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 250-AA	8X6	0 – 125	CEILING REGISTER
B	TITUS 250-AA	10X6	125 – 200	CEILING REGISTER
C	TITUS 250-AA	12X10	205 – 300	CEILING REGISTER
D	TITUS 250-AA	14X10	305 – 450	CEILING REGISTER

NOTE:
SUPPLY REGISTER SHALL BE PROVIDED WITH A SURFACE MOUNT BORDER TYPE 1.

RETURN GRILLE SCHEDULE

(#/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 355FL	10X10	0 – 400	LOUVER FACE
2	TITUS 50F	14x10	405 – 600	EGGCRATE FACE
3	TITUS 355FL	12x8	0 – 400	SIDEWALL REGISTER
4	TITUS 355FL	36x18	405 – 1800	SIDEWALL REGISTER

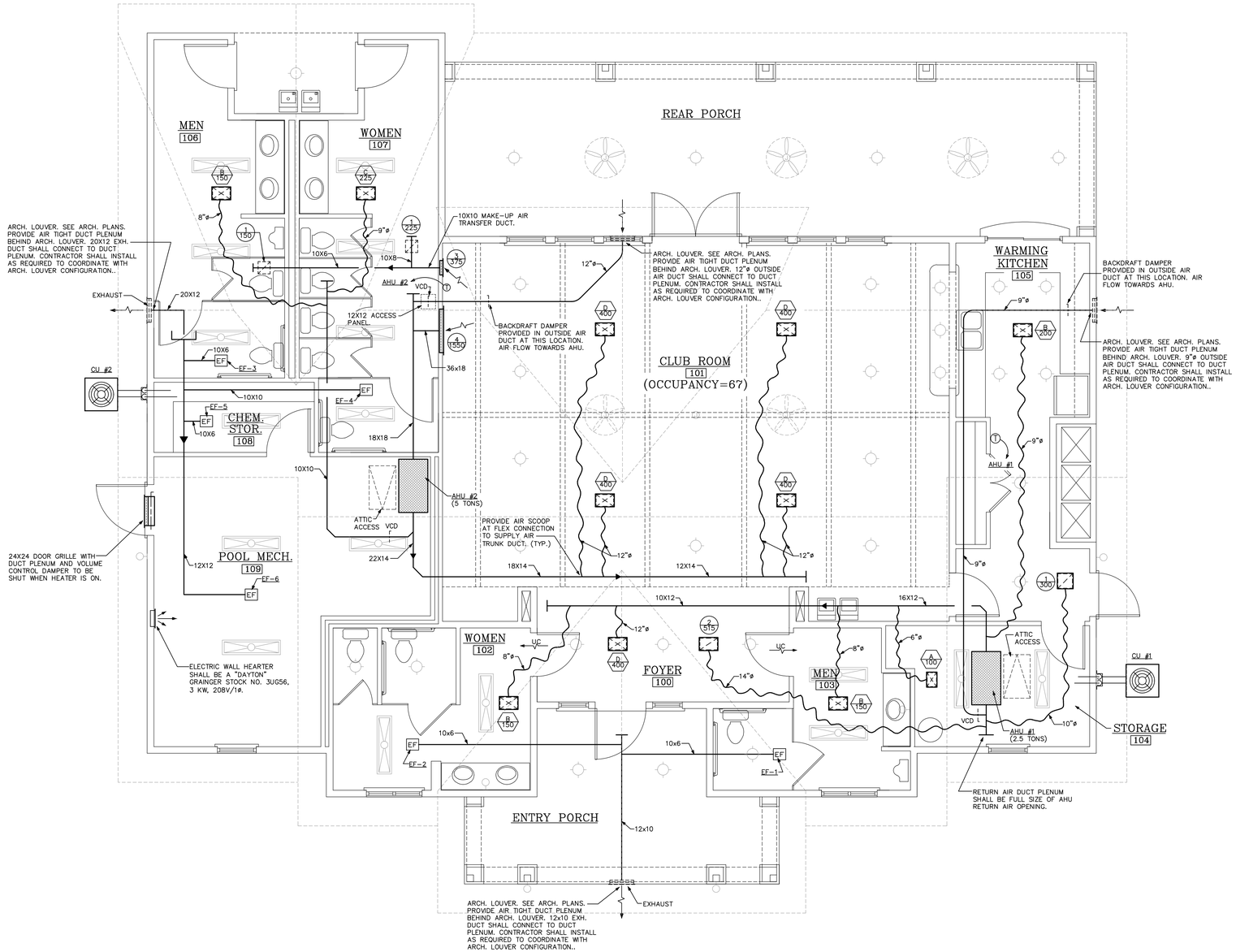
NOTE:
RETURN AIR GRILLE SHALL BE PROVIDED WITH A SURFACE MOUNT BORDER TYPE 1.

HVAC SYMBOLS LEGEND

- (T) THERMOSTAT, MTD +47" AFF
- (EF) EXHAUST FAN
- SECTION "A"-"A"
- (B) REMOTE BULB SENSOR
- (D) DUCT SMOKE DETECTOR
- TRANSITION
- TURNING VANE
- 45° BRANCH DUCT TAKE-OFF
- FIRE DAMPER
- VCD VOLUME CONTROL DAMPER
- RETURN REGISTER
- SUPPLY DIFFUSER
- RETURN AIR GRILLE
- SUPPLY REGISTER
- DUCTWORK TRANSITION
- (RTU) ROOF MTD. EXH. FAN
- DUCT TURN DOWN
- DUCT TURN UP
- FLEXIBLE DUCT

