

**HVAC SYSTEM DESIGN NOTES**

- 1) HVAC DESIGN SHALL SUPPLY THE FRESH AIR AS SHOWN IN OCCUPANT LOAD TABLE THIS SHEET. SEE NOTES 1 & 2 BELOW THIS TABLE.
- 2) SMOKE DETECTOR SHALL BE INSTALLED IN RETURN DUCT IF AIR FLOW EQUALS OR EXCEEDS 2,000 CFM.
- 3) ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL PROVIDE FIRE DAMPERS AS FOLLOWS:  
 01-HOUR FIRE RATED ASSEMBLY 0.75-HOUR DAMPER  
 02-HOUR FIRE RATED ASSEMBLY 1.50-HOUR DAMPER  
 03-HOUR FIRE RATED ASSEMBLY 2.00-HOUR DAMPER  
 04-HOUR FIRE RATED ASSEMBLY 3.00-HOUR DAMPER

**LIFE SAFETY / FIRE PREVENTION NOTES**

- 1) ALL EXIT SIGNS TO BE ILLUMINATED WITH BATTERY BACK UP.
- 2) ALL EMERGENCY LIGHTING TO HAVE BATTERY BACKUP.
- 3) ASSEMBLY 10 TO 15 MINUTES FROM POINT OF VISIBLE FROM THE ROADWAY WITH "P" NUMBERS ON CONTRASTING BACKGROUND.
- 4) ALL FIRE EXTINGUISHERS SHALL BE INSPECTED, TAGGED & MOUNTED.
- 5) A FIRE EXTINGUISHER IS REQUIRED WITHIN 500-FT CURBLINE DISTANCE OF THE BUILDING IF CENTRAL WATER IS AVAILABLE WITHIN 200-FT.



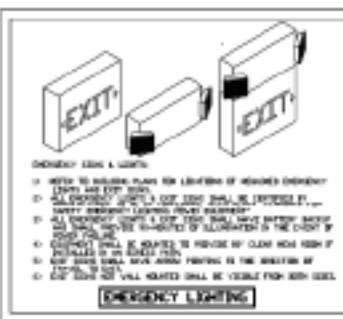
**DESIGN CRITERIA**

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE-2014 M/2015 & 2016 SUPPLEMENTS.

WIND SPEED: 120 MPH (3-SEC GUST)  
 IMPORTANCE FACTOR: 1.00  
 FLOOR LIVE LOAD: 100 PSF  
 ROOF LIVE LOAD: 20 PSF  
 INTERNAL PRESSURE COEFF: 0.10

**ISOLATION NOTES**

- 1) ALL ISOLATION SHALL BE THERMAL AND/OR ACoustICAL HAVING A MAX FLAME SPREAD OF 25 AND MAX SMOKE DEVELOP OF 450 WITH THE FOLLOWING EXCEPTIONS:  
 A) ISOLATION PLACED BETWEEN CO-LAYERS OF NON-COMBUSTIBLE MATERIAL WITH RED LIP GAP SHALL HAVE MAX FLAME SPREAD OF 10.  
 B) OTHER EXCEPTIONS PER FBC-2014 603.1
- 2) ALL CONDITIONED SPACES SHALL HAVE R-10 MIN WALL INSULATION & R-15 MIN CEILING INSULATION.



**DESIGN OF STEEL BUILDING SHALL BE BY PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.**

1) 10-HOUR FIRE RATED SELF-CLOSING DOOR.  
 2) SELF-CLOSING DOOR.

