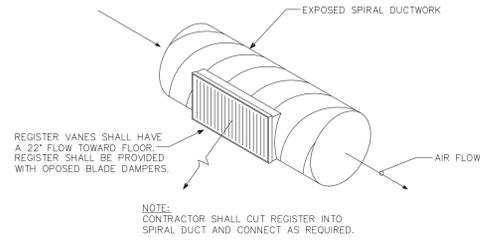


**2 BRANCH DUCT DETAIL**  
NO SCALE

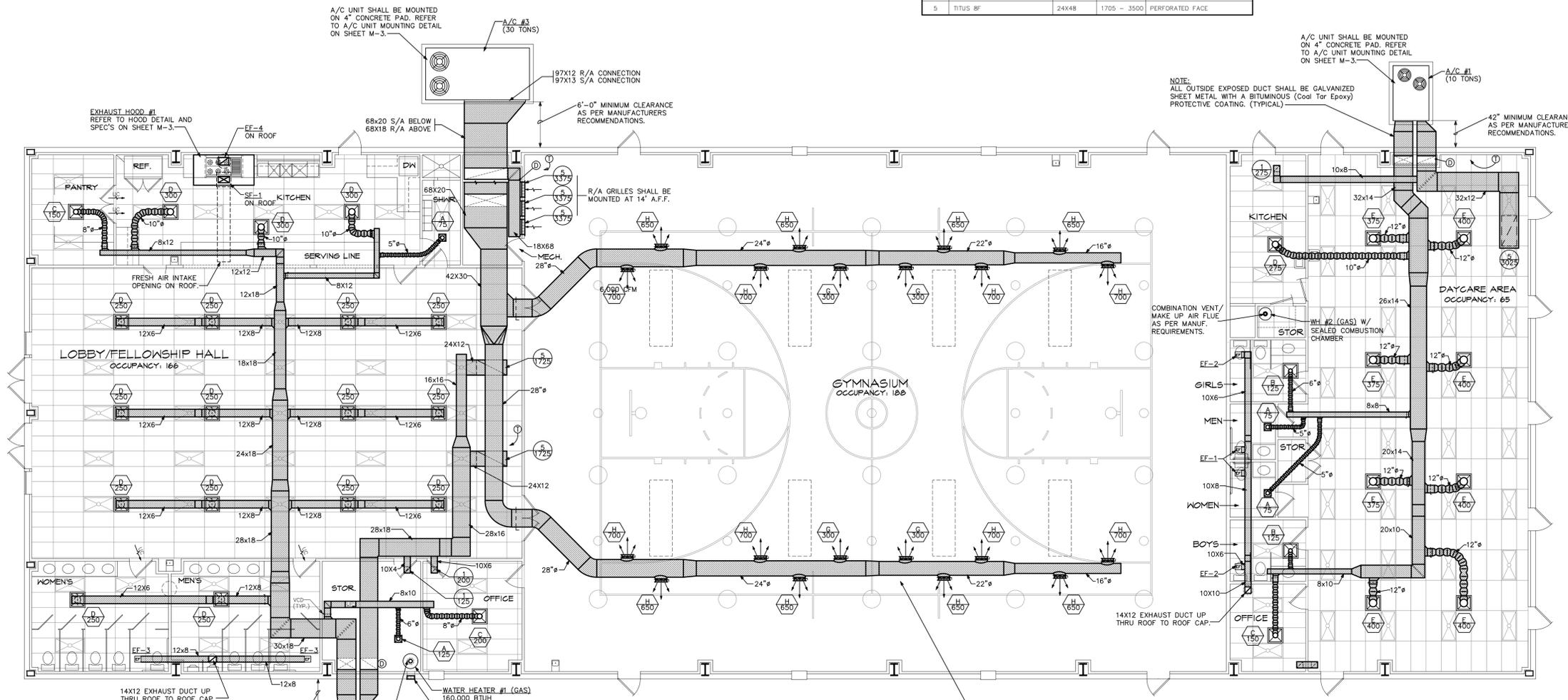


**3 SPIRAL DUCT / REGISTER CONNECTION DETAIL**  
NO SCALE

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	14x6	150 - 300	SIEDWALL
H	TITUS 300RL	18x10	500 - 700	SIEDWALL

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

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 8F	10X10	0 - 350	PERFORATED FACE
2	TITUS 8F	12X12	400 - 600	PERFORATED FACE
3	TITUS 8F	18X18	605 - 1000	PERFORATED FACE
4	TITUS 8F	24X24	1005 - 1700	PERFORATED FACE
5	TITUS 8F	24X48	1705 - 3500	PERFORATED FACE

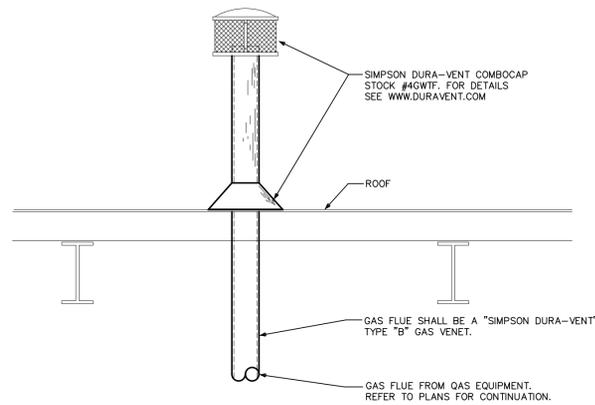


A/C UNIT SHALL BE MOUNTED ON 4" CONCRETE PAD. REFER TO A/C UNIT MOUNTING DETAIL ON SHEET M-3.

