



Addendum No. 1

Invitation to Bid (ITB) #001-23:

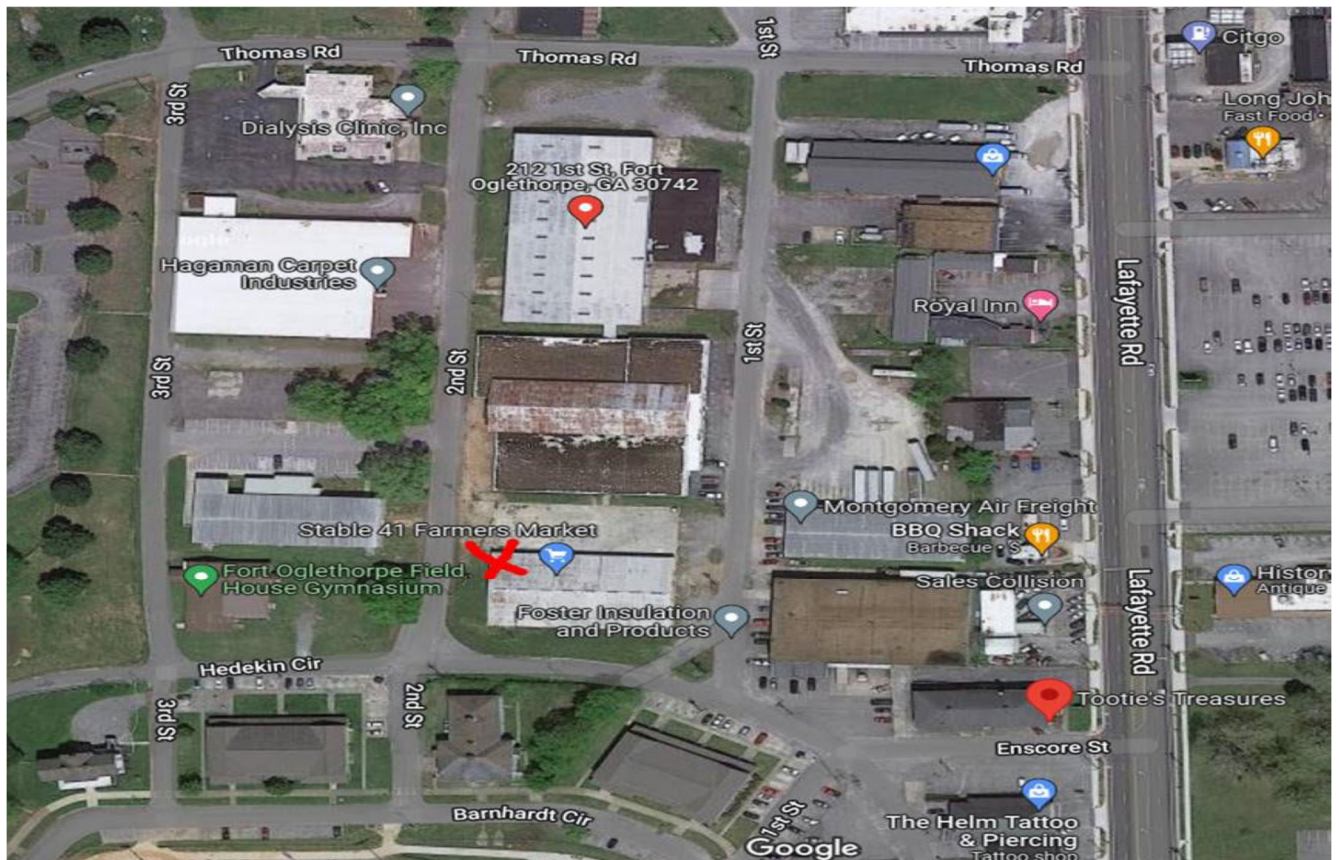
Stable 41 Facilities Project

January 18, 2023

Contractors are responsible for acknowledging receipt of this addendum by completing the Addenda Acknowledgement form in the bid proposal packet. This addendum is also posted on the City's website (www.fortogov.com) under the Bids and Proposals tab (<http://fortogov.com/bids-and-proposals/>).

1. **Question:** Will there be a bid walk for this project or is the site available for inspection?

Answer: Interested vendors are free to inspect the site. It is located at 214 First Street, Fort Oglethorpe, GA 30742. From the map below, you can see the location of the open-air market on the corner of Hedekin Cir and 2nd St. The red X marks the spot in the building where the bathrooms will be built under the northwest corner of the pavilion. Please note that the question and answer period concludes on January 18, 2023, at 2pm EDT. No questions will be answered if received after that date and time.



2. **Question:** Please provide a set of construction plans and specifications if they exist.

Answer: Attached to this addendum is a stamped permit set from an architect.

3. **Question:** The site currently has power. Is the service in place adequate for the additional load of the new building?

Answer: The power is adequate for the additional load. Please refer to the stamped permit document attached to this addendum.

4. **Question:** Please advise as to the availability of water supply and sanitation locations. Is that work in our scope or will the City handle that with its own resources?

Answer: Water and sewer are available. The awarded contractor will be responsible for making the sewer tap and the City will be responsible for making the water tap.


5. **Question:** What is the date of issue for this contract? A completion date of March 31st leaves little time for the process to take place.

Answer: The City intends to award this contract as soon as the responses received are thoroughly reviewed. Award of this contract requires Council approval in an open meeting. The Fort Oglethorpe City Council regularly holds meetings on the second and fourth Mondays of each month. It is the City's intention to award this project as soon as is practicable and possible. If a potential bidder does not find the stated deadline of completion to be possible, the bidder shall state this and provide an alternate completion date on the Exception Sheet, which is included in the bid document located on the City's website.

6. **Question:** Do you anticipate events in the facility during construction?

Answer: The City may hold events during construction. Such events will be coordinated with the awarded contractor so that there will be no disruption to the worksite or to the ongoing construction.

End of Addendum No. 1



FLOOR PLAN
1/4" = 1'-0"

N
2 ATTIC PLAN
1/4" = 1'-0"

3 SOUTH ELEVATION
1/4" = 1'-0"

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M1.0 HVAC PLAN, SCHEDULES, & DETAILS

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E0.2 ELECTRICAL SPECIFICATIONS
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E1.1 PARTIAL LIGHTING PLAN
E2.1 PARTIAL ELECTRICAL PL

E2.1 PARTIAL ELECTRICAL PLAN

GENERAL NOTES

1. DRAWINGS ARE DRAWN TO SCALE, BUT DUE TO THE PRINTING PROCESS, DO NOT SCALE DRAWINGS.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, AND AREAS ON SITE PRIOR TO BEGINNING WORK. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO BEGINNING WORK IN AFFECTED AREAS.
3. ALL WORK TO BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
4. ALL WORK TO BE DONE IN NEAT, ORDERLY FASHION.
5. ALL INTERIOR DIMENSIONS TO FACE OF FINISH UNLESS NOTED OTHERWISE.
6. ALL MILLWORK, EQUIPMENT AND FURNITURE PROVIDED BY THE OWNER/TENANT ARE TO COMPLY WITH REQUIREMENTS OF THE CURRENT ACCESSIBILITY CODE.
7. PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814.
8. A COMPLETE SET OF APPROVED PLANS AND SPECIFICATIONS SHALL BE MAINTAINED ON THE CONSTRUCTION SITE AT ALL TIMES.
9. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL BLOCKING OR BACKING NECESSARY TO COMPLETE SCOPE OF WORK WHETHER NOTED OR NOT. COORDINATE WITH OWNER SELECTED EQUIPMENT.
10. ALL ROOF PENETRATIONS TO BE COORDINATED WITH THE BUILDING OWNER.

FINISH SCHEDULE

ROOM #	ROOM NAME	FLOOR	BASE	WALLS	CEILING	REMARKS
101	WOMEN	CONC.	PAINT CMU	PAINT CMU	GWB/PAINT	
102	MEN	CONC.	PAINT CMU	PAINT CMU	GWB/PAINT	
103	KITCHEN	CONC.	PAINT CMU	PAINT CMU	GWB/PAINT	
104	JANITOR'S CLOSET	CONC.	PAINT CMU	PAINT CMU	GWB/PAINT	

FINISH NOTES

1. ALL FINISHES TO BE SELECTED BY THE OWNER.
2. WALL FINISHES TO BE EPOXY PAINT.
3. IF OWNER TILES FLOORS, THEN ALL FLOOR TRANSITIONS TO BE ADA-COMPLIANT. TILE TO CONCRETE TRANSITIONS TO BE EQUAL TO SCHLUTER RENO-RAMP. VERIFY HEIGHT WITH TILE SELECTED BY OWNER. INSTALL BY MANUFACTURER'S RECOMMENDATIONS.

DOOR SCHEDULE

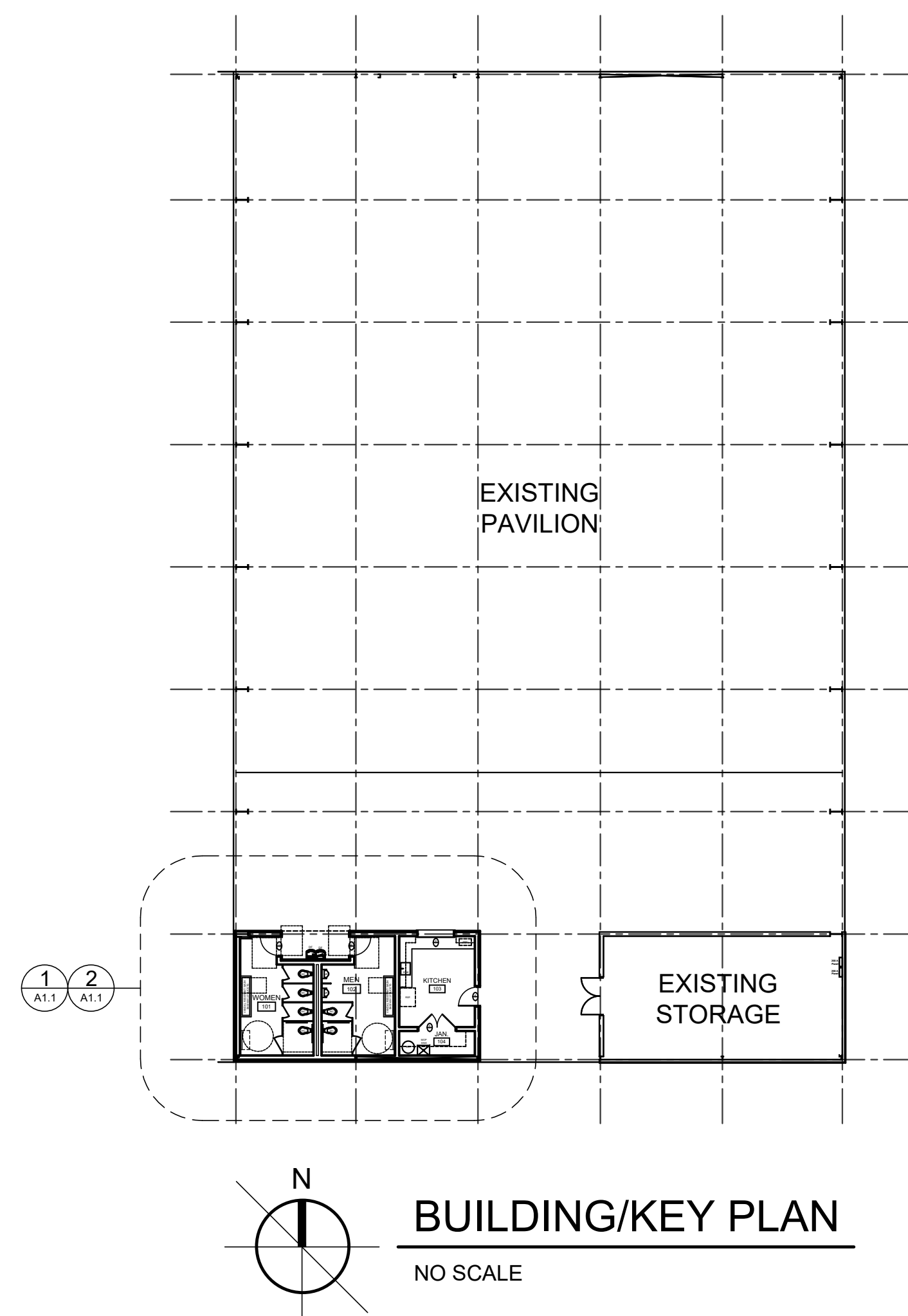
MARK	DOOR					FRAME	FIRE RATING	HARDWARE	NOTES
	SIZE			MATL	TYPE				
	WIDTH	HGT	THK						
1	3'-0"	7'-0"	1 3/4"	H.M.		H.M.		1	
2	3'-0"	7'-0"	1 3/4"	H.M.		H.M.		1	
3	6'-0"	4'-6"		ALUM.		H.M.			OVERHEAD COUNTER SHUTTER. M.O. = 72"x 54"x
4	3'-0"	7'-0"	1 3/4"	H.M.		H.M.		2	
5	PR. 3'-0"	7'-0"	1 3/4"	H.M.		H.M.		3	
6	3'-0"	7'-0"	1 3/4"	H.M.		H.M.		4	ATTIC DOOR

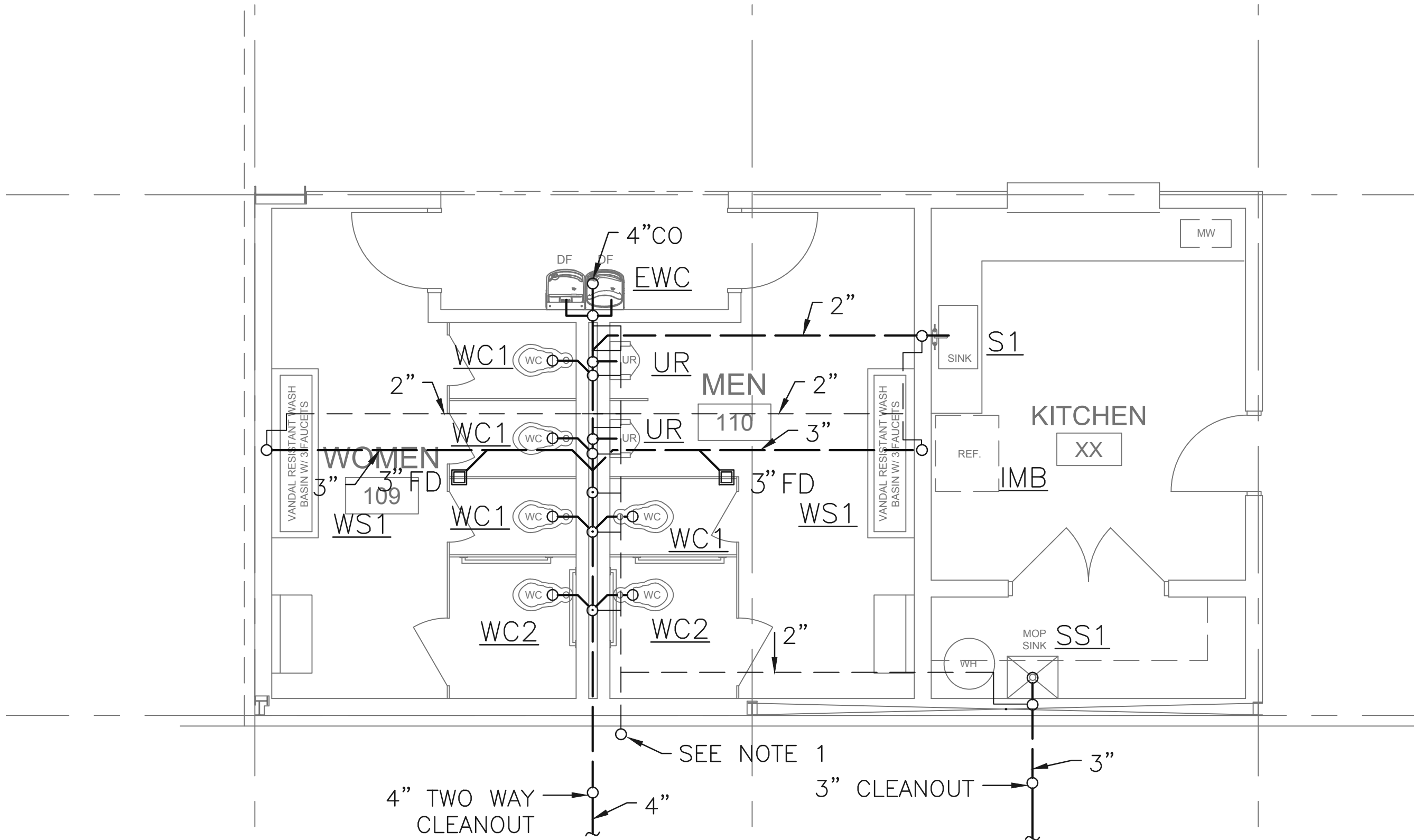
HARDWARE SCHEDULE

SET DESCRIPTION	
1	1½ PAIR BUTTS, PULL & PUSH PLATES, CLOSER, KEYED CYLINDER LOCK, & SILENCERS (3)
2	1½ PAIR BUTTS, LEVER HANDLE OFFICE LOCKSET, CLOSER, & SILENCERS (3)
3	1½ PAIR BUTTS, LEVER HANDLE STORAGE ROOM LOCKSET, FLUSH BOLTS, & SILENCERS (3)
4	1½ PAIR BUTTS, LEVER HANDLE STORAGE ROOM LOCKSET, & SILENCERS (3)

DOOR & HARDWARE NOTES

1. ALL DOORS & HARDWARE TO BE VANDAL RESISTANT AS SELECTED BY OWNER. QUALITY STANDARD TO BE SCHLAGE COMMERCIAL SERIES, OMEGA STYLE.
2. H.M. FRAMES TO PROJECT OUT $\frac{3}{4}$ " FROM FACE OF SHEATHING. PROVIDE CEMENTITIOUS TRIM AROUND ALL DOOR OPENINGS. COORDINATE W/ OWNER.
3. ALL FRAMES SHALL BE CAULKED CONTINUOUSLY ON ALL SIDES TO THE WALL & FLOOR.
4. DOORS EXPOSED TO EXTERIOR TO HAVE WEATHERSTRIPPING, SWEEPS, & THRESHOLDS.
5. ALL THRESHOLDS SHALL CONFORM TO THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE ANSI A117.1 HANDICAP CODE AND THE AMERICANS WITH DISABILITIES ACT.
6. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONTRACT DOCUMENTS AND THIS SCHEDULE AND SHALL REPORT AT ONCE TO THE ARCHITECT ANY ERROR, INCONSISTENCY OR OMISSION THAT HE MAY DISCOVER.
7. ALL DOOR HARDWARE TO BE SCHEDULED BY A MEMBER OF THE AMERICAN SOCIETY OF ARCHITECTURAL HARDWARE CONSULTANTS AS REQUIRED BY CODE OR USE. SCHEDULE TO BE APPROVED BY THE TENANT.





NOTE:

- HOLD VENT AS TIGHT AS POSSIBLE TO EXTERIOR WALL AND RISE UP, TERMINATE AS REQUIRED BY LOCAL CODE OFFICIALS.