**BUILDING CONSTRUCTION REQUIREMENTS**

OCCUPANCY CLASSIFICATION	01-BUSINESS
CONSTRUCTION TYPE	TYPE 2B MRM
FIRE PROTECTION	UNPROTECTED
SPRINKLERS	NOT PROVIDED

**AREA IDENTIFICATION**

BUILDING DETECTOR (FD)	NA
SMALL FOOTCOT (FD)	NA
WIDTH OF ROW (W) (30' MAX)	NA
SPRINKLERS (SM)	NA
DETECTOR (FD)	NA

**BUILDING LOCATIONS**  
(TABLE 905 FBC-2014)

NUMBER OF STORIES	2	NA	NA
10-STORY FLOOR AREA	3,000 SF	NA	2,400 SF
10-STORY FLOOR AREA	NA	NA	NA

**FIRE RESISTANCE RATINGS OF BUILDING ELEMENTS**  
(TABLE 602 FBC-2014)

BUILDING COMPONENT	REQUIRED FIRE RATING	PROVIDED FIRE RATING
BEARING WALLS	0 HR	0 HR
NON-BEARING WALLS & PARTITIONS	0 HR	0 HR
FLOOR CONSTRUCTION	0 HR	0 HR
ROOF CONSTRUCTION	0 HR	0 HR

**FIRE RESISTANCE RATINGS OF EXTERIOR WALLS**  
(TABLE 602 FBC-2014)

WALL LOCATION	MINIMUM RATING	PROVIDED FIRE RATING	FIRE RATING PROVIDED
FRONT WALL	OVER 30 FT	0	0
LEFT WALL	OVER 30 FT	0	0
RIGHT WALL	27 TO 29 FT	0	0
BACK WALL	27 TO 29 FT	0	0

**EXTERIOR WALL OPENINGS (FBC TABLE 704.10)**

WALL	HORIZONTAL SEPARATION PROVIDED	PERCENT OPENING ALLOWED	PERCENT OPENING PROVIDED
FRONT WALL	OVER 30 FT	NA	NA
LEFT WALL	OVER 30 FT	NA	NA
RIGHT WALL	27 TO 29 FT	NA	NA
BACK WALL	27 TO 29 FT	NA	NA

NA NOT APPLICABLE  
 0 NO LIMIT  
 00 NON-COMBUSTIBLE

**OCCUPANT LOAD CALCCS**

ROOM	NET AREA	OCCUP LOAD*	FRESH AIR†
OFFICE-1	863 SF	86.3 / 200 = 0.43	32.0 CFM
OFFICE-2	863 SF	86.3 / 200 = 0.43	32.0 CFM
RECEPTION	273.8 SF	273.8 / 200 = 1.37	50.0 CFM
LIBRARY	333.6 SF	333.6 / 200 = 1.67	60.0 CFM
CORRIDOR	96.3 SF	96.3 / 200 = 0.48	17.0 CFM
BATHROOM	403 SF	403 / 200 = 2.02	73.0 CFM
MECHANICAL ROOM	240 SF	240 / 200 = 1.20	43.0 CFM
WAREHOUSE	1,474.2 SF	1,474.2 / 200 = 7.37	265.0 CFM
<b>TOTAL NET AREA</b>	<b>5,293.2 SF</b>	<b>0 OCCUPANTS</b>	<b>584 CFM</b>
<b>TOTAL GROSS AREA</b>	<b>6,400 SF</b>		

\* OCCUPANT LOAD PER 200 SQ FT OF FLOOR SPACE  
 † FRESH AIR PER 100 SQ FT OF FLOOR SPACE  
 NOTES: 1) FRESH AIR HAS BEEN DETERMINED FROM TABLE 602 FBC-2014. ALTERNATIVE METHODS MAY BE USED TO DETERMINE OCCUPANT LOAD FOR FBC-2014 SHALL ALSO BE ALLOWED AS LONG AS IT IS USED.  
 2) OCCUPANT LOAD HAS BEEN CALCULATED TO SEE EXISTING FRESH AIR AND FRESH AIR EQUIPMENT ONLY. EQUIPMENT LOAD ON FRESH AIR SYSTEM SHALL BE CALCULATED WITH APPROVED DESIGN NOTES.

