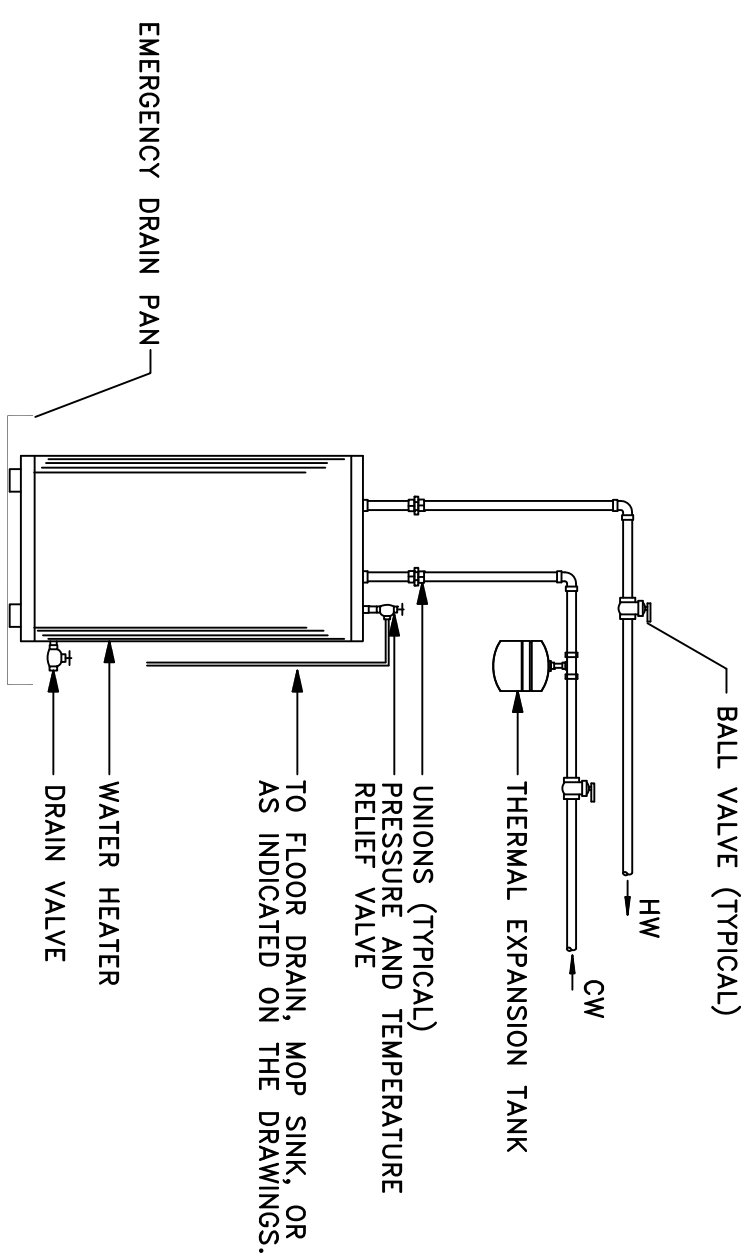


PLUMBING FIXTURE SCHEDULE

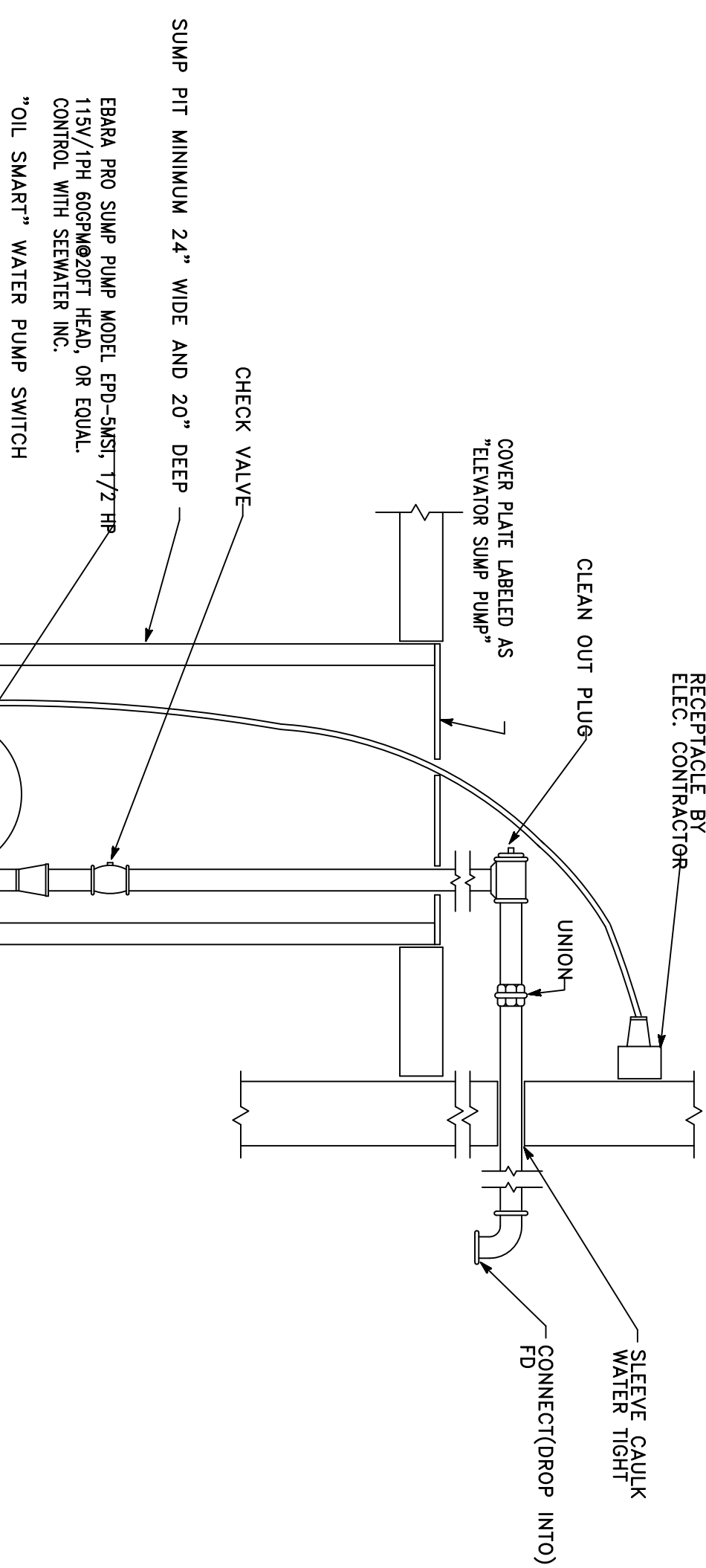
P-#	FIXTURES	SPECIFICATIONS	PIPING REQUIRED		
			WASTE	CW	HW
P-1	WATER CLOSET/ADA TANK MOUNTED 1.6 GPF	AMERICAN STANDARD "CLOSET RIGHT HEIGHT" MODEL 2298.012 VITREOUS CHINA TOILET WITH ELONGATED BOWL AND TANK WITH SIDE TRIP LEVER, 16 1/2" RIM HEIGHT, 1.6 GPF, 12" ROUGH-IN. BOWL CAPS, COMPLETS WITH ANSI A112.19.2 & A117.1 SEAT: BRASS/CHROME PLATED/BRASS 2109 NSSC ANTI-MICROBIAL HEAVY DUTY WHITE ELONGATED OPEN FRONT SEAT WITH COVER VALVE: MEASURE NO. 2166 3/4"x12" FLEX CLOSET SUPPLY WITH STOP.	3"	1/2"	--
P-2	URINAL - HANDICAP 3/4" TOP SPRUD - 1.0 GPF MANUAL FLUSH VALVE	AMERICAN STANDARD "ULABROOK" MODEL 6541.132 1.0 GPF 3/4" TOP SPRUD, WHITE VITREOUS CHINA, 2" IPS OUTLET, WALL HANGER, MOUNT RIM 17" H/T TO COMPLY WITH ADA. VALVE: SLOAN REGAL MODEL 1-186-1-ADA, 10GPF, CHROME FLUSH WITH ADA COMPLIANT HANDLE.	2"	1/2"	--
P-3	LAVATORY - CABINET MTD. SINGLE LEVER FAUCET ADA	AMERICAN STANDARD "ROQUIN" 0475.028 CABINET MTD. WHITE VITREOUS CHINA 20"x17" SELF FINISHING LAVATORY WITH 4" FAUCET CENTERS. FAUCET: SENSOR ADA APPROVED FAUCET.	1-1/2"	1/2"	1/2"
P-4	LAVATORY - WALL MTD. SINGLE LEVER FAUCET ADA	AMERICAN STANDARD "LUCERNE" 0355.012 WALL MTD. WHITE VITREOUS CHINA 20"x18" LAVATORY WITH 4" FAUCET CENTERS. FAUCET: SENSOR ADA APPROVED FAUCET.	1-1/2"	1/2"	1/2"
P-5	SINGLE BOWL SINK ADA	SUPPLIES: MEASURE NO. 165 3/4"x12" FLEX ANGLE SUPPLY WITH STOP STRAINER. MEASURE NO. 155-A GRID STRAINER WITH 1 1/2" TAILPIECE. TRAP AND SUPPLY INSULATION: MEASURE PREMADE PROMAP INSULATION KIT MODEL NO2150 JUST MODEL: NO. 51-1515-1-GR SINGLE COMPARTMENT SINK, 16"x13"x6 3/4" DEEP, 304 STAINLESS STEEL, 18 GAUGE, 3 1/2" FAUCET LEDEG WITH 4 HOLES 6 1/4" DEEP. CENTERS. TRAP AND SUPPLIES: MEASURE NO. 151 CHROME PLATED FORGED BRASS STRAINER WITH 1-1/2" TAILPIECE. MEASURE NO. 8912 1 1/2" P-TRAP AND NIPPLE. MEASURE NO. 2165 ANGLE SUPPLIES WITH STOP. FAUCET: JUST MODEL 1174MS TWO-HANDLE KITCHEN FAUCET, CHROME PLATED BRASS CONSTRUCTION, 8 WHIST BLOC HANDLES, COMPLETS WITH LATEST ADA REQUIREMENTS.	1-1/2"	1/2"	1/2"
P-6	ELECTRIC WATER COOLER HANDICAP/ADA	HAMS MODEL NO. HMA100I BARBER-FREE DUAL-HEIGHT UNIT WITH FRONT AND SIDE PUSH BARS, SIMULATED RECESSED MODEL WITH LEAD FREE WATERWAYS, 8 GPH OF 90WF WATER AT 90WMP. HEAVY GAUGE UNIT WITH STAINLESS STEEL FINISH. TRAP AND SUPPLIES: MEASURE NO. 8972 1 1/2" P-TRAP AND NIPPLE. MEASURE NO. 165 ANGLE SUPPLY WITH STOP.	1-1/4"	1/2"	--
P-7	MOP BASIN 36"x36"x12"	TRAP MODEL TRP-3002, 36"x36"x12" TERAZZO SERVICE BASIN WITH STAINLESS STEEL CAPS ON ALL SIDES, 12" HIGH WITH 6" DROP FRONT, SELF CALKING BRASS BRIM WITH STAINLESS STEEL STRAINER. FAUCET: FAT MODEL 830-4A CHROME PLATED WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PALM HOOK & 3/4" HOSE THREAD ON SPOUT, HOSE AND HOSE BRACKET MODEL 832-4A 30' LONG FLEXIBLE HEAVY DUTY 3/4" RUBBER HOSE WITH 1/2" BRASS COUPLING, 18 GAUGE 302 STAINLESS STEEL BRACKET WITH RUBBER GRIP.	3"	1/2"	1/2"
P-8	SHOWER STALL	SHOWER SELECTION/CONSTRUCTION BY CONTRACTOR VALVE: STAMONS PRESSURE BALANCE VALVE MODEL C-96-300-830-V-X WITH VOLUME CONTROL. FEATURES CERAMIC DISC VALVE CARTRIDGE WITH AN ADJUSTABLE HOT LIMIT SAFETY STOP. LOW LEAD FORGED BRASS BOIT. ALL METAL LEVER HANDLE AND WALL ESCUTHEON. SPOKE DRIVER STOPS WITH WALL SUPPLY. IN-LINE VACUUM BREAKER 80" ABOVE FLOOR FINISH. 1/2" DIA. 1/2" WALL SUPPLY. 1/2" DIA. 1/2" WALL SUPPLY. 1/2" DIA. 1/2" WALL SUPPLY. ALL POLISHED CHROME FINISH. TEMPERATURE COLOR MATCH ON ESCUTHEON.	3"	1/2"	1/2"

A GAS WATER HEATER

WATER HEATER (GWH): STATE M/N SDV100 199, 100 GALLON SEALED COMBUSTION GAS WATER HEATER 120 VOLT, SINGLE PHASE. PROVIDE AND INSTALL 3" PVC/CPVC INSTAKE AND EXHAUST PIPING TO OUTSIDE PER MANUFACTURER'S RECOMMENDATIONS. 5 YEAR WARRANTY. FINISH WITH A.S.I.M.E. APPROVED RELIEF VALVE, WATERGLARD EXPANSION TANK M/N ETC-2X, AND DRAIN PAN CONNECTION. SIZES: C=1 1/2", H=1 1/2".



B SUMP PUMP DETAIL



GENERAL PLUMBING SPECIFICATIONS
THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE VOLUME II - PLUMBING. SUBMIT THREE (3) COPIES OF PLUMBING INSPECTION CERTIFICATES TO OWNER. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVED CONTRACT DOCUMENTS. CONTRACTOR SHALL OBTAIN AND INSTALL ALL SUPPORTS, BRACKETS, MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE AND ACCEPTABLE PLUMBING SYSTEM. PLUMBING CONTRACTOR SHALL CLEAN ALL PLUMBING FIXTURES AFTER ALL CONSTRUCTION IS COMPLETE.

CAST IRON SOIL, WASTE AND VENT PIPING. WASTE PIPING AND VENT PIPING SHALL BE P.V.C. - D.M.P. SCHEDULE 40 PIPE. HOWEVER, CORRODED PVC FOAM CONET. ASTM 7891.1 WILL NOT BE ALLOWED.
ALL PENETRATIONS THROUGH NON-COMBUSTIBLE CONSTRUCTION SHALL BE PACKED WITH NON-COMBUSTIBLE FIRE STOPPING MATERIAL.

GRADE WASTE AND VENT PIPING 1/4 INCH PER FOOT WHERE POSSIBLE BUT NOT LESS THAN 1/8 INCH PER FOOT, UNLESS SPECIFICALLY DIRECTED. MAINTAIN INVERTS WHERE INDICATED.
WASTE PIPING: ALL DISTRIBUTION WATER PIPING CPVC TUBING GLEED FITTINGS AND CONNECTIONS. MAIN SERVICE PIPING FROM METER TO FIRST FITTING SHALL BE CONTINUOUS ROLL PEV.

WATER HEATER: ALL FITTINGS SHALL BE SWEET TYPE WROUGHT COPPER WITH WALL THICKNESS EQUAL TO THE HEATER. ALL FITTINGS SHALL BE MADE WITH 95-3 SOLDER OR SILVERWIRE 100. NO SOLDER W/LEAD SHALL BE PERMITTED.
ALL ROUGHING-IN PIPING SHALL BE RAIN CONCEALED. ALL EXPOSED WATER LINES, STOPS, TRAP AND WASTE PIPE AT THE FIXTURES SHALL BE CHROME PLATED BRASS WHICH FOR THE MOST PART WILL BE FINISHED WITH THE FIXTURES. CHROME PLATED ESCUTHEON RINGS SHALL BE USED AT EACH POINT OF ENTRANCE OF PIPING INTO WALLS, FLOORS, OR CEILINGS. EXPOSED WORK SHALL BE UNIFORM IN HEIGHT AND LOCATION FOR EACH TYPE FIXTURE.

