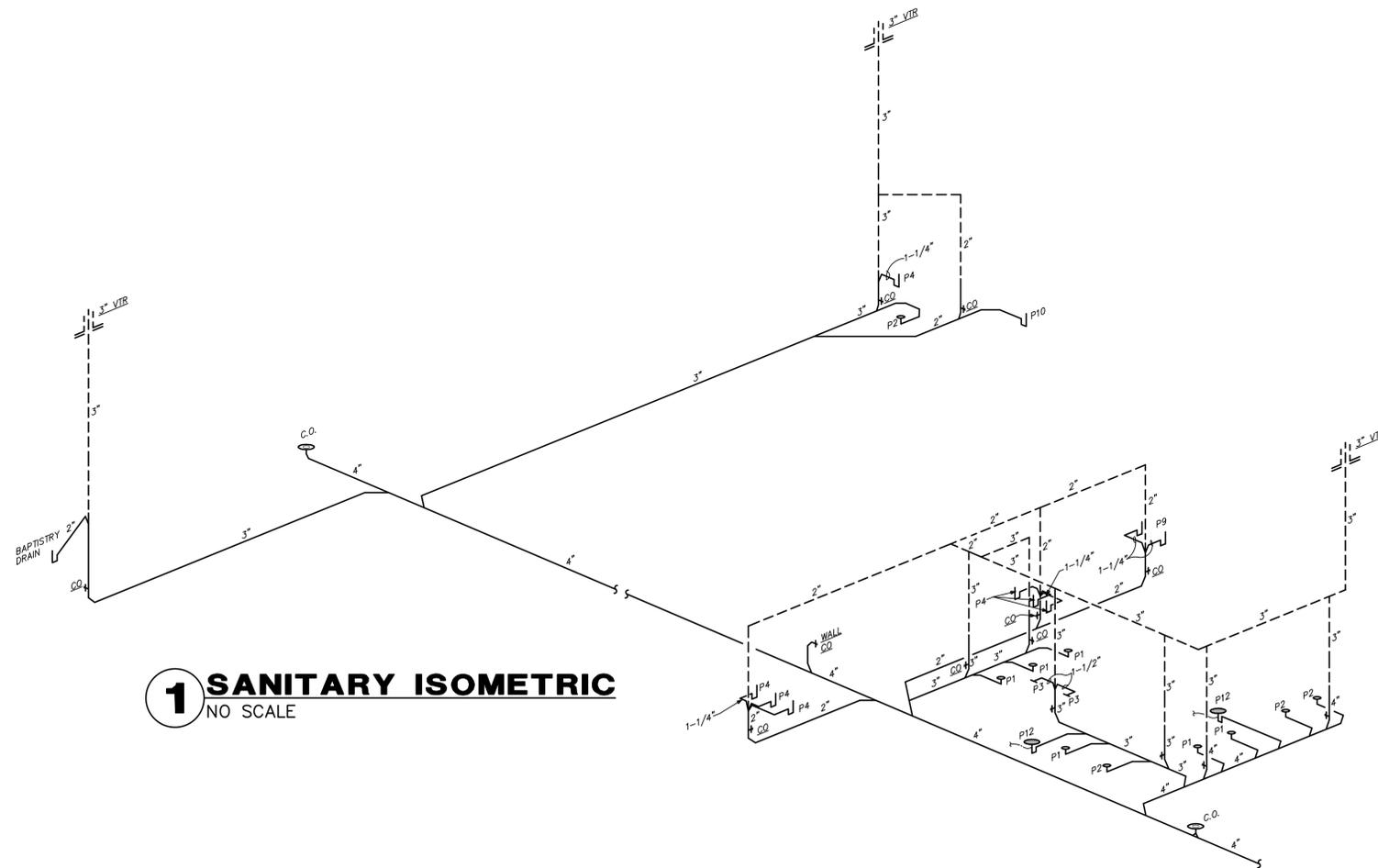
SPECIFIC NOTES:
 1) FACTORY ROOF CURB WITH THRU THE CURB SERVICE CONNECTION.
 2) OUTDOOR AIR MANUAL OR 30% DAMPER.
 3) ELECTRONIC PROGRAMMABLE THERMOSTAT.
 4) COMPRESSOR TIME DELAY.
 5) HEAD PRESSURE CONTROL.
 6) FILTER DOOR ACCESS PANEL KIT.
 8) PROVIDE (1) YEAR WARRANTY ON ALL PARTS AND LABOR AND (5) YEAR WARRANTY ON COMPRESSOR.
 9) PROVIDE 1" FARR 30/30 THROUGHWAY FILTERS. (1) SET DURING CONSTRUCTION AND (1) SET AFTER FINAL INSPECTION.
 10) INSULATE CONDENSATE DRAIN LINE WITH 1/2" ARMAFLEX.
 11) PROVIDE ALL NECESSARY CONTACTORS, RELAYS, MOTOR STARTERS, ETC. FOR A COMPLETE OPERATING UNIT.