**COMPONENT AND CLADDING PRESSURE ZONES**

WIND DIRECTION	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5
10' SF	100.00	100.00	100.00	100.00	100.00
20' SF	100.00	100.00	100.00	100.00	100.00
30' SF	100.00	100.00	100.00	100.00	100.00
40' SF	100.00	100.00	100.00	100.00	100.00
50' SF	100.00	100.00	100.00	100.00	100.00

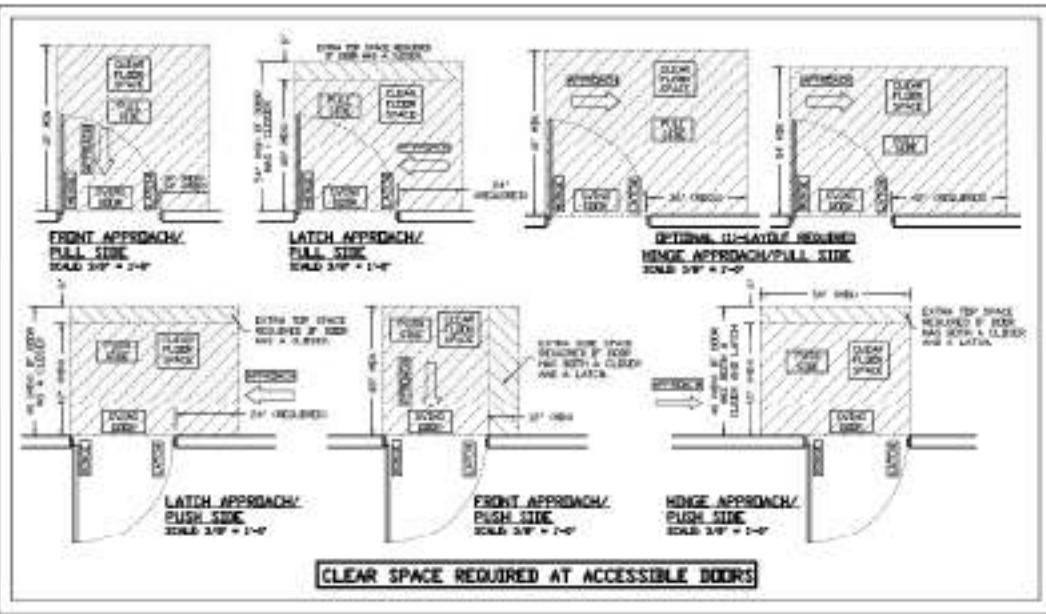
**ROOM FINISH SCHEDULE**

ROOM NAME	WALLS	FLOOR	CEILING	DOORS	NOTES
OFFICE SPACES	GR	NOT VNTL	ACC		
RECEPTION	GR	NOT VNTL	ACC		
BATHROOMS	VNTL	NOT VNTL	ACC		
MECHANICAL	GR	NOT VNTL	ACC		
WAREHOUSE	SNCR	CONC	CONC	SNCR	