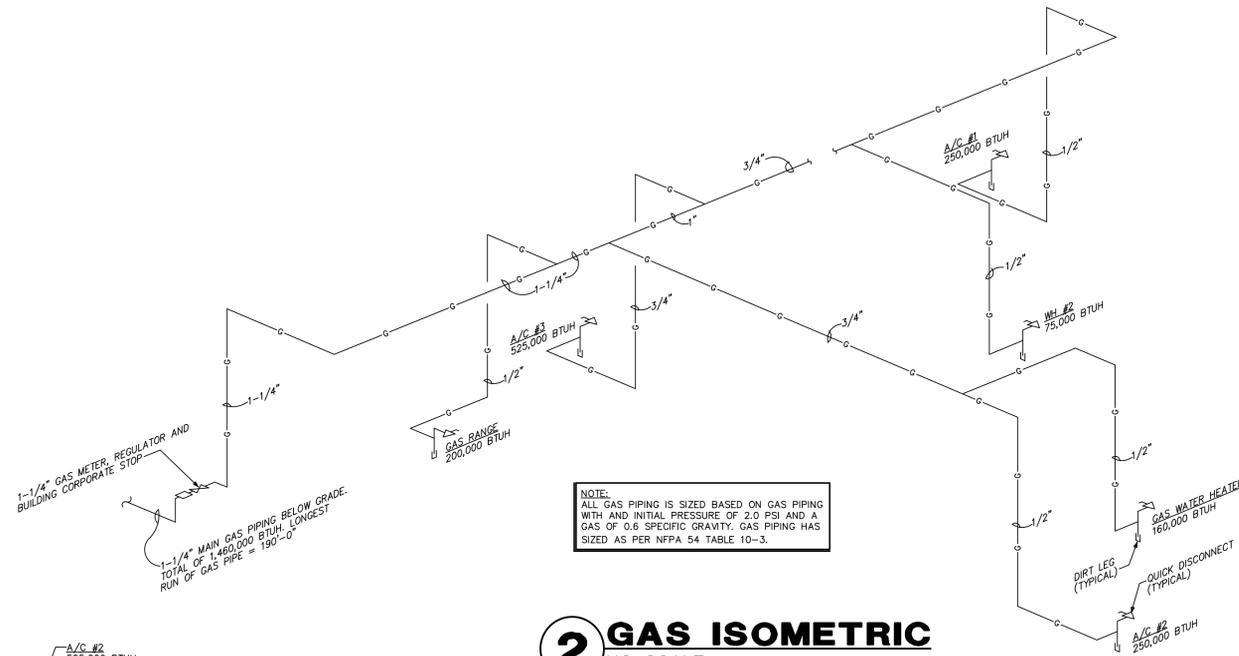
(2) 12X12 "PENN" MODEL M48 STORM LOUVERS (1) HIGH 12" BELOW CLG. (1) LOW, 6" A.F.F. FOR MECHANICAL ROOM COMBUSTION AIR. NFPA 54 COMBUSTION AIR CALCUL. TOTAL BTU OF ALL APPLIANCES IS 160,000 BTU. ACCORDING TO NFPA 54, 402.4.4.2, 150 INCH PER 4,000 BTU IS REQUIRED WHICH EQUALS 40 SQ. INCHES. THE 12X12 LOUVER HAS 144 SQ. INCHES W/ A 40% FREE AREA FACTOR, OR 57 SQ. INCHES AVAILABLE.

Exposed ductwork in Gymnasium shall be double wall, acoustically insulated round spiral duct. Double wall duct shall be constructed of an outer shell, a 1" thick layer of fiberglass insulation, and an inner metal liner. Insulation shall have a thermal conductivity "k" factor of .26 btu/hr/sq. Ft./F or less. The inner metal liner for all spiral and longitudinal seam duct shall be perforated metal. All fittings from fan discharge to a point where 35 lineal feet of spiral duct has been used shall have a perforated metal liner. All other fittings shall have a solid metal liner which may be one even gauge lighter than that shown for perforated liners. All spiral duct and fittings shall be as manufactured by SEMCO incorporated or approved equal.

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

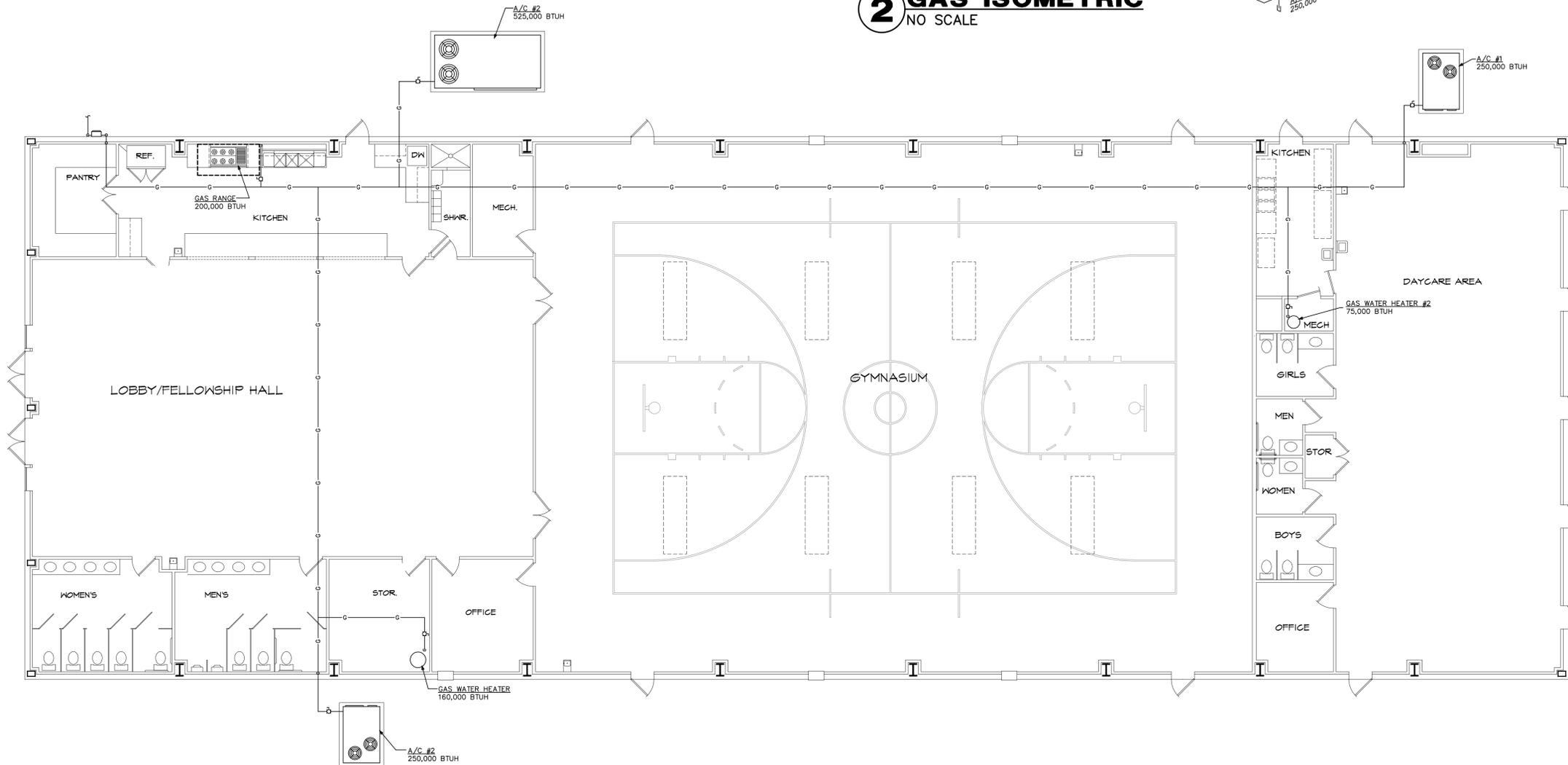


**3 GAS FLUE DETAIL**  
NO SCALE (APPLIES TO WATER HEATER #1)



**2 GAS ISOMETRIC**  
NO SCALE

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



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

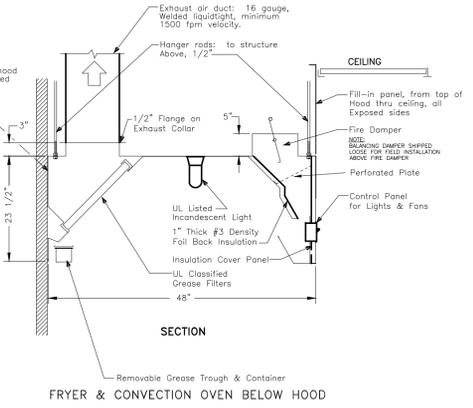
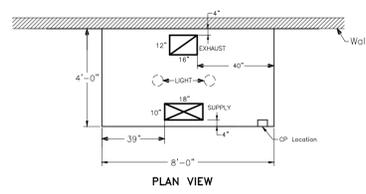
**GREASE MASTER**  
 POST OFFICE BOX 309 INDIAN TRAIL, NC 28079  
 TELEPHONE (704) 821-9211 FAX (704) 821-6618  
 EMAIL: INFO@GREASEMASTER.COM

