BOXABL

CASITA B

PREFABRICATED MODULAR DWELLING UNITS

REVISIONS				DRAWING INDEX	
00-00-00	00-00-00	00-00-00	0-00-2022	Sheet Number	Sheet Title
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				A1.0	FLOOR PLAN
				A2.0	EXTERIOR ELEVATIONS
				A3.0	WALL SECTIONS
				MECHANICAL	
				M1.0	MECHANICAL NOTES, SYMBOLS, AND ABBREVIATIONS
				M2.0	MECHANICAL PLANS
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				ELECTRICAL	
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				P1.0	PLUMBING NOTES, SYMBOLS, AND ABBREVIATIONS
				P2.0	PLUMBING PLANS
				P3.0	PLUMBING DETAILS

SCOPE OF WORK

WORK TO INCLUDE:

- THESE UNITS ARE PREFABRICATED FACTORY BUILT ACCESSORY DWELLING UNITS. PLUMBING, ELECTRICAL, & HVAC ARE PRE-INSTALLED, AND ARE CONNECTED TO INCOMING UTILITIES WHEN THE UNIT IS SET ON SITE.
- FOUNDATION SYSTEM IS PERMITTED & INSTALLED SEPARATELY BY THE UNIT OWNER.
- UNITS ARE SET ON SITE, LOWER AND UPPER UNITS ARE CONNECTED DURING THE SITE INSTALLATION PHASE
- STAIRS, PLATFORMS & WALKWAYS TO BE INSTALLED BY OTHERS
- THIS SET IS INTENDED TO BE USED IN CONJUNCTION WITH THE MANUFACTURERS PANEL DRAWINGS AND STRUCTURAL DRAWINGS.

PROJECT CONTACTS

OWNER:
BOXABL
5345 EAST NORTH BELT ROAD
LAS VEGAS, NV 89115

ELECTRICAL ENGINEER
DICKERSON ENGINEERING, INC
3343 NORTH RIDGE
ARLINGTON HEIGHTS, IL 60004
847-966-0290
DAVIS DICKERSON

ARCHITECT
SEVAN DESIGN SOLUTIONS P.C.
3025 HIGHLAND PARKWAY,
SUITE 850
DOWNERS GROVE, ILLINOIS
630-733-9647
JOE DEFILIPPIS

MECHANICAL & PLUMBING ENGINEER
WCW ENGINEERS, INC.
760 CREEL DRIVE
WOOD DALE, IL 60191
630-595-8800
JOSEPH G. THOMAS

BUILDING INFORMATION:

ADDRESS:

ADDRESS:	1234 STREET
CITY:	CITY
COUNTY:	COUNTY
STATE:	ARIZONA

BUILDING CODE:

BUILDING CODE:	2021 INTERNATIONAL BUILDING CODE
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE
ELECTRICAL CODE:	2018 NEC
PLUMBING CODE:	2018 INTERNATIONAL PLUMBING CODE
ENERGY CODE:	2018 INTERNATIONAL ENERGY CONSERVATION CODE
FIRE PREVENTION CODE:	2018 INTERNATIONAL FIRE CODE

BUILDING DATA

OCCUPANCY CLASSIFICATION:	RESIDENTIAL GROUP R-1
TOTAL BUILDING AREA:	324 SQFT
BUILDING HEIGHT:	10'-9"
CONSTRUCTION TYPE:	III-B

GENERAL NOTES

THE INFORMATION SHOWN ON THESE DRAWINGS IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME TO THE ARCHITECT. THIS INFORMATION CANNOT BE GUARANTEED TO SHOW EVERY EXISTING CONDITION. EACH CONTRACTOR ON THIS PROJECT SHALL READ AND STUDY THE TOTAL SET OF DRAWINGS FOR ALL WORK. CONTRACTORS MUST VISIT THE SITE AND DETERMINE ALL FIELD CONDITIONS. ALL DIMENSIONS SHALL BE VERIFIED AND ALL DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT PRIOR TO BID SUBMISSION.

THE ARCHITECT AND HIS CONSULTANTS DO NOT WARRANTY OR GUARANTEE THE COMPLETENESS OF THE WORK BEYOND A REASONABLE DILIGENCE. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS ARE FOUND TO EXIST IN THE WORK PRODUCT, THE ARCHITECT SHALL BE PROMPTLY NOTIFIED SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THE ISSUE. FAILURE TO PROMPTLY NOTIFY THE ARCHITECT OF SUCH CONDITIONS, SHALL ABSOLVE THE ARCHITECT FROM ANY RESPONSIBILITY OF SUCH FAILURE. ACTION TAKEN WITHOUT THE KNOWLEDGE AND CONSENT OF THE ARCHITECT, IN CONTRADICTION TO THE WORK PRODUCT, OR THE RECOMMENDATIONS OF THE ARCHITECT SHALL BECOME THE RESPONSIBILITY OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

THESE DRAWINGS WERE PREPARED BASED ON THE ASSUMPTION THAT ANY CONTRACTOR, SUBCONTRACTOR, SUPPLIER, OR VENDOR INVOLVED IN THE CONSTRUCTION OF THE WORK DESCRIBED HEREIN HAS EXPERIENCE IN THEIR RESPECTIVE AREAS OR DISCIPLINES THAT MAKE UP THE SCOPE OF THE PROJECT.

IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW EVERY DETAIL OR NUANCE THAT MAY BE REQUIRED TO CONSTRUCT THE WORK SHOWN. IN ADDITION, IT IS ASSUMED THAT EACH CONTRACTOR IS FAMILIAR WITH EACH PORTION OF THEIR WORK, WHETHER THEY ARE CONSTRUCTING OR ASSEMBLING THE REQUIRED COMPONENTS, OR FOLLOWING MANUFACTURER'S GUIDELINES, RECOMMENDATIONS, OR SPECIFICATIONS FOR A PARTICULAR PORTION OF THEIR WORK.

ANY WORK THAT INVOLVES UTILIZING A PRE-MANUFACTURED COMPONENT, OR OTHER FIELD ASSEMBLED OR FIELD APPLIED SYSTEM IS THE SOLE RESPONSIBILITY OF THE ENTITY ENGAGED TO PERFORM THAT WORK. ANY ERRORS, OMISSIONS, DEFECTS, OR DAMAGES CAUSED BY ANY DEVIATION FROM THE MANUFACTURER'S GUIDELINES, RECOMMENDATIONS, OR SPECIFICATIONS, SHALL BE THE SOLE RESPONSIBILITY OF THE ENTITY RESPONSIBLE FOR SUCH ACTION, AND ANY REQUIRED REMEDIES, INCLUDING REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE PARTY RESPONSIBLE FOR THE ERROR, OR OMISSION, THAT CAUSED THE DAMAGE OR DEFECT.

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REGISTERED ARCHITECT
CERTIFICATE NO.
34195
JOSEPH A.
DEFILIPPIS
DATE SIGNED 12/1/22
ARIZONA, U.S.A.
Exp. 9/30/23

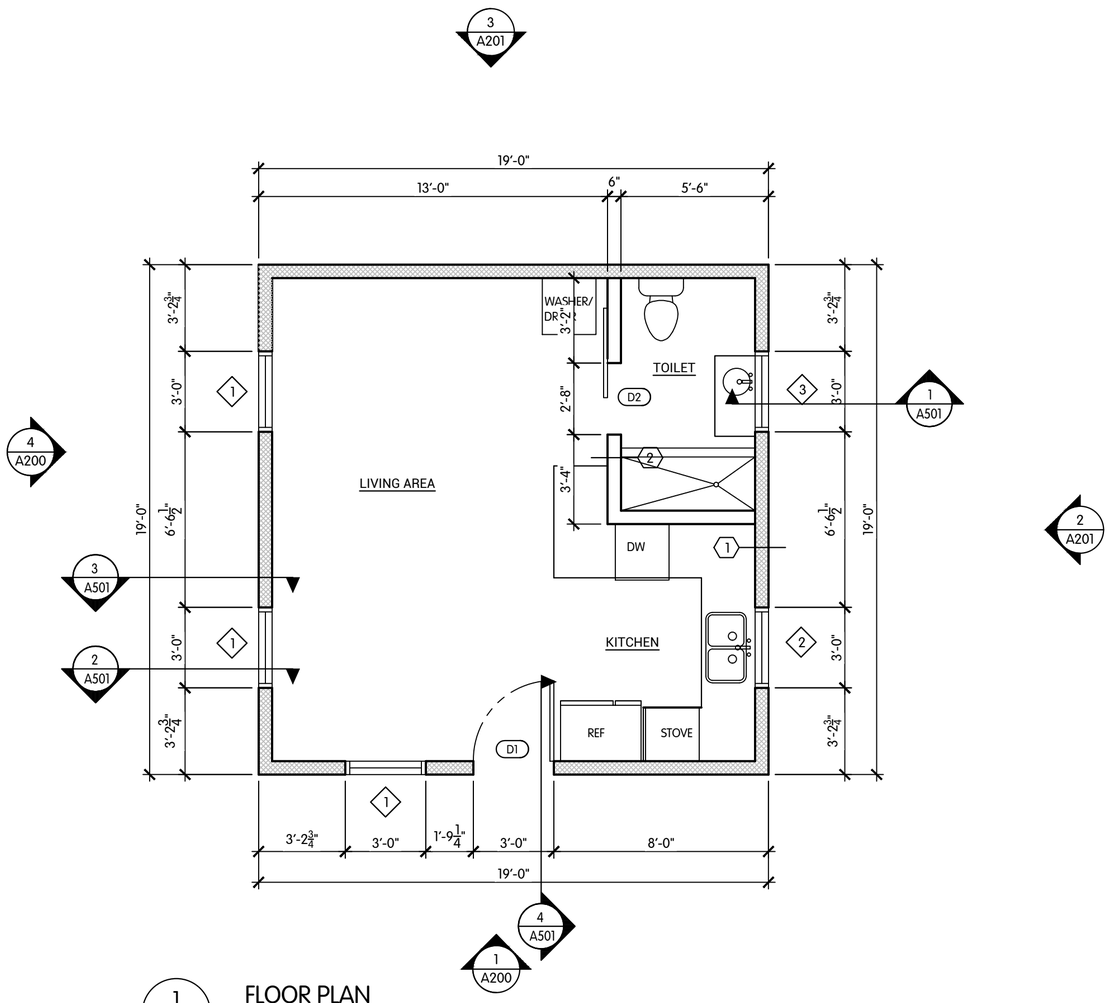
I HEREBY CERTIFY THAT THESE DRAWINGS HAVE BEEN PREPARED UNDER MY DIRECT SUPERVISION AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE CODES AND ORDINANCES FOR PREFABRICATED DWELLING UNITS.