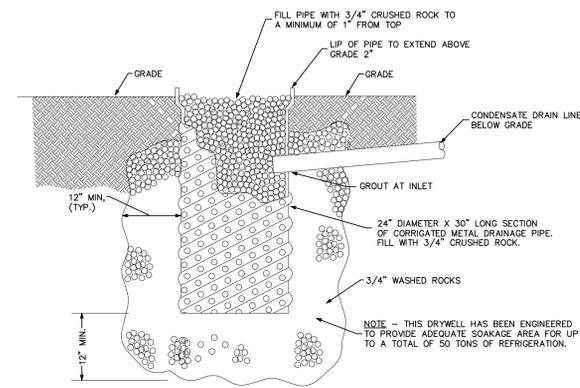
2 SECOND FLOOR PLAN - PLUMBING
SCALE: 1/8"=1'-0"



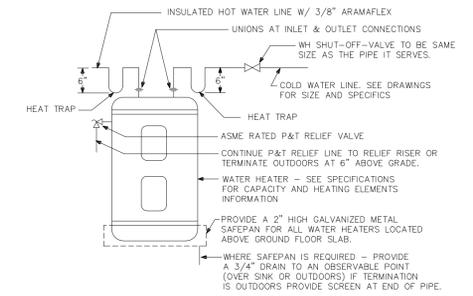
1 FIRST FLOOR PLAN - PLUMBING
SCALE: 1/8"=1'-0"



1 SANITARY ISOMETRIC
NO SCALE



2 CONDENSATE DRYWELL DETAIL
NO SCALE



3 WATER HEATER 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 bent 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.
 - There shall be no taps, piping branches, unapproved bypass piping, hydrants, fire dept. connection points, or other water-using appurtenances connected to the supply line between any water meter and its CMUD-required backflow preventer.
 - Each CMUD-required BPA is required to be tested by a CMUD-approved Certified Tester prior to placing the water system in service.
 - 1" Reduced Pressure Principle Backflow Prevention Assembly installed above-ground within insulated enclosure per CMUD requirements. Enclosure to include drain ports for discharge water per CMUD requirements.