**EXHAUST HOOD:  
 MODEL GWC-4 WALL HOOD**

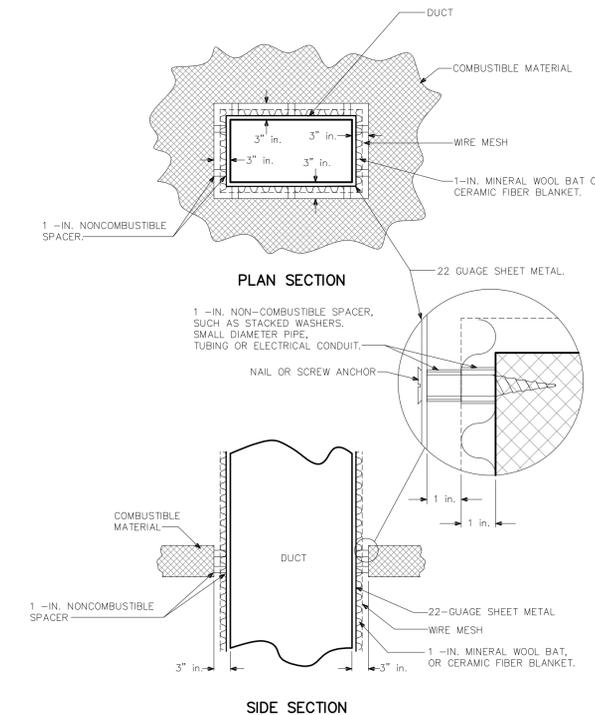
EXPOSED MAT'L: 18 GA. TYPE 304 S/S	UL LISTED MH11662
UNEXPOSED MAT'L: 18 GA. ALUMINIZED	
FINISH: #3 POLISH	BALT. ACCORDANCE WITH NFPA 96-99
LIGHTS: (2) INCANDESCENT	
FILTERS: (1) 16 X 20 ALUM. (3) 16 X 25 ALUM.	NSF
EXHAUST CFM: 2,400	
SUPPLY CFM: 1,440	
CONTROLS: EL-2	
REGISTERS: NONE	

**ROOF TOP EXHAUST/SUPPLY FAN PACKAGE:**

EXHAUST FAN MANUFACTURER: JENN FAN - EF-4
MODEL: TXB18-3/4 3/4 HP
208 v 1 PHASE
SUPPLY FAN MANUFACTURER: JENN FAN - SF-1
MODEL: KSF10-1/2
MOTOR: 1/2 HP - RPM
208 v 1 PHASE
EXHAUST: 2,400 CFM @ .750" SP
SUPPLY: 1,440 CFM @ .500" SP



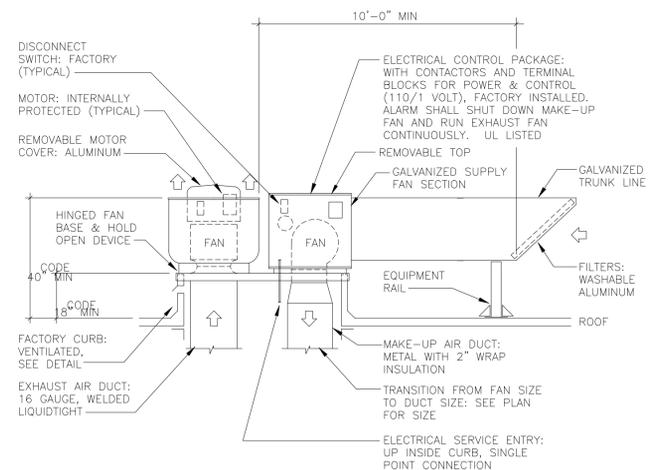
**EXHAUST HOOD #1 DETAIL AND SPECIFICATIONS**  
 NOT TO SCALE



(NFPA 96-22 FIGURE A-1-3.2)  
**(HOODS #1)  
 GREASE DUCT FIRE RATING DETAIL**  
 NOT TO SCALE

**GENERAL MECHANICAL NOTES**

- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1 MECHANICAL REFRIGERATION. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
- 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 NON-EXPOSED SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH 1" INSULATION WITH A 4.2 R VALUE OR HIGHER.
- ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
- DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
- ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE TITANIUM, METALINE, AIRGRADE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
- THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE THERMOSTAT. THERMOSTAT SHALL BE EQUIPPED WITH A DIRTY FILTER INDICATOR.
- CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. COORDINATE FINAL LOCATION OF ALL THERMOSTATS WITH OWNER PRIOR TO CONSTRUCTION. PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT/ROOF TOP UNIT.
- REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS. USE 95/5 SOLDER. REFRIGERANT LINES SHALL BE 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 AHUS 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.
- HVAC CONTRACTOR SHALL PROVIDE A TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHUS AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE CODE 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.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
- 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.
- 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.



**EXHAUST/MAKE-UP AIR FAN DETAIL  
 COMBINATION FAN ROOF CURB DETAIL**  
 NOT TO SCALE

**EXHAUST HOOD NOTES**

- EXHAUST HOODS SHALL BE CONSTRUCTED OF 18 GAUGE 304 STAINLESS STEEL FOR ALL SURFACES EXPOSED TO THE AIRSTREAM AND 18 GAUGE GALVANIZED STEEL FOR OTHER SURFACES. ALL SEAMS AND JOINTS SHALL HAVE A LIQUID TIGHT U.L. APPROVED CONTINUOUS EXTERNAL WELD.
- ENTIRE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH NATIONAL SANITATION FOUNDATION STANDARDS, NFPA-96, NFPA-17-A, AND ALL GOVERNING CODES.
- EXHAUST HOODS SHALL BE PROVIDED WITH AN ANSUL R-102 AUTOMATIC FIRE EXTINGUISHING SYSTEM FOR PROTECTION OF THE EXHAUST HOOD, PLENUM, GREASE FILTERS, EXHAUST DUCT AND COOKING EQUIPMENT. THE SYSTEM SHALL EMPLOY A LIQUID CHEMICAL EXTINGUISHMENT. THE SYSTEM SHALL BE ARRANGED TO SHUT OFF THE SOURCE OF COOKING HEAT AUTOMATICALLY UPON SYSTEMS OPERATION. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA-96, NFPA-17-A AND ACCORDING TO MANUFACTURERS PRINTED INSTALLATION PROCEDURES. EACH HOOD SHALL HAVE A SEPARATE FIRE EXTINGUISHING SYSTEM WHICH WILL OPERATE EFFECTIVELY WITH OR WITHOUT FANS OPERATING.
- THE INSTALLER OF THE EXHAUST HOOD AUTOMATIC FIRE EXTINGUISHING SYSTEM SHALL BRIEF THE OWNER IN ITS OPERATION.
- EXHAUST AND SUPPLY FANS OF EACH HOOD SHALL BE INTERLOCKED. PROVIDE ONE LIGHT SWITCH AND ONE FAN SWITCH ON THE FACE OF GREASE HOOD.
- GREASE FILTERS TO BE THE GREASE ELIMINATOR SELF BALANCING TYPE U.L. APPROVED.
- EXHAUST HOOD DUCTWORK OFFSETS TO GREASE EXHAUST FANS FROM HOOD LOCATION SHALL BE MADE WITH (2) - 45° ELBOWS, TRANSITION TO FULL SIZE OF FAN CONNECTION AT CURB.

