

SPECIFIC MECHANICAL NOTES

① 22x10 POSITIVE PRESSURE RELIEF DAMPER SHALL BE A TITS MODEL 55FL. PROVIDE PRESSURE RELIEF REGISTER WITH A BACK DRAFT DAMPER WITH AIR FLOW TOWARDS CEILING SPACE. 22x10 PRESSURE RELIEF DUCT SHALL ROUT FROM REGISTER THROUGH CEILING SPACE TO ROOF CAP.

② RETURN AIR DUCT PLENUM SHALL BE FULL SIZE OF AHU RETURN AIR OPENING.

SUPPLY DIFFUSER SCHEDULE

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 *

* BORDER TYPE 1 SURFACE MOUNT

RETURN GRILLE SCHEDULE

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	12X12	0 - 600	
2	TITUS 50FF	24X24	1000 - 3000	EGGCRATE FACE

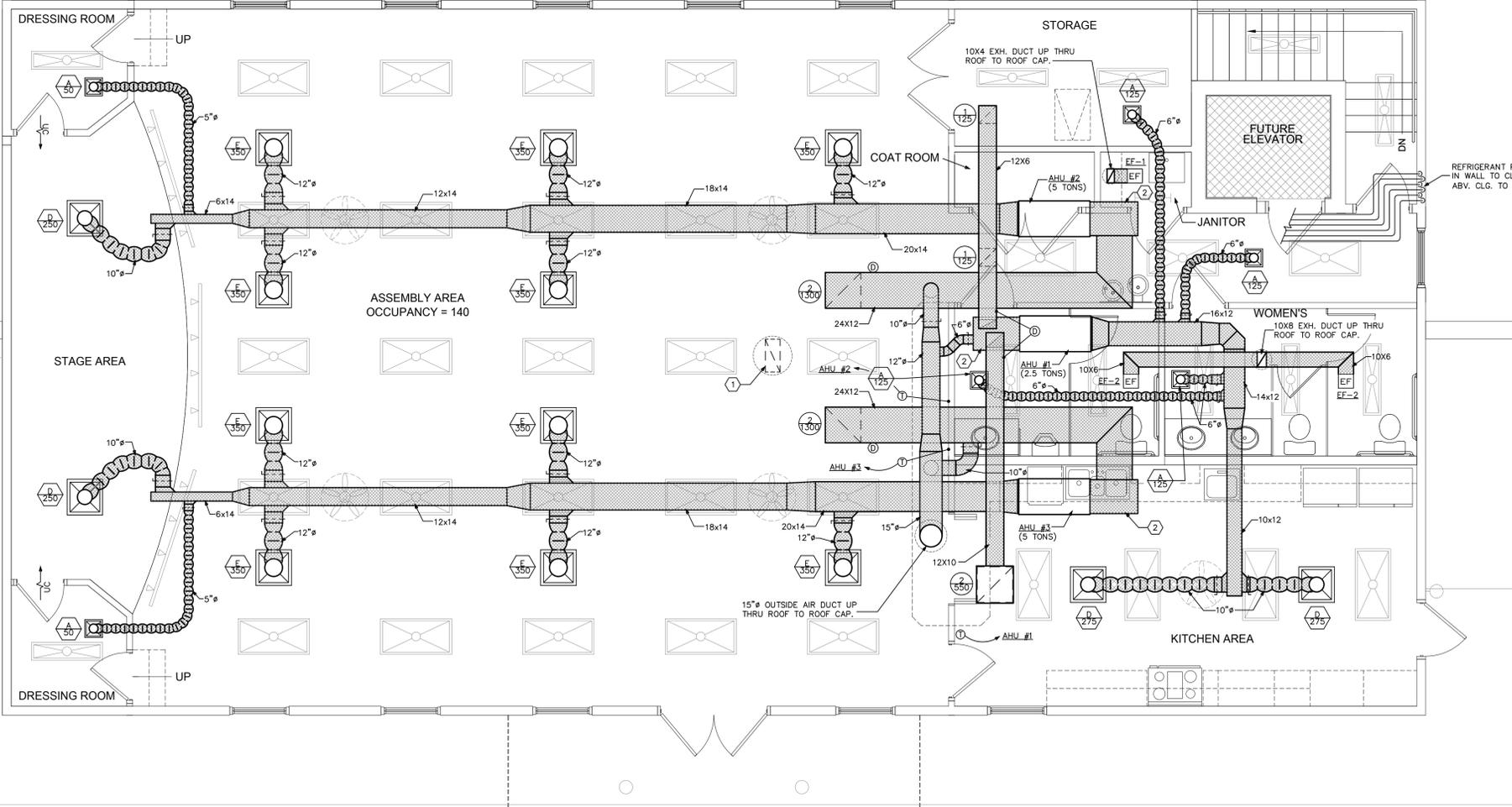
* BORDER TYPE 1 SURFACE MOUNT

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	MFOR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	D/SP.	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.F.	SAFE FAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	CD.	CONDENSATE DRAIN



REFRIGERANT PIPING FROM BL. UP IN WALL TO CLG. SPACE. OFFSET ABV. CLG. TO AHU'S AS REQ.

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

SPECIFIC MECHANICAL NOTES

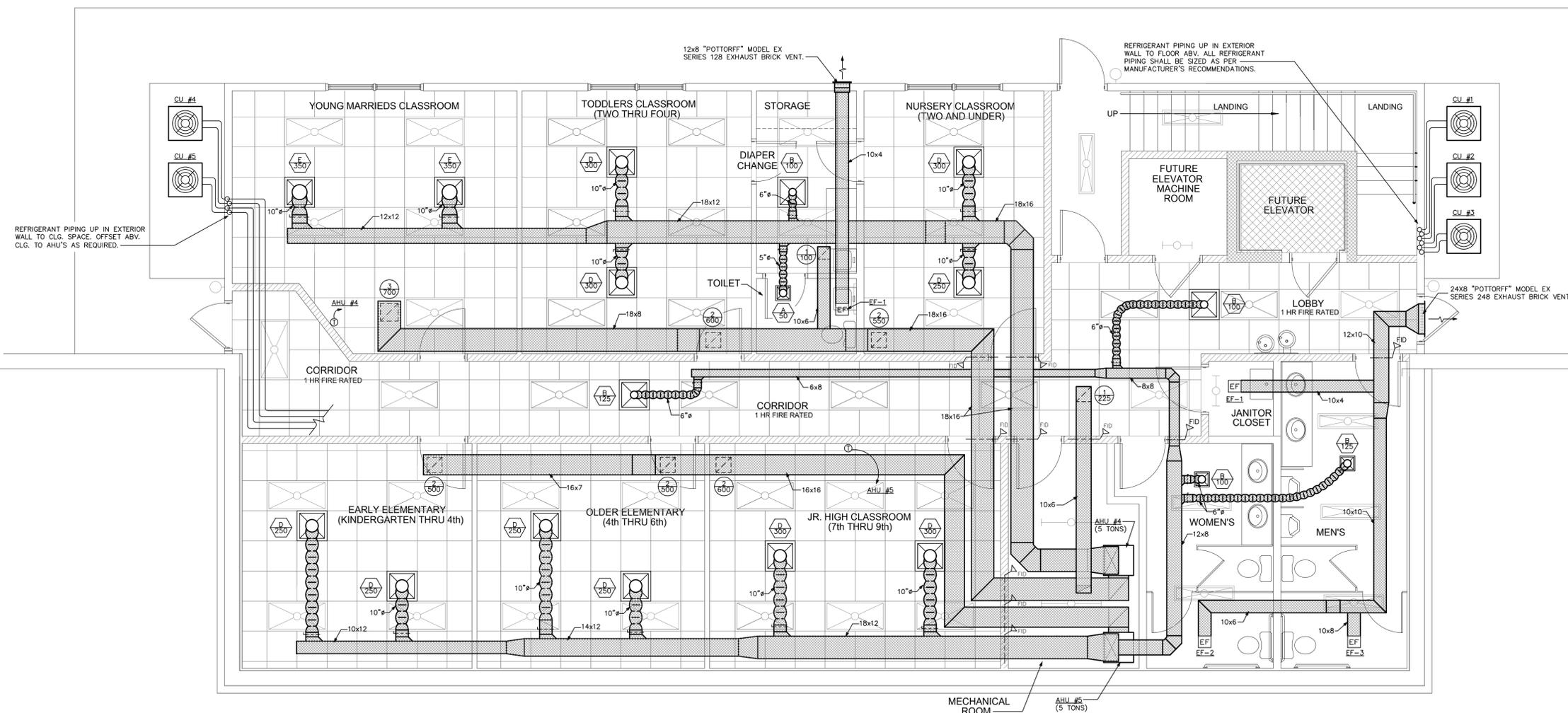
- 1 DUCTWORK SHALL ROUTE UP IN-BETWEEN JOIST ABOVE CORRIDOR FIRE RATING AT THIS LOCATION.
- 2 FIRE DAMPER AT CEILING PENETRATION OF MECHANICAL ROOM.

