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	DISCHARGE PTTERN
A	TITUS 250-AA	8X6	0 - 125	CEILING REGISTER	L1 (ONE-WAY)
B	TITUS 250-AA	8X6	0 - 125	CEILING REGISTER	L2 (TWO-WAY)
C	TITUS 250-AA	10X6	130 - 225	CEILING REGISTER	L2 (TWO-WAY)
D	TITUS 250-AA	10X6	130 - 225	CEILING REGISTER	L3 (THREE-WAY)
E	TITUS 250-AA	16X8	230 - 350	CEILING REGISTER	L3 (THREE-WAY)
F	TITUS 250-AA	16X8	150 - 350	CEILING REGISTER	L4 (FOUR-WAY)

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

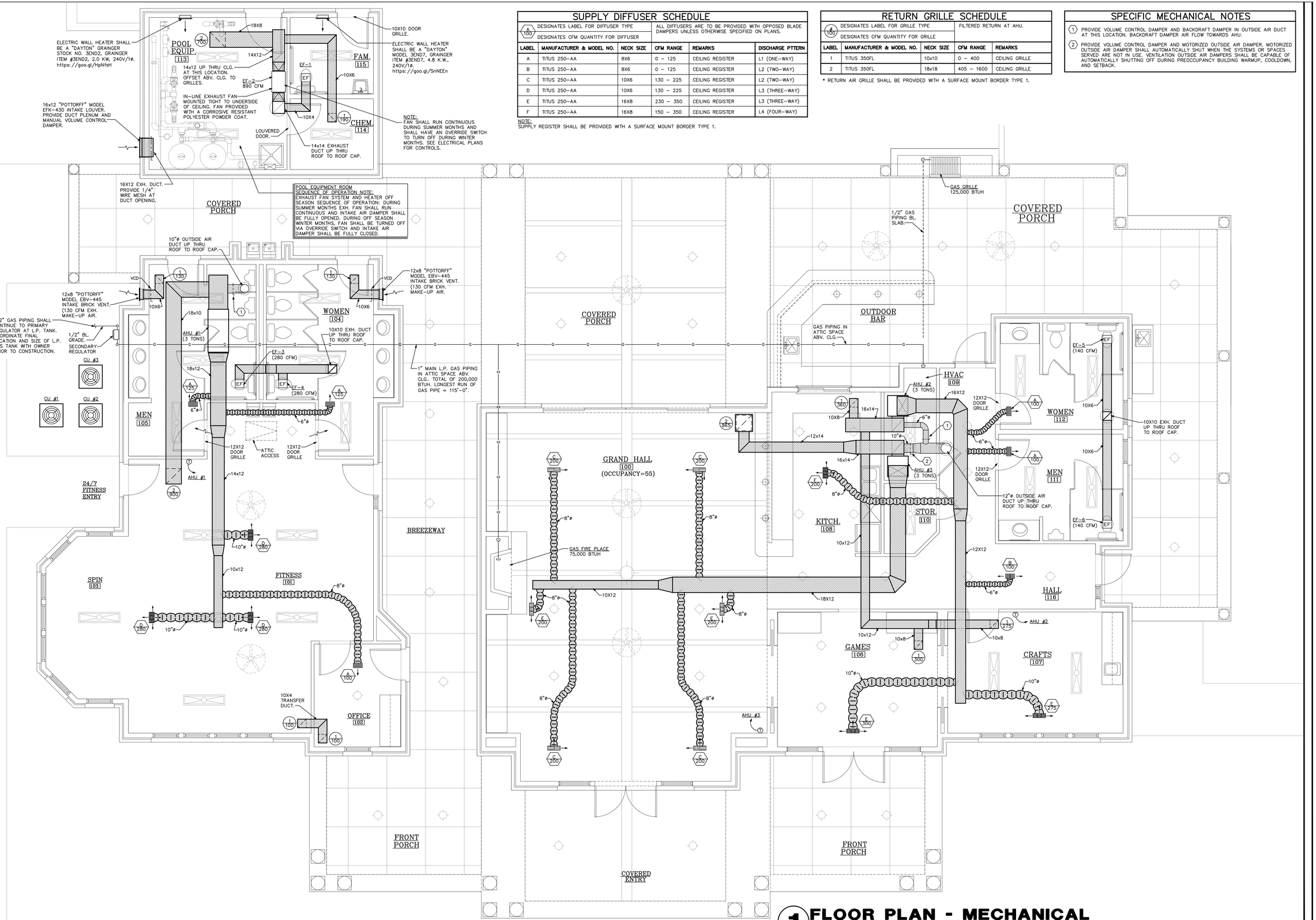
FILTERED RETURN AT AHU.

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 350FL	10x10	0 - 400	CEILING GRILLE
2	TITUS 350FL	18x18	405 - 1600	CEILING GRILLE

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

SPECIFIC MECHANICAL NOTES

1. PROVIDE VOLUME CONTROL DAMPER AND BACKDRAFT DAMPER IN OUTSIDE AIR DUCT AT THIS LOCATION. BACKDRAFT DAMPER AIR FLOW TOWARDS AHU.
2. PROVIDE VOLUME CONTROL DAMPER AND MOTORIZED OUTSIDE AIR DAMPER. MOTORIZED OUTSIDE AIR DAMPER SHALL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY SHUTTING OFF DURING PREOCCUPANCY BUILDING WARMUP, COOLDOWN, AND SETBACK.



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

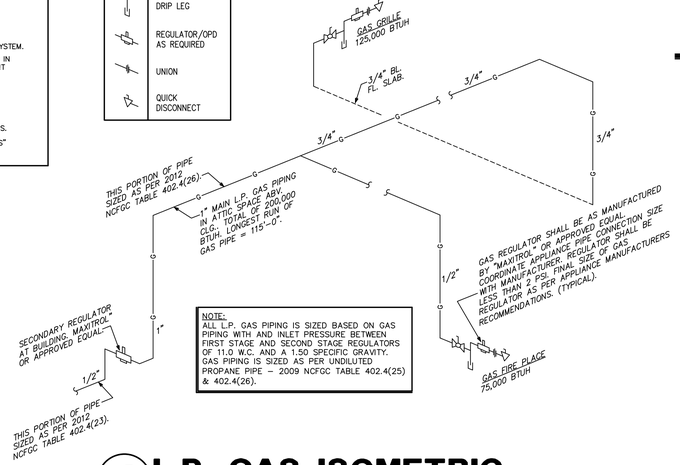
M1.0

GENERAL GAS PIPING 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.
7. ALL EXPOSED GAS PIPING SHALL BE IDENTIFIED BY A YELLOW LABEL MARKED "GAS" IN BLACK LETTERS. THE MARKERS SHALL BE AT INTERVALS NOT EXCEEDING 5'.

