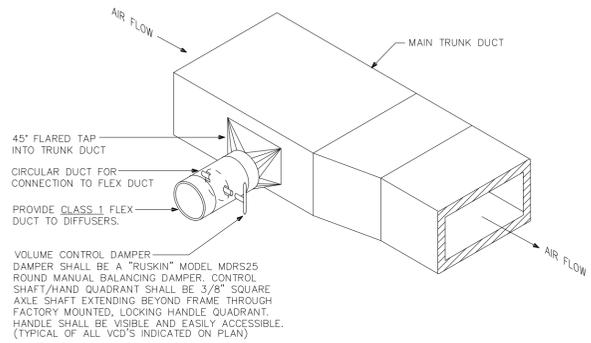
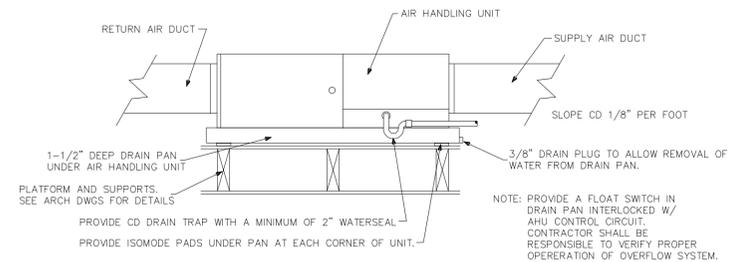


RETURN GRILLE SCHEDULE				
DESIGNATES LABEL FOR GRILLE TYPE	FILTER SHALL BE PROVIDED AT UNIT.			
DESIGNATES CFM QUANTITY FOR GRILLE				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 - 400	LOUVER FACE
2	TITUS 355FL	12X12	400 - 600	LOUVER FACE
3	TITUS 355FL	18X18	605 - 1200	LOUVER FACE
4	TITUS 355FL	24X24	1205 - 1450	LOUVER FACE
5	TITUS 355FL	24X48	1500 - 2250	LOUVER FACE
6	TITUS 50FF	36X36	2300 - 5000	EGGCRATE FACE

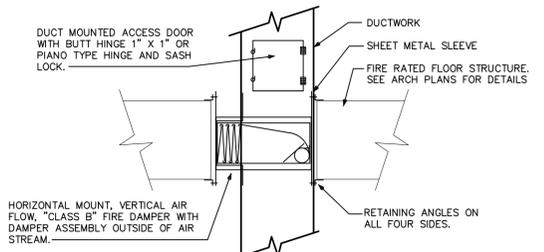
SUPPLY DIFFUSER SCHEDULE				
DESIGNATES LABEL FOR DIFFUSER TYPE	ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.			
DESIGNATES CFM QUANTITY FOR DIFFUSER				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS TDC-AA	6"ø	0 - 125	12X12 LOUVERED 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 - 350	24X24 LOUVERED FACE
E	TITUS TDC-AA	12"ø	355 - 475	24X24 LOUVERED FACE
F	TITUS S300FS	14X6	130 - 275	DIRECT DUCT MOUNTED REGISTER
G	TITUS 300RL	10X6	155 - 200	SIDEWALL REGISTER