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT  
 METHOD OF COMPLIANCE:  
 Prescriptive [X] 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 850,000 BTU  
 Building Cooling Load 651,400 BTU

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

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

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

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

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

SIGNED: TODD W. CAREY  
 TITLE: ENGINEER

**OUTSIDE AIR CALCULATIONS**

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS: MAXIMUM OCCUPANCY ON ARCHITECTURAL PLANS = 25 PEOPLE. OUTDOOR AIR REQUIREMENTS ARE BASED ON "DAYCARE/CLASSROOM" CATEGORY = 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
A/C #1	1,971	--- / 1000 X --- = ---	65 X 15 = 975

**OUTSIDE AIR CALCULATIONS**

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS: MAXIMUM OCCUPANCY ON ARCHITECTURAL PLANS = 25 PEOPLE. OUTDOOR AIR REQUIREMENTS ARE BASED ON "LOBBY/ASSEMBLY" CATEGORY = 15 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
A/C #2	2,485	--- / 1000 X --- = ---	166 X 15 = 2,490/2=1,245

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

**OUTSIDE AIR CALCULATIONS**

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS: MAXIMUM OCCUPANCY ON ARCHITECTURAL PLANS = 25 PEOPLE. OUTDOOR AIR REQUIREMENTS ARE BASED ON "GYMNASIUM" CATEGORY = 20 CFM PER PERSON

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
A/C #3	6,288	--- / 1000 X --- = ---	188 X 20 = 3,760/2=1,880

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.

**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	150	.125"	CEILING MOUNTED	68 WATTS	OPEN DRIP PROOF	1640	115V/1Ø	1
EF-3	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z10S	475	.125"	CEILING MOUNTED	243 WATTS	OPEN DRIP PROOF	1050	115V/1Ø	1
EF-4	REFER TO EXHAUST HOOD #1 DETAIL AND SPECIFICATION ON THIS SHEET FOR FAN SPEC.									
SF-1	REFER TO EXHAUST HOOD #1 DETAIL AND SPECIFICATION ON THIS SHEET FOR FAN SPEC.									

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
A/C #1	CARRIER	48TFF012	118,900	89,800	4,000	SEE SCH.	.4"	801	(2) Ø 15.8	(2) Ø 1.4	2 HP	200,000	208V/3Ø	50	9.0	1 THRU 11	250,000
A/C #2	CARRIER	48TFE014	153,500	111,100	5,000	SEE SCH.	.4"	993	(2) Ø 23.0	(2) Ø 1.4	5 HP	200,000	208V/3Ø	80	9.0	1 THRU 11	250,000
A/C #3	CARRIER	48EWE034	379,000	292,000	12,000	SEE SCH.	.4"	795	(2) Ø 57.1	(2) Ø 5.3	10 HP	450,000	208V/3Ø	225	8.5	1 THRU 11	525,000

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, LENOX 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

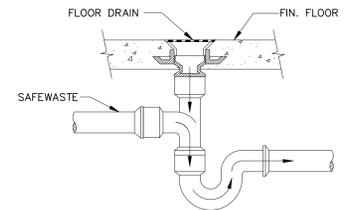
SPECIFIC NOTES:  
 1) FACTORY ROOF CURB WITH THRU THE CURB SERVICE CONNECTION.  
 2) OUTDOOR AIR MANUAL DZ TO 30% DAMPER.  
 3) ELECTRONIC PROGRAMMABLE THERMOSTAT.  
 4) COMPRESSOR TIME DELAY.  
 5) HEAD PRESSURE CONTROL.  
 6) FILTER DOOR ACCESS PANEL KIT.  
 8) PROVIDE (1) YEAR WARRANTY ON ALL PARTS AND LABOR AND (5) YEAR WARRANTY ON COMPRESSOR.  
 9) PROVIDE 1" FARR 30/30 THROWAWAY 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.



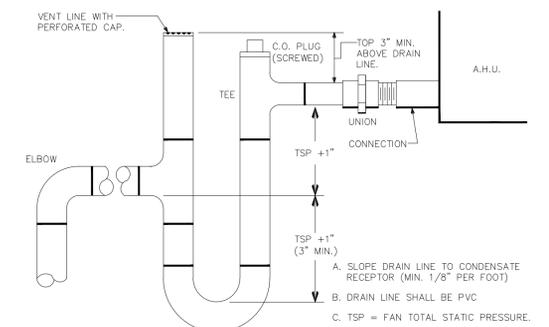
## WATER HEATER SCHEDULE

**WATER HEATER #1**  
 SHALL BE A LOCHINVAR "SUPER CHARGER" MODEL CNR-075-DF9 GAS FIRED COMMERCIAL WATER HEATER. 160,000 BTU INPUT TO PRODUCE 151 GALLONS PER HOUR OF HOT WATER AT 100 DEGREE RISE. INSULATED GLASSLINED 75 GALLON STORAGE TANK. 5 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE SECTIONS 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.

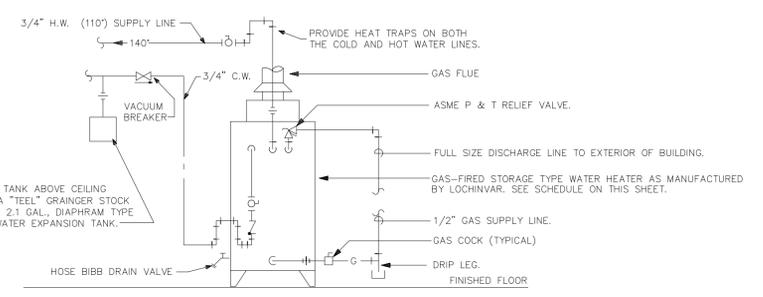
**WATER HEATER #2**  
 SHALL BE A LOCHINVAR "DIRECT VENT" MODEL DVN076 GAS FIRED COMMERCIAL WATER HEATER. 75,000 BTU INPUT TO PRODUCE 80 GALLONS PER HOUR OF HOT WATER AT 100 DEGREE RISE. INSULATED GLASSLINED 75 GALLON STORAGE TANK. 5 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE SECTIONS 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.