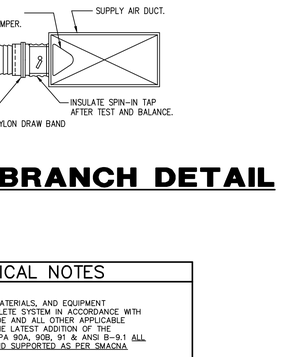
GAS PIPE LEGEND

	BALL VALVE
	DRIP LEG
	REGULATOR/OPD AS REQUIRED
	UNION
	QUICK DISCONNECT



NOTE:
ALL L.P. GAS PIPING IS SIZED BASED ON GAS PIPING WITH AND INLET PRESSURE BETWEEN FIRST STAGE AND SECOND STAGE REGULATORS OF 11.0 W.C. AND A 1.50 SPECIFIC GRAVITY. GAS PIPING IS SIZED AS PER UNDILUTED PROPANE PIPE – 2009 NCFGC TABLE 402.4(25) & 402.4(26).

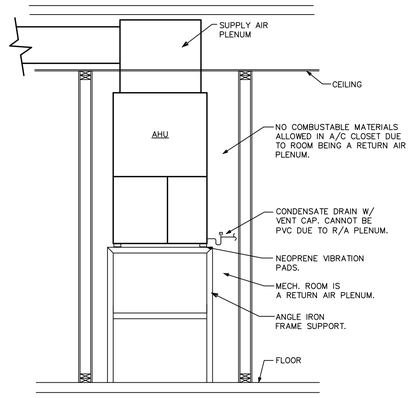
1 L.P. GAS ISOMETRIC
NO SCALE



2 SPIN-IN TAP BRANCH DETAIL
NO SCALE

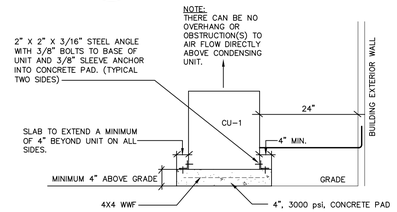
GENERAL MECHANICAL NOTES

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" WITH A MINIMUM 4.2 R VALUE. 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 A MINIMUM OF 1-1/2" ARMAFLEX 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. PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL RETURN AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON DESIGN SUPPLY OR RETURN PLENUM OF ABOVE 2000 CFM. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER. COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
17. 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 BALCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (T) FROM SUPPLY GRILLS AND EVAPORATORS.
18. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
19. ALL INSULATION SHALL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
20. 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.
21. 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.
22. PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING SYSTEM.
23. 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.
24. 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.
25. 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.



(AHU #2,3)

3 AHU MOUNTING DETAIL
NO SCALE



4 COND. UNIT MTG. DETAIL
NO SCALE

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON 2012 NCMC CODE TABLE 403.3 MINIMUM VENTILATION RATES FOR OUTSIDE AIR REQUIREMENTS (EQUATION 4-1)

UNIT LABEL	OCCUPANCY CATAGORY	AREA	ESTIMATED MAX. OCCUPANCY		OUTSIDE AIR REQUIRED (CFM)	ZONE AIR DIST. EFF.	TOTAL
		A_z	P_z	R_p	$P_z \times R_p$ $A_z \times R_A$	E_z	
AHU #1	HEALTH CLUB/WEIGHT ROOM	0,675	10 PEOPLE PER 1,000 S.F.	20.0 CFM PER PERSON	(08 x 20.0) + (0,675 x .06) = 200 PEOPLE AREA TOTAL		
AHU #1	OFFICE	0,080	05 PEOPLE PER 1,000 S.F.	05.0 CFM PER PERSON	(01 x 05.0) + (0,080 x .06) = 024 PEOPLE AREA TOTAL		
					AHU #1 TOTAL = 224	1.0*	224/1.0 = 224
AHU #2	CINFERENCE/MEETING	0,390	50 PEOPLE PER 1,000 S.F.	05.0 CFM PER PERSON	(20 x 05.0) + (0,390 x .06) = 124 PEOPLE AREA TOTAL		
AHU #2	CORRIDOR	0,265	N/A	N/A	(N/A) + (0,265 x .06) = 016 PEOPLE AREA TOTAL		
					AHU #2 TOTAL = 140	1.0*	140/1.0 = 140
AHU #3	MULTIPURPOSE ASSEMBLY	0,945	AS PER ARCH. 55 PEOPLE	05.0 CFM PER PERSON	(55 x 05.0) + (0,945 x .06) = 331 PEOPLE AREA TOTAL	1.0*	331/1.0 = 331

A_z — ZONE FLOOR AREA
P_z — ZONE POPULTION
R_p — PEOPLE OUTDOOR RATE
R_A — AREA OUTDOOR RATE
E_z — ZONE AIR DISTRIBUTION EFFECTIVENESS

* ALL SYSTEMS ON THIS PROJECT ARE SINGLE ZONE SYSTEMS WHERE ONE AIR HANDLER SUPPLIES A MIXTURE OF OUTDOOR AIR AND RECIRCULATED RETURN AIR TO ONLY ONE ZONE, SO NCMC SECTION 403.3.2.1 ALLOWS THE Ez OF 1.0 TO BE UTILIZED.

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	CENTREX INLINER SX100BC	890	.25"	IN LINE	1/4 HP	OPEN DRIP PROOF	1400	115V/1ø	1,2,3
EF-3,4	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z81S	280	.125"	CEILING MOUNTED	77 WATTS	OPEN DRIP PROOF	1050	115V/1ø	1,2
EF-5,6	CABINET FAN – REFER TO PLANS	PENN ZEPHYR Z5H	150	.125"	CEILING MOUNTED	79 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.
3.) FAN SHALL PROVIDED WITH A CORROSIVE RESISTANT POLYESTER POWDER COAT.

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

NOTE:
COMPLIANCE TO NC ENERGY SECTION C406 IS MADE BY LIGHTING LEVEL REDUCTION.