4 DUCT TAP DETAILS NO SCALE

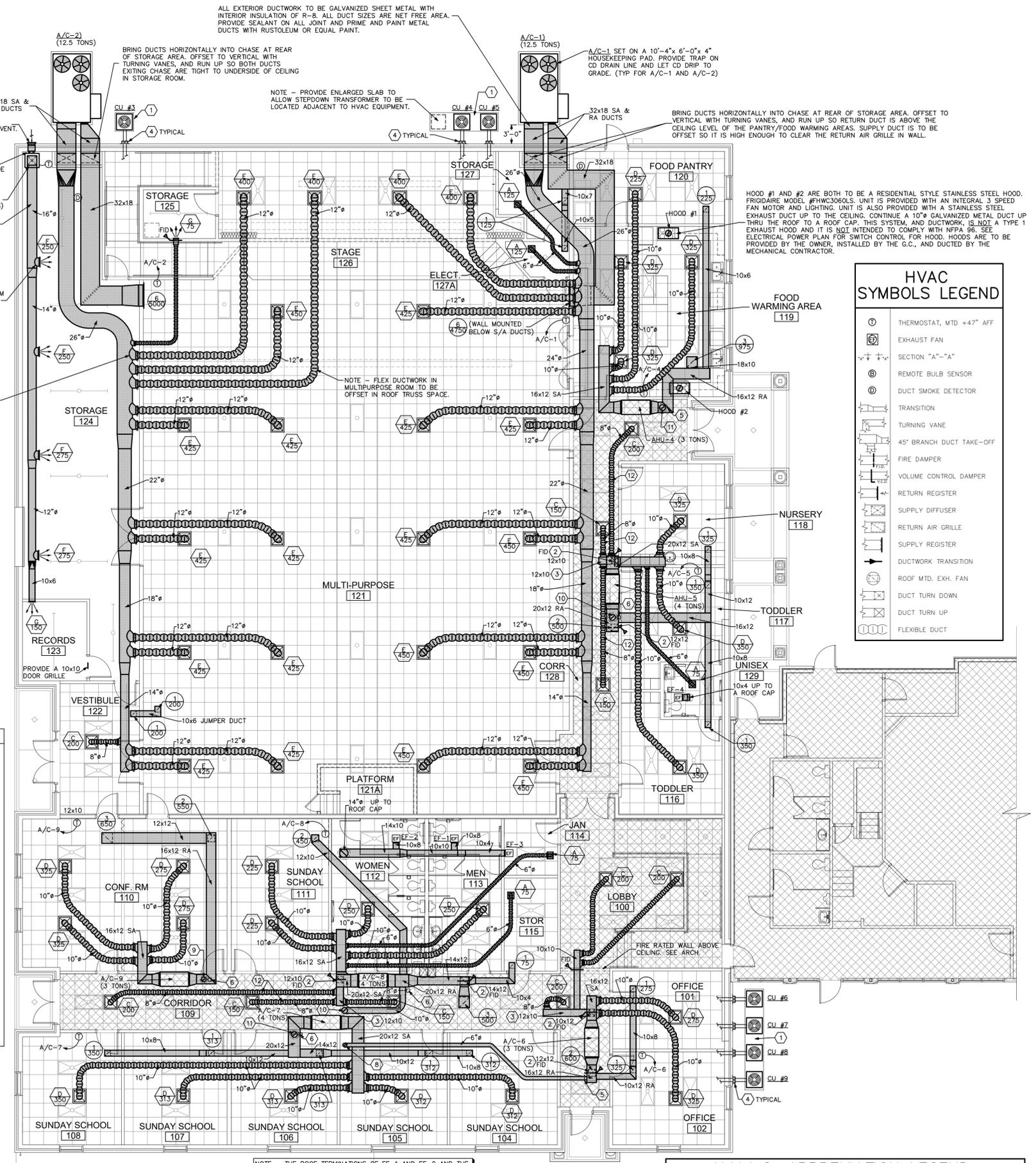


3 A.H.U. MOUNTING DETAIL NO SCALE



2 FIRE DAMPER DETAIL NO SCALE

- MECHANICAL PLAN KEYED NOTES**
- PROVIDE 4" HOUSEKEEPING PAD FOR ALL CONDENSING UNITS. PAD TO BE FREESTANDING FROM BUILDING SLAB.
 - DROP DUCTWORK DOWN THRU FIRE RATED ASSEMBLY ABOVE THE CORRIDOR. SEE ARCHITECTURAL SHEET A4.1 FOR DETAILS. PROVIDE A 1 HOUR DAMPER AT PENETRATION THAT CONFORMS TO UL# U305 ASSEMBLY.
 - DUCT AND DUCT TAPS BELOW FIRE RATING IN SPACE BETWEEN FIRE RATING AND ACOUSTICAL CEILING.
 - PROVIDE REFRIG. PIPING SIZED AS PER MANUFACTURER'S REQUIREMENTS. OFFSET LINES UP WALL IN A GALVANIZED METAL LINE COVER AND THEN OFFSET TO AHU IN CEILING SPACE.
 - PROVIDE A MANUAL VOLUME CONTROL DAMPER FOR ADJUSTMENT OF OUTSIDE AIR. ADJUST TO VALUE SHOWN ON O/A CALCS ON M2.
 - PROVIDE A TWO POSITION MOTORIZED OUTSIDE AIR DAMPER. SET DAMPER TO A MINIMUM FLOW SETTING SHOWN ON OUTSIDE AIR CALCS ON M2. PROVIDE A CO2 MONITOR TO MONITOR MAIN RETURN AIR BEFORE THE OUTSIDE AIR IS INTRODUCED, AND WIRE MONITOR SO WHEN CO2 LEVEL RISES. MOTORIZED OUTSIDE AIR DAMPER IS TO OPEN TO ALLOW AIRFLOW OF MAXIMUM VALUE SHOWN ON OUTSIDE AIR CALCS ON SHEET M2.
 - RETURN AIR FOR AIR HANDLER IS TO BE RUN ON TOP OF AHU AND THEN SET DOWN TO THE R/A. IT IS BROKEN OFF ON TOP FOR CLARITY OF DRAWING.
 - 6"ø OUTSIDE AIR DUCT UP TO A ROOF CAP.
 - 8"ø OUTSIDE AIR DUCT UP TO A ROOF CAP.
 - 10"ø OUTSIDE AIR DUCT UP TO ROOF CAP.
 - 12"ø OUTSIDE AIR DUCT UP TO ROOF CAP.
 - FLEX DUCTWORK IN CEILING SPACE BELOW FIRE RATED ASSEMBLY.



HVAC SYMBOLS LEGEND	
(T)	THERMOSTAT, MTD +47" AFF
(E)	EXHAUST FAN
(S)	SECTION "A"- "A"
(B)	REMOTE BULB SENSOR
(D)	DUCT SMOKE DETECTOR
(T)	TRANSITION
(V)	TURNING VANE
(B)	45° BRANCH DUCT TAKE-OFF
(F)	FIRE DAMPER
(V)	VOLUME CONTROL DAMPER
(R)	RETURN REGISTER
(S)	SUPPLY DIFFUSER
(R)	RETURN AIR GRILLE
(S)	SUPPLY REGISTER
(T)	DUCTWORK TRANSITION
(R)	ROOF MTD. EXH. FAN
(D)	DUCT TURN DOWN
(U)	DUCT TURN UP
(F)	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	MFR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER	F/A	FRESH AIR
F.F.	FINISH FLOOR	REG.	REGISTER	S.P.	SAFE PAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	CD.	CONDENSATE DRAIN

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

PACKAGE HEAT PUMP WITH BACK UP ELECTRICAL HEAT															INTEGRATED SUPPLEMENTAL ELECTRIC HEATING												
SYS. LABEL	MANUFACTURER	MODEL NO.	TOTAL CAPACITY COOLING	SENSIBLE CAPACITY COOLING	TOTAL CAPACITY HEATING	TOTAL CFM	O/A CFM	E.S.P.	FAN SPEED	COMP. RLA	OUTDOOR FAN FLA	INDOOR FAN HP	VOLTAGE	MOCP	EER/SEER	WEIGHT	HEATER KW	VOLTAGE	NOTES								
A/C-1	CARRIER	50TC0D14A1M6-0F20	142,000	100,800	89,000	5,000	SEE SCH.	.40"	519	(2)Ø10.6	(1)Ø0.8	3.4A	480V/3Ø	70	10.6	1,490 lbs.	26.5	480V/3Ø	1 THRU 10								
A/C-2	CARRIER	50TC0D14A1M6-0F20	142,000	100,800	89,000	5,000	SEE SCH.	.40"	519	(2)Ø10.6	(1)Ø0.8	3.4A	480V/3Ø	70	10.6	1,490 lbs.	26.5	480V/3Ø	1 THRU 10								
GENERAL NOTES:			ABBREVIATION LEGEND:									SPECIFIC NOTES:															
<ul style="list-style-type: none"> ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP. APPROVED EQUALS SHALL BE TRANE, LENNOX AND YORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS. 			<ul style="list-style-type: none"> O/A - OUTSIDE AIR HP - HORSE POWER RLA - RUNNING LOAD AMPS FLA - FULL LOAD AMPS 									<ul style="list-style-type: none"> MOCP - MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE) E.S.P. - EXTERNAL STATIC PRESSURE EER - ENERGY EFFICIENCY RATIO SEER - SEASONAL ENERGY EFF. RATIO 								<ul style="list-style-type: none"> 1) CONFIGURE UNITS FOR HORIZONTAL OPERATION. 2) PROVIDE OUTDOOR AIR ECONOMIZER WITH ENTHALPY CONTROLLER. PROVIDE POWER VENTILATED EXHAUST FAN FOR WHEN ECONOMIZER IS IN OPERATION. 3) ELECTRONIC PROGRAMMABLE THERMOSTAT. 4) COMPRESSOR TIME DELAY. 5) FILTER DOOR ACCESS PANEL KIT. 6) PROVIDE (1) YEAR WARRANTY ON ALL PARTS AND LABOR AND (5) YEAR WARRANTY ON COMPRESSOR. 7) PROVIDE 1" FARR 30/30 THROWAWAY FILTERS. (1) SET DURING CONSTRUCTION AND (1) SET AFTER FINAL INSPECTION. 8) PROVIDE ALL NECESSARY CONTACTORS, RELAYS, MOTOR STARTERS, ETC. FOR A COMPLETE OPERATING UNIT. 9) CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. 10) OUTSIDE AIR OPENING OF RTU SHALL BE PROVIDED WITH A MOTORIZED O/A DAMPER TO BE CLOSED WHEN COMPRESSOR IS NOT RUNNING. 							

HEAT PUMP											AIR COOLED HEAT PUMP SCHEDULE											AIR HANDLING UNIT				INTEGRATED SUPPLEMENTAL ELECTRIC HEATING							
CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY COOLING	SENSIBLE CAPACITY COOLING	TOTAL CAPACITY HEATING	COMP. RLA	FAN FLA	VOLTAGE	MOCP	EER/SEER	WEIGHT	AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	O/A CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	WEIGHT	HEATER KW	VOLTAGE	NOTES											
CU #3	CARRIER 25HBC336A006	33,800	25,600	26,480	5.8	0.6	480V/3Ø	20A	13.0	203 lbs.	AHU #3	CARRIER FX4CNF036008	1,200	SEE SCH	0.3"	HIGH	1/2 HP	240V/1Ø	144 lbs.	8.0 K.W.	480V/3Ø	1 THRU 7											
CU #4	CARRIER 25HBC336A006	33,800	25,600	26,480	5.8	0.6	480V/3Ø	20A	13.0	203 lbs.	AHU #4	CARRIER FX4CNF036008	1,200	SEE SCH	0.3"	HIGH	1/2 HP	240V/1Ø	144 lbs.	8.0 K.W.	480V/3Ø	1 THRU 7											
CU #5	CARRIER 25HBB348A006	47,500	35,360	35,850	6.2	0.6	480V/3Ø	20A	13.0	295 lbs.	AHU #5	CARRIER FX4CNF048010	1,600	SEE SCH	.25"	HIGH	3/4 HP	240V/1Ø	168 lbs.	10 KW	480V/3Ø	1 THRU 7											
CU #6	CARRIER 25HBC336A006	33,800	25,600	26,480	5.8	0.6	480V/3Ø	20A	13.0	203 lbs.	AHU #6	CARRIER FX4CNF036008	1,200	SEE SCH	0.3"	HIGH	1/2 HP	240V/1Ø	144 lbs.	8.0 K.W.	480V/3Ø	1 THRU 7											
CU #7	CARRIER 25HBB348A006	47,500	35,360	35,850	6.2	0.6	480V/3Ø	20A	13.0	295 lbs.	AHU #7	CARRIER FX4CNF048010	1,600	SEE SCH	.25"	HIGH	3/4 HP	240V/1Ø	168 lbs.	10 KW	480V/3Ø	1 THRU 7											
CU #8	CARRIER 25HBB348A006	47,500	35,360	35,850	6.2	0.6	480V/3Ø	20A	13.0	295 lbs.	AHU #8	CARRIER FX4CNF048010	1,600	SEE SCH	.25"	HIGH	3/4 HP	240V/1Ø	168 lbs.	10 KW	480V/3Ø	1 THRU 7											
CU #9	CARRIER 25HBC336A006	33,800	25,600	26,480	5.8	0.6	480V/3Ø	20A	13.0	203 lbs.	AHU #9	CARRIER FX4CNF036008	1,200	SEE SCH	0.3"	HIGH	1/2 HP	240V/1Ø	144 lbs.	8.0 K.W.	480V/3Ø	1 THRU 7											
GENERAL NOTES:			ABBREVIATION LEGEND:									SPECIFIC NOTES:																					
<ul style="list-style-type: none"> 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 CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS. 			<ul style="list-style-type: none"> O/A - OUTSIDE AIR HP - HORSE POWER RLA - RUNNING LOAD AMPS FLA - FULL LOAD AMPS 									<ul style="list-style-type: none"> MOCP - MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE) E.S.P. - EXTERNAL STATIC PRESSURE EER - ENERGY EFFICIENCY RATIO SEER - SEASONAL ENERGY EFF. RATIO 											<ul style="list-style-type: none"> 1) SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS. 2) INSULATE REFRIGERANT SUCTION LINE WITH 3/4" ARMAFLEX OR APPROVED EQUAL. 3) PROVIDE FIELD INSTALLED ACCESSORIES, AND 5 MINUTE TIME DELAY COMPRESSOR LOCKOUT. 4) PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR. 5) PROVIDE A 480V/3Ø STRIP HEATER WITH AN INTEGRAL 480V/1Ø TO 240V/1Ø STEPDOWN TRANSFORMER TO FEED 240V/1Ø AHU FAN MOTOR. WARREN CO. OR EQUAL. 6) AIR HANDLING UNIT TO BE CONFIGURED FOR ACCESS FROM WALKWAY ABOVE FIRE RATED COORIDOR. STANDARD CONFIGURATION TO BE MODIFIED AS REQUIRED TO ALLOW ACCESS FROM WALKWAY. 7) PROVIDE A NEW SET OF FILTERS UPON COMPLETION OF ALL WORK, PRIOR TO TEST AND BALANCE. 										