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

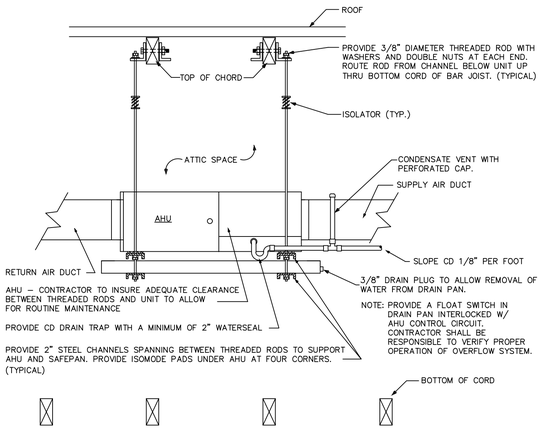


1 FLOOR PLAN - MECHANICAL
SCALE: 1/4"=1'-0"

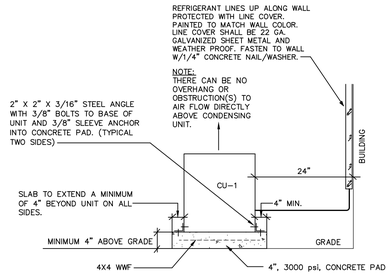
M1.0

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 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 AN ORDERLY PROGRESS OF THIS WORK.
4. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH ONE SET OF "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT. CONTRACTOR SHALL ALSO LEAVE FOR ONE AT LEAST ONE SET OF THE MANUFACTURER'S INSTALLATION AND OPERATIONS MANUALS FOR ALL EQUIPMENT PROVIDED ON THE PROJECT.
5. ALL PROVIDED MATERIALS SHALL BE NEW OF GOOD QUALITY, ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
6. CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE [5] COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT. IT IS STRONGLY PREFERRED THAT THE SUBMITTALS BE MADE IN THE FORM OF AN ELECTRONIC SUBMITTAL IN A PDF TYPE FORMAT.
7. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R5 INSULATION OR R8 IF DUCTWORK IS LOCATED EXTERIOR TO BLDG INSULATION ENVELOPE. ALL FLEX DUCT SHALL BE "THERMOFLEX" OR APPROVED EQUAL AND SHALL HAVE EQUIVALENT INSULATION.
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. 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". * THERMOSTATS SHALL BE MOUNTED A MAX. OF 48" A.F.F.
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. SPLIT SYSTEMS (IF APPLICABLE) SHALL HAVE ARMAFLEX 3/4" INSULATION (OR APPROVED EQUAL) USED FOR SUCTION LINES. INSTALLATION SHALL BE AS PER MANUFACTURERS INSTRUCTIONS. PRE-INSULATED LINES SETS ARE ACCEPTABLE.
14. ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS AND TAPS AS PER PLANS REQUIREMENTS.
15. PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
16. HVAC CONTRACTOR SHALL PROVIDE A 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.
17. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
18. ALL INSULATION SHALL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
19. 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.
20. 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.
21. PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING SYSTEM.
22. 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.
23. NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
24. 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.



1 AHU MOUNTING DETAIL
NO SCALE



2 COND. UNIT MTG. DETAIL
NO SCALE

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62.1-2010 FOR OUTSIDE AIR REQUIREMENTS

UNIT LABEL	OCCUPANCY CATAGORY	AREA	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)	E_Z *	TOTAL
AHU #1 (CLUB ROOM)	MEETING ROOM	800	67 AS PER ARCHITECTURAL PLAN (5 CFM/PERSON) + .06 CFM/S.F.	(67 X 5) + (800 X .06) = 383 PEOPLE AREA TOTAL	0.8	383/0.8 = 478
AHU #2 (FOYER)	MAIN ENTRY LOBBY	135	10 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(2 X 5) + (135 X .06) = 18 PEOPLE AREA TOTAL		
AHU #2 (WARMING KITCHEN)	KITCHEN	185	.7 CFM PER S.F.	(N/A) + (185 X .7) = 130 PEOPLE AREA TOTAL		
				AHU #2 TOTAL = 148	0.8	148/0.8 = 185

* E_Z (SYSTEM VENTILATION EFFICIENCY) AS PER 2012 NCMC TABLE 403.3.2.3.2

FAN SCHEDULE

LABEL	TYPE OF UNIT - AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1,2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6H	190	.125"	CEILING MOUNTED	108 WATTS	OPEN DRIP PROOF	1550	115V/1ø	1,2
EF-3	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z8S	250	.125"	CEILING MOUNTED	77 WATTS	OPEN DRIP PROOF	1050	115V/1ø	1,2
EF-4	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z8H	400	.125"	CEILING MOUNTED	130 WATTS	OPEN DRIP PROOF	1550	115V/1ø	1,2
EF-5	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6H	200	.125"	CEILING MOUNTED	108 WATTS	OPEN DRIP PROOF	1550	115V/1ø	1,2
EF-6	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z10H	700	.125"	CEILING MOUNTED	390 WATTS	OPEN DRIP PROOF	1550	115V/1ø	1,2

NOTES: 1.) REFER TO ELECTRICAL PLANS FOR CONTROL.
2.) FAN TO BE PROVIDED WITH BACKDRAFT DAMPER.

APPENDIX B BUILDING CODE SUMMARY (MECHANICAL SUMMARY)
MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE:
Prescriptive [X] Energy Cost Budget [ ]
Thermal Zone Zone 3A
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 61,434 BTU
Building Cooling Load 87,700 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 knoledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Code 2012.
SIGNED:
NAME:
TITLE:

NOTE:
COMPLIANCE TO NC ENERGY SECTION 506 IS MADE BY LIGHTING LEVEL REDUCTION.

AIR COOLED HEAT PUMP SCHEDULE

HEAT PUMP										AIR HANDLING UNIT									INTEGRATED ELECTRIC HEATING		
CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY COOLING	SENSIBLE CAPACITY COOLING	TOTAL CAPACITY HEATING	COMP. RLA	FAN FLA	VOLTAGE	MOCP	EER/SEER	WEIGHT	AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	O/A CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	WEIGHT	HEATER KW	VOLTAGE	NOTES
CU #1	CARRIER 25HCD330A003	28,600	20,330	21,450	16.0	1.1	240V/1ø	30A	13.0	149 lbs.	AHU #1	CARRIER FX4DNB0310008	1,000	SEE SCH	0.4"	HIGH	1/2 HP	240V/1ø	146 lbs.	8.0 K.W.	240V/1ø	1 THRU 6
CU #2	CARRIER 25HCD360A003	59,400	44,260	44,800	26.3	1.2	240V/1ø	50A	13.0	250 lbs.	AHU #2	CARRIER FX4DNB0610010	2,000	SEE SCH	0.4	HIGH	3/4 HP	240V/1ø	201 lbs.	10 KW	240V/1ø	1 THRU 6

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 3/4" ARMAFLEX OR APPROVED EQUAL.
3) INSTALL FILTER DRYER AND STRAINER IN REFRIGERANT LIQUID LINE.
4) PROVIDE FIELD INSTALLED ACCESSORIES, AND 5 MINUTE TIME DELAY SWITCH.
5) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.
6) PROVIDE SINGLE POINT POWER CONNECTION WITH INTEGRAL OVERCURRENT PROTECTION DEVICE.

