AIR BALANCE SCHEDULE

OUTSIDE	OUTSIDE AIR	RETURN AIR	SUPPLY AIR	EXHAUST AIR	RESULTING PRESSURES
AHU #1	2430 (60%)	1570	4000		+2430
AHU #2	2430 (60%)	1570	4000		+2430
AHU #3	910 (30%)	2090	3000		+910
AHU #4	628 (26%)	1772	2400		+628
AHU #5	500 (25%)	1500	2000		+500
AHU #6	100 (25%)	900	1000		+100
EF-1 (HOOD 1)				2640	-2640
EF-4 (TLT. RM.)				90	-90
EF-5 (TLT. RM.)				300	-300
EF-5 (TLT. RM.)				300	-300
SF-1 (HOOD 1)	2112				+2112
RELIEF DAMPERS				5400	-5400
TOTAL	9110	9402	16400	8630	+380

HVAC SYMBOLS LEGEND

- THERMOSTAT, MTD +60" AFF
- EXHAUST FAN
- SECTION "A"-"A"
- REMOTE BULB SENSOR
- DUCT SMOKE DETECTOR
- TRANSITION
- TURNING VANE
- 45° BRANCH DUCT TAKE-OFF
- FIRE DAMPER
- VOLUME CONTROL DAMPER
- RETURN REGISTER
- SUPPLY DIFFUSER
- RETURN AIR GRILLE
- SUPPLY REGISTER
- AIR FLOW DIRECTION
- ROOF MTD. EXH. FAN
- DUCT TURN DOWN
- DUCT TURN UP
- FLEXIBLE DUCT

H.V.A.C. ABBREVIATION LEGEND

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

SPECIFIC MECHANICAL NOTES

1. 11"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
2. 22"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
3. 24"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP.
4. 6"ø FLEX DUCT DOWN THRU MECHANICAL PLATFORM TO CEILING SPACE BELOW. SEE MAIN FLOOR PLAN FOR CONTINUATION.
5. 10"ø FLEX DUCT DOWN THRU MECHANICAL PLATFORM TO CEILING SPACE BELOW. SEE MAIN FLOOR PLAN FOR CONTINUATION.
6. 12"ø FLEX DUCT DOWN THRU MECHANICAL PLATFORM TO CEILING SPACE BELOW. SEE MAIN FLOOR PLAN FOR CONTINUATION.
7. FOR CONTINUATION OF DUCTWORK REFER TO MAIN FLOOR PLAN ON THIS SHEET.
8. FOR CONTINUATION OF DUCTWORK REFER TO MECHANICAL EQUIP. PLATFORM PLAN ON THIS SHEET.
9. 6"ø FLEX DUCT FROM MECHANICAL PLATFORM ABOVE. OFFSET IN CEILING SPACE BELOW PLATFORM AS INDICATED. FOR CONTINUATION, REFER TO MECHANICAL PLATFORM PLAN ON THIS SHEET.
10. 10"ø FLEX DUCT FROM MECHANICAL PLATFORM ABOVE. OFFSET IN CEILING SPACE BELOW PLATFORM AS INDICATED. FOR CONTINUATION, REFER TO MECHANICAL PLATFORM PLAN ON THIS SHEET.
11. 12"ø FLEX DUCT FROM MECHANICAL PLATFORM ABOVE. OFFSET IN CEILING SPACE BELOW PLATFORM AS INDICATED. FOR CONTINUATION, REFER TO MECHANICAL PLATFORM PLAN ON THIS SHEET.
12. MOTORIZED OUTSIDE AIR DAMPER. 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.

SUPPLY DIFFUSER SCHEDULE

(A/100) DESIGNATES LABEL FOR DIFFUSER TYPE
DESIGNATES CFM QUANTITY FOR DIFFUSER

ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS TDC-AA	6"ø	0 - 125	12X12 LOUVERED FACE
B	TITUS TDC-AA	6"ø	0 - 125	24X24 LOUVERED FACE
C	TITUS TDC-AA	8"ø	130 - 200	24X24 LOUVERED FACE
D	TITUS TDC-AA	10"ø	205 - 325	24X24 LOUVERED FACE
E	TITUS TDC-AA	12"ø	330 - 450	24X24 LOUVERED FACE
F	TITUS TDC-AA	14"ø	455 - 600	24x24 LOUVERED FACE
G	TITUS S300FS	14X6	130 - 250	DIRECT SPIRAL MOUNTED REGISTER
H	TITUS S300FS	24X6	255 - 500	DIRECT SPIRAL MOUNTED REGISTER
I	TITUS TDC-AA	6"ø	0 - 125	12X12 LOUVERED FACE *
J	TITUS TDC-AA	8"ø	130 - 200	24X24 LOUVERED FACE *
K	TITUS 300RL	10X6	155 - 200	SIDEWALL REGISTER
L	TITUS 300RL	14X6	205 - 300	SIDEWALL REGISTER
M	TITUS 300RL	16X6	305 - 450	SIDEWALL REGISTER

* THIS DIFFUSER SHALL BE PROVIDED WITH A TYPE 1 BORDER FOR DRYWALL SURFACE MOUNT.

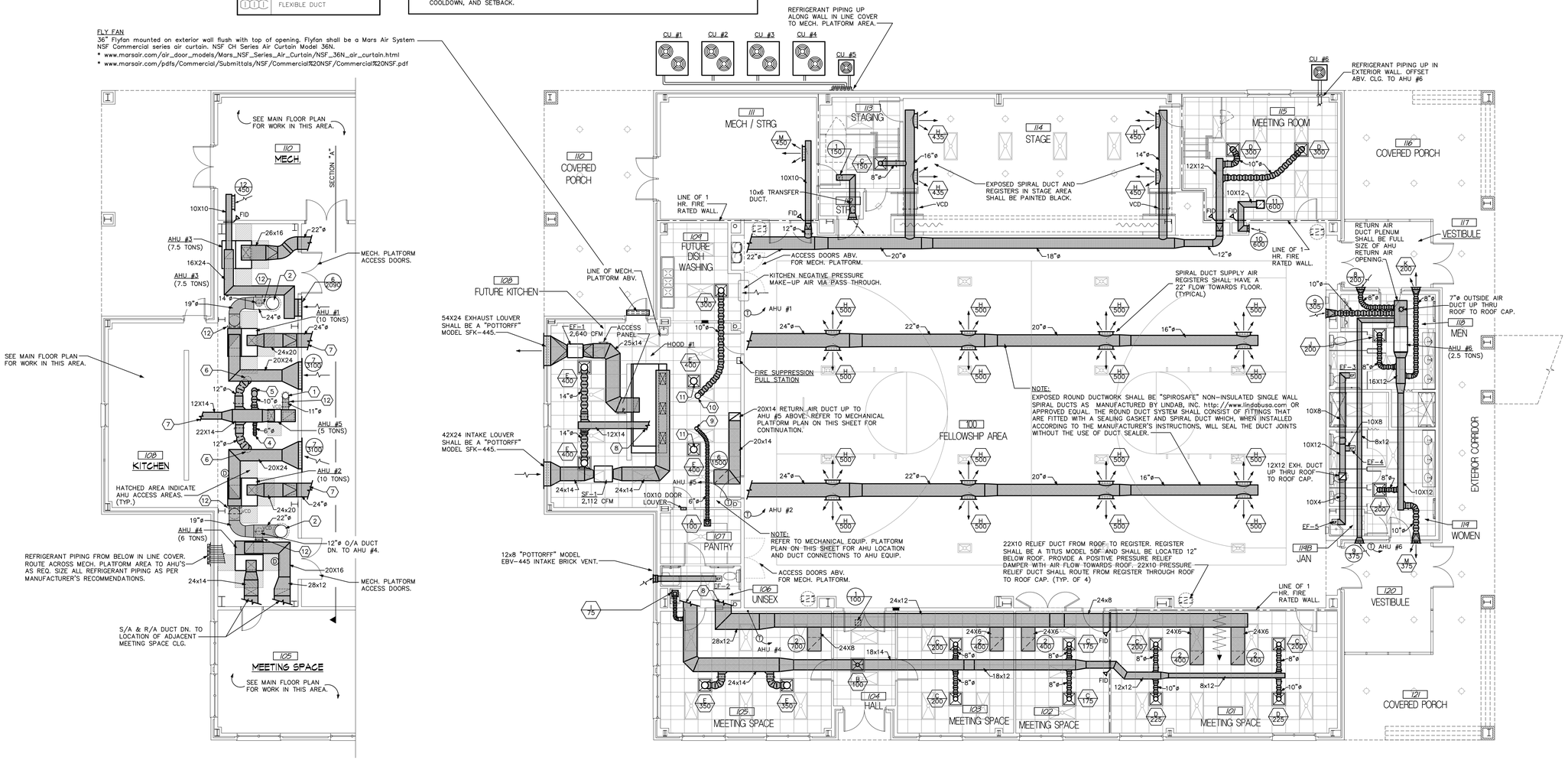
RETURN GRILLE SCHEDULE

(A/100) DESIGNATES LABEL FOR GRILLE TYPE
DESIGNATES CFM QUANTITY FOR GRILLE

FILTER SHALL BE PROVIDED AT UNIT.

LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 - 400	LOUVER FACE
2	TITUS 355FL	24X24	1205 - 1450	LOUVER FACE
3	TITUS 50FF	24X48	2300 - 4000	EGGCRATE FACE *
4	TITUS S300FS	24X6	255 - 400	DIRECT SPIRAL MOUNTED REGISTER
5	TITUS 355FL	10X10	0 - 400	LOUVER FACE *
6	TITUS 50F	30X20	1205 - 1450	EGGCRATE LOUVER
7	TITUS 50F	48X20	1455 - 4500	EGGCRATE LOUVER
8	TITUS 300RL	10X6	155 - 200	SIDEWALL REGISTER
9	TITUS 300RL	16X6	305 - 400	SIDEWALL REGISTER
10	TITUS 300RL	10X12	0 - 600	SIDEWALL REGISTER
11	TITUS 355FL	12X12	405 - 650	LOUVER FACE
12	TITUS 300RL	18X6	0 - 450	SIDEWALL REGISTER

* THIS GRILLE SHALL BE PROVIDED WITH A TYPE 1 BORDER FOR DRYWALL SURFACE MOUNT.

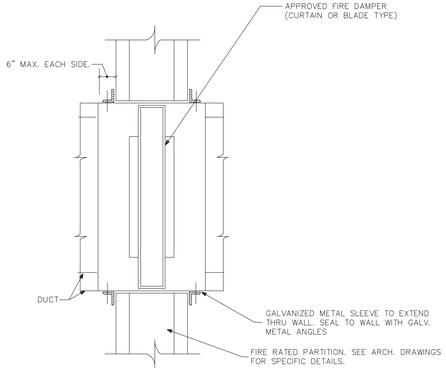


2 MECHANICAL EQUIP. PLATFORM PLAN

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

1 FLOOR PLAN - MECHANICAL

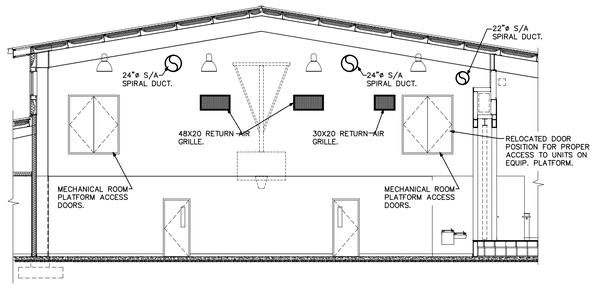
SCALE: 1/8"=1'-0"



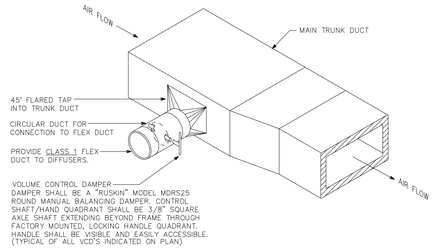
NOTE: ACCESS DOOR MUST BE PROVIDED AT EACH FIRE DAMPER CONSTRUCTED IN ACCORDANCE TO SMACNA STANDARDS.