WASTE AND VENT PIPING PLAN

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

FIXTURE SCHEDULE								ROUGHING IN CONNECTION				REMARKS
SYM.	MANUFACTURE	FIXTURE NO.	SIZE	TRIM	SUPPLIES	WASTE	TRAP	C.W.	H.W.	WASTE	VENT	
WC1	KOHLER	K-96053-B-0	15" HIGH	SLOAN 110	---	---	---	1"	---	4"	2"	SEE NOTE 1
WC2	KOHLER	K-96057-B-0	17" HIGH	SLOAN 110	---	---	---	1"	---	4"	2"	SEE NOTE 1
WS1	SLOAN	ELS-42000	55 X 21.25	SEE NOTE 2	McGUIRE H2166	W/FIXTURE	SEMI-CAST "P"	1/2"	1/2"	1-1/4"	2"	3 STATION WASH BASIN
UR	KOHLER	K-4991-ETSS-0	---	SLOAN G2 8186	---	---	"P"	3/4"	---	2"	2"	ADA WALL HUNG URINAL
S1	JUST	SLN-ADA-2521-A-GR	25x21x6.5	JVR1-W4	HD 1/4 TURN	OFF SET BASKET	SEMI CAST "P"	1/2"	1/2"	11/2"	2"	ADA DROP IN SINK (1 HOLE)
SS1	PROFLO	PFMB2424S	24x24x10	PF1119	---	W/FIXTURE	"P"	1/2"	1/2"	2"	2"	FLOOR MTD MOP SINK
EWC	OASIS	PGVDBACSL-14G	---	---	HD 1/4 TURN	---	SEMI CAST "P"	1/2"	---	11/2"	2"	DUAL HEIGHT WATER COOLER
IMB	GLY GRAY	82389	---	---	---	---	---	1/2"	1/2"	---	---	ICE MAKER BOX
FD	JOSAM	30000A	3"	---	---	---	DEEP SEAL "P"	---	---	3"	2"	POUSHED TOP

NOTES:

- PROVIDE SPERZEL 150E WHITE SEAT (OPEN FRONT). FIXTURES SHALL BE GROUTED TO FLOOR, CAULK IS NOT ACCEPTABLE. CAULKING WILL RESULT IN THE REPLACEMENT OF THE ENTIRE FIXTURE.
- PROVIDE SLOAN MODEL SF-2150-4-BAT-BDM-CP-0.35GPM-MLM-IR-FCT BATTERY OPERATED FAUCET (3 PER LAV) AS REQUIRED.

WATER HEATER:

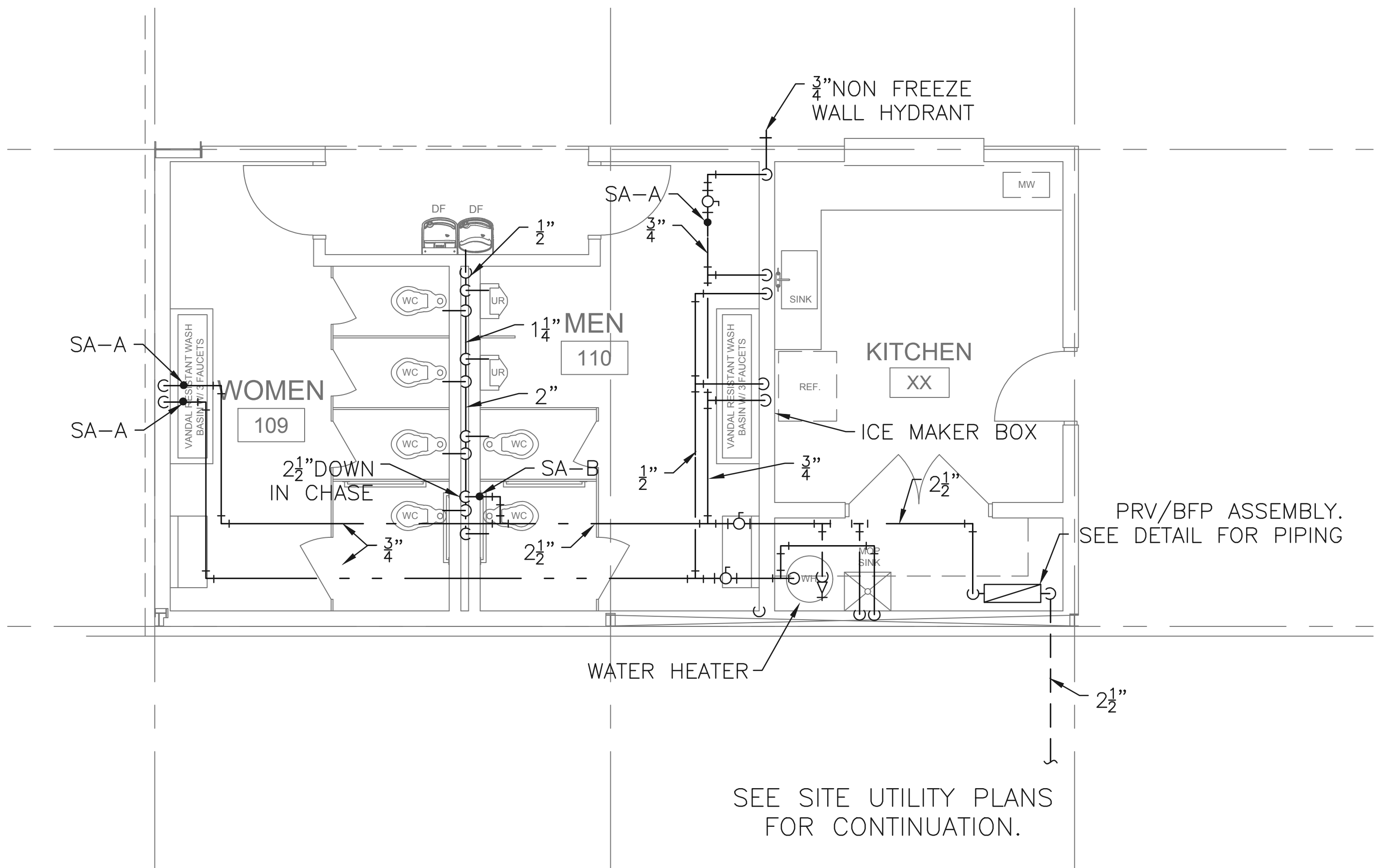
MFR: AO SMITH MODEL NO. DEL-20S-30S

STORAGE: 20 GAL. WORKING PRESS.: 150

RECOVERY 12 GPH AT 100 RISE.

INPUT: 3.5kW AT 250 VOLTS

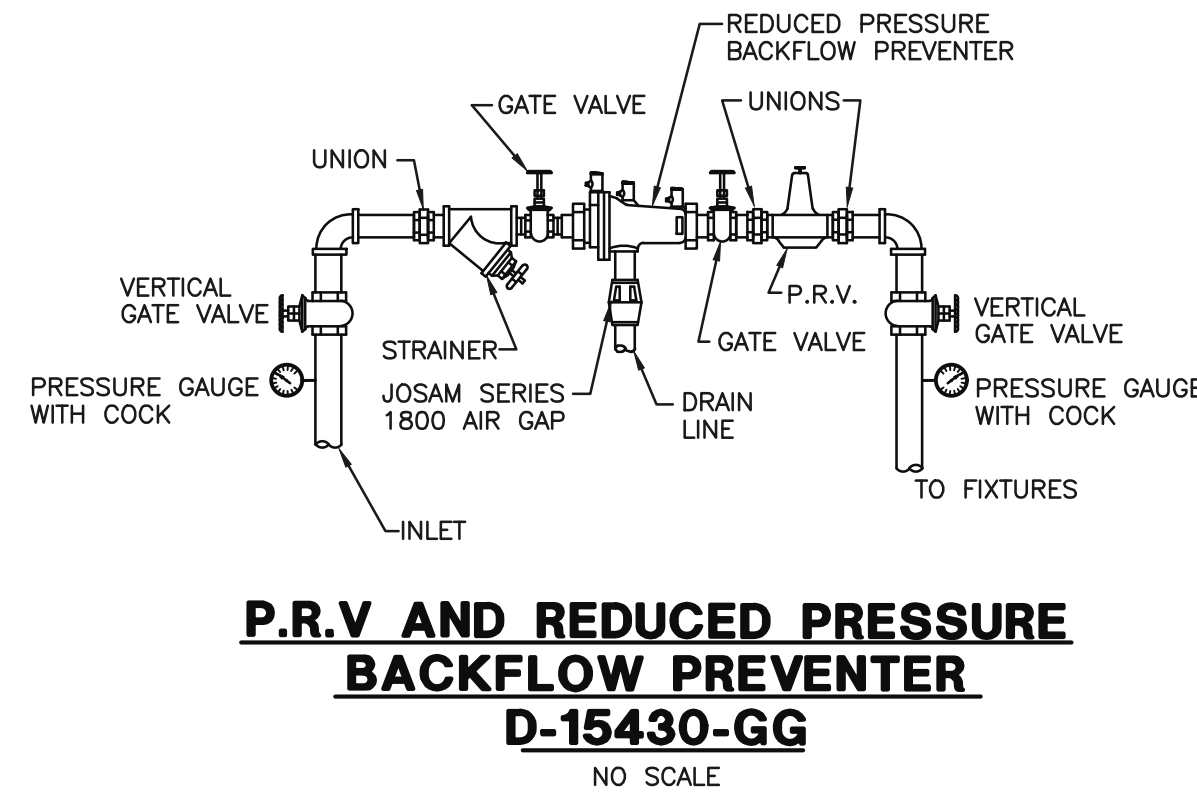
NOTES: PROVIDE FACTORY SUPPLIED T&P RELIEF VALVE AND PIPE DRAIN, FULL SIZE, TO DRAIN. DRAIN LINE SHALL BE HARD DRAWN COPPER.
COORDINATE ELECTRICAL REQUIREMENTS WITH EC PRIOR TO ORDERING HEATER AND/OR PUMP.



WATER PIPING PLAN

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

PLUMBING LEGEND	
—G—	NATURAL GAS
—SA—	SHOCK ABSORBER (per P.D.I. manual)
—	DOMESTIC COLD WATER SUPPLY
—	DOMESTIC HOT WATER SUPPLY (110°F)
—	DOMESTIC HOT WATER RETURN (110°F)
—CD—	CONDENSATE DRAIN
—RL—	RAINLEADER ABOVE FINISHED CEILING
—SD—	STORM DRAIN BELOW FINISHED GRADE
—V—	VENT
—	SANITARY SEWER
—	FLOOR CLEANOUT
—G—	WALL CLEANOUT
—FD—	FLOOR DRAIN
—HD—	HUB DRAIN
—	DOUBLE CLEANOUT
—	VALVE IN VERTICAL RISER
—	BALL VALVE IN HORIZONTAL LINE
—	BALANCING VALVE IN HORIZONTAL LINE
—	WALL HYDRANT
—	APPROX. POINT OF CONNECTION, NEW TO EXISTING.
ABBREVIATIONS	
VTR	VENT THRU ROOF
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
AFC	ABOVE FINISHED CEILING
BFC	BELOW FINISHED CEILING
EWC	ELECTRIC WATER COOLER
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SS	SANITARY SEWER
FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
HB	HOSE BIBB



PLUMBING NOTES:

- WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC (FOAM CORE IS NOT ACCEPTABLE) WITH SOLVENT WELD FITTINGS. ALL FITTINGS SHALL BE D.W.V. PATTERN.
- WATER PIPING SHALL BE COLOR CODED P.E.X. WITH SHARK BITE FITTINGS. HOT WATER PIPING SHALL BE INSULATED WITH 1.5" THICK FIBERGLASS PIPE INSULATION WITH FACTORY FORMED FITTINGS.
- ALL VALVES SHALL BE FULL PORT BALL VALVES UNLESS OTHERWISE NOTED.
- ALL FLOOR DRAINS SHALL HAVE DEEP SEAL TRAPS.
- ALL WALL HUNG FIXTURES SHALL BE SUPPORTED BY CARRIERS.
- WATER CLOSETS SHALL BE SET IN GROUT BASES, COLOR TO MATCH FLOOR TILE GROUT.
- ALL TAP FEES, PERMITTING AND INSPECTION COST SHALL BE INCLUDED IN BASE BID.

C&A No. 22-114



NEW TOILET FACILITIES FOR
FORT OGLETHORPE PAVILION
214 1st STREET
FORT OGLETHORPE, GA 30742

JOB NO. 2241
DATE 16 JAN 23
DRAWN BY
REVISIONS

DRAWING TITLE

PLUMBING PLANS
AND SCHEDULES

SHEET NO.

P1.0

HVAC LEGEND AND SYMBOLS					
A.F.F.	ABOVE FINISHED FLOOR		VALVE ACTUATORS:		SUPPLY, OUTSIDE AIR, OR MAKE-UP AIR DUCTWORK CROSS-SECTION
AMB.	AMBIENT		MANUAL, NON-RISING STEM		RETURN DUCTWORK CROSS-SECTION
B.F.C.	BELOW FINISHED CEILING		ELECTRIC MOTOR		EXHAUST DUCTWORK CROSS-SECTION
CFM	CUBIC FEET PER MINUTE		ELECTRIC SOLENOID		RADIUS ELBOW (45° SHOWN)
EA	EXHAUST AIR		CAP		MITERED ELBOW WITH DOUBLE THICK TURNING VANES (90° SHOWN)
E.A.D.B.	ENTERING AIR DRY BULB TEMPERATURE		ELBOW, FACING TOWARD VIEWER		SUPPLY DUCTWORK SHOWN TURNING UP
E.A.W.B.	ENTERING AIR WET BULB TEMPERATURE		ELBOW, FACING AWAY FROM VIEWER		RETURN DUCTWORK SHOWN TURNING DOWN
E.S.P.	EXTERNAL STATIC PRESSURE		REDUCER, CONCENTRIC		FIRE DAMPER WITH ACCESS DOOR IN DUCT
FD-2	2-HOUR FIRE DAMPER		REDUCER, ECCENTRIC, FLAT ON BOTTOM		SMOKE DAMPER WITH ACCESS DOOR IN DUCT
GPM	GALLONS PER MINUTE		REDUCER, ECCENTRIC, FLAT ON TOP		FIRE/SMOKE DAMPER WITH ACCESS DOOR IN DUCT
MBH	THOUSAND BTU/HOUR		TEE, FACING TOWARD VIEWER		MANUAL VOLUME BALANCING DAMPER
MADB	MEAN COINCIDENT DRY BULB TEMP.		TEE, FACING AWAY FROM VIEWER		PROGRAMMABLE TEMPERATURE SENSOR
MCWB	MEAN COINCIDENT WET BULB TEMP.		UNION, SCREWED		REMOTE WIRED WALL-MOUNTED CONTROLLER
MUA	MAKE-UP AIR		UNION, FLANGED		DUCT-MOUNTED SMOKE DETECTOR
N.C.	NORMALLY CLOSED		STRAINER		MANUAL PULL STATION FOR KITCHEN EXHAUST HOOD FIRE SUPPRESSION SYSTEM
N.O.	NORMALLY OPEN		STRAINER, BLOW OFF		DUCT CONNECTION TO THE NECK OF A DIFFUSER, REGISTER, OR GRILLE (DIFFUSER CONNECTION SHOWN)
N/A	NOT APPLICABLE		PETE'S PLUG		SIDEWALL GRILLE OR REGISTER; ARROW INDICATES FLOW DIRECTION
N.I.C.	NOT IN CONTRACT		PRESSURE GAGE AND COCK		SIZE OF DIFFUSER/GRILLE NECK
N.T.S.	NOT TO SCALE		THERMOMETER		DIFFUSER/GRILLE TYPE (SEE SCHEDULE)
OA	OUTSIDE AIR		PUMP		AIR VOLUME OF DIFFUSER/GRILLE
RA	RETURN AIR		DIRECTION OF FLOW		
RH	RELATIVE HUMIDITY				
SA	SUPPLY AIR				
CHWS	CHILLED WATER SUPPLY				
CHWR	CHILLED WATER RETURN				
HWS	LOW-TEMPERATURE HOT WATER SUPPLY				
HWR	LOW-TEMPERATURE HOT WATER RETURN				
H/C S	HOT/CHILLED WATER SUPPLY				
H/C R	HOT/CHILLED WATER RETURN				
CWS	CONDENSER WATER SUPPLY				
CWR	CONDENSER WATER RETURN				
HPWS	HEAT PUMP WATER SUPPLY				
HPWR	HEAT PUMP WATER RETURN				
RL	REFRIGERANT LIQUID				
RS	REFRIGERANT SUCTION				
CD	CONDENSATE DRAIN ABOVE FLOOR/GRADE				
CD	CONDENSATE DRAIN BELOW FLOOR/GRADE				
BV	BALL VALVE				
BV	BUTTERFLY VALVE				
CV	CHECK VALVE				
GV	GATE OR GLOBE VALVE				
TV	THREE-WAY VALVE				

NOTE: NOT ALL SYMBOLS SHOWN IN LEGEND MAY BE ON THE DRAWINGS.

MECHANICAL GENERAL NOTES:

INTENT: IT IS THE INTENT OF THE CONTRACT DOCUMENTS THAT THE CONTRACTOR FURNISH AND INSTALL ALL MATERIALS AND SYSTEMS, WITH NECESSARY AND INCIDENTAL APPURTANCES, FOR A COMPLETE, FUNCTIONAL INSTALLATION, READY AND SUITABLE FOR THE OWNER'S USE.

CODES: WORK UNDER THIS CONTRACT SHALL BE GOVERNED BY ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES. THE INTERNATIONAL MECHANICAL, ENERGY CONSERVATION, AND PLUMBING CODES SHALL FORM THE BASIS FOR MINIMUM CONSTRUCTION STANDARDS FOR THIS PROJECT.

FEES, PERMITS, AND TAXES: CONTRACTOR SHALL MAKE ARRANGEMENTS FOR INSPECTIONS AND PAY ALL LAWFUL FEES AND PERMITS REQUIRED BY LOCAL AUTHORITIES. CONTRACTOR SHALL PAY TAXES LEVIED FOR LABOR AND MATERIALS ASSOCIATED WITH WORK ON THIS PROJECT.

INSPECTION OF SITE: THE DRAWINGS ARE PREPARED FROM THE BEST INFORMATION AVAILABLE AND REFLECT THE CONDITIONS COMMENSURATE WITH THIS INFORMATION. HOWEVER, THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A PROPOSAL AND SHALL VERIFY THE LOCATIONS, SIZES, DEPTH, PRESSURE, ETC., OF ALL EXISTING UTILITIES; AND FAMILIARIZE HIMSELF WITH WORKING CONDITIONS, HAZARDS, EXISTING GRADES, SOIL CONDITIONS, OBSTRUCTIONS, ETC. IF IT BECOMES EVIDENT THAT EXISTING SITE CONDITIONS WILL IMPAIR THE PROPER OPERATION OF THE UTILITIES, OR THE CONSTRUCTION PROCESS, THE ARCHITECT SHALL BE NOTIFIED IN WRITING. ALL PROPOSALS AND BIDS SHALL TAKE THESE EXISTING CONDITIONS AND ANY REVISIONS REQUIRED INTO ACCOUNT, AND THE LACK OF SPECIFIC SITE INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY.

DATA AND SHOP DRAWINGS: PRIOR TO ORDERING, SUBMIT CERTIFIED PRINTS AND/OR DESCRIPTIVE DATA FOR MAJOR PIECES OF EQUIPMENT, FIXTURES, VALVES, INSULATION, CONTROLS, ETC. STAMP, SIGN, AND CERTIFY TO BE CORRECT AND IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EACH DRAWING SUBMITTED FOR REVIEW. DRAWINGS SUBMITTED WITHOUT SIGNED CERTIFICATION WILL BE RETURNED WITHOUT REVIEW. ANY DEVIATION IN SUBMITTAL FROM CONTRACT DOCUMENTS OF MATERIALS, CAPACITIES, SPACE REQUIREMENTS IN ITEMS FURNISHED, ETC., SHALL BE LISTED IN A LETTER ACCOMPANYING SUBMITTAL STATING DEVIATION AND REASON REQUESTED FOR CONSIDERATION OF ACCEPTANCE. SUBMITTALS SHALL INCLUDE ONE PAPER COPY (IF REQUESTED) AND ONE ELECTRONIC COPY, CLEARLY MARKED, AND IN ORDER AS INDICATED IN DRAWINGS. ITEMS SUBMITTED PARTIALLY AND IN AN UNORGANIZED MANNER SHALL BE RETURNED WITHOUT REVIEW. SUBMITTAL SHALL SHOW MANUFACTURER'S CATALOG NUMBER, PERFORMANCE DATA WITH INDICATED OPERATING POINTS, FINISHES, OPTIONAL FEATURES AND MODIFICATIONS. EACH SHEET OF PRINTED SUBMITTAL DATA SHALL BE CLEARLY MARKED (USING ARROWS, UNDERLINING, CIRCLED, OR HIGHLIGHTING) TO SHOW THE PARTICULAR SIZE, TYPE, MODEL NUMBER, RATINGS AND OPTIONS ACTUALLY PROPOSED. WHEN WORK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION IS SPECIFIED, A COPY OF THESE RECOMMENDATIONS SHALL BE KEPT IN THE JOB OFFICE. SHOP DRAWINGS SHALL SHOW SIZES AND DETAILS OF REQUIRED CONCRETE AND STEEL MACHINE FOUNDATION, LOCATION OF ANCHOR BOLTS, PHYSICAL DIMENSION OF EQUIPMENT, EQUIPMENT WEIGHT OR OTHER PERTINENT DATA REQUIRED FOR EQUIPMENT SUPPORT OR INSTALLATION. APPROVED SHOP DRAWINGS DO NOT MEAN THAT DRAWINGS HAVE BEEN CHECKED IN DETAIL; SAID APPROVAL DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY OR NECESSITY OF FURNISHING MATERIAL OR PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS OR SPECIFICATIONS.