MODEL:
ARIZONA
20' CASITA B

PAGE LAYOUT

NOTES:

PROJECT # :	-
DRAWN BY:	XX
REVIEWED BY:	JD
REVISION:	
ISSUE DATE:	12-02-22
SHEET:	G1.0



1 A1.0 FLOOR PLAN

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

LEGEND

- 1 — KEY NOTE
- SIP PANEL
- EXISTING WALL
- 1 — WINDOW TAG SEE A600
- # — WALL TYPE TAG. SEE 2/A100
- D# — DOOR TAG SEE A600

NOTE:

SEE MANUFACTURER'S DRAWINGS FOR UTILITY CONNECTIONS, PANEL DETAILS, MODULAR CONNECTIONS & ALL RELATED STRUCTURAL DETAILS

WINDOW & DOOR SCHEDULE

NUMBER	PRODUCT	CONFIGURATION	SIZE	MATERIAL	U-FACTOR	SOLAR HEAT GAIN (SHGC)	NOTES
1	WINDOW	SINGLE HUNG	3'-0" X 6'-0"	VINYL	0.25	0.21	
2	WINDOW	FIXED	3'-0" X 4'-0"	VINYL	0.22	0.23	
3	WINDOW	FIXED	3'-0" X 2'-0"	VINYL	0.22	0.23	
D1	DOOR	ENTRY DOOR	3'-0" X 8'-0"	FIBERGLASS	0.15	0.01	
D2	DOOR	TOILET DOOR	2'-8" X 8'-0"	BARN DOOR	0	0	BARN-STYLE SLIDER

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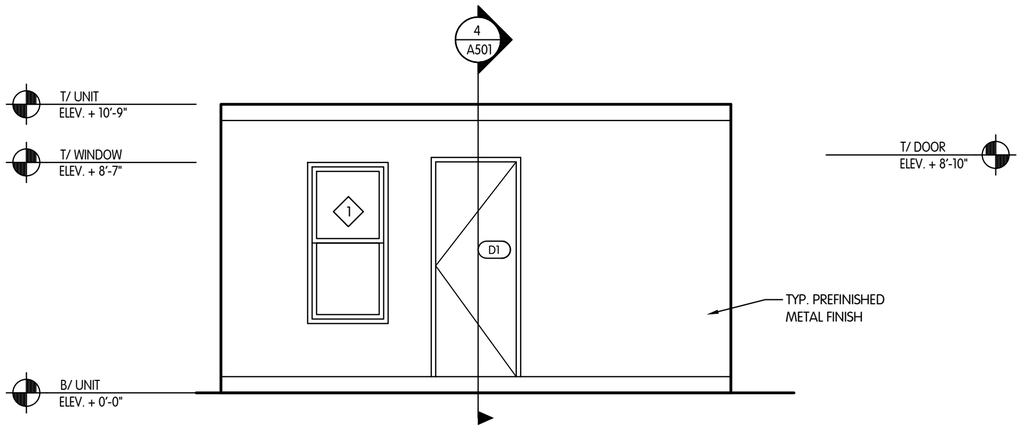
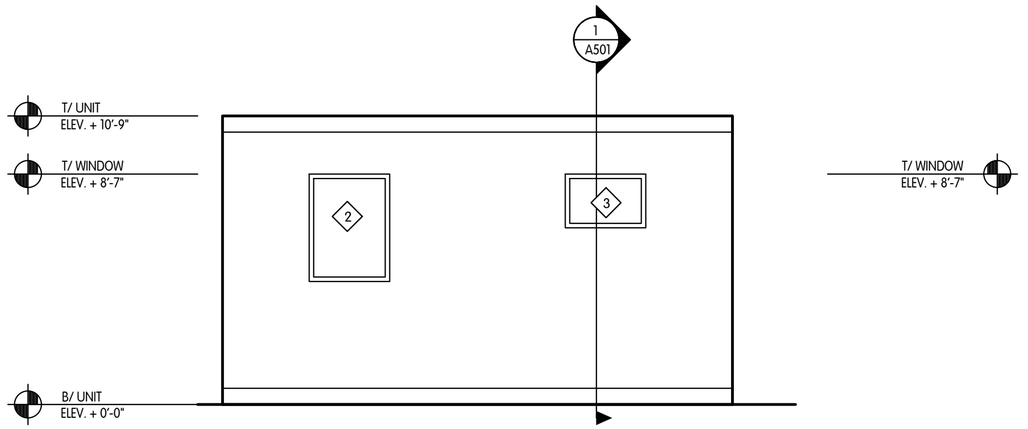
EXTERIOR FINISHES:

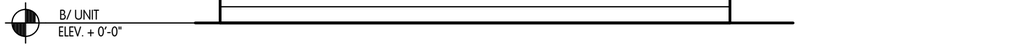
24 GAUGE METAL PANEL INSTALLED BY MANUFACTURER



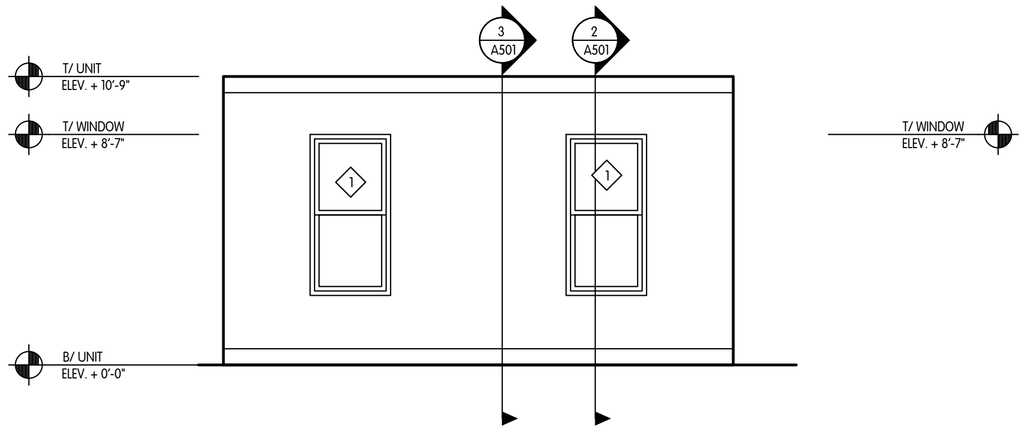
1 A2.0 FRONT SIDE
SCALE: 1/4" = 1'-0"