SEQUENCE OF OPERATION FOR HEATING
FIRST STAGE
WHEN THE THERMOSTAT CALLS FOR HEATING, THE INDOOR FAN MOTOR, OUTDOOR FAN MOTORS AND THE COMPRESSOR (FULLY LOADED) ARE ENERGIZED. THE REVERSING VALVE SOLENOID IS ENERGIZED IN THE HEATING MODE.

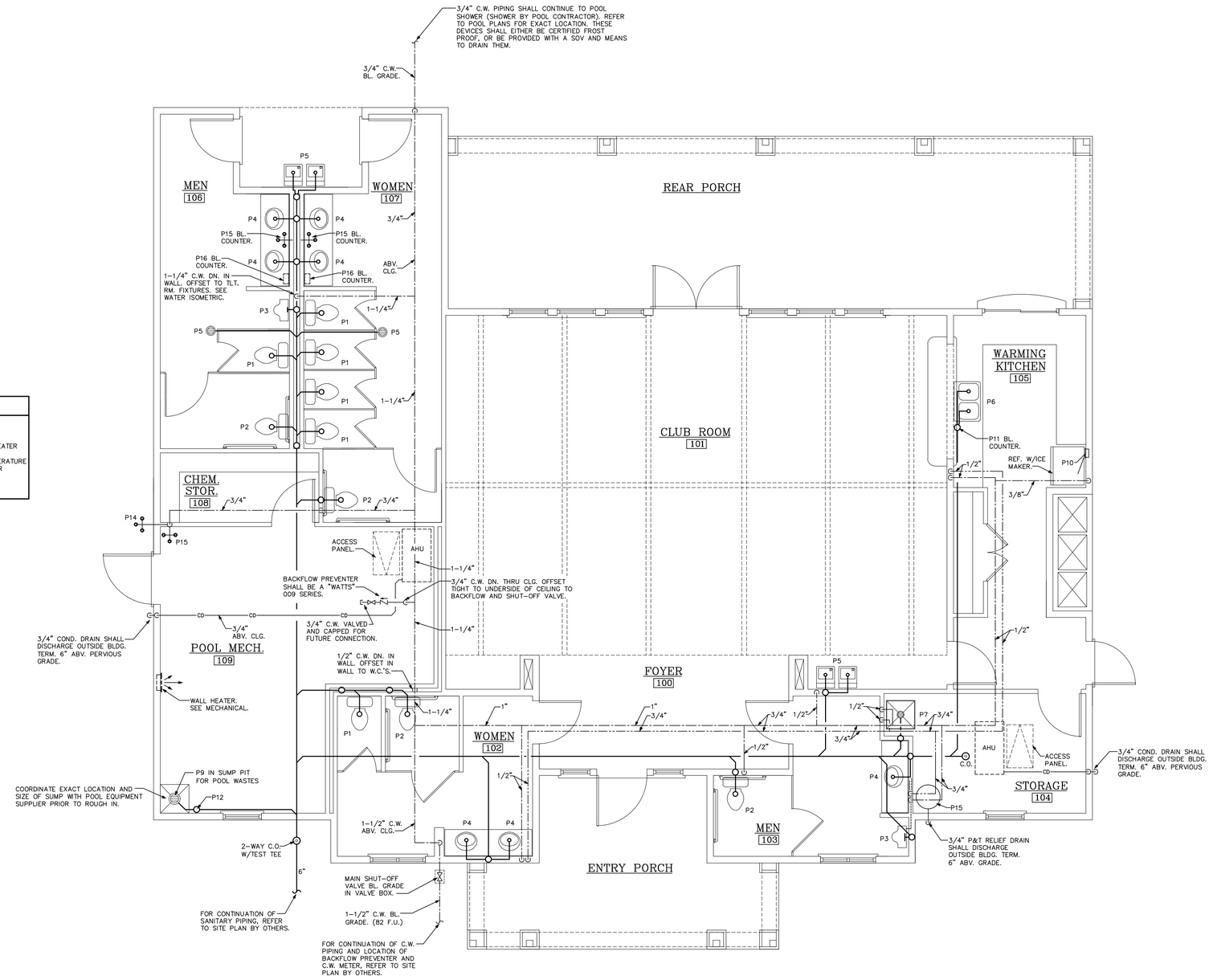
SECOND STAGE
IF ADDITIONAL HEAT IS REQUIRED, THE ELECTRIC HEAT SHALL BE ENERGIZED.

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
P&T	PRESSURE & TEMP. RELIEF LINE
CD	CONDENSATE DRAIN LINE
RWL	RAIN WATER LEADER
G	GAS LINE
	SAFEWASTE LINE
F	FIRE PROTECTION
	SHUT OFF VALVE
SP	SAFEPAN LINE
	FIRE SPRINKLER HEAD
	PIPE TURN UP
	PIPE TURN DOWN
	P-TRAP

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	MFGR.	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.	LAVORATORY	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		



1 FLOOR PLAN - MECHANICAL

SCALE: 1/4"=1'-0"

P1.0

PLUMBING FIXTURE SCHEDULE

P-1 (FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET MODEL 2.333.100 ELONGATED 1.6 GPF, VITREOUS CHINA, PRESSURE-ASSISTED SIPHON ACTION BOWL, CLOSE-COUPLED TANK, FLOOR MOUNTED, FLOOR OUTLET, SPEED CONNECT TANK/BOWL COUPLING SYSTEM, WITH AMERICAN STANDARD OPEN FRONT SEAT WITH COVER MODEL 5325.024.
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_722.pdf