Thermal Zone
winter dry bulb: 20° F — winter dry bulb
summer dry bulb: 97° F — summer dry bulb

Interior design conditions
winter dry bulb: 68° F — winter dry bulb
summer dry bulb: 74° F — summer dry bulb
relative humidity: 52.9% — relative humidity

Building heating load: 100,640 BTUH

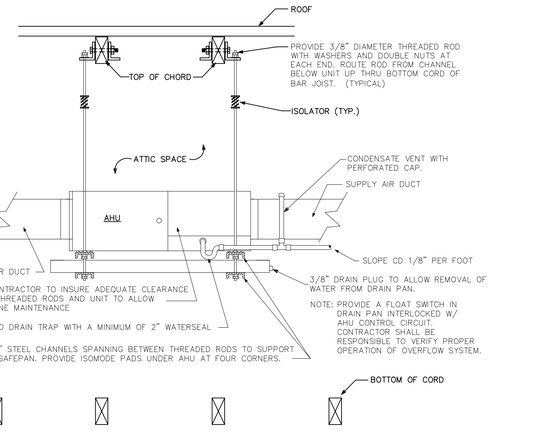
Building cooling load: 102,060 BTUH

Mechanical Spacing Conditioning System
Unitary
description of unit: REFER TO EQUIP. SCHED. ON THIS SHEET.
heating efficiency: REFER TO EQUIP. SCHED. ON THIS SHEET.
cooling efficiency: REFER TO EQUIP. SCHED. ON THIS SHEET.
size category of unit: REFER TO EQUIP. SCHED. ON THIS SHEET.
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A

List equipment efficiencies: REFER TO EQUIP. SCHED. ON THIS SHEET.

DESIGNER STATEMENT:
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 NORTH CAROLINA CHAPTER 4 [CE] COMMERCIAL ENERGY EFFICIENCY CODE.

SIGNED: Todd W. Carey
NAME: TODD W. CAREY
TITLE: N.C. PROFESSIONAL ENGINEER #9079



(AHU #1)

5 AHU MOUNTING DETAIL
NO SCALE

AIR COOLED HEAT PUMP SCHEDULE

HEAT PUMP

CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY COOLING	SENSIBLE CAPACITY COOLING	TOTAL CAPACITY HEATING	COMP. RLA	FAN FLA	VOLTAGE	MOCP	EER/SEER	WEIGHT
CU #1	CARRIER 25HCE436A003	34,320	26,350	33,800	15.1	1.1	240V/1ø	30A	15.0	201 lbs.
CU #2	CARRIER 25HCE436A003	33,870	25,000	33,420	15.1	1.1	240V/1ø	30A	15.0	201 lbs.
CU #3	CARRIER 25HCE436A003	33,870	25,000	33,420	15.1	1.1	240V/1ø	30A	15.0	201 lbs.

AIR HANDLING UNIT

AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	O/A CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	WEIGHT
AHU #2	CARRIER FX4DNF037L00	1,200	SEE SCH.	0.4"	HIGH	1/2 HP	240V/1ø	185 lbs.
AHU #2	CARRIER FX4DNF037L00	1,075	SEE SCH.	0.4"	HIGH	1/2 HP	240V/1ø	185 lbs.
AHU #3	CARRIER FX4DNF037L00	1,200	SEE SCH.	0.4"	HIGH	1/2 HP	240V/1ø	185 lbs.

INTEGRATED ELECTRIC HEATING

HEATER KW	VOLTAGE	NOTES	HTR.+MTR. MCA	HTR.+MTR. MOCP
10.0 K.W.	240V/1ø	1 THRU 6	58.5	60
8.0 K.W.	240V/1ø	1 THRU 6	48.5	50
8.0 K.W.	240V/1ø	1 THRU 6	48.5	50

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.

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.

SPECIFIC PLUMBING NOTES

1. PREASSEMBLED PIPE HEAT CABLE SHALL BE "RAYCHEM" MODEL W51-6P, GRAINGER STOCK NO. 4E528, VOLTAGE RATING 120 VOLTS, HEATER LENGTH 6 FEET, 48 WATTS. HEAT CABLE SHALL BE ATTACHED TO PIPE THEN PIPE INSULATION IS INSTALLED ON TOP OF PIPE AND CABLE. HEAT CABLE SHALL ROUTE ALONG WATER PIPING AND SANITARY P-TRAP WITH INSULATION ON TOP OF CABLE. COORDINATE FINAL INSTALLATION AS PER MANUFACTURERS RECOMMENDATIONS. REFER TO ELECTRICAL PLANS FOR ELECTRICAL REQUIREMENTS.
   6' HEAT TAPE: https://goo.gl/okQTvs — INSTALLATION: https://goo.gl/9ECPQw
2. PREASSEMBLED PIPE HEAT CABLE SHALL BE "RAYCHEM" MODEL W51-18P, GRAINGER STOCK NO. 4E530, VOLTAGE RATING 120 VOLTS, HEATER LENGTH 18 FEET, 144 WATTS. HEAT CABLE SHALL BE ATTACHED TO PIPE THEN PIPE INSULATION IS INSTALLED ON TOP OF PIPE AND CABLE. HEAT CABLE SHALL ROUTE ALONG WATER PIPING AND SANITARY P-TRAP WITH INSULATION ON TOP OF CABLE. COORDINATE FINAL INSTALLATION AS PER MANUFACTURERS RECOMMENDATIONS. REFER TO ELECTRICAL PLANS FOR ELECTRICAL REQUIREMENTS.
   18' HEAT TAPE: https://goo.gl/HZFzF2 — INSTALLATION: https://goo.gl/9ECPQw
3. 1/2" TRAP PRIMER BELOW FLOOR TO FLOOR DRAIN.