PLUMBING FIXTURE SCHEDULE

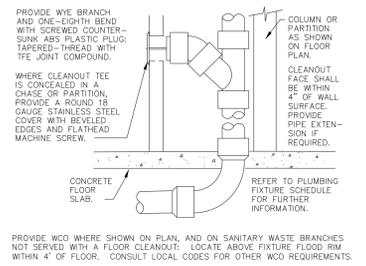
- P-1 (WATER CLOSET)**
SHALL BE AN AMERICAN STANDARD MODEL CADET 2898.014 ELONGATED 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.
- P-2 (HANDICAPPED WATER CLOSET)**
SHALL BE AN AMERICAN 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 (HANDICAPPED COMBINATION HI/LO ELECTRIC WATER COOLER)**
OASIS MODELS PLFBWMSL, HI/LO COMBINATION, SELF CONTAINED, WALL-HUNG ELECTRIC REFRIGERATED WATER COOLERS. ACCEPTABLE ALTERNATE MANUFACTURERS - ELKAY AND HALSEY TAYLOR.
- P-6 (HANDICAPPED SHOWER MIXING VALVE)**
SHOWER SHALL INCLUDE AN SPEAKMAN MODEL VS-1970-SS-3 SENTINEL MARK II REGENCY CONCEALED ANTI-SCALD BALANCED PRESSURE SHOWER VALVE AND HAND HELD SPRAY COMBINATION WITH 68" WHITE VINYL REINFORCED HOSE. ALSO INCLUDED IN THIS PACKAGE IS A COSMOPOLITAN SHOWER HEAD MODEL #S-2270-AF WITH WATER CONSERVING COMPENSATING AUTOFLOW DEVICE SET TO 2.5 CFM. SHOWER STALL - COORDINATE WITH OWNER.
- P-7 (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-8 (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. WEJLOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR. WEEPHOLES. BOTTOM OUTLET. INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALDY ROUND SUPER-FLO STRAINER.
- P-9 (JUNIOR WATER HEATER)**
WATER HEATER SHALL BE A LOCHINVAR MODEL JRC012E, 12 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-10 (WATER HEATER)**
SHALL BE A LOCHINVAR MODEL ETA 052 KK, 50 GALLON GLASSLINED STORAGE TANK, STUBBY TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-COINCIDENT 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:**
- ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
 - PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
 - ALL HANDICAP PLUMBING FIXTURES SHALL BE INSTALLED AS PER LATEST A.D.A. REQUIREMENTS.
 - ALL PLUMBING FIXTURES SHALL COMPLY WITH SFBC TABLE 46-R2.

PLUMBING ABBREVIATION LEGEND

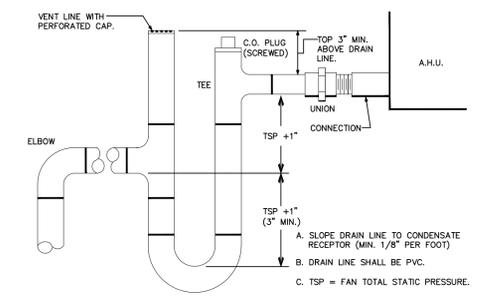
DN.	DOWN	C.C.	CENTER TO CENTER	F.U.	FIXTURE UNITS
EXT.	EXTERIOR	N.T.S.	NOT TO SCALE	H.B.	HOSE BIBBS
F.D.	FLOOR DRAIN	MFG.	MANUFACTURER	C.O.	CLEANOUT
F.F.	FINISH FLOOR	S.O.V.	SHUT OFF VALVE	E.W.H.	ELECTRIC WATER HEATER
A.F.F.	ABOVE FINISH FLOOR	W.C.	WATER CLOSET	JAN.SK.	JANITOR SINK
V.T.R.	VENT THRU ROOF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

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



4 WALL CLEANOUT DETAIL
NO SCALE



5 CONDENSATE P-TRAP DETAIL
NO SCALE

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 2.43 VS 2.50
 TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED N/A