GUARANTEE: WORK AND MATERIALS TO BE GUARANTEED FOR ONE (1) YEAR AFTER PROJECT COMPLETION. HVAC REFRIGERATION SYSTEM COMPONENTS SHALL HAVE AN ADDITIONAL 4-YEAR WARRANTY. EACH PIECE OF EQUIPMENT SHALL MEET PERFORMANCE SPECIFICATIONS AFTER ONE (1) YEAR'S ACTUAL OPERATION. THE CONTRACTOR SHALL REPLACE, OR MAKE GOOD, ANY DEFECT DUE TO FAULTY WORKMANSHIP OR MATERIAL, WHICH SHALL DEVELOP WITHIN ONE (1) YEAR FROM DATE OF ACCEPTANCE AT NO COST TO THE OWNER. THIS GUARANTEE SHALL COVER BOTH MATERIAL AND LABOR AND SHALL INCLUDE: (A) REFRIGERANT AND OIL REPLACEMENT, (B) ANY ADJUSTMENTS OR SERVICE REQUIRED, AND (C) ANY NECESSARY ADJUSTMENTS IN SYSTEM CONTROL SET POINTS WHEN REQUIRED, BUT NO FILTER MAINTENANCE. THE CONTRACTOR IS RESPONSIBLE TO REPLACE WORK FOUND NOT IN COMPLIANCE WITH THE CONTRACT AT ANY TIME DURING THE LIFE OF THE INSTALLATION; REPLACEMENT OF NON-CONFORMING WORK IS NOT SUBJECT TO THE ONE-YEAR WARRANTY LIMITATION.

WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OR REQUIRED ACCESS/CLEARANCE SPACE OF OTHER TRADES, COORDINATE ADJUSTMENTS PRIOR TO INSTALLATION TO PROVIDE SATISFACTORY CLEARANCE. FOR ANY WORK INSTALLED WITHOUT COORDINATION AND/OR CAUSING CONFLICTS, PROVIDE ALL NECESSARY CHANGES TO CORRECT THE CONDITIONS. THE CONSTRUCTION WORK SHALL BE PERFORMED IN A MANNER ACCEPTABLE TO ARCHITECT AND ENGINEER AND SHALL BEAR NO ADDITIONAL COSTS.

LOCATE ALL EQUIPMENT REQUIRING SERVICING, OPERATIONAL, OR MAINTENANCE CLEARANCES IN A FULLY ACCESSIBLE POSITION. EQUIPMENT REQUIRING THESE CLEARANCES SHALL INCLUDE, BUT NOT BE LIMITED TO: DAMPERS, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DISCONNECTS, DRAIN PANS, ETC. IF EQUIPMENT IS CONCEALED, PROVIDE ACCESS DOORS TO MAINTAIN ACCESSIBILITY. MINOR DEVIATIONS FROM THE CONTRACT DOCUMENTS MAY BE MADE TO ALLOW FOR BETTER ACCESSIBILITY. WHERE FIRE DAMPERS ARE REQUIRED, PROVIDE ACCESS PANELS TO ALLOW RE-LINKING OF DAMPER FUSIBLE LINKS. PANELS IN RATED CONSTRUCTION SHALL BEAR UL LABEL.

INSTALL ALL DUCTWORK AND HORIZONTAL PIPING AS HIGH AS POSSIBLE AND ABOVE THE FINISHED CEILING, UNLESS NOTED OTHERWISE. PROVIDE OFFSETS, AS REQUIRED, TO AVOID ALL OBSTRUCTIONS.

PIPING, CONDUITS, CABLES, ETC., SHALL BE RUN NEATLY, PARALLEL TO EXISTING AND NEW PIPING AND BUILDING WALLS AND FLOORS.

DO NOT SCALE DRAWINGS; USE GIVEN DIMENSIONS ONLY. IF NOT SHOWN, VERIFY AND DOCUMENT CORRECT DIMENSION WITH THE ARCHITECT OR ENGINEER. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE.

A TECHNICIAN, FACTORY TRAINED AND CERTIFIED BY THE MANUFACTURER OF THE HVAC EQUIPMENT PROVIDED, SHALL PERFORM PRE START-UP CHECK AND SHALL SUBMIT A REPORT TO THE OWNER ON EACH SPLIT SYSTEM. THIS REPORT SHALL INCLUDE CERTIFICATION, IN WRITING, THAT THE EQUIPMENT IS CORRECTLY INSTALLED (INCLUDING PROPER DRAINAGE FROM DRAIN PANS AND SEALING OF AIR LEAKS); ELECTRICAL CONNECTIONS AND TERMINAL TIGHTNESS; INDOOR FILTERS ARE CLEAN, IN PLACE, AND EASILY REPLACEABLE; FANS AND COMPRESSORS ROTATE CORRECTLY; ELECTRICAL AMP DRAWS SHALL BE RECORDED AND CERTIFIED WITHIN MANUFACTURER'S RECOMMENDED LIMITS; REFRIGERANT SUCTION AND DISCHARGE PRESSURES FOR ALL CIRCUITS WITH STATEMENT THAT SYSTEMS ARE CORRECTLY CHARGED.

ALL DUCTWORK DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.

DUCTWORK: RIGID - GALVANIZED SHEET METAL PER SMACNA WITH THE EXCEPTION THAT ALL DUCTWORK SHALL BE CONSTRUCTED WITH A MINIMUM OF 26 GA. SHEET METAL. USE ROUND DUCTWORK WHERE CLEARANCES PERMIT. SEAL ALL SUPPLY AIR DUCTWORK JOINTS TO SMACNA CLASS "A" OR TO DUCT SEAL SCHEDULE IF PRESENT ON DRAWINGS; DUCT LEAKAGE SHALL NOT EXCEED 1 PERCENT OF THE SPECIFIED AIRFLOWS WHEN TESTED AT 1" W.G.

AIR DISTRIBUTION DEVICES: AS SCHEDULED ON DRAWINGS.

REFRIGERANT PIPING: HARD-DRAWN TYPE "K" SEAMLESS COPPER TUBING, ASTM B88-74. FITTINGS SHALL BE WROUGHT COPPER, ANSI B16-22-63, WITH A WORKING PRESSURE OF NOT LESS THAN 300 PSIG. REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED WITH THE EQUIPMENT MANUFACTURER'S WRITTEN RECOMMENDATIONS. CONTRACTOR SHALL PROVIDE WRITTEN CERTIFICATION FROM THE EQUIPMENT MANUFACTURER AS TO THE CORRECTNESS OF THE LINE SIZES PRIOR TO INSTALLATION.

CONDENSATE DRAIN PIPING: SCHEDULE 40 PVC WITH DWV FITTINGS, EXCEPT IN RETURN AIR PLENUMS, WHERE TYPE "L" COPPER SHALL BE USED. PIPING SHALL BE INSTALLED WITHOUT ANY SAGGING TO ENSURE COMPLETE DRAINAGE. THE CONDENSATE DRAIN SHALL BE THE SAME SIZE AS THE UNIT DRAIN CONNECTION BUT SHALL NOT BE LESS THAN 3/4" DIAMETER PIPE. ALL CONDENSATE DRAIN PIPING SHALL SLOPE DOWN 1/8" IN 12" MINIMUM IN DIRECTION OF FLOW.

INSULATION: DUCTWORK; MAKE-UP AIR (CONCEALED) - 2" THICK, 1 PCF DENSITY FIBERGLASS BLANKET WITH FIRE RATED VAPOR BARRIER (INSTALLED R-VALUE SHALL BE 5.0 MINIMUM). OVERLAP BUTTING EDGES, FOLD, SEAL AND TAPE, AND PROVIDE A CONTINUOUS VAPOR BARRIER. USE OF

STAPLES SHALL NOT BE PERMITTED. RETURN AIR DUCT INSIDE THE CONDITIONED SPACE NEED NOT BE EXTERNALLY INSULATED. ALL SHEET METAL SURFACES, INCLUDING THE TOPS OF SUPPLY AIR DIFFUSERS EXPOSED ABOVE THE CEILING, SHALL BE INSULATED.

INSULATION: DUCTWORK; EXHAUST - NO INSULATION IS REQUIRED.

INSULATION: REFRIGERANT PIPING (EXTERIOR AND INTERIOR OF BUILDING) AND CONDENSATE DRAIN PIPING (INTERIOR OF BUILDING) - 1" THICK CLOSED CELL ELASTOMERIC FOAM INSULATION, ARMAFLEX AP OR EQUAL, WITH MANUFACTURER'S RECOMMENDED ADHESIVE AT ALL JOINTS. INSULATION EXPOSED TO EXTERIOR CONDITIONS SHALL BE COVERED IN A FLEXIBLE PVC JACKET AND SEALED WEATHERPROOF.

HVAC EQUIPMENT: AS SCHEDULED ON DRAWINGS.

MOUNT TEMPERATURE SENSORS, REMOTE CONTROL PANELS, ETC., AS INDICATED ON PLANS 48" A.F.F. TO CENTER OF DEVICE UNLESS OTHERWISE NOTED OR AS REQUIRED FOR ACCESSIBILITY CODE COMPLIANCE. COORDINATE LOCATION OF SENSORS WITH CABINETS AND OTHER SERVICES. THE TEMPERATURE SENSORS SHALL NOT BE INSTALLED ON OUTSIDE WALLS, IN THE DIRECT AIR STREAM FROM ANY DIFFUSER, OR WHERE IT MAY BE INFLUENCED BY HEAT GIVEN OFF FROM EQUIPMENT.

ADJUSTING AND BALANCING: ALL EQUIPMENT AND SYSTEMS SHALL BE ADJUSTED AND BALANCED SO THAT THEY PERFORM TO THE SATISFACTION OF THE ARCHITECT. AIR DISTRIBUTION SYSTEM(S) SHALL BE ADJUSTED TO THE AIR QUANTITIES INDICATED AND TO ELIMINATE ANY TEMPERATURE GRADIENTS BETWEEN ROOMS OR WITHIN ROOMS GREATER THAN 3' F. CONTRACTOR SHALL ENGAGE THE SERVICES OF A TEST AND BALANCE AGENCY TO PERFORM THE ADJUSTING AND BALANCING OF THE MECHANICAL SYSTEM(S). ALL ADJUSTING AND BALANCING WORK SHALL BE PERFORMED BY THE PROCEDURAL STANDARDS AS SET FORTH BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), THE ASSOCIATED AIR BALANCE COUNCIL (AABC), OR THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA). THE CONTRACTOR SHALL SUBMIT TAB REPORTS TO THE ENGINEER FOR REVIEW; ALL TAB REPORTS SHALL BE SUBMITTED ON FORMS AS SET FORTH BY THE ORGANIZATIONS LISTED ABOVE.

ALL SAFETY DEVICES SHALL BE CHECKED FOR PROPER OPERATION.

PRIOR TO COMPLETION AND FINAL ACCEPTANCE OF THE FACILITY, FURNISH TO THE ENGINEER CERTIFICATION THAT THE MECHANICAL SYSTEMS HAVE BEEN TESTED AND THAT THE INSTALLATION AND PERFORMANCE OF THOSE SYSTEMS CONFORM TO THE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL MAINTAIN AT THE JOB SITE A SET OF CONTRACT RECORD DOCUMENTS KEPT CURRENT BY INDICATING THEREON ALL CHANGES, SUBSTITUTIONS, ETC., BETWEEN WORK AS SPECIFIED AND AS INSTALLED. SHOW ON RECORD DRAWINGS ACTUAL AIR QUANTITIES, WATER FLOW RATES, VALVE OR DAMPER POSITIONS AFTER BALANCING, ETC.; ALSO SHOW, BY ACTUAL DIMENSION, LOCATION OF ALL UNDERGROUND WORK. FURNISH THE ENGINEER AND THE OWNER WITH ONE (1) COMPLETE SET EACH OF ELECTRONIC DRAWING FILES SHOWING INSTALLED LOCATION, SIZE, ETC. OF ALL WORK AND MATERIAL IN .PDF AND .DWG FORMATS.

RECORD AND AS-BUILT DRAWINGS: MAINTAIN AT THE JOB SITE A SET OF CONTRACT RECORD DRAWINGS KEPT CURRENT BY INDICATING THEREON ALL CHANGES, SUBSTITUTIONS, ETC., BETWEEN WORK AS SPECIFIED AND AS INSTALLED. FURNISH THE ENGINEER WITH ONE (1) COMPLETE SET OF ELECTRONIC DRAWING FILES SHOWING INSTALLED LOCATION, SIZE, ETC., OF ALL WORK AND MATERIAL IN .PDF AND .DWG FORMAT. SHOW ON RECORD DRAWINGS ACTUAL AIR QUANTITIES, WATER FLOW RATES, VALVE AND/OR DAMPER POSITIONS AFTER BALANCING, ETC.; ALSO SHOW, BY ACTUAL DIMENSION, LOCATION OF ALL UNDERGROUND WORK. FOR EACH PIECE OF EQUIPMENT, PROVIDE THE OWNER THREE (3) SETS OF: (A) MANUFACTURER'S PRINTED CATALOG PAGES, OPERATING AND MAINTENANCE INSTRUCTIONS, WIRING AND CONNECTION DIAGRAM, ETC.; (B) TEMPERATURE-HUMIDITY AND MOTOR INTERLOCK CONTROL AND WIRING DIAGRAMS SHOWING OPERATION INSTRUCTIONS FOR, AND NORMAL POSITION OF, EACH MOTOR AND CONTROLLER, CONTROL VALVE, THERMOSTAT, ETC.; AND (C) LUBRICATION CHART. BIND THIS INFORMATION INTO 8-1/2"x 11" BOOKLETS. ALL THREE (3) SETS SHALL BE ASSEMBLED IN HARDBACK BINDERS.

NEW TOILET FACILITIES FOR FORT OGLETHORPE PAVILION 214 1st STREET FORT OGLETHORPE, GA 30742

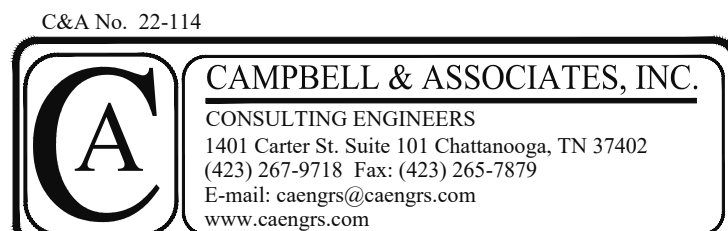
JOB NO. 2241
DATE 16 JAN 23
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REVISIONS

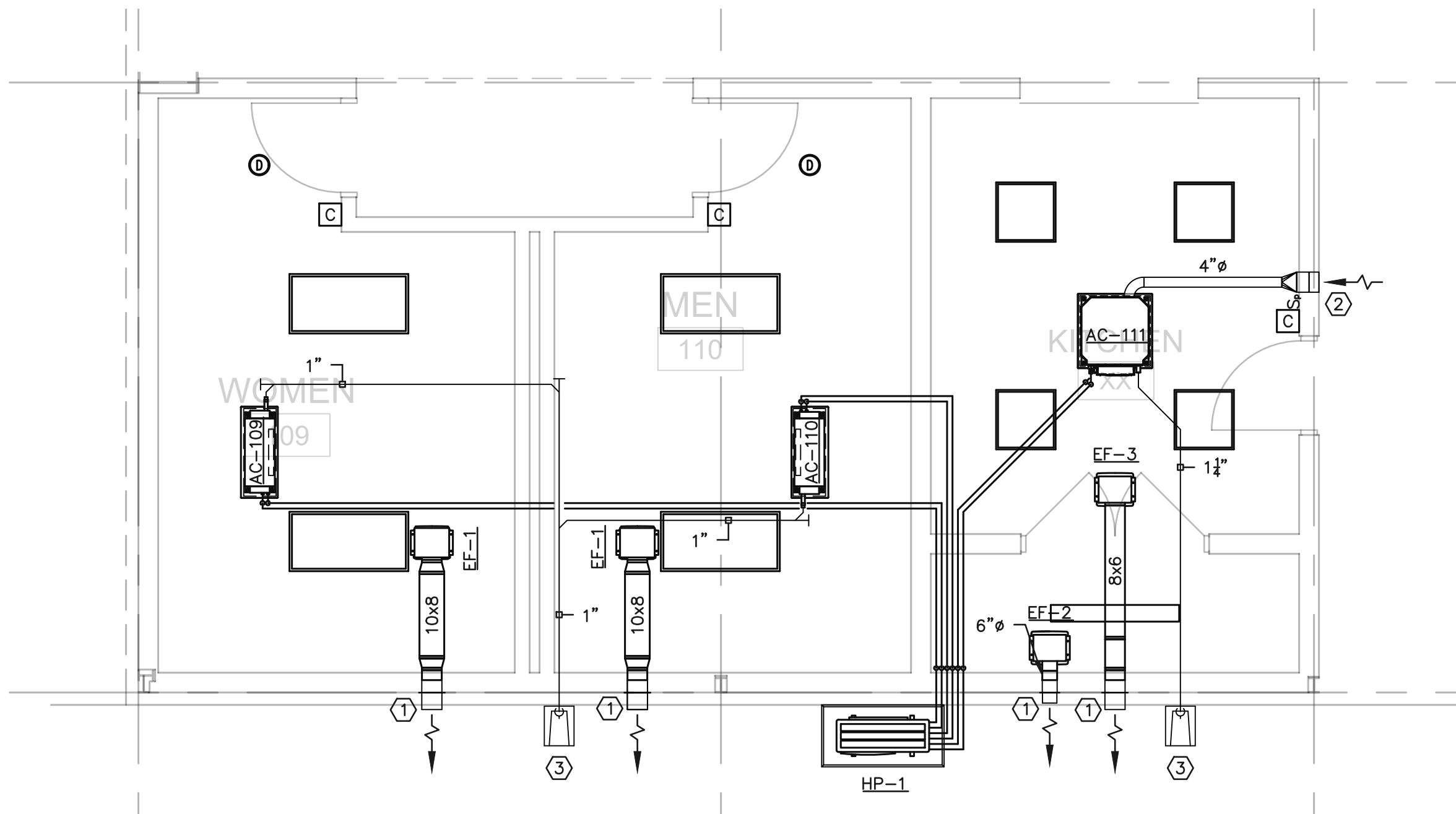
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HVAC LEGEND &
GENERAL NOTES