P-2 (HANDICAPPED FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET RIGHT HEIGHT 16-1/2" 2.377.100 ELONGATED 1.6 GPF, VITREOUS CHINA, PRESSURE-ASSISTED SIPHON ACTION BOWL, CLOSE-COUPLED TANK, FLOOR MOUNTED, FLOOR OUTLET, SPEED CONNECT TANK/BOWL COUPLING SYSTEM, WITH AMERICAN STANDARD OPEN FRONT SEAT WITH COVER MODEL 5325.024.
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_1006.pdf

P-3 (HANDICAPPED URINAL AND FLUSH VALVE)
SHALL BE AN AMERICAN STANDARD WASHBROOK MODEL 6501.511 3/4" TOP SPUD. 1.0 GPF. URINAL INCLUDES AMERICAN STANDARD MANUAL FLUSH VALVE MODEL 6045.102 FOR 3/4" TOP SPUD URINAL.
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_4875.pdf
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_4085.pdf

P-4 (HANDICAPPED COUNTER TOP LAVATORY W/METERED FAUCET)
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A "CHICAGO" MODEL 3300-ABCP METERING FAUCET WITH 4" CENTERS AND BUILT-IN THERMOSTATIC MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. UNIT IS ADA COMPLIANT, 0.5 GPM WITH AN ADJUSTABLE 2-15 SECOND OPERATING CYCLE PRODUCING UNDER .25 GALLONS PER CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (HTTP: //WWW.TRUEBRO.COM) OR APPROVED EQUAL.
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_90.pdf
* http: //www.chicagofaucets.com/catalog/catalog.php?part_number=3400-CP

P-5 (HANDICAPPED ELECTRIC WATER COOLER COMBINATION HI/LO & WALL CARRIER)
SHALL BE AN ELKAY MODEL EMABFTLBC, SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS. MODEL EMABFTLBC, 8.8 GPH, 4.0 FLA AT 120 VOLT. WITH ACCESSORY IN-WALL CARRIER ELKAY MODEL MLP200.
HI/LO WATER COOLER: * http: //www.elkaypro.com/emabftlblc
IN-WALL CARRIER SYSTEM: * http: //www.elkaypro.com/mlp200
WALL CARRIER INSTALLATION: * http: //goo.gl/BldXzk

P-6 (DOUBLE BOWL STAINLESS STEEL SINK)
SHALL BE A "JUST" MODEL DL-2133-A-GR, 22"X33"X8" DOUBLE BOWL, SEAMLESS DIE-DRAWN CONSTRUCTION OF TYPE 304, 18-8 STAINLESS STEEL. INTERIOR AND TOP SURFACES POLISHED TO A NON-POROUS HAND-BLENDED JUST FINISH WITH HIGHLIGHTED BOWL RIM. FULLY COATED UNDERSIDE INSULATES FOR SOUND, AND REDUCES CONDENSATION. STRAIGHT-SIDED COMPARTMENT WITH 1 3/4" RADIUS CORNERS PROVIDES GREATER CAPACITY. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH 300 SERIES STAINLESS STEEL MOUNTING CHANNELS. DRAIN PUNCH #35 CENTERED FOR JUST J-35 UNLESS OTHERWISE SPECIFIED. PROVIDE 4TH HOLE IN SINK FOR SPRAY ASSEMBLY. FAUCET SHALL BE A "JUST" MODEL JWF-201.
* http: //www.justmfg.com/PDF/1-50.pdf
* http: //www.justmfg.com/PDF/7-119.pdf

P-7 (FLOOR MOUNTED MOP RECEPTOR)
SHALL BE A FLORESTONE #MSR-2424 24X24X10" MOLDED MOP BASIN WITH 3" OUTLET. PROVIDE WITH MR-371 FAUCET WITH WALL BRACE, PAIL HOOK AND APPROVED VACUUM BREAKER, MR-370 HOSE & HOSE BRACKET, MR-372 MOP HANGER, MR-373 BUMBER GUARDS AND MR-377 STAINLESS TEEL WALL GUARD.
* http: //www.florestone.com/mop_sinks/model_50-70.html
* http: //www.florestone.com/mop_sinks/ms_accessories.html

P-8 (FLOOR DRAIN WITH TRAP SEAL)
SHALL BE A JOSAM 30000-WT-A-49 SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WE,LOC INVERTIBLE NON- PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.
* http: //www.josam.com/images/josamnkt/sbmti/s06_30000-WT-A.pdf
FLOOR DRAIN TRAP SEAL
SHALL BE A "SURE SEAL" MODEL SS3000 PREASSEMBLED INLINE FLOOR DRAIN TRAP SEALER. 5 PIECES: COMMERCIAL GRADE ABS PLASTIC HOUSING AND KEEPER PIN, PROPRIETARY NEOPRENE RUBBER DIAPHRAGM, WITH 2 SOFT RUBBER SEALING GASKETS. FLOOR RATING ASSE-1072 AF-GW.
* http: //www.thesureseal.com/Portals/49321/docs/pitch_sheet_ss3000.pdf

P-9 (12"ø FLOOR DRAIN WITH 6" DISCHARGE PIPE CONNECTION)
SHALL BE A JOSAM 32200 SERIES COATED CAST IRON FLOOR DRAIN, SHALLOW TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WE,LOC NON-PUNCTURING FLASHING CLAMP COLLAR, WEEPHOLES, BOTTOM OUTLET, ROUND TOP, AND MEDIUM-DUTY LOOSE-SET ANTI-TILTING SUPER-FLO GRATE WITH PERIMETER DRAINAGE SLOTS.
* http: //www.josam.com/images/josamnkt/zzother/J08_p128-30.pdf

P-10 (WATER CONNECTION BOX)
SHALL BE A HIGH QUALITY CONNECTION BOX AS SPECIFIED ON PLUMBINGSUPPLY.COM LOCATED ON THIS PAGE "http: //www.plumbingsupply.com/icemaker-outlet-boxes.html" SHALL INCLUDE 2 SUPPORT BRACKETS, HIGH IMPACT POLYSTYRENE, 1/4" BRASS BALL VALVE WITH 1/2" SWEAT CONNECTION. OR APPROVED EQUAL.