2 A2.0 RIGHT SIDE
SCALE: 1/4" = 1'-0"



3 A2.0 BACK SIDE
SCALE: 1/4" = 1'-0"



4 A2.0 LEFT SIDE
SCALE: 1/4" = 1'-0"

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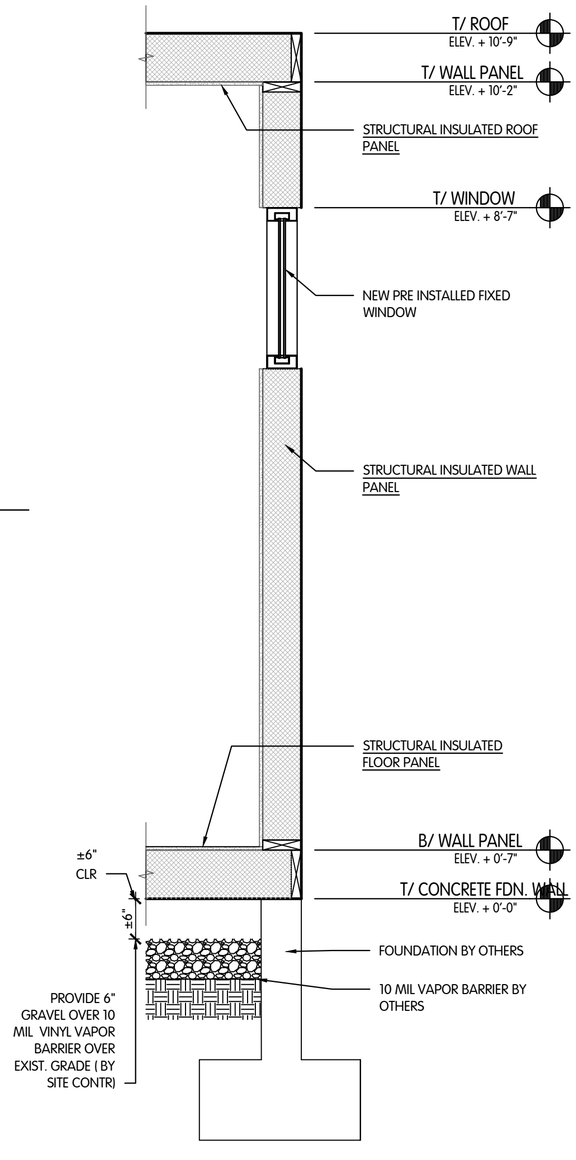
STANDARD WALL CONSTRUCTION TYPES

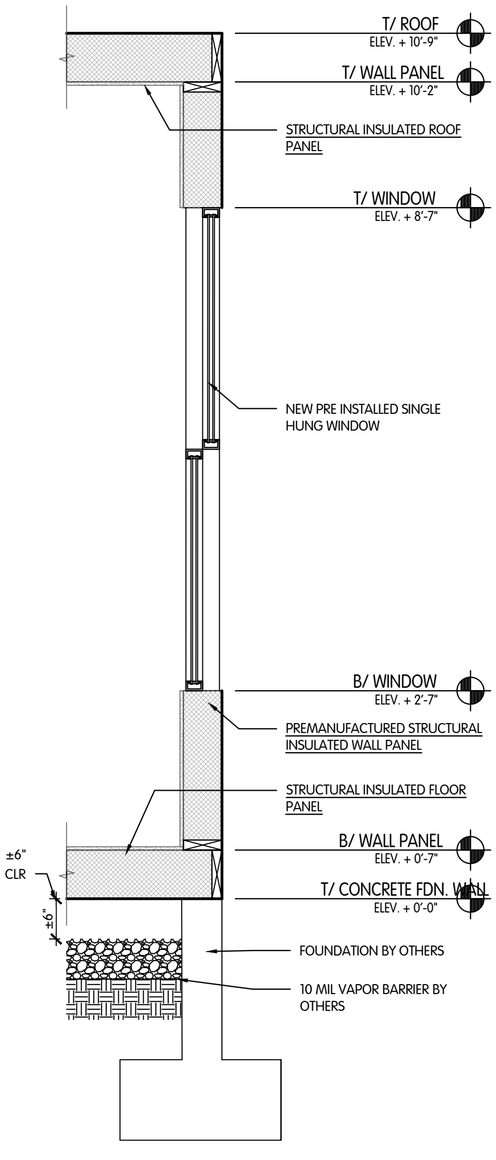
TYPICAL STRUCTURAL INSULATED WALL PANEL
1/2" MgO BOARD ADHERED TO 5 3/4" EPS FOAM INSULATION W/ 24 GAUGE METAL PANEL AS OUTSIDE FINISH.

TYPICAL STRUCTURAL INSULATED ROOF PANEL
1/2" MgO BOARD ADHERED TO 7 1/4" EPS FOAM INSULATION W/ TPO ROOFING MEMBRANE AS OUTSIDE FINISH

TYPICAL STRUCTURAL INSULATED FLOOR PANEL
1/2" MgO BOARD ADHERED TO 7 1/4" EPS FOAM INSULATION W/ 24 GAUGE METAL PANEL AS OUTSIDE FINISH.



1 A3.0 WALL SECTION
SCALE: 3/4" = 1'-0"



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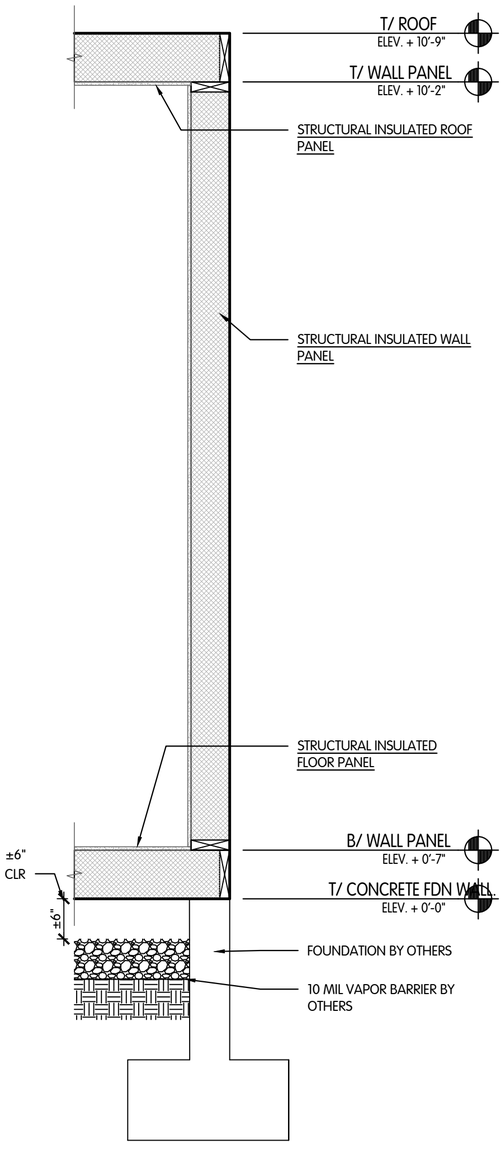
SCALE: 3/4" = 1'-0"



3 A3.0 WALL SECTION
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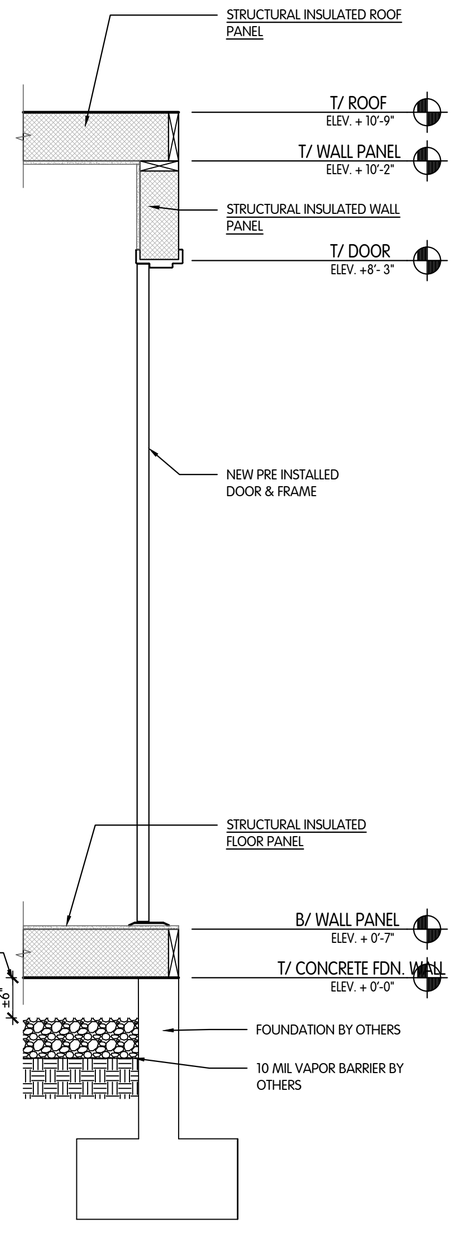

4 A3.0 WALL SECTION
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GENERAL

1. MECHANICAL SYSTEMS SHALL BE INSTALL IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.

2. DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURERS STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS AS REQUIRED. FURNISH AND INSTALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS AND MATERIALS NECESSARY TO FACILITATE THE SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED. THE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES AND SUBJECT TO INSPECTION.