WATER PIPING UNDER GROUND OUTSIDE OF BUILDING SHALL BE AT LEAST 24 INCHES BELOW THE FINISHED GRADE SURFACE.
THERMAL INSULATION: ALL HOT AND COLD WATER PIPING INSIDE BUILDING AND IN GRAB, SPACE, ALL HOT WATER PIPING BEFORE REACHING THE WATER HEATER SHALL BE INSULATED WITH "1" THICK "BARBER" OR JACOBA WITH SEALED JOINTS OR PREPARED FIBERGLASS WITH VAPOR BARRIER JACKET. IN LEU OF INSULATING WATER PIPING IN HEATED WALLS PIPING MAY BE ENCASED IN BATT INSULATION WITHIN THE WALL OR FLOOR/CEILING.

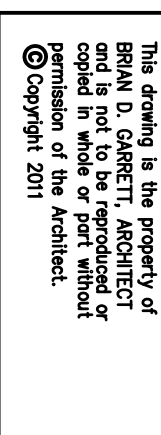
DOMESTIC ELECTRIC WATER HEATERS: ELECTRIC WATER HEATERS SHALL BE UL LISTED AND COMPLETE WITH ALL STANDARD FEATURES, FIVE (5) YEAR TANK WARRANTY, GLASS-LINED TANK, FOAM INSULATION ON THE TANK, AUTOMATIC TEMPERATURE CONTROL, AND AUTOMATIC HIGH-LIMIT SAFETY CONTROL.
EACH WATER HEATER SHALL BE PROVIDED WITH AN ASME APPROVED PRESSURE AND TEMPERATURE RELIEF VALVE. UNITS NOT INSTALLED VACUUM RELIEF VALVE PER ANSI Z21.22. A GATE VALVE SHALL BE PROVIDED ON SAME FLOOR AS UNIT AND NO FURTHER THAN 3 FEET ON THE COLD WATER SUPPLY.

EACH WATER HEATER AND ITS INSTALLATION SHALL COMPLY WITH THE LATEST ISSUE AND ALL ADDENDA ASSOCIATED WITH THE STATE BOILER INSPECTION LAWS AND REGULATIONS. ALL WIRING AND CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
EACH HEATER TANK SHALL BE FITTED WITH APPROVED "TOP" TUBE AND LABELED TO SHOW APPROVAL FOR INSTALLATION.

DISCHARGE RELIEF VALVE FROM EACH WATER HEATER SHALL BE PIPED FULL SIZE TO WITHIN SIX (6) INCHES OF THE FLOOR OVER A FLOOR DRAIN, DRIP PAN OR OTHER SAFE LOCATION. DISCHARGE PIPE SHALL BE SUPPORTED AND ANCHORED SO THAT IT WILL NOT PUT UNDE STRAIN ON THE RELIEF VALVE BODY OR MOUNTING COUPLING.
SUBMITTAL: THE CONTRACTOR SHALL WITHIN (15) DAYS OF RECEIPT OF PROPERLY SIGNED CONTRACT SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL (5) COPIES OF A LIST OF SUPPLIERS AND MANUFACTURER'S MATERIAL AND EQUIPMENT TO BE USED ON THIS PROJECT.

SUBSTITUTION OF MATERIALS AND/OR EQUIPMENT FOR THAT SPECIFIED WILL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER PRIOR TO RECEIPT OF BIDS.
GUARANTEE: THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER SIGNING THE D.M. THE GUARANTEE BEGINS AT END.

PLUMBING GENERAL NOTES:
1. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. WARRANTY ALL WORK AND ALL MATERIALS, EQUIPMENT AND DEVICES FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE.
2. WORK SHALL CONFORM TO OR MEET THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE NORTH CAROLINA CODE VOLUME II - PLUMBING
A. ASPE
B. ASPE
C. UL
D. ANSI
E. ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES
3. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.
4. ALL MATERIALS, EQUIPMENT AND DEVICES SHALL, AS A MINIMUM, MEET THE REQUIREMENTS OF UL WHERE UL STANDARDS ARE ESTABLISHED FOR THE PURPOSES. THESE ITEMS SHALL BE CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE USED.
5. ALL ITEMS SHALL BE NEW, UNLESS NOTED OTHERWISE.
6. ALL MATERIALS AND EQUIPMENT SHALL BE CURRENT PRODUCTS BY MANUFACTURERS REPUTABLE, ENKED IN THE PRODUCTION OF SUCH PRODUCTS.
7. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.
8. INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN PRINTED INSTRUCTIONS AND RECOMMENDATIONS.
9. COORDINATE WITH AND OBTAIN PERMITS AND INSPECTIONS FROM AUTHORITY HAVING JURISDICTION AND INCLUDE ALL FEES IN BID.
10. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION AND ACCEPTANCE FROM AUTHORITY HAVING JURISDICTION.
11. ALL EQUIPMENT AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE. UNO.
12. WHERE PIPES PENETRATE FIRE RATED BARRIERS (WALLS, FLOORS AND CEILING) SHALL OPENING TO BE MADE AND PENETRATION WITH THE LISTED FIRE-RATED PIPING SHALL BE MADE IN ACCORDANCE WITH THE LISTED PER NC BUILDING CODE VOLUME 1. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOORS OF NONCOMBUSTIBLE CONSTRUCTION SHALL BE FIRE-STOPPED WITH NONCOMBUSTIBLE MATERIAL.
13. PROVIDE EXPANSION-DEFLECTION JOINTS WHERE PIPE CROSSES BUILDING EXPANSION OR SEISMIC JOINTS.
14. PRIOR TO BIDDING, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND SHALL INCLUDE IN HIS BID ALL LABOR, MATERIAL AND OPERATIONS REQUIRED TO COMPLETE THE WORK (NOTIFY OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO BID).
15. CLEANOUTS, LINE SIZE, UNO.
16. FLOOR DRAINS, LINE SIZE, UNO.
17. FLOOR DRAINS WITH SUBSCRYPT CO TO HAVE INTEGRAL CLEANOUT AND SHALL BE SIMILAR TO REGULAR FLOOR DRAIN SPECIFIED, UNO.



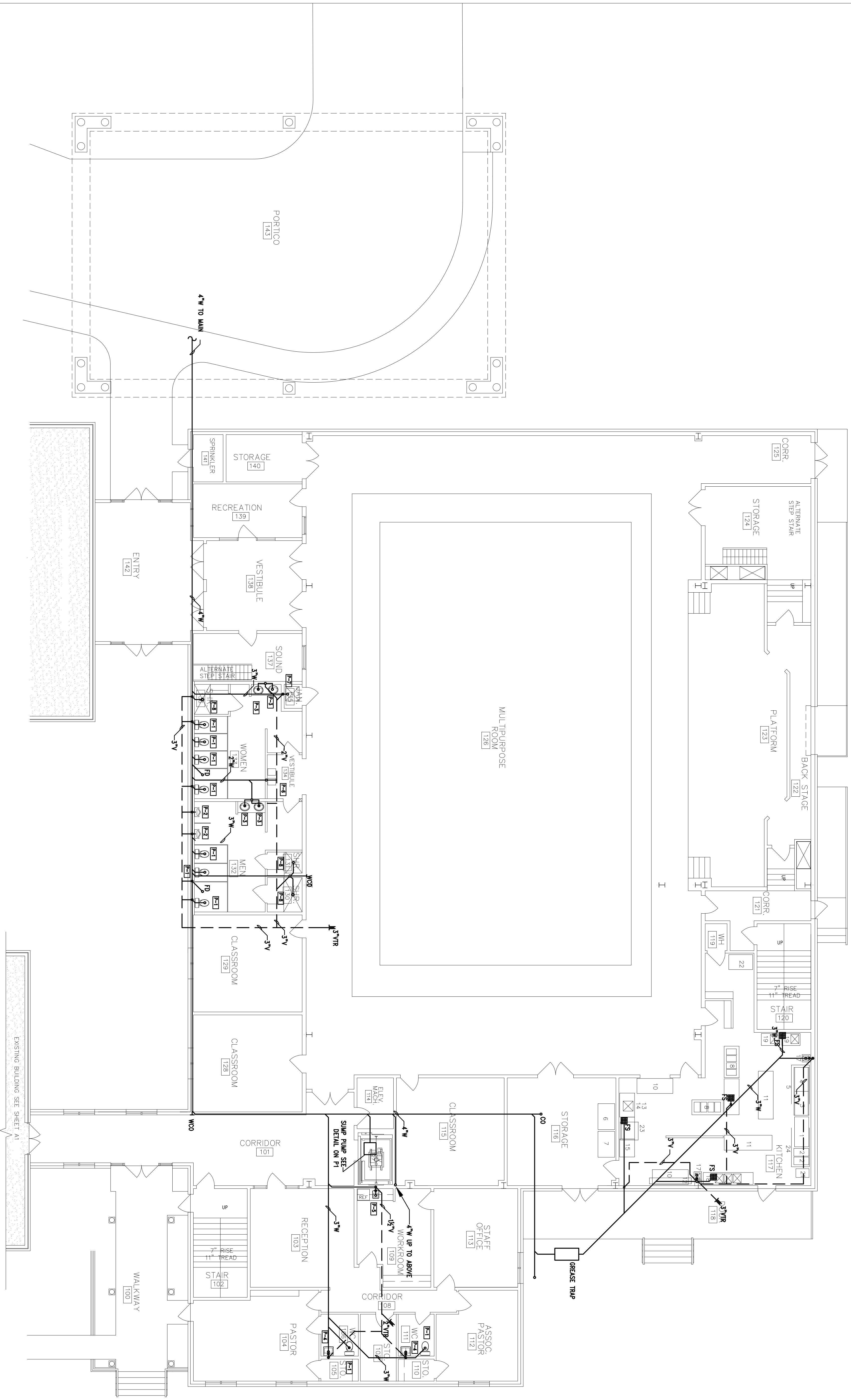
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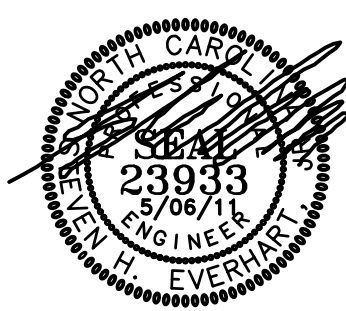
PLUMBING NOTES
AND DETAILS

PROJECT NO. 04200
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FIRST FLOOR PLAN - WASTE

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



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PROJECT NO.: 1106

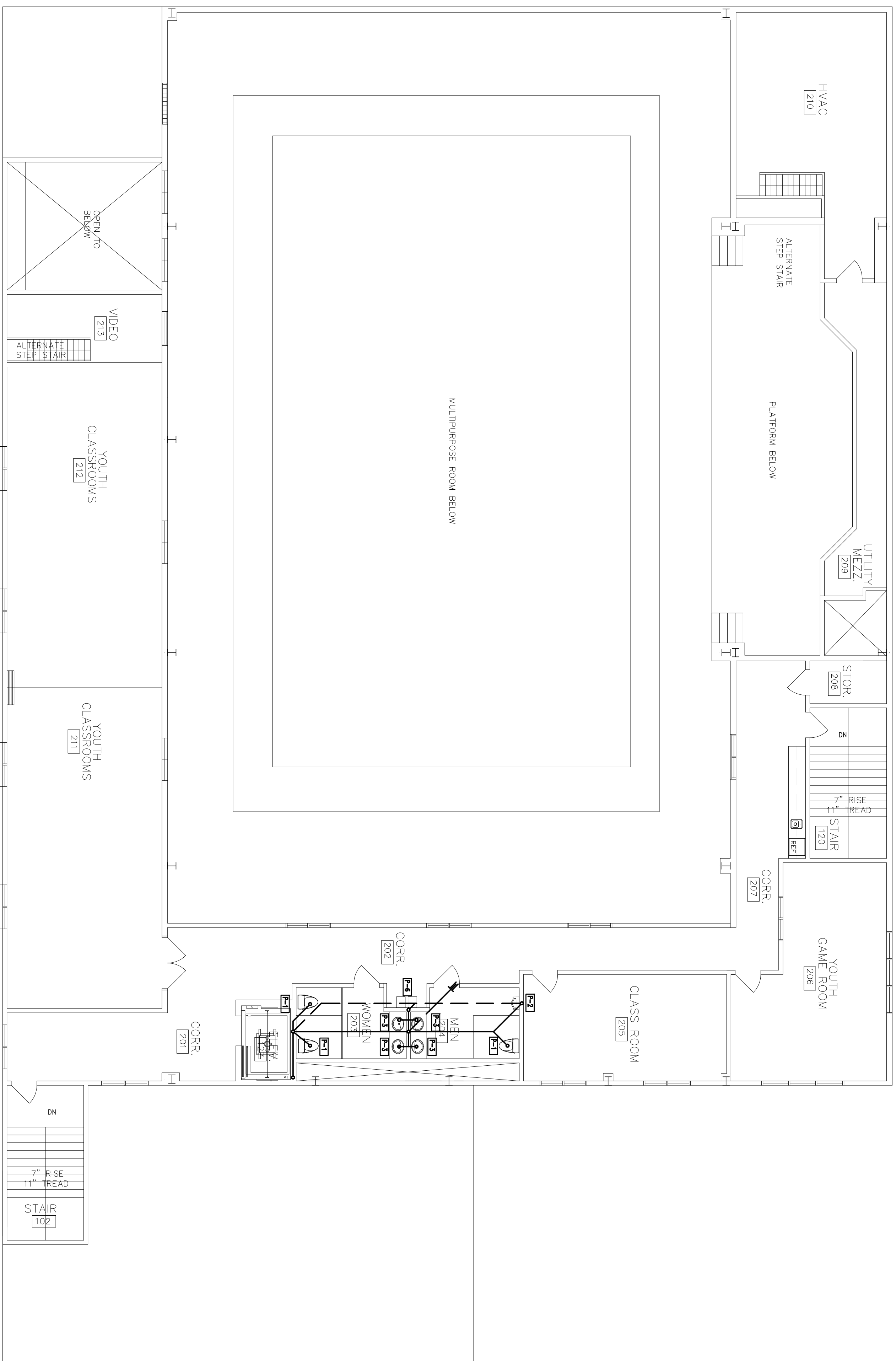
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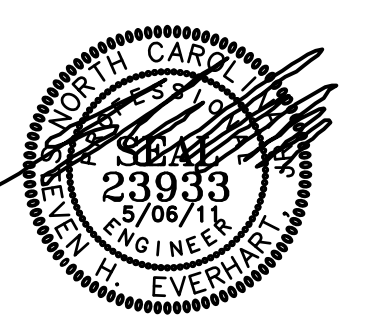
FIRST FLOOR PLAN
WASTE

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SECOND FLOOR PLAN — WASTE
SCALE: 1/8"=1'-0"