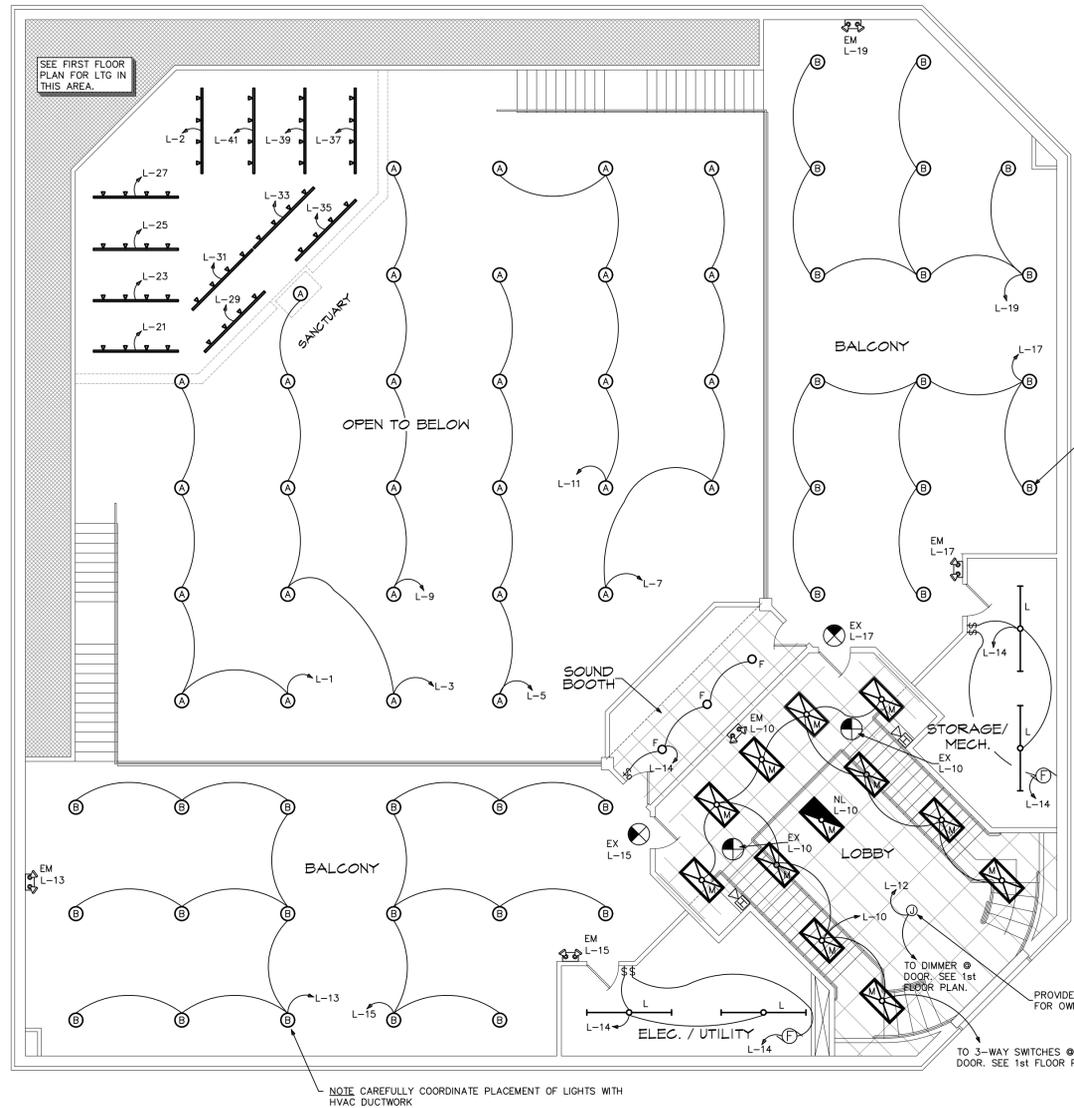
EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
 MOTOR HORSEPOWER N/A
 NUMBER OF PHASES N/A
 MINIMUM EFFICIENCY N/A
 MOTOR TYPE N/A
 NUMBER OF POLES N/A

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: NORTH CAROLINA PROFESSIONAL ENGINEER #9079