3. THE MECHANICAL SYSTEMS SHALL BE COMPLETE WITH ALL NECESSARY APPURTENANCES FOR A COMPLETE OPERATING SYSTEM.

4. THE CONTRACTOR SHALL WARRANTEE ALL MATERIAL AND GUARANTEE ALL WORKMANSHIP FOR ONE YEAR FROM SUBSTANTIAL COMPLETION.

BASIC MATERIALS AND METHODS

1. MATERIALS SHALL BEAR UNDERWRITERS LABEL WHERE SUCH STANDARDS HAVE BEEN ESTABLISHED AND LISTED BY UNDERWRITER'S LABORATORIES, INC. MATERIALS, EQUIPMENT AND APPLIANCES SHALL CONFORM TO THE LATEST STANDARDS OF:
   - AMCA -AIR MOVING AND CONDITIONING ASSOCIATIONS, INC.
   - SMACNA -SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, INC.
   - ASHRAE -AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
   - ASME -AMERICAN SOCIETY OF MECHANICAL ENGINEERS
   - ASTM -AMERICAN SOCIETY FOR TESTING MATERIALS
   - NEMA -NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
   - ARI -AIR CONDITIONING AND REFRIGERATION INSTITUTE
   - ANSI -AMERICAN NATIONAL STANDARDS INSTITUTE

COORDINATION

1. COORDINATE WITH GENERAL CONTRACTOR FOR ALLOWABLE DAYS OF WEEK AND TIMES OF DAY FOR SYSTEMS SHUT DOWNS AS REQUIRED FOR THE CONSTRUCTION WORK.

2. THE MECHANICAL CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATION WITH ARCHITECTS/OWNERS REPRESENTATIVE IN FIELD AND OTHER TRADES.

3. THE MECHANICAL CONTRACTOR SHALL COORDINATE VOLTAGE OF ALL EQUIPMENT WITH ELECTRICAL PRIOR TO ORDERING EQUIPMENT.

INSTALLATION

1. CORE-DRILL OR SAW-CUT FLOOR, WALL, ROOF, ETC. AS REQUIRED FOR PIPING OR DUCTWORK AND FIRE-STOP OPENING AROUND PIPE OR DUCTWORK. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING OR CUTTING. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

2. WHEREVER FOUNDATION WALLS, OUTSIDE WALLS, ROOFS, ETC. ARE CUT FOR INSTALLATION OF SYSTEMS, THEY SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND SEALED WEATHER-TIGHT. WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES.

3. ALL DUCTWORK AND PIPING SHALL BE ROUTED ABOVE THE SUSPENDED CEILING SPACE, UNLESS OTHERWISE NOTED ON PLANS.

4. ALL DUCTWORK AND PIPING THAT IS EXPOSED TO VIEW SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO THE UNDERSIDE OF THE STRUCTURAL STEEL ABOVE.

5. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10'-0" AWAY FROM EXHAUST DISCHARGE OPENINGS AND PLUMBING VENT STACKS.

INSULATION

1. DUCT LINER: PROVIDE DUCT LINER FOR DUCTWORK WHERE INDICATED. DUCT LINER SHALL MEET NFPA 90A FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50.

2. DUCT INSULATION: PROVIDE FLEXIBLE INSULATION FOR DUCTWORK WHERE INDICATED. INSULATION SHALL BE FOIL REINFORCED KRAFT MEETING NFPA 90A, FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50.

3. ALL SUPPLY, RETURN AND OUTSIDE AIR RECTANGULER/SQUARE DUCTWORK SHALL BE INSULATED WITH 1-1/2" THICK 3 PCF DUCT LINER. DUCT LINER SHALL BE FASTENED TO INSIDE OF DUCTWORK AS PER MANUFACTURE'S DIRECTIONS AND SMACNA "DUCT LINER APPLICATION STANDARD". SIZE OF DUCTS SHALL BE INCREASED FOR DUCT LINER INSULATION. SIZES SHOW ON PLAN ARE INSIDE FREE AREA. ALL SUPPLY, RETURN AND OUTSIDE AIR ROUND/OVAL DUCTWORK SHALL BE INSULATED WITH 2" THICK FLEXIBLE INSULATION, 1 PCF DENSITY FOIL REINFORCED KRAFT FACING. DUCT WRAPS SHALL BE FASTENED TO DUCTWORK AS PER MANUFACTURER'S DIRECTIONS. ROUND DIFFUSER BRANCHES SHALL BE INSULATED WITH 1" THICK FIBERGLASS SLEEVE WITH REINFORCED FOIL JACKET AND ALL JOINTS AND TERMINATIONS SEALED WITH 4" WIDE FOIL TAPE. ROUND/OVAL SUPPLY AND RETURN DUCTWORK EXPOSED TO VIEW AND LOCATED IN THE CONDITIONED SPACE SHALL NOT BE INSULATED. MINIMUM INSULATION 'R' VALUE SHALL BE AS REQUIRED BY ADOPTED ENERGY CODE.

4. PROVIDE INSULATION FOR ALL CHILLED WATER, CONDENSER WATER, CONDENSATION DRAINAGE, MAKE-UP WATER, ETC.. PIPING. COLD PIPE INSULATION SHALL BE MINIMUM 1" THICK FIBERGLASS WITH ALL SERVICE JACKET (ASJ) AND PREFORMED PVC FITTING COVERS. THICKNESS SHALL COMPLY WITH LOCAL CODES OR AS RECOMMENDED BY MANUFACTURER. ALL JOINTS SHALL BE TAPED FOR CONTINUOUS VAPOR BARRIER INSTALLATION. PROVIDE REPAIRS FOR TEARS, RIPS, ETC.. IN THE ASJ. MINIMUM INSULATION 'R' VALUE SHALL BE AS REQUIRED BY ADOPTED ENERGY CODE.

5. PROVIDE HALF ROUND 18 GAUGE GALVANIZED SHEET METAL HANGER SHIELDS FOR INSULATION PROTECTION AT ALL PIPE HANGERS.

EQUIPMENT

1. THE MECHANICAL CONTRACTOR SHALL INSTALL MECHANICAL SYSTEMS AS SHOWN, NOTED AND SPECIFIED. EQUIPMENT MAY NOT BE SUBSTITUTED UNLESS WRITTEN APPROVAL BY THE ARCHITECT, ENGINEER OR OWNER'S REPRESENTATIVE IS OBTAINED. ANY CHANGES TO THE DUCTWORK LAYOUT WILL NECESSITATE SUBMISSION OF SHEET METAL SHOP DRAWINGS FOR ENGINEER'S REVIEW. ANY UNAUTHORIZED CHANGES WILL BE REMOVED AT CONTRACTOR'S EXPENSE, IF DEEMED NECESSARY BY ARCHITECT, ENGINEER, OR OWNER'S REPRESENTATIVE.

2. UPON SELECTION OF THE MECHANICAL APPLIANCES, SUBMIT THE MANUFACTURER'S INSTALLATION INSTRUCTIONS TO THE BUILDING DEPARTMENT, INCLUDING LISTING FOR OUTSIDE INSTALLATION WHERE APPLICABLE.

AIR DISTRIBUTION

1. ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED IRON SHEET METAL AND FABRICATED ACCORDING TO THE SMACNA LOW VELOCITY DUCT MANUAL, ASHRAE HANDBOOK VOLUME "HVAC SYSTEMS AND EQUIPMENT", AND TYPICAL DUCTWORK DETAILS SHOWN IN THESE DRAWINGS. ALL ELBOWS SHALL HAVE PROPER RADIUS, OR MECHANICAL CONTRACTOR SHALL PROVIDE DOUBLE THICKNESS AIRFOIL TURNING VANES REQUIRED BY SMACNA. NO SQUARE THROAT ELBOWS SHALL BE INSTALLED WITHOUT DOUBLE THICKNESS TURNING VANES. SIZES SHOW ON PLAN ARE INSIDE FREE AREA.

2. ALL FLEXIBLE DUCTWORK SHALL FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR 2" W.C. PRESSURE AND 0 TO 250 DEGREE TEMPERATURE. MAXIMUM STRETCHED OUT LENGTH SHALL BE AS PER CODES.

3. PROVIDE UL APPROVED FIRE DAMPERS FOR ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, CEILINGS, AND FLOORS. INSTALL FIRE DAMPERS AS PER MANUFACTURER'S DIRECTIONS AND PER UL GUIDELINES. PROVIDE ACCESS DOORS IN DUCTWORK AND ACCESS PANELS IN BUILDING CONSTRUCTION AS REQUIRED FOR SERVICING OF FIRE DAMPERS.

4. ALL DUCT CONNECTIONS TO EQUIPMENT SHALL BE MADE WITH NEOPRENE, DOUBLE COATED, HEAVY GLASS FABRIC, VIBRATION ELIMINATION CONNECTIONS, (F.C) FLEXIBLE CONNECTIONS, EQUAL TO VENTFABRICS, INC. TYPE VENTGLAS, UNLESS NOTED OTHERWISE.

5. ALL BRANCH SUPPLY DUCTS SHALL HAVE (VD) MANUAL VOLUME DAMPERS INSTALLED FOR BALANCING.

6. PROVIDE A VOLUME DAMPER FOR EVERY INLET AND OUTLET (DIFFUSERS, REGISTERS, GRILLES, ETC.) OF THE DUCTWORK DISTRIBUTION SYSTEMS WHETHER SHOWN OR NOT ON THE PLANS. PROVIDE ADDITIONAL VOLUME DAMPERS OR EXTRACTORS AT BRANCH TAKE-OFFS FROM DUCTWORK MAINS AS REQUIRED TO ACHIEVE AIR VOLUME DISTRIBUTION AND BALANCING.