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 Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1Ø	1, 2		
EF-2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1Ø	1, 2		
EF-3	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1Ø	1, 2		
EF-4	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1Ø	1, 2		
NOTES: 1) REFER TO ELECTRICAL PLANS FOR CONTROL. 2) PROVIDE A 277V TO 120V STEPDOWN TRANSFORMER EQUAL TO AN ELCO MODEL ETR-277. 300VA RATED CAPACITY. HVAC CONTRACTOR TO PROVIDE, ELECTRICIAN TO INSTALL.												

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 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 OWNER WITH ONE SET OF "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT. CONTRACTOR SHALL ALSO LEAVE AT LEAST ONE SET OF THE MANUFACTURER'S INSTALLATION AND OPERATIONS MANUALS FOR ALL EQUIPMENT PROVIDED ON THE PROJECT.
- ALL PROVIDED MATERIALS SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT. IT IS STRONGLY PREFERRED THAT THE SUBMITTALS BE MADE IN THE FORM OF AN ELECTRONIC SUBMITTAL IN A PDF TYPE FORMAT WHERE ONLY 1 COPY IS REQUIRED.
- ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED 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.
- 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 TITUS, METALAIR, AIRGUIDE. 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. CONTRACTOR SHALL FULLY INSTRUCT OWNER ON HOW TO PROPERLY PROGRAM INSTALLED THERMOSTATS. PROGRAMMABLE THERMOSTAT SHALL BE BY MANUFACTURER OF INSTALLED AIR HANDLING UNIT. IT IS RECOMMENDED THAT DURING OCCUPIED HOURS, THE FANS BE SET TO "ON" IN LIEU OF "AUTO". THERMOSTATS SHALL BE MOUNTED A MAX. OF 48" A.F.F.
- ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS AND TAPS AS PER PLANS REQUIREMENTS.
- PROVIDE FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM FOR INITIAL TESTING. PROVIDE NEW FILTERS IN ALL EQUIPMENT WHEN ALL TESTING AND BALANCING IS COMPLETE, AND PRIOR TO ACCEPTANCE BY OWNER. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN ALL DUCTWORK AND UNITS IF DIRT DAMAGE IS PRESENT IN SYSTEMS WHEN EQUIPMENT IS TURNED OVER TO THE OWNER UPON COMPLETION OF THE WORK.
- PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL RETURN AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON DESIGN SUPPLY OR RETURN PLENUM OF ABOVE 2000 CFM. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT. 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, AHU'S AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (T) FROM SUPPLY GRILLS AND EVAPORATORS. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER BEFORE INSTALLATION.
- ALL INSULATION SHALL 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 SYSTEM.
- 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 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.

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

METHOD OF COMPLIANCE:
Prescriptive Energy Cost Budget

Thermal Zone Zone 3A

Exterior Design Conditions
winter dry bulb 20° F
summer dry bulb 97° F

Interior Design Conditions
winter dry bulb 68° F
summer dry bulb 74° F
relative humidity 52.9%

Building Heating Load 577,000 BTU
Building Cooling Load 564,800 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.

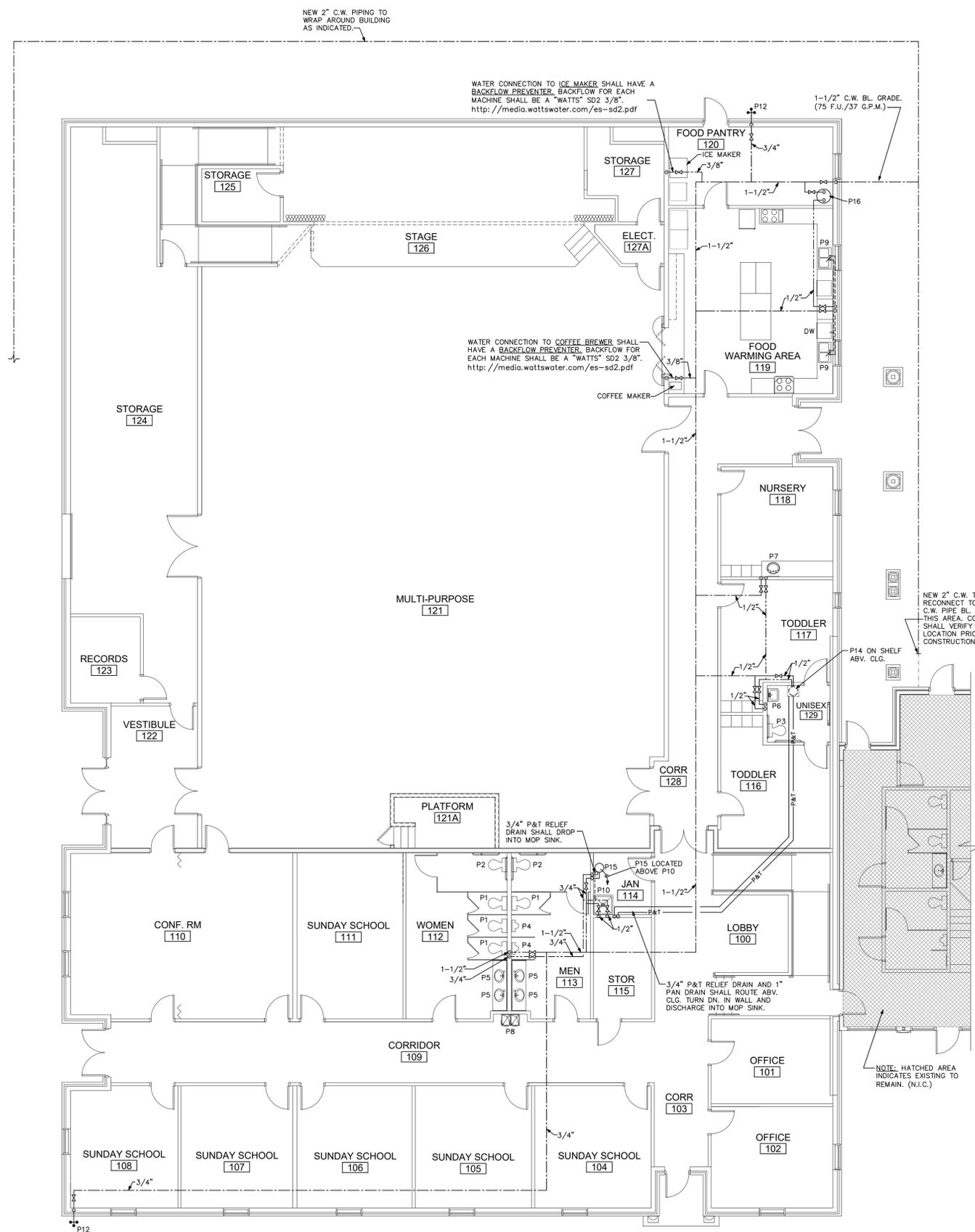
DESIGNER STATEMENT:¹
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Code 2012.