P-11 (STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MINI-VENT". 2" VENT.
* http: //www.ipscorp.com/plumbing/studor/minivent

P-12 (STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MAXI-VENT". 3" VENT.
* http: //www.ipscorp.com/plumbing/studor/maxivent

P-13 (HANDICAPPED COUNTER TOP LAVATORY)
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A "CHICAGO" MODEL 3300-ABCP METERING FAUCET WITH 4" CENTERS AND BUILT-IN THERMOSTATIC MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. UNIT IS ADA COMPLIANT, 0.5 GPM WITH AN ADJUSTABLE 2-15 SECOND OPERATING CYCLE PRODUCING UNDER .25 GALLONS PER CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (HTTP: //WWW.TRUEBRO.COM) OR APPROVED EQUAL.
* http: //www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_90.pdf
* http: //www.chicagofaucets.com/catalog/catalog.php?part_number=3400-CP

P-14 (HOSE BIBB - NON-FREEZE HYDRANT WITH LOCK COVER)
SHALL BE A "ZURN" Z1300 ENCASED ECOLOTROL, ANTI-SIPHON, AUTOMATIC DRAINING, NON-FREEZE WALL HYDRANT COMPLETE WITH INTEGRAL BACKFLOW PREVENTOR, COPPER CASING, ALL BRONZE INTERIOR PARTS, NON-COMBINATION 3/4 MALE PIPE THREAD INLET CONNECTION STANDARD. REGULARLY FURNISHED WITH 3/4 HOSE CONNECTION. CHROME-PLATED ROUGH CAST BRONZE BOX AND HINGED COVER. INCLUDES OPERATING KEY.
* http: //content.zurn.com/web_documents/pdfs/specsheets/58867.pdf

P-15 (HOSE BIBB INTERIOR W/HANDWHEEL)
SHALL BE A "WOODFORD" MODEL 101 ANTI-SIPHON WALL FAUCET.
* http: //www.wcmind.com/woodford/Wall_Faucet_Pages/Model-101.html

P-16 (INSTA-HOT WATER HEATER BELOW LAVATORY)
WATER HEATER SHALL BE A "EEMAX" MODEL EX-65, 4.8 KW TANKLESS WATER HEATER @ 208V/1ø, 27 AMPS.
* http: //www.eemaxinc.com/assets/files/floco.pdf

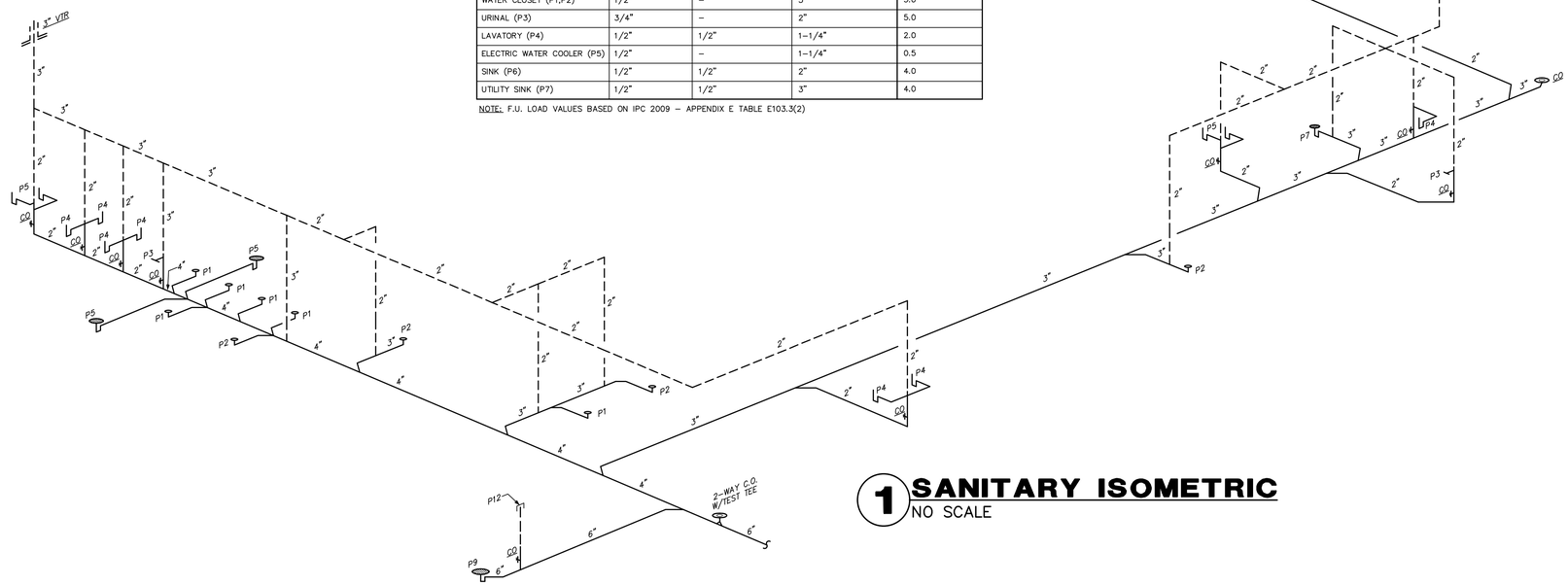
P-17 (WATER HEATER - MEDIUM DUTY - TALL MODEL)
SHALL BE A LOCHINVAR MODEL LTA040KK, 40 GALLON GLASSLINED STORAGE TANK, TALL TANK TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 208 VOLTS, SINGLE PHASE INCOMING POWER. 3 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.
* http: //lochinvar.com/_linefiles/RE.pdf

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.

PLUMBING FIXTURE CONNECTION SIZES

FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE	F.U. LOAD VALUES
WATER CLOSET (P1,P2)	1/2"	-	3"	5.0
URINAL (P3)	3/4"	-	2"	5.0
LAVATORY (P4)	1/2"	1/2"	1-1/4"	2.0
ELECTRIC WATER COOLER (P5)	1/2"	-	1-1/4"	0.5
SINK (P6)	1/2"	1/2"	2"	4.0
UTILITY SINK (P7)	1/2"	1/2"	3"	4.0

NOTE: F.U. LOAD VALUES BASED ON IPC 2009 - APPENDIX E TABLE E103.3(2)



1 SANITARY ISOMETRIC
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. CONTRACTOR IS RESPONSIBLE TO INSTALL ALL FIXTURES AND EQUIPMENT IN STRICT COMPLIANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. THIS REQUIREMENT IS TO SUPERSEDE ANY DETAILS OR INFORMATION CONTAINED ON THESE DRAWINGS.