7. ALL DUCTWORK TRANSITIONS SHALL BE (FOT) "FLAT ON TOP", UNLESS OTHERWISE SPECIFIED ON PLAN.

8. ALL CONTRACTOR FABRICATED AND MANUFACTURER FABRICATED COMPONENTS OF THE OUTSIDE AIR, SUPPLY AIR, RETURN AIR AND EXHAUST SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED AIR-TIGHT. THE INSTALLED SYSTEMS SHALL BE PRESSURE TESTED AS SPECIFIED. PIPE OPENINGS IN SYSTEM COMPONENTS SHALL HAVE SHEET METAL BAFFLES, SET IN SEALANT, TO PREVENT LEAKAGE.

AUTOMATIC TEMPERATURE CONTROLS

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING AS REQUIRED. THERMOSTATS SHALL BE AS SPECIFIED OR AS FURNISHED WITH THE EQUIPMENT. PROVIDE TRANSFORMERS AS REQUIRED.

TESTING AND BALANCING

1. BALANCING CONTRACTOR SHALL BALANCE SYSTEMS TO AIR QUANTITIES SHOWN ON PLAN. BALANCING CONTRACTOR SHALL USE DUCT MOUNTED MANUAL DAMPERS FOR AIR SYSTEM BALANCING. USE OF A TERMINAL DAMPER IS NOT ACCEPTABLE.
2. TESTING AND BALANCING CONTRACTOR SHALL TEST ALL HVAC EQUIPMENT TO ENSURE PROPER OPERATION, TEST ALL CONTROLS TO ENSURE PROPER OPERATION, CALIBRATION AND ADJUSTMENT OF CONTROLS, AND TEST ECONOMIZERS TO ENSURE PROPER OPERATION.

3. THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED 48 HOURS OR MORE PRIOR TO FINAL TESTING AND BALANCING WORK SO THAT THEY AND/OR THE ENGINEER MAY BE PRESENT TO OBSERVE THIS WORK. THE BALANCING CONTRACTOR SHALL SUBMIT WRITTEN REPORTS OF ALL AIR FLOW READINGS, STATIC PRESSURES, GPM RATES, PRESSURE READINGS, TEMPERATURE READINGS, MOTOR AMPERAGE, ETC., TO DOCUMENT PROPERLY OPERATING AND BALANCED MECHANICAL SYSTEMS IN ALL AREAS. A COPY OF THE TEST AND BALANCE REPORT SHALL BE SUBMITTED TO THE AUTHORITIES HAVING JURISDICTION PRIOR TO FINAL INSPECTION AND REQUESTING OCCUPANCY.

CLOSEOUT DOCUMENTATION

1. THE CONTRACTOR SHALL FURNISH TO THE BUILDING OWNER WITHIN 90 DAYS OF DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY THE FOLLOWING;
   A. OPERATING AND MAINTENANCE MANUAL. MANUAL SHALL CONSIST OF MANUFACTURER'S RECOMMENDATIONS, PROGRAMMING PROCEDURES AND DATA POINTS, NARRATIVE AND OTHER MEANS OF ILLUSTRATING TO THE OWNER HOW THE BUILDING, EQUIPMENT AND SYSTEMS ARE INTENDED TO BE INSTALLED, MAINTAINED AND OPERATED.
   B. AS-BUILT HVAC DRAWINGS.
   C. BALANCE REPORT OF HVAC SYSTEMS.

MECHANICAL ABBREVIATIONS

A.D.	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
ACCU	AIR COOLED CONDENSING UNIT
CC	COOLING COIL
CV	CONTROL VALVE
EF	EXHAUST AIR FAN
F.C.U	FAN COIL UNIT
HX	HEAT EXCHANGER
N.C	NEW CONNECTION TO EXISTING
N.T.S.	NOT TO SCALE
S.C.D.	SEE CONSTRUCTION DRAWINGS
SF	SUPPLY AIR FAN
S.S.	STAINLESS STEEL
T	THERMOSTAT
U.N.O.	UNLESS NOTED OTHERWISE
ARCH	ARCHITECT OR ARCHITECTURAL
BLD'G	BUILDING
BOT.	BOTTOM
CL'G.	CEILING
CONC.	CONCRETE
DET.	DETAIL
DN.	DOWN
DWG.	DRAWING
E.A.T.	ENTERING AIR TEMPERATURE
GA.	GAUGE
H/AC	HEATING AND AIR CONDITIONING
L.A.T.	LEAVING AIR TEMPERATURE
MT'D	MOUNTED
S.S.T.	SATURATED SUCTION TEMPERATURE
T.S.P.	TOTAL STATIC PRESSURE
W/	WITH
Ø	DIAMETER/ROUND
0'-0"	ELEVATION FOR BOTTOM OF DUCT FROM FINISH FLOOR

MECHANICAL SYMBOLS

(T) DEVICE	THERMOSTAT WITH DEVICE CONTROLLED.
CD	CONDENSATE DRAINAGE PIPING
L	REFRIGERANT LIQUID PIPING
S	REFRIGERANT SUCTION PIPING
	LINE SIZE GATE VALVE
	LINE SIZE BALL VALVE (2" & SMALLER) OR LINE SIZE BUTTERFLY VALVE (2-1/2" & LARGER)
	LINE SIZE BALANCING VALVE
	LINE SIZE CHECK VALVE
	LINE SIZE UNION

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EXPIRATION DATE: 9/30/24

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MODEL:

20' CASITA B

PAGE LAYOUT

MECHANICAL NOTES SYMBOLS & ABBREVIATIONS

NOTES:

PROJECT # :

DRAWN BY: JS

REVIEWED BY: JT

REVISION:

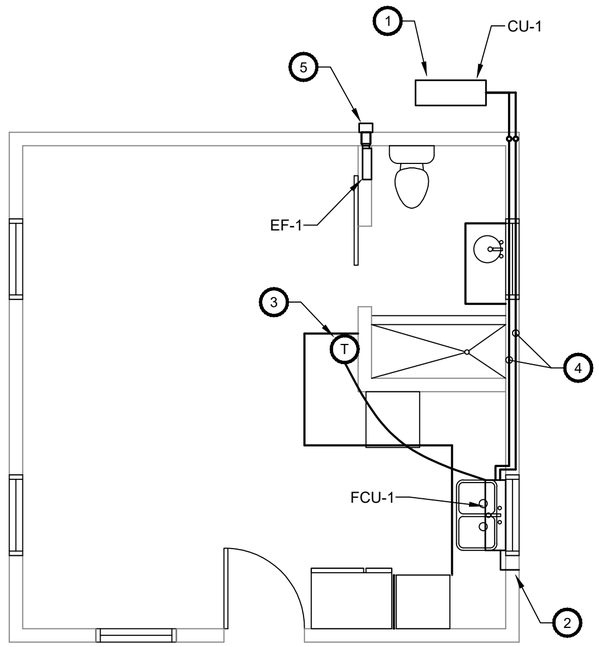
ISSUE DATE: 12/02/22

SHEET: M1.0

PLAN NOTES

1	NEW CONDENSING UNIT, CU-1. PROVIDE CONCRETE PAD TO HAVE THE CONDENSING UNIT ON A LEVEL SURFACE. COORDINATE EXACT LOCATION WITH ARCHITECT AND BUILDING OWNER.
2	TERMINATE CONDENSATE DRAIN FROM FCU-1. PROVIDE SPLASH BLOCK ON GRADE. COORDINATE EXACT LOCATION WITH ARCHITECT AND BUILDING OWNER.
3	PROVIDE THERMOSTAT.
4	REFRIGERANT PIPING ROUTED IN WALL, SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SIZING.
5	PROVIDE GREENHECK WC-4 HOODED WALL CAP.

VERIFY WITH CODE OFFICIAL IF THE EXHAUST FAN WILL COMPLY WITH IMC 403.3 WITH REGARDS TO CODE COMPLIANT OUTSIDE AIR. IF NOT, PROVIDE OTHER MEANS OF INTRODUCING OUTSIDE AIR INTO THE SPACE.