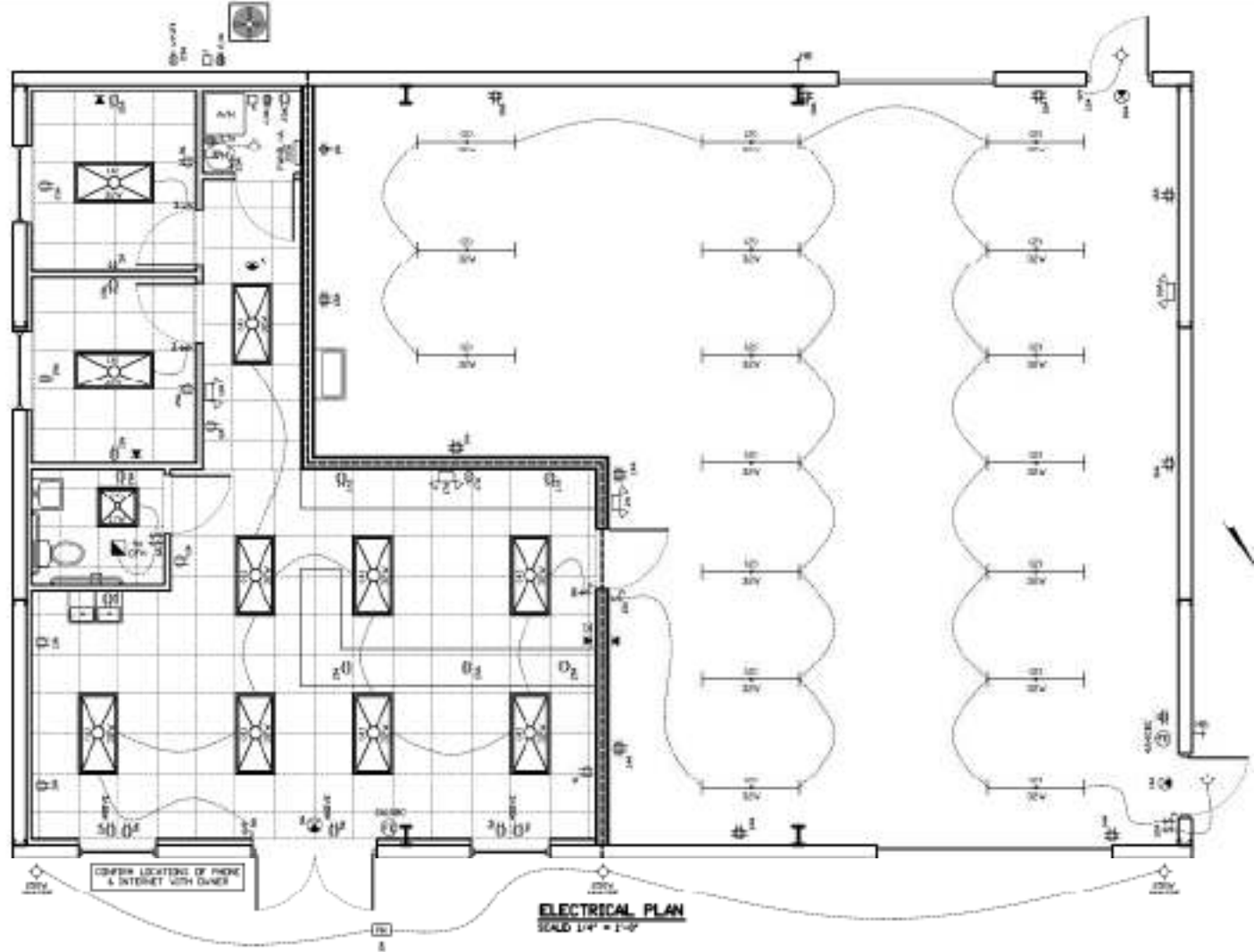
GR = GYP-SUR BOARD  
 VNTL = MOISTURE RESISTANT GYP-SUR BOARD  
 CONC = CONCRETE  
 SNCR = Gypsum Board  
 NOT = VENTILATION CONDITION TABLE

**BAFFLER DESIGN NOTES**

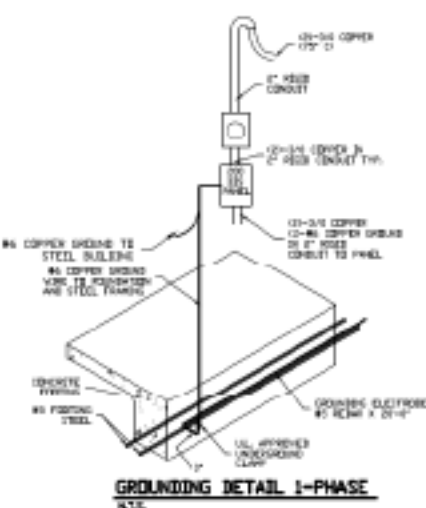
- 1) BAFFLER SHALL BE 1/2" MINIMUM THICKNESS SUBSTRATE OVER 1/2" Gypsum BOARD.
- 2) WALLS WITHIN 8-FT OF WINDOWS AND VENTILATORS SHALL HAVE A MINIMUM 1/2" MINIMUM THICKNESS SURFACE TO A HEIGHT OF 8-FT ABOVE THE FLOOR AND SHALL NOT BE ADVERSELY AFFECTED BY MOISTURE EXCEPT FOR TIGHT JOINTS THAT ARE NOT ACCESSIBLE TO THE PUBLIC AND WHICH HAVE NOT MORE THAN ONE WATER GASKET AND NOT SUBJECT TO THE MOST ALL ACCESSIBLE GASKETS SHALL HAVE GASKETING. PAINTS, REPAIRS AND JOINTS SHALL BE SEALED TO PROTECT STRUCTURAL ELEMENTS FROM MOISTURE.
- 3) JOINTS AND COMPONENTS AND WALLS ABOVE WINDOWS WITH INSTALLED GASKETS SHALL BE FINISHED WITH A DRYWALL WATERPROOFING SURFACE TO A HEIGHT NOT LESS THAN 12" ABOVE WINDOW SILL.
- 4) GASKETS SHALL BE FINISHED WITH A DRYWALL WATERPROOFING SURFACE TO A HEIGHT NOT LESS THAN 12" ABOVE WINDOW SILL.