(FRAME WALL DETAIL)

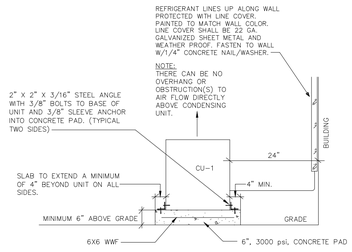
2 FIRE DAMPER DETAIL
NO SCALE



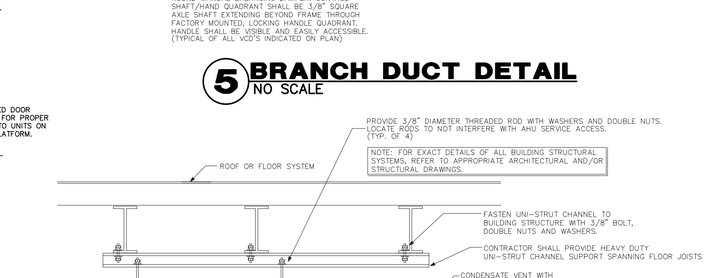
1 SECTION 'A'
NO SCALE



5 BRANCH DUCT DETAIL
NO SCALE

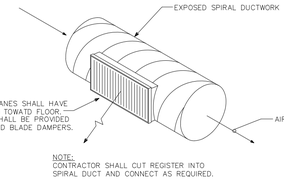


3 COND. UNIT MTG. DETAIL
NO SCALE



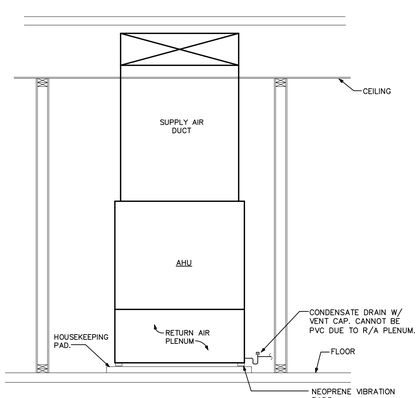
(AHU #6)

4 AIR HANDLING UNIT MOUNTING DETAIL
NO SCALE



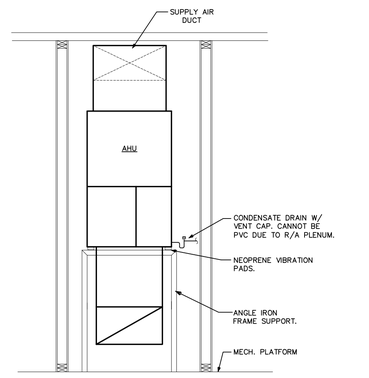
NOTE: CONTRACTOR SHALL CUT REGISTER INTO SPIRAL DUCT AND CONNECT AS REQUIRED.

SPIRAL DUCT / REGISTER CONNECTION DETAIL
6
NO SCALE



(AHU #1 - 4)

7 AHU FLOOR MOUNTING DETAIL
NO SCALE



(AHU #5)

8 AHU FLOOR MOUNTING DETAIL
NO SCALE

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

METHOD OF COMPLIANCE:
Prescriptive [X] Energy Cost Budget [ ]
Thermal Zone: Zone 4

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: 143,346 BTU
Building Cooling Load: 490,560 BTU

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

Boiler N/A
total boiler output. If oversized, state reason.
Chiller N/A
total chiller capacity. If oversized, state reason.

List equipment efficiencies

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

DESIGNER STATEMENT:[1]
To the best of my knoledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Code 2009.
SIGNED:
NAME:
TITLE:

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

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, ALL MANUFACTURERS INSTALLATION REQUIREMENTS, 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. 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 ENSURE AN ORDERLY PROGRESS OF THIS WORK.
4. ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
5. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R5 INSULATION OR R8 IF DUCTWORK IS LOCATED EXTERIOR TO BLDG INSULATION ENVELOPE. ALL FLEX DUCT SHALL BE "THERMOFLEX" OR APPROVED EQUAL AND SHALL HAVE EQUIVALENT INSULATION.
6. ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
7. DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
8. 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.
9. 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".
10. 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.
11. ARMAFLEX 3/4" INSULATION SHALL BE USED FOR SUCTION LINES. PRE-INSULATED REFRIGERANT LINE KITS ARE ACCEPTABLE.
12. PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
13. 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 WLL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
14. 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.
15. PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
16. IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.

OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62.1-2007 FOR OUTSIDE AIR REQUIREMENTS

UNIT LABEL	OCCUPANCY CATAGORY	AREA	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)	E_z	TOTAL
AHU #1&2	GYM	4,800	0.30 CFM PER S.F.	(N/A) + (4,800 X .30) = 1,440 PEOPLE AREA TOTAL	0.8	1,440/0.8 = 1,800
AHU #3	STORAGE	450	0.12 CFM PER S.F.	(N/A) + (450 X .12) = 54 PEOPLE AREA TOTAL		
AHU #3	STAGE	700	70 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(49 X 10) + (700 X .06) = 532 PEOPLE AREA TOTAL		
AHU #3	CONFERENCE/MEETING	450	50 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(23 X 5) + (450 X .06) = 142 PEOPLE AREA TOTAL		
				AHU #3 TOTAL = 728	0.8	728/0.8 = 910
AHU #4	CONFERENCE/MEETING	1,620	50 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(81 X 5) + (1,620 X .06) = 503 PEOPLE AREA TOTAL	0.8	503/0.8 = 628
AHU #5	KITCHEN	950	NO ASHREA CATEGORY - O/A FOR KITCHEN MAKE-UP	(N/A) + (N/A) = 500 PEOPLE AREA TOTAL	0.8	N/A = 500
AHU #6	LOBBY	325	10 PEOPLE PER 1,000 S.F./7.5 CFM PER PERSON	(4 X 5) + (325 X .06) = 40 PEOPLE AREA TOTAL	0.8	40/0.8 = 50

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	REFER TO HOOD DETAILS AND SPECIFICATIONS ON SHEET M-3									
EF-2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1ø	1
EF-3	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1ø	1
EF-4	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1ø	1
EF-5	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1ø	1
SF-1	REFER TO HOOD DETAILS AND SPECIFICATIONS ON SHEET M-3									

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

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 38AUQA12A0A5	119,000	90,300	78,000	30.8	(2)@1.5	208V/3ø	60A	11.0/	483 lbs.
CU #2	CARRIER 38AUQA12A0A5	119,000	90,300	78,000	30.8	(2)@1.5	208V/3ø	60A	11.0/	483 lbs.
CU #3	CARRIER 38AUQA08A0A5	91,800	68,000	84,600	25	(2)@1.5	208V/3ø	50A	11.0/	483 lbs.
CU #4	CARRIER 38AUQ07A0A5	72,900	56,100	48,000	19.0	(2)@1.5	208V/3ø	45A	11.0/	483 lbs.
CU #5	CARRIER 25HCD360A005	59,260	44,220	43,770	15.9	1.2	208V/3ø	30A	/13.0	295 lbs.
CU #6	CARRIER 25HCD330A005	28,600	20,330	24,460	10.0	1.1	208V/3ø	20A	/13.0	149 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 #1	CARRIER 40RUQA12A2A6	4,000	SEE SCH	.4"	881	3 HP	208V/3ø	427 lbs.
AHU #2	CARRIER 40RUQA12A2A6	4,000	SEE SCH	.4"	881	3 HP	208V/3ø	427 lbs.
AHU #3	CARRIER 40RUQA08A2A6	3,000	SEE SCH	.4"	759	3 HP	208V/3ø	385 lbs.
AHU #4	CARRIER 40RUQA07A1A6	2,400	SEE SCH	.4"	622	1 HP	208V/3ø	381 lbs.
AHU #5	CARRIER FX4DNF060O8	2,000	SEE SCH	.25"	HIGH	3/4 HP	208V/1ø	168 lbs.
AHU #6	CARRIER FX4DNF031005	1,000	SEE SCH	.25"	HIGH	1/2 HP	208V/1ø	146 lbs.

INTEGRATED ELECTRIC HEATING

HEATER KW	VOLTAGE	NOTES
7.5 KW	208V/3ø	1 THRU 6
7.5 KW	208V/3ø	1 THRU 6
7.5 KW	208V/3ø	1 THRU 6
7.5 KW	208V/3ø	1 THRU 6
6.0 KW	208V/1ø	1 THRU 6
6.0 KW	208V/1ø	1 THRU 6

GENERAL NOTES:
* ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
* PROVIDE VIBRATION ISOLATION FOR UNITS.
* EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.
* CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

ABBREVIATION LEGEND:
O/A - OUTSIDE AIR
HP - HORSE POWER
RLA - RUNNING LOAD AMPS
FLA - FULL LOAD AMPS
MOCP - MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE)
E.S.P. - EXTERNAL STATIC PRESSURE
EER - ENERGY EFFICIENCY RATIO
SEER - SEASONAL ENERGY EFF. RATIO

SPECIFIC NOTES:
1) SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.
2) INSULATE REFRIGERANT SUCTION LINE WITH 3/4" ARMAFLEX OR APPROVED EQUAL.
3) INSTALL FILTER DRYER AND STRAINER IN REFRIGERANT LIQUID LINE.
4) PROVIDE FIELD INSTALLED ACCESSORIES, AND 5 MINUTE TIME DELAY SWITCH.
5) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.
6) PROVIDE SINGLE POINT POWER CONNECTION WITH INTEGRAL OVERCURRENT PROTECTION DEVICE.

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

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

HOOD INFORMATION

HOOD NO.	MODEL	LENGTH	MAX. COOKING TEMP.	EXHAUST PLENUM					SUPPLY PLENUM						HOOD CONSTRUCTION	HOOD CONFIG.	
				TOTAL EXH. CFM	RISER(S)				TOTAL SUP. CFM	RISER(S)						END TO END	ROW
					WIDTH	LENG.	DIA.	CFM	S.P.		WIDTH	LENG.	DIA.	CFM	S.P.		
1	4824 ND-2-PSP-F	12' 0.00"	450 Deg.	2640	10"	25"		2640	-0.499"	2112						430 SS Where Exposed	ALONE	ALONE

HOOD INFORMATION

HOOD NO.	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)						FIRE SYSTEM PIPING	HOOD HANGING WGHT
	TYPE	QTY.	HEIGHT	LENGTH	QTY.	TYPE	WIRE GUARD	LOCATION	FIRE SYSTEM		ELECTRICAL	SWITCHES				
									TYPE	SIZE	MODEL #	QUANTITY	LOCATION			
1	SS Baffle with Handles	4	16"	16"	4	Incandescent Light Fixt	NO	Left	Ansul R102	3.0/1.5	31111002	1 Light 1 Fan	Outside		YES	595 LBS
		4	16"	20"												

HOOD OPTIONS

HOOD NO.	OPTION
1	FIELD WRAPPER 17.00" High Front, Left, Right
	BACKSPLASH 80.00" High X 156.00" Long 430 SS

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
						WIDTH	LENG.	DIA.	CFM	S.P.
1	Front	156"	14"	6"	MUA	10"	20"		703	0.314"
					MUA	10"	20"		703	0.314"
					MUA	10"	20"		703	0.314"

ELECTRICAL PACKAGES

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		ROOFTOP STARTERS	OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY			TYPE	ø	H.P.	VOLT	FLA
1		31111002	Utility Cabinet Left	Utility Cabinet Left	1 Light		Exhaust in Fire	Exhaust	3	1.000	208	3.3
				Hood # 1	1 Fan							
								Supply	3	0.750	208	2.7

EXHAUST FAN INFORMATION

FAN UNIT NO.	FAN UNIT MODEL #	MODEL	TAG	CFM	ESP.	RPM	H.P.	ø	VOLT	FLA	WEIGHT (LBS.)
EF-1	RMFI150CA	RMFI150CA		2640	1.000	1416	1.000	3	208	3.3	185.00

MUA FAN INFORMATION

FAN UNIT NO.	FAN UNIT MODEL #	BLOWER	HOUSING	TAG	CFM	ESP.	RPM	H.P.	ø	VOLT	FLA	WEIGHT (LBS.)
SF-1	INLINE1L-G10	G10	INLINE,1L		2112	0.450	953	0.750	3	208	2.7	175.84

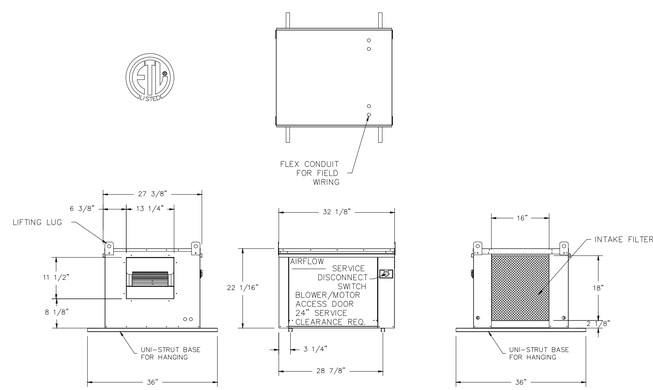
FAN OPTIONS

FAN UNIT NO.	OPTION (Qty. - Descr.)
EF-1	1 - Ceiling Spring Isolators With Mounting Brackets - RMFI 150.
SF-1	1 - Vibration Isolation Ceiling Hangars for INLINE fans (set of

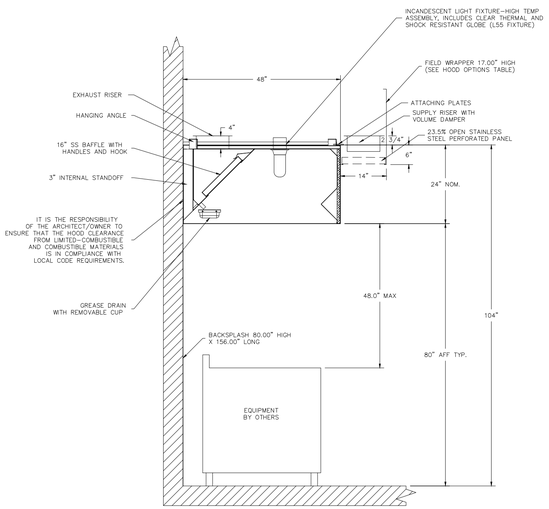
FAN ACCESSORIES

FAN UNIT NO.	FAN UNIT TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
SF-1					YES			

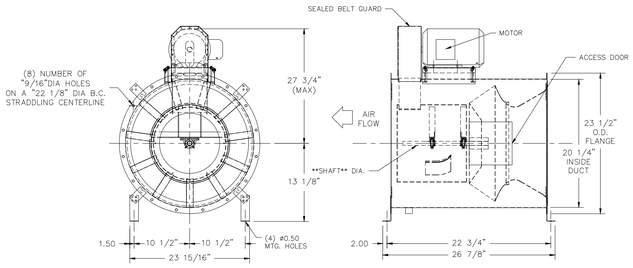
1. LOW PROFILE INLINE SUPPLY UNIT W/ 10" BLOWER IN SIZE #1 HOUSING. INSULATED HOUSING.
2. SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT
3. VIBRATION ISOLATION CEILING HANGERS FOR INDOOR UN-TEMPERED FANS (SET OF 4).