SIGNED: _____
NAME: _____
TITLE: _____

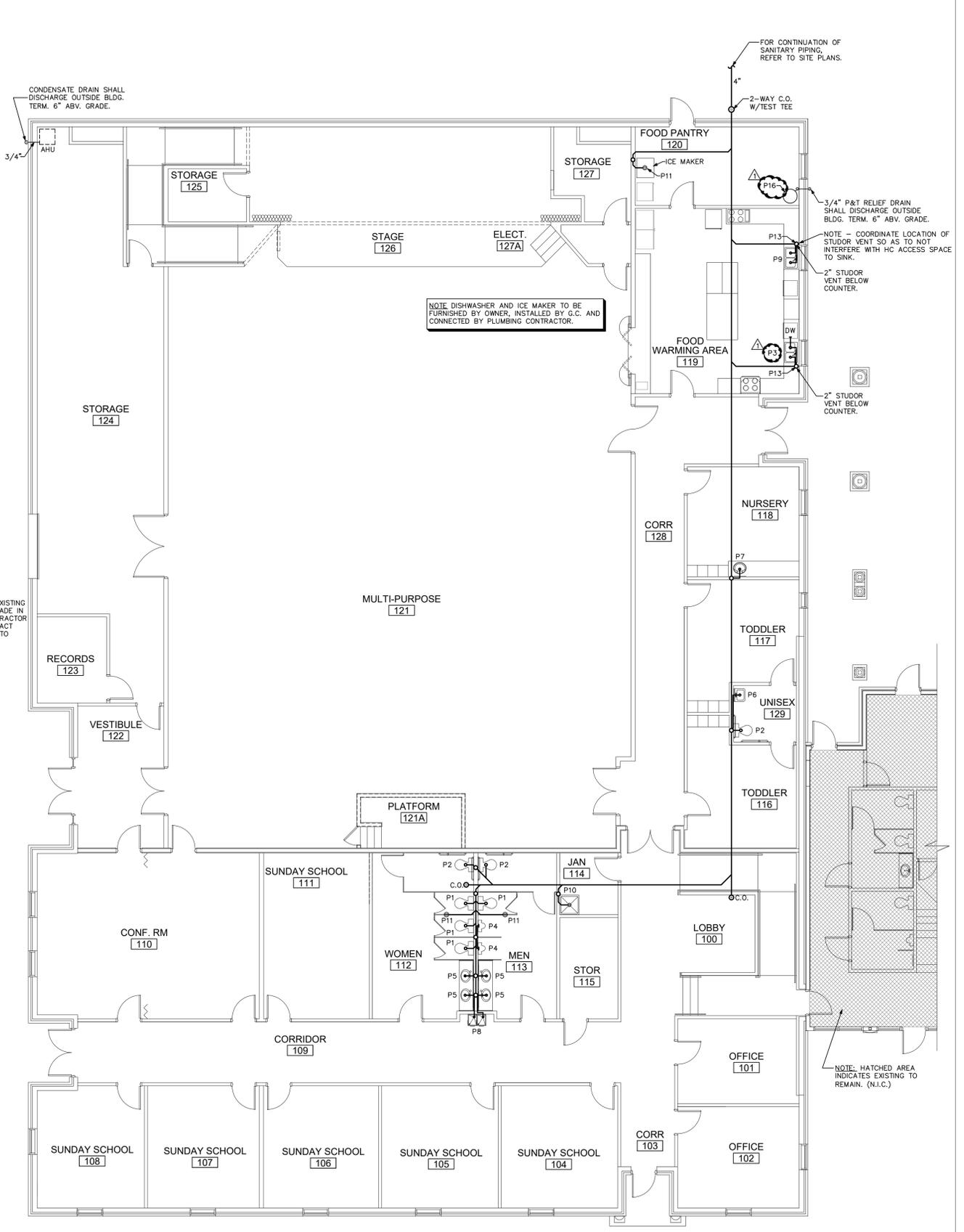
NOTE:
COMPLIANCE TO NC ENERGY SECTION 506 IS MADE BY LIGHTING LEVEL REDUCTION.

OUTSIDE AIR CALCULATIONS														
THE FOLLOWING IS BASED ON 2012 NCMC TABLE 403.3 MINIMUM VENTILATION RATES FOR OUTSIDE AIR REQUIREMENTS														
UNIT LABEL	ROOM	OCCUPANCY CATEGORY	AREA	ESTIMATED MAX. OCCUPANCY	MINIMUM OUTSIDE AIR REQUIRED (CFM)			MAXIMUM OUTSIDE AIR REQUIRED (CFM)						
					AREA CALC	E _s	TOTAL	PEOPLE + AREA CALC	E _s	TOTAL				
A/C-1 & 2	MULTIPURPOSE ASSEMBLY	MULTIUSE ASSEMBLY	4419	100 PEOPLE PER 1,000 S.F./7.5 CFM PER PERSON	(4419 x .06) = 265 AREA TOTAL			(442x7.5) + (4419 x .06) = 3580 PEOPLE AREA TOTAL						
	STAGE	STAGES	685	70 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(685 x .06) = 41 AREA TOTAL			(48x10) + (685 x .06) = 521 PEOPLE AREA TOTAL						
	CORRIDOR	CORRIDOR	200	N/A	(200 x .06) = 12 AREA TOTAL			N/A + (200 x .06) = 12 PEOPLE AREA TOTAL						
	STORAGE	STORAGE	221	N/A	(221 x .12) = 27 AREA TOTAL			N/A + (221 x .12) = 27 PEOPLE AREA TOTAL						
A/C-1 & 2 TOTAL = 345					0.8	345/0.8 = (431)	A/C-1 & 2 TOTAL = 4140					0.8	4140/0.8 = (5175)	
A/C-3	STORAGE	STORAGE	1025	N/A	(1025 x .12) = 123 AREA TOTAL	0.8	123/0.8 = (154)	N/A + (1025 x .12) = 123 PEOPLE AREA TOTAL					0.8	123/0.8 = (154)
A/C-4	FOOD WARMING AREA	KITCHEN	512	5 PEOPLE PER 1,000 S.F./ (N/A)	(512 x .70) = 358 AREA TOTAL			(N/A) + (512 x .70) = 358 PEOPLE AREA TOTAL						
	STORAGE	STORAGE	217	N/A	(217 x .12) = 26 AREA TOTAL			N/A + (217 x .12) = 26 PEOPLE AREA TOTAL						
A/C-4 TOTAL = 384					0.8	384/0.8 = (480)	A/C-4 TOTAL = 384					0.8	384/0.8 = (480)	
A/C-5	NURSERY/TODDLERS	DAYCARE (THROUGH AGE 4)	636	25 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(636 x .18) = 114 AREA TOTAL			(16x10) + (636 x .18) = 274 PEOPLE AREA TOTAL						
	CORRIDOR	CORRIDOR	488	0.06 CFM PER SQ. FT.	(488 x .06) = 29 AREA TOTAL	0.8	143/0.8 = (179)	N/A + (488 x .06) = 29 PEOPLE AREA TOTAL						
A/C-5 TOTAL = 143					0.8	143/0.8 = (179)	A/C-5 TOTAL = 303					0.8	303/0.8 = (379)	
A/C-6	OFFICES	OFFICE	379	5 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(379 x .06) = 23 AREA TOTAL			(2x5) + (379 x .06) = 43 PEOPLE AREA TOTAL						
	CORRIDOR	CORRIDOR	680	0.06 CFM PER SQ. FT.	(680 x .06) = 41 AREA TOTAL			N/A + (680 x .06) = 41 PEOPLE AREA TOTAL						
A/C-6 TOTAL = 64					0.8	64/0.8 = (80)	A/C-6 TOTAL = 84					0.8	84/0.8 = (105)	
A/C-7	CLASSROOMS	CLASSROOMS AGE 9+	1166	35 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(1166 x .12) = 140 AREA TOTAL	0.8	140/0.8 = (175)	(41x10) + (1166 x .12) = 550 PEOPLE AREA TOTAL						
	SUNDAY SCHOOL	CLASSROOMS AGE 9+	295	35 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(295 x .12) = 35 AREA TOTAL			(18x10) + (295 x .12) = 145 PEOPLE AREA TOTAL						
A/C-8	BATHROOMS	BATHROOMS	497	NO DIRECT O/A REQUIREMENT										
	STORAGE	STORAGE	158	N/A	(158 x .12) = 19 AREA TOTAL			N/A + (158 x .12) = 19 PEOPLE AREA TOTAL						
A/C-9	COORDOR	CORRIDOR	605	0.06 CFM PER SQ. FT.	(605 x .06) = 36 AREA TOTAL			(N/A) + (605 x .06) = 36 PEOPLE AREA TOTAL						
	CONFERENCE ROOM	CONFERENCE ROOM	616	50 PEOPLE PER 1,000 S.F./5 CFM PER PERSON	(616 x .06) = 37 AREA TOTAL	0.8	90/0.8 = (113)	(31x5) + (616 x .06) = 186 PEOPLE AREA TOTAL						
A/C-8 TOTAL = 90					0.8	90/0.8 = (113)	A/C-8 TOTAL = 199					0.8	199/0.8 = (249)	
A/C-9 TOTAL = 37					0.8	49/0.8 = (61)	A/C-9 TOTAL = 186					0.8	186/0.8 = (233)	