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		

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

POOL EQUIP. 113 — P10 (TYP. OF 2) IN WALL BL. HOSE BIBB. — 3/4" C.W. DN. THRU CLG. VALVE AND BACKFLOW TIGHT TO UNDERSIDE OF CLG. — P12 — P15 — P2 — P4 — P17 BL. LAV. — P14 — 1/2" — 3/4" — P16 — 1/2" — 1/2" — P13 — FAM. 115 — CHEM. 114 — BACKFLOW PREVENTER SHALL BE A "WATTS" 009 SERIES. — 3/4" C.W. VALVED AND CAPPED FOR FUTURE CONNECTION. — 1" — COVERED PORCH — P6 — P3 — P1 — 3/4" COND. DRAIN DN. IN WALL DISCHARGE OUTSIDE BLDG. TERMINATE 6" ABV. PERVIOUS GRADE. — P17 BL. LAV. — AHU #1 — P15 BL. COUNTER. — P12 — 1-1/4" C.W. DN. IN WALL. — P7 — P10 (TYP. OF 2) IN WALL BL. HOSE BIBB. — MEN 105 — WOMEN 104 — 24/7 FITNESS ENTRY — 1-1/2" — SPIN 103 — FITNESS 101 — BREEZEWAY — 1-1/4" — ABV. CLG. — OFFICE 102 — 1-1/2" C.W. BL. GRADE. (101 F.U./45 G.P.M.) — C.W. SHUT-OFF VALVE BL. GRADE IN VALVE BOX. — WATER DISTRIBUTION PIPE UP TO 5' OUTSIDE BUILDING. FOR CONTINUATION AND SIZE OF C.W. SERVICE PIPE AND LOCATION & SIZE OF C.W. METER AND BACKFLOW PREVENTER, REFER TO CIVIL PLANS BY OTHERS. — 4" — 2-WAY C.O. W/TEST TEE — FOR CONTINUATION OF SANITARY PIPING, REFER TO CIVIL PLANS BY OTHERS. — FRONT PORCH — COVERED ENTRY — GRAND HALL 100 — COVERED PORCH — C.O. — OUTDOOR BAR — P16 BL. COUNTER. — P8 — 1/2" C.W. & H.W. BL. COUNTER TO SINK. — 3/4" COND. DRAIN AND 3/5" P&T RELIEF DRAIN SHALL DISCHARGE INTO F.D. VIA A MIN. 2" AIR GAP CONNECTION. — KITCH. 108 — AHU #2 — AHU #3 — HVAC 109 — P17 — 3/4" — P10 — D.W. — REF. W/ICE MAKER. — P19 — 1/2" C.W. & H.W. DN. IN WALL. — STOR. 110 — 3/8" C.W. IN WALL TO ICE MAKER. — 1/2" C.W. & H.W. BL. COUNTER TO SINK. — P9 — P4 — P1 — P2 — 3/4" — 1/2" — WOMEN 112 — MEN 111 — ABV. CLG. — P3 — HALL 116 — GAMES 106 — CRAFTS 107 — P8 — P17 BL. LAV.

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

P1.0

PLUMBING FIXTURE SCHEDULE

P-1 (FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL 270CA.001 CADET 3 ELONGATED 1.6 GPF TOILET, VITREOUS CHINA, CADET FLUSHING SYSTEM, TANK TYPE, FLOOR MOUNTED, FLOOR OUTLET, WITH AMERICAN STANDARD OPEN FRONT HEAVY-DUTY COMMERCIAL SEAT MODEL 5901.100.

WATER CLOSET: https://goo.gl/rZTofA	TOILET SEAT: https://goo.gl/12Oeyk

P-2 (HANDICAPPED FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL 270AA.001 CADET 3 RIGHT HEIGHT ELONGATED 1.6 GPF TOILET, VITREOUS CHINA, CADET FLUSHING SYSTEM, TANK TYPE, FLOOR MOUNTED, FLOOR OUTLET, WITH AMERICAN STANDARD OPEN FRONT HEAVY-DUTY COMMERCIAL SEAT MODEL 5901.100.
* TOILET LEVER HANDLE SHALL BE LOCATED ON ACCESSIBLE SIDE OF TOILET.

WATER CLOSET: https://goo.gl/kP4ISI	TOILET SEAT: https://goo.gl/12Oeyk

P-3 (HANDICAPPED URINAL AND FLUSH VALVE)
SHALL BE AN AMERICAN STANDARD WASHBROOK MODEL 6501.511 3/4" TOP SPUD. 0.125 TO 1.0 GPF. URINAL INCLUDES AMERICAN STANDARD MANUAL FLUSH VALVE MODEL 6590.001 3/4" TOP SPUD.

URINAL & VALVE: https://goo.gl/ysTAf	

P-4 (HANDICAPPED COUNTER TOP LAVATORY)
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0491.019 VITREOUS CHINA SELF-RIMMING, FAUCET SHALL BE A "CHICAGO" MODEL 333-665PRABCP METERING FAUCET. UNIT IS ADA COMPLIANT, ADJUSTABLE RUN TIME FROM 2 TO 15 SECONDS, OPENS WITH PUSH, 0.20 MAX GALLON/CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (TRUEBRO.COM) OR APPROVED EQUAL. PROVIDE MIXING VALVE BELOW LAVATORY SET TO 110° H.W.

LAVATORY: https://goo.gl/TiWyJ3	FAUCET: https://goo.gl/69DJOw

P-5 (HANDICAPPED WALL HUNG LAVATORY)
SHALL BE AN AMERICAN STANDARD REGALYN LAVATORY MODEL 4869.004 (CENTER HOLE ONLY), VITREOUS CHINA, WALL MOUNT WITH CONCEALED ARMS SUPPORT. FAUCET SHALL BE A "CHICAGO" MODEL 333-665PRABCP METERING FAUCET. UNIT IS ADA COMPLIANT, ADJUSTABLE RUN TIME FROM 2 TO 15 SECONDS, OPENS WITH PUSH, 0.20 MAX GALLON/CYCLE. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDER-SINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (TRUEBRO.COM) OR APPROVED EQUAL. PROVIDE MIXING VALVE BELOW LAVATORY SET TO 110° H.W.

LAVATORY: https://goo.gl/LLwx4I	FAUCET: https://goo.gl/69DJOw

P-6 (EXTERIOR HANDICAPPED NON-REFRIGERATED DRINKING FOUNTAIN COMBINATION HI/LO)
SHALL BE AN "OASIS" MODEL MSSLPM-14G (SPLIT-LEVEL). * PROVIDE HEAT TAPE ON EXTERIOR WATER PIPING AND SANITARY P-TRAP AT FIXTURE CONNECTION AS NOTED ON PLANS.

WATER COOLER: https://goo.gl/kzAmfs	

P-7 (INTERIOR HANDICAPPED ELECTRIC WATER COOLER COMBINATION HI/LO & WALL CARRIER)
SHALL BE AN ELKAY MODEL EMABFTL8C, SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS. MODEL EMABFTL8C, 8.0 GPH, 4.0 FLA AT 120 VOLT, WITH ACCESSORY IN-WALL CARRIER ELKAY MODEL WLP200.

WATER COOLER: https://goo.gl/1y83FY	WALL CARRIER: https://goo.gl/srJUz

P-8 (SINGLE BOWL STAINLESS STEEL BAR SINK W/FAUCET)
SHALL BE A "JUST" MODEL SLF-1815-A-GR, 18"X15"X7-1/2", SINGLE BOWL, STAINLESS STEEL, (3) HOLES ON 4" CENTERS. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH STAINLESS STEEL MOUNTING CHANNELS. FAUCET SHALL BE A "JUST" MODEL J-1174-KS WITH 4" WRIST BLADE HANDLES.

SINK: https://goo.gl/2LgU4r	FAUCET: https://goo.gl/hgV6fh

P-9 (SINGLE BOWL STAINLESS STEEL SINK W/FAUCET)
SHALL BE A "JUST" MODEL SLF-2125-A-GR, 21"X25"X8", SINGLE BOWL, STAINLESS STEEL. (3) HOLES ON 4" CENTERS. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH STAINLESS STEEL MOUNTING CHANNELS. FAUCET SHALL BE A "JUST" MODEL J-1174-KS WITH 4" WRIST BLADE HANDLES.