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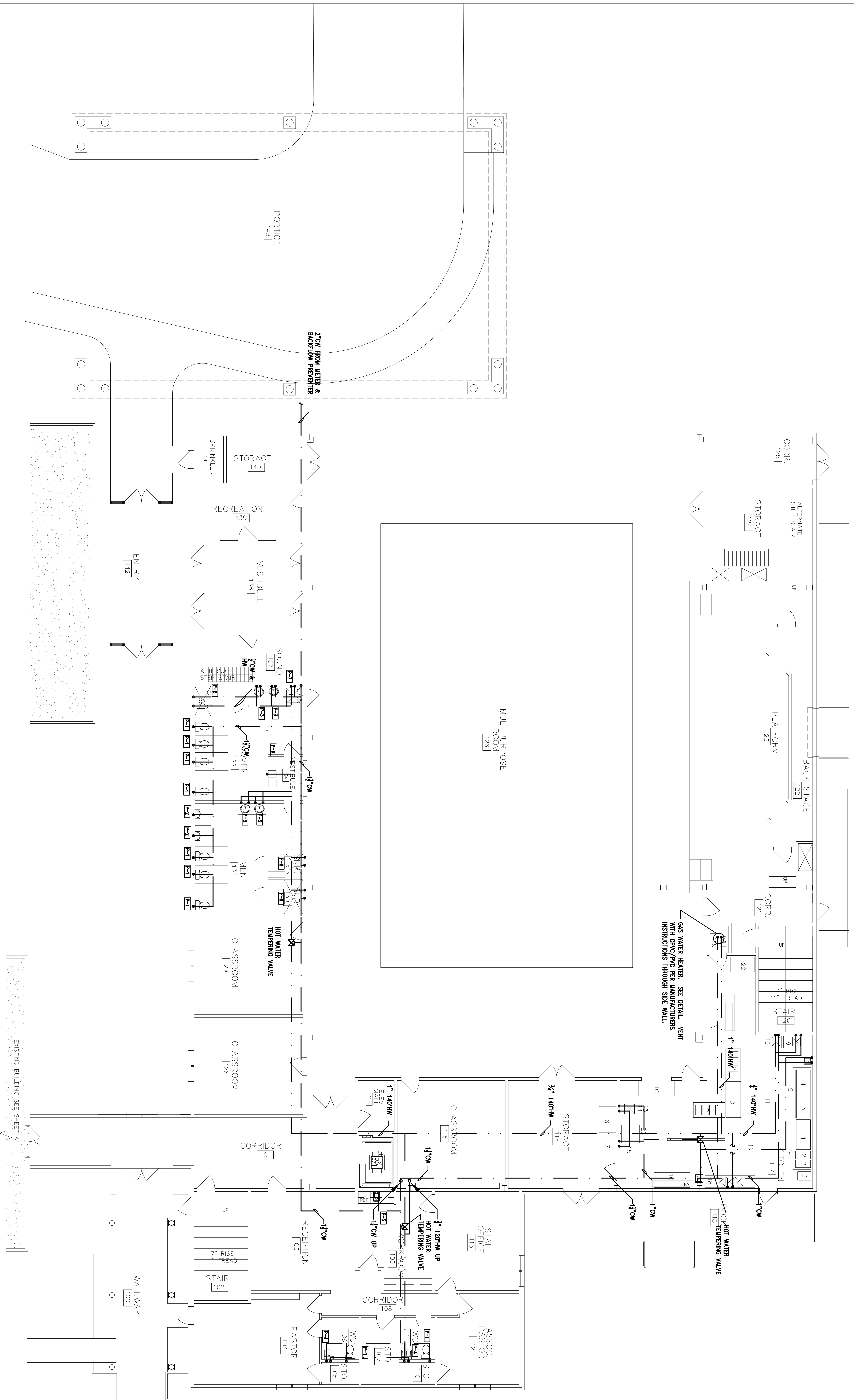
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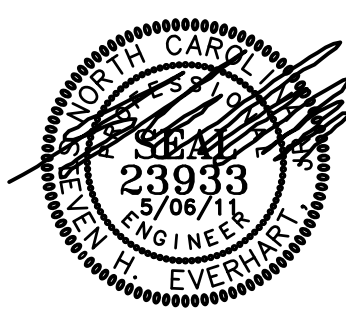
SECOND FLOOR
PLAN WASTE

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FIRST FLOOR PLAN — WATER
SCALE: 1/8"=1'-0"



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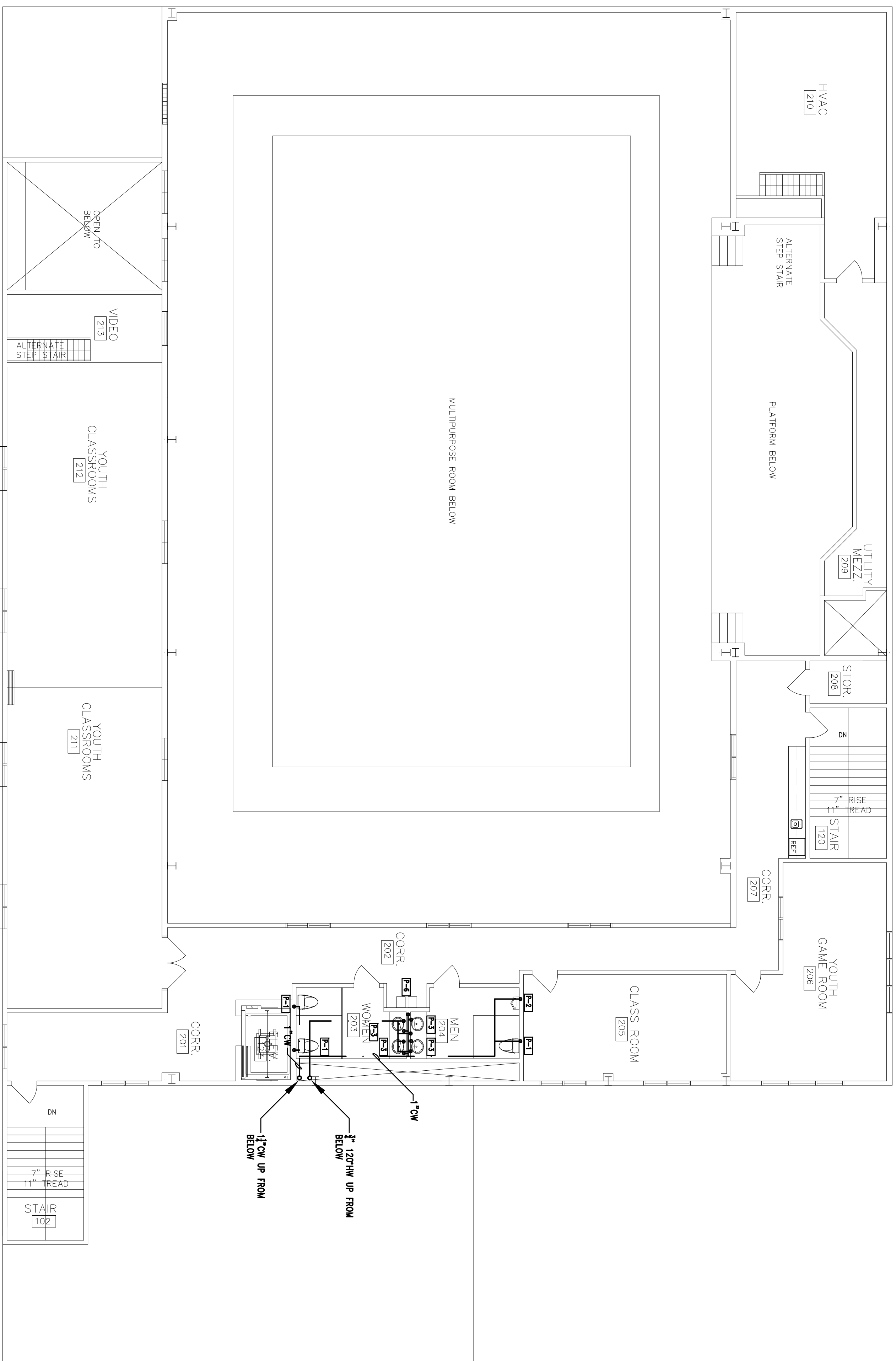
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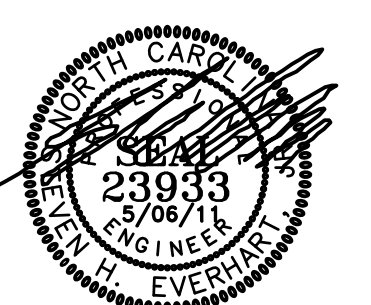
FIRST FLOOR PLAN WATER

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SECOND FLOOR PLAN — WATER
SCALE: 1/8"=1'-0"



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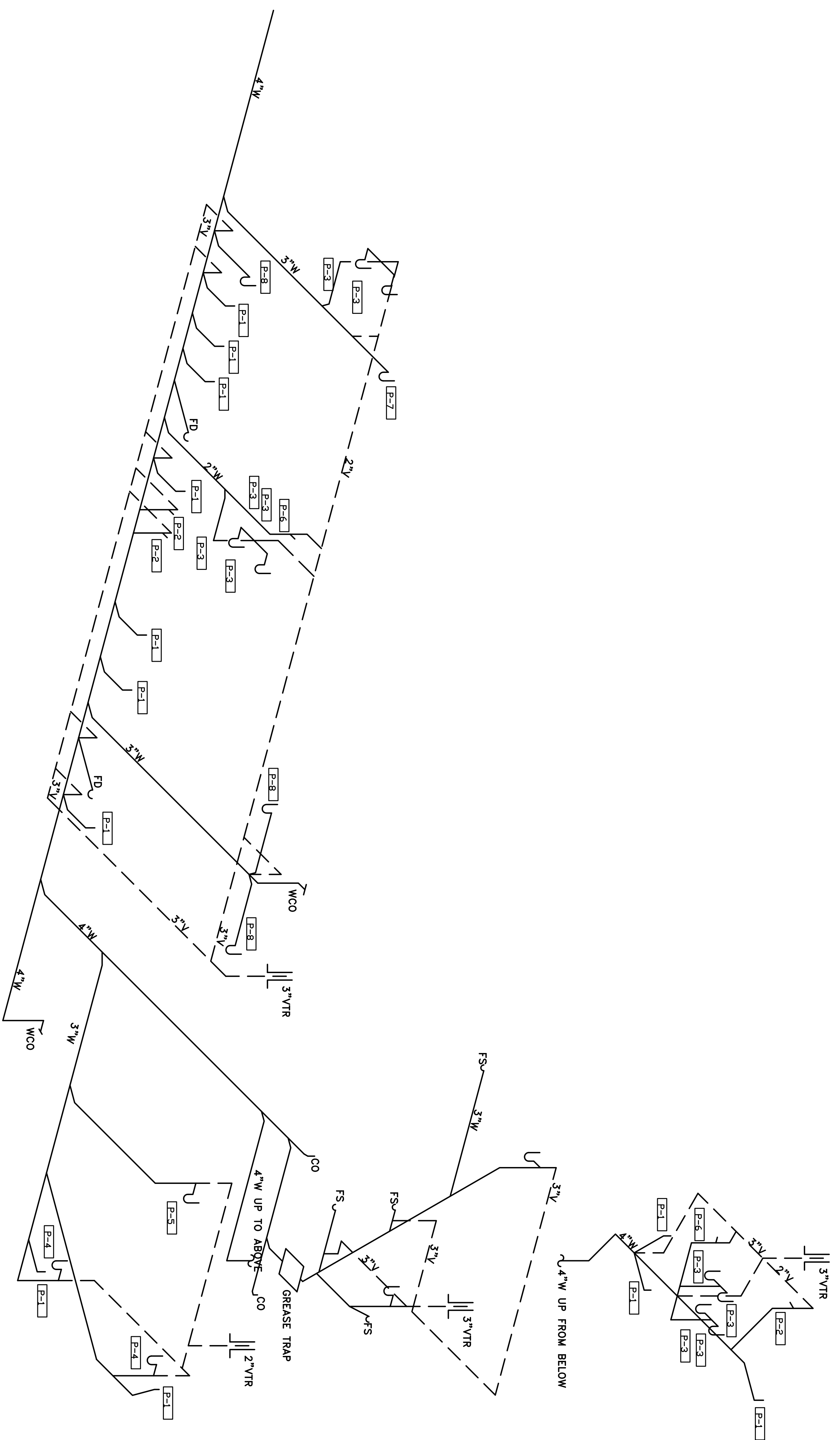
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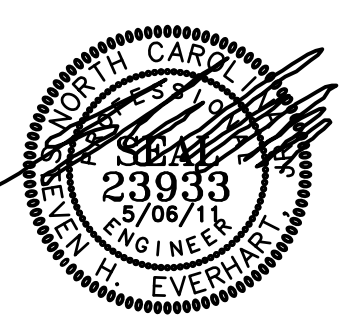
SECOND FLOOR
PLAN WATER

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WASTE RISER
SCALE: NONE



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PLUMBING RISER

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SPLIT SYSTEM HEAT PUMP SCHEDULE

UNIT NUMBER	AHU-4, 6	AHU-1, 7, 8	AHU-3,5	AHU-2
AREA SERVED	TRANE	TRANE	TRANE	MITSUBISHI
MANUFACTURER	4TECF3081	4TECF3681	4TECF4881	PLF7-24
MODEL NUMBER	125	125	151	37
UNIT WEIGHT (LBS)	1000	1200	1600	570
TOTAL AIR CFM	0	0	0	0
OUTSIDE AIR CFM	1/3	1/3	1/2	0.53
FAN H.P.	0.4	0.4	0.4	-
EXT. S.P. (IN. H2O)	208/60/1	208/60/1	208/60/1	208/60/1
POWER SUPPLY	30,300	34,600	48,000	22,000
TOTAL CAPACITY COOLING (BTUH)	22,000	24,900	35,000	13,860
SENSIBLE CAPACITY COOLING (BTUH)	80/67	80/67	80/67	80/67
ENTERING AIR TEMP.	70 °F	70 °F	70 °F	70 °F
ENTERING AIR TEMP. (BTUH)	28,600	34,600	46,500	23,200
LOW TEMPERATURE (BTUH)	15,600	20,600	29,400	3,600
AUXILIARY COIL CAPACITY	3.6 KW @ 208	5.77KW @ 208	7.21 KW @ 208	-
POWER SUPPLY	208/60/1	208/60/1	208/60/1	VIA OUTDOOR UNIT
MINIMUM AMPACITY	24	37	47	-
MAX. OVERCURRENT PROTECTION	25	40	50	-
UNIT NUMBER	HP-4	HP-1, 7, 8	HP-5	HP-1,2
MODEL NUMBER	4TWB3030	4TWB3036	4TWB3048	PJZ-424NHA
UNIT WEIGHT	209	242	255	165
ENTERING AIR TEMP.	95TF	95TF	95TF	95TF
FAN TYPE	PROPPELLER	PROPPELLER	PROPPELLER	PROPPELLER
FAN H.P.	1/8	1/4	1/4	.93
COMPRESSOR	RCIP	SCROLL	SCROLL	SCROLL
POWER SUPPLY	208/60/1	208/60/1	208/60/1	208/60/1
MINIMUM AMPACITY	15	21	30	18
MAX. OVERCURRENT PROTECTION	25	35	50	30
ACCESSORIES	(1), (2)	(1), (2)	(1), (2)	(1), (2)

- PROVIDE WALL MOUNTED, PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER.
- MECHANICAL CONTRACTOR SHALL INSTALL DUCT DETECTOR IN RETURN AIR DUCT FOR AIR HANDLER SHUTDOWN. DETECTOR PROVIDED AND CONNECTED TO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.

AIR DISTRIBUTION DEVICE SCHEDULE

TAG	SERVICE	DESCRIPTION NECK SIZE	OVERALL SIZE	MODEL NO.	DESCRIPTION & ACCESSORIES
A	SUPPLY	8"	24"x24"	SCD	1, 2, 3, 5, 6
B	SUPPLY	10"	24"x24"	SCD	1, 2, 3, 5, 6
C	SUPPLY	8"	12"x12"	ASCD	1, 2, 4, 5, 6, 9
D	SUPPLY	24"	54"x9"	RCD	1, 2, 6, 7
E	EXHAUST	8"	12"x12"	ASCD	1, 2, 4, 5, 6, 9
F	SUPPLY	12"	24"x24"	SCD	1, 2, 4, 5, 6
R1	RETURN	30"x30"	30"x30"	98L	1, 2, 4, 8, 9
R2	RETURN	12"	24"x24"	SCD	1, 2, 3, 5, 6
R3	RETURN	8"	24"x24"	SCD	1, 2, 3, 5, 6
R4	RETURN	12"	24"x24"	SCD	1, 2, 4, 5, 6

- PRICE INDUSTRIES INC.; OR APPROVED EQUAL
- STANDARD WHITE FINISH
- T-BAR LAY-IN PANEL
- SURFACE MOUNT BORDER
- SQUARE FACE, ROUND NECK DIFFUSER
- BUTTERFLY STYLE VOLUME CONTROL DAMPER
- ADJUSTABLE ROUND DIFFUSER
- MULTIPLE CORES OF THIS SIZE IN SINGLE BORDER SEE PLAN FOR WIDTH OF OVERALL GRILLE
- ALUMINUM CONSTRUCTION

GENERAL MECHANICAL SPECIFICATIONS

ALL WORK SHALL COMPLY WITH THE REQUIREMENTS TO THE NC BUILDING CODE VOLUME III - MECHANICAL SHEET METAL WORK. THIS CONTRACTOR SHALL FURNISH ALL DUCTWORK AND ASSOCIATED SHEET METAL WORK AS CALLED FOR ON THE DRAWINGS AND REQUIRED FOR A COMPLETE DUCTED AIR DISTRIBUTION SYSTEM. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH BEST PRACTICES OF SHEET METAL WORK AND SMACNA STANDARDS.

DUCTBOARD SHALL BE ACCEPTABLE IF SPECIFICALLY REQUESTED BY OWNER.