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



(WATER PIPING)
2 FLOOR PLAN - PLUMBING
 SCALE: 1/8"=1'-0"

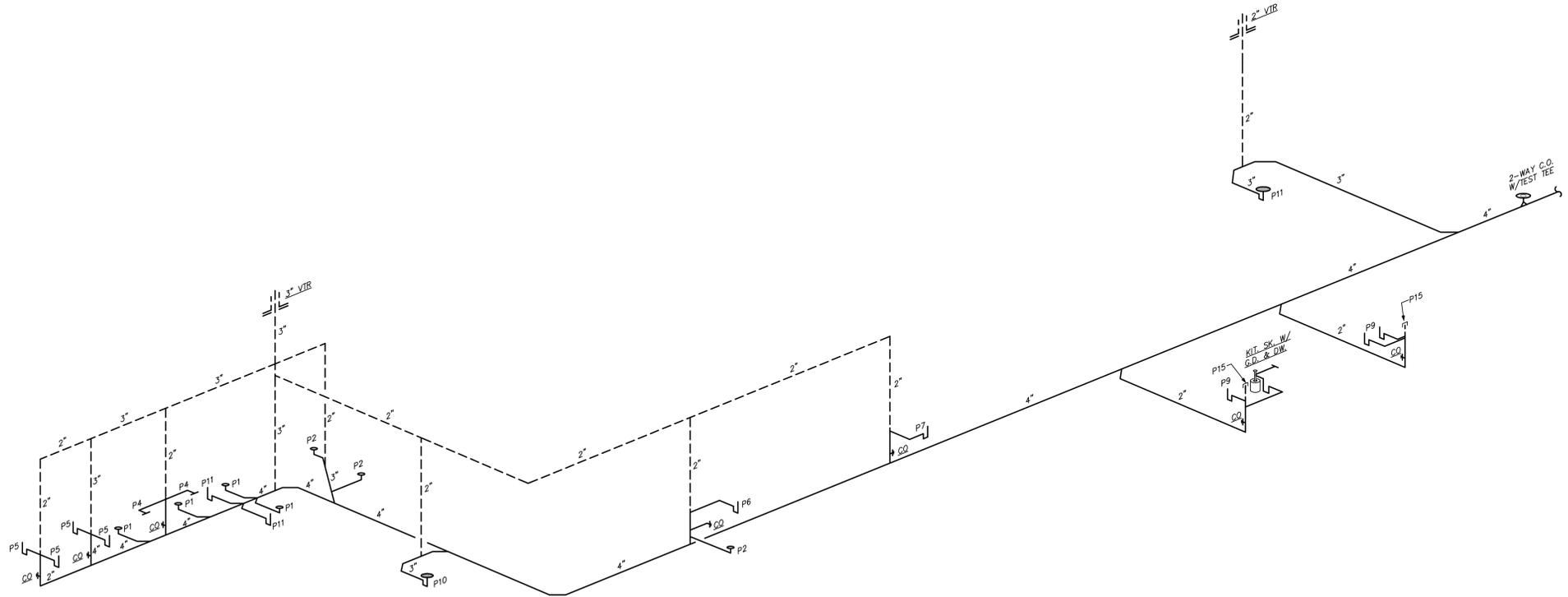


(SANITARY PIPING)
1 FLOOR PLAN - PLUMBING
 SCALE: 1/8"=1'-0"