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
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C	TITUS TDC-AA	6"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

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 - 350	EGGGRATE FACE
2	TITUS 355FL	12X12	355 - 600	EGGGRATE FACE
3	TITUS 355FL	14X14	605 - 750	EGGGRATE FACE

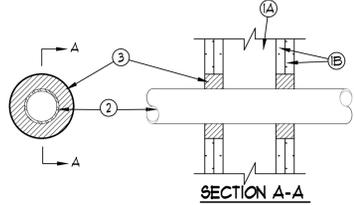


1 BASEMENT FLOOR PLAN - MECHANICAL
SCALE: 1/4"=1'-0"

FIRE RATE PENETRATION DETAIL FOR REFRIGERANT PIPING

System No. W-L-2098

F Ratings - 1 and 2 Hr (See Item 1)
 T Ratings - 1 and 2 Hr (See Item 1)
 L Rating At Ambient - Less Than 1 CFM/Sq Ft
 L Rating At 400 F - 4 CFM/Sq Ft



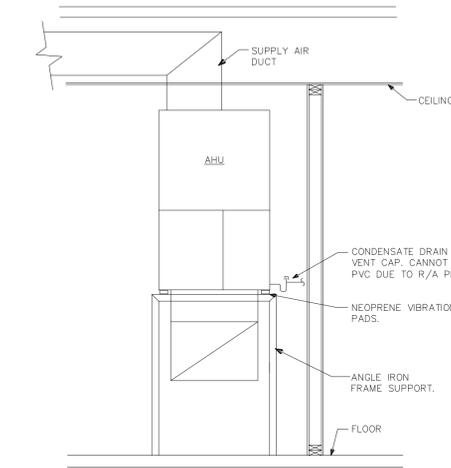
- Wall Assembly -- The fire-rated gypsum wallboard/steel wall assembly shall be constructed of the materials and in the manner specified in the individual U200 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs consist of non 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in wide and spaced max 24 in. OC.
 - Gypsum Board -- 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard 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 4-3/8 in.
 The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
- Through Penetrants -- One nonmetallic pipe installed within the firestop system. Pipe to be rigidly supported on both sides of floor or wall assembly. The space between pipe and periphery of opening shall be min 3/4 in. to max 1-1/4 in. Pipe to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:
 - Polyvinyl Chloride (PVC) Pipe -- Nom 2 in. diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) piping system.
 - Chlorinated Polyvinyl Chloride (CPVC) Pipe -- Nom 2 in. diam (or smaller) SCH20 CPVC pipe for use in closed (process or supply) piping system.
- Fill, Void or Cavity Material -- Sealant -- Installed to completely fill the annular space between the pipes and gypsum wallboard on both sides of wall.

UL TI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- 85-one sealant.
 *Bearing the UL Classification Mark



1 BRANCH DUCT DETAIL

NO SCALE



3 AHU MOUNTING DETAIL

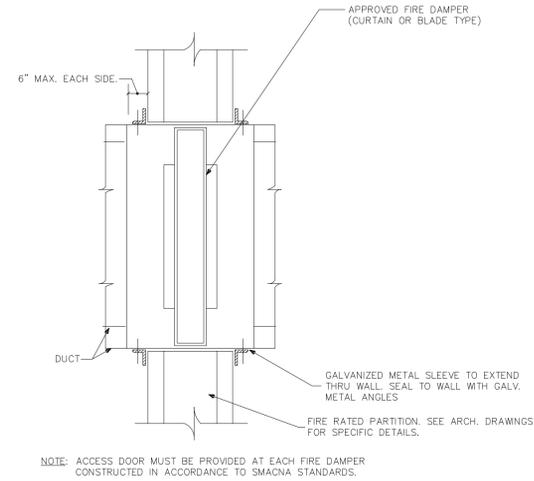
NO SCALE

FAN SCHEDULE										
LABEL	TYPE OF UNIT - AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1φ	1
EF-2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z7	190	.125"	CEILING MOUNTED	68 WATTS	OPEN DRIP PROOF	1640	115V/1φ	1
EF-3	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z81	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1φ	1

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

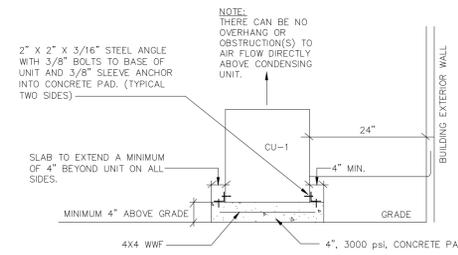
2 FIRE DAMPER DETAIL

NO SCALE



4 COND. UNIT MTG. DETAIL

NO SCALE



MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT			
METHOD OF COMPLIANCE:			
Prescriptive [X]	Performance []	Energy Cost Budget []	
Exterior Design Conditions			
winter dry bulb	20° F		
summer dry bulb	97° F		
Interior Design Conditions			
winter dry bulb	68° F		
summer dry bulb	74° F		
relative humidity	52.9%		
Building Heating Load	232,084 BTU		
Building Cooling Load	268,000 BTU		
Mechanical Spacing Conditioning System			
Unitary			
Description of unit	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
heating efficiency	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
cooling efficiency	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
heat output of unit	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
cooling output of unit	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
Boiler	N/A		
total boiler output, if oversized, state reason.			
Chiller	N/A		
total chiller capacity, if oversized, state reason.			
List equipment efficiencies			
Equipment schedules with motors (mechanical systems)			
motor horsepower	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
number of phases	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
minimum efficiency	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
motor type	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
# of poles	REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.		
DESIGNER STATEMENT: 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 ASHRAE Standard 90.1 2001.			
SIGNED:			
NAME:			
TITLE:			

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, 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.
- 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 ENSURE AN ORDERLY PROGRESS OF THIS WORK.
- ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- ALL NON-EXPOSED SUPPLY AND RETURN AIR DUCTWORK IN BASEMENT CEILING SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R8 INSULATION OR HIGHER. ALL NON-EXPOSED SUPPLY AND RETURN AIR DUCTWORK IN FIRST FLOOR ATTIC SPACE SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH WITH A MIN. OF R8 INSULATION OR HIGHER. ALL FLEX DUCT SHALL BE "THERMOFLEX" OR APPROVED EQUAL AND SHALL HAVE A MIN. OF R5 INSULATION IN BASEMENT CEILING AND A MIN. OF R8 INSULATION IN FIRST FLOOR ATTIC SPACE.
- 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".
- REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS. USE 99.5 SOLDER. REFRIGERANT LINES SHALL SIZED AS PER MANUFACTURER RECOMMENDATIONS.
- ARMAFLEX 3/4" INSULATION SHALL BE USED FOR SUCTION LINES. PRE-INSULATED REFRIGERANT LINE KITS ARE ACCEPTABLE.
- PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
- MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND WIND LOADING FORCES AS REQUIRED BY LOCAL CODES. REFER TO STRUCTURAL PLANS BY OTHERS FOR STRUCTURAL DETAILS.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
- 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