DUCTS 25 INCHES OR SMALLER IN MAXIMUM DIMENSION SHALL BE SUPPORTED WITH 1/8" INCH FLAT BAND HANGERS. DUCTS 25 INCHES AND LARGER SHALL BE SUPPORTED BY 3/4" INCH X 1-1/2" INCH ANGLE IRON AND ROUND ROD. SUPPORTS SHALL BE NOT MORE THAN 8 FEET ON CENTERS, PROPERLY FASTENED AND PLACED TO BUILDING STRUCTURES AND SHALL EXTEND AND BE RIVETED TO THE BOTTOM OF DUCTS.

UNLESS OTHERWISE SPECIFIED, FURNISH AND INSTALL ALL NECESSARY LINTELS, PROPERLY SIZED, SHEET METAL SLEEVES AND ESCUTCHEON COLLARS WHERE DUCTWORK RISES THROUGH FLOORS OR PASSES THROUGH WALLS OR CEILING.

FURNISH AND INSTALL FLEXIBLE COLLARS IN THE DUCTWORK CONNECTIONS TO AIR HANDLING FANS TO PREVENT NOISE TRANSMISSION BETWEEN SECTIONS.

ALL CHANGES IN DUCT DIRECTION SHALL BE LONG RADIUS ELBOWS OR SHALL BE FITTED WITH TURNING VANES.

DUCT INSULATION:

EDGES OF INSULATION SHALL BE CUT STRAIGHT AND TRUE AND SHALL BE TIGHTLY BUTTED. THE VAPOR BARRIER JACKET SHALL OVERLAP THE BLANKET JOINT A MINIMUM OF THREE INCHES. THE JACKET LAP SHALL BE PROTECTED WITH A VAPOR BARRIER TAPE. THE VAPOR BARRIER TAPE SHALL BE 3" WIDE AND SHALL BE FASTENED WITH TAPE OF THE SAME MATERIAL AS THE JACKET AND SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE.

ALL CUTS, TEARS AND PENETRATIONS IN THE VAPOR BARRIER JACKET SHALL BE SEALED WITH JOINT TAPE. ALL EDGES OF INSULATING BLANKET SHALL BE SEALED FROM THE JACKET TO DUCT SURFACE WITH TAPE.

INSULATING BLANKET ON THE BOTTOM OF SURFACES IN EXCESS OF 24 INCHES WIDE SHALL BE SECURED AGAINST THE DUCT WITH ADHESIVE OVER THE ENTIRE AREA, MECHANICAL CLIPS ON 24 INCH CENTER OR BY WIRE TIES AROUND THE DUCT SPACED 24 INCHES C/C.

CONTRACTOR MAY USE FLEXIBLE DUCTWORK (MINIMUM LENGTHS 14'-0" FOR FINAL CONNECTIONS TO DISTRIBUTOR/COLLARS. FLEXIBLE DUCTWORK SHALL BE CERTIFIED 25 AS MANUFACTURED BY THE GUARANTEED CORPORATION.

REFRIGERATION PIPING: ALL REFRIGERATION PIPING FROM THE AIR COOLED CONDENSERS TO THE REFRIGERANT COIL SHALL BE TYPE L HARD DRAWN COPPER PER ASTM B-88. ALL FITTINGS AND JOINTS SHALL BE MADE WITH SOLDER. PIPING SHALL BE SUPPORTED BY HANGERS AND SHALL BE PROTECTED WITH A VAPOR BARRIER TAPE. THERMOSTATIC EXPANSION VALVES AND ALL ACCESSORIES SHALL BE EQUAL TO ALCO, INC. OR APPROVE EQUAL. PROVIDE AND INSTALL DISTRIBUTORS EQUAL TO ALCO, INC., SUITABLE FOR MODULATING FLOW RATES.

PROVIDE SPECIALTIES SUCH AS SOLENOID VALVES, SIGHT GLASSES, AND FILTER/DRYERS AS INDICATED AND REQUIRED FOR PROPER SYSTEM OPERATION. COMPONENTS SHALL BE SPECIFICALLY DESIGNED FOR REFRIGERATION SERVICE.

REGISTER AND GRILLES: ALL REGISTERS AND GRILLES SHALL BE OF SIZE, STYLE AND CAPACITY CALLED FOR ON PLANS AND IN THE GRILLE SCHEDULE. PROVIDE RUBBER OR EXPANDED FOAM GASKETS COMPLETELY AROUND ALL REGISTER AND GRILLE FRAMES TO PREVENT AIR LEAKAGE BETWEEN GRILLE FRAME AND DUCT OR BETWEEN GRILLE FRAME AND SURROUNDING FINISHED SURFACE. ACCEPTABLE MFGS: PRICE, CARNES, METALAIR, KRUGER.

OPERATING INSTRUCTIONS, CERTIFICATES AND WARRANTIES: THE ORIGINAL OF ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER AND ONE (1) COPY EACH TO THE ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.

THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUFACTURER'S WARRANTIES FOR ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED TO THE OWNER PRIOR TO SUBMITTING REQUEST FOR FINAL PAYMENT.

PRIOR TO FINAL PAYMENT TO THE CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE TO TRAIN THE AUTHORIZED PERSONNEL ON HOW TO SERVICE, START-UP AND SHUT-DOWN THE VARIOUS SECTIONS OF THE SYSTEM. UPON COMPLETION OF THIS PHASE OF THE CONTRACT, THE CONTRACTOR SHALL SIGN A LETTER OF ACCEPTANCE FROM THE ENGINEER. THIS LETTER SHALL BE SIGNED BY THE ENGINEER AND ACCEPTANCE OF THIS LETTER AND AT THE DISCRETION OF THE ENGINEER, THE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SYSTEM ACCEPTANCE.

THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED ONLY AS AN ENTIRE SYSTEM UPON SATISFACTORY COMPLETION OF THE REQUIRED TESTS. NO PARTIAL ACCEPTANCE OF ANY PART OR PORTION OF APPARATUS WILL BE MADE.

INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DO ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE AS JUDGED BY THE ENGINEER.

ALL EQUIPMENT AND PIPING SHALL BE SO INSTALLED THAT NO OBJECTIONABLE NOISES FROM EQUIPMENT, PIPING OR AIR DISTRIBUTION ARE AUDIBLE IN THE FINISHED AREAS.

GUARANTEES: THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FOLLOWING FINAL INSPECTION AND ACCEPTANCE OF THE SYSTEM BY THE ENGINEER AND OWNER. THIS APPLIES TO ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, REGARDLESS OF SOURCE.

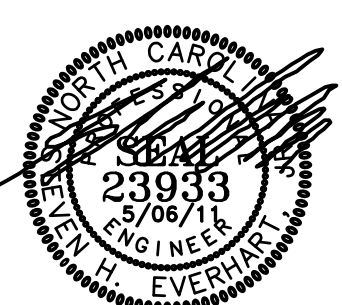
THE ONE (1) YEAR GUARANTEE PERIOD WILL START ON THE DAY OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER WITH TWO (2) COPIES STATING THE BEGINNING AND ENDING DATES OF THE GUARANTEE BASED ON THE AFOREMENTIONED STARTING DATES.

EXTENDED GUARANTEE: PROVIDE AN ADDITIONAL FOUR (4) YEAR GUARANTEE ON ALL COMPRESSORS BEYOND THE ABOVE MENTIONED ONE (1) YEAR GUARANTEE PERIOD.

FAN SCHEDULE

TAG	CFM	S.P. IN.	W.G.	RPM	WATTS	SONES	MANUFACTURER MODEL NO.	DESCRIPTION/ ACCESSORIES
EF-1	75	0.125		900	54 WATTS	3.2	GREENHECK SP-880	1, 2, 3
EF-2	150	0.25		1050	129 WATTS	4.5	GREENHECK SP-8150	1, 2, 3
EF-3	700	0.25		1100	350 WATTS	6.3	GREENHECK CSP-4700	2, 3, 4

- CABINET CEILING FAN, DIRECT DRIVE, CENTRIFUGAL, SPRING LOADED ALUMINUM BACKDRAFT DAMPER
- ALUMINUM, WHITE ENAMEL CEILING GRILLE.
- ALUMINUM WALL CAP WITH BUILT-IN FLASHING FLANGE AND INTEGRAL BIRDSCREEN.
- CABINET FAN, DIRECT DRIVE CENTRIFUGAL, SPRING LOADED ALUMINUM BACKDRAFT DAMPER.



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DATE: MAY 06, 2011
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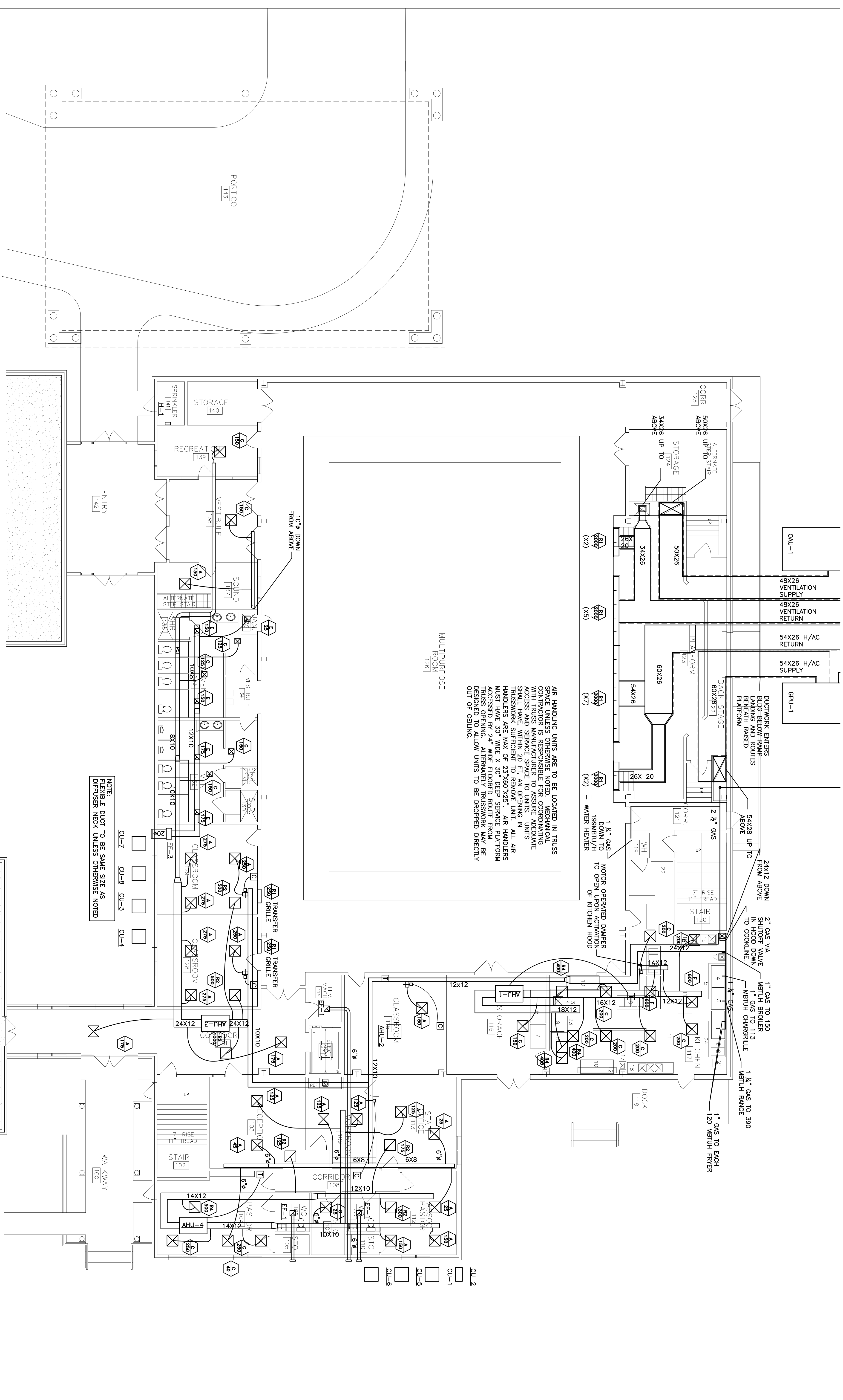
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MECHANICAL
NOTES & DETAILS

SHEET NUMBER:

4

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ELECTRIC UNIT HEATER SCHEDULE

UNIT NO.	TYPE	CFM	MANUFACTURER & MODEL	HEAT CAP. KW	POWER SUPPLY	DESCRIPTION & ACCESSORIES
H-1	WALL	175	MARTEL E331Z1SRW	1	120-1-60	1, 2, 4

- (1) MARTEL MANUFACTURING CO., OR EQUAL.
- (2) HORIZONTAL AIR DELIVERY, NICKEL CHROMIUM RESISTANCE COIL.
- (3) VERTICAL AIR DELIVERY, NICKEL CHROMIUM RESISTANCE COIL.
- (4) BUILT IN CONTACTORS AND CONTROL TRANSFORMER.
- (5) REMOTE LINE VOLTAGE THERMOSTAT.