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.) ALL BELOW FLOOR SLAB WATER PIPING SHALL BE FLEXIBLE "TEMPRITE PEX (CROSS-LINKED POLYETHYLENE)" INTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.LUBRIZOL.COM. ALL ABOVE SLAB WATER PIPING SHALL BE "FLOWGUARD GOLD CPVC" INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.FLOWGUARDGOLD.COM. ALL WATER PIPING AS SPECIFIED OR APPROVED EQUAL.

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.

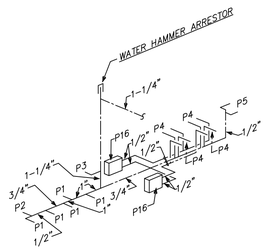
15.) FURNISH AND INSTALL APPROVED WATER HAMMER ARRESTORS AT EACH GROUP OF FIXTURES. INSTALLATION OF WATER HAMMER ARRESTORS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE AND INSTALL AN APPROVED WATER HAMMER ARRESTOR AT EACH FIXTURE OR DEVICE THAT HAS A SOLENOID WATER CONTROL VALVE.

16.) PROVIDE CHROME PLATED COMBINATION COVERED PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS, JOSAM 58890.

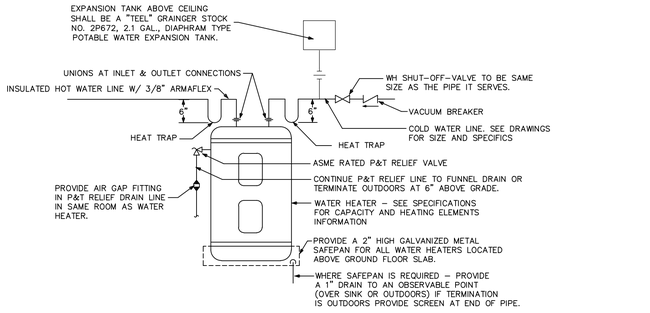
17.) INSULATE LINES AS FOLLOWS:

A.) 1" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON BOTH C.W. & H.W. WHEN PIPING IS LOCATED OUTSIDE OF THE INSULATED BUILDING ENVELOPE.

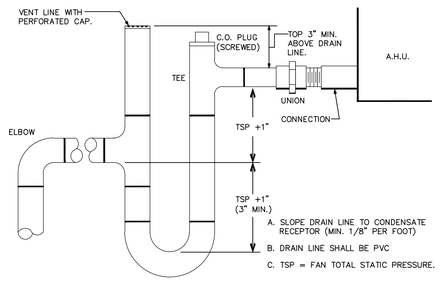
B.) CONDENSATE PIPING: 1/2" THICK ARMAFLEX PREFORMED OR APPROVED EQUAL.