UNIT LABEL	OCCUPANCY CATEGORY	AREA	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)	E ₂	TOTAL
AHU #1	CORRIDORS	140	0.12 CFM PER SQ. FT.	(N/A) + (100 X .12) = 28.3 PEOPLE AREA TOTAL (N/A) + (140 X .06) = 45.9 PEOPLE AREA TOTAL		
AHU #2&3	MULTI-USE ASSEMBLY	1,725	140 PEOPLE AS PER ARCH. PLANS	(140 X 7.5) + (1,725 X .06) = 1,153 PEOPLE AREA TOTAL (N/A) + (600 X .06) = 36 PEOPLE AREA TOTAL	0.8	86.2/0.8 = 107.75
AHU #4	CORRIDOR	600	0.06 CFM PER SQ. FT.	(19 X 10) + (760 X .12) = 281.2 PEOPLE AREA TOTAL		
AHU #4	CLASSROOM	760	25 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	AHU-4 TOTAL = 317.2	0.8	317.2/0.8 = 396.5
AHU #5	CLASSROOM	720	25 PEOPLE PER 1,000 S.F./10 CFM PER PERSON	(18 X 10) + (720 X .12) = 266.4 PEOPLE AREA TOTAL	0.8	266.4/0.8 = 333

AIR COOLED HEAT PUMP SCHEDULE

HEAT PUMP										AIR HANDLING UNIT					INTEGRATED 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 #1	CARRIER 25HC8330	30,000	21,600	22,010	16.0	0.8	208V/1φ	30A	13.0	160 lbs.	AHU #1	CARRIER FX4CNF030008	1,000	SEE SCH	0.3"	HIGH	1/3 HP	208V/1φ	100 lbs.	8.0 K.W.	208V/1φ	1 THRU 6
CU #2	CARRIER 25HC8360	59,500	45,060	43,600	26.3	1.2	208V/1φ	50A	13.0	295 lbs.	AHU #2	CARRIER FX4CNF06015	2,000	SEE SCH	.25"	HIGH	3/4 HP	208V/1φ	168 lbs.	15 KW	208V/1φ	1 THRU 6
CU #3	CARRIER 25HC8360	59,500	45,060	43,600	26.3	1.2	208V/1φ	50A	13.0	295 lbs.	AHU #3	CARRIER FX4CNF06015	2,000	SEE SCH	.25"	HIGH	3/4 HP	208V/1φ	168 lbs.	15 KW	208V/1φ	1 THRU 6
CU #4	CARRIER 25HC8360	59,500	45,060	43,600	26.3	1.2	208V/1φ	50A	13.0	295 lbs.	AHU #4	CARRIER FX4CNF06015	2,000	SEE SCH	.25"	HIGH	3/4 HP	208V/1φ	168 lbs.	15 KW	208V/1φ	1 THRU 6
CU #5	CARRIER 25HC8360	59,500	45,060	43,600	26.3	1.2	208V/1φ	50A	13.0	295 lbs.	AHU #5	CARRIER FX4CNF06015	2,000	SEE SCH	.25"	HIGH	3/4 HP	208V/1φ	168 lbs.	15 KW	208V/1φ	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:
- SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.
 - INSULATE REFRIGERANT SUCTION LINE WITH 3/4" ARMAFLEX OR APPROVED EQUAL.
 - INSTALL FILTER DRYER AND STRAINER IN REFRIGERANT LIQUID LINE.
 - PROVIDE FIELD INSTALLED ACCESSORIES, AND 5 MINUTE TIME DELAY SWITCH.
 - PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1 YEAR WARRANTY ON ALL PARTS AND LABOR.
 - PROVIDE SINGLE POINT POWER CONNECTION WITH INTEGRAL OVERCURRENT PROTECTION DEVICE.

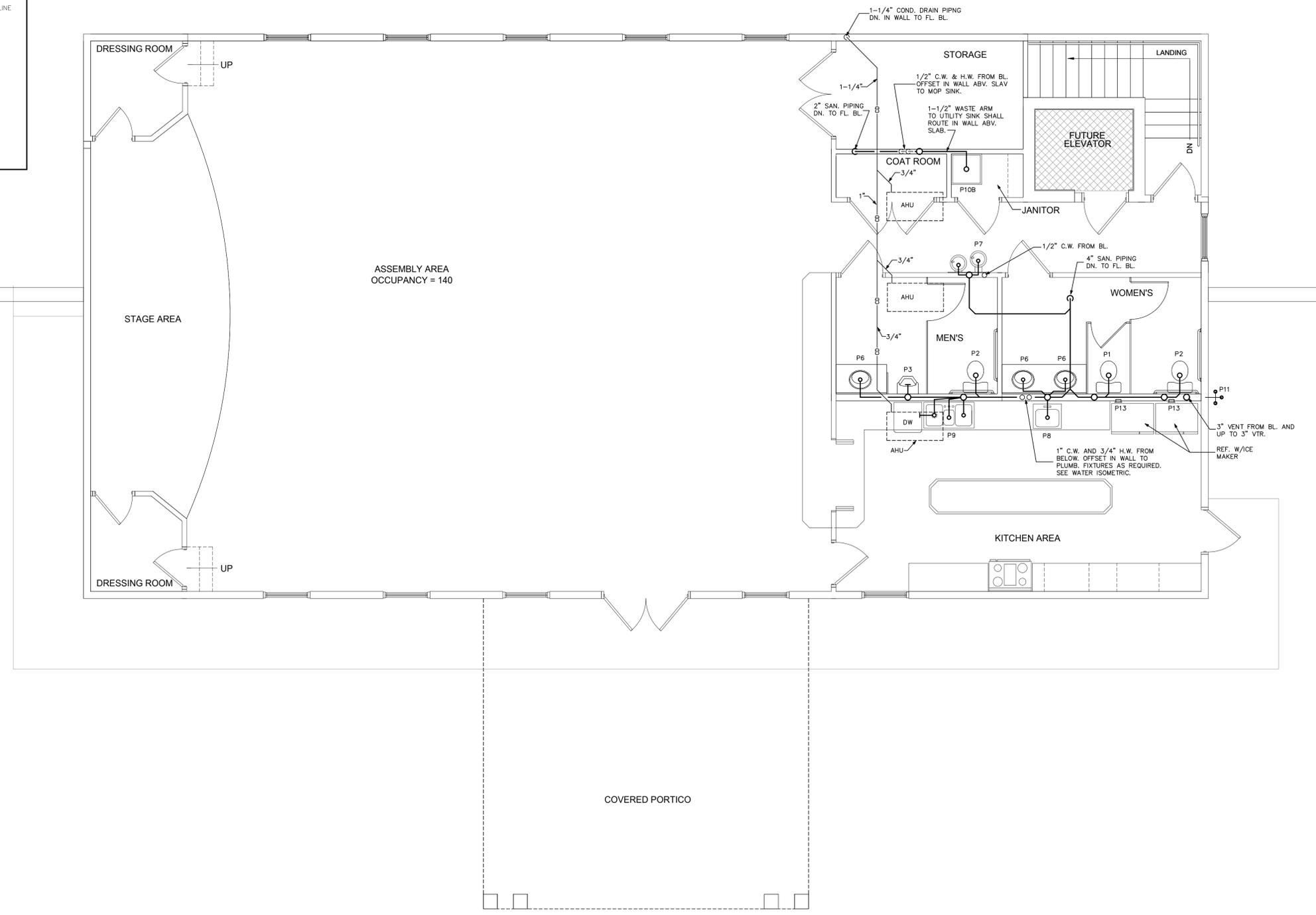
- SEQUENCE OF OPERATION FOR HEATING
- FIRST STAGE
- WHEN THE THERMOSTAT CALLS FOR HEATING, THE INDOOR FAN MOTOR, OUTDOOR FAN MOTORS AND THE COMPRESSOR (FULLY LOADED) ARE ENERGIZED. THE REVERSING VALVE SOLENOID IS ENERGIZED IN THE HEATING MODE.
- SECOND STAGE
- IF ADDITIONAL HEAT IS REQUIRED, THE ELECTRIC HEAT SHALL BE ENERGIZED.