SINK: https://goo.gl/sDDnnM	FAUCET: https://goo.gl/hgV6fh

P-10 (HANDICAPPED DOUBLE BOWL STAINLESS STEEL SINK)
SHALL BE A "JUST" MODEL DL-ADA-1933-A-GR, 19"X33"X6-1/2" DOUBLE BOWL STAINLESS STEEL. STAINLESS STEEL. (3) HOLES ON 4" CENTERS. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH STAINLESS STEEL MOUNTING CHANNELS. FAUCET SHALL BE A "JUST" MODEL J-1174-KS WITH 4" WRIST BLADE HANDLES.

SINK: https://goo.gl/UhkGkp	FAUCET: https://goo.gl/hgV6fh

P-11 (AUTOMATIC TRAP PRIMER)
SHALL BE A IPS CORPORATION "SIOUX CHIEF" MODEL 695 TRAP PRIMER WITH VACUUM BREAKER. AUTOMATIC TRAP PRIMER VALVE SHALL ACTIVATE WITH A 10 PSIG PRESSURE DROP BETWEEN 30-150 PSIG.

DRAIN: https://goo.gl/WqkVxK	

P-12 (FLOOR DRAIN WITH TRAP PRIMER)
SHALL BE A JOSAM 30003-A-50 SERIES COATED CAST IRON FLOOR DRAIN WITH 1/2" TRAP PRIMER. 3"ø PIPE CONNECTION, 6"ø DRAIN TOP, STRAINER TYPE 6A. TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WE&LOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.

DRAIN: https://goo.gl/0G5lly	

P-13 (4"FLOOR DRAIN WITH TRAP PRIMER)
SHALL BE A JOSAM 30004-A-50 SERIES COATED CAST IRON FLOOR DRAIN WITH 1/2" TRAP PRIMER. 4"ø PIPE CONNECTION, 6"ø DRAIN TOP, STRAINER TYPE 6A. TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WE&LOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.

DRAIN: https://goo.gl/0G5lly	

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.

HOSE BIBB: https://goo.gl/QWaJxx	

P-15 (HOSE BIBB INTERIOR W/HANDWHEEL)
SHALL BE A "WOODFORD" MODEL 101 ANTI-SIPHON WALL FAUCET.

HOSE BIBB: https://goo.gl/PDOLyD	

P-16 (2" STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MINI-VENT". 2" VENT.

STUDOR VENT: https://goo.gl/fxH9PT	

P-17 (INSTA-HOT WATER HEATER BELOW LAVATORY)
WATER HEATER SHALL BE A "CHRONOMITE" MODEL SR-20L/240, 4.8 KW TANKLESS WATER HEATER @ 240V/1ø, 20 AMPS.

INSTA-HOT: https://goo.gl/68fjwa	

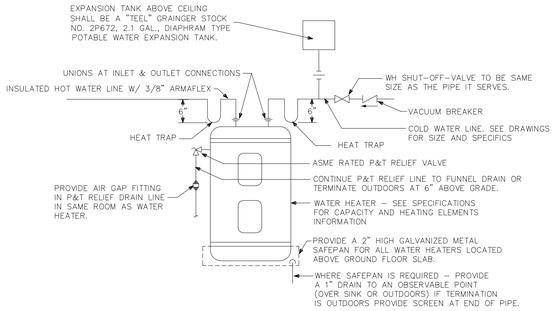
P-18 (ELECTRIC WATER HEATER)
SHALL BE A LOCHINVAR MODEL KTA030KD, 30 GALLON GLASSLINED STORAGE TANK, TALL TANK TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 240 VOLTS, SINGLE PHASE INCOMING POWER. 3 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.

WATER HEATER: https://goo.gl/a271ea	

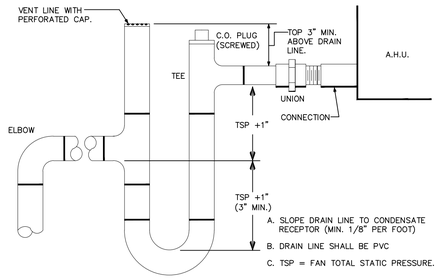
P-19 (WATER CONNECTION BOX)
SHALL BE A HIGH QUALITY CONNECTION BOX AS SPECIFIED ON PLUMBINGSUPPLY.COM SHALL INCLUDE 2 SUPPORT BRACKETS, HIGH IMPACT POLYSTYRENE, 1/4" BRASS BALL VALVE WITH 1/2" SWEAT CONNECTION. OR APPROVED EQUAL.

CONNECTION BOX: https://goo.gl/wBbLCM	

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.



4 WATER HEATER DETAIL
NO SCALE



3 CONDENSATE P-TRAP DETAIL
NOT TO 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)" INSTALLED 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. ALL 2" WATER PIPING SHALL BE TYPE "L" COPPER AND TYPE "K" COPPER FOR 2 1/2" AND LARGER. (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.

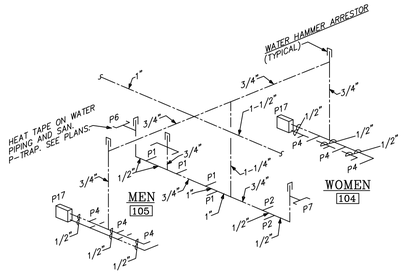
16.) PROVIDE CHROME PLATED COMBINATION COVERED PLATE AND CLEANOUT PLUG FOR ALL WALL CLEANOUTS, JOSAM 58890.