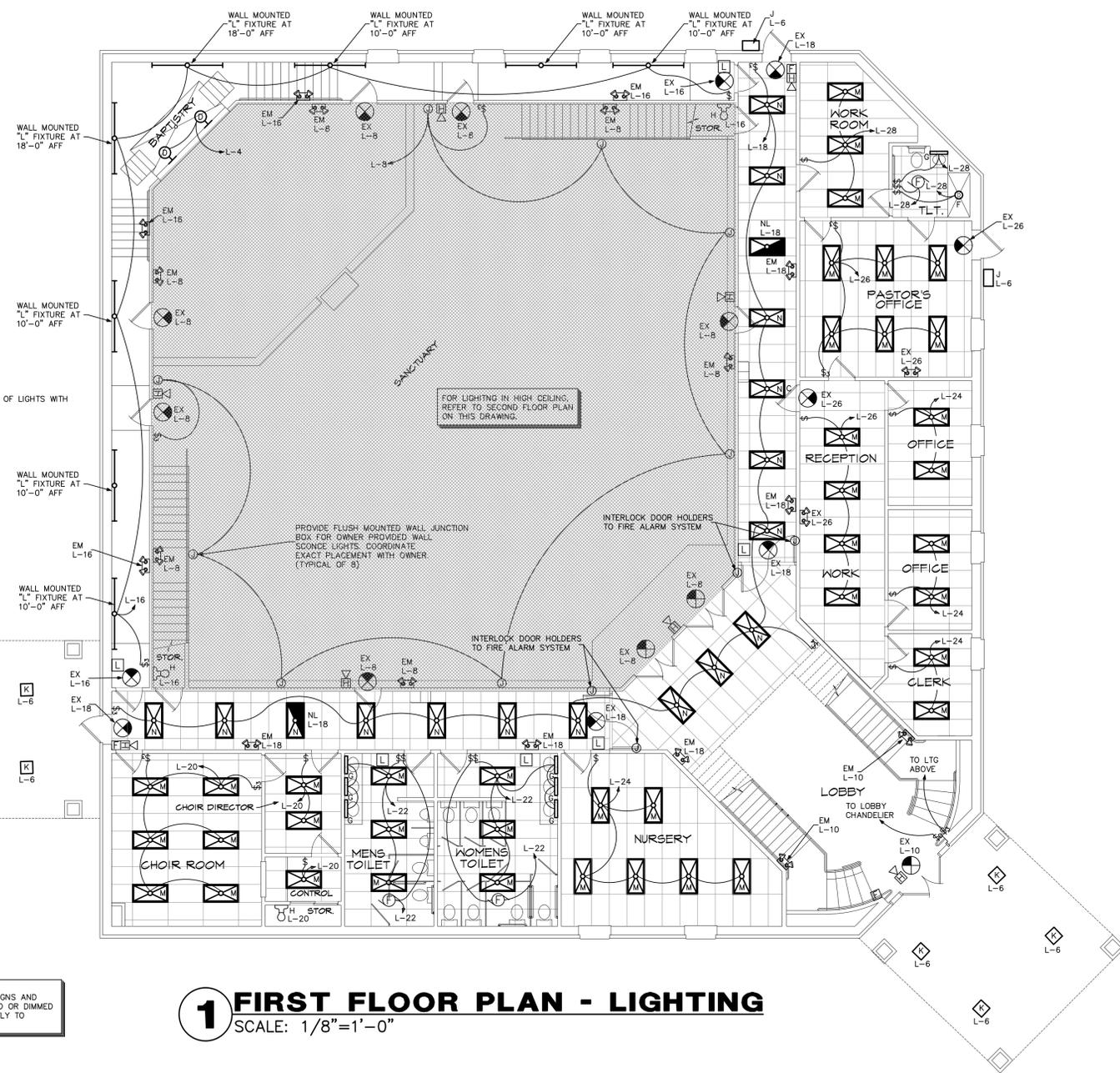
ELECTRICAL SYMBOLS LEGEND			
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF		TRANSFORMER - SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL - SIZE AS NOTED
	QUADRUPLX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"		F-FAN; M-MOTOR; P-PUMP
	SINGLE POLE SWITCH		SPECIAL OUTLET - AS REQUIRED
	THREE-WAY SWITCH		GKT, HOMERUN (8 INDICATES PANEL) "2" DESIGNATES CIRCUIT NUMBER
	MANUAL STARTER SWITCH		EXIT SIGN; ONE SIDED, OR TWO SIDED
	DIMMER SWITCH		EMERGENCY LIGHTING
	SWITCH W/ ILLUMINATION WHEN ON		RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	JUNCTION BOX		HIGH BAY HID LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	TELEPHONE JACK		FLUORESCENT LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	COMPUTER DATA TERMINAL OUTLET		FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH W/ STARTER		ISOLATED GROUND
	DISCONNECT SWITCH		WP WEATHER-PROOF
	FLR. MTD. FLUSH DUPLEX RECEPTACLE		BC BELOW COUNTER
	FLR. MTD. FLUSH QUAD. RECEPTACLE		BFG BELOW FINISH GRADE
	FLR. MTD. FLUSH TELEPHONE JACK		GFI GROUND FAULT INTERRUPTER
	FLR. MTD. FLUSH COMPUTER TERMINAL		AFI ABOVE FINISHED FLOOR
	SMOKE DETECTOR		EWV ELECTRIC WATER COOLER
	HEAT DETECTOR		ASW ABOVE SHOW WINDOW
	DUCT SMOKE DETECTOR		BSW BELOW SHOW WINDOW
	MANUAL PULL STATION		FACP FIRE ALARM CONTROL PANEL
	HORN WITH STROBE LIGHT, MTD. +80"		FAAP FIRE ALARM ANNUNCIATOR PANEL
	STROBE LIGHT ONLY, MTD. +80"		