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	MFG.	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.	LAVATORY	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		

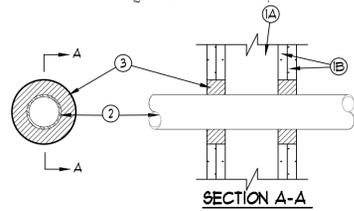


1 FIRST FLOOR PLAN - PLUMBING
SCALE: 1/4"=1'-0"

FIRE RATE PENETRATION DETAIL FOR WATER PIPING

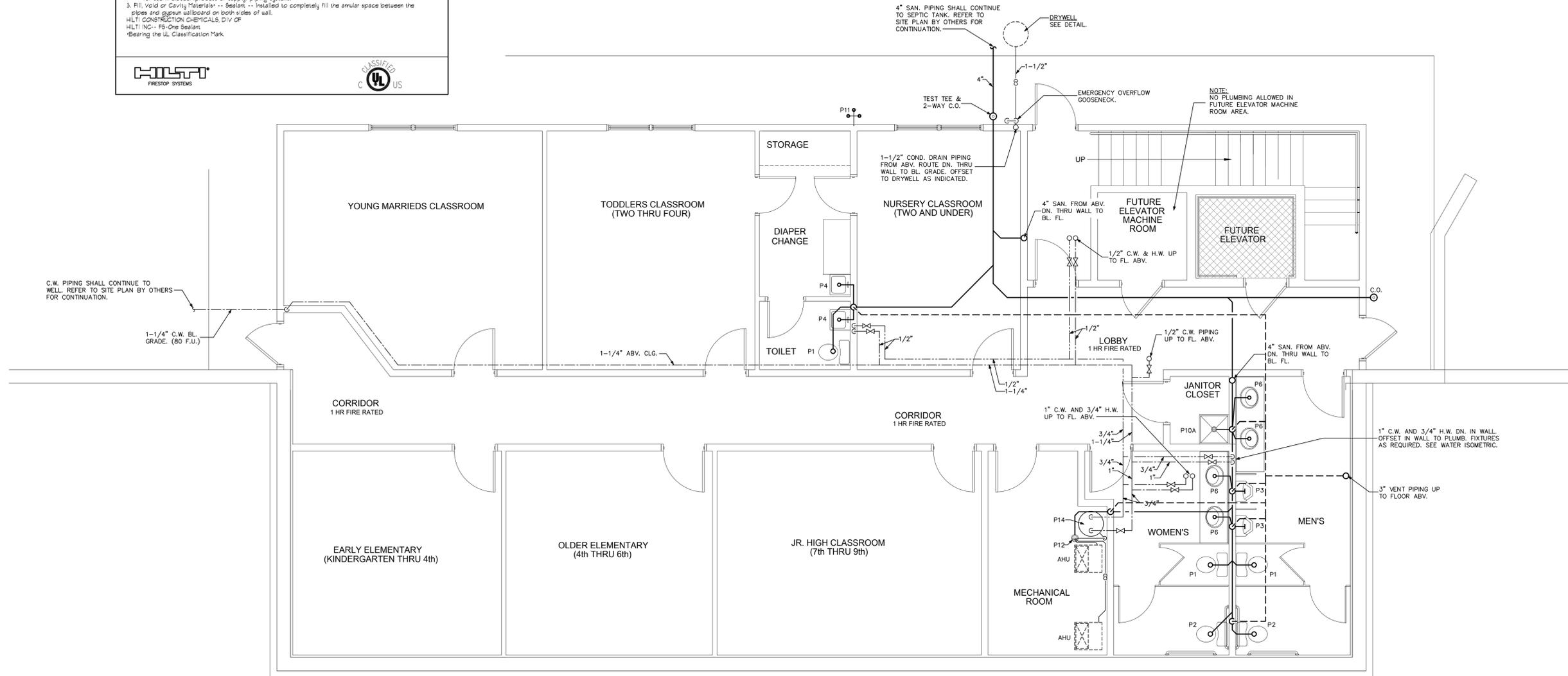
System No. W-L-2098

F Ratings - 1 and 2 Hr (See Item 1)
 T Ratings - 1 and 2 Hr (See Item 1)
 L Rating At Ambient - Less Than 1 CFM/Sq Ft
 L Rating At 400 F - 4 CFM/Sq Ft



- Wall Assembly -- The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
 - Gypsum Board -- 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and spread orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 4-3/8 in. The hourly F and T Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
- Through Penetrants -- One nonmetallic pipe installed within the firestop system. Pipe to be rigidly supported on both sides of floor or wall assembly. The space between pipe and periphery of opening shall be min 3/4 in. to max 1-1/4 in. Pipe to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:
 - Polyvinyl Chloride (PVC) Pipe -- Nom 2 in. diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) piping system.
 - Chlorinated Polyvinyl Chloride (CPVC) Pipe -- Nom 2 in. diam (or smaller) SDR11 CPVC pipe for use in closed (process or supply) piping system.
- Fill, Void or Cavity Materials -- Sealant -- installed to completely fill the annular space between the pipes and gypsum wallboard on both sides of wall.

HILTI CONSTRUCTION CHEMICALS DIV
 HILTI INC - FB - One Sealant
 Bearing the UL Classification Mark



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



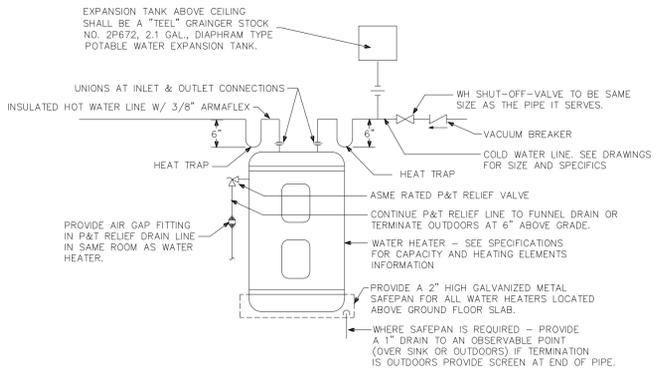
PLUMBING FIXTURE CONNECTION SIZES			
FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE
P1,P2	1/2"	-	3"
P3	3/4"	-	1-1/2"
P4,P5,P6	1/2"	1/2"	1-1/4"
P7	1/2"	-	1-1/2"
P8,P9	1/2"	1/2"	1-1/2"
P10A	1/2"	1/2"	3"
P10B	1/2"	1/2"	1-1/2"
P11	1/2"	-	-
P12	-	-	3"