ELECTRICAL LOAD CALCULATIONS	
CONTINUOUS LOADS	0.00
GENERAL LIGHTING - 2,400 SF @ 3.5 VA/SF	8,400
NEW VENDING LIGHTING - 10-FT @ 200 VA/FT	2,000
OUTSIDE SERVICE - 20 @ 1000 VA EACH	20,000
<b>SUB-TOTAL</b>	<b>30,400</b>
NON-CONTINUOUS LOADS	0.00
RECEPTACLE LOADS - 100 @ 150 VA EACH	15,000
<b>SUB-TOTAL</b>	<b>15,000</b>
HEAT & AIR	0.00
HVAC SYSTEM	13,000
WATER HEATER	2,500
<b>SUB-TOTAL</b>	<b>17,500</b>
<b>TOTALS</b>	<b>0.00</b>
CONTINUOUS LOADS @ 125%	13,600
NON-CONTINUOUS LOADS @ 75% OF REMAINDER	14,000
HEAT LOADS @ 100%	17,500
<b>FINAL TOTAL</b>	<b>45,100</b>
<b>WIRE VA / 240 V = 187.9 AMP</b>	<b>200 AMP</b>



ELECTRICAL LEGEND	
⊞	SINGLE POLE SWITCH 20A, 120/277V
⊞	THREE WAY SWITCH 20A, 120/277V
⊞	DISCONNECT SWITCH
⊞	PROFESSIONAL METERS, 120/277V
⊞	120V OUTLET
⊞	GROUND FAULT INTERRUPTER, 20A, 120V
⊞	DUPLEX RECEPTACLE W/WATERPROOF COVER
⊞	QUADRAPLEX RECEPTACLE, 20A, 250V
⊞	JEKY BUCKET
⊞	INCANDESCENT LIGHT FIXTURE
⊞	FLUORESCENT STRIP FIXTURE
⊞	FLUORESCENT LIGHT W/INT BOX
⊞	EMERGENCY EXIT SIGN
⊞	EMERGENCY LIGHTING
⊞	FIRE SMOKE/HEAT
⊞	TELEPHONE
⊞	INVERTER
⊞	CEILING MOUNTED EXHAUST FAN

PANEL-A		200 AMP	
LOAD	TRIP	COPPER WIRE	LOAD
AIR HANDLER	20	1 2	4 1/2-1
WATER HEATER	30	3 4	LIGHTS
RECEPTACLE	20	7 8	RECEPT
RECEPTACLE	20	9 10	RECEPT
RECEPTACLE	20	11 12	RECEPT
RECEPTACLE	20	13 14	RECEPT
RECEPTACLE	20	15 16	RECEPT
RECEPTACLE	20	17 18	RECEPT
RECEPTACLE	20	19 20	RECEPT
RECEPTACLE	20	21 22	RECEPT
RECEPTACLE	20	23 24	RECEPT
RECEPTACLE	20	25 26	RECEPT
RECEPTACLE	20	27 28	RECEPT
RECEPTACLE	20	29 30	RECEPT
RECEPTACLE	20	31 32	RECEPT
RECEPTACLE	20	33 34	RECEPT
RECEPTACLE	20	35 36	RECEPT
RECEPTACLE	20	37 38	RECEPT
RECEPTACLE	20	39 40	RECEPT
RECEPTACLE	20	41 42	RECEPT