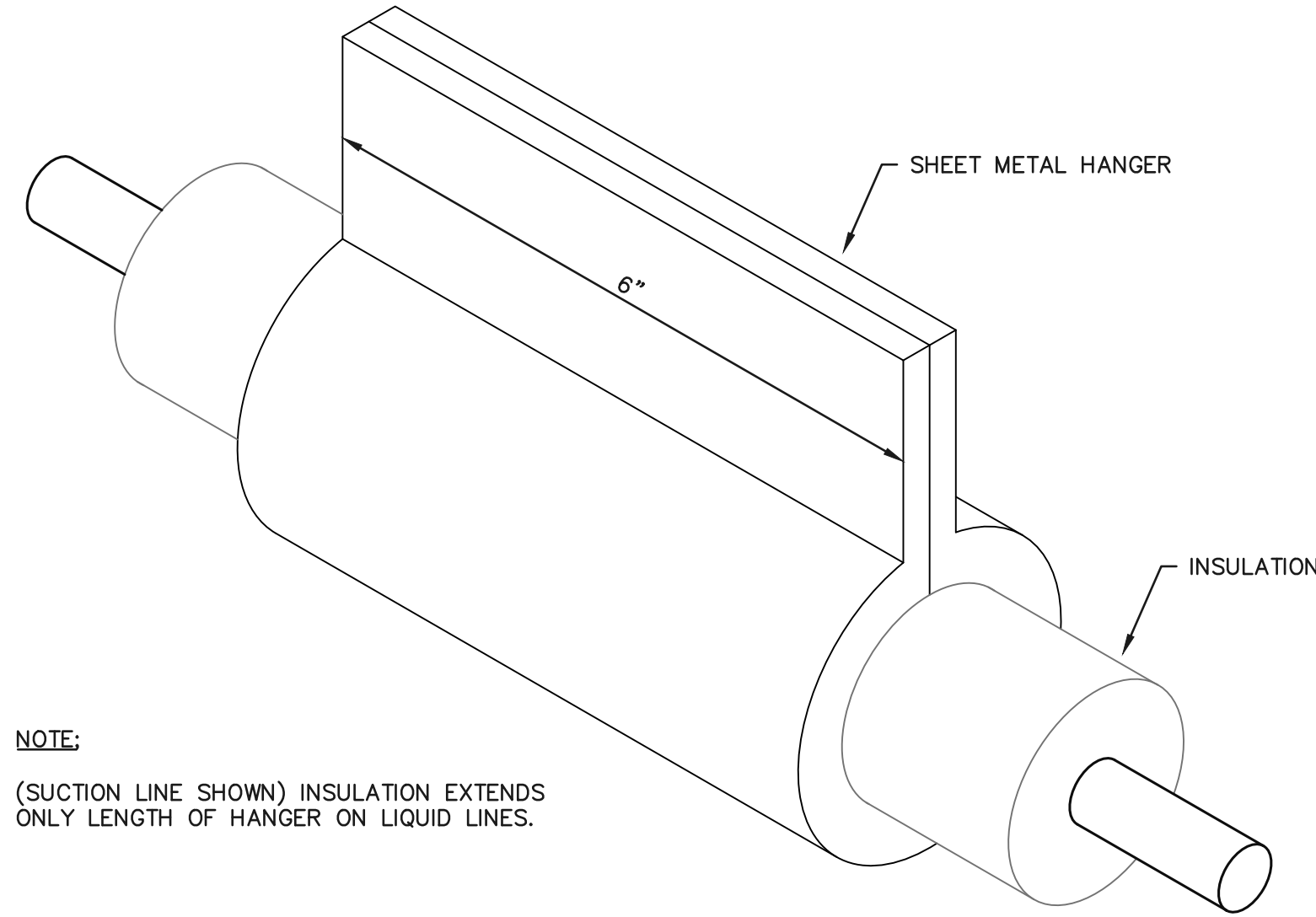
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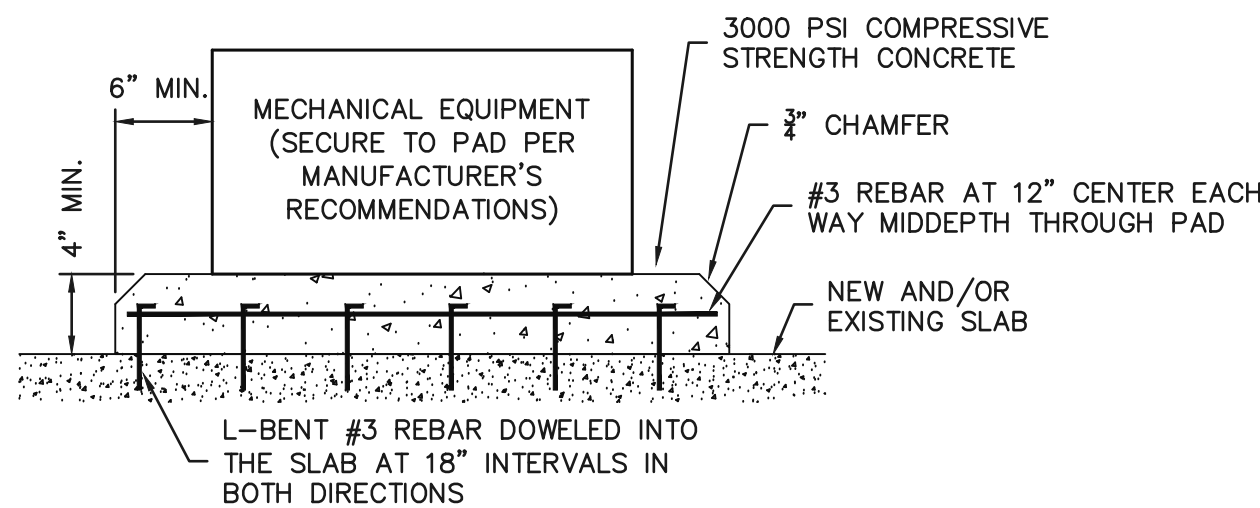




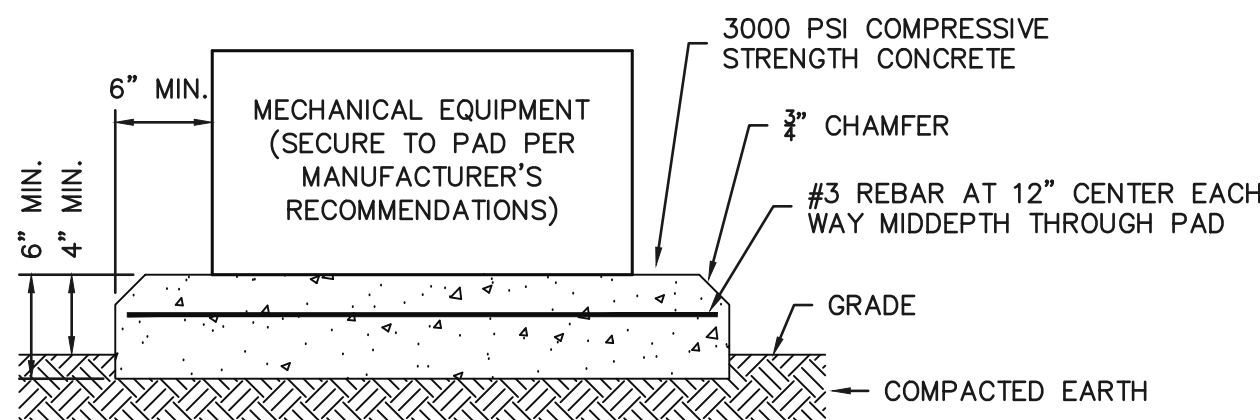
- HVAC PLAN NOTES:
- WALL CAP FOR EXHAUST FAN.
 - UNITED ENERTECH MODEL BVE-847 BRICK VENT OR EQUAL; PROVIDE WITH DAMPER AND INSECT SCREEN.
 - SPILL CONDENSATE DRAIN PIPING ONTO CONCRETE SPLASH BLOCK.



DETAIL OF REFRIGERANT LINE HANGERS
NO SCALE

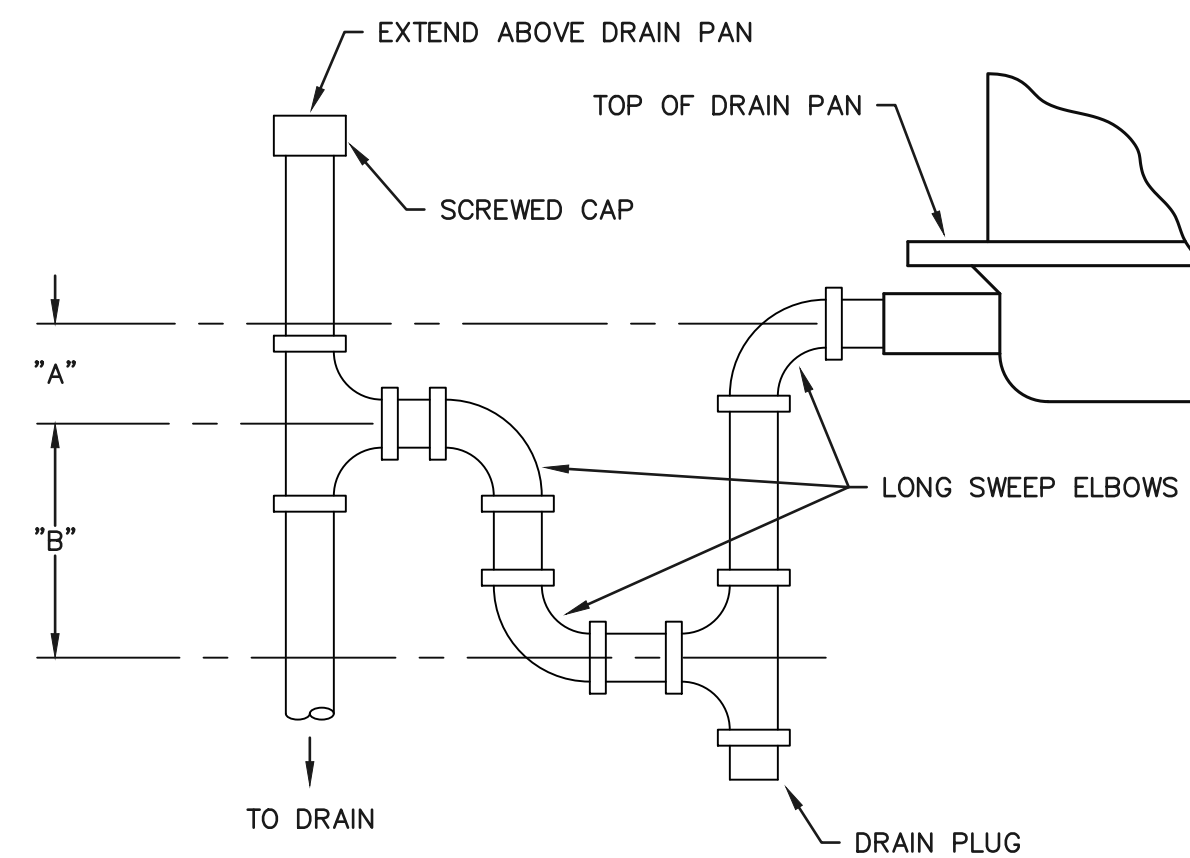


HOUSEKEEPING PAD ON NEW AND/OR EXISTING CONCRETE SLAB



HOUSEKEEPING PAD ON GRADE

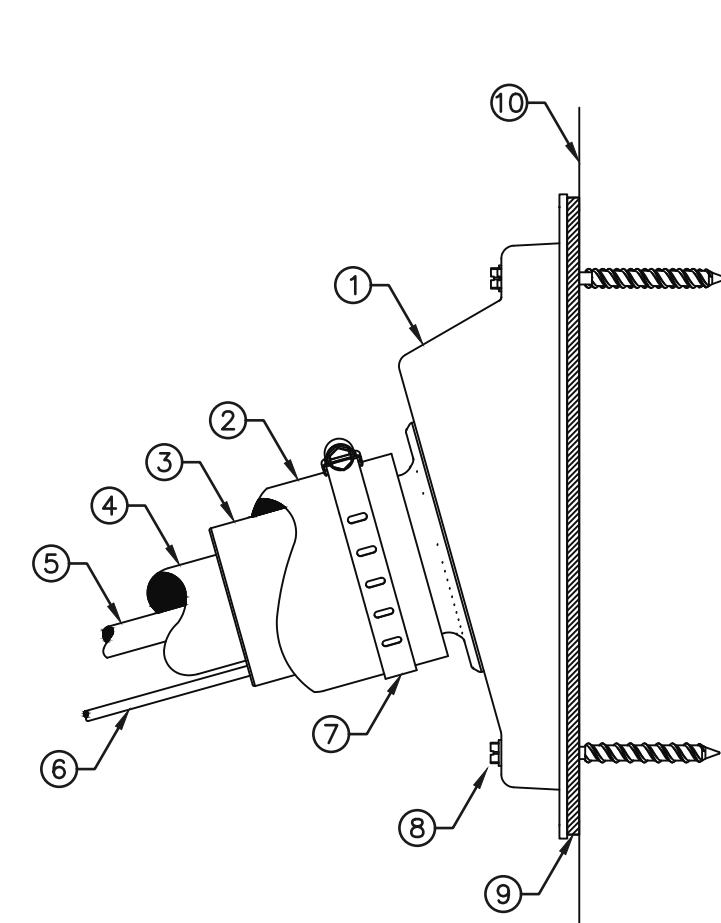
HOUSEKEEPING PAD DETAILS
NO SCALE



"A" DIMENSION TO BE A MINIMUM OF 1/2"
"B" DIMENSION TO BE 1/2" PLUS TOTAL STATIC PRESSURE

- NOTES:
- PROVIDE 3/8" VALVED PRIMING LINE FOR FLOOR DRAINS LOCATED IN PLENUMS.
 - CONDENSATE DRAIN LINE SHALL BE FULL UNIT CONDENSATE DRAIN CONNECTION SIZE (3/4" MINIMUM).

DRAIN TRAP FOR A.C. UNITS
NO SCALE



REFRIGERATION PIPE PENETRATION DETAIL
NO SCALE

VRF SPLIT SYSTEM SCHEDULE (HEAT PUMP)																						
MARK	COOLING (MBH)			HEATING			SYSTEM ELECTRICAL			MANUFAC.	MODEL NUMBER		OUTDOOR UNIT WEIGHT (LBS.)	SEER	HSPF	REFR.	NOMINAL TONS	COMMENTS				
	TOTAL	E.A.D.B. (°F)	AMB. (°F)	MBH	E.A.D.B. (°F)	AMB. (°F)	VOLTS/PH	MCA	MOCP		INDOOR UNIT	OUTDOOR UNIT										
AC-109 & HP-1	6.0	80.0	95.0	7.2	70.0	47.0	208-230/1	22.1	25.0	MITSUBISHI	MLZ-KY06NA	MXZ-3C24NA2	137.0	18.0	9.5		R410A	0.50	SEE NOTES			
AC-110 & HP-1	6.0	80.0	95.0	7.2	70.0	47.0												MLZ-KY06NA		R410A	0.50	SEE NOTES
AC-111 & HP-1	9.0	80.0	95.0	11.0	70.0	47.0												SLZ-KF09NA		R410A	0.75	SEE NOTES

- NOTES:
- PROVIDE MODEL MAC-334IF-E SYSTEM CONTROL INTERFACE, MODEL PAC-YT53CRAU-J SIMPLE MA REMOTE CONTROLLER, AND MODEL X87-721 BLUE DIAMOND MINI CONDENSATE PUMP WITH RESERVOIR (208-230 VOLT) FOR EACH INDOOR UNIT.
 - PROVIDE MODEL PAC-SH96SG-E AIR OUTLET GUIDE FOR EACH OUTDOOR UNIT.
 - SIZE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS PRIOR TO CONSTRUCTION. ROUTE THE SHORTEST AND MOST DIRECT ROUTE POSSIBLE.

FAN SCHEDULE											
MARK	MANUFAC.	TYPE	MODEL #	CFM	E.S.P. (IN. H2O)	AMPS	WATTS	HP	FAN RPM	SONE LEVEL	VOLTS/PH
EF-1	GREENHECK	CEILING EXHAUST	SP-A290	280	0.20	0.83	81.0	-	1050	2.5	115/1
EF-2	GREENHECK	CEILING EXHAUST	SP-A70	50	0.20	0.14	10.0	-	777	<0.3	115/1
EF-3	GREENHECK	CEILING EXHAUST	SP-A110	130	0.20	0.19	18.0	-	950	0.4	115/1

- NOTES:
- EF-1 SHALL BE INTERLOCKED WITH THE ROOM LIGHT SWITCH. EF-2 SHALL OPERATE CONTINUOUSLY. EF-3 SHALL BE CONTROLLED BY A SINGLE POLE ROCKER SWITCH WITH PILOT LIGHT.
 - PROVIDE EF-1 WITH 6-AMP SOLID STATE SPEED CONTROL, DESIGNER GRILLE WITH INTEGRAL MOTION DETECTOR (MOTION DETECTOR TO INCLUDE AN ADJUSTABLE 0-15 MINUTE TIME DELAY FOR DEACTIVATION OF FAN AFTER MOTION DETECTOR NO LONGER SENSES MOTION IN THE SPACE), MODEL VI KIT-SP/CSP VIBRATION ISOLATION KIT, AND MODEL WC-8x8 SQUARE HOODED WALL CAP.
 - PROVIDE EF-2 WITH 6-AMP SOLID STATE SPEED CONTROL, DESIGNER GRILLE, MODEL VI KIT-SP/CSP VIBRATION ISOLATION KIT, AND MODEL WC-6 ROUND HOODED WALL CAP.
 - PROVIDE EF-3 WITH 6-AMP SOLID STATE SPEED CONTROL, DESIGNER GRILLE, SINGLE POLE ROCKER SWITCH WITH PILOT LIGHT, MODEL VI KIT-SP/CSP VIBRATION ISOLATION KIT, AND MODEL WC-8x8 RECTANGULAR HOODED WALL CAP.

MINIMUM DUCT SEAL LEVEL				
DUCT LOCATION	DUCT TYPE			
	SUPPLY (< OR = 2" W.G.)	SUPPLY (> OR = 2" W.G.)	EXHAUST	RETURN
OUTDOORS	SMACNA SEAL CLASS A	SMACNA SEAL CLASS A	SMACNA SEAL CLASS C	SMACNA SEAL CLASS A
UNCONDITIONED SPACE	SMACNA SEAL CLASS B	SMACNA SEAL CLASS A	SMACNA SEAL CLASS C	SMACNA SEAL CLASS B
CONDITIONED SPACES (INCLUDING RETURN AIR PLENUMS)	SMACNA SEAL CLASS C	SMACNA SEAL CLASS B	SMACNA SEAL CLASS B	SMACNA SEAL CLASS C

- NOTES:
- SMACNA SEAL CLASS A: ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS TO BE SEALED. NON UL-181A OR UL-181B (OR OTHER INDEPENDANT TESTING LABORATORY) CERTIFIED PRESSURE SENSITIVE TAPE SHALL NOT BE USED AS THE PRIMARY SEALANT.
- SMACNA SEAL CLASS B: ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS TO BE SEALED. NON UL-181A OR UL-181B (OR OTHER INDEPENDANT TESTING LABORATORY) CERTIFIED PRESSURE SENSITIVE TAPE SHALL NOT BE USED AS THE PRIMARY SEALANT.
- SMACNA SEAL CLASS C: TRANSVERSE JOINTS ONLY

C&A No. 22-114



NEW TOILET FACILITIES FOR
FORT OGLETHORPE PAVILION
214 1st STREET
FORT OGLETHORPE, GA 30742

JOB NO. 2241
DATE 16 JAN 23
DRAWN BY GSJ
REVISIONS

DRAWING TITLE

HVAC PLAN,
SCHEDULES, &
DETAILS

SHEET NO.