PLUMBING FIXTURE SCHEDULE

<p>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>
<p>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>
<p>P-3 (DOUBLE BOWL STAINLESS STEEL SINK - NON HANDICAPPED) SHALL BE A "JUST" MODEL DL-2133-A-CR, 22"x33"x8" DOUBLE BOWL, SEAMLESS DIE-DRAWN CONSTRUCTION OF TYPE 304, 18-8 STAINLESS STEEL. INTERIOR AND TOP SURFACES POLISHED TO A NON-POROUS HAND-BLENDED JUST FINISH WITH HIGHLIGHTED BOWL RIM. FULLY COATED UNDERSIDE INSULATES FOR SOUND, AND REDUCES CONDENSATION. STRAIGHT-SIDED COMPARTMENT WITH 1 3/4" RADIUS CORNERS PROVIDES GREATER CAPACITY. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH 300 SERIES STAINLESS STEEL MOUNTING CHANNELS. DRAIN PUNCH #35 CENTERED FOR JUST J-35 UNLESS OTHERWISE SPECIFIED. PROVIDE 4TH HOLE IN SINK FOR SPRAY ASSEMBLY. FAUCET SHALL BE A "JUST" MODEL JWF-201. * http://www.justmfg.com/PDF/1-50.pdf * http://www.justmfg.com/PDF/7-119.pdf</p>
<p>P-4 (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>
<p>P-5 (HANDICAPPED COUNTER TOP LAVATORY W/WATERED FAUCET) SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE A BRADLEY "AERADA 90-75 SERIES METERING FAUCET" MODEL SS3-053 WITH 4" CENTERS. UNIT IS ADA COMPLIANT AND 0.5 GPM WITH A 10 SECOND OPERATING CYCLE. PRODUCTIONS UNDER .75 GALLONS PER CYCLE. PROVIDE A BRADLEY VERNATHERM THERMOSTATIC MIXING VALVE TO DELIVER TEMPERED WATER AT A TEMPERATURE NOT TO EXCEED 105 DEGREES. GRID DRAIN: OFFSET PERFORATED WHEELCHAIR LAVATORY DRAIN ASSEMBLY WITH 1-1/2" TAILPIECE. MCGUIRE #155WC. PROVIDE PROTECTIVE INSULATION ON DRAIN AND HOT WATER LINE TO MEET HANDICAP CODE REQUIREMENTS ON ALL INSTALLATIONS WITH EXPOSED PIPING. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_90.pdf * http://www.bradleycorp.com/products/techdata/3000.pdf</p>
<p>P-6 (HANDICAPPED WALL HUNG LAVATORY) SHALL BE AN AMERICAN STANDARD MISSOURI LAVATORY MODEL 0436.008US. VITREOUS CHINA. WALL MOUNT WITH CONCEALED ARMS SUPPORT. PROVIDE AN AMERICAN STANDARD MONTEREY MODEL 6531.170 CENTERSET FAUCET WITH 4" WRIST BLADE HANDLES. WATER PIPING AND P-TRAP SHALL BE COVERED WITH AN UNDERSINK PROTECTIVE PIPE COVER KIT BY TRUEBRO (HTTP://WWW.TRUEBRO.COM) OR APPROVED EQUAL. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_4486.pdf * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_428.pdf</p>
<p>P-7 (COUNTER TOP LAVATORY) SHALL BE AN AMERICAN STANDARD MODEL CADET MODEL 0419.888 VITREOUS CHINA SELF-RIMMING. FAUCET SHALL BE AN AMERICAN STANDARD HERITAGE MODEL 7831.000 W/NON-HANDICAPPED HANDLES MODEL 352H. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_95.pdf * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_1313.pdf</p>
<p>P-8 (HANDICAPPED ELECTRIC WATER COOLER COMBINATION H/A/O) SHALL BE AN ELKAY MODEL EMABFTL8C. SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS. MODEL EMABFTL8C, 8.8 GPH, 4.0 FLA AT 120 VOLT. * http://www.elkay.com/cps/rde/xber/elkay/12-53B_EMABFTL8C_EMABFTLDDC.pdf</p>
<p>P-9 (HANDICAPPED DOUBLE BOWL STAINLESS STEEL SINK) SHALL BE A "JUST" MODEL DL-ADA-1933-A-CR, 19"x33"x6-1/2" DOUBLE BOWL, SEAMLESS DIE-DRAWN CONSTRUCTION OF TYPE 304, 18-8 STAINLESS STEEL. INTERIOR AND TOP SURFACES POLISHED TO A NON-POROUS HAND-BLENDED JUST FINISH WITH HIGHLIGHTED BOWL RIM. FULLY COATED UNDERSIDE INSULATES FOR SOUND, AND REDUCES CONDENSATION. STRAIGHT-SIDED COMPARTMENT WITH 1 3/4" RADIUS CORNERS PROVIDES GREATER CAPACITY. SELF-RIMMING TOP MOUNT GRIP-RIM PLUS WITH 300 SERIES STAINLESS STEEL MOUNTING CHANNELS. DRAIN PUNCH #35 CENTERED FOR JUST J-35 UNLESS OTHERWISE SPECIFIED. FAUCET SHALL BE A "JUST" MODEL J-1174-KS WITH 4" WRIST BLADE HANDLES. * http://www.justmfg.com/PDF/DLADA1933A.pdf * http://www.justmfg.com/PDF/7-29.pdf</p>
<p>P-10 (FLOOR MOUNTED MOP RECEPTOR) SHALL BE A FLORESTONE #MSR-2424 32X32X6" MOLDED MOP BASIN WITH 3" OUTLET. PROVIDE WITH MR-371 FAUCET WITH WALL BRACE, PAIL HOOK AND APPROVED VACUUM BREAKER, MR-370 HOSE & HOSE BRACKET, MR-372 MOP HANGER, MR-373 BUMPER GUARDS AND MR-377 STAINLESS STEEL WALL GUARD. * http://www.florestone.com/mop_sinks/model_50-70.html * http://www.florestone.com/mop_sinks/ms_accessories.html</p>
<p>P-11 (FLOOR DRAIN WITH TRAP SEAL) SHALL BE A JOSAM 30000-WT-A SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE. WEILOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET. INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER. * http://www.josam.com/images/josam/mkt/sbmt/s06_30000-WT-A.pdf</p> <p>FLOOR DRAIN TRAP SEAL SHALL BE A "SURE SEAL" MODEL SS3000 PREASSEMBLED INJINE FLOOR DRAIN TRAP SHALL BE 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>
<p>P-12 (HOSE BIBB - NARROW WALL HYDRANT - MODERATE CLIMATE) SHALL BE A ZURN Z1350 ENCASED MODERATE CLIMATE WALL HYDRANT FOR NARROW WALL INSTALLATION. COMPLETE WITH BRONZE BODY, ALL BRONZE INTERIOR PARTS, REPLACEABLE SEAT WASHER, SCREWDRIVER OPERATED STOP VALVE IN SUPPLY, KEY OPERATED CONTROL VALVE, AND 3/4" IP FEMALE INLET AND 3/4" MALE HOSE CONNECTION STANDARD. STAINLESS STEEL BOX AND HINGED COVER WITH CYLINDER LOCK AND "WATER" STAMPED ON COVER. **NOTE: CAULKING OF INSIDE JOINTS BY OTHERS. * http://content.zurn.com/web_documents/pdfs/specsheets/58877.pdf</p>
<p>P-13 (STUDOR VENT - AIR ADMITTANCE VALVE) SHALL BE A IPS CORPORATION "STUDOR MINI-VENT". 2" VENT. * http://www.ipscorp.com/plumbing/studor/minivent</p>
<p>P-14 (JUNIOR WATER HEATER) WATER HEATER SHALL BE A LOCHINVAR MODEL JRC006DS, 6 GALLON GLASSLINED STORAGE TANK, JUNIOR TYPE WATER HEATER WITH (1) - 1.6 KW ELECTRIC ELEMENT AT 115 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/_jinefiles/JRE-06.pdf</p>
<p>P-15 (JUNIOR WATER HEATER) WATER HEATER SHALL BE A LOCHINVAR MODEL JRC010DS, 10 GALLON GLASSLINED STORAGE TANK, JUNIOR TYPE WATER HEATER WITH (1) - 1.6 KW ELECTRIC ELEMENT AT 115 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/_jinefiles/JRE-06.pdf</p>
<p>P-16 (WATER HEATER - MEDIUM DUTY - TALL MODEL) SHALL BE A LOCHINVAR LIGHT DUTY COMMERCIAL WATER HEATER MODEL ETW066KK, 65 GALLON GLASSLINED STORAGE TANK, TALL TANK TYPE WATER HEATER WITH (2) - 4.5 KW ELECTRIC ELEMENTS WIRED FOR NON-CONCURRENT INDEPENDENT OPERATION AT 277 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/_jinefiles/CLD.pdf</p>

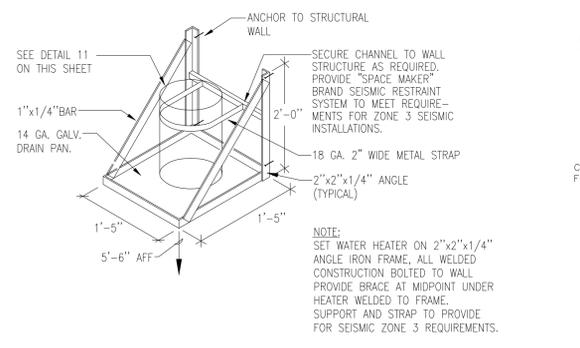
NOTES:
1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.



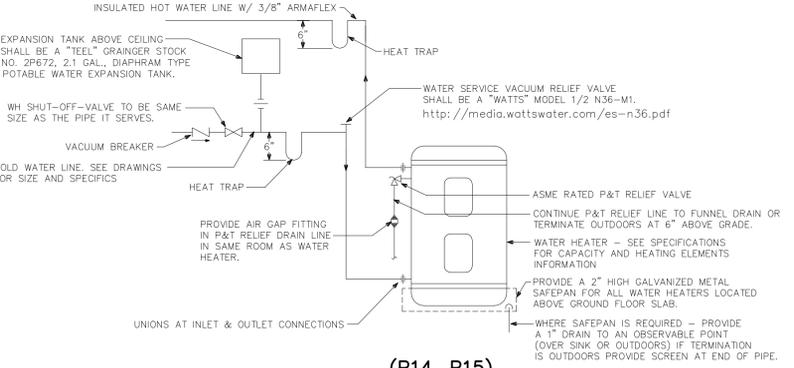
1 SANITARY ISOMETRIC NO SCALE

GENERAL PLUMBING NOTES

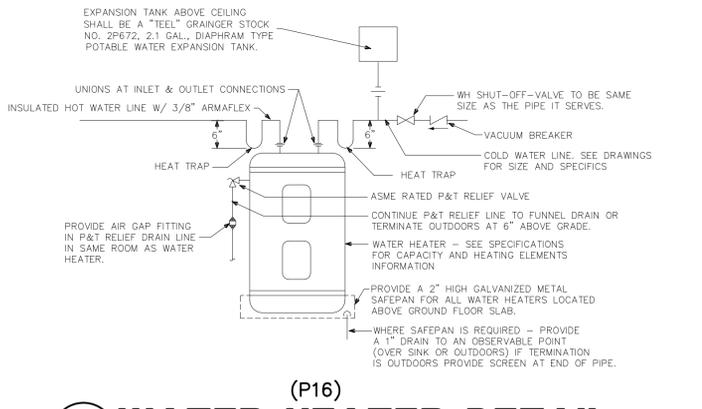
- Drawings are diagrammatic and shall not be scaled. Refer to architectural plans and elevations for exact location of all plumbing fixtures, equipment, etc. Plumbing contractor shall furnish and install all items required for a complete and acceptable working installation. Contractor is responsible to install all fixtures and equipment in strict compliance with the manufacturers installation instructions. This requirement is to supersede any details or information contained on these drawings.
- All work and materials shall comply with the latest edition of the National, State, and all local codes and Ordinances having jurisdiction.
- 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.
- All material shall be new.
- 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.
- All required insurance shall be provided for protection against public liability or property damage for the duration of the work.
- The plumbing contractor shall secure and pay all permit fees, inspections, and tests.
- All work shall be coordinated with other trades to avoid interference with the progress of construction.
- 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.
- Verify location, size and inverts of all existing utilities prior to start of construction. Advise architect/engineer of any discrepancies.
- All fixtures shall be provided with readily accessible stops.
- All below floor slab water piping shall be flexible "temprite pex (cross-linked polyethylene)" installed as per manufacturers recommendations found here: www.lubrizol.com. All above slab water piping shall be "FlowGuard Gold CPVC" installed as per manufacturers recommendations found here: www.flowguardgold.com. All water piping as specified or approved equal. All water piping larger than 1" shall be CPVC.
- 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.
- Not used.
- FURNISH AND INSTALL APPROVED WATER HAMMER ARRESTORS AT EACH GROUP OF FIXTURES. INSTALLATION OF WATER HAMMER ARRESTORS SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATIONS. PROVIDE AND INSTALL AN APPROVED WATER HAMMER ARRESTOR AT EACH FIXTURE OR DEVICE THAT HAS A SOLENOID WATER CONTROL VALVE.
- Provide chrome plated combination covered plate and cleanout plug for all wall cleanouts, Josam 58890.
- Insulate lines as follows:
 - 1" thick armaflex preformed insulation shall be provided on both c.w. & h.w. when piping is located outside of the insulated building envelope.
 - 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.