LIGHTING FIXTURE SCHEDULE							
LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	PENDENT MTD DOWNLIGHT	BRONZE		120	(1) 300W HALOGEN	LITHONIA CP8C-AR	PENDENT MOUNTED AT +22" AFF
B	PENDENT MTD DOWNLIGHT	BRONZE		120	(1) 150W HALOGEN	LITHONIA CP8C-AR	PENDENT MOUNTED AT +26" AFF
C	SURFACE MOUNTED FLUOR.	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA LB-232-120	
D	WALL MTD INCANDESCENT	WHITE		120	(1) 150W HALOGEN	LITHONIA CW8B-AR	MTD W/ BOTTOM OF FIXTURE 2'-0" ABOVE BAPISTRY OPENING
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	W/ BATTERY BACKUP
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP
F	RECESSED INCANDESCENT	WHITE	FLAT FRESNEL	120	(1) 100W A19	LITHONIA LG-7RW-FFL	WET LOCATION LISTED
G	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 17W T8	LITHONIA WC-217-A12-120	
H	PORCELAIN LAMP HOLDER	WHITE		120	(1) 75W A19		W/ PULLCHAIN
J	EXT. FLUORESCENT WALL MTD	BRONZE	POLYCARBONATE	120	(1) 28WDTT	LITHONIA TWL-28DTT-120	
K	RECESSED HID	WHITE	FLAT FRESNEL	120	(1) 100W MH	LITHONIA LGH-100M-7RW-120	WET LOCATION LISTED
L	8' FLUORESCENT STRIP	WHITE		120	(2) 75W T8	LITHONIA C-296-120	
M	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(4) 32W T8	LITHONIA 2SPG-432-FWA12-120	
N	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 2SPG-232-FWA12-120	