FIRST FLOOR PLAN - MECHANICAL

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

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SHEET NUMBER:
M2
 OF 4

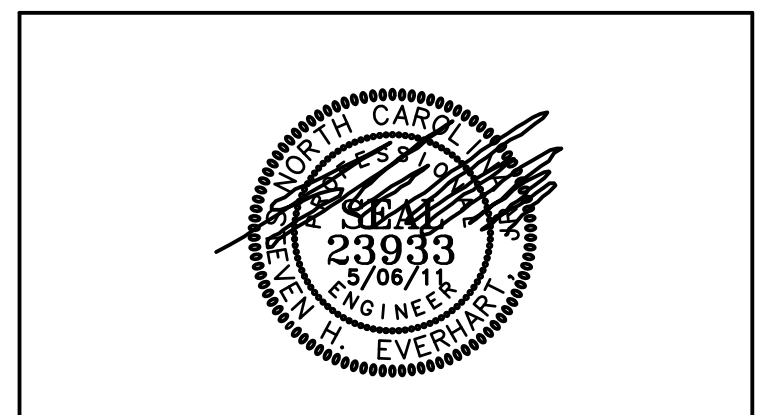
FIRST FLOOR PLAN MECHANICAL

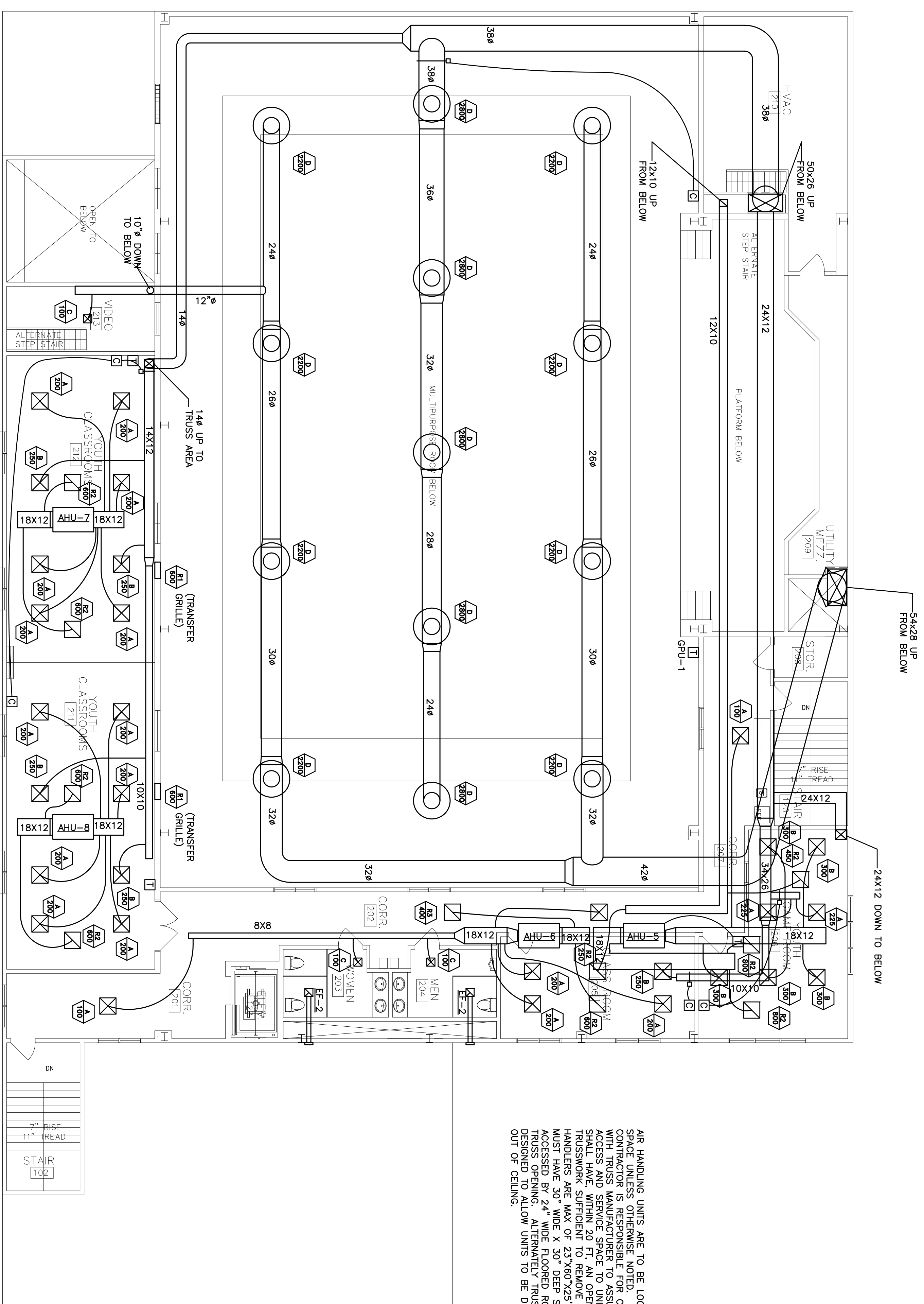
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AIR HANDLING UNITS ARE TO BE LOCATED IN TRUSS SPACE UNLESS OTHERWISE NOTED. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TRUSS WORK. ALL TRUSSWORK SHALL HAVE SUFFICIENT SERVICE SPACE TO UNITS. TRUSSWORK SUFFICIENT TO REMOVE UNIT. ALL AIR HANDLERS ARE MAX OF 23'X60'X25". AIR HANDLERS MUST HAVE 30" WIDE X 30" DEEP SERVICE PLATFORM ACCESSED BY 24" WIDE FLOORED TRUSSWORK. ALL BE CROSS OPENING. ALTERNATELY TRUSSWORK MAY BE REMOVED TO ALLOW UNITS TO BE DROPPED DIRECTLY OUT OF CEILING.

NOTE:
ALL FLEXIBLE DUCTWORK
TO BE SAME SIZE AS
DIFFUSERS NEW UNITS.

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



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SECOND FLOOR
PLAN MECHANICAL

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M3
of 4
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MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE

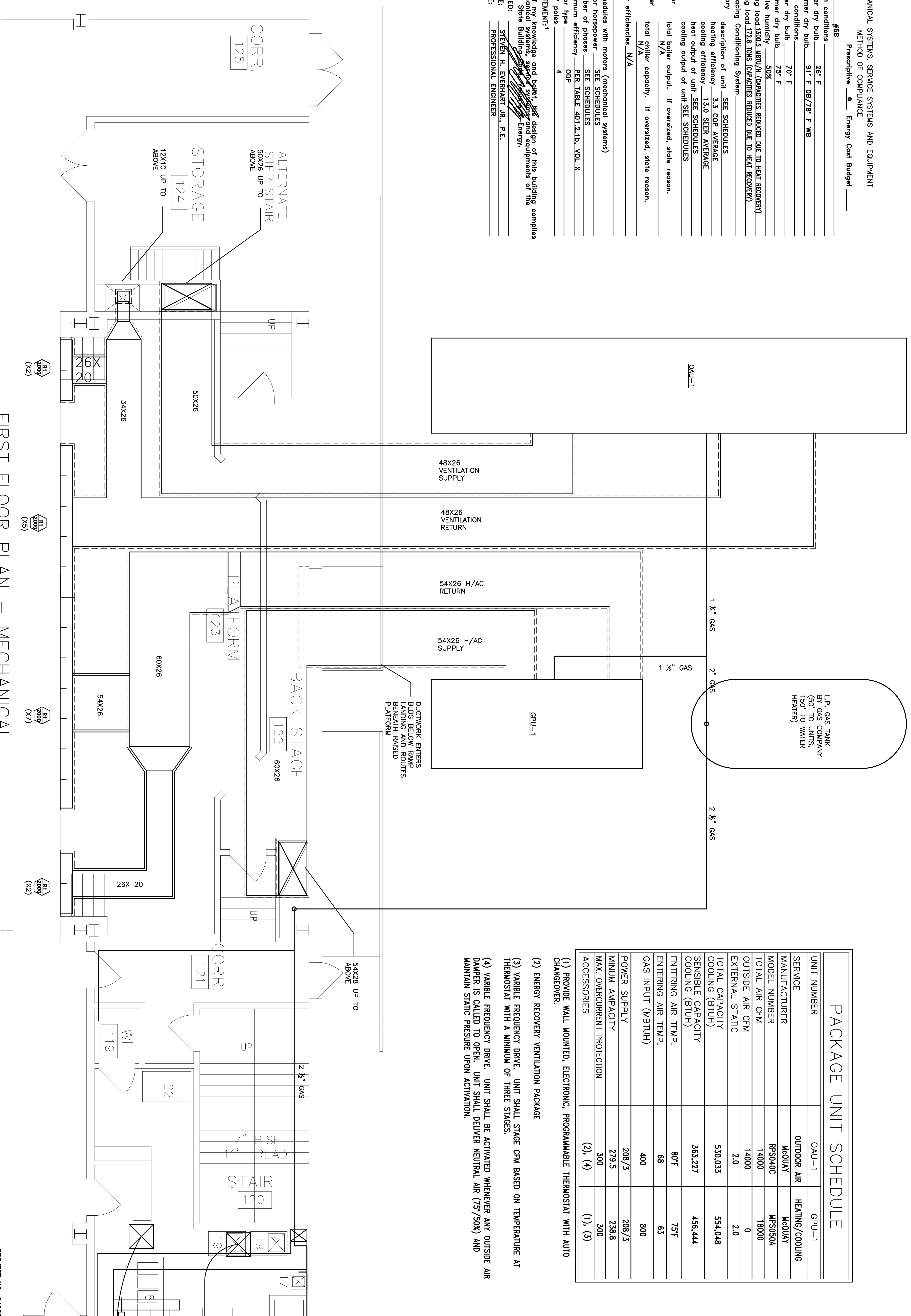
Prescriptive — Energy Cost Budget —

Thermal Zone #58
 Exterior design conditions
 winter dry bulb 26° F
 summer dry bulb 91° F DB/78° F WB
 Interior design conditions
 winter dry bulb 70° F
 summer dry bulb 75° F
 relative humidity 50%
 Building heating load 1300.3 MBTU/H (CAPACITIES REDUCED DUE TO HEAT RECOVERY)
 Building cooling load 172.8 TONS (CAPACITIES REDUCED DUE TO HEAT RECOVERY)
 Mechanical Spacing Conditioning System
 Unitary description of unit SEE SCHEDULES
 heating efficiency 3.3 COP AVERAGE
 cooling efficiency 13.0 SEER AVERAGE
 heat output of unit SEE SCHEDULES
 cooling output of unit SEE SCHEDULES
 boiler total boiler output. If oversized, state reason.
 chiller total chiller capacity. If oversized, state reason.
 List equipment efficiencies N/A

Equipment schedules with motors (mechanical systems)
 motor horsepower SEE SCHEDULES
 number of phases SEE SCHEDULES
 minimum efficiency PER TABLE 401.2.1b, VOL. X
 motor type ODP
 # of poles 4

DESIGNER STATEMENT:
 To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipments of the North Carolina State Building Code - Energy.

SIGNED: STEVEN H. EVERHART, JR., P.E.
 NAME: STEVEN H. EVERHART, JR., P.E.
 TITLE: PROFESSIONAL ENGINEER



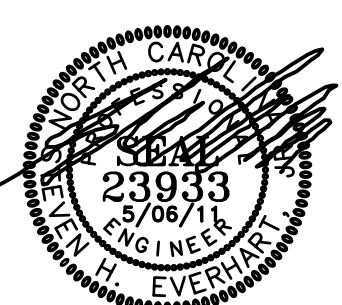
PACKAGE UNIT SCHEDULE

UNIT NUMBER	OAU-1	GPU-1
SERVICE	OUTDOOR AIR	HEATING/COOLING
MANUFACTURER	McQUAY	McQUAY
MODEL NUMBER	RPS340C	MP5050A
TOTAL AIR CFM	14000	18000
OUTSIDE AIR CFM	14000	0
EXTERNAL STATIC	2.0	2.0
TOTAL CAPACITY COOLING (BTUH)	530,033	554,048
SENSIBLE CAPACITY COOLING (BTUH)	363,227	456,444
ENTERING AIR TEMP.	80°F	75°F
ENTERING AIR TEMP.	68	63
GAS INPUT (MBTUH)	400	800
POWER SUPPLY	208/3	208/3
MINUM AMPACITY	279.5	238.8
MAX. OVERCURRENT PROTECTION	300	300
ACCESSORIES	(2), (4)	(1), (3)

- (1) PROVIDE WALL MOUNTED, ELECTRONIC, PROGRAMMABLE THERMOSTAT WITH AUTO CHANGEOVER.
- (2) ENERGY RECOVERY VENTILATION PACKAGE
- (3) VARIABLE FREQUENCY DRIVE. UNIT SHALL STAGE CFM BASED ON TEMPERATURE AT THERMOSTAT WITH A MINIMUM OF THREE STAGES.
- (4) VARIABLE FREQUENCY DRIVE. UNIT SHALL BE ACTIVATED WHENEVER ANY OUTSIDE AIR DAMPER IS CALLED TO OPEN. UNIT SHALL DELIVER NEUTRAL AIR (75°/50%) AND MAINTAIN STATIC PRESSURE UPON ACTIVATION.

FIRST FLOOR PLAN - MECHANICAL

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



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FIRST FLOOR PLAN
 MECHANICAL

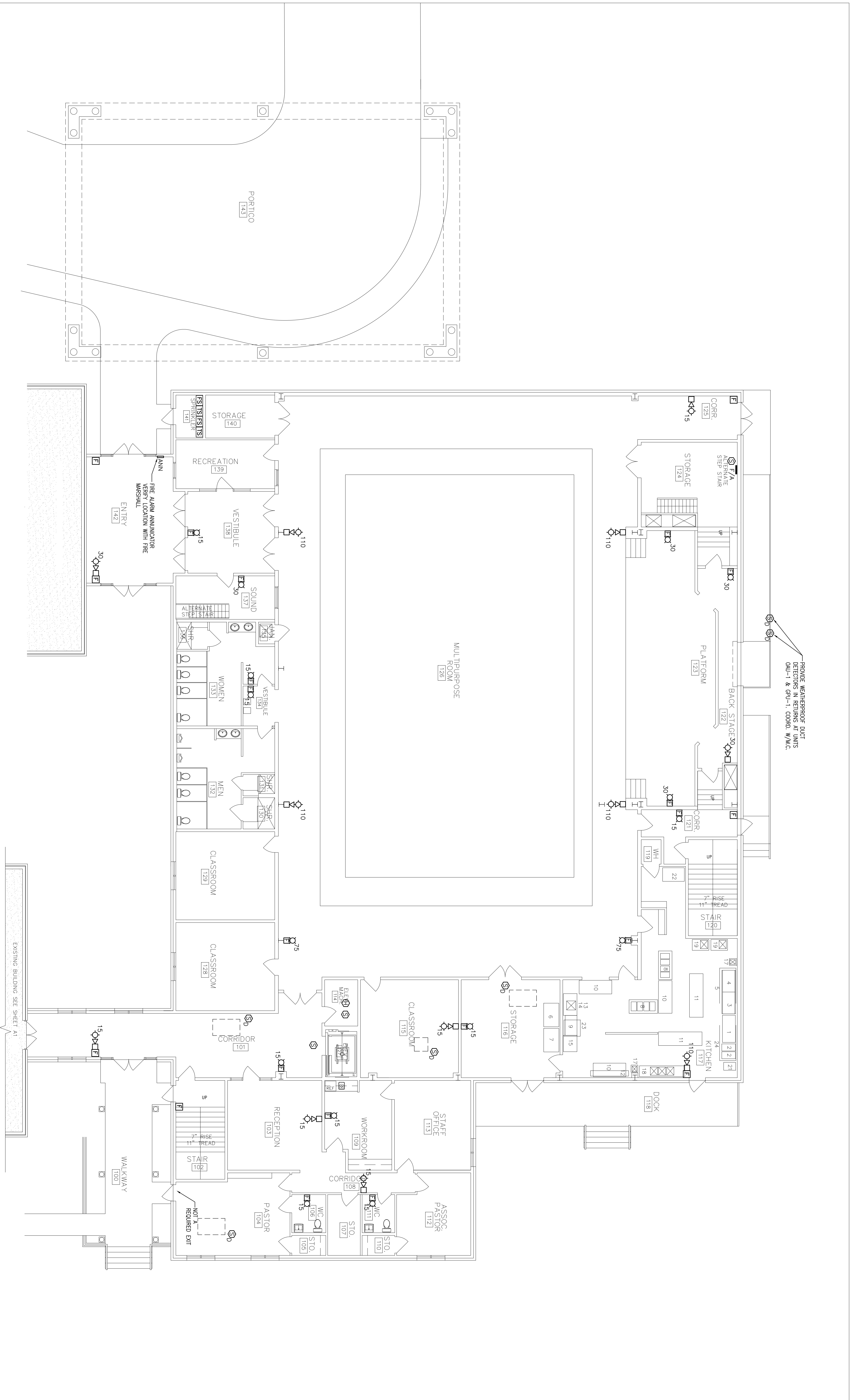
SHEET NUMBER:

M/4
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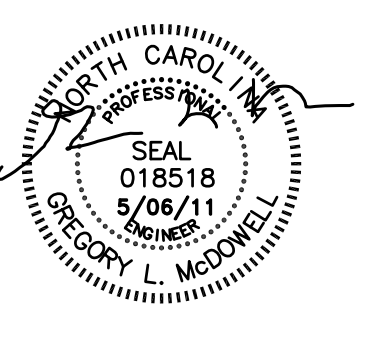
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FIRST FLOOR PLAN – FIRE ALARM