2 WATER HTR. MTG. DETAIL NO SCALE



3 WATER HEATER DETAIL NO SCALE



4 WATER HEATER DETAIL NO SCALE

LIGHTING FIXTURE SCHEDULE

LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	A12 PRISMATIC	120	(6) 54W T5 HO	ORACLE 24-QCRB-654T5HO-MVOLT-PLDF	PROVIDE QUICKTRONIC POWERSENSE DIMMING BALLASTS
B	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	277	(3) 32W T8	LITHONIA 25P86-332-FWA12-MVOLT	
C	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	277	(2) 32W T8	LITHONIA 25P86-232-FWA12-MVOLT	
D	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	277	(2) 25W T8	LITHONIA WC-225-A12-120	36" WALL LIGHT
D1	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	277	(2) 25W T8	LITHONIA WC-225-A12-120	36" WALL LIGHT, PROVIDE LINE VOLTAGE DIMMING BALLAST
EM	EMERGENCY EGRESS	WHITE		277	INCLUDED	LITHONIA ELM2	W/ BATTERY BACKUP
EX1	EMERG EGRESS / EXIT LIGHT	WHITE		277/120	INCLUDED	LITHONIA LHQM	
EX	EXIT SIGN	WHITE	RED	277	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP
F	WALL PACK	BRONZE	GLASS	277	(2) 42W TRT	BROWNLEE LTG 7037-POI	
G	8' FLUORESCENT STRIP	WHITE		277	(4) 32W T8	LITHONIA C-432-MVOLT	
H	4' FLUORESCENT STRIP	WHITE		277	(2) 32W T8	LITHONIA C-232-MVOLT	
K	RECESSED FLUORESCENT	WHITE	POLYCARBONATE	277	(2) 13W DTT	LITHONIA AF-2/130TT 6WR PCL-277	WET LOCATION LISTED
KE	RECESSED FLUORESCENT	WHITE	POLYCARBONATE	277	(2) 13W DTT	LITHONIA AF-2/130TT 6WR PCL-277 ELRHL2LP	W/ 90 MINUTE BATTERY BACKUP FOR BOTH LAMPS
L	RECESSED FLUORESCENT	WHITE		277	(2) 13W DTT	LITHONIA AF-2/130TT 6WR-277	

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE

PRESCRIPTIVE 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 12106 VS 16188 (RELIGIOUS BUILDING)
 TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED 590 VS 600

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:

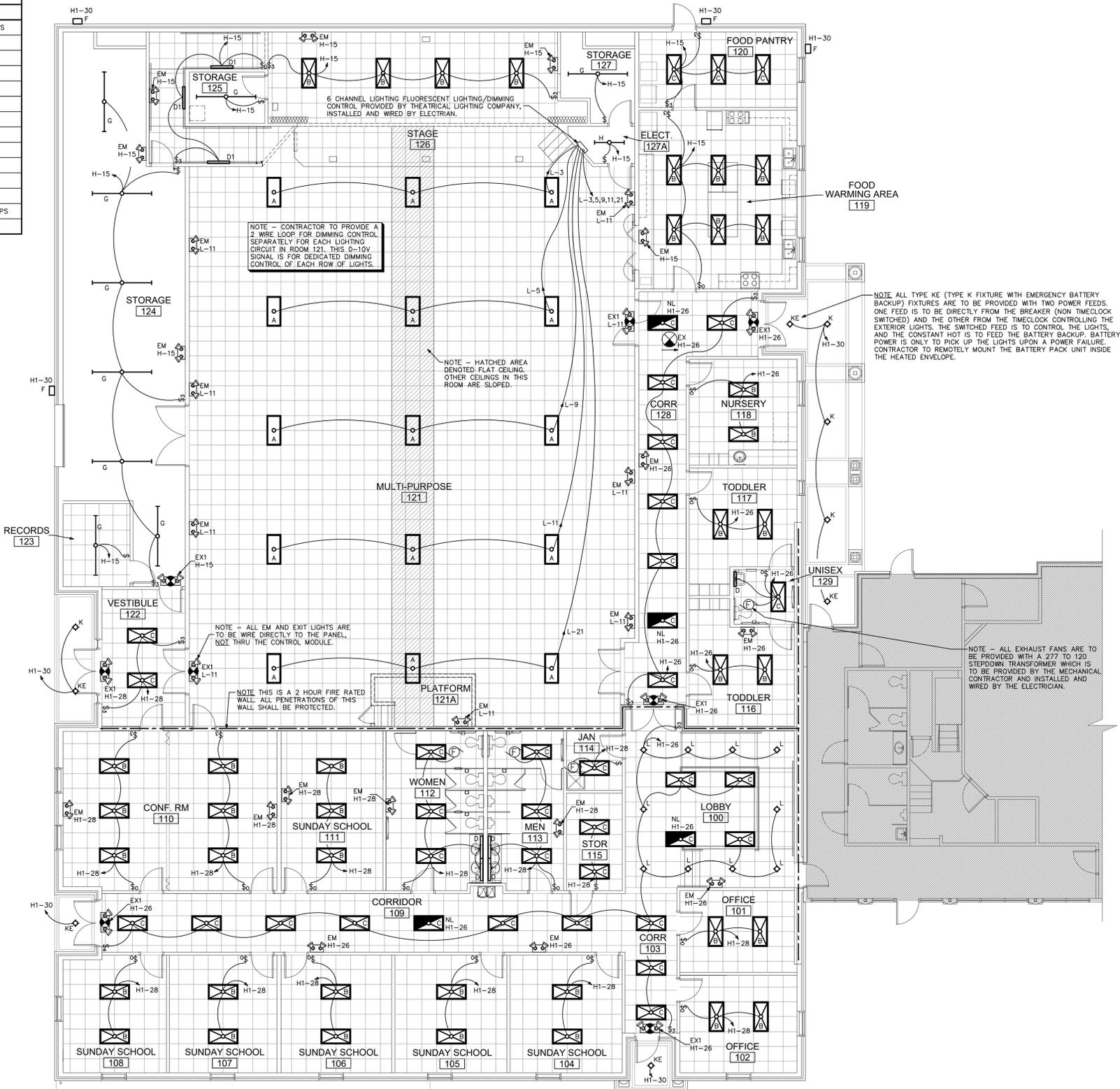
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA ENERGY CODE 2009, CHAPTER 5.