17.) INSULATE LINES AS FOLLOWS:

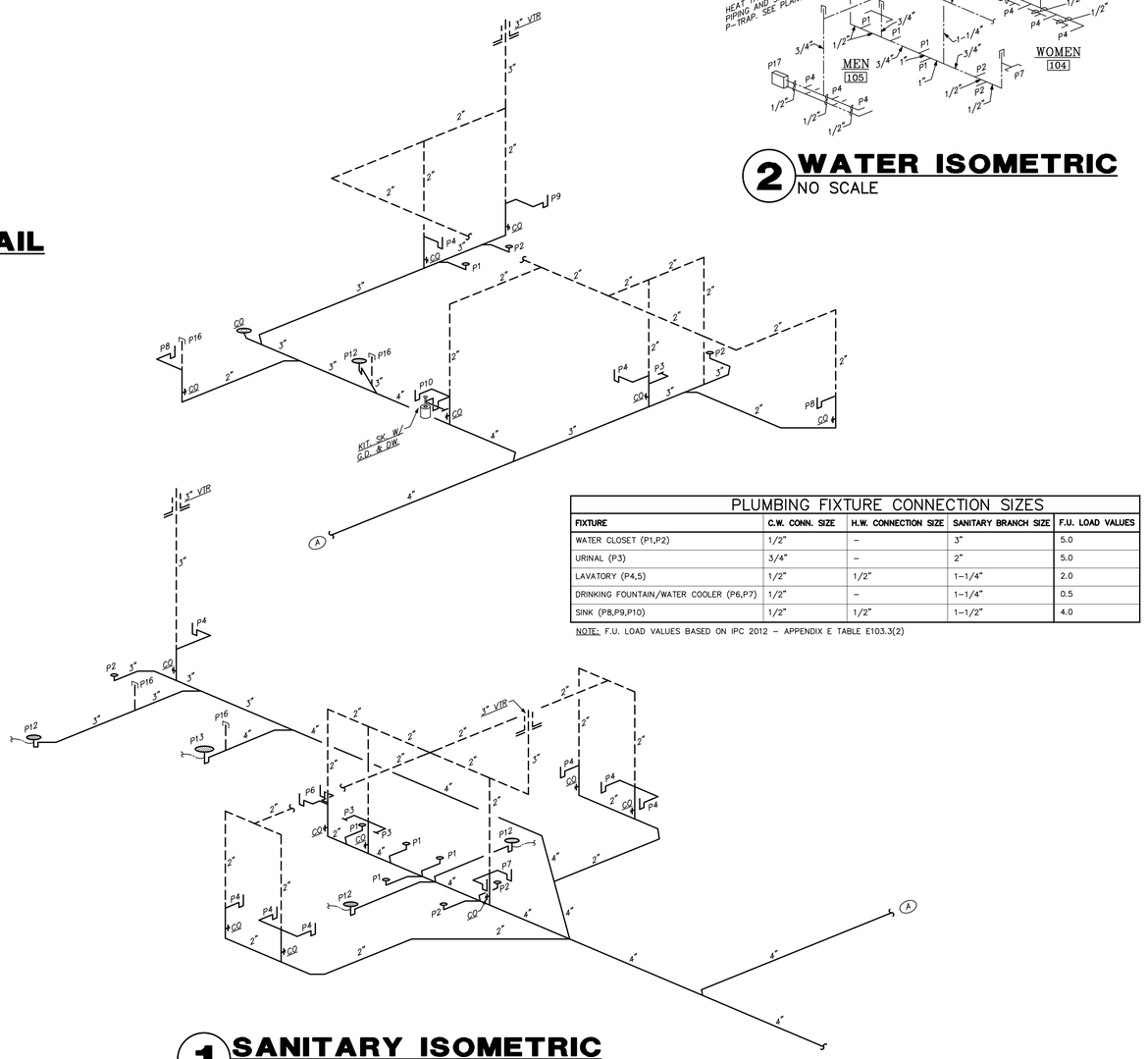
A.) 1-1/2" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON BOTH C.W. & H.W. WHEN PIPING IS LOCATED OUTSIDE OF THE INSULATED BUILDING ENVELOPE.

B.) 1-1/2" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON HW PIPING & H.W. RECIRC. PIPING, ONLY WHEN THERE IS A H.W. RECIRCULATING PIPING SYSTEM.

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



2 WATER ISOMETRIC
NO SCALE



1 SANITARY ISOMETRIC
NO SCALE

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 (P4,5)	1/2"	1/2"	1-1/4"	2.0
DRINKING FOUNTAIN/WATER COOLER (P6,P7)	1/2"	–	1-1/4"	0.5
SINK (P8,P9,P10)	1/2"	1/2"	1-1/2"	4.0

NOTE: F.U. LOAD VALUES BASED ON IPC 2012 - APPENDIX E TABLE E103.3(2)

LIGHTING FIXTURE SCHEDULE

LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 1'X4' LED TROFFER	WHITE	4000 LUMENS	120	40 W	CREE FP14-40L-35K-10V	SMK-CR14 - MOUNTING KIT
B	6" LED DOWNLIGHT	SEMISPECULAR	3000 LUMENS	120	34.7 W	LITHONIA LDN6-35/30-L06-LSS-MVOLT-EZ1-WL	(P) - PHOTOCELL
C	LED WALL SCONCE	BRONZE	7182 LUMENS	120	74 W	LITHONIA DSXW1 LED-20C-1000-40K-TFTM-MVOLT-PE-DDBXD	BY OWNER NOT TO EXCEED 100 W
D	OWNER LIGHTS			120		OWNER LED LIGHT NOT TO EXCEED 100 W	
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	W/ BATTERY BACKUP
EX1	EXIT SIGN w/ REM HEAD	WHITE	RED	120	INCLUDED	LITHONIA LHQM LED R	W/ MODEL ELA T Q DUAL REMOTE HEAD, 90 MIN BATTERY
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP

16x12 "POTTORFF" MODEL EFK-430 INTAKE LOUVER. PROVIDE DUCT PLENUM AND VOLUME CONTROL DAMPER TO BE SHUT WHEN HEATER IS ON DURING THE OFF SEASON.

POOL EQUIP. 113

FAM. 115

CHEM. 114

COVERED PORCH

MEN 105

WOMEN 104

LOCATE IN ATTIC AS REQUIRED.