M1.0



ELECTRICAL GENERAL NOTES:

- IT IS STRONGLY RECOMMENDED THAT ALL BIDDERS VISIT AND EXAMINE THE SITE. NO ADDITIONAL COMPENSATION WILL BE AWARDED FOR ANY DEVIATIONS OR DISCREPANCIES TO THESE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS UNDER WHICH WORK MUST BE PERFORMED AND CHECK ALL PRESENT ELEVATIONS. THE CONTRACTOR SHALL REPORT ANY MAJOR DISCREPANCIES TO THE ARCHITECT. FAILURE TO DO SO SHALL BE DEEMED AS ACCEPTANCE OF EXISTING CONDITIONS.
- ANY OTHER RELOCATIONS, ALTERATIONS AND/OR EXTENSIONS OF ELECTRICAL ITEMS DUE TO REMODELING (THOUGH NOT SPECIFICALLY SHOWN) SHALL BE INCLUDED TO PROVIDE A COMPLETE AND WORKING INSTALLATION.
- THE DRAWINGS INDICATE MAJOR ITEMS TO BE REMOVED SUCH AS PANELS, COMMUNICATIONS SYSTEM TERMINAL BOXES, MAJOR FEEDERS, ETC. THE DRAWINGS DO NOT DETAIL REMOVALS FOR MINOR DEVICES, LIGHTING FIXTURES, BRANCH CIRCUITS, ETC., UNLESS SPECIFICALLY INDICATED FOR REUSE ELSEWHERE. IT IS INTENDED THAT ALL ITEMS NOT SHOWN TO BE REUSED ON THE NEW FLOOR PLANS BE REMOVED BACK TO SOURCE AND CONTINUITY OF CIRCUITRY TO ADJACENT AREAS BE PROVIDED FOR.
- ALL REMOVED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS DIRECTED OTHERWISE BY THE OWNER.
- ALL WORK REQUIRING A POWER OUTAGE SHALL BE COORDINATED WITH THE OWNER AND SCHEDULED AT SUCH A TIME AS TO MINIMIZE DISRUPTION. THE CONTRACTOR SHALL SCHEDULE FULL WORK CREWS FOR AS LONG AS REQUIRED TO MINIMIZE THE SHUTDOWN PERIOD. ALL SHUTDOWNS SHALL OCCUR BETWEEN 8:00 P.M. AND 4:00 A.M.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING FOR INSTALLATION OF ALL ELECTRICAL WORK. ALL CONDUIT SHALL BE RUN CONCEALED IN WALLS AND CEILINGS, WIREMOLD OR EXPOSED CONDUITS ARE NOT ACCEPTABLE UNLESS SPECIFICALLY NOTED ON THE DRAWINGS. ELECTRICAL CONTRACTOR TO PROVIDE ACCESS PANELS IN WALLS AND CEILINGS AS REQUIRED. MATCH ALL EXISTING CONDITIONS.
- OPENINGS AROUND CONDUITS OR IN SLEEVES FOR CONDUITS PENETRATING FIRE-RATED FLOOR SLABS, WALLS, PARTITIONS, CEILINGS OR SMOKE PARTITIONS, SHALL BE SEALED AT BOTH SIDES OF THE PENETRATION. INSULATION SHALL NOT EXTEND THROUGH SLEEVES. PACK OPENINGS WITH CALCIUM SILICATE BLOCK, DOW CORNING 3-6548 RTV SILICON FOAM, 3M CP25 CAULK, OR 303 PUTTY FIRE BARRIER SYSTEM, OR MATERIAL HAVING THE SAME FIRE-RATING AS THE FLOOR OR WALL PENETRATED. FIBERGLASS IS NOT ACCEPTABLE.
- ELECTRICAL CONTRACTOR TO PROVIDE AN INSTALLATION SCHEDULE DETAILING MAJOR DATES OF INSTALLATION FOR ITEMS SUCH AS TRANSFORMERS, MAIN DISTRIBUTION PANELS, SHUT DOWN TIMES, SERVICE SWITCHOVER, ETC. THE SCHEDULE SHALL BE APPROVED BY THE OWNER PRIOR TO ANY SHUT DOWN TIMES.
- ALL EXTERIOR TRENCHING SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR FILL, GRADED WITH A MINIMUM OF 6" OF TOP SOIL AND SEEDED TO MATCH EXISTING.
- ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. REFER TO THE DRAWINGS OF THE RESPECTIVE SYSTEMS PRIOR TO SUBMISSION OF BIDS FOR ADDITIONAL WORK WHICH MAY BE REQUIRED AS PART OF THIS WORK. NO ALLOWANCES WILL BE MADE FOR THE LACK OF COORDINATION BETWEEN DISCIPLINES OR SYSTEMS AND EQUIPMENT.
- THE WORK SHALL BE COORDINATED WITH THE ARCHITECT FOR THE EXACT LOCATION OF LIGHT FIXTURES, EQUIPMENT, DEVICES, ETC. TO ASSURE PROPER PLACEMENT OF SAID DEVICES AND EQUIPMENT, WHERE A CONFLICT EXISTS BETWEEN ANY TWO DOCUMENTS, NOTIFY THE ENGINEER FOR RESOLUTION PRIOR TO ANY ROUGH-IN OR INSTALLATION.
- THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT BEING INSTALLED PRIOR TO INSTALLATION TO ASSURE THAT THE FEEDER, DISCONNECT, STARTER, OVERCURRENT PROTECTION, ETC. MATCHES THE ACTUAL NAMEPLATE DATA AS SUPPLIED BY THE MANUFACTURER.
- SPECIFIC REQUIREMENTS REGARDING MATERIALS, WORKMANSHIP AND THE WORK TO BE DONE ARE COVERED BY THE SPECIFICATIONS WHICH COMPLEMENT THE PLANS. WORK CALLED FOR BY THE SPECIFICATIONS OR THE PLANS IS REQUIRED THE SAME AS IF REQUIRED BY BOTH. WHERE A CONFLICT EXISTS BETWEEN THE PLANS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS OF THE TWO SHALL APPLY UNLESS SPECIFICALLY APPROVED IN WRITING BY THE ENGINEER.
- REFER TO EQUIPMENT CUT SHEETS AND MANUFACTURER'S DATA FOR ROUGH IN LOCATIONS OF ELECTRICAL CONNECTIONS AND INTERCONNECTIONS OF ALL EQUIPMENT.
- INSTALL OVER CURRENT PROTECTION AND BRANCH CIRCUIT WIRING PER U.L. LISTING REQUIREMENTS FOR EQUIPMENT SERVED – REFER TO NAMEPLATE DATA.
- PROVIDE START-UP ASSISTANCE TO OWNER PERSONNEL AND EQUIPMENT TECHNICIANS TO CONFIRM CORRECT PHASE ROTATION, PROPER OPERATION AND SEQUENCE, AND CONTROLS.
- CONTRACTOR SHALL COORDINATE ELEVATIONS AND PIPING SYSTEM SLOPES SUCH THAT DUCTWORK, PIPING, RACEWAY, CABLE TRAY, AND ASSOCIATED EQUIPMENT IS INSTALLED AT UNIFORM ELEVATIONS WITH MINIMAL OFFSET. PROVIDE COORDINATION DRAWING TO ENGINEER FOR REVIEW PRIOR TO EQUIPMENT ORDERS AND ROUGH-IN.
- ATTENTION IS CALLED TO THE FACT THAT THIS IS A RENOVATION WITHIN AN EXISTING BUILDING. WHEN THE WORK IS FINISHED, THE ELECTRICAL INSTALLATION SHALL BE COMPLETE IN EVERY RESPECT, COMPLETELY INTEGRATED WITH ALL THE EXISTING ELECTRICAL SYSTEMS. COORDINATION WITH THE ENGINEER IS REQUIRED FOR CHANGING OVER OF EXISTING LOADS. ALL EXISTING ELECTRICAL WORK REQUIRED TO REMAIN IN USE DURING AND/OR AFTER THE COMPLETION OF THE WORK SHALL BE EXTENDED, REROUTED, REPLACED, RECONNECTED OR OTHERWISE TO FIT INTO THE RENOVATED AREA AND LEFT IN SAFE WORKING ORDER. CONTRACTOR TO VERIFY LOAD OF EXISTING CIRCUITS. REMOVE ALL ELECTRICAL EQUIPMENT AND MATERIAL WHICH IS IN THE AFFECTED SPACE AND WILL NOT BE RE-USED BY THE RENOVATION.
- IN AREAS TO BE REMODELED, REMOVE ALL EXISTING LIGHTS, SWITCHES, JUNCTION BOXES, EXPOSED WIRING, MISCELLANEOUS EQUIPMENT, ETC., WHICH ARE TO BE ABANDONED OR ARE NOT UNUSED OR OTHERWISE NOT SERVICEABLE. ALL EXPOSED CONDUIT AND WIRE SHALL BE REMOVED BACK TO THE POINT OF SERVICE TIE-IN AND PLUGGED OR CAPPED AS REQUIRED. ALL ITEMS REMOVED AND NOT REUSED SHALL REMAIN THE PROPERTY OF THE OWNER OR DISPOSED OF AS DIRECTED.
- PROVIDE FOR THE CONTINUITY OF EXISTING CIRCUITS WHICH MAY PASS THROUGH THIS AREA AND ARE DISTURBED BY THE DEMOLITION.
- THERE SHALL BE NO EXPOSED CONDUIT OR WIRING. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN WALLS, CABINETS, ETC.
- MOUNTING HEIGHT (M.H.) SHALL BE FROM FINISHED FLOOR TO BOTTOM OF ITEM, UNLESS OTHERWISE NOTED.
- SEE ARCHITECTURAL DRAWING(S) FOR EXACT LOCATION OF LIGHT FIXTURES, RECEPTACLES, ETC. OTHERWISE NOTED.
- ANY OTHER RELOCATIONS, ALTERATIONS AND/OR EXTENSIONS OF ELECTRICAL ITEMS DUE TO REMODELING (THOUGH NOT SPECIFICALLY SHOWN) SHALL BE INCLUDED TO PROVIDE A COMPLETE AND WORKING INSTALLATION.
- RUN SEPARATE GREEN GROUND WIRE IN ALL CONDUIT SYSTEMS TO ALL DEVICES.
- VERIFY CEILING TYPE FOR GRID OR FLANGE-TYPE HOUSING CONSTRUCTION OF LIGHTING FIXTURES.
- THIS CONTRACTOR SHALL ROUGH-IN AND COMPLETELY CONNECT UP AFTER EQUIPMENT INSTALLATION BY OTHERS, ALL EQUIPMENT AS DETAILED ON THE DRAWINGS AND SPECIFIED HEREIN. ELECTRICAL OUTLETS AND APPROXIMATE LOADS FOR THE VARIOUS ITEMS OF EQUIPMENT ARE NOTED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EXACT LOCATIONS OF SUCH OUTLETS SERVING VARIOUS EQUIPMENT UNITS, AS WELL AS TO VERIFY THE EQUIPMENT MANUFACTURER'S REQUIRED CIRCUIT TERMINATION METHODS TO BEST SUIT REQUIREMENTS FOR EACH EQUIPMENT ITEM (E.G., BLANKED BOX, PLUG-IN, RECEPTACLES, ETC.). COMPLIANCE WITH SUCH REQUIREMENTS OF THE EQUIPMENT MANUFACTURER SHALL BE A PART OF THE CONTRACT AND SHALL BE MET WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

GENERAL ELECTRICAL NOTES:

- ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. REFER TO THE DRAWINGS OF THE RESPECTIVE SYSTEMS PRIOR TO SUBMISSION OF BIDS FOR ADDITIONAL WORK WHICH MAY BE REQUIRED AS PART OF THIS WORK. NO ALLOWANCES WILL BE MADE FOR THE LACK OF COORDINATION BETWEEN DISCIPLINES OR SYSTEMS AND EQUIPMENT.
- THE WORK SHALL BE COORDINATED WITH THE ENGINEERING DOCUMENTS FOR THE EXACT LOCATION OF LIGHT FIXTURES, EQUIPMENT, DEVICES, ETC. TO ASSURE PROPER PLACEMENT OF SAID DEVICES AND EQUIPMENT. WHERE A CONFLICT EXISTS BETWEEN ANY TWO DOCUMENTS, NOTIFY THE ENGINEER FOR RESOLUTION PRIOR TO ANY ROUGH-IN OR INSTALLATION.
- THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT BEING INSTALLED PRIOR TO INSTALLATION TO ASSURE THAT THE FEEDER, DISCONNECT, STARTER, OVERCURRENT PROTECTION, ETC. MATCHES THE ACTUAL NAMEPLATE DATA AS SUPPLIED BY THE MANUFACTURER.
- SPECIFIC REQUIREMENTS REGARDING MATERIALS, WORKMANSHIP AND THE WORK TO BE DONE ARE COVERED BY THE SPECIFICATIONS WHICH COMPLEMENT THE PLANS. WORK CALLED FOR BY THE SPECIFICATIONS OR THE PLANS IS REQUIRED THE SAME AS IF REQUIRED BY BOTH. WHERE A CONFLICT EXISTS BETWEEN THE PLANS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS OF THE TWO SHALL APPLY UNLESS SPECIFICALLY APPROVED IN WRITING BY THE ENGINEER.
- REFER TO EQUIPMENT CUT SHEETS AND MANUFACTURER'S DATA FOR ROUGH IN LOCATIONS OF ELECTRICAL CONNECTIONS AND INTERCONNECTIONS OF ALL EQUIPMENT.
- INSTALL OVER CURRENT PROTECTION AND BRANCH CIRCUIT WIRING PER U.L. LISTING REQUIREMENTS FOR EQUIPMENT SERVED – REFER TO NAMEPLATE DATA.
- PROVIDE START-UP ASSISTANCE TO OWNER PERSONNEL AND EQUIPMENT TECHNICIANS TO CONFIRM CORRECT PHASE ROTATION, PROPER OPERATION AND SEQUENCE, AND CONTROLS.
- CONTRACTOR SHALL COORDINATE ELEVATIONS AND PIPING SYSTEM SLOPES SUCH THAT DUCTWORK, PIPING, RACEWAY, CABLE TRAY, AND ASSOCIATED EQUIPMENT IS INSTALLED AT UNIFORM ELEVATIONS WITH MINIMAL OFFSET. PROVIDE COORDINATION DRAWING TO ENGINEER FOR REVIEW PRIOR TO EQUIPMENT ORDERS AND ROUGH-IN.
- ATTENTION IS CALLED TO THE FACT THAT THIS IS A RENOVATION WITHIN AN EXISTING BUILDING. WHEN THE WORK IS FINISHED, THE ELECTRICAL INSTALLATION SHALL BE COMPLETE IN EVERY RESPECT, COMPLETELY INTEGRATED WITH ALL THE EXISTING ELECTRICAL SYSTEMS. COORDINATION WITH THE ENGINEER IS REQUIRED FOR CHANGING OVER OF EXISTING LOADS. ALL EXISTING ELECTRICAL WORK REQUIRED TO REMAIN IN USE DURING AND/OR AFTER THE COMPLETION OF THE WORK SHALL BE EXTENDED, REROUTED, REPLACED, RECONNECTED OR OTHERWISE TO FIT INTO THE RENOVATED AREA AND LEFT IN SAFE WORKING ORDER. CONTRACTOR TO VERIFY LOAD OF EXISTING CIRCUITS. REMOVE ALL ELECTRICAL EQUIPMENT AND MATERIAL WHICH IS IN THE AFFECTED SPACE AND WILL NOT BE RE-USED BY THE RENOVATION.
- ALL WORK SHALL COMPLY TO THE LATEST APPLICABLE NATIONAL ELECTRIC CODE (N.E.C.).

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	HOME RUN TO PANEL; GROUND, PHASE 'A', 'B', NEUTRAL AND GND
	RACEWAY INSTALLED CONCEALED IN WALL AND/OR ABOVE CEILING
	RACEWAY INSTALLED CONCEALED IN SLAB OR BELOW GRADE
	GROUND PER NEC ARTICLE 250
	CONDUIT UP / CONDUIT DOWN
	120/240V-1PH-3W PANELBOARD, SURFACE MOUNTED
	JUNCTION BOX, WALL / CEILING / FLOOR
	METER BASE
	DUPLEX RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET WITH USB CHARGING - <u>LEGRAND TM826USBWCC6</u> - COLOR BY ARCHITECT
	G.F.C.I. DUPLEX RECEPTACLE OUTLET
	QUADRAPLEX RECEPTACLE OUTLET
	FACELESS GFCI DEVICE
	30A-120/240V-1PH-3W GROUNDED DRYER OUTLET; HUBBELL 94xx SERIES WITH 94xx ANGLE CAP
	50A-120/240V-1PH-3W GROUNDED RANGE OUTLET; HUBBELL 94xx WITH 94xx ANGLE CAP
	WALL SWITCHES: SINGLE POLE, DOUBLE POLE, 3-WAY, 4-WAY
	LIGHTING CONTROL, AUTOMATIC WALL SWITCH, 180 DEGREE COVERAGE, 900 SQ. FT. COVERAGE, DUAL TECHNOLOGY, DUAL VOLTAGE 120/277V, W/ DIMMING; WATT STOPPER DW-311-W OR EQUAL BY HUBBELL, NOVITAS, OR SENSOR SWITCH
	LIGHTING CONTROL, AUTOMATIC WALL SWITCH, 180 DEGREE COVERAGE, 900 SQ. FT. COVERAGE, DUAL TECHNOLOGY, DUAL VOLTAGE 120/277V; WATT STOPPER DW-100-W OR EQUAL BY HUBBELL, NOVITAS, SENSOR SWITCH
	ULTRASONIC OCCUPANCY SENSOR, CEILING MOUNTED, 1100 SQ. FT. 360° COVERAGE WITH POWER PACK (24VDC-150MA) AND AUXILIARY RELAY AS REQUIRED; WATT STOPPER WT-1100-SERIES OR ENGINEER APPROVED EQUAL
	MANUAL MOTOR STARTING SWITCH - W/OVERLOAD PROTECTION
	MANUAL ON-OFF SWITCH
	DRY-TYPE TRANSFORMER; SEE PANEL RISER
	HEAVY DUTY SAFETY SWITCH, SIZE AS NOTED, FUSED AS NOTED, NEMA 1/ 3R
	FEEDER IDENTIFICATION, SEE FEEDER SCHEDULE THIS SHEET

FEEDER SCHEDULE					
MARK	1PH - 2 WIRE W/ GROUND	MARK	1PH OR 3PH - 3 WIRE W/ GROUND	MARK	3PH - 4 WIRE W/ GROUND
(20SD)	2#12, 1#12G - 1/2\"C	(20D)	3#12, 1#12G - 1/2\"C	(20NG)	4#12, 1#12G - 1/2\"C
(30SD)	2#10, 1#10G - 1/2\"C	(30D)	3#10, 1#10G - 1/2\"C	(30NG)	4#10, 1#10G - 3/4\"C
(50SD)	2#8, 1#10G - 1\"C	(50D)	3#8, 1#10G - 1\"C	(50NG)	4#8, 1#10G - 1\"C
(60SD)	2#6, 1#10G - 1\"C	(60D)	3#6, 1#10G - 1\"C	(60NG)	4#6, 1#10G - 1-1/4\"C
(80SD)	2#4, 1#8G - 1\"C	(80D)	3#4, 1#8G - 1\"C	(80NG)	4#4, 1#8G - 1-1/4\"C
(100SD)	2#2, 1#8G - 1-1/4\"C	(100D)	3#2, 1#8G - 1-1/4\"C	(100NG)	4#2, 1#8G - 1-1/4\"C
		(12SD)	3#1, 1#6G - 1-1/4\"C	(12SDNG)	4#1, 1#6G - 1-1/2\"C
		(150D)	3#1/0, 1#6G - 1-1/2\"C	(150NG)	4#1/0, 1#6G - 1-1/2\"C
		(17SD)	3#2/0, 1#6G - 1-1/2\"C	(17SDNG)	4#2/0, 1#6G - 2\"C
		(200D)	3#3/0, 1#6G - 2\"C	(200NG)	4#3/0, 1#6G - 2\"C
		(22SD)	3#4/0, 1#2G - 2\"C	(22SDNG)	4#4/0, 1#2G - 2-1/2\"C
		(250D)	3#250kcmil, 1#2G - 2-1/2\"C	(250NG)	4#250kcmil, 1#2G - 2-1/2\"C
		(300D)	3#350kcmil, 1#2G - 2-1/2\"C	(300NG)	4#350kcmil, 1#2G - 3\"C
		(400D)	3#500kcmil, 1#2G - 3\"C	(400NG)	4#500kcmil, 1#2G - 3-1/2\"C

C&A No. 22-114



NEW TOILET FACILITIES FOR
FORT OGLETHORPE PAVILION
214 1st STREET
FORT OGLETHORPE, GA 30742

JOB NO. 2241
DATE 16 JAN 23
DRAWN BY RIG
REVISIONS

DRAWING TITLE

ELECTRICAL
LEGEND,
SCHEDULE, AND
NOTES

SHEET NO.