EF-1
FAN #2 INLINE1L-G10 - SUPPLY FAN



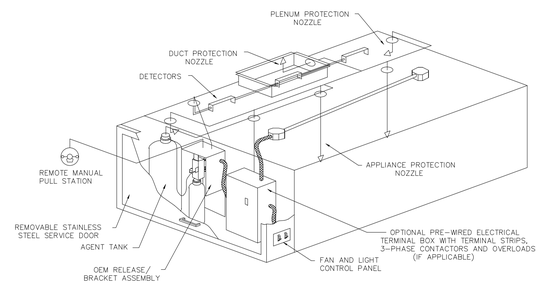
SECTION VIEW - MODEL 4824ND-2-PSP-F



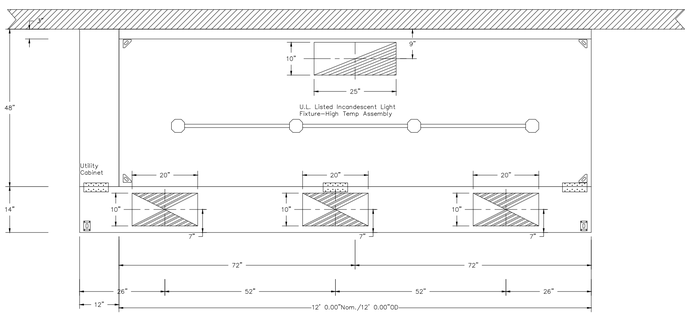
SF-1
FAN #1 RMFI150CA - EXHAUST FAN

FEATURES:
LEVEL II CONSTRUCTION - UL 762.
HIGH PRESSURE,
STRAIGHT THROUGH AIR FLOW.
WHEELS BACKWARD INCLINED, NON-OVERLOADING.
WHEELS STATICALLY AND DYNAMICALLY BALANCED.
HEAVY GAUGE STEEL CONSTRUCTION.
MULTIPLE ACCESS DOORS FOR WHEEL CLEANING.
BELT TUBES AND GUARDS.
EXTENDED LUBE LINES.
2" GREASE DRAIN.

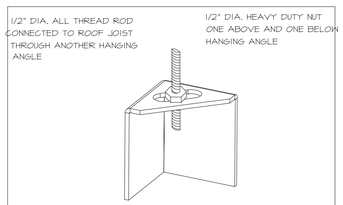
OPTIONS
CEILING SPRING ISOLATORS WITH MOUNTING BRACKETS - RMFI 150.



TYPICAL ANSUL R-102 SYSTEM LAYOUT



PLAN VIEW - Hood #1
12' 0.00" LONG 4824ND-2-PSP-F



HOOD HANGING ANGLE DETAIL

FOR QUESTIONS, CALL THE
CHARLOTTE, NORTH CAROLINA
AVERY GRANT
PHONE: 704-844-9088, FAX: 704-844-0599
EMAIL: reg30@captiveair.com

CAPTIVE-AIRE

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

NFPA #96
NSF
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

EXHAUST HOOD NOTES

1. EXHAUST HOODS SHALL BE CONSTRUCTED OF 18 GAUGE 430 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.
2. ENTIRE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH NATIONAL SANITATION FOUNDATION STANDARDS, NFPA-96, NFPA-17-A, AND ALL GOVERNING CODES.
3. EXHAUST HOODS SHALL BE PROVIDED WITH A 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.
4. THE INSTALLER OF THE EXHAUST HOOD AUTOMATIC FIRE EXTINGUISHING SYSTEM SHALL BRIEF OWNER IN ITS OPERATION.
5. EXHAUST AND SUPPLY FANS OF EACH HOOD SHALL BE INTERLOCKED. PROVIDE ONE LIGHT SWITCH AND ONE FAN SWITCH ON THE FACE OF EACH GREASE HOOD.
6. GREASE FILTERS TO BE THE GREASE ELIMINATOR SELF BALANCING TYPE U.L. APPROVED.
7. 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.
8. U.L. RANGE HOOD: MATERIAL: 18 GAUGE STAINLESS STEEL CONSTRUCTION ON EXPOSED SURFACES 18 GA. GALV. ON EXH. PLENUM ALL CONTINUOUS EXTERNAL LIQUID TIGHT WELDS, POLISHED. FILTERS UL CLASSIFIED BAFFLE TYPE, SET IN HOOD @ 45 DEGREE ANGLE, INCANDESCENT LIGHT FIXTURES UL LISTED FOR USE IN COMMERCIAL COOKING HOODS. GREASE TRAY BELOW FILTERS WITH REMOVE- ABLE GREASE CONTAINER, LIQUID VOLUME LESS THAN 1 QUART. ALL IN COMPLIANCE WITH NFPA #96 AND LOCAL BUILDING CODES.
9. RANGE HOOD EXHAUST DUCTS MATERIAL: 16 GAUGE GALVANIZED STEEL. CONSTRUCTION, ALL CONTINUOUS LIQUID TIGHT EXTERNAL WELDS. DUCTS TO SLOPE TOWARD HOOD. CLEANING ACCESS AT CHANGE IN DIRECTION OF DUCT RUN EXCEPT AT HOOD COLLAR.
10. RANGE HOOD SUPPLY DUCTS MATERIAL: 22 GALVANIZED SHEET METAL, GAUGES, HANGING AND REINFORCING PER SMACNA STANDARDS.

Storage Tank Water Heater Sizing Calculator

Developed by the Plan Review Unit of the Environmental Health Services Section
NC Division of Environmental Health

Facility Name:	PISGAH UNITED METHODIST CHURCH
Address:	488 Hill Farm Road, Hiddenite, North Carolina

EQUIPMENT						**GPH CALCULATED**
Enter the description, and number and size of compartments for each sink below	**Description**	**Number of compartments**	**(inches)** **Length**	**Width**	**Depth**	**Gallons Per Hour (GPH)**
Largest Sink #1	1	3	20	15	12	35
Sink #2						0
Sink #3						0
Bar sink						0
Sinks are calculated at 75% capacity					**Total**	35

Enter type of prep sink and number of sink compartments for each sink below	**Type of prep sink (vegetable, meat, seafood)**	**Number of compartments**	**Gallons Per Hour (GPH)**
Prep sink #1	2	1	5
Prep sink #2			0
Prep sink#3			0
Prep sinks are calculated at 5 gallons per compartment		**Total**	5

Enter the quantity of equipment below	**Quantity**	**Gallons Per Hour (GPH)**
Hand sinks	1	5
Can wash	1	10
Mop sink		0
Hose reel		0
Clothes washer		0

Enter a description and estimated gallon per hour (GPH) usage for other equipment below	**Description**	**Estimated gallons per hour (GPH) usage**	**Gallons Per Hour (GPH)**
Other Equipment	Lavatory	1	1
Other Equipment	Shower	3	3
Other Equipment			0
Other Equipment			0
Hand sinks and mop sinks are calculated at 5 GPH each, can washes at 10 GPH each. Hose reels are calculated at 5 GPH, clothes washers at 15 GPH, other equipment at the usage entered		**Total**	19

Enter the make, model and Final Rinse Usage in gallons per hour (GPH) for dishmachines	**Make**	**Model**	**Final Rinse Usage (GPH)** Found in "Dishmachine Specs" sheet below or on manufacturer's spec sheet	**Gallons Per Hour (GPH)**
Dishmachine #1	Hobart	LT-1	51	35.7
Dishmachine #2				0

Enter the quantity of pre-rinse units	**Quantity**	**Gallons Per Hour (GPH)**
Pre-rinse	1	45
Dishmachines are calculated at 70% of the final rinse usage specified by the manufacturer. Pre-rinses are calculated at 45 GPH	**Total**	80.7

Recovery Rate Needed (GPH):	**140**

Water Heater Input (BTU or kW) Needed:

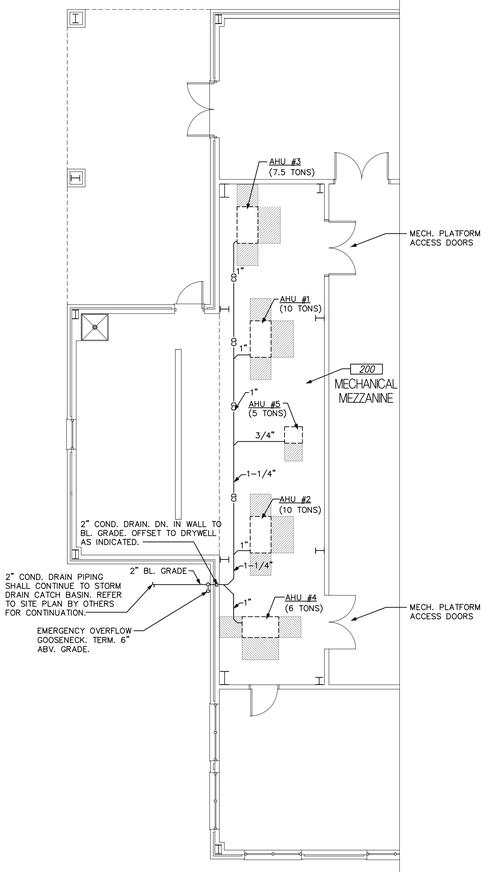
Gas Water Heater	**Electric Water Heater**
123 ,000 BTU at 80°F rise	27 kW at 80°F rise
138 ,000 BTU at 90°F rise	31 kW at 90°F rise
153 ,000 BTU at 100°F rise	34 kW at 100°F rise