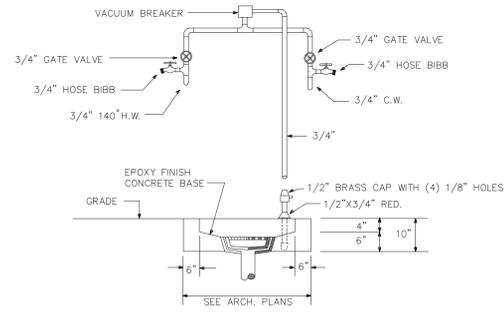
## 4 SAFEWASTE DETAIL NO SCALE



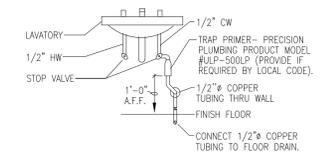
## 5 CONDENSATE P-TRAP DETAIL NOT TO SCALE



## 6 GAS WATER HEATER PIPING DETAIL NO SCALE

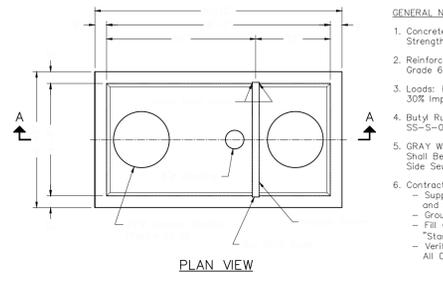


## 3 CAN WASH CONNECTION DETAIL NO SCALE

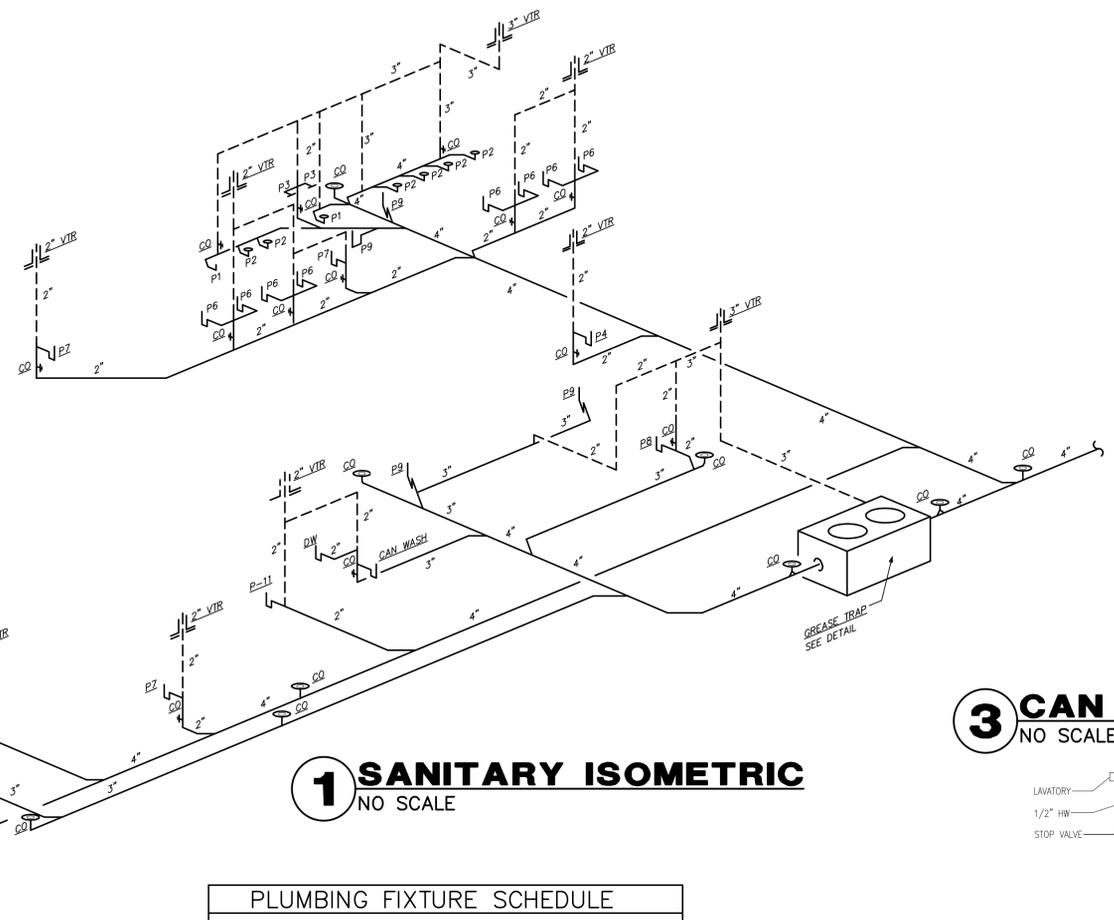


## 2 TRAP PRIMER DETAIL NO SCALE

48-1000-GA  
 GREASE INTERCEPTOR  
 1,000 GALLON CAPACITY



## 7 GREASE TRAP DETAIL NO SCALE



## 1 SANITARY ISOMETRIC NO SCALE

### 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 2898.012 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)  
 SHALL BE AN AMERICAN STANDARD ALLBROOK MODEL 6541.132. FLUSH VALVE SHALL BE SLOAN ROYAL MODEL 180-Y5.
  - P-4 (HAND SINK)  
 SHALL BE AN AMERICAN STANDARD MODEL COMRADE MODEL 0124.131 VITREOUS CHINA SELF-RIMMING STYLE CLASSIC ROUND SHAPE. FAUCET SHALL BE A MONTERRY MODEL 5502.140 W/STANDARD LEVEL-HANDLES. PROVIDE 0.5 GPM FLOW RESTRICTOR.
  - P-5 (COUNTER TOP LAVATORY)  
 SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A MONTERRY 5502.170 W/STANDARD LEVER HANDLES. PROVIDE 0.5 GPM FLOW RESTRICTOR.
  - P-6 (HANDICAPPED COUNTER TOP LAVATORY)  
 SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A MONTERRY 5502.170 W/4" WRIST BLADE HANDLES. PROVIDE 0.5 GPM FLOW RESTRICTOR.
  - P-7 (HANDICAPPED ELECTRIC WATER COOLER)  
 SHALL BE AN OASIS MODEL PLF8WEE, 8.0 GPH, 4.8 FLA AT 120 VOLT WITH A 1/5 HP COMPRESSOR.
  - P-8 (FLOOR SINK W/SEDIMENT BUCKET)  
 SHALL BE A JOSAM 4900-3-31 SERIES WITH A "SUPERFLOW 8-1/2" TOP", FLOOR SINK SHALL BE A SQUARE CAST IRON 6-1/4" DEEP SUPERFLOW SEPARATOR FLOOR SINK WITH ACID-RESISTING INTERIOR, DOUBLE DRAINAGE FLANGE. FLOOR SINK SHALL BE PROVIDED WITH AN OPTIONAL STAINLESS STEEL BUCKET AND A HALF GRATE TOP.
  - P-9 (FLOOR DRAIN WITH TRAP PRIMER)  
 SHALL BE A JOSAM 30000-A-50 SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEALOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.
  - P-10 (HOT WATER RECIRCULATING PUMP)  
 SHALL BE A TEEL MODEL 1P903 HOT WATER RECIRCULATING PUMP. 1/8 HP MOTOR RUNNING AT 1725 RPM AND 115 VOLTS SINGLE PHASE INCOMING POWER.
  - P-11 (SHOWER MIXING VALVE)  
 SHALL BE A SPEAKMAN SENTINEL MARK II REGENCY MODEL #SM-1400-AF-SS ANTI-SCALD BALANCED PRESSURE SHOWER VALVE WITH AN INLINE OMNI PRESSURE COMPENSATING 2.5 GPM FLOW RESTRICTOR.
  - P-12 (EXTERIOR HOSE BIBB W/HANDWHEEL)  
 SHALL BE A "NIBCO" SERIES 63LS, GRAINGER STOCK NO. 5E407, 3/4" SOLID BRONZE HOSE BIBB WITH ALUMINUM HANDWHEEL BUILT-UP SHOWER STALL REFER TO ARCHITECTURAL PLANS FOR SHOWER STALL DETAILS.
  - P-13 (3 COMPARTMENT SINK)  
 BY OWNER.
- NOTES:
- 1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
  - 2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
  - 3.) ALL HANDICAP PLUMBING FIXTURES SHALL BE INSTALLED AS PER LATEST A.D.A. REQUIREMENTS.