David F. Ardito, P.E.  
Florida P.E.# 35804

**ELECTRICAL PLAN**

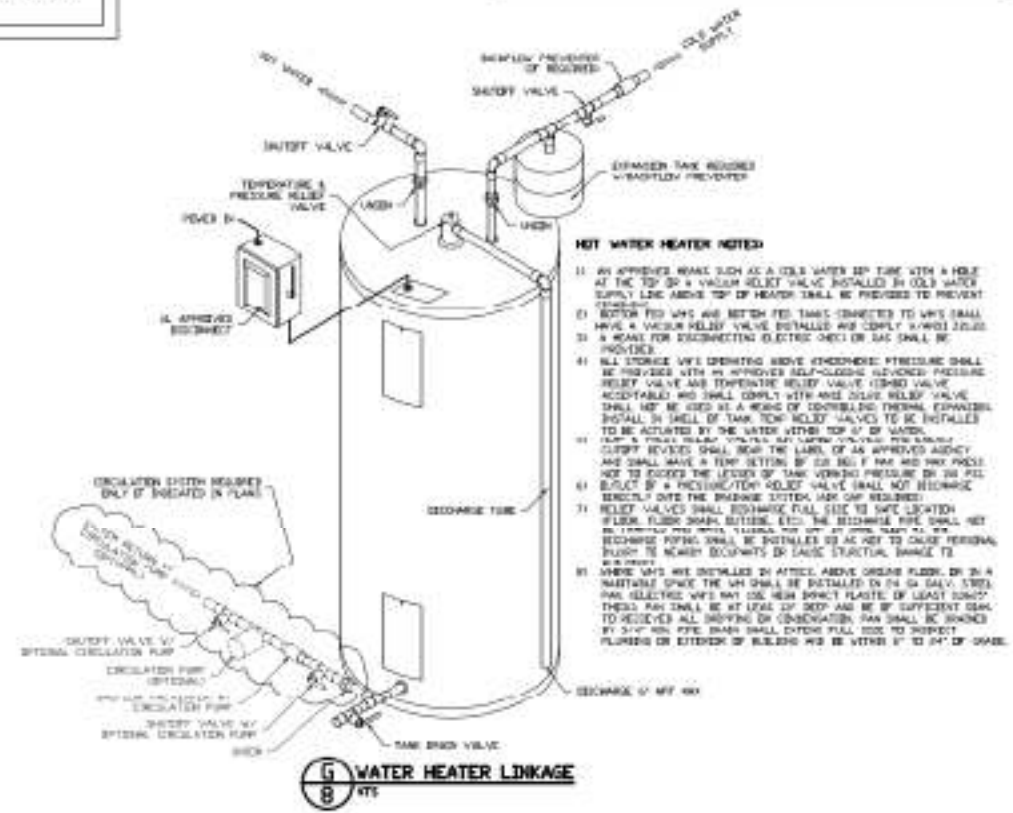