PLUMBING SYMBOLS LEGEND

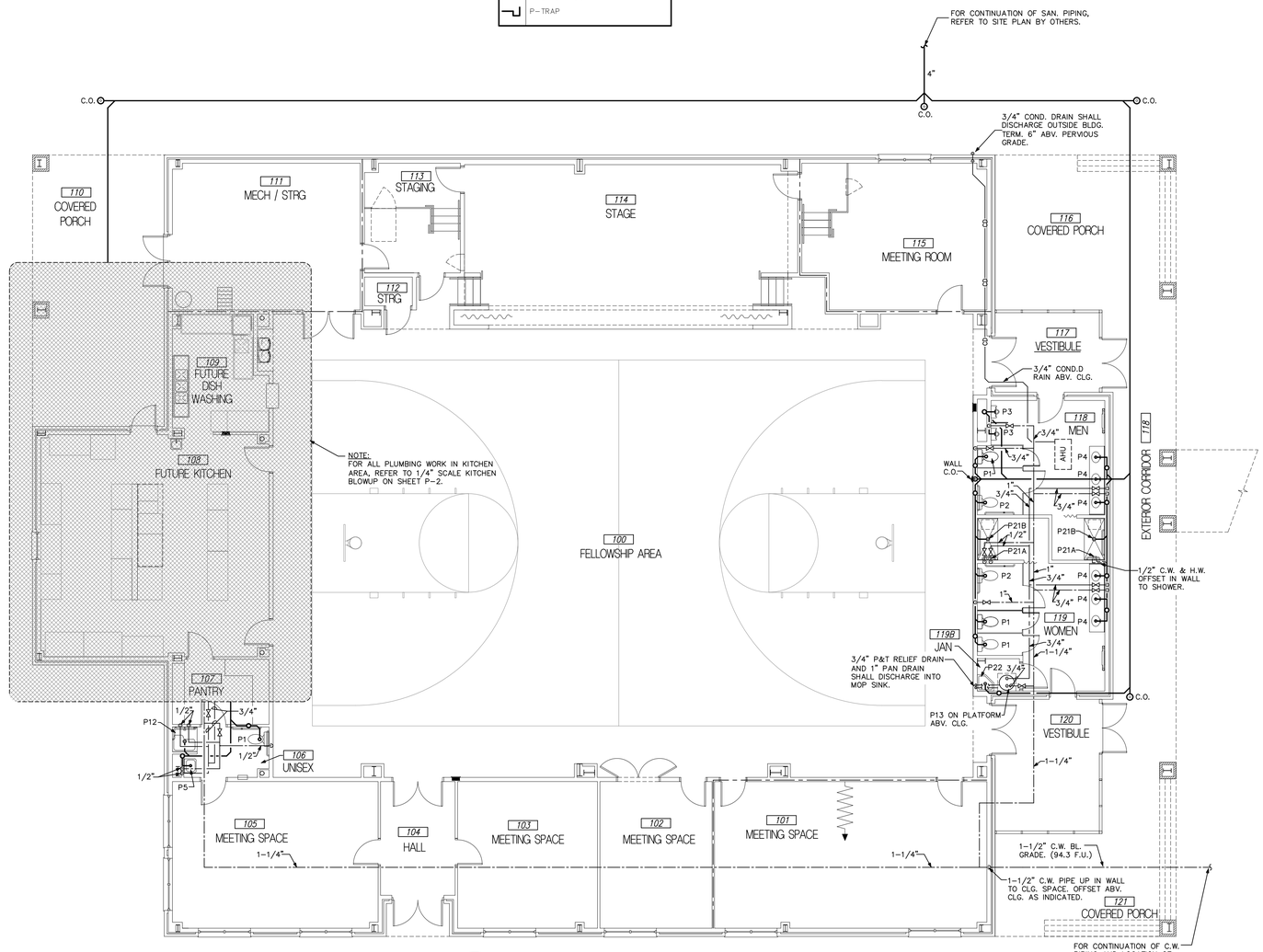
- FLOOR DRAIN
- HOSE BIBB
- CLEANOUT
- RELIEF VALVE
- AIR CHAMBER
- UNION
- SOIL OR WASTE LINE
- SANITARY VENT LINE
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC WATER RECIRCULATION
- PRESSURE & TEMP. RELIEF LINE
- CONDENSATE DRAIN LINE
- RAIN WATER LEADER
- GAS LINE
- SAFEWASTE LINE
- FIRE PROTECTION
- SHUT OFF VALVE
- SAFEPAN LINE
- FIRE SPRINKLER HEAD
- PIPE TURN UP
- PIPE TURN DOWN
- P-TRAP

PLUMBING ABBREVIATION LEGEND

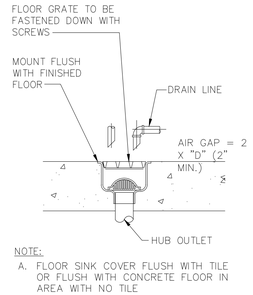
DN.	DOWN	C.C.	CENTER TO CENTER	F.U.	FIXTURE UNITS
EXT.	EXTERIOR	N.T.S.	NOT TO SCALE	H.B.	HOSE BIBBS
F.D.	FLOOR DRAIN	MFGR.	MANUFACTURER	C.O.	CLEANOUT
F.F.	FINISH FLOOR	S.O.V.	SHUT OFF VALVE	E.W.H.	ELECTRIC WATER HEATER
A.F.F.	ABOVE FINISH FLOOR	W.C.	WATER CLOSET	JAN.SK.	JANITOR SINK
V.T.R.	VENT THRU 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		



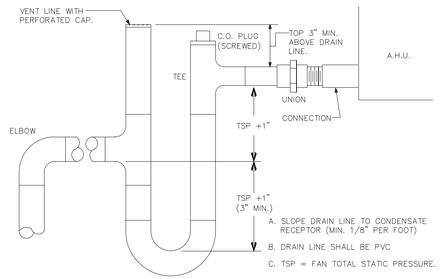
2 MECHANICAL EQUIP. PLATFORM PLAN
SCALE: 1/8"=1'-0"



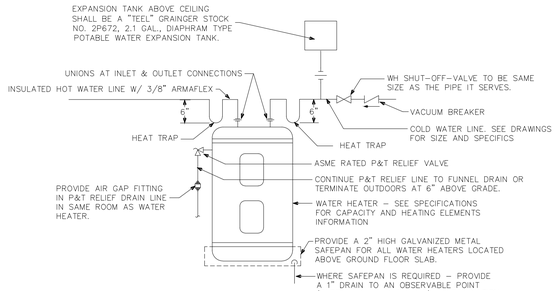
1 FLOOR PLAN - PLUMBING
SCALE: 1/8"=1'-0"



2 FLOOR SINK CONN. DETAIL
NO SCALE

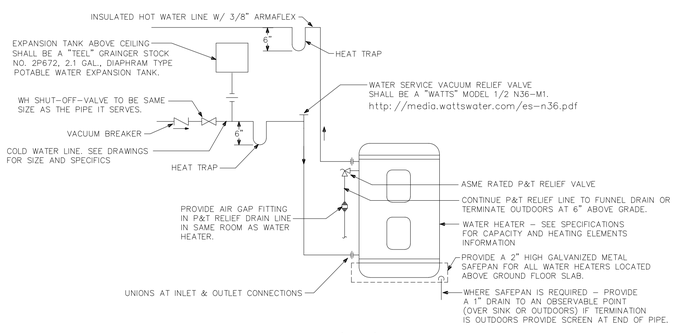


3 CONDENSATE P-TRAP DETAIL
NOT TO SCALE



(P14)

4 WATER HEATER DETAIL
NO SCALE



(P13)

5 WALL MTD. JR. WATER HEATER DETAIL
NO SCALE

GREASE INTERCEPTOR CALCULATIONS

3 COMP. SINK: (SINK SIZE) 18"x24"x14"x3= 18,144 CU. IN. x 1(GAL)/231 CU. IN. = 78.54 GAL. x .75 (75% ACTUAL WATER VOLUME) = 58.9 GAL. W/ FLOW RATE OF 2 GAL./MIN. (58.9 DIVIDED BY 2) = 29.4 G.P.M.

VEGETABLE PREP SINK: (SINK SIZE) 18"X21"X14"= 5,292 CU IN. X 1(GAL)/231 CU. IN = 22.9 GAL. X .75 (75 % ACTUAL WATER VOLUME) = 17.1 GAL. W/ FLOW RATE OF 2 GAL./MIN. (17.1 DIVIDED BY 2) = 8.5 G.P.M.

MEAT PREP SINK: (SINK SIZE) 18"X21"X14"= 5,292 CU IN. X 1(GAL)/231 CU. IN = 22.9 GAL. X .75 (75 % ACTUAL WATER VOLUME) = 17.1 GAL. W/ FLOW RATE OF 2 GAL./MIN. (17.1 DIVIDED BY 2) = 8.5 G.P.M.

PRE-RINSE SINK: (SINK SIZE) 18"X21"X14"= 5,292 CU IN. X 1(GAL)/231 CU. IN = 22.9 GAL. X .75 (75 % ACTUAL WATER VOLUME) = 17.1 GAL. W/ FLOW RATE OF 2 GAL./MIN. (17.1 DIVIDED BY 2) = 8.5 G.P.M.

MOP SINK/CAN WASH: 3'x3'x6" = 7,776 CU.IN. x 1 GAL/231 CU. IN. = 33 GAL. x 75% = 24.75 G.P.M. (NO DRAIN PLUG - OPEN) W/FLOW RATE OF 2 GAL./MIN. (24.75 DIVIDED BY 2) = 12.4 G.P.M.

(3) 3" FLOOR DRAINS = 9 GPM

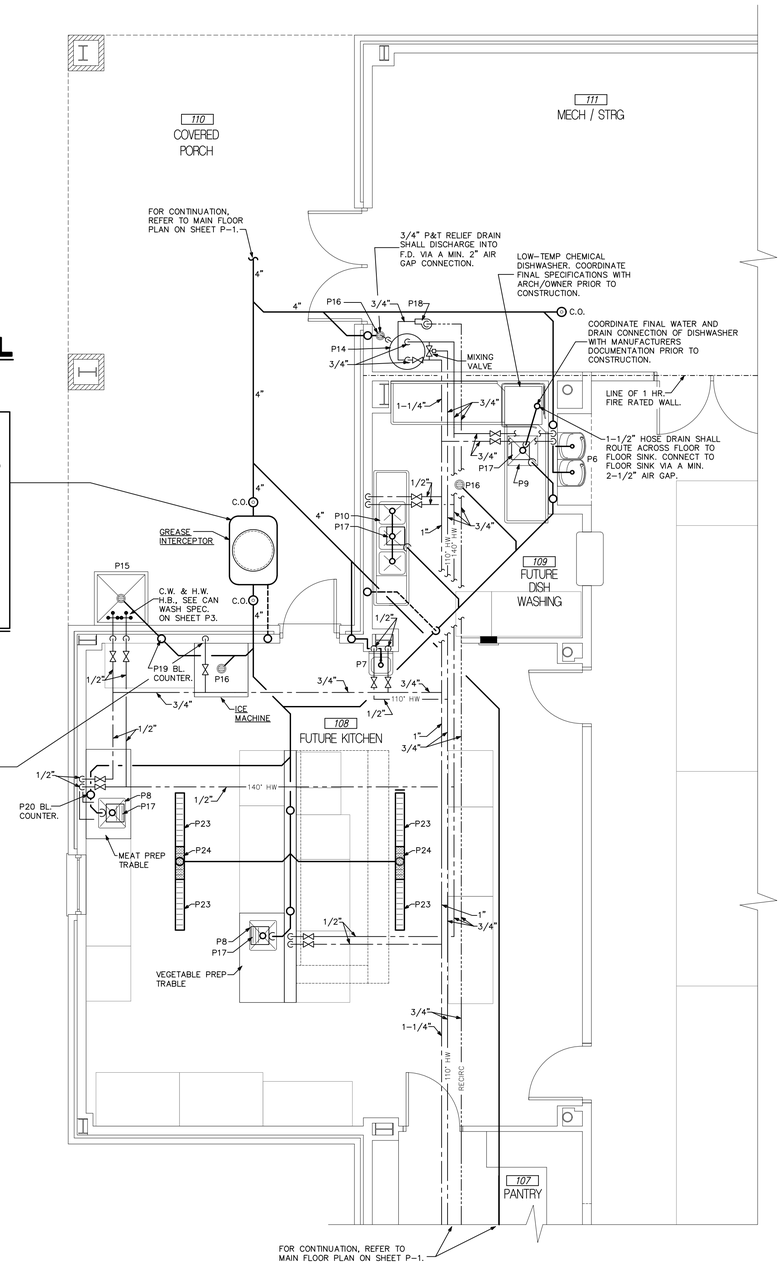
TOTAL REQUIREMENT = 76.3 G.P.M.

* AS PER NCPC TABLE 1003.3.4.1 75.3 GPM REQUIRES A GREASE RETENTION CAPACITY OF 150 LBS. GREASE SEPARATOR PROVIDED = 300 LBS. GREASY SLUDGE CAPACITY.

GREASE INTERCEPTOR

GREASE SEPARATOR SHALL BE EQUAL TO A "GREAT BASIN" MODEL GB-75, 75 GPM INTERMITTENT FLOW, 3" TAPPED INLET AND OUTLET WITH A 3" TAPPED INTERNAL VENT CONNECTION. 125 GALLON LIQUID HOLDING CAPACITY WITH 616 LBS GREASY SLUDGE CAPACITY.
http: //www.schierproducts.com/Gi/gb_redesign/spec/gb_75_spec.pdf
http: //www.schierproducts.com/Gi/gb_redesign/inst/gb_series_installation_o&m.PDF

WATER CONNECTION TO ICE MACHINE SHALL HAVE A BACKFLOW PREVENTER. BACKFLOW SHALL BE A "WATTS" SD3 3/8". http: //media.wattswater.com/es-sd3.pdf
BACKFLOW MEETS ASSE 1022 STANDARDS
http: //media.wattswater.com/ASSE-WBF-00037.pdf



1 FLOOR PLAN [KITCHEN BLOW UP] - PLUMBING
SCALE: 1/4"=1'-0"

PLUMBING FIXTURE SCHEDULE

P-1 (FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET MODEL 2333.100 ELONGATED 1.6 GPF, VITREOUS CHINA, PRESSURE-ASSISTED SIPHON ACTION BOWL, CLOSE-COUPLED TANK, FLOOR MOUNTED, FLOOR OUTLET, SPEED CONNECT TANK/BOWL COUPLING SYSTEM, WITH AMERICAN STANDARD OPEN FRONT SEAT WITH COVER MODEL 5325.024.
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_722.pdf

P-2 (HANDICAPPED FLOOR MOUNTED FLUSH TANK WATER CLOSET)
SHALL BE AN AMERICAN STANDARD MODEL CADET RIGHT HEIGHT 16-1/2" 2377.100 ELONGATED 1.6 GPF, VITREOUS CHINA, PRESSURE-ASSISTED SIPHON ACTION BOWL, CLOSE-COUPLED TANK, FLOOR MOUNTED, FLOOR OUTLET, SPEED CONNECT TANK/BOWL COUPLING SYSTEM, WITH AMERICAN STANDARD OPEN FRONT SEAT WITH COVER MODEL 5325.024.
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_1006.pdf