### GENERAL PLUMBING NOTES

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

P2

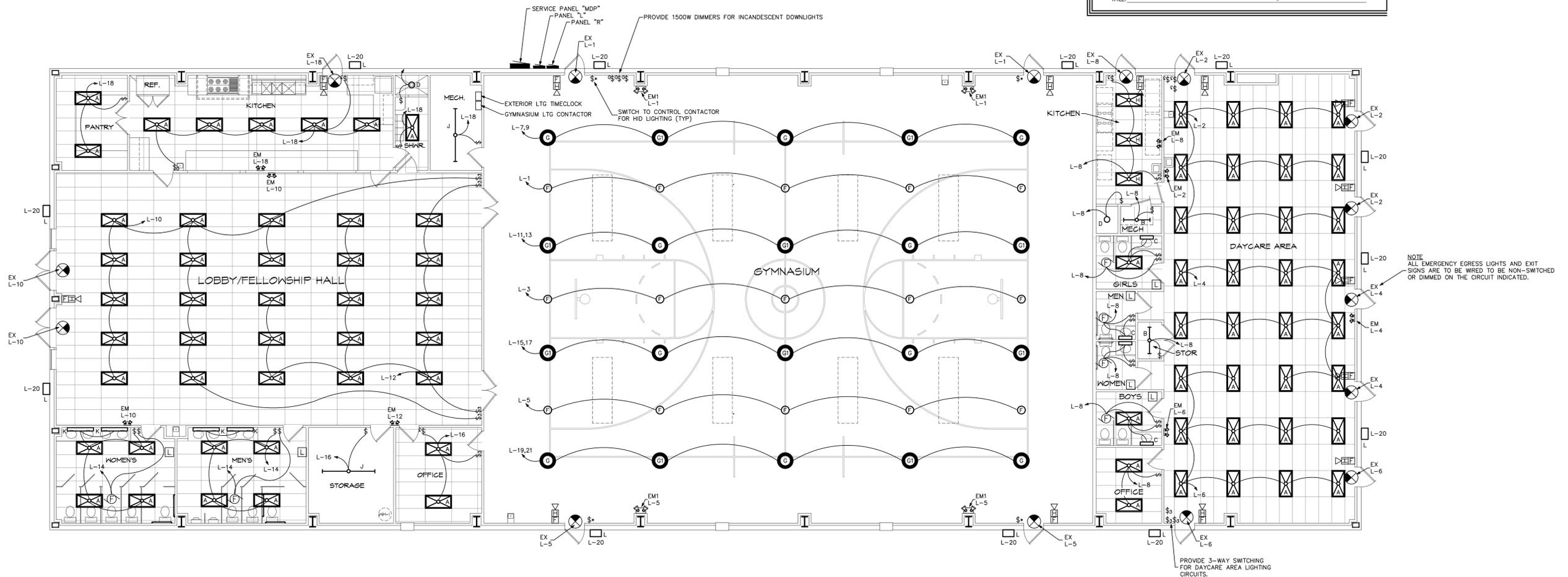
ELECTRICAL SYMBOLS LEGEND			
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD, +18" AFF		TRANSFORMER - SIZE AS NOTED
	240 VOLT RECEPTACLE (HT, AS REQ.)		PANEL - SIZE AS NOTED
	QUADRUPLEX RECEPTACLE, MTD, +18" AFF		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42" AFF		F-FAN; M-MOTOR; P-PUMP
	SINGLE POLE SWITCH		SPECIAL OUTLET - AS REQUIRED
	THREE-WAY SWITCH		CKT. HOMERUN (B INDICATES PANEL)
	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		FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	DISCONNECT SWITCH		IG ISOLATED GROUND
	FLR. MTD. FLUSH DUPLEX RECEPTACLE		WP WEATHER-PROOF
	FLR. MTD. FLUSH QUAD. RECEPTACLE		BC BELOW COUNTER
	FLR. MTD. FLUSH TELEPHONE JACK		BFG BELOW FINISH GRADE
	FLR. MTD. FLUSH COMPUTER TERMINAL		AFI GROUND FAULT INTERRUPTER
	SMOKE DETECTOR		AFF ABOVE FINISHED FLOOR
	HEAT DETECTOR		EW ELECTRIC WATER COOLER
	DUCT SMOKE DETECTOR		ASW ABOVE SHOW WINDOW
	MANUAL PULL STATION		BSW BELOW SHOW WINDOW
	HORN WITH STROBE LIGHT, MTD, +80" AFF		FACP FIRE ALARM CONTROL PANEL
	STROBE LIGHT ONLY, MTD, +80" AFF		FAAP FIRE ALARM ANNUNCIATOR PANEL

**ELECTRICAL NOTES:**

- GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.  
THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.  
THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.  
COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.  
UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL SPECS ARE NOT INTENDED TO BE PROPRIETARY. SUBSTITUTIONS WILL BE ACCEPTABLE FOR EQUAL RATED AND LISTED UNITS.
- SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE," "BY OTHERS," OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.
- EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH CARE, FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
- GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.
- CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.  
CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE.  
PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80).  
ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.
- CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL), CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.  
CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG AND SMALLER, SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.
- PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
- LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS. FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.
- TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.
- TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