BASEMENT FLOOR MAIN MEN'S AND WOMEN'S TOILET ROOMS FIRST FLOOR MAIN MEN'S AND WOMEN'S TOILET ROOMS

2 WATER ISOMETRICS

NO SCALE

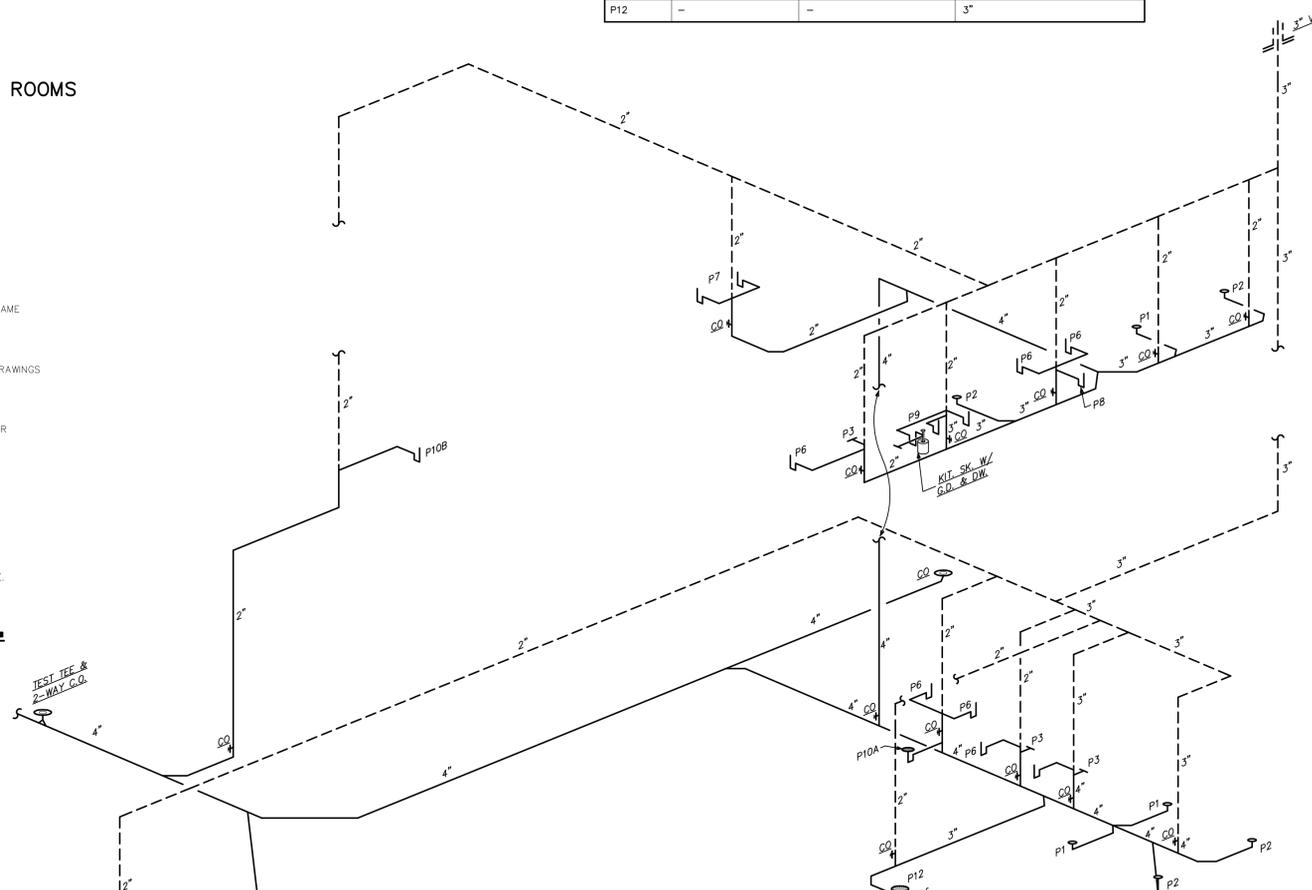
PLUMBING FIXTURE SCHEDULE	
P-1 (FLOOR MOUNTED FLUSH TANK WATER CLOSET)	SHALL BE AN AMERICAN STANDARD CADET MODEL 2333.100 ELONGATED 1.6 GPF, VITREOUS CHINA, PRESSURE-ASSISTED SIPHON ACTION BOWL, CLOSE-COUPLED TANK, FLOOR MOUNTED FLOOR OUTLET, SPEED CONNECT TANK/BOWL COUPLING SYSTEM, WITH AMERICAN STANDARD 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 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 LYMBROOK MODEL 6601.012 TOP SPUD, 0.83 GPF, FLUSH VALVE SHALL BE SLOAN ROYAL MODEL 180-7. * http://www.americanstandard.ca/products/pdf_specSheets/6601012_1016.pdf
P-4 (WALL HUNG LAVATORY)	SHALL BE AN AMERICAN STANDARD COMRADE MODEL 0124.131 VITREOUS CHINA SELF-RIMMING STYLE CLASSIC ROUND SHAPE, FAUCET SHALL BE A MONTERRY MODEL 5502.140 W/STANDARD LEVELHANDLES. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_101.pdf
P-5 (HANDICAPPED WALL HUNG LAVATORY)	SHALL BE AN AMERICAN STANDARD WHEELCHAIR USERS LAVATORY MODEL 9141.011, 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. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_107.pdf
P-6 (HANDICAPPED COUNTER TOP LAVATORY)	SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING, 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. * http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_90.pdf
P-7 (HANDICAPPED ELECTRIC WATER COOLER COMBINATION H/A/O)	SHALL BE AN ELKAY SPLIT LEVEL TWO STATION WATER COOLER WITH BARRIER FREE ACCESS, MODEL EMABFL8C, 8.8 GPH, 4.0 FLA AT 120 VOLT. * http://www.elkayusa.com/cps/rde/xbr/elkay/12-53B_EMABFL8C_EMABFL8CDDC.pdf
P-8 (1 COMP. STAINLESS STEEL SINK)	SHALL BE AN ELKAY CELEBRITY SINK MODEL DCR252210 TOP MOUNT SINGLE COMPARTMENT STAINLESS STEEL SINK (25"X22"X10"D) WITH A CHROME LKDC2432 FAUCET TO INCLUDE 4" WRIST BLADE HANDLES. * http://www.elkayusa.com/cps/rde/xbr/elkay/01-16D_DCR252210.pdf
P-9 (3 COMP. STAINLESS STEEL SINK)	SHALL BE AN ELKAY LUSTERONE TRIPLE BOWL SINK MODEL LCR4322 TOP MOUNT 3 COMPARTMENT STAINLESS STEEL SINK (43"X22"X7-7/8"D) WITH A CHROME LKDC2432 FAUCET TO INCLUDE 4" WRIST BLADE HANDLES. * http://www.elkayusa.com/cps/rde/xbr/elkay/01-134C_LR(0)4322.pdf
P-10A (MOP RECEPTOR)	SHALL BE A FLORESTONE #MSR-2424 24X24X10" 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/model.php?s=mop_sinks&m=mop_sinks_model_msr-2424 * http://www.florestone.com/mop_sinks_accessories.php
P-10B (UTILITY SINK)	UTILITY SINK SHALL BE A "MUSTEE" MODEL 14 UTILATUB AS MANUFACTURED E.L.MUSTEE & SONS, INC. TUB SHALL BE ONE-PIECE MOLDED CO-POLY-PURE COMPLETE WITH DRAIN ASSEMBLY AND FLOOR MOUNTING HARDWARE, PROVIDE A 93000 FAUCET SET. * http://www.mustee.com/products/utilitub/14.shtml
P-11 (HOSE BIBB - NON-FREEZE HYDRANT WITH LOCK COVER)	SHALL BE A ZURN Z1391 EXPOSED, NON-FREEZE POST HYDRANT, COMPLETE WITH BRONZE CASING, ALL BRONZE INTERIOR PARTS, BRONZE SEAT, REPLACEMENT SEAT WASHER, AND NON-TURNING OPERATING ROD WITH FREE-FLOATING COMPRESSION CLOSURE VALVE AND 3/4 CONNECTION, OPERATING KEY INCLUDED, HYDRANT IS EQUIPPED WITH A TAPPED 1/4 DRAIN PORT IN VALVE HOUSING. * http://www.zurn.com/operations/lightcommercial/pdfs/specsheets/63816.pdf
P-12 (FLOOR DRAIN WITH TRAP PRIMER)	SHALL BE A JOSAM 30000-A-50 SERIES COATED CAST IRON FLOOR DRAIN, TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGES, N.E.L.C. INVERTIBLE NON-STRUCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALLOY ROUND SUPER-FLO STRAINER. * http://www.josam.com/catalog/JOS/plf/30000--S--S
P-13 (WATER CONNECTION BOX)	SHALL BE A HIGH QUALITY CONNECTION BOX AS SPECIFIED ON PLUMBINGSUPPLY.COM LOCATED ON THIS PAGE "http://www.plumbingsupply.com/cemaker-outlet-boxes.html" SHALL INCLUDE 2 SUPPORT BRACKETS, HIGH IMPACT POLYSTYRENE, 1/4" BRASS BALL VALVE WITH 1/2" SWEAT CONNECTION, OR APPROVED EQUAL.
P-14 (WATER HEATER - MEDIUM DUTY)	SHALL BE A LOCHINVAR MODEL L7A080K, 80 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 90-90A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION. * http://lochinvar.com/_linefiles/RE.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.