2 WATER ISOMETRIC
NO SCALE



3 WATER HEATER DETAIL
NO SCALE

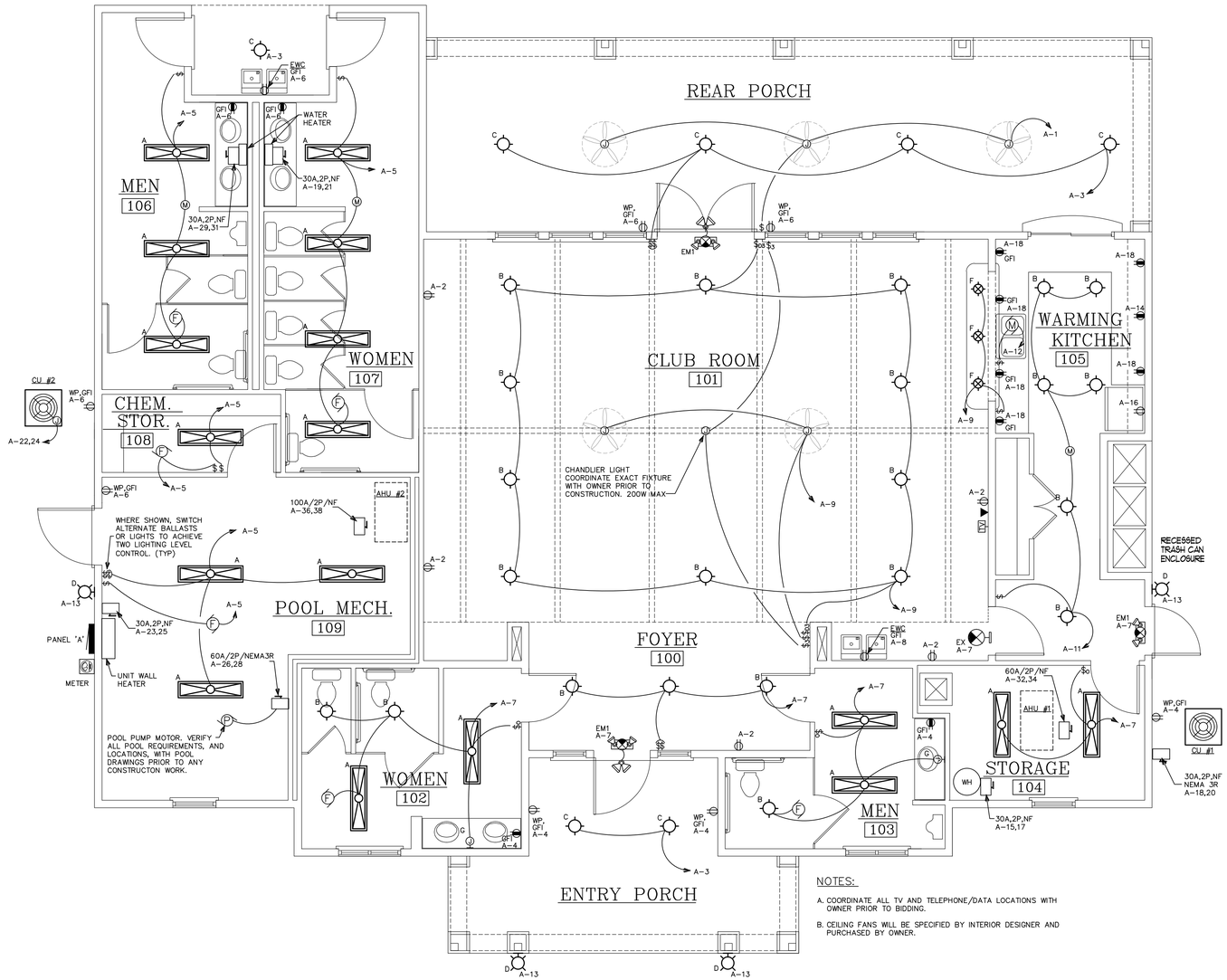


4 CONDENSATE P-TRAP DETAIL
NOT TO SCALE

P2.0

LIGHTING FIXTURE SCHEDULE

LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	SURFACE MOUNTED	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA SB-232-MVOLT	
B	DOWNLIGHT	WHITE		120	(1) 32 TRT	LITHONIA LP6FN-26-42TRT-MVOLT	PROVIDE SLOPED CEILING ADAPTER
C	DOWNLIGHT EXTERIOR	WHITE		120	(1) 32 TRT	LITHONIA LP6FN-26-42TRT-6LR4-MVOLT	
D	WALL SCONCE			120	100W MAX	OWNER SELECTED	CONTRACTOR TO ALLOW $100 ALLOWANCE PER FIXTURE
F	PENDANT			120	100W MAX	OWNER SELECTED	
G	VANITY			120	50W MAX	OWNER SELECTED	
EM1	EMERG COMBO w/ REM HEAD	WHITE		120	INCLUDED	LITHONIA LHQM-HO	W/ MODEL NX DUAL REMOTE HEAD, 90 MIN BATTERY
EX	EXIT	WHITE		120	INCLUDED	LITHONIA EXR LED EL M6	W/90 MIN BATTERY



NOTES:

A. COORDINATE ALL TV AND TELEPHONE/DATA LOCATIONS WITH OWNER PRIOR TO BIDDING.

B. CEILING FANS WILL BE SPECIFIED BY INTERIOR DESIGNER AND PURCHASED BY OWNER.

1 FLOOR PLAN - ELECTRICAL

SCALE: 1/4"=1'-0"

Sheet
E1.0

PANEL SCHEDULE A

400 AMP, 120/240 VOLT, SINGLE PHASE, THREE WIRE, 400A. M.C.B., 10000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE

##	BKR.	WIRE AND CONDUIT COND.	NEUTRAL	GND	C.	KEYS	LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	PORCH FANS	360	360	------								
3	20/1	#12	#12	#12	1/2	CHAL	LIGHTING-PORCH VIA T.C.	900	900	------								
5	20/1	#12	#12	#12	1/2	CHAL	LIGHTING-TOILET/MECH,	600	------	600	RECEPT.	CHAL	1/2	#12	#12	#12	20/1	2
7	20/1	#12	#12	#12	1/2	CHAL	LIGHTING-FOYER/TOILET	650	650	------								
9	20/1	#12	#12	#12	1/2	CHAL	LIGHTING-CLUB/FANS	900	900	------								
11	20/1	#12	#12	#12	1/2	CHAL	LIGHTING-KITCHEN	800	------	800	RECEPT.	CHAL	1/2	#12	#12	#12	20/1	4
13	20/1	#12	#12	#12	1/2	CHAL	EXTERIOR LTG VIA T.C.	720	------	720	EWC	CHAL	1/2	#12	#12	#12	20/1	6
15								200	------	200								
	30/2	#10	---	#10	1/2	CHAL	WATER HEATER	1200	------	1200	DISPOSAL	CHAL	1/2	#12	#12	#12	20/1	8
17								400	400	------								
								900	900	------	MICROWAVE	CHAL	1/2	#12	#12	#12	20/1	10
								0	------	2250								
								900	------	900	REFRIGERATOR	CHAL	1/2	#12	#12	#12	20/1	12
19	30/2	#10	---	#10	1/2	CHAL	INSTA HOT	0	2250	------								
								0	2340	------								
								0	------	2808	CONDENSING UNIT-1	CHAL	3/4	#10	---	#10	30/2	14
21								0	------	2340								
								0	2808	------								
23								0	3651	------								
	20/2	#12	---	#12	1/2	CHAL	UWH	0	------	1500	CONDENSING UNIT-2	CHAL	1	#10	---	#8	50/2	16
25								0	------	3651								
								0	1500	------								
27	20/1	#12	#12	#12	1/2	CHAL	POOL LTG	0	4576	------								
								1500	------	1500	POOL PUMP	CHAL	3/4	#10	---	#6	60/2	18
29								0	------	4576								
	30/2	#10	---	#10	1/2	CHAL	INSTA HOT	0	2808	------								
31								540	540	------	RECEPT.	CHAL	1/2	#12	#12	#12	20/1	20
								0	------	2808								
								0	------	4588								
33							SPACE	0	0	------	AIR HANDLING UNIT #1	CHAL	1/2	#10	---	#8	50/2	22
								0	4588	------								
35							SPACE	0	------	0								
								0	------	5828								
37							SPACE	0	0	------	AIR HANDLING UNIT #2	CHAL	3/4	#8	---	#6	70/2	24
								0	5828	------								
39							SPACE	0	------	0								
								0	------	0								
41							SPACE	0	0	------	SPACE							40
							SPACE	0	0	------	SPACE							42

WIRE/CONDUIT KEY 1234 — 1: TEMP RATING; 2: CONDUIT TYPE; 3: INSULATION; 4: WIRING TYPE

WIRING TYPE C-CU WIRE | INSULATION H-THWN | CONDUIT TYPE A-EMT | TEMP RATING L-78-86 Deg. F.