E0.1

ELECTRICAL SPECIFICATIONS

- ALL WORK SHALL CONFORM TO THE LATEST APPROVED VERSION OF THE N.E.C., NATIONAL, STATE AND LOCAL CODES WHICH APPLY.
- ALL MATERIAL AND EQUIPMENT SHALL CONFORM TO U.L. AND NEMA STANDARDS WHICH APPLY.
- THIS CONTRACTOR SHALL PAY ALL FEES AND OBTAIN ALL PERMITS REQUIRED FOR THE EXECUTION OF HIS WORK. HE SHALL ALSO PROVIDE PROOF OF FINAL APPROVAL BY THE AUTHORITY HAVING JURISDICTION BEFORE FINAL PAYMENT IS MADE.
- THIS CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF HIS ENTIRE ELECTRICAL INSTALLATION AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY OWNER.
- SUBMIT EIGHT COPIES OF DETAILED SHOP DRAWINGS OF ALL ITEMS OF EQUIPMENT FURNISHED UNDER THIS CONTRACT IN A TIMELY MANNER FOR APPROVAL, BEFORE MANUFACTURE OF THE EQUIPMENT OR ITS INCORPORATION IN THE WORK.
- CONDUCTORS:

MINIMUM WIRE SIZE SHALL BE #12 UNLESS NOTED OTHERWISE.

CONDUCTORS SMALLER THAN #2 AWG SHALL BE "THHN/THWN". CONDUCTORS #2 AWG AND LARGER SHALL BE "XHHW".

ALL CONDUCTORS SHALL BE COPPER.

CONDUCTORS SHALL BE AS MANUFACTURED BY AETNA, AMERICAN INSULATED, ENCORE, ESSEX, PARANITE, PIRELLI OR SOUTHWIRE.
- CONDUITS:

INTERIOR CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT) UNLESS NOTED OTHERWISE.

EXTERIOR CONDUIT BURIED BELOW GRADE SHALL BE PVC SCHEDULE 40.

EXPPOSED EXTERIOR CONDUIT SHALL BE FULL WEIGHT RIGID GALVANIZED STEEL (RGS) OR INTERMEDIATE METAL CONDUIT (IMC) GALVANIZED OR SHERADIZED INSIDE AND OUT.

FLEXIBLE METAL CONDUIT SHALL BE USED FOR "MAKE UP" CONNECTIONS TO ROTATING MACHINERY (24" MAXIMUM LENGTH), EQUIPMENT OR FLUSH LIGHT FIXTURES.

CONDUIT CONNECTORS SHALL BE STEEL SETSCREW OR COMPRESSION. FLEXIBLE METALLIC COUPLINGS AND CONNECTORS SHALL BE MALLEABLE IRON OR STAMPED STEEL FITTINGS.

EXTERIOR BURIED CONDUITS SHALL BE INSTALLED 36" BELOW GRADE WITH METALLIC WARNING/SENSOR TAPE 12" ABOVE THE CONDUIT.

MINIMUM CONDUIT SIZE IS 3/4" UNLESS NOTED OTHERWISE. MINIMUM CONDUIT SIZE SHALL BE 1" FOR CONDUITS CONCEALED UNDER FLOOR SLABS OR EXTERIOR BELOW GRADE.
- DISCONNECT SWITCHES SHALL BE SQUARE D "HD" OR EQUAL BY GENERAL ELECTRIC, SIEMENS.
- FUSES SHALL BE CLASS "RM" MANUFACTURED BY BUSSMANN AS FOLLOWS: 0-99A FUSETRON, 100-600A LOW PEAK, ABOVE 600A HI-CAP, OR EQUAL BY FERRAZ-SHAWMUT OR LITTELFUSE.
- WIRING DEVICES:

SWITCHES SHALL BE HEAVY DUTY INDUSTRIAL SPECIFICATION GRADE WITH SOLID BRASS CONSTRUCTION, 120/277V-20A RATING; HUBBELL HBL1221GRY, LEVITON 1221-2GY OR PASS & SEYMOUR PS20AC1-GRY (SINGLE POLE DEVICES INDICATED).

RECEPTACLES SHALL BE HEAVY DUTY INDUSTRIAL SPECIFICATION GRADE WITH SOLID BRASS CONSTRUCTION, 120V-20A RATING; HUBBELL HBL5362GY, LEVITON 5362GY OR PASS & SEYMOUR 5362-AGT.

GFI DUPLEX RECEPTACLES SHALL BE HEAVY DUTY INDUSTRIAL GRADE, 20A; HUBBELL GF5362G1A OR APPROVED EQUAL BY LEVITON OR PASS & SEYMOUR.

PLATES SHALL BE SATIN STAINLESS STEEL; HUBBELL S1 SERIES OR APPROVED EQUAL BY LISTED MANUFACTURERS.

WEATHERPROOF COVER PLATES SHALL BE CLEAR THERMOPLASTIC, IN-USE RATED; RED DOT CROWN OR APPROVED EQUAL BY HUBBELL OR TAYMAC.

DEVICE COLOR AND PLATE COLOR SHALL BE SELECTED BY THE ARCHITECT/OWNER.
- MOTOR STARTERS FOR MOTORS SMALLER THAN 1/2 HORSEPOWER SHALL BE MANUAL STARTERS WITH OVERLOAD AND PILOT LIGHT; SQUARE D CLASS 2510 OR EQUAL BY GENERAL ELECTRIC, SIEMENS. MANUAL ON-OFF SWITCHES SHALL BE SQUARE D 2510-KG-1 OR KG-2 OR EQUAL BY GENERAL ELECTRIC, SIEMENS.
- PANELBOARDS:

PANELBOARDS SHALL UTILIZE FULLY RATED COPPER BUS OF AMPACITY NOTED ON THE DRAWINGS.

CIRCUIT BREAKERS SHALL BE BOLT TYPE, COMMON TRIP AND RATED FOR THE LOAD CONTROLLED (BACK, HD, SWITCH DUTY, HIGH MAGNETIC IN RUSH).

PANELBOARDS AND CIRCUIT BREAKERS SHALL HAVE AN INTERRUPTING CAPACITY OF 14,000 (277/480V) AND 10,000 (120/208V) MINIMUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PANELS NOTED FOR SERIES RATING WITH UPSTREAM DEVICES SHALL INCLUDE LABELING WITHIN THE PANEL.

PANELBOARDS SHALL BE SQUARE D "MDD" SERIES (120/208V)/SQUARE D "MF" SERIES (277/480V), OR APPROVED EQUALS BY GENERAL ELECTRIC OR SIEMENS.

BALANCE LOAD ON FEEDERS AND MAIN SWITCH TO WITHIN 10% UNDER MAXIMUM LOAD CONDITIONS.
- MOTOR CONTROL CENTERS SHALL BE MODEL 5, CLASS 8998 AS MANUFACTURED BY SQUARE D OR EQUAL BY GENERAL ELECTRIC, SIEMENS. PROVIDE ALL STARTERS WITH HAND-OFF-AUTO SELECTED SWITCHES, PILOT LIGHT AND CONTROL TRANSFORMER, UNLESS OTHERWISE NOTED.
- NAMEPLATES SHALL BE INSTALLED ON ALL OF THE FOLLOWING EQUIPMENT TYPES: PANELBOARDS, MOTOR STARTERS, CONTROL PANELS, CONTROL DEVICES, TELEPHONE CABINETS, EMERGENCY SYSTEM EQUIPMENT, TRANSFORMERS, ETC. NAMEPLATES SHALL BE LAMINATED PHENOLIC, WHITE WITH BLACK CORE.
- PROVIDE TYPED PANEL SCHEDULES FOR ALL PANELBOARDS DESCRIBING LOCATION OF DEVICE SERVED. PROVIDE PHENOLIC NAMEPLATES FOR EACH SWITCHBOARD DISCONNECT SWITCH OR CIRCUIT BREAKER.
- SWITCHES SHALL BE MOUNTED 48" A.F.F. TO CENTER LINE UNLESS NOTED OTHERWISE. RECEPTACLES SHALL BE MOUNTED 18" A.F.F. TO BOTTOM OF DEVICE UNLESS NOTED OTHERWISE. PANELS SHALL BE MOUNTED 48" A.F.F. TO CENTER LINE OR LOWER, WITH TOP OF CABINET A MAXIMUM OF 6'-0" A.F.F..
- FLUORESCENT LAMPS SHALL BE TRIMLINE T8-SP25, RAPID START, ENERGY SAVING. FLUORESCENT LAMPS TO BE MANUFACTURED BY PHILIPS, SYLVANIA OR GENERAL ELECTRIC. METAL HALIDE LAMPS SHALL BE COLOR CORRECTED TYPE, SIZE AS NOTED. HIGH PRESSURE SODIUM LAMPS SHALL BE AS RECOMMENDED BY FIXTURE MANUFACTURER UNLESS OTHERWISE NOTED. INCANDESCENT LAMPS SHALL BE 120 VOLT, INSIDE FROSTED. ALL FLUORESCENT LAMPS SHALL BE OF THE SAME MANUFACTURER.
- ELECTRONIC BALLAST SHALL BE PROGRAM START UL LISTED, HIGH POWER FACTOR, E.T.O. AND C.B.M. APPROVED, SOUND RATED "A", CLASS "FM". THE BALLAST SHALL LIMIT E.M.F.I. AND R.F.I. EMISSIONS TO WITHIN P.C.C. GUIDELINES, AND PRODUCE FULL LIGHT OUTPUT AND LAMP LIFE PER LAMP MANUFACTURER'S SPECIFICATIONS. TOTAL HARMONIC DISTORTION SHALL BE 10% OR LESS, LAMP CURRENT CREST FACTOR SHALL BE LESS THAN 1.7, MINIMUM POWER FACTOR SHALL BE 0.90 AND THE MINIMUM BALLAST FACTOR SHALL BE 0.85. ELECTRONIC BALLAST SHALL BE MANUFACTURED BY UNIVERSAL, MAGNETEK, ADVANCE, OR OSRAM SYLVANIA.
- PROVIDE AN ARC FLASH HAZARD LABEL FOR ALL ELECTRICAL DISTRIBUTION EQUIPMENT, INCLUDING BUT NOT LIMITED TO SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKETS, ENCLOSURES, DISCONNECTS, AND MOTOR CONTROL CENTERS. LABELING SHALL MEET FLASH PROTECTION REQUIREMENTS OF NFPA AND NEC (110.16). ARC FLASH HAZARD LABELS SHALL BE PERMANENTLY ADHERED. THE LABELS SHALL BE 3.50" X 5.00 SELF-ADHESIVE PLASTIC; BRADY CMT #9452. THE HAZARD LABEL SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE OF EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INSTALL THE LABEL ON A 1/8" CLEAR PLASTIC BACK PLATE WHERE PERMANENT ADHESION CAN NOT BE MAINTAINED. THIS PLASTIC BACK PLATE TAG ASSEMBLY SHALL BE SECURED TO THE ELECTRICAL EQUIPMENT WITH POP RIVETS.
- DUE TO ARC FLASH HAZARDS, ANY WORK REQUIRED ON ELECTRICAL EQUIPMENT THAT IS

- ENHANCED SHALL BE WITH WRITTEN PERMISSION FROM THE OWNER. THE ELECTRICAL CONTRACTOR SHALL REQUIRE EMPLOYEES TO WEAR THE PROPER PERSONAL PROTECTION (PPE) EQUIPMENT REQUIRED IN NFPA-70E, 130.7(c)(9).
21. SURGE PROTECTIVE DEVICES:
- A. DESCRIPTION OF WORK:
- EXTENT OF SURGE PROTECTIVE DEVICES IS INDICATED ON THE DRAWINGS.
- TYPES OF SURGE PROTECTIVE DEVICES SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
- SERVICE ENTRANCE SURGE PROTECTIVE DEVICES
 - DISTRIBUTION PANEL SURGE PROTECTIVE DEVICES
 - BRANCH PANEL SURGE PROTECTIVE DEVICES
- WARRANTY:
- THE MANUFACTURER SHALL WARRANTY THE SURGE PROTECTIVE DEVICE AGAINST FAILURE FOR A PERIOD OF FIVE YEARS FROM DATE OF ACCEPTANCE BY THE OWNER. UPON NOTICE FROM THE OWNER, THE MANUFACTURER SHALL REMEDY ALL SUCH DEFECTS AT HIS OWN EXPENSE AT A TIME CONVENIENT TO THE OWNER.
- THE ELECTRICAL CONTRACTOR SHALL WARRANTY THE INSTALLATION OF THE SURGE PROTECTIVE DEVICES FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER. UPON NOTICE FROM THE OWNER, THE ELECTRICAL CONTRACTOR SHALL REMEDY ALL SUCH DEFECTS AT HIS OWN EXPENSE AT A TIME CONVENIENT TO THE OWNER.
- TEST REPORTS:
- EACH SPECIFIED SURGE PROTECTIVE DEVICE (SPD) SHALL BE INDEPENDENTLY TESTED FROM AN NVLAP OR NRTL ACCREDITED TEST FACILITY.
- TEST SHALL BE PERFORMED IN ACCORDANCE WITH UL 1449, 3RD EDITION.
- TEST REPORTS SHALL INCLUDE ALL DOCUMENTATION PRODUCED BY TESTING LABORATORY AND A SUMMARY SHEET INDICATING ALL ITEMS OUTLINED:
- SPD MODEL
 - SPD CIRCUIT DESCRIPTION
 - NOMINAL LINE VOLTAGE
 - MAXIMUM CONTINUOUS OPERATING VOLTAGE
 - CONNECTION MEANS
 - SPD PROTECTION MODES
 - CLAMPING VOLTAGE FOR B3 RINGWAVE, 6 KV-30A COMBINATION WAVE, B3/C1 COMBINATION WAVE, C3 COMBINATION WAVE AND DURING MAXIMUM SURGE CURRENT FOR LINE-NEUTRAL, LINE-GROUND, NEUTRAL-GROUND AND LINE-LINE.
 - MINIMUM REPEITITIVE SURGE CURRENT CAPACITY: UNIT SUBJECT TO AN INITIAL TEST CONFORMING TO UL 1449 GUIDE LINES (BENCH MARK TEST) FOLLOWED BY A REPEITITIVE NUMBER OF ANSI/IEEE C62.41.2-2002 (CAT C3) SURGES IN ONE MINUTE INTERVALS (MINIMUM OF 3,500 IMPULSES). UPON COMPLETION THE UNIT SHALL RETESTED TO THE UL 1449 GUIDELINES TO VERIFY SURVIVABILITY. UNITS SHALL NOT DEVIATE MORE THAN 10% FROM FIRST TO FINAL TEST TO BE CONSIDERED TO HAVE ACHIEVED SURVIVAL.
- SPD UNITS SHALL BE TESTED WITH ALL SPECIFIED OPTIONS ASSEMBLED AND FULLY OPERATIONAL. TEST SHALL SIMULATE REAL FIELD CONDITIONS.
- SUBMITTALS:
- PRODUCT DATA: SUBMIT MANUFACTURER'S DATA ON THE SURGE PROTECTIVE DEVICE INCLUDING, BUT NOT LIMITED TO, LIFE CYCLE RATING, OVERCURRENT PROTECTION, UL 1449 COMPLIANCE, AND SURGE CURRENT CAPACITY. MANUFACTURER'S CURRENT CAPACITY SHALL BE BACKED UP BY AN INDEPENDENT TEST FROM AN NVLAP OR NRTL ACCREDITED TEST LABORATORY. THE INDEPENDENT TEST REPORT AS OUTLINED ABOVE SHALL BE INCLUDED WITH THE SUBMITTAL. FAILURE TO INCLUDE THE INDEPENDENT TEST REPORT WILL RESULT IN PRODUCT DISAPPROVAL.
- SHOP DRAWING: SUBMIT LAYOUT DRAWINGS OF THE SURGE PROTECTIVE DEVICES SHOWING ACCURATELY SCALED COMPONENTS, UNIT DIMENSIONS, WEIGHTS, MOUNTING PROVISIONS, CONNECTION DETAILS, AND WIRING DIAGRAMS.
- EQUIPMENT MANUALS: SUBMIT A MANUFACTURER'S INSTALLATION MANUAL WITH INSTALLATION, START-UP, SPARE PARTS LIST, AND OPERATING INSTRUCTIONS.
- B. PRODUCTS:
- SERVICE ENTRANCE SURGE PROTECTIVE DEVICES:
- SURGE PROTECTIVE DEVICES (SPD) INSTALLED ON THE SERVICE ENTRANCE SHALL BE DESIGNED FOR A 277/480V-3PH-4W OR 120/208V-3PH-4W, SIXTY-CYCLE SERVICE. THE SPD SHALL HAVE AN INTEGRAL DISCONNECT MOUNTED IN THE ENTRY DORY.
- THE SPD SHALL USE SINGLE OR MULTIPLE METAL OXIDE VARISTORS (MOVS) AND POLYPROPYLENE CAPACITORS FOR THE SURGE PROTECTION. EACH MOV SHALL BE FUSED FOR REDUNDANT PROTECTION AND ONGOING PERFORMANCE.
- THE SPD SHALL BE CONSTRUCTED USING A SOLID COPPER BUS CONSTRUCTION. THE COPPER BUS BARS SHALL CARRY THE CUMULATIVE SURGE CURRENT.
- THE SPD SHALL BE RATED FOR A MAXIMUM CONTINUOUS OPERATING VOLTAGE EQUAL TO NO LESS THAN 115% OF THE NOMINAL PHASE VOLTAGE.
- THE SPD SHALL PROVIDE ALL MODES OF PROTECTION (L-N, L-G, L-L, N-G). THE SPD SHALL PROTECT TO THE FOLLOWING CLAMPING VOLTAGES:
- 277/480V RATED:
- | | B3 RINGWAVE | 6 KV-3 KA UL VFR | C3 COMB WAVE |
|-----|-------------|------------------|--------------|
| L-N | 600 | 1300 | 1300 |
| L-G | 875 | 1300 | 1300 |
| N-G | 675 | 1300 | 1300 |
| L-L | 750 | 2000 | 2000 |
- 120/208V RATED:
- | | B3 RINGWAVE | 6 KV-3 KA UL VFR | C3 COMB WAVE |
|-----|-------------|------------------|--------------|
| L-N | 350 | 900 | 900 |
| L-G | 425 | 900 | 900 |
| N-G | 375 | 900 | 900 |
| L-L | 450 | 1300 | 1300 |
- THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST A SINGLE PULSE SURGE CURRENT OF 200KA ON ALL MODES (L-N, L-G, N-G, L-L). THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST REPEITITIVE C3 (C HIGH) SURGE CURRENTS OF 3,500 IMPULSES ON ALL MODES (L-N, L-G, N-G, L-L). THE REPEITITIVE SURGE CURRENT TEST SHALL BE CONDUCTED ACCORDING TO ANSI/IEEE C62.41 AND C62.45 STANDARDS.
- THE SPD SHALL INCLUDE A SYSTEM MONITOR. THERE SHALL BE A DISPLAY EVENT COUNTER, AUDIBLE ALARM, PHASE STATUS INDICATORS AND DUAL FORM "C" DRY CONTACTS.
- THE SPD SHALL HAVE A FAULT CURRENT PROTECTION RATING OF 100 KAIC.
- THE SPD SHALL BE RATED AS A UL-1449 3RD EDITION TYPE 1 OR TYPE 2 DEVICE WITH A NOMINAL DISCHARGE (IN) RATING OF 20 KA.
- THE SPD SHALL BE AS MANUFACTURED BY CURRENT TECHNOLOGY TO 200 SERIES, GENERAL ELECTRIC TRY-2000 SERIES, LEA INTERNATIONAL PV400, SQUARE D BMA24 SERIES OR ENGINEER APPROVED EQUAL BY LIEBERT.
- DISTRIBUTION PANEL SURGE PROTECTIVE DEVICES:
- SURGE PROTECTIVE DEVICES (SPDS) SHALL BE INSTALLED ON ALL DISTRIBUTION PANELS AS NOTED ON THE DRAWINGS. THE SPD SHALL BE DESIGNED FOR 277/480V-3PH-4W OR 120/208V-3PH-4W, SIXTY-CYCLE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS.
- THE SPD SHALL USE SINGLE OR MULTIPLE METAL OXIDE VARISTORS (MOVS) AND POLYPROPYLENE CAPACITORS FOR THE SURGE PROTECTION. EACH MOV SHALL BE FUSED FOR REDUNDANT PROTECTION AND ONGOING PERFORMANCE.
- THE SPD SHALL BE CONSTRUCTED USING A SOLID COPPER BUS CONSTRUCTION. THE COPPER BUS BARS SHALL CARRY THE CUMULATIVE SURGE CURRENT.
- THE SPD SHALL BE RATED FOR A MAXIMUM CONTINUOUS OPERATING VOLTAGE OF EQUAL TO NO LESS THAN 115% OF NOMINAL PHASE VOLTAGE.
- THE SPD SHALL PROVIDE ALL MODES OF PROTECTION (L-N, L-G, L-L, N-G). THE SPD SHALL PROTECT TO THE FOLLOWING CLAMPING VOLTAGES:
- 277/480V RATED:
- | | B3 RINGWAVE | 6 KV-3 KA UL VFR | C3 COMB WAVE |
|-----|-------------|------------------|--------------|
| L-N | 350 | 900 | 900 |
| L-G | 425 | 900 | 900 |
| N-G | 375 | 900 | 900 |
| L-L | 450 | 1300 | 1300 |
- THE CONTROL PANEL SHALL OBTAIN ITS PRIMARY OPERATING POWER FROM A (120 VAC SINGLE-PHASE 60 HZ) PROVIDED WITH A DEDICATED AND SECURED DISCONNECT SWITCH.