3 WATER HEATER DETAIL

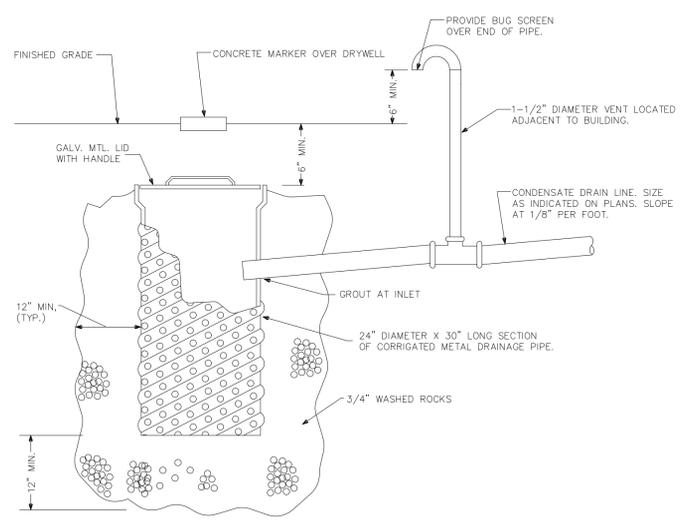
NO SCALE

GENERAL PLUMBING NOTES	
1.	Drawings are diagrammatic and shall not be scaled. Refer to architectural plans and elevations for exact location of all plumbing fixtures, equipment, etc. Plumbing contractor shall furnish and install all items required for a complete and acceptable working installation. Contractor is responsible to install all fixtures and equipment in strict compliance with the manufacturers 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.tempritepex.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 type "L" copper for up to and including 2" and shall be type "K" for 2 1/2" and larger.
13.	Sol, 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 vent pipe and fittings. Insulate all condensate piping except exterior piping. Install all condensate piping for air conditioning units as required per local codes.
15.	Furnish and install approved air chambers at each plumbing fixture and PDI approved shock arresters on main lines and risers.
16.	Provide chrome plated combination covered plate and cleanout plug for all wall cleanouts, Josam 58990.
17.	Insulate lines as follows: a) Hot and Cold water supply and return: 1" thick armaflox preformed or approved equal. b) Condensate piping: 1/2" thick armaflox preformed or approved equal.