24/7 FITNESS ENTRY

SPIN 103

FITNESS 101

OFFICE 102

BREEZEWAY

GRAND HALL 100

COVERED PORCH

COVERED ENTRY

FRONT PORCH

COOKING STATION

OUTDOOR BAR

HVAC 109

KITCH. 108

STOR. 110

COVERED PORCH

WASHING STATION

WOMEN 112

MEN 111

HALL 116

GAMES 106

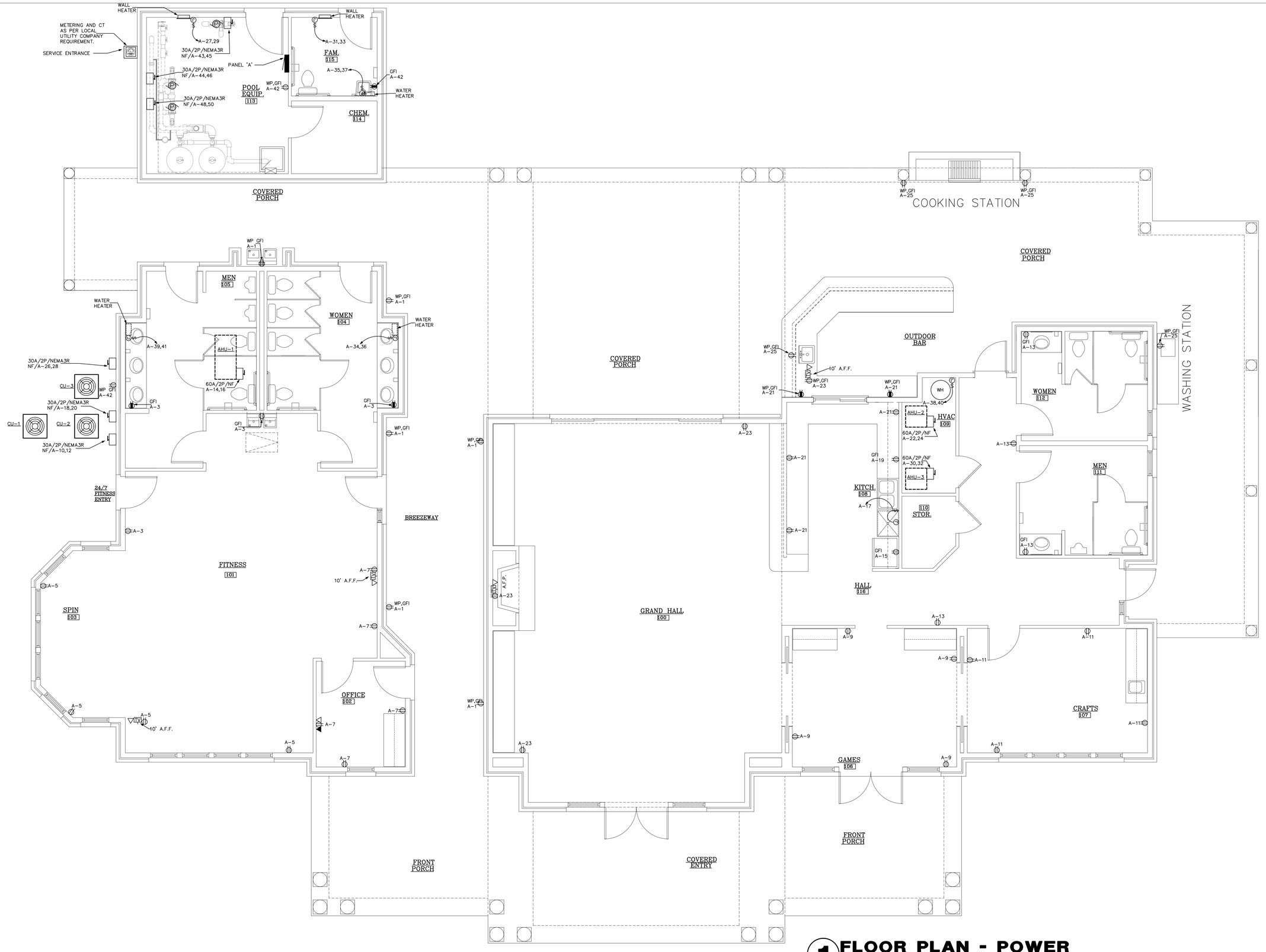
CRAFTS 107

FRONT PORCH

1 FLOOR PLAN - LIGHTING

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

E-1



1 FLOOR PLAN - POWER

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

E-2

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.

13. ALL PANELBOARDS, UNLESS OTHERWISE NOTED, SHALL BE PROVIDED WITH PLUG-IN TYPE CIRCUIT BREAKERS.

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 MTD +47"	B	RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
$O3	THREE-WAY SWITCH W/ OCCU SENSOR MTD. +47"	M	OVERHEAD OCCUPANCY SENSOR
$O	SWITCH W/ OCCU SENSOR. MTD. +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 N	FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DED. COMPUTER TERM. OUTLET +18"	B	FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
SMC	DISCONNECT SWITCH W/ STARTER	B	LED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH	IG	ISOLATED GROUND
	FLR. MTD. FLUSH DUPLEX RECEPTACLE	WP	WEATHER-PROOF
	FLR. MTD. FLUSH QUAD. RECEPTACLE	BC	BELOW COUNTER
	FLR. MTD. FLUSH PHONE/DATA OUTLET	TC	TIME CLOCK - 24 HOUR
	FLR. MTD. FLUSH COMPUTER OUTLET	GFI	GROUND FAULT INTERRUPTER
SD	AREA SMOKE DETECTOR	AFF	ABOVE FINISHED FLOOR
H	HEAT DETECTOR	EWC	ELECTRIC WATER COOLER
D	DUCT SMOKE DETECTOR	ASW	ABOVE SHOW WINDOW
F	FIRE ALARM MAN. PULL STATION +47"	BSW	BELOW SHOW WINDOW
30	HORN WITH STROBE LIGHT, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FACP	FIRE ALARM CONTROL PANEL
L 30	STROBE LIGHT ONLY, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FAAP	FIRE ALARM ANNUNCIATOR PANEL

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

Energy Code	☐ Performance	☐ Prescriptive
ASHRAE 90.1	☒ Performance	☐ Prescriptive

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	1896 VS 4982
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED	N/A

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

- ☐ C406.2 More Efficient HVAC Equipment Performance
- ☐ C406.3 Reduced Lighting Power Density
- ☐ C406.4 Enhanced Digital Lighting Controls
- ☐ C406.5 On-Site Renewable Energy
- ☐ C406.6 Dedicated Outdoor Air System
- ☐ C406.7 Reduced Energy Use in Service Water Heating

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 ENERGY CODE 2018, CHAPTER 4C.

SIGNED: _____

NAME: TODD W. CAREY, P.E.