	B3 RINGWAVE	6 KV-3 KA UL VFR	C3 COMB WAVE
L-N	600	1300	1300
L-G	875	1300	1300
N-G	675	1300	1300
L-L	750	2000	2000

- 120/208V RATED:

	B3 RINGWAVE	6 KV-3 KA UL VFR	C3 COMB WAVE
L-N	350	900	900
L-G	425	900	900
N-G	375	900	900
L-L	450	1300	1300

THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST A SINGLE PULSE SURGE CURRENT OF 100KA ON ALL MODES (L-N, L-G, N-G, L-L). THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST REPEITITIVE C3 (C HIGH) SURGE CURRENT OF 3,500 IMPULSES ON ALL MODES (L-N, L-G, N-G, L-L). THE REPEITITIVE SURGE CURRENT TEST SHALL BE CONDUCTED ACCORDING TO ANSI/IEEE C62.41 AND C62.45 STANDARDS.

THE SPD SHALL HAVE A FAULT CURRENT PROTECTION RATING OF 100 KAIC.

THE SPD SHALL BE RATED AS A UL-1449 3RD EDITION TYPE 2 DEVICE WITH A NOMINAL DISCHARGE (IN) RATING OF 20 KA MINIMUM.

THE SPD SHALL BE AS MANUFACTURED BY CURRENT TECHNOLOGY TG 100 SERIES, GENERAL ELECTRIC TRY-V100 SERIES, LEA INTERNATIONAL LS200F, SQUARE D BMA16 SERIES OR ENGINEER APPROVED EQUAL BY LIEBERT.

BRANCH PANEL SURGE PROTECTIVE DEVICES:

SURGE PROTECTIVE DEVICES (SPDS) SHALL BE INSTALLED ON ALL BRANCH PANELS AS NOTED ON THE DRAWINGS. THE SPD SHALL BE DESIGNED FOR A 277/480V-3PH-4W OR 120/208V-3PH-4W, SIXTY-CYCLE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS.

THE SPD SHALL USE SINGLE OR MULTIPLE METAL OXIDE VARISTORS (MOVS) AND POLYPROPYLENE CAPACITORS FOR THE SURGE PROTECTION. EACH MOV SHALL BE FUSED FOR REDUNDANT PROTECTION AND ONGOING PERFORMANCE.

THE SPD SHALL BE CONSTRUCTED USING A SOLID COPPER BUS CONSTRUCTION. THE COPPER BUS BARS SHALL CARRY THE CUMULATIVE SURGE CURRENT.

THE SPD SHALL BE RATED FOR A MAXIMUM CONTINUOUS OPERATING VOLTAGE EQUAL TO NO LESS THAN 115% OF THE NOMINAL PHASE.

THE SPD SHALL PROVIDE ALL MODES OF PROTECTION (L-N, L-G, L-L, N-G). THE SPD SHALL PROTECT TO THE FOLLOWING CLAMPING VOLTAGES:

- 277/480V RATED:

	B3 RINGWAVE	6 KV-3 KA UL VFR	C3 COMB WAVE
L-N	300	1300	1300
L-G	400	1300	1300
N-G	325	1300	1300
L-L	400	2000	2000

- 120/208V RATED:

	B3 RINGWAVE	6 KV-3 KA UL VFR	C3 COMB WAVE
L-N	350	900	900
L-G	425	900	900
N-G	375	900	900
L-L	450	1300	1300

THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST A SINGLE PULSE SURGE CURRENT OF 50,000A ON ALL MODES (L-N, L-G, N-G, L-L). THE SPD SHALL BE CAPABLE OF PROTECTING AGAINST REPEITITIVE SURGE CURRENT OF 3,500 IMPULSES ON ALL MODES (L-N, L-G, N-G, L-L). THE REPEITITIVE SURGE CURRENT TEST SHALL BE CONDUCTED ACCORDING TO ANSI/IEEE C62.41 AND C62.45 STANDARDS.

THE SPD SHALL BE RATED AS A UL-1449 3RD EDITION TYPE 2 DEVICE WITH A NOMINAL DISCHARGE (IN) RATING OF 20 KA MINIMUM.

THE SPD SHALL BE AS MANUFACTURED BY CURRENT TECHNOLOGY TG60 SERIES, GENERAL ELECTRIC TR6-1065 SERIES, LEA INTERNATIONAL SP100, SQUARE D BMA12 SERIES OR ENGINEER APPROVED EQUAL BY LIEBERT.

B. EXECUTION:

INSTALLATION:

THE SERVICE ENTRANCE SPD SHALL BE INSTALLED ON THE LOAD SIDE OF THE MAIN SERVICE DISCONNECT. THE SPD SHALL BE WIRED IN PARALLEL WITH THE MAIN DISTRIBUTION PANEL. THE SPD SHALL BE DIRECTLY CONNECTED TO BUS IN OR FED BY A 100A3P SWITCH/BREAKER IN THE MDP WITH #2 AWG COPPER CONDUCTORS. THE SPD SHALL BE CLOSE NIPPLED TO THE MDP AND TERMINATE ON THE NEAREST BREAKER/SWITCH AT PANEL ENTRY POINT.

THE DISTRIBUTION PANEL SPD SHALL BE WIRED IN PARALLEL WITH THE DISTRIBUTION PANEL. THE SPD SHALL BE FED BY A 60A3P SWITCH OR CIRCUIT BREAKER IN THE SDP WITH #6

AWG COPPER CONDUCTORS. THE SPD SHALL BE CLOSE NIPPLED TO THE DISTRIBUTION PANEL AND TERMINATE ON THE NEAREST BREAKER AT PANEL ENTRY POINT.

THE RECEPTACLE PANEL SPD SHALL BE WIRED IN PARALLEL WITH THE RECEPTACLE PANEL. THE SPD SHALL BE FED BY A 30A3P CIRCUIT BREAKER MOUNTED IN THE RECEPTACLE PANEL. THE SPD SHALL BE CONNECTED TO THE RECEPTACLE PANEL USING #10 AWG COPPER CONDUCTORS. THE SPD SHALL BE CLOSE NIPPLED TO THE RECEPTACLE PANEL AND TERMINATE ON THE NEAREST BREAKER AT PANEL ENTRY POINT.

SPD FEED CONDUCTORS SHALL BE KEPT AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL TWIST THE FEED CONDUCTORS TOGETHER TO REDUCE CONDUCTOR IMPEDANCE.

SPD CONDUCTOR LUGS SHALL BE TORQUED TO THE VALUES RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

TESTING:

PRIOR TO TURNOVER TO THE OWNER, SURGE PROTECTIVE DEVICES SHALL BE TESTED FOR OPERATION BY THE CONTRACTOR.

TRAINING:

THE CONTRACTOR SHALL INCLUDE A TRAINING COURSE FOR THE OWNER'S PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE SURGE PROTECTIVE DEVICES.

THE TRAINING COURSE SHALL BE TAUGHT BY A MANUFACTURER'S REPRESENTATIVE AT THE OWNER'S LOCATION.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TRAINING MATERIALS. THE OWNER IS RESPONSIBLE FOR PROVIDING THE TRAINING ROOM FACILITIES AT THE OWNER'S LOCATION.

22. FIRE ALARM - ADDRESSABLE:

A. GENERAL:

PROVIDE A COMPLETE, ADDRESSABLE FIRE ALARM SYSTEM TO BE CONNECTED, TESTED AND LEFT IN FIRST-CLASS OPERATING CONDITION. ALL EQUIPMENT HEREIN SPECIFIED SHALL BE MANUFACTURED BY EDWARDS OR ENGINEER APPROVED EQUAL BY SIMPLEX OR NOTIFIER AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES. THE ENTIRE INSTALLATION SHALL CONFORM TO THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS ARTICLE 72, N.E.C. AND LOCAL AUTHORITIES HAVING JURISDICTION.

THE FIRE ALARM SYSTEM SHALL MONITOR THE INTEGRITY OF ALL ALARM INITIATING AND INDICATING APPLIANCE CIRCUITS, AND SHALL BE PROVIDED WITH AUTOMATICALLY CHARGED STANDBY BATTERIES TO MAINTAIN SYSTEM OPERATION FOR (24-HOURS) IN THE NORMAL SUPERVISORY MODE, PLUS HAVE SUFFICIENT CAPACITY TO OPERATE IN THE ALARM MODE FOR 15-MINUTES AT THE CONCLUSION OF THIS SUPERVISORY TIME PERIOD. BATTERIES SHALL BE SUPERVISED FOR CONNECTION TO THE SYSTEM AND A LOW VOLTAGE THRESHOLD. THE AUTOMATIC BATTERY CHARGER SHALL BE CAPABLE OF CHARGING FULLY DISCHARGED SYSTEM BATTERIES TO (70% CAPABILITY IN 12-HOURS) FOR SYSTEMS WITH 24-HOURS OF STANDBY.

THE MANUFACTURER SHALL SUPPLY THE OWNER WITH BUILDING WIRING PRINTS, EQUIPMENT, SCHEMATICS AND NECESSARY TOOLS TO MAINTAIN THE SYSTEM ALONG WITH EQUIPMENT OPERATING INSTRUCTIONS.

B. SYSTEM OPERATION:

THE CONTROL PANEL SHALL OBTAIN ITS PRIMARY OPERATING POWER FROM A (120 VAC SINGLE-PHASE 60 HZ) PROVIDED WITH A DEDICATED AND SECURED DISCONNECT SWITCH.

C. SYSTEM CONTROL PANEL FEATURES:

THE FIRE ALARM SYSTEM CONTROL PANEL SHALL BE AN ADDRESSABLE EST Q51 OR EQUAL.

TO INSURE COMPATIBILITY, THESE DEVICES SHALL BE SUPPLIED BY THE MANUFACTURER OF THE FIRE ALARM CONTROL PANEL.

FIRE ALARM PANEL SHALL HAVE DIAL-UP CAPACITY FOR MONITORING BY OWNER. COMMUNICATION REQUIREMENTS SHALL BE VERIFIED WITH OWNER.

EQUIPMENT SHALL CONSIST OF BUT NOT BE LIMITED TO THE FOLLOWING:

- PHOTO-ELECTRIC SMOKE DETECTORS; EST SIGA-PS WITH SIGA-SB BASE.
- DUCT-MOUNTED SMOKE DETECTORS; EST SIGA-SO.
- MANUAL FIRE ALARM STATIONS; EST SIGA-275.
- AUTOMATIC HEAT DETECTORS; EST SIGA-HRS OR SIGA-HFS.
- HORNS; EST GI-HO
- HORN/STROBES; EST GI-HDVM.
- STROBES; EST GI-VM.
- ANNUNCIATOR; EST Q51-CPU.

D. EXECUTION:

THE CONTRACTOR SHALL FURNISH AND INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS ALL WIRING, CONDUIT, AND OUTLET BOXES FOR A COMPLETE SYSTEM AS DESCRIBED HEREIN AND AS SHOWN ON THE DRAWINGS.

CONDUCTORS SHALL BE UL LISTED FOR NON-POWER LIMITED FIRE PROTECTIVE CIRCUIT CONDUCTORS PER NEC ARTICLE 760, AS REQUIRED. MANUFACTURER RECOMMENDED COLOR CODE SHALL BE USED AND ALL WIRES SHALL BE TAGGED AT ALL JUNCTION POINTS. CONDUCTORS SHALL TEST FREE FROM SHORTS TO GROUND OR SHORTS BETWEEN CONDUCTORS.

FINAL TERMINATIONS OF THE EQUIPMENT SHALL BE MADE UNDER THE DIRECT SUPERVISION OF AN AUTHORIZED MANUFACTURER'S REPRESENTATIVE.

THIS CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT, LABOR ON EQUIPMENT, ALL WIRING FREE FROM MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF INSTALLATION.

THE CONTRACTOR SHALL INSTALL ONE (1) 4-UTP TELEPHONE CABLE FROM SYSTEM PANEL TO THE MAIN TELEPHONE BACKBOARD. TERMINATE TO THE TELEPHONE SYSTEM AS DIRECTED BY THE OWNER OR LOCAL TELEPHONE COMPANY.

THE SYSTEM WIRING AND INSTALLATION SHALL BE IN COMPLIANCE WITH APPLICABLE CODES, PROJECT DRAWINGS AND AS REQUIRED BY THE MANUFACTURER. ALL WIRING SHALL BE COLOR CODED, TAGGED AND CHECKED TO ASSURE THAT IT IS FREE FROM SHORTS AND GROUND.

FIRE ALARM PULL STATIONS INSTALLED BUT NOT IN SERVICE SHALL BE COVERED AND LEGIBLY LABELED "NOT IN SERVICE".

FIRE ALARM DEVICES INSTALLED BUT NOT IN SERVICE SHALL BE COVERED FOR PROTECTION UNTIL SYSTEM IS IN OPERATION.

E. SYSTEM TESTING:

THE COMPLETED SYSTEM SHALL BE TESTED IN ACCORDANCE WITH N.F.P.A. STANDARD 72H.

F. SYSTEM SERVICE SUPPORT:

THE SYSTEM'S VENDOR MUST EMPLOY FACTORY TRAINED TECHNICIANS AND MAINTAIN A SERVICE ORGANIZATION WITHIN 50 MILES OF THE JOBSITE. THIS ORGANIZATION MUST HAVE A MINIMUM OF 10 YEARS EXPERIENCE SERVICING FIRE ALARM SYSTEMS AND PROVIDE 24-HOUR EMERGENCY SERVICE.

G. WARRANTY:

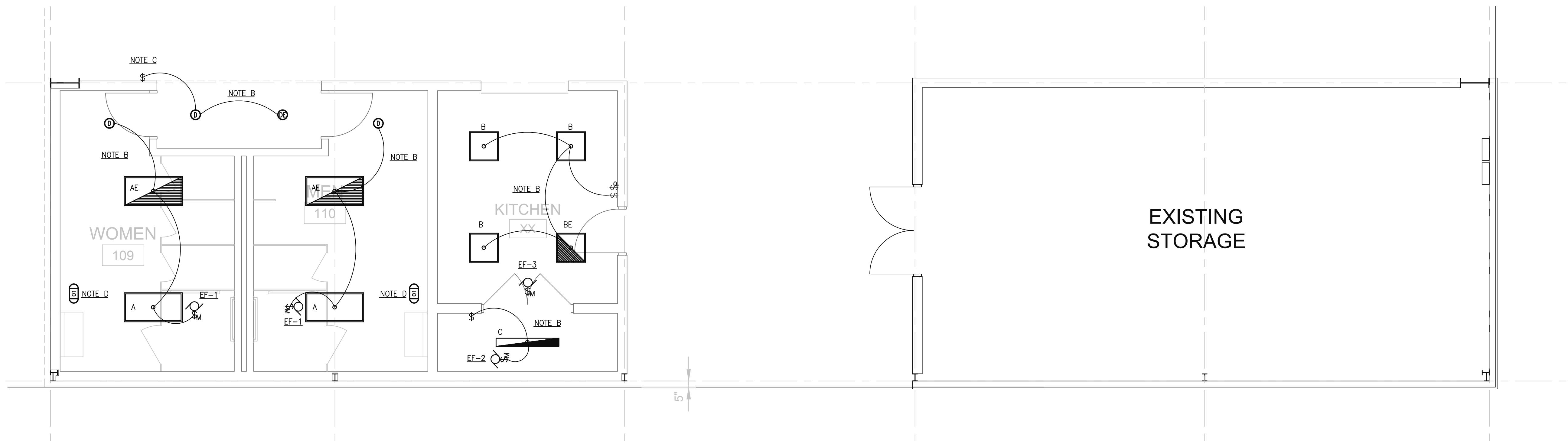
THE EQUIPMENT AND WIRING SHALL BE WARRANTED TO BE FREE FROM ELECTRICAL AND MECHANICAL DEFECTS FOR A PERIOD OF ONE (1) YEAR COMMENCING WITH START-UP AND BENEFICIAL USE OF ANY PORTION OF THE SYSTEM.

ELECTRICAL GENERAL NOTES:

- IT IS STRONGLY RECOMMENDED THAT ALL BIDDERS VISIT AND EXAMINE THE SITE. NO ADDITIONAL COMPENSATION WILL BE AWARDED FOR ANY DEVIATIONS OR DISCREPANCIES TO THESE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS UNDER WHICH WORK MUST BE PERFORMED AND CHECK ALL PRECISE ELEVATIONS. THE CONTRACTOR SHALL REPORT ANY MAJOR DISCREPANCIES TO THE ARCHITECT. FAILURE TO DO SO SHALL BE DEEMED AS ACCEPTANCE OF EXISTING CONDITIONS.
- ANY OTHER RELOCATIONS, ALTERATIONS AND/OR EXTENSIONS OF ELECTRICAL ITEMS DUE TO REMODELING (THOUGH NOT SPECIFICALLY SHOWN) SHALL BE INCLUDED TO PROVIDE A COMPLETE AND WORKING INSTALLATION.
- THE DRAWINGS INDICATE MAJOR ITEMS TO BE REMOVED SUCH AS PANELS, COMMUNICATIONS SYSTEM TERMINAL BOXES, MAJOR FEEDERS, ETC. THE DRAWINGS DO NOT DETAIL REMOVAL FOR MINOR DEVICES, LIGHTING FIXTURES, BRANCH CIRCUITS, ETC., UNLESS SPECIFICALLY INDICATED FOR REUSE ELSEWHERE. IT IS INTENDED THAT ALL ITEMS NOT SHOWN TO BE REUSED ON THE NEW FLOOR PLANS BE REMOVED BACK TO SOURCE AND CONTINUITY OF CIRCUITRY TO ADJACENT AREAS BE PROVIDED FOR.
- ALL REMOVED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS DIRECTED OTHERWISE BY THE OWNER.
- ALL WORK REQUIRING A POWER OUTAGE SHALL BE COORDINATED WITH THE OWNER AND SCHEDULED AT SUCH A TIME AS TO MINIMIZE DISRUPTION. THE CONTRACTOR SHALL SCHEDULE FULL WORK CREWS FOR AS LONG AS REQUIRED TO MINIMIZE THE SHUTDOWN PERIOD. ALL SHUTDOWNS SHALL OCCUR BETWEEN 8:00 P.M. AND 4:00 A.M.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING FOR INSTALLATION OF ALL ELECTRICAL WORK. ALL CONDUIT SHALL BE RUN CONCEALED IN WALLS AND CEILINGS, WIREMOLD OR EXPOSED CONDUITS ARE NOT ACCEPTABLE UNLESS SPECIFICALLY NOTED ON THE DRAWINGS. ELECTRICAL CONTRACTOR TO PROVIDE ACCESS PANELS IN WALLS AND CEILINGS AS REQUIRED. MATCH ALL EXISTING CONDITIONS.
- OPENINGS ABOVE CONDUITS OR IN SLEEVES FOR CONDUITS PENETRATING FIRE-RATED FLOOR SLABS, WALLS, PARTITIONS, CEILINGS OR SMOKE PARTITIONS, SHALL BE SEALED AT BOTH SIDES OF THE PENETRATION. INSULATION SHALL NOT EXTEND THROUGH SLEEVES. PACK OPENINGS WITH CALCIUM SILICATE BLOCK, DOW CORNING 3-6548 RTV SILICONE GUM, 3M CP25 CAULK, OR 303 PUTTY FIRE BARRIER SYSTEM, OR MATERIAL HAVING THE SAME FIRE-RATING AS THE FLOOR OR WALL PENETRATED. FIBERGLASS IS NOT ACCEPTABLE.
- ELECTRICAL CONTRACTOR TO PROVIDE AN INSTALLATION SCHEDULE DETAILING MAJOR DATES OF INSTALLATION FOR ITEMS SUCH AS TRANSFORMERS, MAIN DISTRIBUTION PANELS, SHUT DOWN TIMES, SERVICE SWITCHOVER, ETC. THE SCHEDULE SHALL BE APPROVED BY THE OWNER PRIOR TO ANY SHUT DOWN TIMES.
- ALL EXTERIOR TRENCHING SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR FILL, GRADED WITH A MINIMUM OF 6" OF TOP SOIL AND SEEDED TO MATCH EXISTING.
- ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCE AND CONFLICTS. REFER TO THE DRAWINGS OF THE RESPECTIVE SYSTEMS PRIOR TO ANY WORK. PROVIDE FOR ADDITIONAL WORK WHICH MAY BE REQUIRED AS PART OF THIS WORK. NO ALLOWANCES WILL BE MADE FOR THE LACK OF COORDINATION BETWEEN DISCIPLINES OR SYSTEMS AND EQUIPMENT.
- THE WORK SHALL BE COORDINATED WITH THE ARCHITECT FOR THE EXACT LOCATION OF LIGHT FIXTURES, EQUIPMENT, DEVICES, ETC. TO ASSURE PROPER PLACEMENT OF SAID DEVICES AND EQUIPMENT, WHERE A CONFLICT EXISTS BETWEEN ANY TWO DOCUMENTS, NOTIFY THE ENGINEER FOR RESOLUTION PRIOR TO ANY ROUGH-IN OR INSTALLATION.
- THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT BEING INSTALLED PRIOR TO INSTALLATION TO ASSURE THAT THE FEEDER, DISCONNECT, STARTER, OVERCURRENT PROTECTION, ETC. MATCHES THE ACTUAL NAMEPLATE DATA AS SUPPLIED BY THE MANUFACTURER.
- SPECIFIC REQUIREMENTS REGARDING MATERIALS, WORKMANSHIP AND THE WORK TO BE DONE ARE COVERED BY THE SPECIFICATIONS WHICH COMPLEMENT THE PLANS. WORK CALLED FOR BY THE SPECIFICATIONS OR THE PLANS IS REQUIRED THE SAME AS IF REQUIRED BY BOTH. WHERE A CONFLICT EXISTS BETWEEN THE PLANS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS OF THE TWO SHALL APPLY UNLESS SPECIFICALLY APPROVED IN WRITING BY THE ENGINEER.
- REFER TO EQUIPMENT CUT SHEETS AND MANUFACTURER'S DATA FOR ROUGH IN LOCATIONS OF ELECTRICAL CONNECTIONS AND INTERCONNECTIONS OF ALL EQUIPMENT.
- INSTALL OVER CURRENT PROTECTION AND BRANCH CIRCUIT WIRING PER U.L. LISTING REQUIREMENTS FOR EQUIPMENT SERVED - REFER TO NAMEPLATE DATA.
- PROVIDE START-UP ASSISTANCE TO OWNER PERSONNEL AND EQUIPMENT TECHNICIANS TO CONFIRM CORRECT PHASE ROTATION, PROPER OPERATION AND SEQUENCE, AND CONTROLS.
- CONTRACTOR SHALL COORDINATE ELEVATIONS AND PIPING SYSTEM SLOPES SUCH THAT DUCTWORK, PIPING, RACEWAY, CABLE TRAY,

C&A No. 22-114





- LIGHTING PLAN NOTES:
- A. UPDATE ALL EXISTING PANEL SCHEDULES TO REFLECT CHANGES MADE DUE TO CONSTRUCTION, OR ANY INSTANCES DISCOVERED OF DISCREPANCY.
 - B. ALL LIGHTING AND EXHAUST FANS SHALL BE CONNECTED TO EXISTING PANEL B (B-29).
 - C. VESTIBULE SWITCH LOCATION TO BE COORDINATE IN FIELD WITH OWNER/ARCHITECT PRIOR TO ROUGH IN.
 - D. OCCUPANCY SENSORS ARE SHOWN ON PLANS TO INDICATE ROOM LIGHTING CONTROL GENERAL COVERAGE. E.C. SHALL WALK-TEST THE INSTALLATION FOR PROPER COVERAGE AND ADJUST LOCATIONS AND QUANTITIES OF DEVICES ACCORDINGLY. SENSORS SHALL BE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS. ADHERE TO CLEARANCE DISTANCES FROM ALL DIFFUSERS. SET TIME DELAY FOR 20 MINUTES (MAXIMUM) OR OWNER APPROVED TIME DELAY SETTING. UTILIZE PROGRAM START BALLASTS.

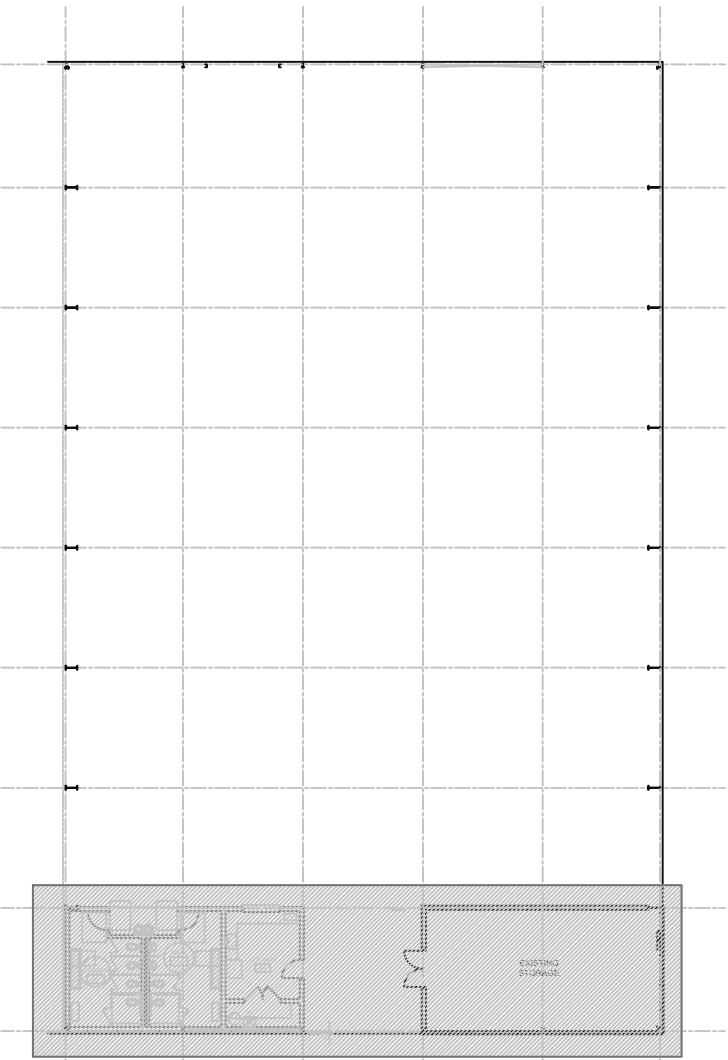
LUMINAIRE SCHEDULE		
SYMBOL	DESCRIPTION	MANUFACTURER
<div><div>A</div><div>AE</div></div>	2'x4' LED VANDAL RESISTANT TROFFER, 48 WATTS, 3500K. "BE" WITH 10-WATT EMERGENCY BATTERY "EM/10W"	H.E.W. V50F S 2 4 L56/835 F VL DRV UNV
<div><div>B</div><div>BE</div></div>	2'x2' LED VANDAL RESISTANT TROFFER, 33.7 WATTS, 3500K. "BE" WITH 10-WATT EMERGENCY BATTERY "EM/10W"	H.E.W. V50F S 2 2 L39/835 F VL DRV UNV
<div><div>C</div></div>	LED VANDAL RESISTANT STRIP LIGHT, 34.7 WATTS, 3500K, 5118 DELIVERED LUMENS, WITH 10-WATT EMERGENCY BATTERY	H.E.W. 97 4 L50/835 FR EM/10W DRV 120
<div><div>D</div><div>DE</div></div>	6" RECESSED LED DOWNLIGHT, FLUSH LENS, VANDAL RESISTANT, 9.8 WATTS, 910 DELIVERED LUMENS	H.E.W. V6DR-L8/835-EM/10W DIM UNV LM OF CS N F1

- EMERGENCY LIGHTING SCHEDULE NOTES:
- 1. ALL EXIT AND EMERGENCY DEVICES SHALL MAINTAIN A MINIMUM 90 MINUTE BATTERY BACK-UP. SHALL BE SELF-DIAGNOSTIC CAPABLE AND CONNECTED HOT TO LOCAL LIGHTING CIRCUIT AHEAD OF CONTROLS.
 - 2. ALL EMERGENCY FIXTURES SHALL MONITOR NORMAL POWER. IN THE EVENT OF NORMAL POWER LOSS, EMERGENCY FIXTURES SHALL UTILIZE INTEGRAL BACKUP BATTERY POWER FOR FIXTURE ILLUMINATION.

- LUMINAIRE SCHEDULE NOTES:
- 1. VERIFY COLORS/FINISHES OF ALL FIXTURES WITH OWNER/ARCHITECT.
 - 2. VERIFY CEILING TYPES PROVIDE INSTALLATION HARDWARE AND/OR SUSPENSION HARDWARE AS REQUIRED.
 - 3. EXACT FINAL LUMINAIRE SELECTIONS SHALL BE APPROVED BY OWNER.

PARTIAL LIGHTING PLAN

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



KEY PLAN

N.T.S.

C&A No. 22-114

C

A

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1/16/23

JOHN F. GERM

NEW TOILET FACILITIES FOR
FORT OGLETHORPE PAVILION
214 1st STREET
FORT OGLETHORPE, GA 30742

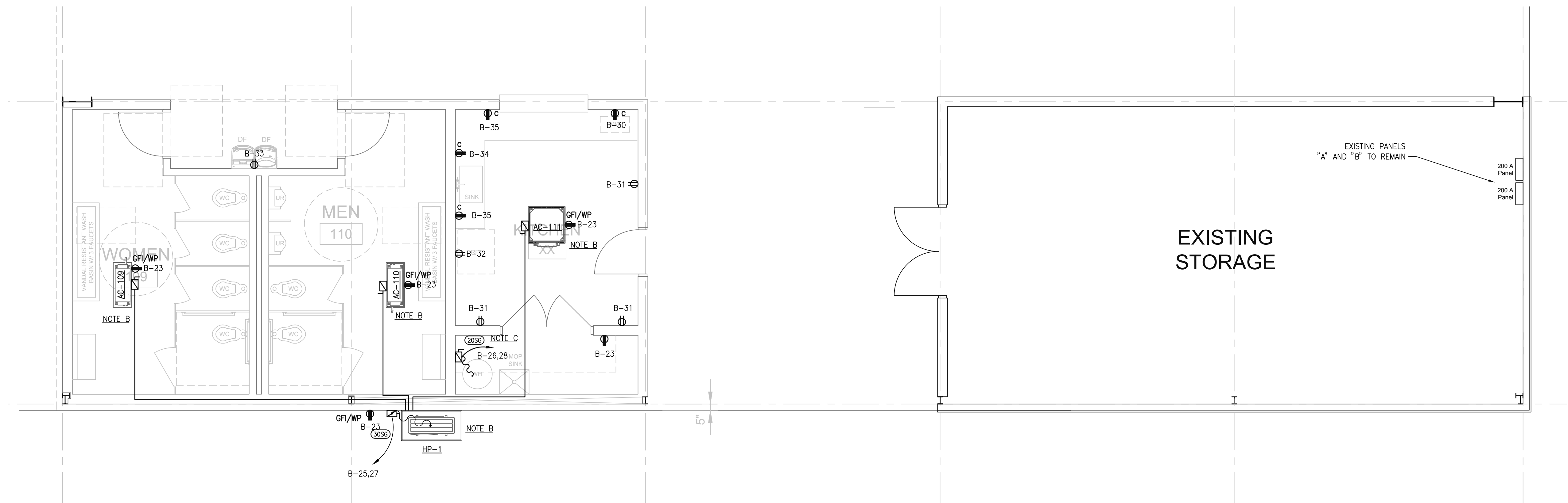
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DATE	16 JAN 23
DRAWN BY	RIG
REVISIONS	

DRAWING TITLE

PARTIAL LIGHTING
PLAN

SHEET NO.

E1.1



- ELECTRICAL PLAN NOTES:**
- A. UPDATE ALL EXISTING PANEL SCHEDULES TO REFLECT CHANGES MADE DUE TO CONSTRUCTION, OR ANY INSTANCES DISCOVERED OF DISCREPANCY.
- B. INDOOR UNITS (AC-109, AC-110, AND AC-111) TO BE POWERED BY OUTDOOR UNIT HP-1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR.
- C. WATER HEATER: 240V/1PH, 3.5 KW.

PARTIAL ELECTRICAL PLAN

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

Existing Panel A											
NOTES	200A MCB VOLTAGE: 120/240V-1PH-3W SURFACE								NOTES		
	USE	LOAD	BKR AMP	BKR No	PH	BKR No	BKR AMP	LOAD		USE	
	Existing	1,080	20	1	A	2	20	1,080	Existing		
	Existing	1,080	20	3	B	4	20	1,080	Existing		
	Existing	1,080	20	5	A	6	20	1,080	Existing		
	Existing	1,080	20	7	B	8	20	1,080	Existing		
	Existing	1,080	20	9	A	10	20	1,080	Existing		
	Existing	1,080	20	11	B	12	20	1,080	Existing		
	Existing	1,080	20	13	A	14	20	1,080	Existing		
	Existing	1,080	20	15	B	16	20	1,080	Existing		
	Existing	1,080	20	17	A	18	20	1,080	Existing		
	Existing	1,080	20	19	B	20	20	1,080	Existing		
	Existing	1,080	20	21	A	22	20	1,080	Existing		
	Existing	1,080	20	23	B	24	20	1,080	Existing		
	Existing	1,080	20	25	A	26	20	1,080	Existing		
	Existing	1,080		27	B	28	20	1,080	Existing		
				29	A	30					
				31	B	32					
				33	A	34					
				35	B	36					
				37	A	38					
				39	B	40					
				41	A	42					
TOTAL CONNECTED LOAD:		30,240 W		126 AMPS							
1/16/2023											

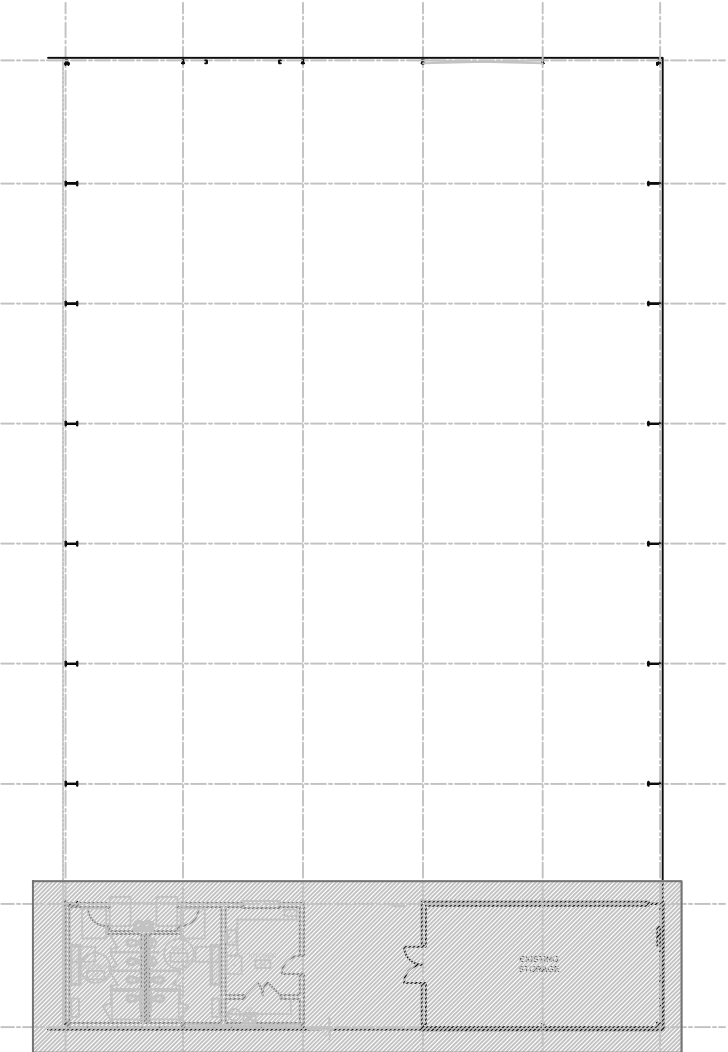
Existing Panel B											
NOTES	200A MCB		VOLTAGE: 120/240V-1PH-3W						SURFACE		NOTES
	USE	LOAD	BKR AMP	BKR No	PH	BKR No	BKR AMP	LOAD	USE		
	Existing	1,080	20	1	A	2	20	1,080	Existing		
	Existing	1,080	20	3	B	4	20	1,080	Existing		
	Existing	1,080	20	5	A	6	20	1,080	Existing		
	Existing	1,080	20	7	B	8	20	1,080	Existing		
	Existing	1,080	20	9	A	10	20	1,080	Existing		
	Existing	1,080	20	11	B	12	20	1,080	Existing		
	Existing	1,080	20	13	A	14	20	1,080	Existing		
	Existing	1,080	20	15	B	16	20	1,080	Existing		
	Existing	1,080	20	17	A	18	20	1,080	Existing		
	Existing	1,080	20	19	B	20	20	1,080	Existing		
	Existing	1,080	20	21	A	22	20	1,080	Existing		
	Receps. @ Units	900	20	23	B	24	20	1,080	Existing		
	HP-1	2,652	30	25	A	26	20	1,750	Water Heater		
	(AC-109, 110, 111)	2,652	2	27	B	28	2	1,750	(3.5 kw)		
	Lighting	705	20	29	A	30	20	1,000	Microwave		
	General Receptacles	540	20	31	B	32	20	800	Refrigerator		
	Water Coolers	432	20	33	A	34	20	1,500	Countertop Receps.		
	Countertop Receps.	1,500	20	35	B	36					
				37	A	38					
				39	B	40					
				41	A	42					
TOTAL CONNECTED LOAD:		41,021 W		171 AMPS							
1/16/2023											

VRF SPLIT SYSTEM SCHED. (HEAT PUMP)				
MARK	SYSTEM ELECTRICAL			COMMENTS
	VOLTS/PH	MCA	MOCP	
AC-109 & HP-1	208-230/1	22.1	25.0	SEE NOTES
AC-110 & HP-1				SEE NOTES
AC-111 & HP-1				SEE NOTES

NOTES:

1. PROVIDE MODEL MAC-334F-E SYSTEM CONTROL INTERFACE, MODEL PAC-YT33CRAU-J SIMPLE MA REMOTE CONTROLLER, AND MODEL X87-721 BLUE DIAMOND MINI CONDENSATE PUMP WITH RESERVOIR (208-230 VOLT) FOR EACH INDOOR UNIT.

FAN SCHEDULE				
MARK	AMPS	WATTS	VOLTS/PH	COMMENTS
EF-1	0.83	81.0	115/1	SEE NOTES
EF-2	0.14	10.0	115/1	SEE NOTES
EF-3	0.19	18.0	115/1	SEE NOTES
NOTES: 1. EF-1 SHALL BE INTERLOCKED WITH THE ROOM LIGHT SWITCH, EF-2 SHALL OPERATE CONTINUOUSLY, EF-3 SHALL BE CONTROLLED BY A SINGLE POLE ROCKER SWITCH WITH PILOT LIGHT.				



KEY PLAN

N.T.S.

C&A No. 22-114

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JOB NO. 2241
DATE 16 JAN 23
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DRAWING TITLE

PARTIAL
ELECTRICAL PLAN

SHEET NO.

E2.1