SIGNED: _____
 NAME: _____
 TITLE: _____

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

ELECTRICAL SYMBOLS LEGEND NOTE - NOT ALL SYMBOLS MAY BE USED ON PROJECT

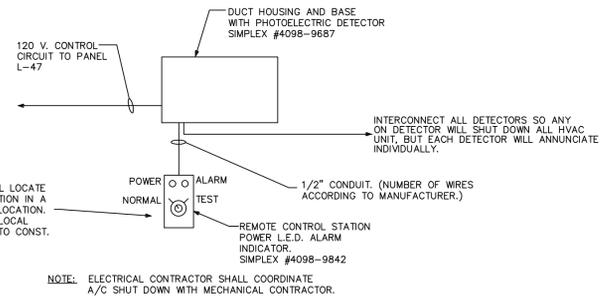
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE, MTD. +18" AFF		TRANSFORMER - SIZE AS NOTED
	240 VOLT RECEPTACLE (HT. AS REQ.)		PANEL - SIZE AS NOTED
	QUADPLEX RECEPTACLE, MTD. +18"		MOMENTARY CONTACT PUSH BUTTON
	COUNTERTOP HT. RECEPTACLE +42"		F-FAN; M-MOTOR; P-PUMP
	SINGLE POLE SWITCH,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



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

ELECTRICAL NOTES:

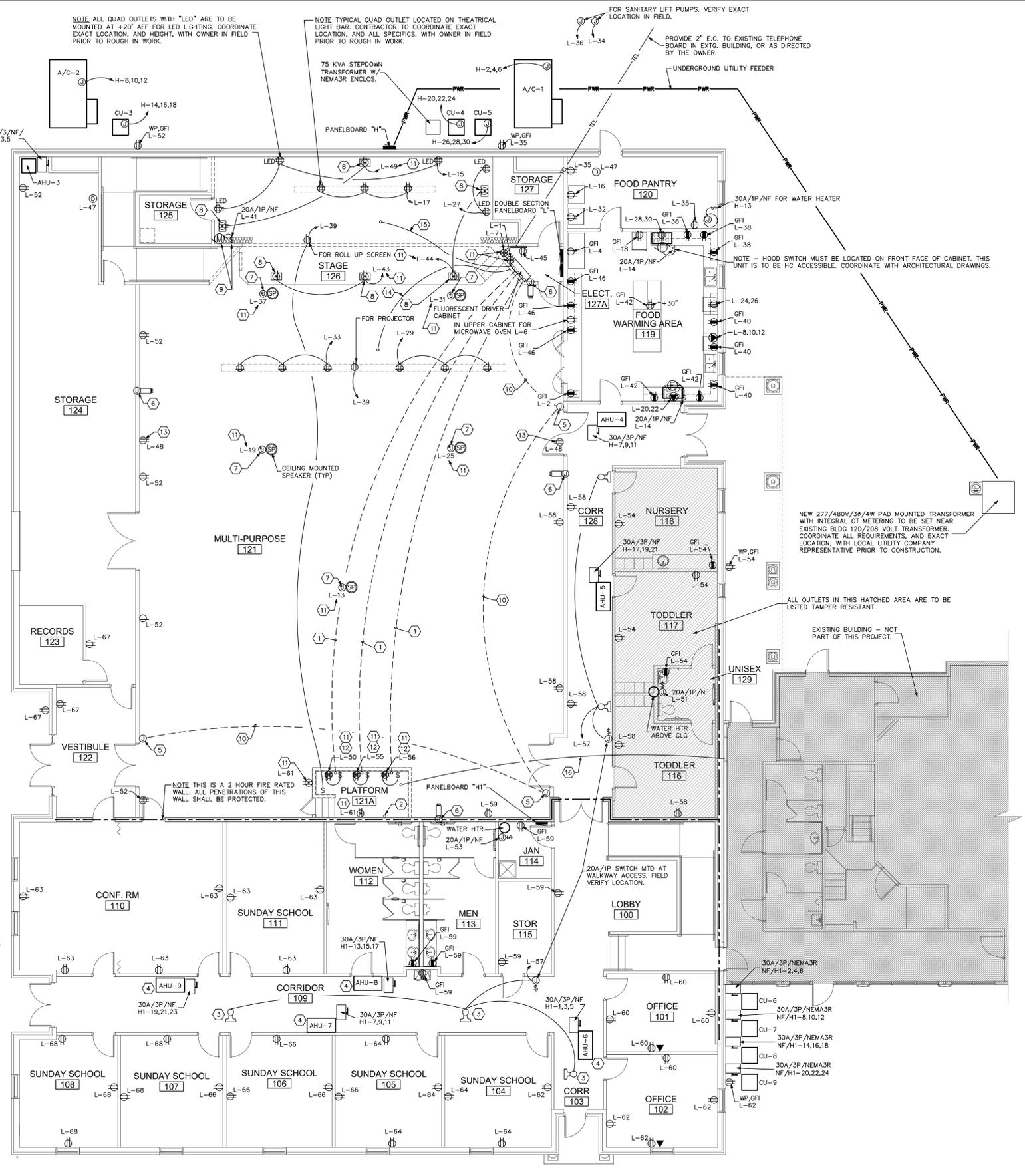
- GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.
THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR 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 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.
- 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.
- SHARED NEUTRAL CONDUCTORS SHALL NOT BE ALLOWED UNLESS INSTALLED IN ACCORDANCE WITH NEC-210.4
- 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 T2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA T2 TYPE EPC-80-PVC (SCHEDULE 80). ALL ARMOR GLAD 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 WREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WREWAYS 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.



2 DUCT SMOKE DETECTOR WIRING
NO SCALE

ELECTRICAL POWER PLAN KEYED NOTES

- PROVIDE 3" E.C. BELOW SLAB TO INTERCONNECT POINTS AS SHOWN. ALL WIRING TO BE BY OTHERS.
- PROVIDE A 3" E.C. FROM BELOW THE PLATFORM FLOOR TO CEILING SPACE ABOVE. ALL WIRING TO BE BY OTHERS.
- PROVIDE A PORCELAIN LAMP HOLDER WITH WIRE GUARD AND CONVENIENCE OUTLET ALONG WALKWAY IN CEILING SPACE.
- AIR HANDLING UNIT TO BE MOUNTED ON WALKWAY PLATFORM IN THE CEILING SPACE. MOUNT DISCONNECT SWITCHES ADJACENT TO AIR HANDLER ON STRUCTURAL SYSTEM.
- PROVIDE FLUSH JUNCTION BOX AT +47" FOR DOOR LIGHT CONTROL STATION (BY OTHERS). VERIFY EXACT LOCATION WITH OWNER PRIOR TO CONSTRUCTION.
- PROVIDE A DEEP JUNCTION BOX AT +7'-4" AFF WITH A 3/4" E.C. UP TO CEILING SPACE FOR FUTURE VIDEO CAMERA BY OTHERS. VERIFY EXACT LOCATION IN FIELD WITH OWNER PRIOR TO CONST.
- PROVIDE JUNCTION BOX WITH CIRCUIT FOR POWERED SPEAKER ABOVE CEILING. VERIFY EXACT LOCATION WITH OWNER IN FIELD.
- TYPICAL FLOOR BOX TO BE PROVIDED BY SOUND CONSULTANT AND INSTALLED BY THE CONTRACTOR. THERE WILL BE FOUR TYPE FMCA2200 BOXES AND ONE FMCA1400 BOX.
- CURTAIN MOTOR AND SWITCH BELOW. COORDINATE EXACT LOCATION W/ OWNER IN FIELD.
- PROVIDE 3/4" E.C. BELOW SLAB TO INTERCONNECT POINTS AS SHOWN. ALL WIRING TO BE BY OTHERS.
- WIRING FROM THESE OUTLETS INDICATED WITH A "*" ARE TO ALL BE WIRED FROM THE SAME PHASE OF POWER. THESE PLANS HAVE THEM SHOWN. CONTRACTOR MUST WIRE TO THE SAME PHASE FOR ALL THESE CIRCUITS.
- PROVIDE A QUAD OUTLET ON ONE CIRCUIT, WITH 1/2 OF QUAD SWITCHED AS SHOWN. TO BE LOCATED UNDER PLATFORM DESK. FIELD VERIFY WITH OWNER PRIOR TO ROUGH IN.
- 20A WALL OUTLET MOUNTED AT +12" AFF. COORDINATE EXACT MOUNTING HEIGHT AND REQUIREMENTS WITH OWNER.
- PROVIDE A 3" E.C. FROM ELECTRICAL ROOM 127A TO CEILING SPACE ABOVE ROOM 121. ALL WIRING TO BE BY OTHERS.
- PROVIDE A 3" E.C. FROM ELECTRICAL ROOM 127A TO CEILING SPACE ABOVE THE STAGE. ALL WIRING TO BE BY OTHERS.
- PROVIDE A 2" E.C. FROM CEILING SPACE ABOVE THE PLATFORM TO EXISTING CEILING OF THE EXISTING CHURCH. PROVIDE FIRE RATED SEALANT AT PENETRATION OF 2 HOUR WALL. CONTINUATION OF 2" CONDUIT IN EXIST BLDG TO BE BY OTHERS.



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