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

EXISTING BUILDING SEE SHEET A1



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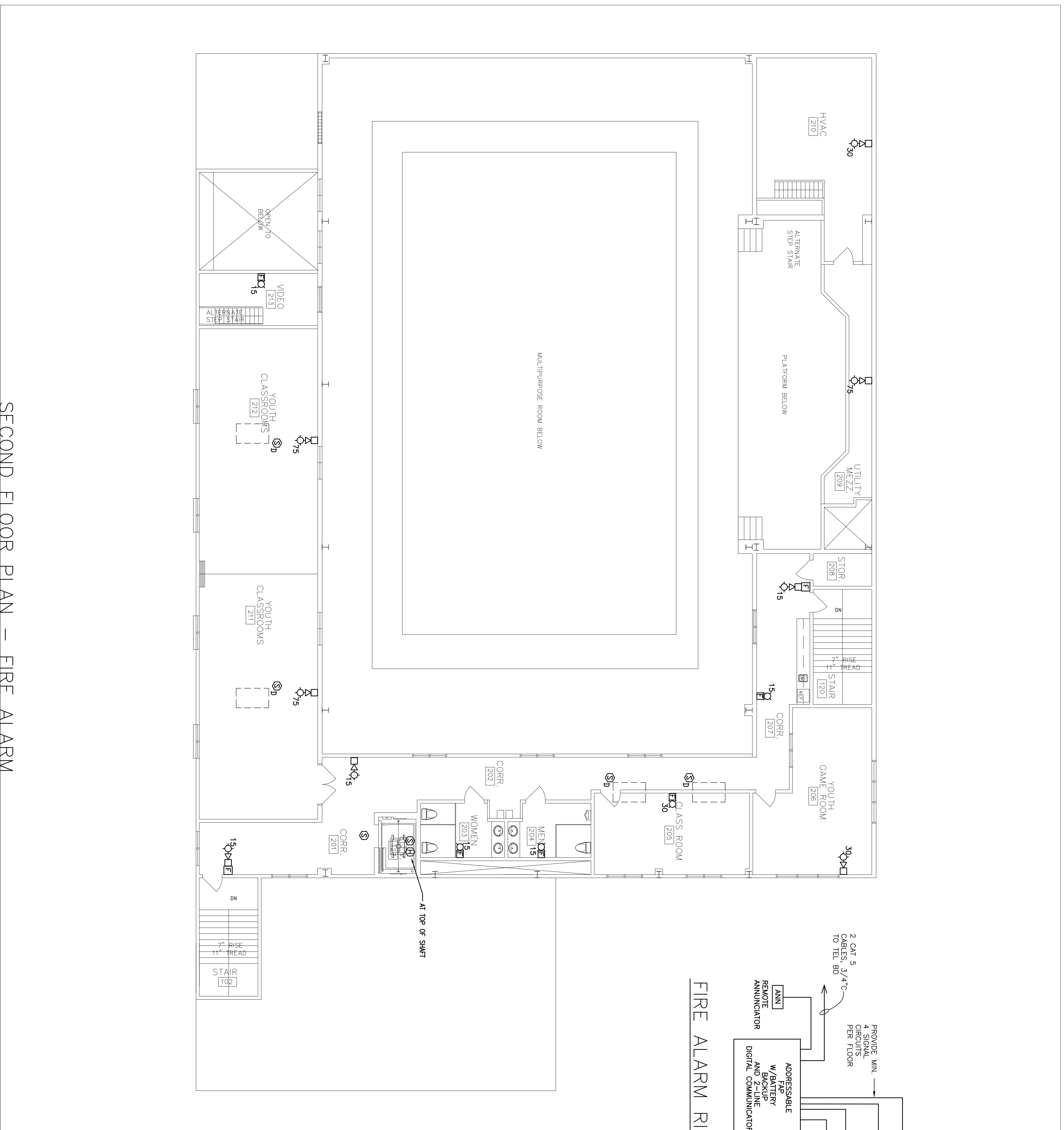
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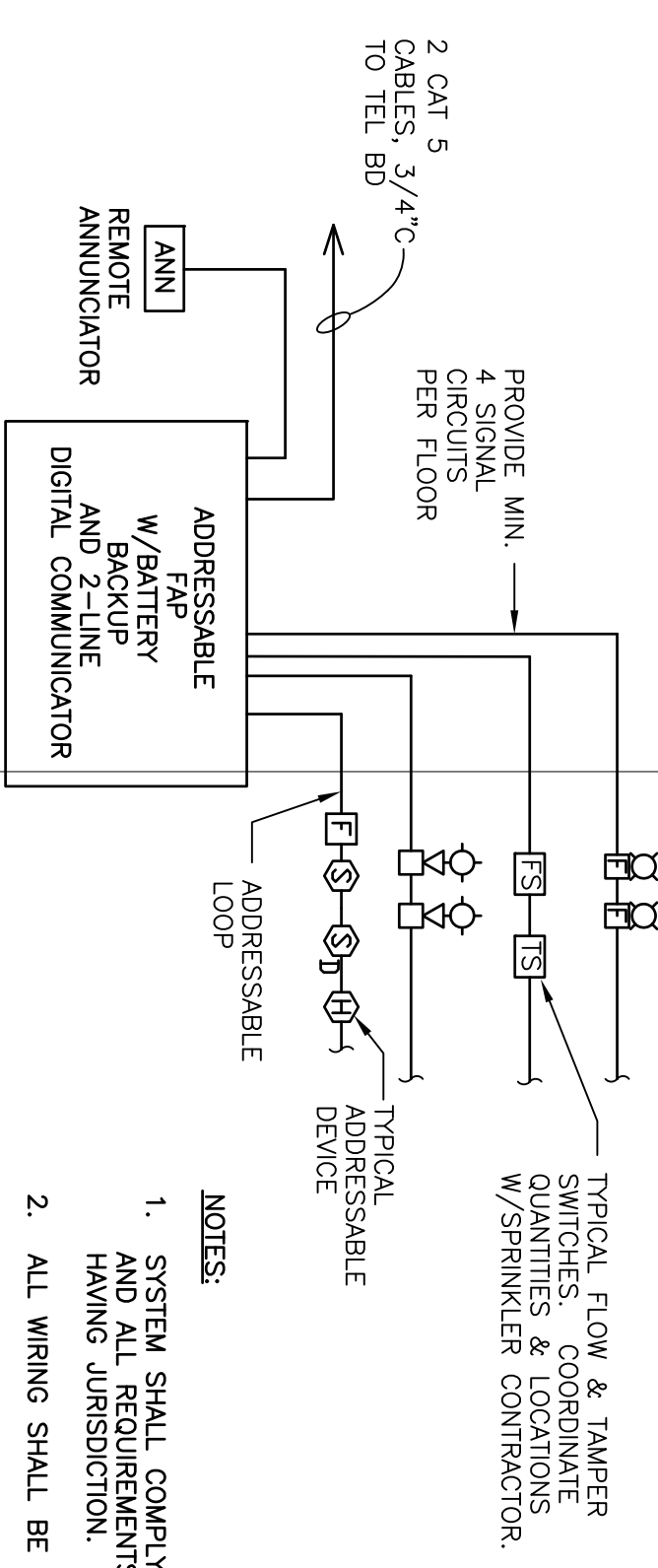
**FIRST FLOOR PLAN
FIRE ALARM**

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SECOND FLOOR PLAN – FIRE ALARM
SCALE: 1/8"=1'-0"

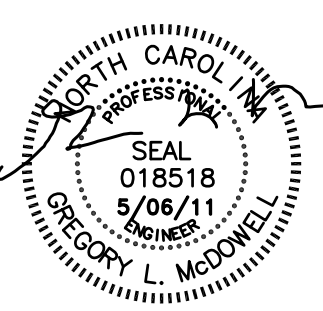


FIRE ALARM RISER

- NOTES:
1. SYSTEM SHALL COMPLY W/ NFPA 72 AND ALL REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
 2. ALL WIRING SHALL BE CONDUIT.
 3. TEST AND CERTIFY SYSTEM.
 4. PROVIDE O&M MANUALS & OWNER TRAINING.
 5. SYNCHRONIZE STROBES.
 6. PROVIDE ELEVATOR RECALL

FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
□	PULL STATION
⬢	F.A. HORN/STROBE, CANDELA INDICATED
⬢	F.A. STROBE, CANDELA INDICATED
⊙	SMOKE DETECTOR
⊙	DUCT MOUNTED SMOKE DETECTOR
⊙	HEAT DETECTOR
⊙	FIRE ALARM PANEL
⊙	REMOTE ANNUNCIATOR
⊙	FLOW SWITCH BY OTHERS
⊙	TAMPER SWITCH BY OTHERS

- NOTES:
1. ALL NEW FIRE ALARM WORK SHALL COMPLY W/ NFPA 72 AND ALL REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
 2. CABLES SHALL BE AS RECOMMENDED BY SYSTEM MANUFACTURER.
 3. SYNCHRONIZE STROBES.
 4. PROVIDE GLOBAL SHUTDOWN OF AIR HANDLERS ON ALARM.
 5. TEST AND CERTIFY SYSTEM.
 6. CONTRACTOR SHALL OBTAIN A SEPARATE PERMIT FOR FIRE ALARM WORK. SUBMIT ALL REQUIRED DOCUMENTATION TO THE AHA FOR APPROVAL.



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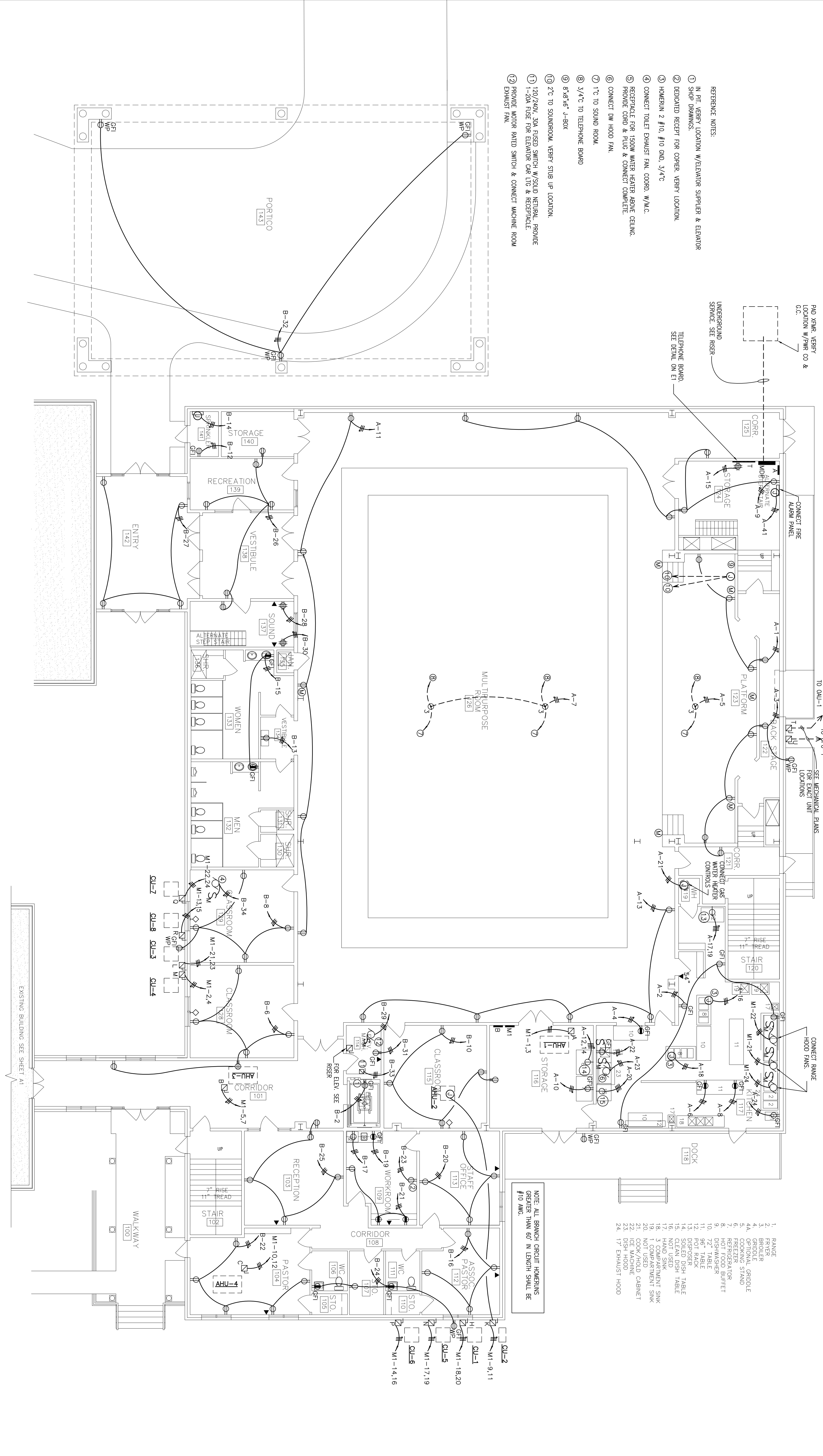
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SECOND FLOOR
PLAN FIRE ALARM

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SHEET NUMBER:
FA2
OF 2



- REFERENCE NOTES:
- IN P.T. VERIFY LOCATION W/ELEVATOR SUPPLIER & ELEVATOR SHOP DRAWINGS.
 - DEDICATED RECEPT FOR COPPER, VERIFY LOCATION.
 - HOMERUN 2 #10 GND. 3/4" C.
 - CONNECT TOILET EXHAUST FAN, COORD. W/M.C.
 - RECEPTACLE FOR 150W WATER HEATER ABOVE CEILING. PROVIDE CONDUIT & FUSE & CONNECT COMPLETE.
 - CONNECT DW HOOD FAN.
 - 1" C TO SOUND ROOM.
 - 3/4" C TO TELEPHONE BOARD
 - 8"x8"x6" J-BOX
 - 3" C TO SOUNDROOM, VERIFY STUB UP LOCATION.
 - 200/240V, 30A FUSED SWITCH W/SOLID NEUTRAL, PROVIDE 1-20A RISE FOR ELEVATOR CAR LIG & RECEPTACLE.
 - PROVIDE MOTOR RATED SWITCH & CONNECT MACHINE ROOM EXHAUST FAN.

- RANGE
- FRYER
- GRIDDLE
- OPTIONAL GRIDDLE
- COOKING STAND
- REFRIGERATOR
- HOT FOOD BUFFET
- DISHWASHER
- TABLE
- 96" TABLE
- POT RACK
- DISPOSER
- COOLED DISH TABLE
- NOT USED
- HAND SINK
- COMPARTMENT SINK
- NOT USED
- COOK/HOLD CABINET
- CEILING MACHINE
- EXHAUST HOOD
- EXHAUST HOOD

NOTE: ALL BRANCH CIRCUIT HOMERUNS GREATER THAN 60' IN LENGTH SHALL BE #10 AWG.

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

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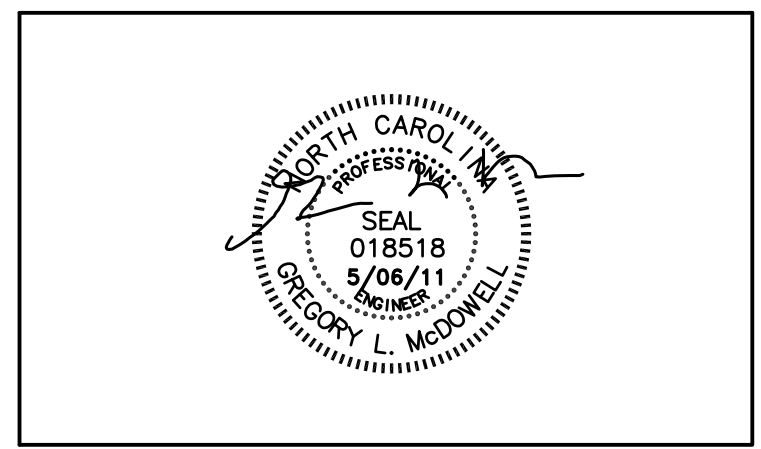
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FIRST FLOOR PLAN
POWER