P-3 (HANDICAPPED URINAL)
SHALL BE AN AMERICAN STANDARD LYNBROOK MODEL 6601.012 TOP SPUD. 0.83 GPF. FLUSH VALVE SHALL BE SLOAN ROYAL MODEL 180-1.
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_190.pdf

P-4 (HANDICAPPED COUNTER TOP LAVATORY W/ELECTRONIC SENSOR)
SHALL BE AN AMERICAN STANDARD MODEL AQUALYN MODEL 0475.047 (CENTER HOLE ONLY) VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A "SLOAN" SENSOR OPERATED ELECTRONIC HAND WASHING FAUCET OPTIMA SYSTEM, MODEL ETF-610 WITH BDM AND BDT VARIATION MIXING VALVES FOR HOT AND COLD WATER SUPPLY, 120V CONTROL. SEE ELECTRICAL PLANS FOR WIRING. MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. PROVIDE PROTECTIVE HOT WATER LINE TO MEET HANDICAP CODE REQ. ON ALL INSTALLATIONS WHERE THE PIPING IS EXPOSED TO THE USER.
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_287.pdf
* http://www.sloanvalve.com/Specifications/Optima_ETF-610.pdf

P-5 (HANDICAPPED WALL HUNG LAVATORY)
SHALL BE AN AMERICAN STANDARD MISSOURI LAVATORY MODEL 0436.004US, VITREOUS CHINA, WALL MOUNT WITH CONCEALED ARMS SUPPORT, PROVIDE AN AMERICAN STANDARD HERITAGE CENTERSET FAUCET WITH 4" WRIST BLADE HANDLES MODEL 6530.170. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDERSINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (HTTP://WWW.TRUEBRO.COM) OR APPROVED EQUAL.
LAVATORY:
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_4486.pdf
FAUCET:
* http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_426.pdf

P-6 (HANDICAPED ELECTRIC WATER COOLER COMBINATION HI/LO)
SHALL BE AN ELKAY SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS. MODEL EMABFTLBC, 8.8 GPH, 4.0 FLA AT 120 VOLT.
* http://www.elkayusa.com/cps/rde/xbcr/elkay/12-53B_EMABFTLBC_EMABFTLDDC.pdf

P-7 (STAINLESS STEEL HAND SINK)
COORDINATE FINAL SPECIFICATIONS WITH OWNER/ARCHITECT PRIOR TO CONSTRUCTION.

P-8 (STAINLESS STEEL WORK TABLE W/PREP SINK)
COORDINATE FINAL SPECIFICATIONS WITH OWNER/ARCHITECT PRIOR TO CONSTRUCTION.

P-9 (STAINLESS STEEL WORK TABLE W/PRE-RINSE SINK)
COORDINATE FINAL SPECIFICATIONS WITH OWNER/ARCHITECT PRIOR TO CONSTRUCTION.

P-10 (STAINLESS STEEL 3 COMPARTMENT SINK)
COORDINATE FINAL SPECIFICATIONS WITH OWNER/ARCHITECT PRIOR TO CONSTRUCTION.

P-11 (HOSE BIBB - NON-FREEZE HYDRANT WITH LOCK COVER)
SHALL BE A "ZURN" Z1320-C ENCASED ECOLOTROL, ANTI-SIPHON, AUTOMATIC DRAINING, NON-FREEZE WALL HYDRANT COMPLETE WITH INTEGRAL BACKFLOW PREVENTOR, COPPER CASING, ALL BRONZE INTERIOR PARTS, NON-COMBINATION 3/4 MALE PIPE THREAD INLET CONNECTION STANDARD. REGULARLY FURNISHED WITH 3/4 HOSE CONNECTION. CHROME-PLATED ROUGH CAST BRONZE BOX AND HINGED COVER. INCLUDES OPERATING KEY.
* http://zurn.com/operations/lightcommercial/pdfs/specsheets/63805.pdf

P-12 (HANDICAPPED SHOWER STALL AND MIXING VALVE)
SHOWER STALL SHALL BE A "FLOORSTONE" MODEL 3PC-40-40H. (O.D. = 40¼"x40¼"x78¼") THREE-PIECE GEL-COATED FIBERGLASS SHOWER DESIGNED FOR BARRIER-FREE USE AS MANUFACTURED BY FLORESTONE PRODUCTS CO. UNIT TO HAVE A FLAME SPREAD OF 25, AND A SMOKE DENSITY RATING OF 400 OR LESS IN ACCORDANCE WITH ASTM-E84 TEST METHOD. BASIC SHOWER WILL CONFORM TO ANSI-Z-124.2 AND THE ACCESSORIZED MODULE TO ANSI-A-117.1. UNIT TO INCLUDE STAINLESS STEEL CURTAIN ROD; SYMMONS BALANCE MIXING VALVE WITH CONCEALED CHECK STOPS; ALSONS WITH HOSE AND CHROME-PLATED SLIDE BAR; STAINLESS STEEL CORNER GRAB BAR; STAINLESS STEEL RECESSED SOAP DISH; WHITE NAUGAHYDE FOLDING WHEELCHAIR TRANSFER SEAT. (OR APPROVED EQUAL)
* http://www.florestone.com/ada/3pc_40-40h.html

P-13 (WATER HEATER)
SHALL BE A LOCHINVAR MODEL LTA050KK, 50 GALLON GLASSLINED STORAGE TANK, TALL TANK TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 208 VOLTS, SINGLE PHASE INCOMING POWER. 3 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.
* http://lochinvar.com/_linefiles/RE.pdf

P-14 (ELECTRIC WATER HEATER)
WATER HEATER SHALL BE A "LOCHINVAR" COMMERCIAL WATER HEATER MODEL HSK27-082, 80 GALLON GLASS-LINED STORAGE TANK, RECOVERY 140 G.P.H. AT 80° RISE. ELECTRIC LOAD 208/3ø, 26 KW, 6 ELECTRIC ELEMENTS. 3 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.
* http://lochinvar.com/_linefiles/HP.pdf

P-15 (FLOOR MOUNTED EXTERIOR CANWASH W/TRAP SEAL)
SHALL BE A FLORESTONE #70 36X36X6" MOLDED MOP BASIN WITH 3" OUTLET. "WOODFORD" MODEL 22 EXPOSED NON-FREEZE ANTI-SIPHON DUAL HOT/COLD WALL FAUCET COMPLETE WITH AUTOMATIC DRAINING HOSE CONNECTION BACKFLOW PREVENTER, AND 3/4 MALE HOSE CONNECTION.
* http://www.florestone.com/mop_sinks/model_50-70.html
* http://www.woodfordmfg.com/woodford/Wall_Faucet_Pages/Model-22.html
CAN WASH TRAP SEAL
SHALL BE A "SURE SEAL" MODEL SS3000 PREASSEMBLED INLINE FLOOR DRAIN TRAP SEALER. 5 PIECES: COMMERCIAL GRADE ABS PLASTIC HOUSING AND KEEPER PIN, PROPRIETARY NEOPRENE RUBBER DIAPHRAGM, WITH 2 SOFT RUBBER SEALING GASKETS. FLOOR RATING ASSE-1072 AF-GW.
* http://www.thesureseal.com/Portals/49321/docs/pitch_sheet_ss3000.pdf

P-16 (FLOOR DRAIN WITH TRAP PRIMER)
SHALL BE A JOSAM 30000-WT-A-49 SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEJLOC INVERTIBLE NON- PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.
* http://www.josam.com/images/josammkt/sbmtl/s06_30000-WT-A.pdf

P-17 (FLOOR SINK W/SEDIMENT BUCKET)
SHALL BE A JOSAM 49340A-3-31 SERIES SQUARE CAST IRON 8" DEEP SUPER-FLO-SEPTOR FLOOR SINK WITH PORC-COATED INTERIOR, DOUBLE DRAINAGE FLANGE WITH WEEPHOLES, BOTTOM OUTLET, ALUMINUM INTERNAL DOME STRAINER, AND CAST IRON, NON-TRAFFIC, PORC-COATED, ANTI-TILTING GRATE. WITH HALF GRATE AND ALUMINUM SEDIMENT BUCKET.
* http://www.josam.com/catalog/JOS/pl=FS/49340A

P-18 (HOT WATER RECIRCULATING PUMP)
SHALL BE A"BELL & GOSSETT" MODEL #PL-36B, GRAINGER STOCK #5JPC3, INLINE CIRCULATOR PUMP, OPEN LOOP SYSTEM, 1/6 HP, 1 PHASE, VOLTAGE 115, INLET/OUTLET FLANGED, HOUSING MATERIAL BRONZE, MAX. TEMP. 225 F, MAX. WORKING PRESSURE 150 PSI, SHUT-OFF 37 FT., 3300 RPM, IMPELLER MATERIAL NORYL THERMAL PROTECTION, MECHANICAL SEAL CARBON/SILICON CARBIDE, ADDITIONAL FEATURES MAINTENANCE-FREE, WARRANTY LENGTH 3 YEARS.
* http://www.grainger.com/Grainger/BELL-GOSSETT-Circulator-Pump-5JPC3?Pid=search

P-19 (2" STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MINI-VENT". 2" VENT.
* http://www.ipscorp.com/plumbing/studor/minivent

P-20 (3" STUDOR VENT - AIR ADMITTANCE VALVE)
SHALL BE A IPS CORPORATION "STUDOR MAXI-VENT". 3" VENT.
* http://www.ipscorp.com/plumbing/studor/maxivent

P-21A (HANDICAPPED SHOWER MIXING VALVE)
SHALL BE A SPEAKMAN MODEL "SM-5040" SENTINELPRO™ THERMOSTATIC/PRESSURE BALANCE HANDICAP SHOWER SYSTEM. SENTINELPRO SHOWER SYSTEM INCLUDES SENTINELPRO CONCEALED ANTI-SCALD THERMOSTATIC/PRESSURE BALANCING SHOWER/BATH VALVE & COMBINATIONS, 69 IN. SQUARE LOCK STAINLESS STEEL HOSE WITH RUBBER LINER. HANDHELD SHOWER HEAD AND SLIDING BAR.
* http://www.speakmancompany.com/products/detail/SM-5040
SHOWER STALL COORDINATE FINAL SPECIFICATIONS OF SHOWER STALL WITH ARCHITECT/ OWNER PRIOR TO BID.

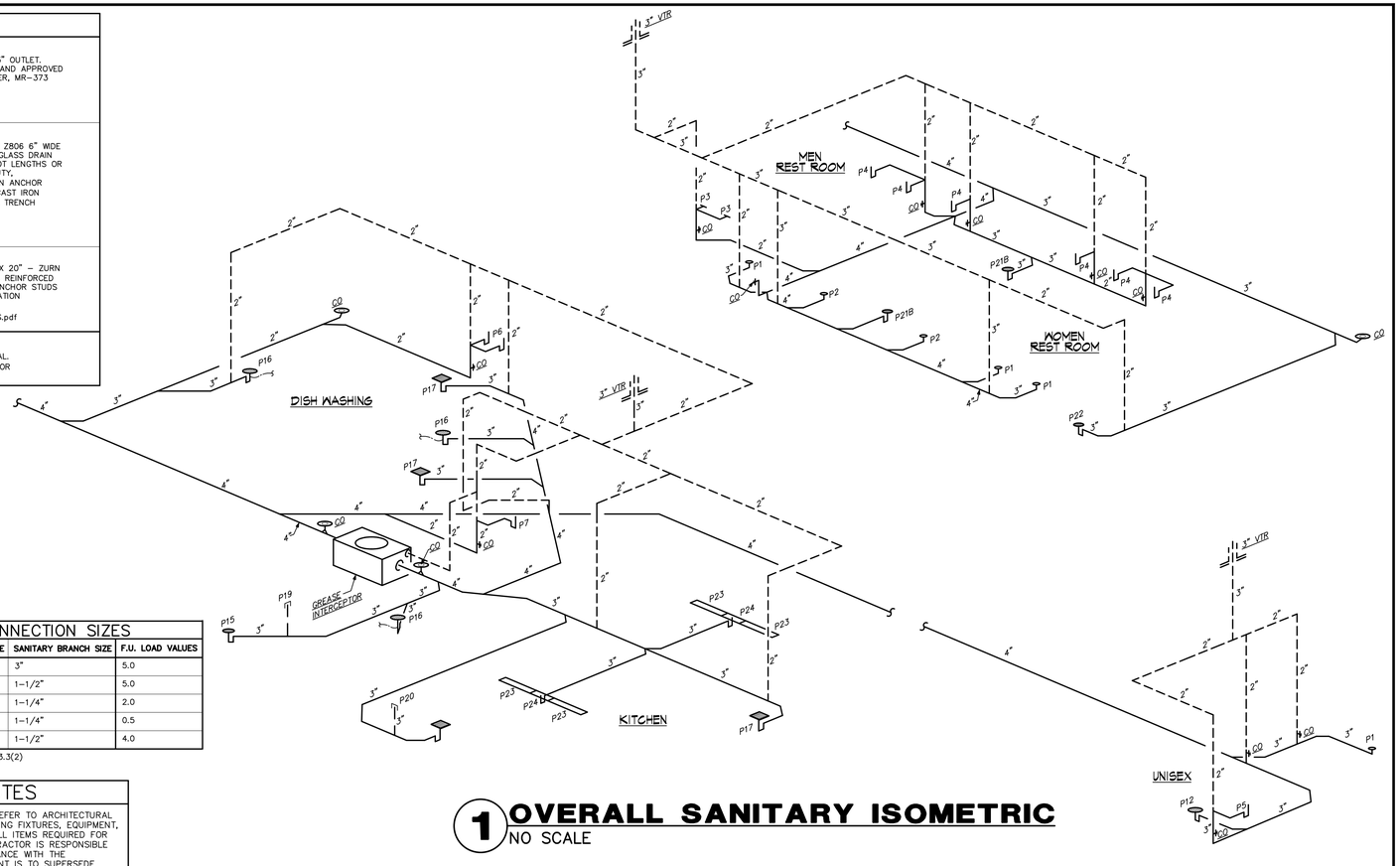
P-21B (SHOWER DRAIN)
SHALL BE A "ZURN" MODEL FD2254-S5, SQUARE DRAIN. 5" SQ. TOP WITH 3"ø PIPE CONNECTION.