LIGHTING FIXTURE SCHEDULE							
LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(4) 32W T8	LITHONIA 2SPG-432-FWA12-120	
B	4' FLUORESCENT STRIP	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA C-232-120	
C	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 17W T8	LITHONIA WC-217-A12-120	
D	RECESSED INCAND DOWN LT	WHITE	FLAT FRESNEL	120	(1) 100W A19	LITHONIA LG7-RW-FFL	WET LOCATION LISTED
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	
EMI	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELT24-H	
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP
F	PENDENT MOUNTED INCANDESCENT WHITE			120	(1) 250W HALOGEN	LITHONIA CP7C-AC-DWHG	PENDENT MOUNTED
G	HID LOW BAY	ALUMINIUM	PRISMATIC	208	(1) 400W MH	LITHONIA TXV A165-208	PENDENT MOUNTED
G1	HID LOW BAY	ALUMINIUM	PRISMATIC	208	(1) 400W MH	LITHONIA TXV A165-208-ORS	PENDENT MOUNTED W/ QUARTZ RESTRIKE
H	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(4) 32W T8	LITHONIA 2SPG-432-FWA12-120	PROVIDE CLEAR LEXAN SHIELDS ON LAMPS
J	8' FLUORESCENT STRIP	WHITE		120	(2) 75W T8	LITHONIA C-296-120	
K	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA WC-232-A12-120	
L	HID WALL PACK	BRONZE	POLYCARBONATE	120	(1) 100W MH	LITHONIA TWP-100M-120	

ELECTRICAL SYSTEM AND EQUIPMENT	
METHOD OF COMPLIANCE	
PREScriptive <input type="checkbox"/>	PERFORMANCE <input checked="" type="checkbox"/> ENERGY COST BUDGET <input type="checkbox"/>
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 _____ 1.58 VS 1.60 TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED _____ N/A	
EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS) MOTOR HORSEPOWER _____ N/A NUMBER OF PHASES _____ N/A MINIMUM EFFICIENCY _____ N/A MOTOR TYPE _____ N/A NUMBER OF POLES _____ N/A	
DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME X-ENERGY.	
SIGNED: _____ NAME: TODD W. CAREY, P.E. TITLE: SOUTH CAROLINA PROFESSIONAL ENGINEER #16410	



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



CIRCUIT BREAKER PANEL SCHEDULE L																		
225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE																		
#	BKR.	WIRE AND CONDUIT				LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT				BKR.	#	
		COND.	NEUTRAL	GND	KEYS							KEYS	C.	GND	NEUTRAL			COND.
1	20/1	#12	#12	#12	1/2	CHAL	GYMNASIUM HALOGEN LTG *	1250	1250	-----	DAYCARE AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	2
3	20/1	#12	#12	#12	1/2	CHAL	GYMNASIUM HALOGEN LTG *	1250	1250	-----	DAYCARE AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	GYMNASIUM HALOGEN LTG *	1280	1280	-----	DAYCARE AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	6
7	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1238	1238	-----	DAYCARE AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	8
9	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1238	1238	-----	FELLOWSHIP HALL LIGHTING	CHAL	1/2	#12	#12	#12	20/1	10
11	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1238	1238	-----	FELLOWSHIP HALL LIGHTING	CHAL	1/2	#12	#12	#12	20/1	12
13	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1238	1238	-----	FELLOWSHIP AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	14
15	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	890	890	-----	FELLOWSHIP AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	16
17	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1400	1400	-----	FELLOWSHIP AREA LIGHTING	CHAL	1/2	#12	#12	#12	20/1	18
19	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1500	1238	-----	EXT SECURITY LIGHTING ***	CHAL	1/2	#12	#12	#12	20/1	20
21	20/2	#12	---	#12	1/2	CHAL	GYMNASIUM HID LIGHTING **	1500	1500	-----	SPACE						22	
23							SPACE	0	0	-----	SPACE						24	
25							SPACE	0	0	-----	SPACE						26	
27							SPACE	0	0	-----	SPACE						28	
29							SPACE	0	0	-----	SPACE						30	
31							SPACE	0	0	-----	SPACE						32	
33							SPACE	0	0	-----	SPACE						34	
35							SPACE	0	0	-----	SPACE						36	
37							SPACE	0	0	-----	SPACE						38	
39							SPACE	0	0	-----	SPACE						40	
41							SPACE	0	0	-----	SPACE						42	

WIRE/CONDUIT KEY: L-TEMP RATING, C-CU WIRE, H-THWN, INSULATION, A-EMT, CONDUIT TYPE, TEMP RATING L-78-86 Deg. F.

1234

PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 60.2 AMPS  
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 76.9 AMPS

27,680

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

PANEL NOTES:  
\* - THESE LIGHTS ARE TO BE DIMMER CONTROLLED  
\*\* - THESE LIGHTS ARE TO BE LIGHTING CONTACTOR CONTROLLED  
\*\*\* - PROVIDE TIMELOCK CONTROL FOR THIS CIRCUIT

PANEL L DIVERSIFICATION CALCULATIONS	
LIGHTING -	26896 X 125% = 33620
MOTOR LOADS AT 100% -	700
PLUS 25% OF THE LARGEST MOTOR -	35
TOTAL DIVERSIFIED PANEL LOAD	24425
LOAD AT 120/208V/3-PHASE/4-WIRE -	95.7A

CIRCUIT BREAKER PANEL SCHEDULE R																		
225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE																		
#	BKR.	WIRE AND CONDUIT				LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT				BKR.	#	
		COND.	NEUTRAL	GND	KEYS							KEYS	C.	GND	NEUTRAL			COND.
1	15/1	#14	#14	#14	1/2	CHAL	EXH HOOD LTG / CONTROLS	400	400	-----	TELE BACKBOARD RECEPTACLE	CHAL	1/2	#14	#14	#14	15/1	2
3	20/2	#12	---	#12	1/2	CHAL	EXHAUST HOOD FAN PACKAGE	0	0	-----	DISHWASHER	CHAL	1/2	#10	---	#8	40/2	4
5	20/1	#12	#12	#12	1/2	CHAL	REFRIGERATOR	1400	1400	-----	KITCHEN EQUIPMENT	CHAL	1/2	#12	#12	#12	20/1	8
7	20/1	#12	#12	#12	1/2	CHAL	(2) SERVING LINE OUTLETS	1500	1500	-----	KITCHEN EQUIPMENT	CHAL	1/2	#12	#12	#12	20/1	10
9	20/1	#12	#12	#12	1/2	CHAL	(2) SERVING LINE OUTLETS	1500	1500	-----	KITCHEN EQUIPMENT	CHAL	1/2	#12	#12	#12	20/1	12
11	20/1	#12	#12	#12	1/2	CHAL	(2) SERVING LINE OUTLETS	1500	1500	-----	HOT WATER RECIRC PUMP	CHAL	1/2	#14	#14	#14	15/1	14
13	20/1	#12	#12	#12	1/2	CHAL	(2) SERVING LINE OUTLETS	1500	1500	-----	FIRE ALARM CONTROL PANEL	CHAL	1/2	#14	#14	#14	15/1	16
15	20/1	#12	#12	#12	1/2	CHAL	(2) SERVING LINE OUTLETS	1500	1500	-----	RECEPTACLES	CHAL	1/2	#14	#14	#14	15/1	18
17	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	RECEPTACLES	CHAL	1/2	#14	#14	#14	15/1	20
19	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	RECEPTACLES	CHAL	1/2	#14	#14	#14	15/1	22
21	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	RECEPTACLES	CHAL	1/2	#14	#14	#14	15/1	24
23	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	900	900	-----	0 SPACE						26	
25	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						28	
27	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						30	
29	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	900	900	-----	0 SPACE						32	
31	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						34	
33	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						36	
35	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						38	
37	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	900	900	-----	0 SPACE						40	
39	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	900	900	-----	0 SPACE						42	
41	15/1	#14	#14	#14	1/2	CHAL	RECEPTACLES	720	720	-----	0 SPACE						44	

WIRE/CONDUIT KEY: L-TEMP RATING, C-CU WIRE, H-THWN, INSULATION, A-EMT, CONDUIT TYPE, TEMP RATING L-78-86 Deg. F.