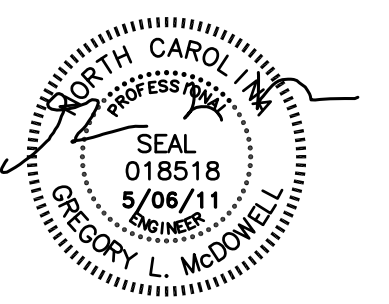
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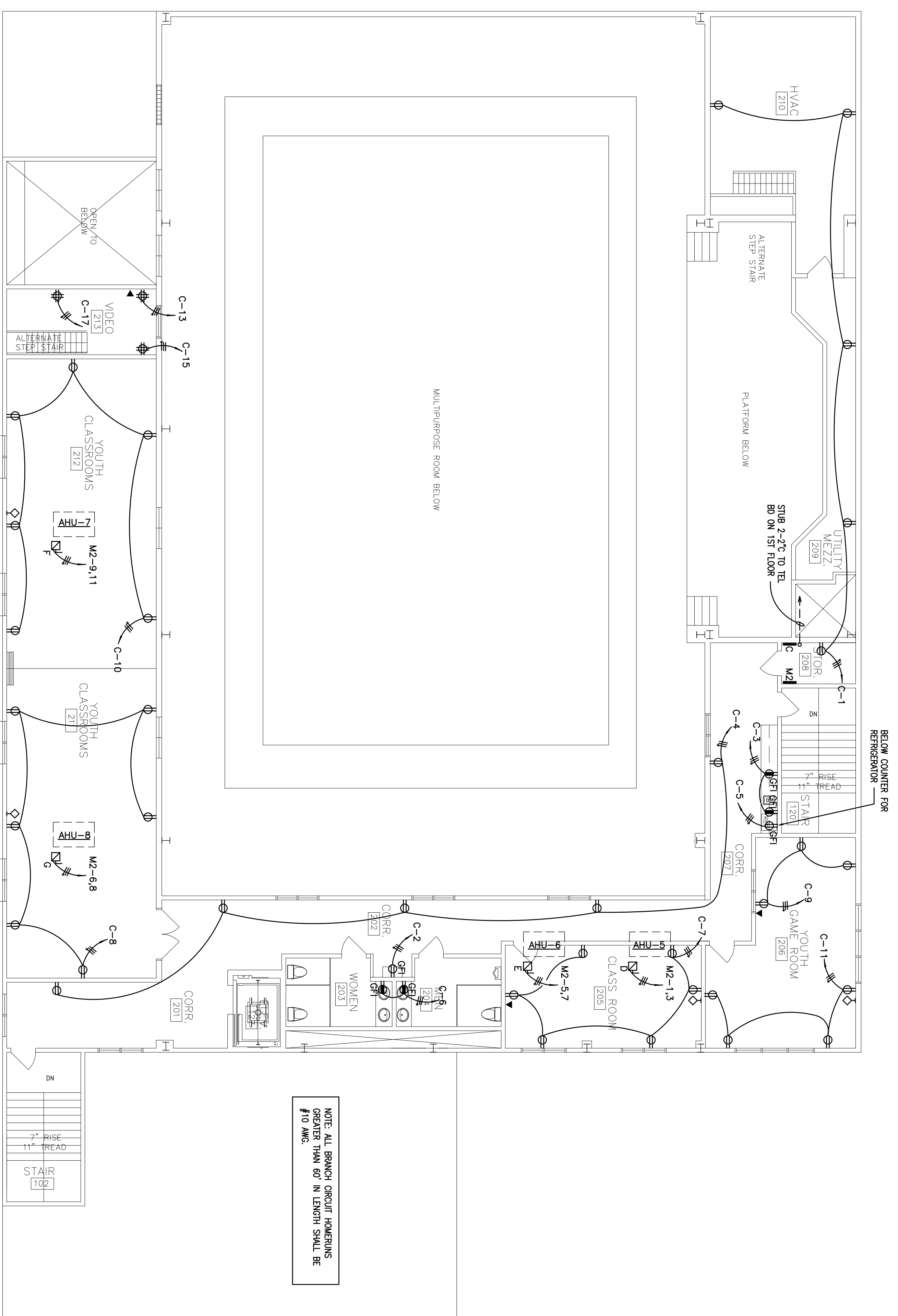
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**SECOND FLOOR
PLAN POWER**

SHEET NUMBER:

E3
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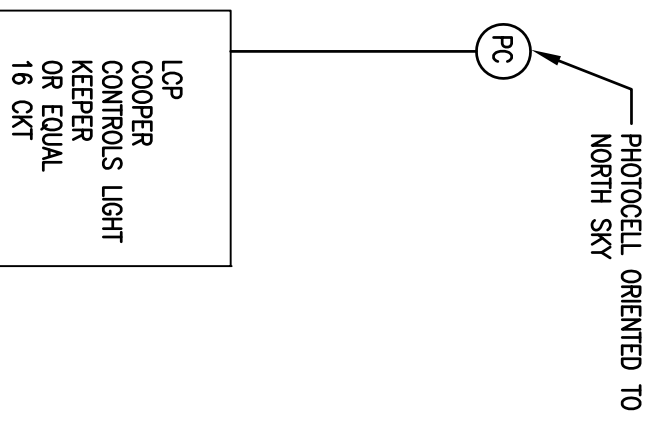
NOTE: ALL BRANCH CIRCUIT HORIZONTALS GREATER THAN 60" IN LENGTH SHALL BE #10 AWG.

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

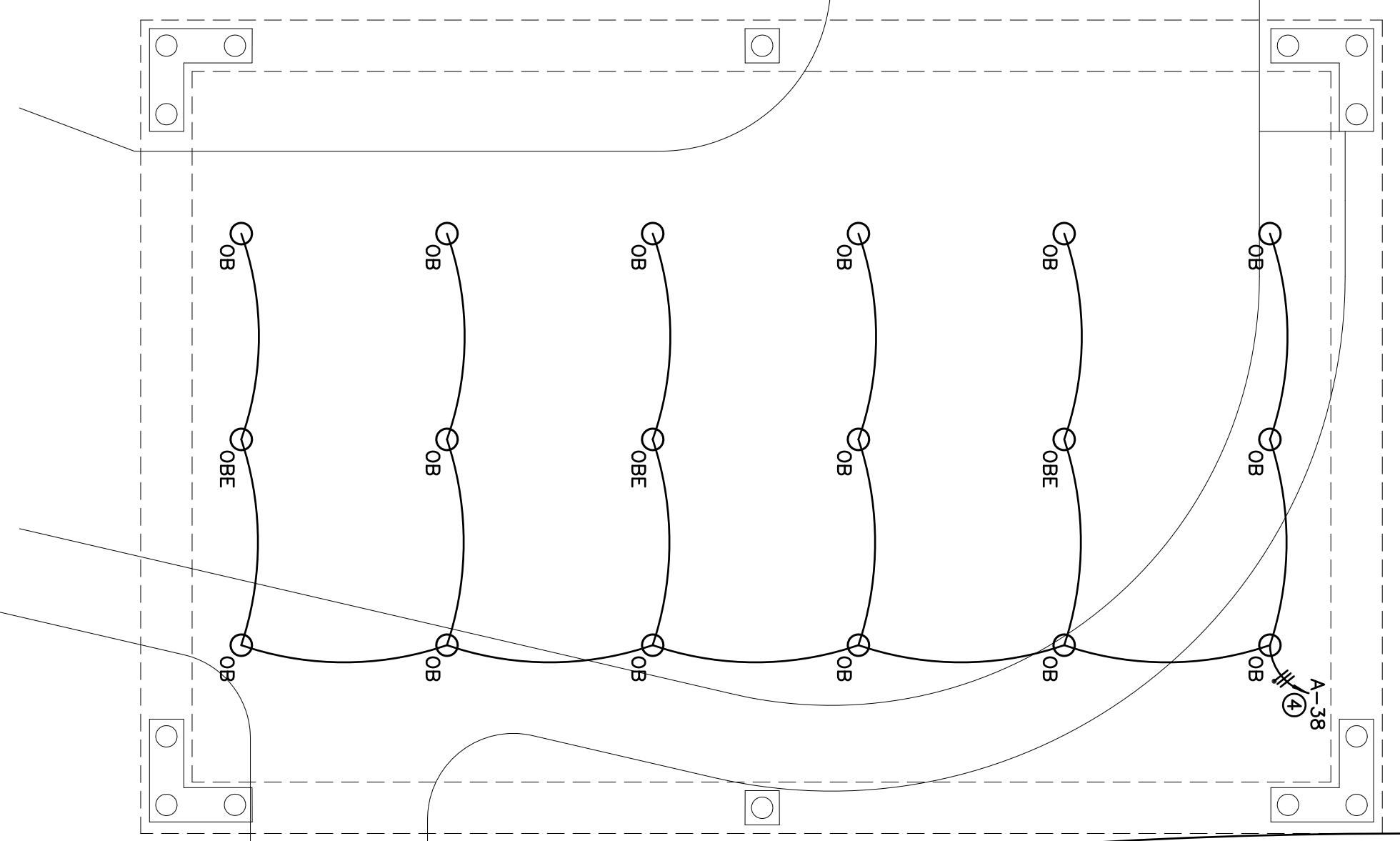
LIGHTING CONTROL SCHEDULE

CIRCUIT	LOAD	CONTROL
A-26,28,30,32,34,27,29,31,33,35	INTERIOR LIG - MULTI PURPOSE	TIMER OFF, MANUAL OVERRIDE
A-36,38	BUILDING MOUNTED EXTERIOR LIG	PHOTOCELL ON, TIMER OFF, MANUAL OVERRIDE

- NOTES:
1. LIGHTING CONTROL PANEL SHALL AUTOMATICALLY SHUT OFF LIG VIA TIMERS W/MANUAL OVERRIDE.
 2. SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF THE NC ENERGY CODE FOR BLDGS > 5000 SF.
 3. PROGRAM SYSTEM FOR OWNER'S SCHEDULE PROVIDE TRAINING & O&M MANUALS.

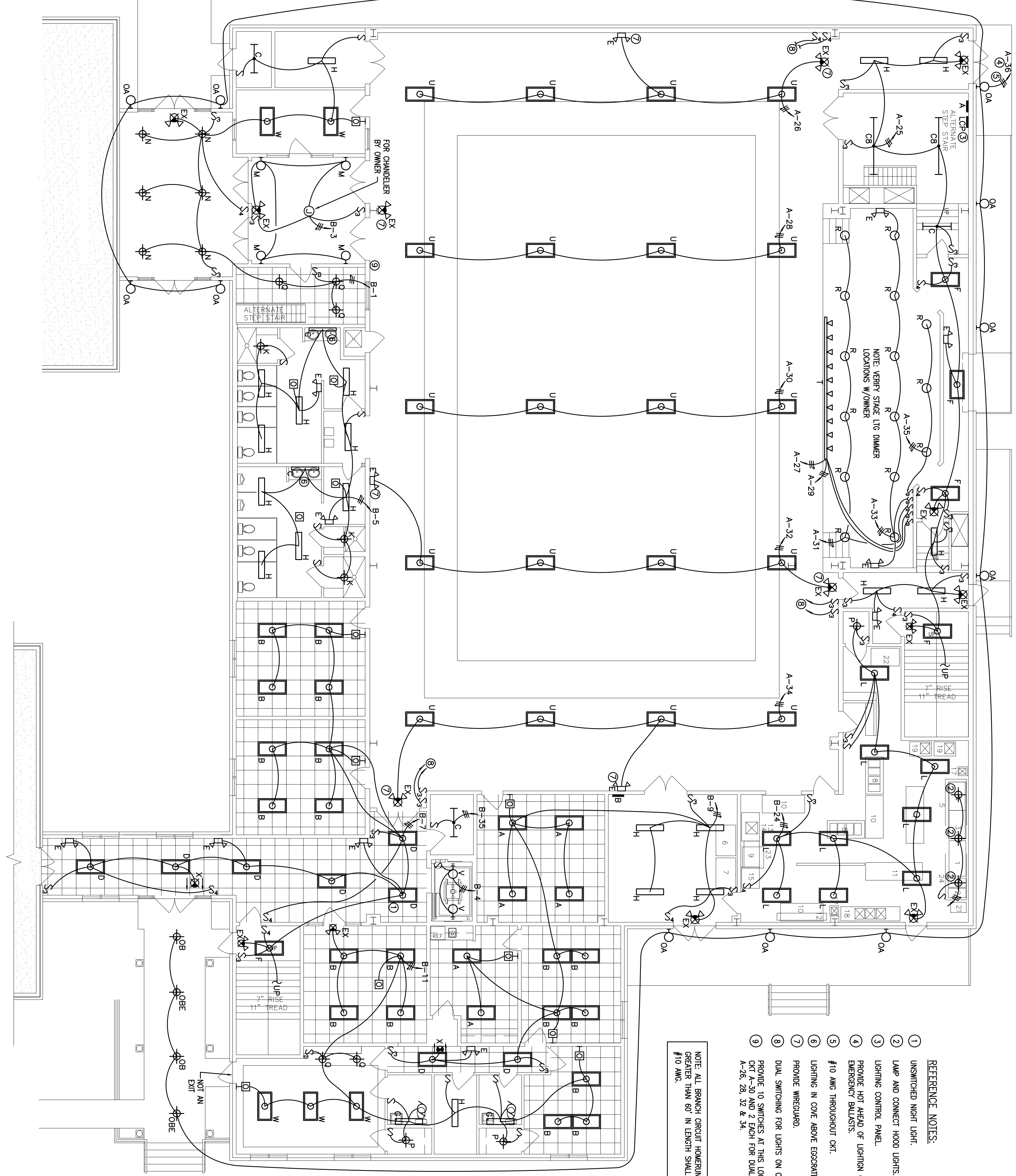


LIGHTING CONTROLS



FIRST FLOOR PLAN - LIGHTING

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



- REFERENCE NOTES:
- 1 UNSWITCHED NIGHT LIGHT.
 - 2 LAMP AND CONNECT HOOD LIGHTS.
 - 3 LIGHTING CONTROL PANEL.
 - 4 PROVIDE HOT AIR/AID OF LIGHTING CONTROLS FOR EMERGENCY BALLISTS.
 - 5 #10 AWG THROUGHOUT OCT.
 - 6 LIGHTING IN COVE ABOVE ESCAPE/COOR. W/O.C.
 - 7 PROVIDE WIREGUARD.
 - 8 DUAL SWITCHING FOR LIGHTS ON CRT A-30.
 - 9 PROVIDE 10 SWITCHES AT THIS LOCATION. 2-4 WAYS FOR CRT A-30 AND 2 EACH FOR DUAL SWITCHING OF CRTS A-26, 28, 32 & 34.

NOTE: ALL BRANCH CIRCUIT HOOKUPS GREATER THAN 60" IN LENGTH SHALL BE #10 AWG.



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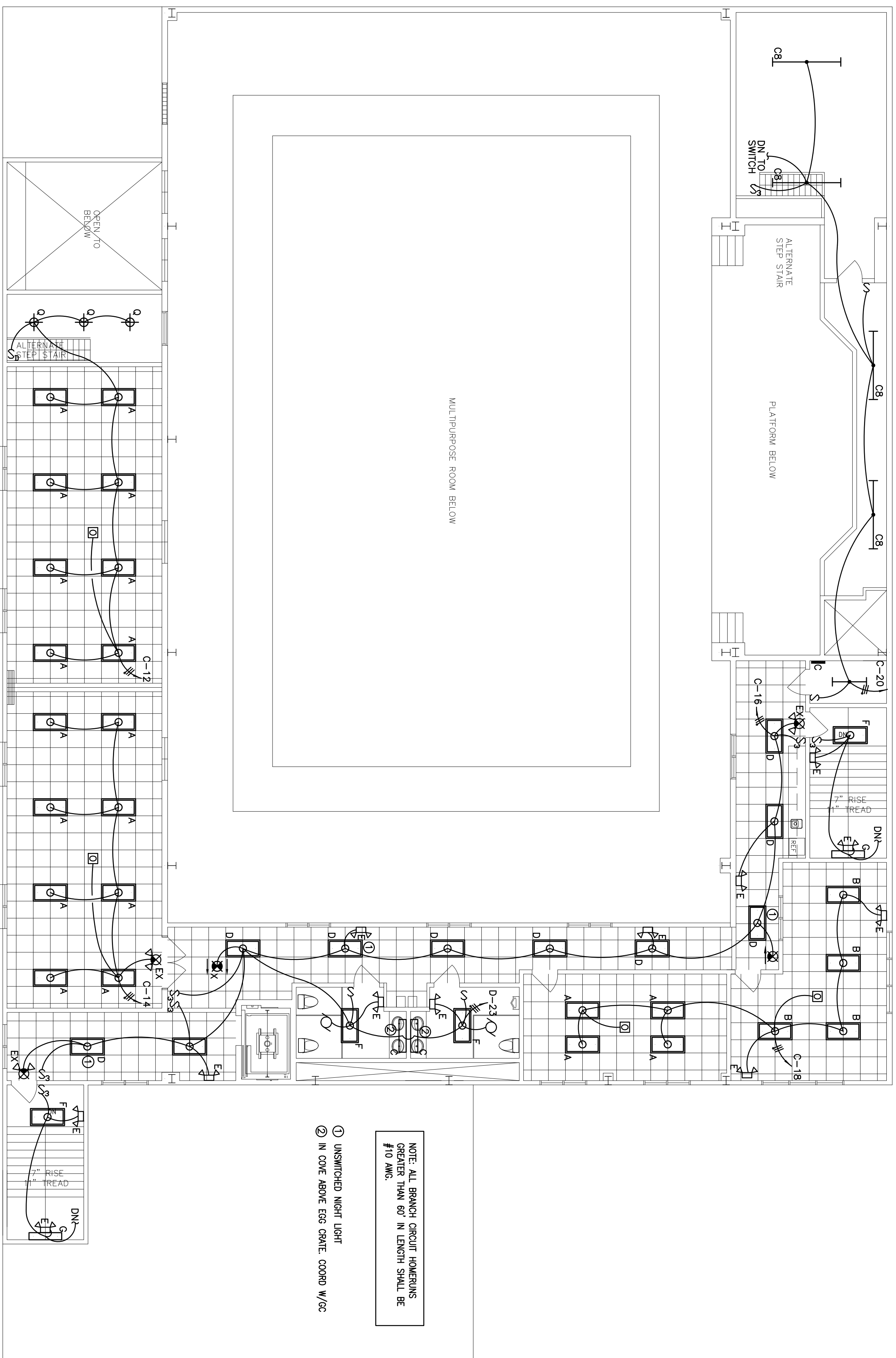
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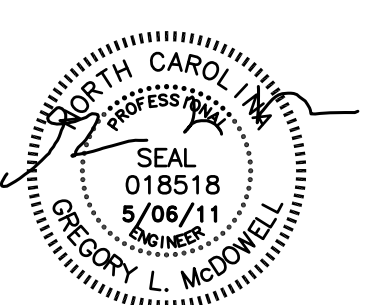
FIRST FLOOR PLAN LIGHTING