TITLE: NORTH CAROLINA PROFESSIONAL ENGINEER #9079

PANEL SCHEDULE A

400 AMP, 120/240 VOLT, SINGLE PHASE, THREE WIRE, 400A. M.C.B., 18000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 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	RECEPTACLE	1080	1080	------								
								1391	1391	------	LIGHTS	CHAL	1-1/4	#6	#1	#1	125/1	2
3	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	------	720								
								1606	------	1606	LIGHTS	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	720	------								
								856	------	856	OUTSIDE LIGHTS **	CHAL	1/2	#12	#12	#12	20/1	6
7	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	900	------	900								
								1746	------	1746	FANS	CHAL	1/2	#12	#12	#12	20/1	8
9	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	720	------								
								0	1944	------								10
11	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	------	720	CONDENSING UNIT # 1	CHAL	1/2	#12	---	#12	30/2	
								0	------	1944								12
13	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	720	------								
								0	5292	------								14
15	15/1	#12	#12	#12	1/2	CHAL	REFRIGERATOR	840	------	840	AIR HANDLING UNIT # 1	CHAL	3/4	#10	---	#6	60/2	
								0	------	5292								16
17	15/1	#12	#12	#12	1/2	CHAL	DISHWASHER	1440	1440	------								
								0	1944	------								18
19	20/1	#12	#12	#12	1/2	CHAL	MICROWAVE	1200	------	1200	CONDENSING UNIT # 2	CHAL	1/2	#12	---	#12	30/2	
								0	------	1944								20
21	20/1	#12	#12	#12	1/2	CHAL	KITCHEN RECEPTACLE	900	900	------								
								0	4332	------								22
23	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLE	720	------	720	AIR HANDLING UNIT # 2	CHAL	1/2	#10	---	#8	50/2	
								0	------	4332								24
25	20/1	#12	#12	#12	1/2	CHAL	HEAT CABLE/COOKING RECEPT	720	720	------								
								0	1944	------								26
27	20/2	#12	---	#12	1/2	CHAL	EQ ROOM WALL HEATER	0	------	1000	CONDENSING UNIT # 3	CHAL	1/2	#12	---	#12	30/2	
29								0	------	1944								28
31	20/2	#12	---	#12	1/2	CHAL	FM BATHROOM WALL HEATER	0	1000	------								
33								0	4332	------								30
								0	------	2400	AIR HANDLING UNIT # 3	CHAL	1/2	#10	---	#8	50/2	
								0	------	4332								32
35	20/2	#12	---	#12	1/2	CHAL	INSTA - HOT WATER HEATER	0	2400	------								
37								0	2400	------								34
								0	------	2400	INSTA - HOT WATER HEATER	CHAL	1/2	#12	---	#12	20/2	
								0	------	2400								36
39	20/2	#12	---	#12	1/2	CHAL	INSTA - HOT WATER HEATER	0	2400	------								
41								0	------	2250								38
								0	------	2400	WATER HEATER	CHAL	1/2	#12	---	#10	25/2	
								0	------	2250								40
								0	2400	------								
								540	540	------	SERVICE RECEPTACLE	CHAL	1/2	#12	#12	#12	20/1	42
43	20/2	#12	---	#12	1/2	CHAL	PUMP #3**	0	960	------								
45								0	1224	------								44
								0	------	960	PUMP #1 **	CHAL	1/2	#12	---	#12	20/2	
								0	------	1224								46
47							SPACE	0	0	------								
								0	1224	------								48
49							SPACE	0	------	0	PUMP #2 **	CHAL	1/2	#12	---	#12	20/2	
51							SPACE	0	------	1224								50
								0	0	------								
53							SPACE	0	------	0	SPACE							52
								0	0	------								
								0	------	0	SPACE							54

WIRE/CONDUIT KEY	WIRING TYPE	INSULATION	CONDUIT TYPE	TEMP RATING
1234	C-CU WIRE	H-THWN	A-EMT	L-78-86 Deg. F.
1 - TEMP RATING 2 - CONDUIT TYPE 3 - INSULATION 4 - WIRING TYPE				

44498 45133 89,631

PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 75.7 AMPS
NON DIVERSIFIED LOAD AT 240 VOLT, SINGLE PHASE = 373.5 AMPS

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

PANEL NOTES:
* - THIS IS A PHOTOCELL CIRCUIT
** - PROVIDE GFCI PROTECTION FOR THIS CIRCUIT

PANEL A DIVERSIFICATION CALCULATIONS

RECEPTACLES (47) - 8460 VA TOTAL		
FIRST 10 KVA AT 100%	-	8460
LIGHTING - 3853 X 125%	-	4816
HVAC LOAD AT 100%	-	39576
MOTOR LOADS AT 100%	-	8562
PLUS 25% OF THE LARGEST MOTOR	-	612
MISC NON-CONTINUOUS LOADS AT 100%	-	29180
TOTAL DIVERSIFIED PANEL LOAD	-	91206
LOAD AT 120/240V/1-PHASE/3-WIRE	-	380.0A

AIC BRACING CALCULATIONS

75 KVA TRANSFORMER WITH 1.4% IMPEDANCE 120/240V/1ø

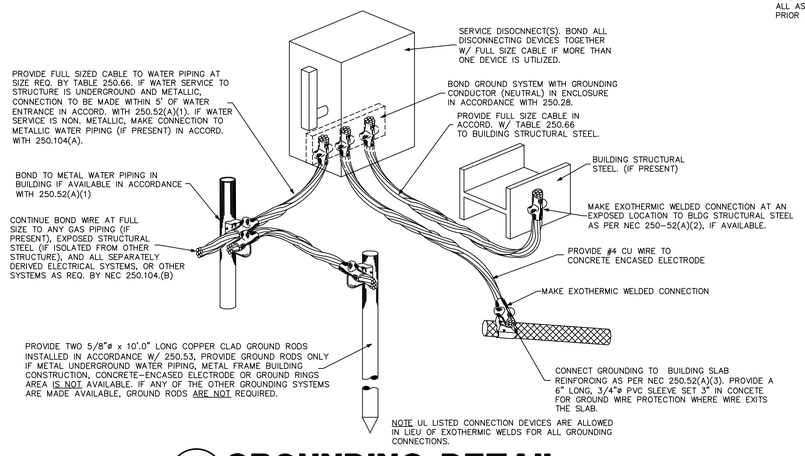
TRANSFORMER FLA = 75,000 / 240 = 312.5 A.
IMPEDANCE MULTIPLIER 100/1.4 = 71.428
AVAILABLE FAULT CURRENT = 312.5 X 71.428 = 22,321 A

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

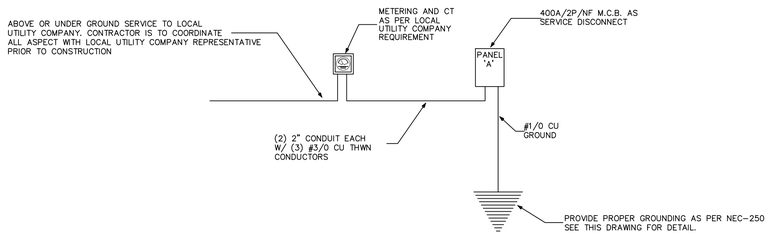
$f = \frac{2 \times 75 \times 22,321}{27,846 \times 240} = 0.5010$

$M = \frac{1}{1 + 0.5010} = 0.6662$

AIC = 0.6662 X 22,321 = 14,871 AMPS



2 GROUNDING DETAIL
NO SCALE



1 ELECTRICAL SERVICE RISER DIAGRAM
NO SCALE