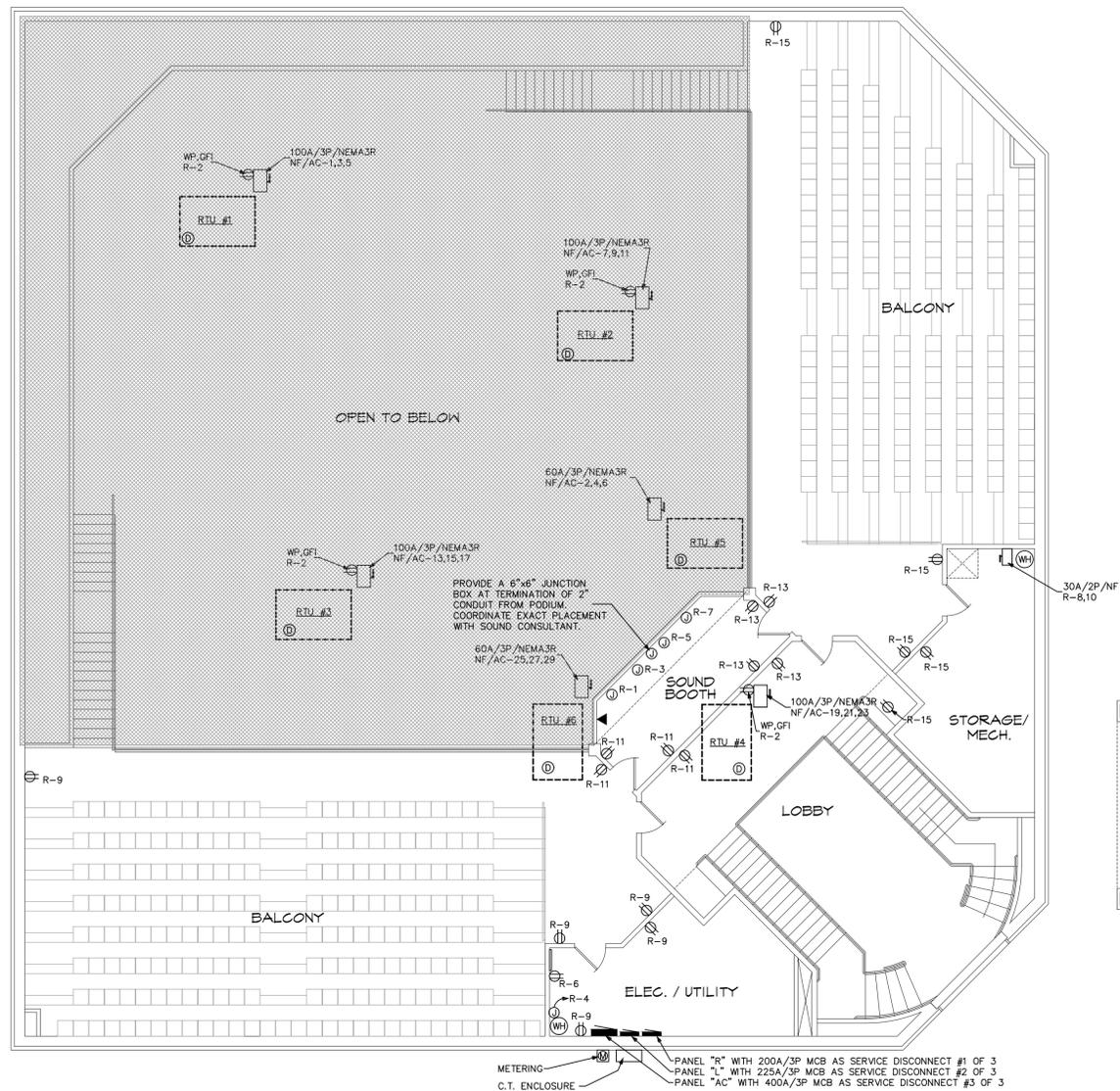


2 SECOND FLOOR PLAN - LIGHTING
 SCALE: 1/8"=1'-0"

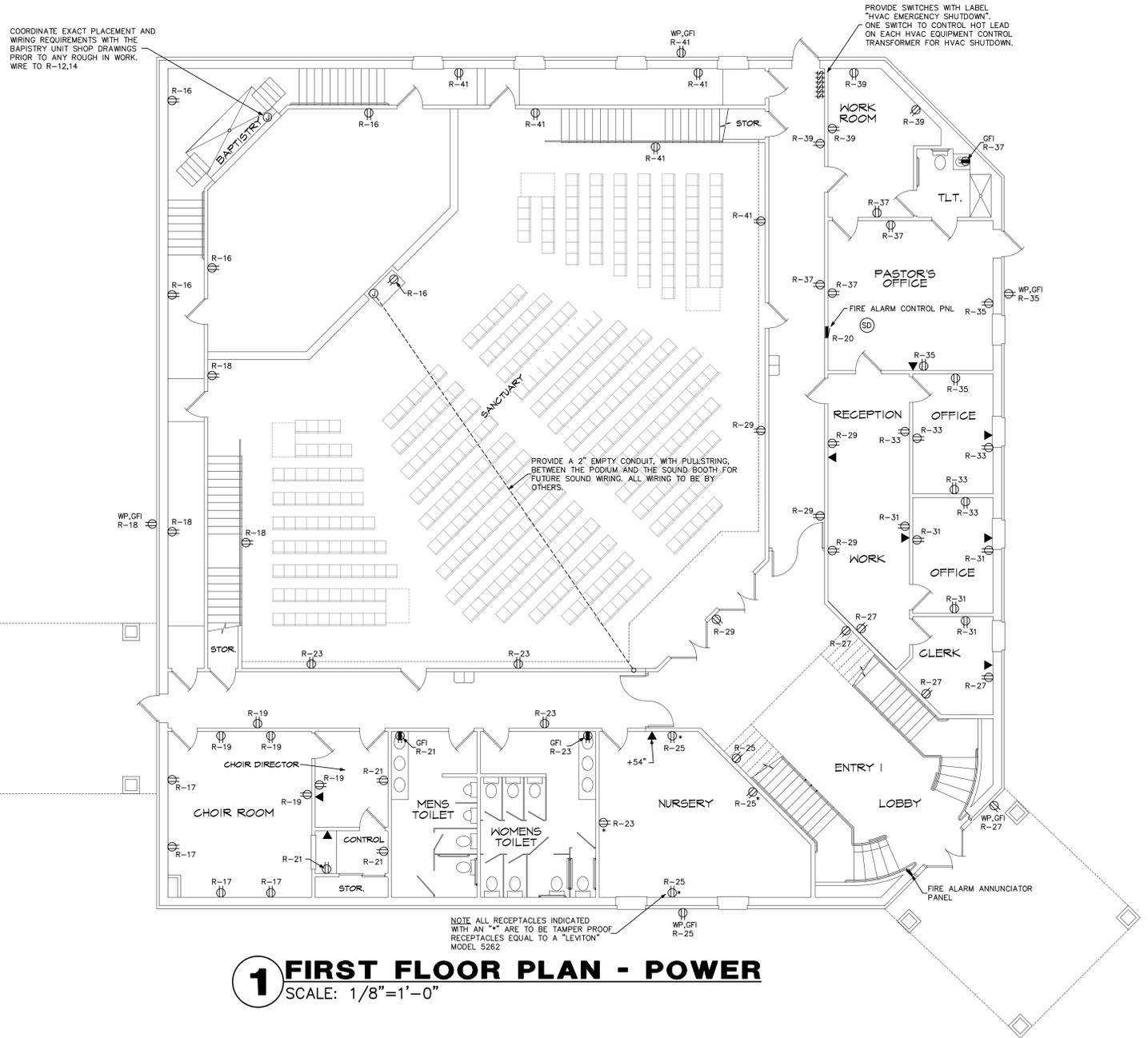
NOTE ALL EMERGENCY EGRESS LIGHTS, EXIT SIGNS AND NIGHT LIGHTS ARE TO BE NON-SWITCHED OR DIMMED ON THE CIRCUIT INDICATED. WIRE DIRECTLY TO BREAKER.



1 FIRST FLOOR PLAN - LIGHTING
 SCALE: 1/8"=1'-0"



2 SECOND FLOOR PLAN - POWER
SCALE: 1/8"=1'-0"



1 FIRST FLOOR PLAN - POWER
SCALE: 1/8"=1'-0"