P-22 (MOP RECEPTOR W/FAUCET)
SHALL BE A FLORESTONE #95/96 24"X24X12" MOLDED MOP BASIN WITH 3" OUTLET. PROVIDE WITH MR-371 THREADED FAUCET WITH WALL BRACE, PAIL HOOK AND APPROVED VACUUM BREAKER, MR-370 HOSE & HOSE BRACKET, MR-372 MOP HANGER, MR-373 BUMBER GUARDS AND MR-377 STAINLESS TEEL WALL GUARD.
* http://www.florestone.com/mop_sinks/model_95-96.html
* http://www.florestone.com/mop_sinks/ms_accessories.html

P-23 (2' TRENCH DRAIN)
SHALL BE A "ZURN" MODEL Z806 6" FLO-THRU TRENCH SYSTEM - ZURN Z806 6" WIDE PRE-SLOPED TRENCH DRAINAGE SYSTEM. GLASS-FILLED POLYESTER FIBERGLASS DRAIN CHANNEL WITH .75% BOTTOM SLOPE. ALL SECTIONS ARE MODULAR 10-FOOT LENGTHS OR CUSTOM CUT TO FIT WITH INTERLOCKING ENDS. COMPLETE WITH HEAVY-DUTY, DURA-COATED STEEL FRAME W/ANCHOR STUDS AT SURFACE, COMBINATION ANCHOR TABS/LEVELING DEVICES AT APPROPRIATE LOCATIONS AND HEAVY-DUTY CAST IRON GRATE W/ LOCKDOWN. GRATE SHALL BE STANDARD WEIGHT DUCTILE IRON. TRENCH DRAIN INSTALLATION INSTRUCTION FOUND HERE:
* http://content.zurn.com/web_documents/pdfs/specsheets/z806.pdf
* http://content.zurn.com/web_documents/pdfs/installation/ft531.pdf

P-24 (20" TRENCH DRAIN CATCH BASIN)
SHALL BE A "ZURN" MODEL Z817-6-HDS FLO-THRU CATCH BASIN - 6" X 20" - ZURN Z817 CATCH BASIN (SPECIFY SIZE). POLYESTER GLASS-FILLED FIBERGLASS REINFORCED BODY, COMPLETE WITH HEAVY-DUTY, DURA-COATED STEEL FRAME WITH ANCHOR STUDS AT SURFACE AND HEAVY-DUTY CAST IRON GRATE. CATCH BASIN INSTALLATION INSTRUCTION FOUND HERE:
* http://content.zurn.com/web_documents/pdfs/specsheets/Z817-6-HDS.pdf

NOTES:
1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.



1 OVERALL 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"	-	1-1/2"	5.0
LAVATORY (P4,P5)	1/2"	1/2"	1-1/4"	2.0
ELECTRIC WATER COOLER (P6)	1/2"	-	1-1/4"	0.5
SINK (P7-P10)	1/2"	1/2"	1-1/2"	4.0

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

GENERAL PLUMBING NOTES

1.) DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES, EQUIPMENT, ETC.. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND ACCEPTABLE WORKING INSTALLATION. CONTRACTOR IS RESPONSIBLE TO INSTALL ALL FIXTURES AND EQUIPMENT IN STRICT COMPLIANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS. THIS REQUIREMENT IS TO SUPERSEDE ANY DETAILS OR INFORMATION CONTAINED ON THESE DRAWINGS.

2.) ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL, STATE, AND ALL LOCAL CODES AND ORDINANCES HAVING JURISDICTION.

3.) THE PLUMBING CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS. ALL EXECUTION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.

4.) ALL MATERIAL SHALL BE NEW.

5.) ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.

6.) ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OR PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

7.) THE PLUMBING CONTRACTOR SHALL SECURE AND PAY ALL PERMIT FEES, INSPECTIONS, AND TESTS.

8.) ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

9.) THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) ONE YEAR FROM DATE OF ACCEPTANCE. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

10.) VERIFY LOCATION, SIZE AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

11.) ALL FIXTURES SHALL BE PROVIDED WITH READILY ACCESSIBLE STOPS.

12.) ALL BELOW FLOOR SLAB WATER PIPING SHALL BE FLEXIBLE "TEMPRITE PEX (CROSS-LINKED POLYETHYLENE)" INTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.LUBRIZOL.COM. ALL ABOVE SLAB WATER PIPING SHALL BE "FLOWGUARD GOLD CPVC" INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS FOUND HERE: WWW.FLOWGUARDGOLD.COM. ALL WATER PIPING AS SPECIFIED OR APPROVED EQUAL. ALL WATER PIPING LARGER THAN 2" SHALL BE TYPE "L" COPPER AND TYPE "K" COPPER 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 WATER HAMMER ARRESTORS AT EACH GROUP OF FIXTURES. INSTALLATION OF WATER HAMMER ARRESTORS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE AND INSTALL AN APPROVED WATER HAMMER ARRESTOR AT EACH FIXTURE OR DEVICE THAT HAS A SOLENOID WATER CONTROL VALVE.

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

17.) INSULATE LINES AS FOLLOWS:

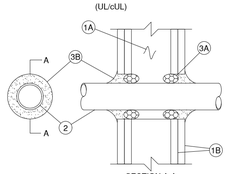
A.) 1" THICK ARMAFLEX PREFORMED INSULATION SHALL BE PROVIDED ON BOTH C.W. & H.W. WHEN PIPING IS LOCATED OUTSIDE OF THE INSULATED BUILDING ENVELOPE.

B.) 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.

System No. W-L-2129 (FOR PLASTIC PIPE)
August 13, 2008
F Ratings 1 & 2 Hr (See Items 1 and 2)
T Ratings 0, 1 & 2 Hr (See Items 1 and 2)

(UL/cUL)



SECTION A-A

1. Wall Assembly The 1 or 2 h fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
B. Gypsum Board* 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 4 in. (102 mm).
The hourly F & T ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed unless noted otherwise.
2. Through Penetrants One nonmetallic pipe to be installed either concentrically or eccentrically within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:
A. Polyvinyl Chloride (PVC) Pipe Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 7/8 in. (22 mm). For use with 1 hr wall constructions only. When used, F Rating is 1 hr and T Rating is 0 hr.
B. Polyvinyl Chloride (PVC) Pipe Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) piping systems. The annular space between pipe and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).
C. Chlorinated Polyvinyl Chloride (CPVC) Pipe Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems. The annular space between pipe and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).
D. Acrylonitrile Butadiene Styrene (ABS) Pipe Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid-core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. The annular space between pipe and periphery of opening shall be min 1/4 in. (6 mm) to max 7/8 in. (22 mm).
E. Crosslinked Polyethylene (PEX) Tube Nom 1 in. (25 mm) diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems. The annular space between tube and periphery of opening shall be min 1/4 in.(6 mm) to max 1-3/8 in. (35 mm).
F. Rigid Nonmetallic Conduit+ Nom 2 in. (51 mm) diam (or smaller), Schedule 40 PVC conduit installed in accordance with Article 347 of the National Electrical Code (NFPA No. 70). The annular space between conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).
G. Chlorinated Polyvinyl Chloride (CPVC) Pipe Nom 2 in. diam (or smaller) FLOWGUARD GOLD® SDR11 CPVC for use in closed (process or supply) piping systems. The annular space between conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).
H. Chlorinated Polyvinyl Chloride (CPVC) Pipe Nom 2 in. diam (or smaller) BLAZEMASTER® SDR13.5 CPVC for use in closed (process or supply) piping systems. The annular space between conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).
3. Firestop System The firestop system shall consist of the following:
A. Packing Material (Optional) In 2 hr wall assemblies, foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
B. Fill, Void or Cavity Material* Caulk Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. Additional fill material to be installed such that a min 1/4 in. (6 mm) crown is formed around the penetrating item.
TREMCO INC - TREMstop Intumescent Acrylic, FyreCaulk or TREMstop IA+
*Bearing the UL Classification Mark

2 FIRE RATE PIPE PENETRATION DTL.
NO SCALE

ELECTRICAL NOTES:

1. GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.

   THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.

   THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.

   COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.

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

2. SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE", "BY OTHERS", OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.

3. EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.

4. MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.

5. GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.

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

7. CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.

   CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80).

   ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.

8. CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL), CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.

   CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG. AND SMALLER, SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.

9. PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.

10. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS.

    FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.

11. TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.

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

ELECTRICAL SYMBOLS LEGEND

NOTE – NOT ALL SYMBOLS MAY BE USED ON PROJECT

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF	T	TRANSFORMER – SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL – SIZE AS NOTED
	QUADRUPLEX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"	F	F-FAN; M-MOTOR; P-PUMP
$	SINGLE POLE SWITCH, MTD +47"		SPECIAL OUTLET – AS REQUIRED
$3	THREE-WAY SWITCH, MTD +47"	B-2	CKT. HOMERUN (B INDICATES PANEL) "2" DESIGNATES CIRCUIT NUMBER
$M	MANUAL STARTER SWITCH		EXIT SIGN; ONE SIDED, OR TWO SIDED
$D	DIMMER SWITCH, MTD +47"		EMERGENCY LIGHTING
$L	SWITCH W/ ILLUM. WHEN ON +47"	B	RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
$O	SWITCH W/ OCCU SENSOR. WHEN ON +47"	M	OVERHEAD OCCUPANCY SENSOR
$O3	THREE-WAY SWITCH W/ OCCU SENSOR WHEN ON +47"	B	HIGHBAY HID LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
J	JUNCTION BOX, FLUSH IF POSSIBLE	B	FLUORESCENT LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	TELEPHONE / DATA OUTLET +18"	B NL	FLUORESCENT LIGHTING NIGHT LIGHT B DESIGNATES FIXTURE TYPE
	DED. COMPUTER TERM. OUTLET +18"	B	FLUORESCENT STRIP LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
SC	DISCONNECT SWITCH W/ STARTER	IG	ISOLATED GROUND
S	DISCONNECT SWITCH	WP	WEATHER-PROOF
	FLR. MTD. FLUSH DUPLEX RECEPTACLE	BC	BELOW COUNTER
	FLR. MTD. FLUSH QUAD. RECEPTACLE	TC	TIME CLOCK – 24 HOUR
	FLR. MTD. FLUSH PHONE/DATA OUTLET	GFI	GROUND FAULT INTERRUPTER
	FLR. MTD. FLUSH COMPUTER OUTLET	AFF	ABOVE FINISHED FLOOR
	AREA SMOKE DETECTOR	EWC	ELECTRIC WATER COOLER
H	HEAT DETECTOR	ASW	ABOVE SHOW WINDOW
D	DUCT SMOKE DETECTOR	BSW	BELOW SHOW WINDOW
F	FIRE ALARM MAN. PULL STATION +47"	FACP	FIRE ALARM CONTROL PANEL
30	HORN WITH STROBE LIGHT, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING	FAAP	FIRE ALARM ANNUNCIATOR PANEL
L30	STROBE LIGHT ONLY, MTD. +80" # BESIDE DEVICE IS CANDELLA RATING		