1 SANITARY ISOMETRIC

NO SCALE

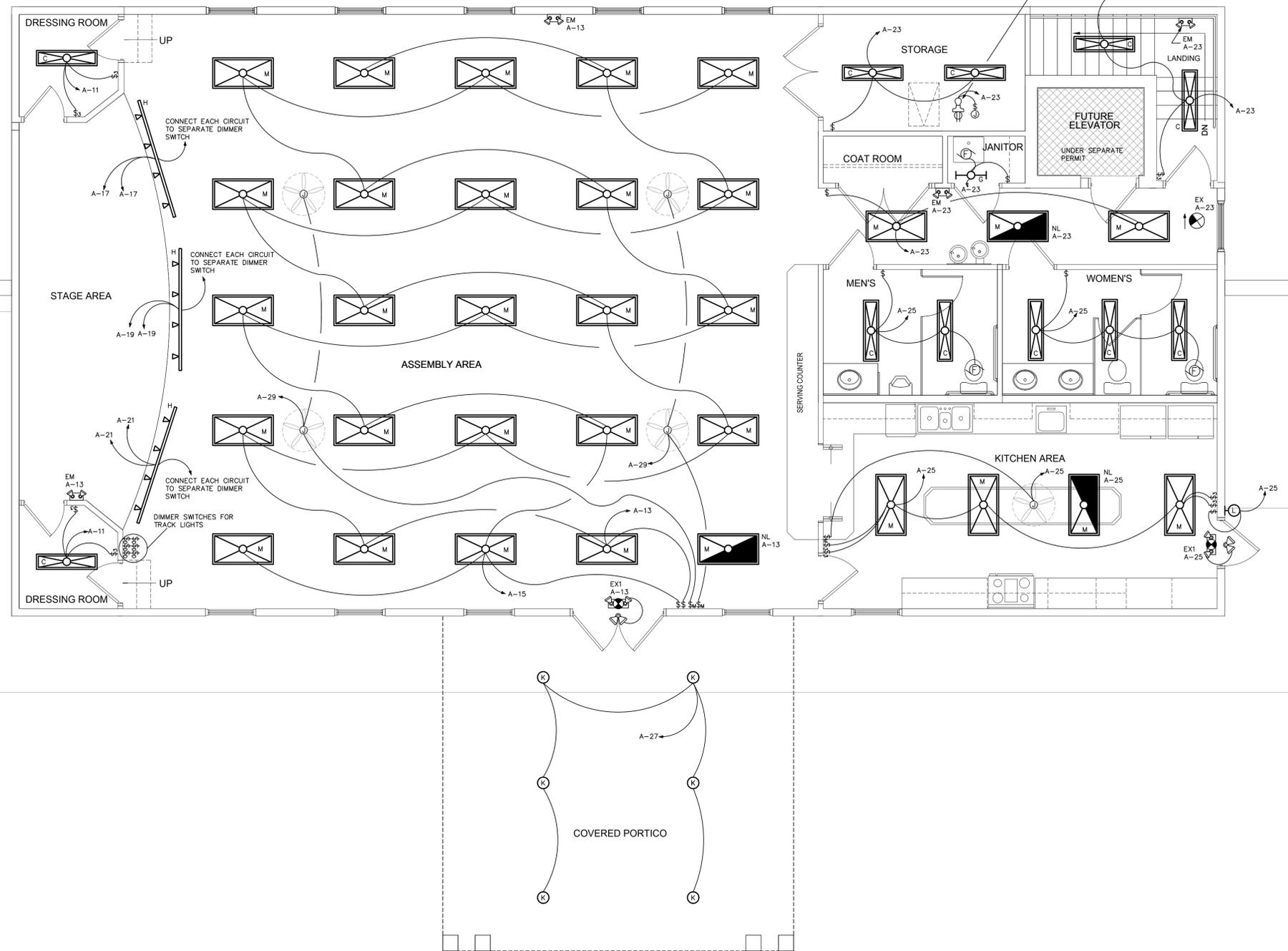


4 DRYWELL DETAIL

NO SCALE

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
	QUADRUPLEX 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 +47"		RECESSED MOUNTED LIGHTING FIXTURE B DESIGNATES FIXTURE TYPE
	SWITCH W/ OCCU SENSOR WHEN ON +47"		OVERHEAD OCCUPANCY SENSOR
	THREE-WAY SWITCH W/ OCCU SENSOR WHEN ON +47"		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
	F.L.R. MTD. FLUSH DUPLEX RECEPTACLE		BELOW COUNTER
	F.L.R. MTD. FLUSH QUAD. RECEPTACLE		TIME CLOCK - 24 HOUR
	F.L.R. MTD. FLUSH PHONE/DATA OUTLET		GFI
	F.L.R. MTD. FLUSH COMPUTER OUTLET		ABOVE FINISHED FLOOR
	AREA SMOKE DETECTOR		EWC
	HEAT DETECTOR		ABOVE SHOW WINDOW
	DUCT SMOKE DETECTOR		BELOW SHOW WINDOW
	FIRE ALARM MAN. PULL STATION +47"		FACP
	HORN WITH STROBE LIGHT, MTD. +80"		FAAP
	STROBE LIGHT ONLY, MTD. +80"		
	BESIDE DEVICE IS CANDLELAMP RATING		

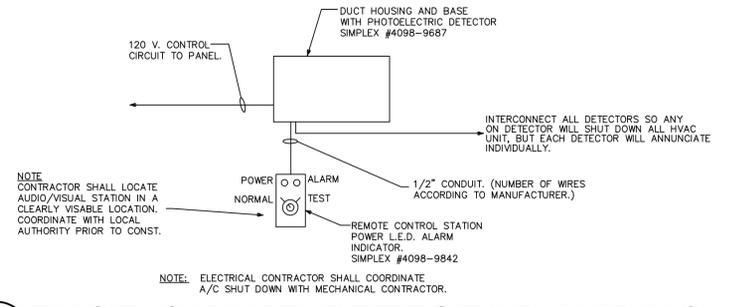
LIGHTING FIXTURE SCHEDULE							
LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(3) 32W T8	LITHONIA 2SPGB-332-FWA12-120	
B	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 2SPGB-432-FWA12-120	
C	SURFACE MOUNTED 1'X4'	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA LB-232-MVOLT	
D	4' STRIP LIGHT	WHITE		120	(2) 32W T8	LITHONIA L-232-MVOLT	
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	W/ BATTERY BACKUP
EX1	EMERG EGRESS w/ REM HEAD	WHITE		120	INCLUDED	LITHONIA LHQM	W/ MODEL NX DUAL REMOTE HEAD, 90 MIN BATTERY
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA LE-SW2R-120/277-ELN	W/ BATTERY BACKUP
F	FLUORESCENT WALL LIGHT				(2) 17W T8	LITHONIA WC-217-MVOLT	
G	2' STRIP LIGHT	WHITE		120	(2) 17W T8	LITHONIA L-217-MVOLT	POLISHED CHROME LAMP HOLDERS W/ COLONIAL BLACK FLANGES
H	DOUBLE CIRCUIT 8' TRACK LT	WHITE		120	750W MAX	LITHONIA L2T8-WH	W/ (5) LITHONIA RND8 HEADS
K	OUTSIDE DOWNLIGHTS	WHITE		120	(1) 32W TRT	LITHONIA LGF-132TRT-8-RWFLL-120	WET LOCATION LISTED
L	JELLY JAR			120	13W DTT	LITHONIA WPGW-13WTRT	
M	SURFACE MOUNT FLUORESCENT	WHITE		120	(3) 32W T8	LITHONIA LB-332-MVOLT	



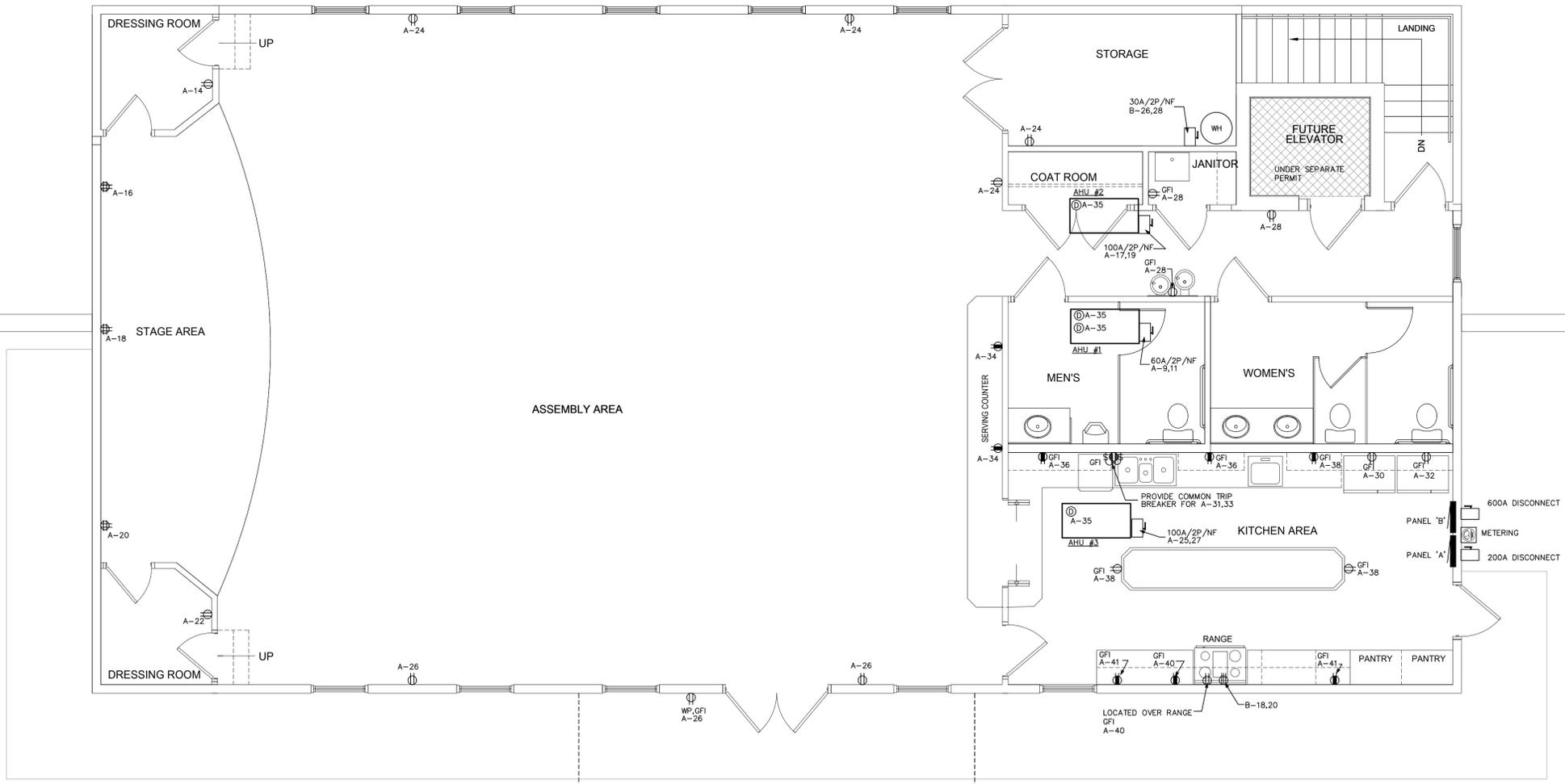
ELECTRICAL NOTES:

- 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 LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
- GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC.
- CONDUITS: PROVIDE CONDUITS WHERE CALLED FOR ON PANEL SCHEDULES. ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE. CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80). ALL ARMOR CLAD CABLE (AC CABLE) WIRING SHALL MEET OR EXCEED ALL NEC, OSHA AND HUD STANDARDS.
- CONDUCTORS: CONDUCTORS SHALL BE AS SCHEDULED ON PANEL SCHEDULES. ALL POWER CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG (CU), OR #12 AWG (AL). CONTROL CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #18 AWG CU. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAYS OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS. CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG AND SMALLER, SHALL BE THE SELF-INSULATED TYPE. OTHER SPLICES SHALL BE INSULATED USING 3M #33+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.
- PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
- LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS. FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.
- TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.
- TERMINALS: ALL ELECTRICAL EQUIPMENT FURNISHED ON THIS PROJECT IS TO HAVE TERMINALS RATED FOR 75° C. OPERATION.

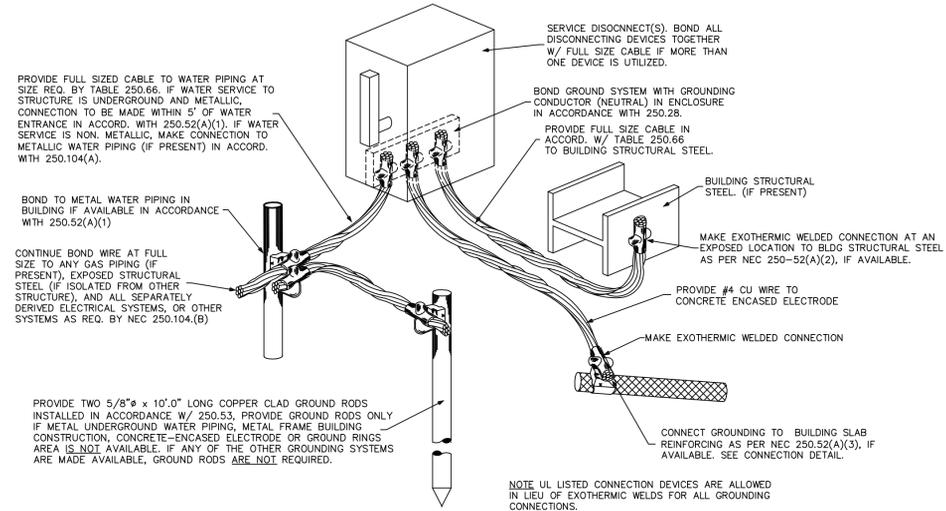
1 FIRST FLOOR PLAN - LIGHTING
SCALE: 1/4"=1'-0"



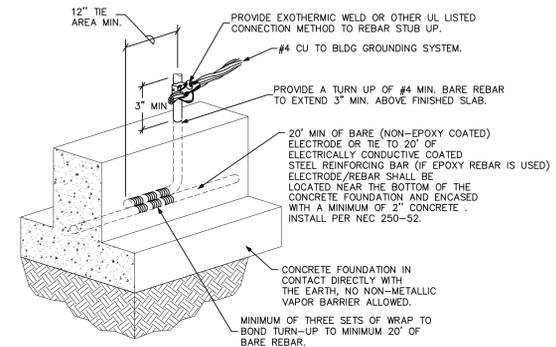
2 DUCT SMOKE DETECTOR WIRING
NO SCALE



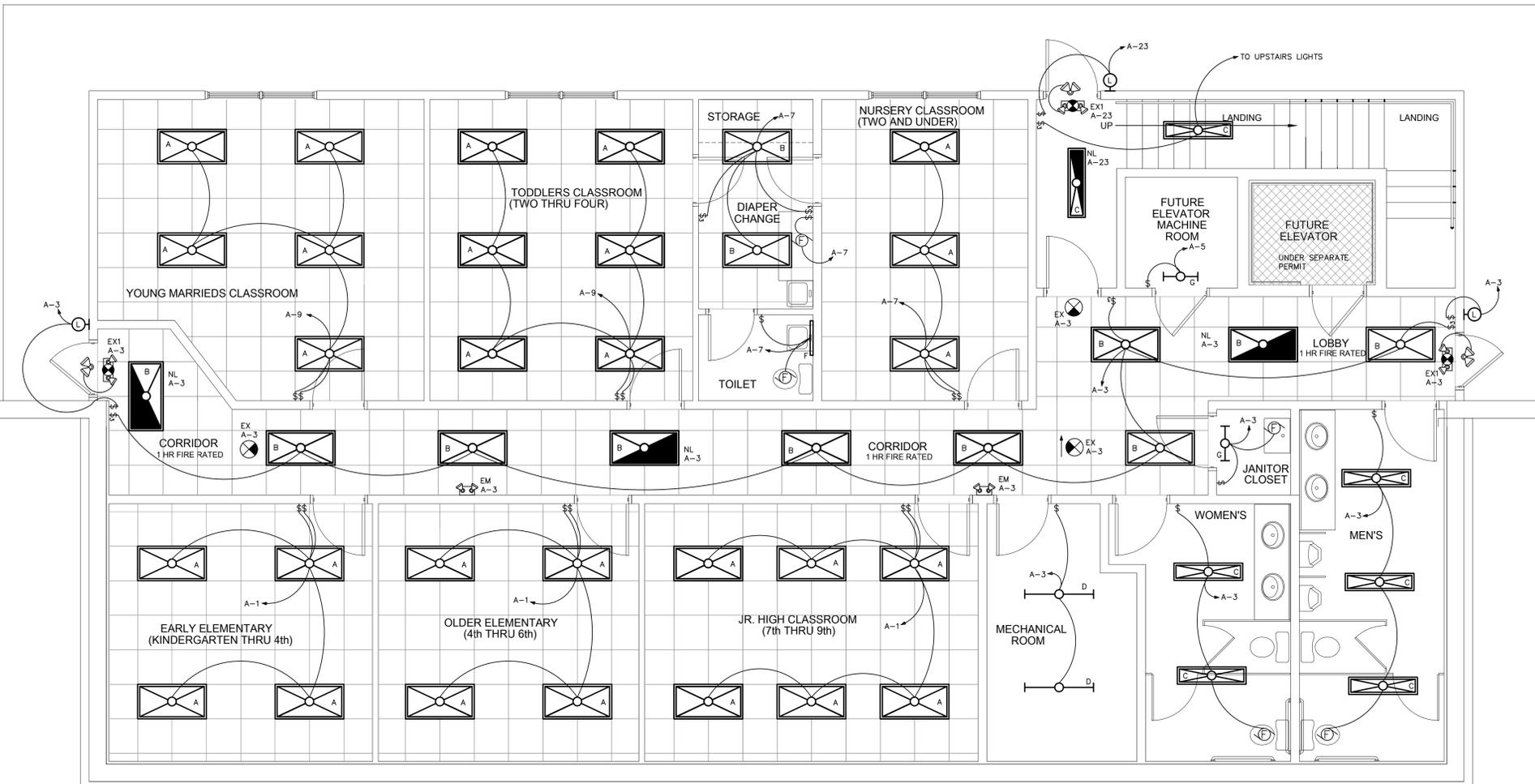
1 FIRST FLOOR PLAN - POWER
SCALE: 1/4"=1'-0"



3 GROUNDING DETAIL
NO SCALE



2 GROUNDING DETAIL
NO SCALE



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