1234

PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 79.9 AMPS  
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 133.9 AMPS

48,212

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PANEL R DIVERSIFICATION CALCULATIONS	
RECEPTACLES (70) -	12600 VA TOTAL
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	1300
LIGHTING -	200 X 125% = 250
MOTOR LOADS AT 100% -	3536
PLUS 25% OF THE LARGEST MOTOR -	395
MISC NON-CONTINUOUS LOADS AT 100% -	400
KITCHEN EQUIPMENT (10) -	20459
31476 X 0.65 -	20459
TOTAL DIVERSIFIED PANEL LOAD	36340
LOAD AT 120/208V/3-PHASE/4-WIRE -	100.9A

CIRCUIT BREAKER PANEL SCHEDULE MDP																		
600 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.D., 42000 AMPS MINIMUM A.I.C. BRACING, FLUSH MOUNTED, TYPE NEMA 1 ENCLOSURE																		
#	BKR.	WIRE AND CONDUIT				LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT				BKR.	#	
		COND.	NEUTRAL	GND	KEYS							KEYS	C.	GND	NEUTRAL			COND.
1							7226	10940	-----	PACKAGE HVAC UNIT #1	CHAM	3/4	#10	---	#8	50/3	2	
3	150/3	#1/0	#1/0	#6	1-1/2	CHAM	PANELBOARD 'L'	5084	8798	-----	PACKAGE HVAC UNIT #2	CHAM	1	#8	---	#4	80/3	10
5							5466	5028	-----	PACKAGE HVAC UNIT #3	CHAM	2	#4	---	#4/0	225/3	16	
7							9592	14592	-----	SPARE								
9	150/3	#1/0	#1/0	#6	1-1/2	CHAM	PANELBOARD 'R'	8660	17300	-----	SPARE							
11							7680	7860	-----	SPARE								
13							0	16272	-----	SPARE								
15	100/3	---	---	---	---	---	0	18672	-----	SPARE								
17							0	18672	-----	SPARE								

WIRE/CONDUIT KEY: L-TEMP RATING, C-CU WIRE, H-THWN, INSULATION, A-EMT, CONDUIT TYPE, TEMP RATING M-87-95 Deg. F.

57892 57658 55822

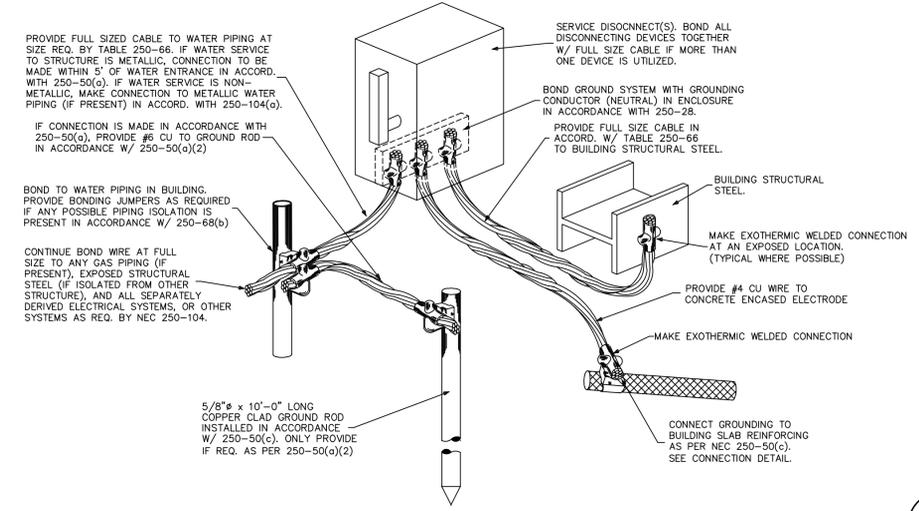
PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 140.2 AMPS  
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 473.8 AMPS

170,572

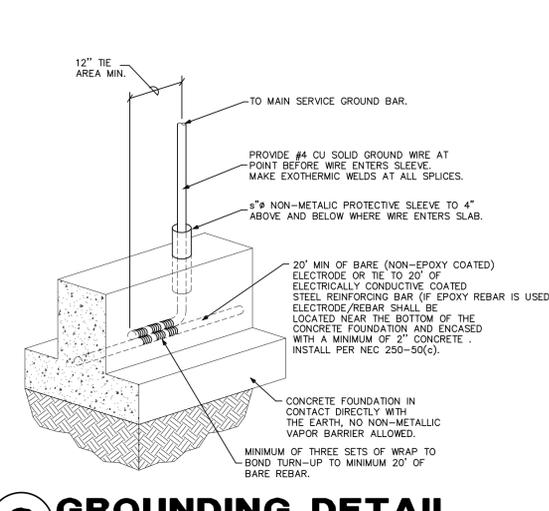
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REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA

MAKE GROUND/NEUTRAL BOND IN PANEL MDP

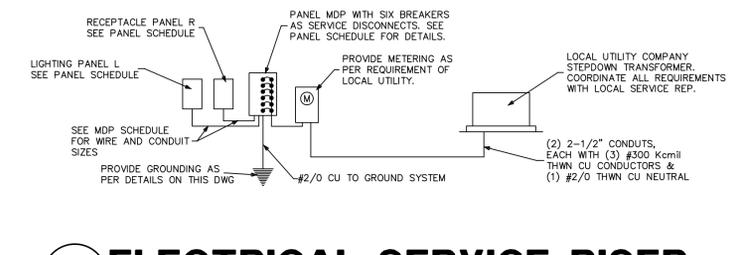
PANEL MDP DIVERSIFICATION CALCULATIONS	
RECEPTACLES (70) -	12600 VA TOTAL
FIRST 10 KVA AT 100% -	10000
REMAINDER AT 50% -	1300
LIGHTING -	27096 X 125% = 33870
MOTOR LOADS AT 100% -	94680
PLUS 25% OF THE LARGEST MOTOR -	4316
MISC NON-CONTINUOUS LOADS AT 100% -	5139
KITCHEN EQUIPMENT (10) -	400
31476 X 0.65 -	20459
TOTAL DIVERSIFIED PANEL LOAD	170164
LOAD AT 120/208V/3-PHASE/4-WIRE -	472.7A



**3** GROUNDING DETAIL  
NO SCALE



**2** GROUNDING DETAIL  
NO SCALE



**1** ELECTRICAL SERVICE RISER  
NO SCALE