LIGHTING FIXTURE SCHEDULE

LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(3) 32W T8	LITHONIA 2SP8G-332-FWA12-MVOLT	
A2	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 2SP8F-232-FWA12-MVOLT	
B	12K LUMEN LED HIGH BAY LT.	WHITE	ACRYLIC	208	125W LED 4000K	LITHONIA IBH12LMVOLT-WGIBH	W/ 0-10V DIMMING CONTROL DRIVER & WIRE GUARD OPTION
C	4' STRIP LIGHT	WHITE		120	(1) 32WT8	LITHONIA C-132-MVOLT	
C2	8' STRIP LIGHT	WHITE		120	(1) 32WT8 (EACH)	LITHONIA TC-232-MVOLT	
D	CANOPY LIGHTS	WHITE		120	(1) 32W TRT	LITHONIA LF6N-1/26-42TRT-MVOLT	DAMP LOCATION LISTED
EX	EXIT COMBO SIGN	WHITE	RED	120	INCLUDED	LITHONIA LHQM	W/ BATTERY BACKUP
EX1	EMERG COMBO w/ REM HEAD	WHITE		120	INCLUDED	LITHONIA LHQM	W/ MODEL NX DUAL REMOTE HEAD. 90 MIN BATTERY
F	HID WALL PACK	BRONZE	POLYCARBONATE	120	(1) 100W MH	LITHONIA TWP-100M-120	
F2	HID WALL PACK	BRONZE	POLYCARBONATE	120	(1) 250W MH	LITHONIA TWR2-250M-120-SCWA	
G	FLUORESCENT DOWN LIGHT	WHITE		120	(1) 26W DTT	LITHONIA AFV-26DTT-6AR-MVOLT	
K	VANITY LIGHT	WHITE		120	(2) 32W T8	LITHONIA WC-232-MVOLT	
K2	VANITY LIGHT	WHITE		120	(2) 17W T8	LITHONIA WC-217-MVOLT	
L	STAGE WORK LIGHTS	WHITE		120	(2) 54W T5HO	LITHONIA 2SP5-G-254T5HO-A12-MVOLT	
M	RECESSED LIGHTS	WHITE		120	100W MAX	LITHONIA LP6N-609A-120	
N	TRACK LIGHTS	WHITE		120	150W/2FT	LITHONIA L2TX-WH	X-COODINATE EXACT LENGHT IN FIELD PRIOR TO CONSTRUCTION AND COORDINATE HEADS WITH OWNER PRIOR TO CONSTRUCTION
P	RECESSED 1'X4' TROFFER	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA SP8G-232-FWA12-MVOLT	
Q	SHOWER LIGHT	WHITE	TEMPERED GLASS	120	(1) 26W DTT	LITHONIA LF6N-1/26TRT-F601A-T73-MVOLT	DAMP LOCATION LISTED
R	2' FLUORESCENT STRIP	WHITE		120	(2) 17W T8	LITHONIA C-217-MVOLT	
S	UP/DOWN SCONCE LIGHTS	T.B.D.	CLEAR GLASS	120	29W LED 2700K	CONTECH CL6227KMVD2-UDX-WCLR	OWNER/ARCH TO DETERMINE COLOR, PROVIDE 1-10 VOLT DIMMING DRIVER

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

PRESCRIPTIVE [X] PERFORMANCE [ ] ENERGY COST BUDGET [ ]

PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDUSE LOADS.

LIGHTING SCHEDULE
- LAMP TYPE REQUIRED IN FIXTURE ____SEE SCHEDULE ON DRAWINGS
- NUMBER OF LAMPS IN FIXTURE ____SEE SCHEDULE ON DRAWINGS
- BALLAST TYPE USED IN FIXTURE ____SEE SCHEDULE ON DRAWINGS
- NUMBER OF BALLASTS IN FIXTURE ____SEE SCHEDULE ON DRAWINGS
- TOTAL WATTAGE PER FIXTURE ____SEE SCHEDULE ON DRAWINGS
- TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED ____8055 VS 11,080
- 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:

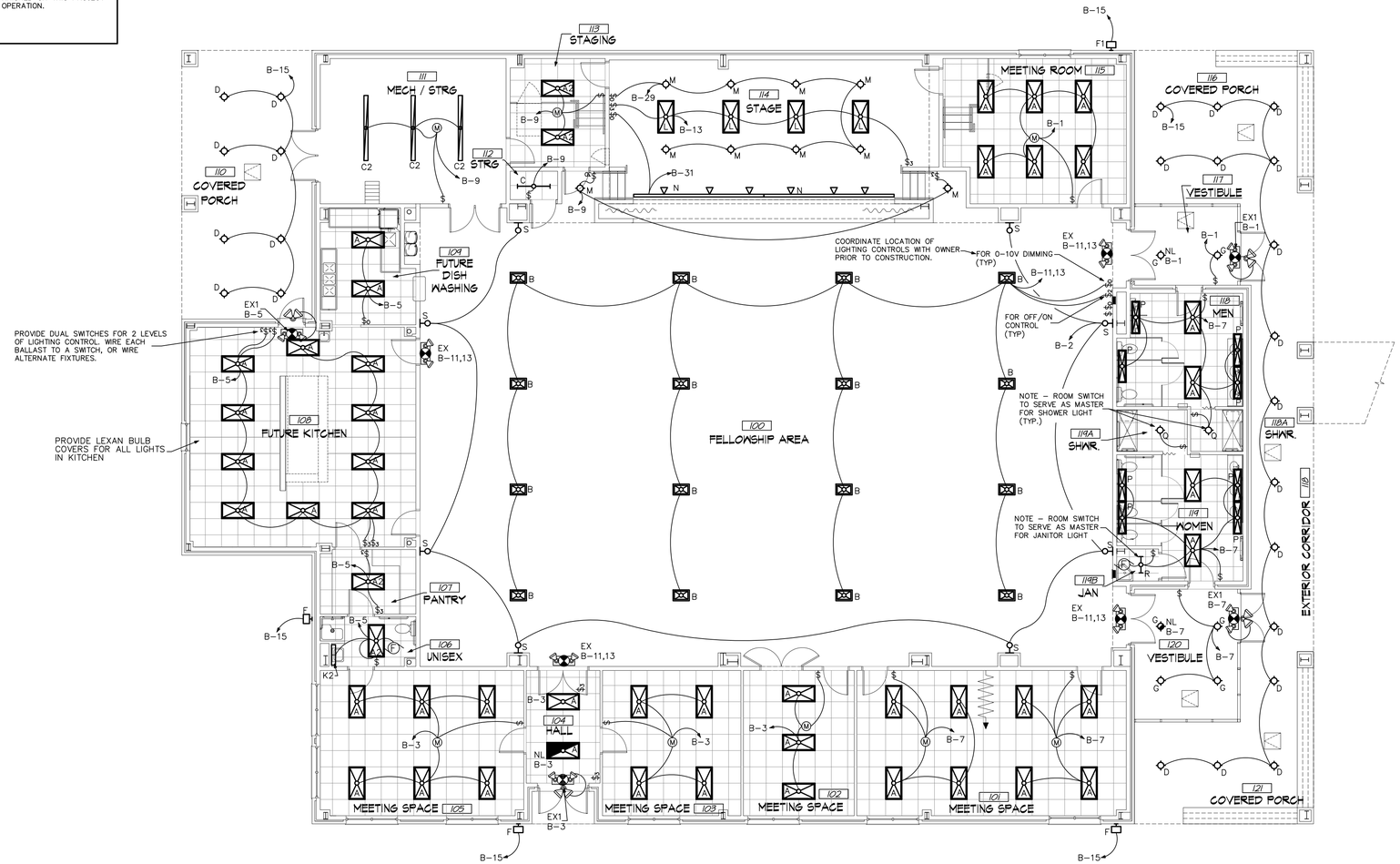
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA ENERGY CODE 2009, CHAPTER 5.

SIGNED: _____

NAME: _____

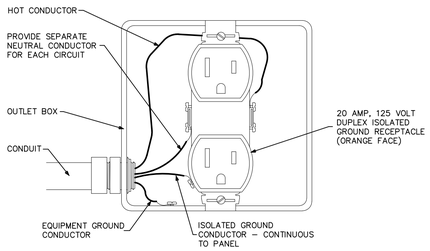
TITLE: _____

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

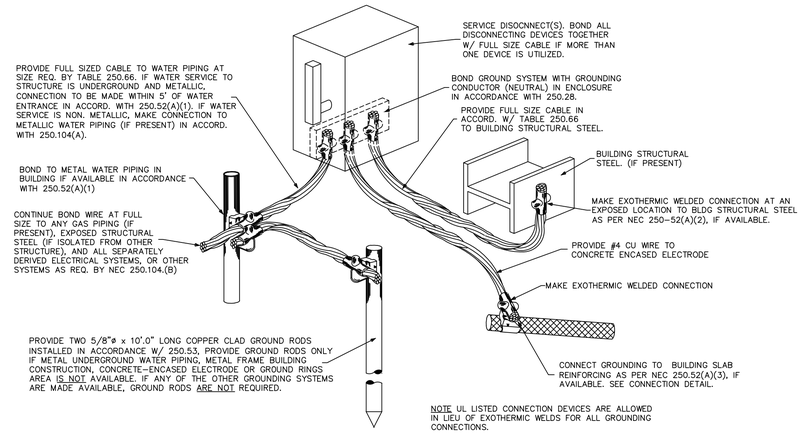


1 FLOOR PLAN - LIGHTING

SCALE: 1/8"=1'-0"

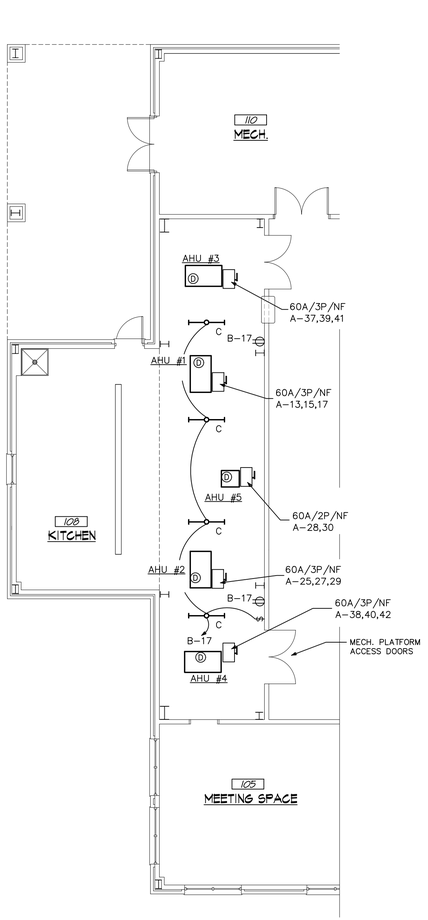


4 I. G. RECEPTACLE DETAIL
NO SCALE

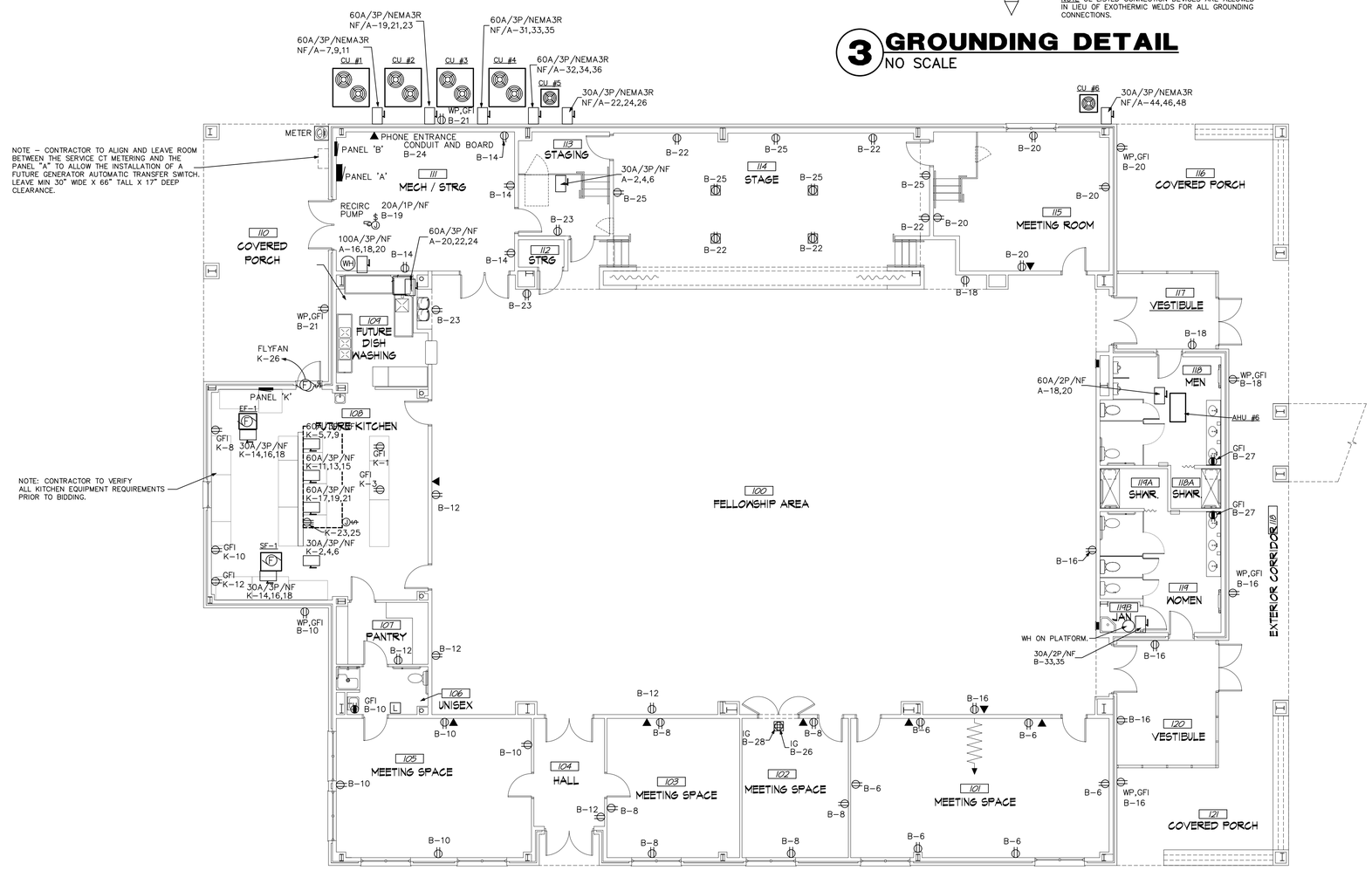


NOTE UL LISTED CONNECTION DEVICES ARE ALLOWED IN LIEU OF EXOTHERMIC WELDS FOR ALL GROUNDING CONNECTIONS.