36639 | 37169 | 73,808

PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 56.8 AMPS
NON DIVERSIFIED LOAD AT 240 VOLT, SINGLE PHASE = 307.5 AMPS

PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001
REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CARDINAS

PANEL A DIVERSIFICATION CALCULATIONS

RECEPTACLES (18) - 3240 VA TOTAL	
FIRST 10 KVA AT 100% -	3240
LIGHTING - 5070 X 125% -	6338
HVAC LOAD AT 100% -	32813
MOTOR LOADS AT 100% -	9512
PLUS 25% OF THE LARGEST MOTOR -	2288
MISC NON-CONTINUOUS LOADS AT 100% -	23172
TOTAL DIVERSIFIED PANEL LOAD -	77363
LOAD AT 120/240V/1-PHASE/3-WIRE -	322.3A

AIC BRACING CALCULATIONS

45 KVA TRANSFORMER WITH 1.4% INPEDANCE 120/240V/1ø

TRANSFORMER FLA = 75,000 / 240 = 312.5 A.
IMPEDANCE MULTIPLIER 100/1.4 = 71.428
AVAILABLE FAULT CURRENT = 312.5 X 71.428 = 22,321 A

FEEDER OF (2) SET OF #3/0 CU IN A PVC CONDUIT WITH AN EXPECTED LENGTH OF 75 FEET.

$$f = \frac{2 \times 75 \times 22{,}321}{27{,}846 \times 240} = 0.50099$$

$$M = \frac{1}{1 + 0.50099} = 0.6662$$

AIC = 0.6662 X 22,321 = 14,870 AMPS

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.

   UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY, SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.

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 UNDERWRITERS 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.

6. SHARED NEUTRAL CONDUCTORS SHALL NOT BE ALLOWED UNLESS INSTALLED IN ACCORDANCE WITH NEC-210.4

7. 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.

8. 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 SCOTCHCAST OR EQUAL POTTING COMPOUND.

9. 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.

10. 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.

11. 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.

12. TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

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, MTD +47"		SPECIAL OUTLET - AS REQUIRED
$3	THREE-WAY SWITCH, MTD +47"	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, MTD +47"		EMERGENCY LIGHTING
$L	SWITCH W/ ILLUM. WHEN ON +47"	B	RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
$03	THREE-WAY SWITCH W/ OCCU SENSOR WHEN ON +47"	M	OVERHEAD OCCUPANCY SENSOR
$O	SWITCH W/ OCCU SENSOR. WHEN ON +47"	B	HIGHBAY HID LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
J	JUNCTION BOX, FLUSH IF POSSIBLE	B	FLUORESCENT LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	TELEPHONE / DATA OUTLET +18"	B	FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DED. COMPUTER TERM. OUTLET +18"	B	FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH W/ STARTER	IG	ISOLATED GROUND
	DISCONNECT SWITCH	WP	WEATHER-PROOF
	FLR. MTD. FLUSH DUPLEX RECEPTACLE	BC	BELOW COUNTER
	FLR. MTD. FLUSH QUAD. RECEPTACLE	TC	TIME CLOCK - 24 HOUR
	FLR. MTD. FLUSH PHONE/DATA OUTLET	GFI	GROUND FAULT INTERRUPTER
	FLR. MTD. FLUSH COMPUTER OUTLET	AFF	ABOVE FINISHED FLOOR
SD	AREA SMOKE DETECTOR	EWC	ELECTRIC WATER COOLER
H	HEAT DETECTOR	ASW	ABOVE SHOW WINDOW
D	DUCT SMOKE DETECTOR	BSW	BELOW SHOW WINDOW
F	FIRE ALARM MAN. PULL STATION +47"	FACP	FIRE ALARM CONTROL PANEL
H30	HORN WITH STROBE LIGHT, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FAAP	FIRE ALARM ANNUNCIATOR PANEL
L30	STROBE LIGHT ONLY, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING		

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

PRESCRIPTIVE [X] 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: 3550 VS 4313
- 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:

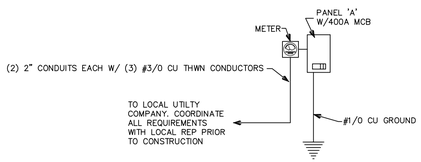
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NATIONAL ENERGY CODE

SIGNED: _____

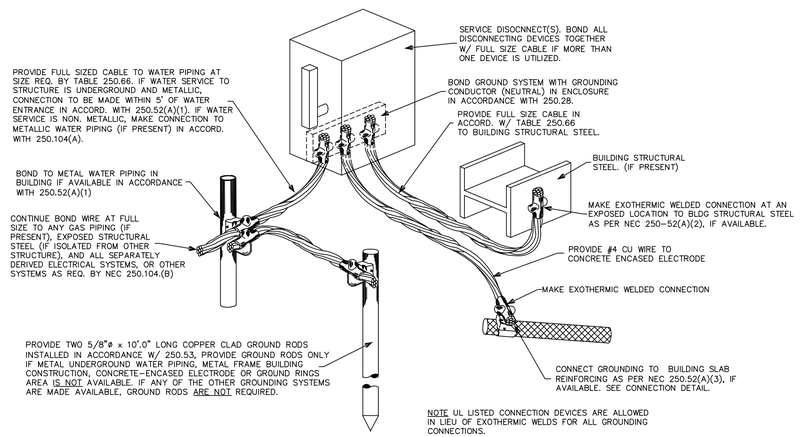
NAME: _____

TITLE: _____

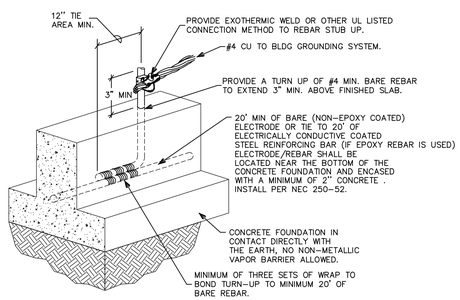
NOTE: COMPLIANCE TO NC ENERGY SECTION 506 IS MADE BY LIGHTING LEVEL REDUCTION.



3 ELECTRICAL SERVICE RISER
NO SCALE



2 GROUNDING DETAIL
NO SCALE



1 GROUNDING DETAIL
NO SCALE

E2.0