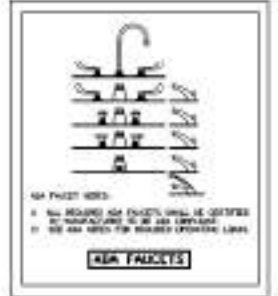
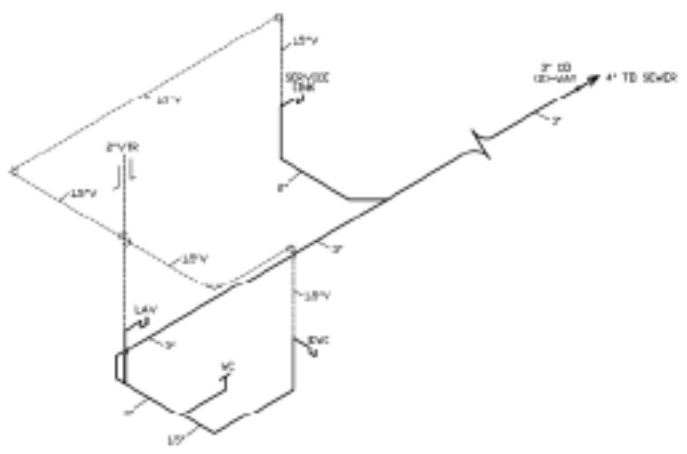
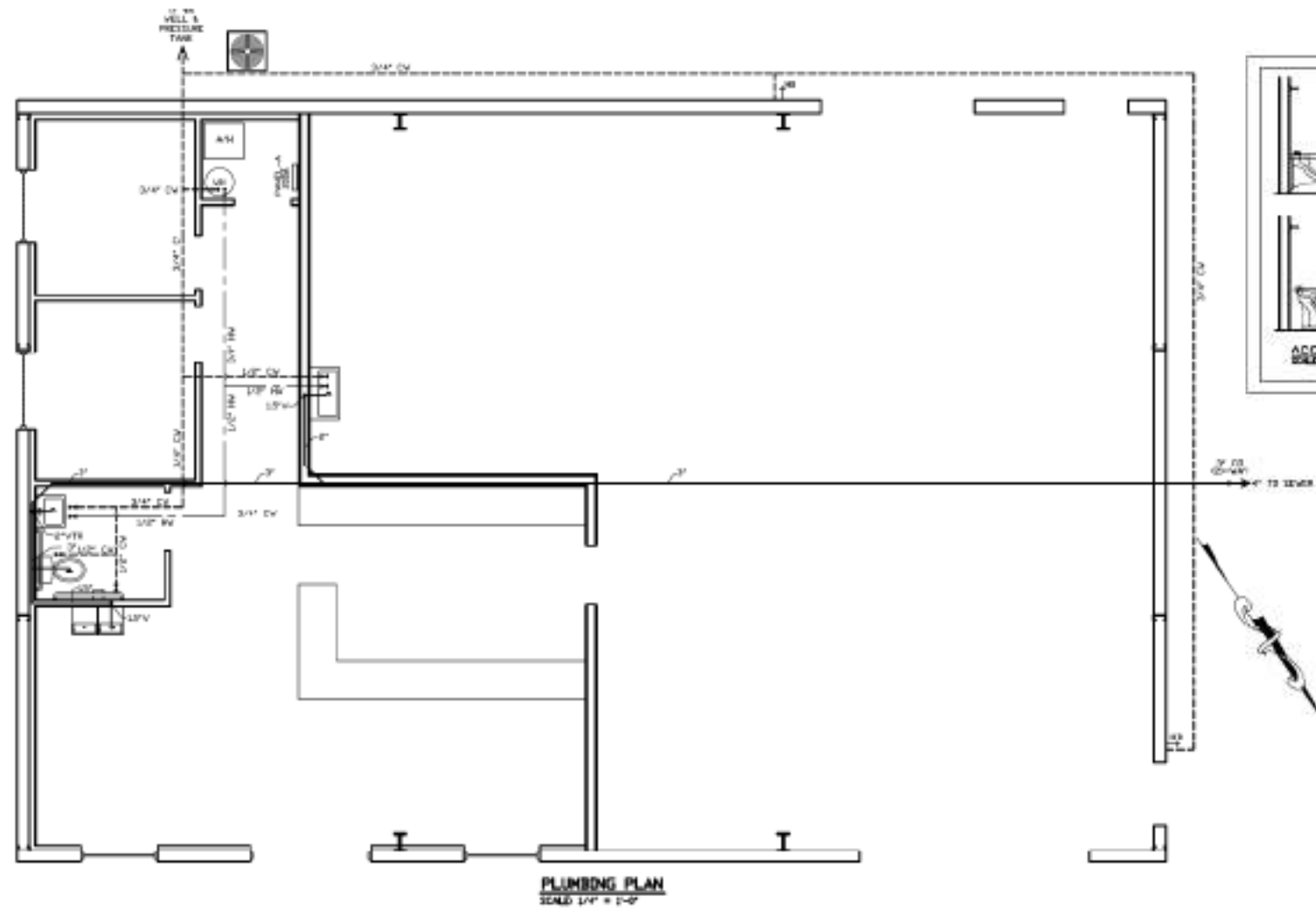
SHEET TITLE:

JOB NAME: **AIR CONDITIONING OFFICE**  
INVERNESS, FL

SHEET: **4** OF 5

DATE: 10/4/09  
DRAWN BY: SA  
JOB NUMBER: 09-001-000

Professional Engineer  
DAVID F. ARDITO, P.E.  
3524 S. PLUMMER PL.  
LEWISTON, FL 32041  
FLORIDA P.E.# 35804



- HOT WATER HEATER NOTED**
- 1) AN APPROVED MEANS SUCH AS A COLD WATER STOP TUBE WITH A HOLE AT THE TOP OR A VACUUM RELIEF VALVE INSTALLED IN COLD WATER SUPPLY LINE ABOVE TOP OF HEATER SHALL BE PROVIDED TO PREVENT Siphoning.
  - 2) BOTTOM FEED VALVE AND BOTTOM FEED TANKS CONNECTED TO WHS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED AND COMPLY WITH LOCAL CODES.
  - 3) A MEANS FOR DISCONNECTING ELECTRIC HEAT OR GAS SHALL BE PROVIDED.
  - 4) ALL STORAGE W/HS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL BE PROVIDED WITH AN APPROVED SELF-CLOSING ALLEVIORED PRESSURE RELIEF VALVE AND TEMPERATURE RELIEF VALVE (TRRV) VALVE. ACCEPTABLE AND SHALL COMPLY WITH ANSI Z39.10. RELIEF VALVE SHALL NOT BE USED AS A MEANS OF CONTROLLING INTERNAL EXPANSION. INSTALL IN SHELL OF TANK TEMP RELIEF VALVES TO BE INSTALLED TO BE ACTUATED BY THE WATER WITHIN TOP 1/2" OF WATER.
  - 5) TANKS & TANKS SHALL BE INSTALLED WITH THE WATER SUPPLY CURTAIN REVERSED SHALL BEAR THE LABEL OF AN APPROVED AGENCY AND SHALL HAVE A TEMP SECTION OF 250 DEG F MAX AND MAX PRESSURE NOT TO EXCEED THE DESIGN OF TANK WORKING PRESSURE OR 200 PSI. BUT NOT EXCEED 150 PSI. PRESSURE RELIEF VALVE SHALL NOT BE INSTALLED DIRECTLY OVER THE HEATING SYSTEM. MAX SHIP REQUIRED.
  - 6) RELIEF VALVES SHALL BE INSTALLED FULL SIZE TO SAFE LOCATION. FLOOR, FLOOR DRINK, BUTTRESS, ETC. THE DISCHARGE PIPE SHALL NOT BE INSTALLED INTO WALLS, FLOOR OR JOINTS. MAX SHIP. THE DISCHARGE PIPING SHALL BE INSTALLED AS AC NOT TO CAUSE PERSONAL FLOOR TO NEARBY EQUIPMENT OR CAUSE STRUCTURAL DAMAGE TO BLDG.
  - 7) WHERE WHS ARE INSTALLED IN ATTIC ABOVE ORGAN FLOOR OR IN A NEARBY SPACE THE WH SHALL BE INSTALLED IN 24 GA GALV STEEL PAN. RELIEF VALVE PAN USE NEAR IMPACT PLASTER OR LEADY CONCP. THESE PAN SHALL BE AT LEAST 2" DEEP AND BE OF SUFFICIENT DIM TO RECEIVE ALL DROPPING OR CONDENSATION PAN SHALL BE FINISH BY 3/4" DIA PIPE. SHALL EXTEND FULL TOE TO PROTECT PLUMBING OR EXTERIOR OF BUILDING AND BE WITHIN 6" TO 24" OF GRADE.