3 GROUNDING DETAIL
NO SCALE



2 MECHANICAL PLATFORM- ELECTRICAL
SCALE: 1/8"=1'-0"



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

PANEL SCHEDULE K

225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 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	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	HOT WELL	480	480	------	------								2
3	20/1	#12	#12	#12	1/2	CHAL	COLD WELL	0	1200	------	------								4
5								480	------	480	------	CONV OVEN	CHAL	1/2	#12	---	#12	20/3	6
7	50/3	#8	---	#10	3/4	CHAL	FRYER	0	------	1200	------								8
9								0	------	------	6000								10
11								0	6000	------	------								12
13	25/3	#10	---	#10	1/2	CHAL	GRIDDLE	1581	1581	------	------	REFRIGERATOR	CHAL	1/2	#12	#12	#12	20/1	14
15								0	------	6000	------								16
17								1581	------	1581	------	FREEZER	CHAL	1/2	#12	#12	#12	20/1	18
19	50/3	#8	---	#10	3/4	CHAL	RANGE	0	------	------	3004								20
21								1581	------	------	1581	ICE MACHINE	CHAL	1/2	#12	#12	#12	20/1	22
23								0	3004	------	------								24
25	20/2	#12	---	#12	1/2	CHAL	WARMING CABINET	0	972	------	------								26
27							SPACE	0	------	3004	------	HOOD FANS	CHAL	1/2	#12	---	#12	20/3	28
29							SPACE	0	------	972	------								30
31							SPACE	0	------	------	5667								32
33							SPACE	0	5667	------	972								34
35							SPACE	0	6084	------	------								36
37							SPACE	0	------	5667	------								38
39							SPACE	0	------	6084	------	DISHWASHER	CHAL	3/4	#10	---	#6	60/3	40
41							SPACE	0	------	------	1800								42
								0	------	6084	------								44
								0	1800	------	------								46
								180	180	------	------	FLY FAN	CHAL	1/2	#12	#12	#12	20/1	48

WIRE/CONDUIT KEY 1234	WIRING TYPE C-CU WIRE	INSULATION H-THWN	CONDUIT TYPE A-EMT	TEMP RATING L-78-86 Deg. F.	26968	24988	26308
1 TEMP RATING, 2 CONDUIT TYPE, 3 INSULATION, 4 WIRING TYPE					78,264		

PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 18.7 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 217.4 AMPS

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

PANEL K DIVERSIFICATION CALCULATIONS

MOTOR LOADS AT 100%	-	3096
PLUS 25% OF THE LARGEST MOTOR	-	414
KITCHEN EQUIPMENT (11) 75167 X 0.65	-	48859
TOTAL DIVERSIFIED PANEL LOAD	-	52369
LOAD AT 120/208V/3-PHASE/4-WIRE	-	145.5A

PANEL SCHEDULE A

600 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 600A. M.C.B., 22000 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	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1								7915	8915	------	------								2
3	125/3	#1	#1	#6	1-1/2	CHAL	PANELBOARD 'B'	2241	26968	------	------								4
5								7474	------	9724	------								6
7								2061	------	24988	------	PANELBOARD 'K'	CHAL	2	#6	#3/0	#3/0	200/3	8
9	60/3	#6	---	#10	3/4	CHAL	CONDENSING UNIT 1	7320	------	------	16570								10
11								1581	------	------	26308								12
13								0	4056	------	------								14
15	50/3	#8	---	#10	3/4	CHAL	AIR HANDLER 1	0	552	------	------								16
17								0	------	4056	------								18
19	60/3	#6	---	#10	3/4	CHAL	CONDENSING UNIT 2	0	------	552	------	LIFT	CHAL	1/2	#12	---	#12	20/3	20
21								0	------	------	4056								22
23								0	------	------	552								24
25	50/3	#8	---	#10	3/4	CHAL	AIR HANDLER 2	0	3772	------	------								26
27								0	0	------	------	SPACE							28
29								0	------	3772	------	SPACE							30
31								0	------	------	3772								32
33	50/3	#8	---	#10	3/4	CHAL	CONDENSING UNIT 3	0	------	3562	------								34
35								0	------	------	3562								36
37								0	3772	------	------								38
39	50/3	#8	---	#10	3/4	CHAL	AIR HANDLER 3	0	3052	------	------								40
41								0	------	3772	------								42
43								0	------	3052	------								44
45	100/3	#3	---	#8	1	CHAL	WATER HEATER	0	9000	------	------								46
47								0	1332	------	------								48
49							SPACE	0	------	9000	------								50
51							SPACE	0	------	1332	------								52
53							SPACE	0	------	------	0								54
								0	------	------	0	SPACE							

WIRE/CONDUIT KEY 1234	WIRING TYPE C-CU WIRE	INSULATION H-THWN	CONDUIT TYPE A-EMT	TEMP RATING L-78-86 Deg. F.	80777	79835	85563
1 TEMP RATING, 2 CONDUIT TYPE, 3 INSULATION, 4 WIRING TYPE					246,175		

PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 84.6 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 683.8 AMPS

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

PANEL SCHEDULE B

125 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, M.L.O., 10000 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	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT KEYS	C.	GND	NEUTRAL	COND.	BKR.	##
1	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1275	1275	------	------								2
3	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	232	232	------	------	WALL SCONCE ACCENT LTG	CHAL	1/2	#12	#12	#12	20/1	4
5	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1126	------	1126	------								6
7	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	360	------	360	------	HOOD LTS/ CONTROLS	CHAL	1/2	#12	#12	#12	20/1	8
9	20/1	#12	#12	#12	1/2	CHAL	LIGHTING	1060	------	------	1060								10
11								1080	------	------	1080	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	12
13	20/2	#12	---	#12	1/2	CHAL	HIGH BAY LED LIGHTS	980	980	------	------								14
15	20/1	#12	#12	#12	1/2	CHAL	OUTSIDE LIGHTING *	1080	1080	------	------	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	16
17	20/1	#12	#12	#12	1/2	CHAL	MECHANICAL PLATFORM POWER	800	------	800	------								18
19	20/1	#12	#12	#12	1/2	CHAL	RECIRC PUMP	900	------	900	------	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	20
21	20/1	#12	#12	#12	1/2	CHAL	OUTSIDE RECEPTACLES	0	------	------	1000								22
23	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	720	------	------	720	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	24
25	20/1	#12	#12	#12	1/2	CHAL	RECEPTACLES	720	720	------	------								26
27	20/1	#12	#12	#12	1/2	CHAL	RESTROOM RECEPTACLES	768	------	768	------								28
29	20/1	#12	#12	#12	1/2	CHAL	STAGE LIGHTS	720	------	720	------	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	30
31	20/1	#12	#12	#12	1/2	CHAL	TRACKS	900	------	------	900								32
33	30/2	#10	---	#10	1/2	CHAL	WATER HEATER P13	720	------	------	720	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	34
35								360	------	360	------								36
37							SPACE	1080	------	1080	------	RECEPTACLES	CHAL	1/2	#12	#12	#12	20/1	38
39							SPACE	1080	------	------	1080								40
41							SPACE	180	------	------	180	TELEPHONE SERIVCE	CHAL	1/2	#12	#12	#12	20/1	42
								360	360	------	------								44
								1000	1000	------	------	A.V RACK	CHAL	1/2	#12	#12	#12	20/1	46
								360	------	360	------								48
								1000	------	1000	------	A.V RACK	CHAL	1/2	#12	#12	#12	20/1	50
								1400	------	------	1400								52
								180	------	------	180	FACP	CHAL	1/2	#12	#12	#12	20/1	54
								0	0	------	------	SPACE							56
								0	------	2250	------	SPACE							58
								0	------	------	0	SPACE							60
								0	0	------	------	SPACE							62
								0	------	0	------	SPACE							64
								0	------	------	0	SPACE							66

WIRE/CONDUIT KEY 1234	WIRING TYPE C-CU WIRE	INSULATION H-THWN	CONDUIT TYPE A-EMT	TEMP RATING L-78-86 Deg. F.	9147	9724	10570
1 TEMP RATING, 2 CONDUIT TYPE, 3 INSULATION, 4 WIRING TYPE					29,441		

PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 67.9 AMPS
NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 81.8 AMPS

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

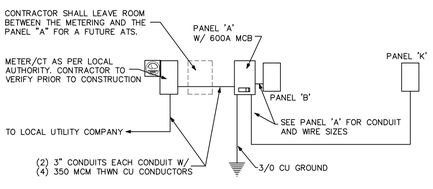
PANEL NOTES:
* - CIRCUIT TO BE CONTROLLED VIA PHOTOCELL

PANEL B DIVERSIFICATION CALCULATIONS

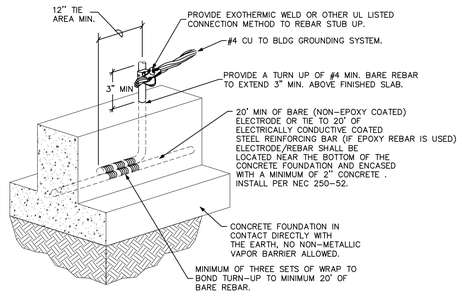
RECEPTACLES (55) - 9900 VA TOTAL FIRST 10 KVA AT 100%	-	9900
LIGHTING - 9641 X 125%	-	12051
MOTOR LOADS AT 100%	-	180
PLUS 25% OF THE LARGEST MOTOR	-	45
MISC NON-CONTINUOUS LOADS AT 100%	-	9720
TOTAL DIVERSIFIED PANEL LOAD	-	31896
LOAD AT 120/208V/3-PHASE/4-WIRE	-	88.6A

PANEL A DIVERSIFICATION CALCULATIONS

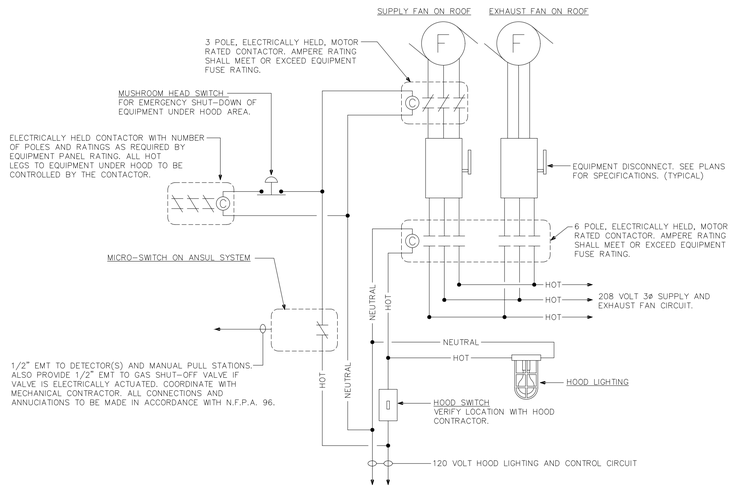
RECEPTACLES (55) - 9900 VA TOTAL FIRST 10 KVA AT 100%	-	9900
LIGHTING - 9409 X 125%	-	11761
HVAC LOAD AT 100%	-	110044
MOTOR LOADS AT 100%	-	3276
PLUS 25% OF THE LARGEST MOTOR	-	954
MISC NON-CONTINUOUS LOADS AT 100%	-	11376
KITCHEN EQUIPMENT (12) 102167 X 0.65	-	66409
TOTAL DIVERSIFIED PANEL LOAD	-	213720
LOAD AT 120/208V/3-PHASE/4-WIRE	-	593.7A



1 ELECTRICAL SERVICE RISER
NO SCALE



2 GROUNDING DETAIL
NO SCALE



3 HOOD CONTROL WIRING DETAIL
NO SCALE