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NC LICENSE NO. C-25846

SHEET NUMBER:
E4
OF 7



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



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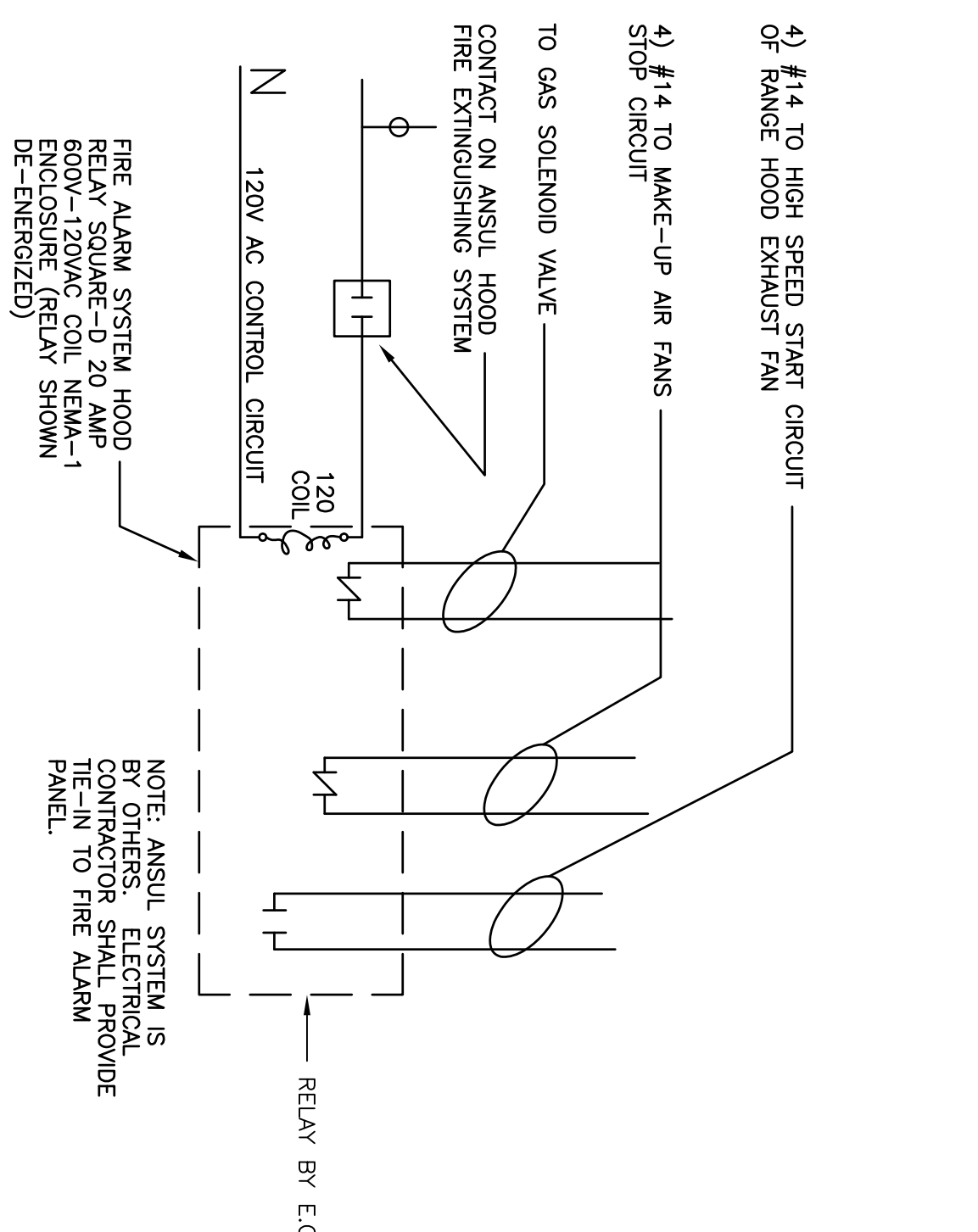
SECOND FLOOR PLAN LIGHTING

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TELEVISION ANTENNA (CATV) SYSTEM:
The Electronic Contractor shall engage an Electronic and Communications Subcontractor who is the equipment manufacturer authorized distributor/resistor to extend the RF reception provided to the building. The Subcontractor shall provide the equipment and distribute a CATV system throughout the building as indicated on the contract drawings.
English and In-plant amplifiers, splitters, cable and hybridized receiver connection top stations, receiver matching transformers, etc., as required for a complete system.
All components shall be from one (1) manufacturer well established and recognized as a leading manufacturer in the industry. The manufacturer shall provide a certificate on request, the manufacturer's name, it shall be stamped, tested by the manufacturer and certification shall be available on request. The cables shall be shielded, braided, low loss, low impedance, and shall be suitable for use with RG-6 coaxial conductor, foam polyethylene dielectric, aluminum-mylar-aluminum, foil tape, aluminum braid shield and polyvinyl chloride jacket. Individual drain wires are not acceptable in lieu of braid.
Top off units shall be flush, wall-mounting of the directional coupler design. The taps shall be provided in five (5) different isolated values. Frequency range shall be 45-808MHz. Isolation between taps shall be no less than 20 db. The top-off units shall be B/T-V-3888 Series, or approved equal, with stainless steel cover plates.
Attenuators shall be of the fixed in-line all channel (dc to 900MHz) type - Bondur-Tongue Series PAF, or approved equal. Attenuators may be cascaded if required.

The Electronic Contractor shall provide for and capable of simultaneous distribution of all CATV channels to all tap points.
Head-end equipment shall be Bondur-Tongue #DA-51-3 broadband amplifier mounted in a suitable wall-mounted ventilated heavy gauge steel cabinet.
The RF reception and distribution system shall provide for reception of monochrome and color TV transmission, at every outlet, equal to or superior to that obtainable on a single standard receiver connected directly to the incoming RF reception. The system shall be free of interference, ghosts and smear on all channels of all taps.
The system performance specifications herein shall take precedence over reference to specific component equipment and methods. Drawing to specific models by manufacturer's name and coding number is to establish minimum capacity, features, and quality. It should in no way be construed as precluding alternate materials equal to or better than that specified.
The Electronic Subcontractor shall supply components in addition to those listed as one required to provide the signal strength and quality specified at each and every outlet.
Components and Materials
Coaxial cable shall be 75 ohms impedance and shall be marked with the manufacturer's name. It shall be stamped, tested by the manufacturer and certification shall be available on request. The cables shall be shielded, braided, low loss, low impedance, and shall be suitable for use with RG-6 coaxial conductor, foam polyethylene dielectric, aluminum-mylar-aluminum, foil tape, aluminum braid shield and polyvinyl chloride jacket. Individual drain wires are not acceptable in lieu of braid.
Top off units shall be flush, wall-mounting of the directional coupler design. The taps shall be provided in five (5) different isolated values. Frequency range shall be 45-808MHz. Isolation between taps shall be no less than 20 db. The top-off units shall be B/T-V-3888 Series, or approved equal, with stainless steel cover plates.
Attenuators shall be of the fixed in-line all channel (dc to 900MHz) type - Bondur-Tongue Series PAF, or approved equal. Attenuators may be cascaded if required.



RANGE HOOD RELAY CONNECTION
***COMPLETE WIRING BY E.C.**

The splitters shall be of the hybrid type with a frequency response of 5-300MHz - Bondur-Tongue Models SUV-2 and SUV-4, or approved equal.
Directional couplers shall be back matched, two-way, compatible, low loss, high isolation units. They shall be located in radiation-proof cast housing and have a frequency range 5 to 300MHz - Bondur-Tongue Model 48889 or equal.
All distribution branch lines shall terminate in characteristic impedance.

The system shall be designed for a minimum 4:3db signal-to-noise ratio overall and minus 46db cross modulation level. The system shall have a flatness response of 3db maximum across any one 6 Mhz channel and 5db maximum across the system band width.
Each outlet shall provide a signal strength for each and all channels being distributed between plus 35dBW minimum and plus 125dBW maximum when measured across 75 ohms.
Installation
Contractor shall provide conduit stubs from TV outlet boxes, and conduct through firewalls (proper sealed) as required for video cable distribution. All cables not in conduit shall be plenum rated and listed for use in plenum spaces. The contractor shall provide a fire stop where any splitters are required, provide duplex receptacle above corridor ceiling to accommodate.
Testing and Bonding
Upon completion of the system installation, it shall be the responsibility of the Electronic Subcontractor to perform the necessary adjustments and bonding of all signals and amplifier level controllers to insure proper system operation.
Before the contract shall be considered completed, the Electronic Subcontractor shall conduct on site tests of the system and provide a written report of the test results. The Electronic Contractor shall furnish all equipment and personnel required for the test as follows:
Using a field strength meter, measure and record signal level at all tap-offs in the system and at random by using a test television receiver supplied by the contractor.
Provide three (3) copies each of:
A complete system schematic diagram showing all equipment, splitters, taps and outlets, as well as cable lengths as accurately as possible. Note reading this diagram to the diagram described below should also be included.
A complete building floor plan on which the cable routes, location of all equipment, splitters, taps and other devices are specifically located. Cable routes through the building should be accurately shown. A complete list of signal strength readings taken on each channel used, at the input of the head end, the output of the head end amplifier and at all television outlets in the systems.
Equipment submittal shall include 4 prints of building floor plan supplied by equipment supplier showing location of equipment devices, conduit and cable routing. One (1) approved print shall be retained by engineer, one (1) by equipment supplier and two (2) by Electrical Contractor.

LIGHTING FIXTURE SCHEDULE

MARK	TYPE	MOUNTING	MANUFACTURER CATALOG NO.	BALLAST (QTY) TYPE	LAMPS (QTY) TYPE	TOTAL WATTS	VOLTS	REMARKS
A	TROFFER	LM-IN	METALUX Z6R8332A	1) ELECTRONIC	4) F32T8	128	120	
B	TROFFER	LM-IN	METALUX Z6R8333A	1) ELECTRONIC	3) F32T8	96	120	
C	TRIP	SURFACE	METALUX SS232	1) ELECTRONIC	2) F32T8	62	120	
CG	TANGM TRIP	SURFACE	METALUX BTSS232	1) ELECTRONIC	4) F32T8	128	120	
D	TROFFER	LM-IN	METALUX Z6R8332A	1) ELECTRONIC	2) F32T8	62	120	
E	EMERGENCY	SURFACE	SURE-LITES CC-2		INCLUDED		120	90 MIN BATTERY
EX	EXIT/EM OMBD	UNIFERSAL	SURE-LITES SUPV-RMHMH		LED (EXIT) INCLUDED (EM)	5	120	90 MIN BATTERY
F	MODULAR	SURFACE	METALUX M232A	1) ELECTRONIC	2) F32T8	62	120	
G	WALL BRACKET	SURFACE	METALUX BE0232	1) ELECTRONIC	2) F32T8	62	120	
H	WREYGROUND	SURFACE	METALUX MK232A	1) ELECTRONIC	2) F32T8	62	120	
K	SURFER DOWNLIGHT	RECESSED	HALO H292A/5050	-	1) 40W A19	40	120	UL LISTED FOR USE IN SHOWER CASINGLED LENS
L	MODULAR	SURFACE	METALUX MK432A/250A5K	2) ELECTRONIC	4) F32T8	128	120	
M	ADJ SCONCE	WALL VERIFY HT.	SELECTED BY OWNER		AS REQUIRED		120	ALLOW \$150 EACH
N	DOWNLIGHT	RECESSED	PORTFOLIO C6232BE250U	1) ELECTRONIC	2) 29W QUAD	55	120	
P	UTILITY	SURFACE	HALO H2540	-	1) 60W A19	120	120	
Q	DOWNLIGHT	RECESSED	PORTFOLIO H08B300U	-	1) 75W PAR 30 FLOOD	75	120	
R	DOWNLIGHT	RECESSED	PORTFOLIO H07750U	-	1) 200W A21	200	120	
T	TRACK	SURFACE	HALO LE42P-20KT L1838 HEADS	-	1) 150W PAR 38 FLOOD PER HEAD 150 FLOOD PER HEAD	150	120	SEE NOTE 1
U	SURFACE RECESSMENT	SEE NOTE 4	METALUX 2HB64-41-UM-EB72-SMG	2) ELECTRONIC	6) 54W TSHO	360	120	PROVIDE WIREGUARD DUAL LEVEL SWITCHING
V	UTILITY	ELEVATOR PIT WALL	FALSAFE IPR100	-	1) 100W A19	100	120	
W	MODULAR	SURFACE	METALUX M232A	1) ELECTRONIC	3) F32T8	96	120	
X	EXIT	UNIFERSAL	SURE-LITES LPV70RHM	1) ELECTRONIC	LED	1.5	120	90 MIN BATTERY NO. OF FIXES AND FIXTURES SHOWN
QA	WALL PACK	EXTERIOR WALL VERIFY HT.	FAIRSAFE 000CHES2AKBP	1) ELECTRONIC	2) 29W QUAD	55	120	90 MIN BATTERY SEE NOTES 2 & 3
QB	DOWNLIGHT	RECESSED	PORTFOLIO C6232BE250U	1) ELECTRONIC	2) 32W TRF	68	120	
QBE	DOWNLIGHT	RECESSED	PORTFOLIO C6232BE250U	1) ELECTRONIC 1) EMERGENCY	2) 32W TRF	68	120	90 MIN BATTERY SEE NOTE 2

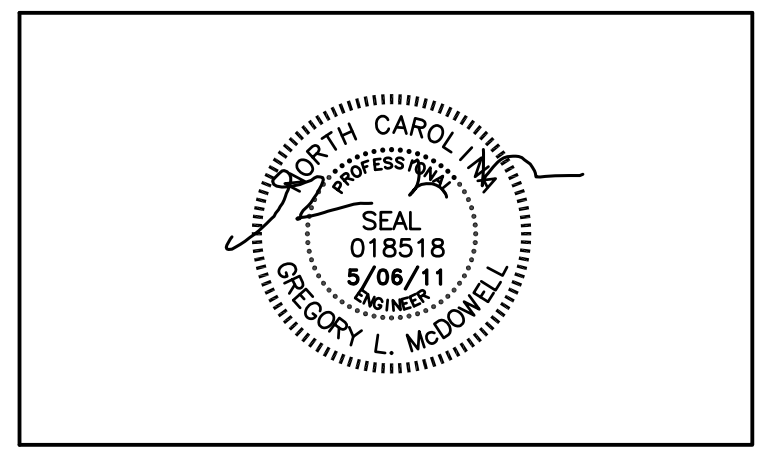
NOTES:
1. PROVIDE 2 EACH RED, BLUE, AMBER & GREEN LENSES, TWO FIXTURES TO BE OPEN.
2. PROVIDE 2-LAMP EMERGENCY BALLAST.
3. FINISH TO BE SELECTED BY OWNER.
4. SECURE TO STRUCTURE HIGH AS POSSIBLE. PROVIDE FRAMING & SUPPORTS AS REQUIRED TO ENSURE FIXTURE LENSES ARE MOUNTED PARALLEL WITH THE FLOOR.

ELECTRICAL SCHEDULES

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