1 MECHANICAL PLAN

1/4" = 1'-0"

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MECHANICAL PLANS

NOTES:

PROJECT # :

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ISSUE DATE: 12/02/22

SHEET: M2.0

FAN COIL UNIT SCHEDULE

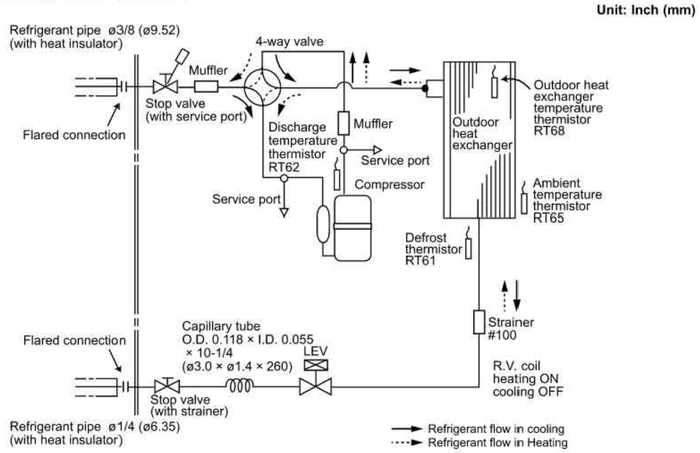
DESIG'N.	MFG'R.	MODEL NO.	AIR QUANTITY (CFM)	COOLING					HEATING			ELECTRICAL				COMPRESSOR	TYPE OF MOUNTING	HSPF	COP	REMARKS
				E.A.T. DB °F/WB °F	L.A.T. DB °F/WB °F	TOTAL CAPACITY (BTU/HR)	REFRIGERANT	REFRIGERANT CHARGE	E.A.T. (°F)	L.A.T. (°F)	TOTAL CAPACITY @ 47°F	VOLTAGE	PHASE (Ø)	MCA	MOCP					
CU-1	MITSUBISHI	MUZ-WR12NA										230	1	15	15	ROTORY INVERTER	ON GRADE			
FCU-1	MITSUBISHI	MSZ-WR12NA	400	75.0/62.3	55.0/53.4	12,000	R410A	1 LB 12 OZ	60.0	88.2	12,200						WALL HUNG	8.50	3.28	

EXHAUST FAN SCHEDULE

DESIG'N	SERVICE	MFG'R	MODEL NO.	TYPE	CFM	STATIC PRESSURE ("W.C.)	DRIVE	ELECTRICAL			BACKDRAFT DAMPER	OPER. WEIGHT (LBS.)	REMARKS
								H.P. (WATTS)	PHASE (Ø)	VOLTAGE			
EF-1	RESTROOM	GREENHECK	SP-LP0511	WALL	50	0.250	DIRECT	(22)	1	115	GRAVITY	8	

MUZ-WR09NA MUZ-WR12NA

Unit: Inch (mm)



REFRIGERATION PIPING SYSTEM SCHEMATIC DETAIL

NOT TO SCALE

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MODEL:

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MECHANICAL DETAILS

NOTES:

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ISSUE DATE: 12/02/22

SHEET: M3.0

ELECTRICAL SPECIFICATIONS:

E1. A QUALIFIED ELECTRICIAN SHALL FURNISH AND INSTALL ALL LABOR, TOOLS, MATERIAL, EQUIPMENT, SERVICES, AND RELATED ACCESSORIES NECESSARY FOR THE COMPLETE INSTALLATION OF ELECTRICAL WORK SHOWN ON THE DRAWINGS, SPECIFIED IN THE NOTES, AND REQUIRED BY LOCAL CODE AUTHORITIES.

E2. ALL WORK SHALL COMPLY WITH THE 2017 NEC. PREMANUFACTURED STRUCTURE COMPLIES WITH 2017 NEC ARTICLE 550 AND FEDERAL MANUFACTURED HOME CONSTRUCTION AND SAFETY STANDARDS (THE CONSTRUCTION AND SAFETY STANDARDS) CODIFIED IN 24 CFR PART 3280.

E3. OBTAIN AND PAY FOR ALL PERMITS AND FEES RELATING TO ELECTRICAL SYSTEM.

E4. IT IS INTENDED THAT ALL ITEMS OF WORK AND SYSTEMS BE COMPLETE AND WIRED COMPLETE IN ALL DETAILS, READY FOR SATISFACTORY OPERATION AND SERVICE. APPARATUS REQUIRED SHALL BE FURNISHED, EVEN THOUGH NOT SPECIFICALLY MENTIONED HEREIN, OR SHOWN ON THE DRAWINGS.

E5. PROVIDE GROUNDING OF ELECTRICAL WORK IN STRICT ACCORDANCE WITH THE APPLICABLE CODES AND THEIR AUTHORITIES.

E6. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ANY INSTALLATION.

E7. PROVIDE CODE APPROVED CLEARANCES AROUND ELECTRICAL EQUIPMENT.

E8. MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE NEMA STANDARDS, NATIONAL ELECTRICAL CODE (NEC) IN EVERY CASE, WHERE SUCH STANDARDS HAVE BEEN ESTABLISHED. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, FITTINGS AND OTHER EQUIPMENT SHALL BE LISTED AND LABELED BY A QUALIFIED TESTING AGENCY AND SHALL BE CONNECTED IN AN APPROVED MANNER WHEN INSTALLED.

E9. TESTING – AFTER WIRES ARE IN PLACE AND CONNECTED TO DEVICES AND EQUIPMENT, THE SYSTEM SHALL BE TESTED FOR SHORTS AND GROUNDS. ALL HOT WIRES, IF SHORTED OR GROUNDED, SHALL BE REMOVED AND REPLACED.

E10. ALL METERS, INSTRUMENTS, CABLE CONNECTION, EQUIPMENT, OR APPARATUS NECESSARY FOR MAKING ALL TESTS, SHALL BE FURNISHED BY THIS CONTRACTOR AT HIS OWN EXPENSE.

E11. AFTER THE COMPLETION OF THE INSTALLATION, THE ENTIRE SYSTEM SHALL BE THOROUGHLY CLEANED. CLEAN ALL FOREIGN MATTER, PAINT, OIL, DIRT, UNREQUIRED LABELS, GREASE, AND STICKERS FROM FIXTURES AND EQUIPMENT. REMOVE FROM THE PREMISES ALL RUBBISH, DEBRIS, ETC. ACCUMULATED BY THE ELECTRICAL INSTALLATION.

E12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EQUIPMENT AND SYSTEMS AGAINST HARMFUL EXPOSURE, OR ACCUMULATION OF DUST/MOISTURE, FLOODING, CORROSION, OR OTHER FORMS OF DAMAGE. CLEAN AND RESTORE DAMAGED FINISHES AND EQUIPMENT TO PLACE INSTALLATION IN A LIKE–NEW CONDITION.

E13. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL INTERIOR WIRING SHALL BE NM–B CABLE. ELECTRICIAN SHALL PROVIDE EXTENSION OF ALL CABLE FROM JUNCTION BOX TO ELECTRICAL PANEL. PROVIDE CODE COMPLIANT RACEWAY AND WIRING FROM INTERIOR JUNCTION BOX TO EXTERIOR PANEL. SEAL OPENING WEATHERTIGHT. PROVIDE INTERCONNECTION OF CABLES BETWEEN THE WALLS AND ROOF PANELS. THERE MAY BE SEVERAL CIRCUITS IN EACH PANEL. EACH IS LABLED WITH CIRCUIT NAME, CONNECT CIRCUITS OF LIKE NAMES.

E14. DISCONNECT SWITCHES SHALL BE QUICK–MAKE, QUICK–BREAK TYPE IN NEMA ENCLOSURE TO MATCH LOCATION AND USE. SWITCHES SHALL BE LISTED FOR THEIR USE.

E15. PANEL/LOAD CENTER SHALL BE AS SHOWN ON THE DRAWINGS WITH 125A–2P MAIN BREAKER AND BRANCH BREAKERS AS SCHEDULED. UNIT IS PROVIDED IN A NEMA 3R ENCLOSURE FOR EXTERIOR MOUNTING. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL BREAKERS AS REQUIRED. PANEL/LOAD CENTERS SHALL BE SQUARE D QO SEREIS WITH QO BREAKERS OR EATON, SEIMENS OR GENERAL ELECTRIC EQUIVELENT. TERMINATE ALL CABLING AND WIRING AT PANEL/LOAD CENTER IN ACCORDANCE WITH NEC REQUIREMENTS.

E16. INSTALL COMBINATION WASHER/DRYER BACKBOX WIRING AND PLUG IN PARTITION WALL.

E17. ASSEMBLE AND INSTALL PENDANT LIGHT FURNISHED WITH UNIT. PENDANT LIGHT SHALL BE LISTED PER 550.14(C).

E18. INSTALL SMOKE DETECTOR FURNISHED WITH UNIT.

E19. ASSEMBLE AND INSTALL EXTERIOR SCONCE LIGHT FURNISHED WITH UNIT BY FRONT DOOR. SEAL LIGHT TO EXTERIOR WALL TO BE WEATHER TIGHT.

E19. ASSEMBLE AND INSTALL EXTERIOR SCONCE LIGHT FURNISHED WITH UNIT BY FRONT DOOR. SEAL LIGHT TO EXTERIOR WALL TO BE WEATHER TIGHT.

E20. ALL EQUIPMENT LOCATED OUTDOORS SHALL BE WEATHERPROOF TYPE.

E21. FURNISH AND INSTALL A COMPLETE AND OPERABLE SYSTEM OF SERVICE AND DISTRIBUTION FROM THE UTILITY COMPANY TRANSFORMERS OR FROM FEED FROM ANOTHER STRUCTURE TO THE PANEL/LOAD CENTER AS REQUIRED. PROVIDE A 120/240V., 1PH., 3W. SERVICE OR FEEDER TO THE LOAD CENTER RATED AT 125 AMPERES. MINIMUM FEEDER SIZE TO THE HOUSE SHALL BE 3 # 1 AWG COPPER CONDUCTORS. COORDINATE FINAL GROUNDING WITH METHOD OF FEEDING. SUGGESTED SERVICE GROUNDING DETAIL IS FOR UTILITY FED BUILDING.

E22. TWO SMALL APPLIANCE 20A BRANCH CIRCUITS HAVE BEEN PROVIDED PER NEC 550.12 (B) SERVING ONLY ABOVE COUNTER RECEPTACLES.

E23. LAUNDRY AREA 20A BRANCH CIRCUITS HAS BEEN PROVIDED PER NEC 550.12 (C) SERVING ONLY LAUNDRY AREA.

E24. APPLIANCE BRANCH CIRCUITS HAVE BEEN PROVIDED PER NEC 550.12 (D) SERVING DEDICATED APPLAINCES INCLUDING HEAT A/C UNIT, DISHWASHER, REFERIGERATOR, GARBAGE DISPOSAL, MICROWAVE AND ELECTRIC RANGE.

E25. BATHROOM RECEPTACLE 20A BRANCH CIRCUIT HAS BEEN PROVIDED PER NEC 550.12 (E) SERVING ONLY BATHROOM RECEPTACLES.

E26. RECEPTACLE OUTELETS HAVE BEEN INSTALLED IN ACCORDNACE WITH NEC 550.13. ALL RECEPTACLES SHALL BE LISTED AND GROUNDED TYPE AND INSTALLED IN ACCORDNACE WITH NEC 406.4. ALL RECEPTACLES SHALL BE PROVIDED WITH AFCI PROTECTION. ALL 15A AND 20A KITCHEN, BATHROOM, LAUNDRY, DISHWASHER, DISPOSAL AND OUTDOOR RECEPTACLES SHALL BE GFCI TYPE. ALL OUTDOOR RECEPTACLES SHALL BE WEATHER RESISTANT TYPE WITH WEATHERPROOF COVERS AND WEATHER SEALED TO BUILDING FRAME

E27. PER 24 CRF 3280.810 THE FOLLOWING TESTS SHALL BE PERFORMED:

(1) ELECTRICAL CONTINUITY TEST TO ASSURE THAT METALLIC PARTS ARE EFFECTIVELY BONDED.
(2) AN OPERATIONAL TEST OF ALL DEVICES AND UTILIZATION EQUIPMENT, EXCEPT WATER HEATERS, ELECTRIC RANGES, ELECTRIC FURNACES, DISHWASHERS, CLOTHES WASHERS/DRYERS, AND PORTABLE APPLIANCES, TO DEMONSTRATE THEY ARE CONNECTED AND IN WORKING ORDER; AND
(3) ELECTRICAL POLARITY CHECKS TO DETERMINE THAT CONNECTIONS HAVE BEEN MADE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THESE STANDARDS AND ARTICLE 550.17 OF (NEC) NFPA 70–2017. VISUAL VERIFICATION IS AN ACCEPTABLE ELECTRICAL POLARITY CHECK.

E28. FITTINGS AND CONNECTORS THAT ARE INTENDED TO BE CONCEALED AT THE TIME OF ASSEMBLY SHALL BE LISTED AND IDENTIFIED FOR THE INTERCONNECTION OF BUILDING COMPONENTS. SUCH FITTING SHALL BE EQUAL TO THE WIRING METHOD EMPLOYED IN INSULATION, TEMPERATURE RISE, AND FAULT–CURRENT WITHSTANDING AND SHALL BE CAPABLE OF ENDURING THE VIBRATION AND SHOCK OCCURRING IN TRANSPORT.

E29. GROUNDING OF BOTH ELECTRICAL AND NON ELECTRICAL METAL PARTS SHALL BE THROUGH CONNECTION TO A GROUNDING BUS IN THE PANEL/LOAD CENTER AND SHALL BE CONNECTED THROUGH THE GREEN–COLORED INSULATED CONDUCTOR IN THE FEEDER WIRING TO THE GROUNDING BUS IN THE SERVICE ENTRANCE EQUIPMENT.

E30. PROVIDE GROUNDING AND BONDING SHALL BE PROVIDED PER NEC 550.16.

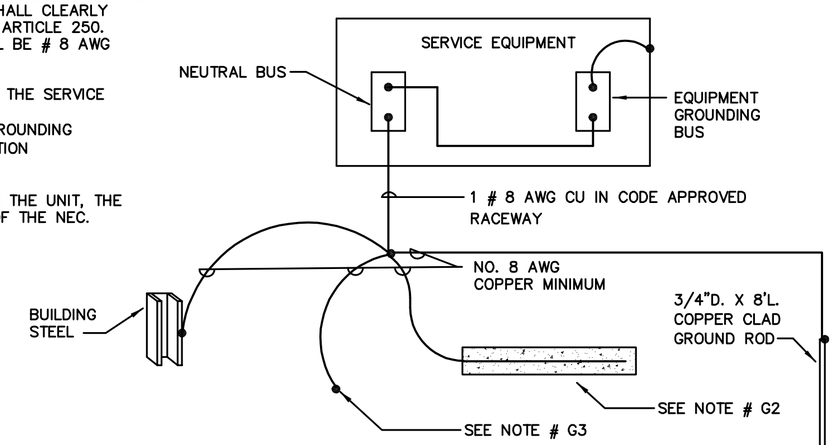
E31. THE INSTALLATION OF THE SERVICE EQUIPMENT SHALL COMPLY WITH ARTICLE 230. MEANS SHALL BE PROVIDED FOR THE CONNECTION OF A GROUNDING ELECTRODE CONDUCTOR TO THE SERVICE EQUIPMENT AND ROUTING IT OUTSIDE THE STRUCTURE. BONDING AND GROUNDING OF THE SERVICE SHALL BE IN ACCORDANCE WITH ARTICLE 250. THE MANUFACTURER SHALL INCLUDE IN ITS WRITTEN INSTALLATION INSTRUCTIONS ONE METHOD OF GROUNDING THE SERVICE EQUIPMENT AT THE INSTALLATION SITE. THE INSTRUCTIONS SHALL CLEARLY STATE THAT OTHER METHODS OF GROUNDING ARE FOUND IN ARTICLE 250. THE MINIMUM SIZE GROUNDING ELECTRODE CONDUCTOR SHALL BE # 8 AWG COPPER.

A WARNING LABEL SHALL BE MOUNTED ON OR ADJACENT TO THE SERVICE EQUIPMENT. THE LABEL SHALL STATE THE FOLLOWING:
"WARNING DO NOT PROVIDE ELECTRICAL POWER UNTIL THE GROUNDING ELECTRODE(S) IS INSTALLED AND CONNECTED (SEE INSTALLATION INSTRUCTIONS)."

WHERE THE SERVICE EQUIPMENT IS NOT INSTALLED IN OR ON THE UNIT, THE INSTALLATION SHALL COMPLY WITH THE OTHER PROVISIONS OF THE NEC.

SYMBOL LIST

SYMBOL	DESCRIPTION
(J), (J)	JUNCTION BOX – WALL OR CEILING MOUNTED
	NON – FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MOTOR CONNECTION – H.P. AS NOTED ON DRAWINGS
	NM–B CABLE RUN CONCEALED IN CEILING OR WALLS. X DENOTES GROUND WIRE | DENOTES NEUTRAL CONDUCTOR | DENOTES HOT CONDUCTOR
	LOAD CENTER
	DUPLEX RECEPTACLE (NEMA 5–20R) (+18" AFF UNLESS NOTED OTHERWISE)
	DUPLEX RECEPTACLE (NEMA 5–20R) (MOUNTED 6" ABOVE COUNTER TOP UNLESS NOTED OTHERWISE)
USB	DUPLEX CONVENIENCE OUTLET (NEMA 5–15R) WITH USB CHARGERS
	SPECIAL OUTLET. REFER TO POWER PLAN ON SHEET E1.0 FOR REQUIREMENTS
SD	CEILING MOUNTED SMOKE ALARM
A.	DENOTES AMPERES
A.C.	DENOTES ABOVE COUNTER
A.F.F.	DENOTES ABOVE FINISHED FLOOR
AFCI	DENOTES ARC FAULT CIRCUIT INTERRUPTER
C.	DENOTES CONDUIT
GFCI	DENOTES GROUND FAULT CIRCUIT INTERRUPTER
GRD.	DENOTES GROUND
M.L.O.	DENOTES MAIN LUGS ONLY
WP	DENOTES WEATHERPROOF (NEMA 3R)



SUGGESTED SERVICE GROUND DETAIL

NO SCALE

NOTES:

G1. CONTRACTOR SHALL OBTAIN APPROVAL FROM LOCAL CODE AUTHORITIES BEFORE INSTALLING GROUNDING.

G2. CONCRETE ENCASED ELECTRODE ENCASED BY A MINIMUM OF 2" OF CONCRETE ON ALL SIDES LOCATED WITHIN AND NEAR THE BOTTOM OF A CONCRETE FOOTING OR FOUNDATION. ELECTRODE SHALL CONSIST OF A MINIMUM OF 20' OF BARE COPPER CONDUCTOR (# 4) WHERE APPLICABLE. (SEE NEC 250.52 (A) (3) (2))

G3. BOND TO REBAR STUBOUT IN FOUNDATION PER NEC 250 WHERE APPLICABLE (SEE NEC 250.52 (A) (3) (1))

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PROFESSIONAL SEAL

Registered Professional Engineer (Electrical) CERTIFICATE NO 22987 DAVIS L DICKERSON ARIZONA U.S.A.

SIGNATURE

12/01/2022 DATE — 09/30/2023 EXPIRATION DATE

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MODEL:

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20' CASITA B

PAGE LAYOUT

E-1.0 - SYMBOLS & NOTES
E-2.0 - ELEC. FLOOR PLANS

NOTES:

PROJECT # :

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REVIEWED BY: SB

REVISION:

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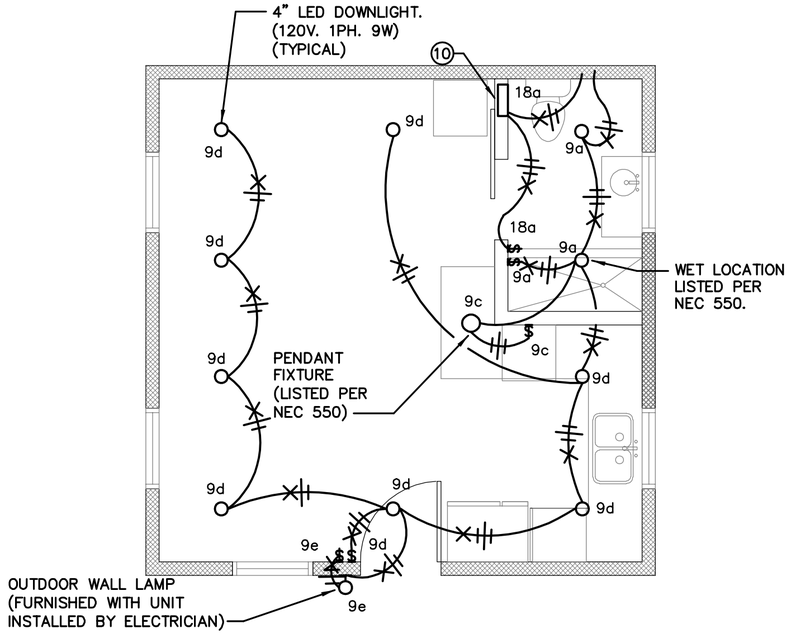
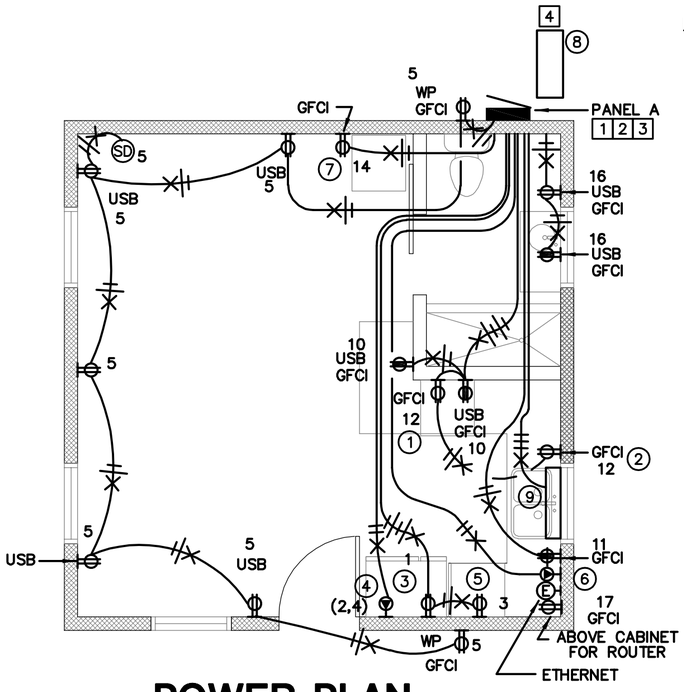


LIGHTING PLAN

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

0' 4' 8' 12' 16'



POWER PLAN

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

0' 4' 8' 12' 16'

POWER NOTES:

1. ELECTRICIAN TO RECEIVE, INSTALL ASSEMBLE AND WIRE OUTDOOR LOAD CENTER COMPLETE. TERMINATE CABLE AND WIRE AT LOAD CENTER.
2. ELECTRICIAN TO PROVIDE ELECTRICAL FEEDER/ELECTRICAL SERVICE FROM SITE TO LOAD CENTER.
3. ELECTRICIAN TO PROVIDE SERVICE GROUND/BUILDING GROUND PER NEC REQUIREMENTS.
4. ELECTRICIAN TO WIRE OUTDOOR CONDENSER UNIT EXTEND WIRING AND INTERCONNECT WIRING FROM INDOOR FAN COIL PER MANUFACTURERS DIRECTIONS. COORDINATE INSTALLATION WITH MECHANICAL CONTRACTOR AS TO NOT IMPEDE CODE REQUIRED CLEARANCE FOR ELECTRICAL PANELS/SERVICE DISCONNECTS.

CIRCUIT PROTECTION NOTES:

- ARC FAULT CIRCUIT INTERRUPTER PROTECTION SHALL BE PROVIDED FOR ALL 15 AND 20A BRANCH CIRCUITS SUPPLYING OUTLETS AND DEVICES IN ACCORDANCE WITH NEC 210.12(A).
- GROUND FAULT CIRCUIT INTERRUPTER PROTECTION SHALL BE PROVIDED FOR ALL 15A AND 20A RECEPTACLES AND EQUIPMENT IN ACCORDANCE WITH NEC 210.8.

PANEL DESIGNATION		A								
TOTAL AREA (SQ FT)		361		SERVICE:		120/240V., 1PH., 3W.				
GENERAL LIGHTING										
LOAD CALC	AREA		361	X			3	WT/SQ FT	1083	W GEN. LTG
							2	WT/SQ FT	722	W GEN. RECPT.
SMALL APPLIANCE			2	X	1	QTY OF UNITS	X 1500	WATTS	3000	W SM. APP.
LAUNDRY			1	X	1	QTY OF UNITS	X 1500	WATTS	1500	W LAUNDRY
						SUBTOTAL			6305	
DEMAND										
1ST 20 KW			AT	100%		6305		=	6,305	
NEXT 120 KW			AT	35%		0	ACTUAL	=	0	
REMAINING KW			AT	25%		0	ACTUAL	=	0	
WATER HEATER	75% FOR 3 OR MORE			NEC 550.18 (B)		4500	X 75%	=	3,375	
DISPOSAL	75% FOR 3 OR MORE			NEC 550.18 (B)		1176	X 75%	=	882	
DISHWASHER	75% FOR 3 OR MORE			NEC 550.18 (B)		1200	X 75%	=	900	
MISC						0	X 100%	=	0	
MISC						0	X 100%	=	0	
FAN COIL						240	X 100%	=	240	
AC						2400	X 100%	=	2,400	
ELECTRIC DRYER						0	X 100%	=	0	
ELECTRIC RANGE				NEC 550.18 (B)		5100	X 80%	=	4,080	
LARGEST MOTOR						2400	X 25%	=	600	
TOTAL DEMAND:									18,782	WATTS
VOLTAGE:		240		1	PHASE				19	KW
AMPS:		78.3								
MINIMUM SERVICE SIZE:			78	AMPS						
SERVICE SIZE:			125A	AMPS						

EQUIPMENT SCHEDULE

MARK	EQUIPMENT DESCRIPTION	VOLTAGE	PHASE	AMPS	CIRCUIT DATA: RECEPTACLE TYPE	CIRCUIT DATA: CIRCUIT NUMBER	CONDUCTORS: QTY.	CONDUCTORS: SIZE	CONDUCTORS: EQ. GND.		HEIGHT
1	DISHWASHER	120	1	10.0	5-20R	A-12	2	#12	#12		6" A.F.F.
2	GARBAGE DISPOSAL	120	1	9.8	5-20R	A-12	2	#12	#12		6" A.F.F.
3	REFRIGERATOR	120	1	12	5-20R	A-1	2	#12	#12		54" A.F.F.
4	RANGE	240	1	40.0	6-50R	A-(2,4)	2	#8	#10		6" A.F.F.
5	MICROWAVE/HOOD	120	1	12	5-20R	A-3	2	#12	#12		
6	WATER HEATER	240	1	18.75	6-30R	A-(6,8)	2	#10	#10		6" A.F.F.
7	WASHER DRYER	120	1	10.0	5-20R	A-14	2	#12	#12		6" A.F.F.
8	OUTDOOR CONDENSER CU-1	240	1	15.0	-	A-(13,15)	2	#12	#12		-
9	FAN COIL UNIT FCU-1	240	1	1.0	-	WIRE TO CU-1	3	#12	#12		-
10	EXHAUST FAN EF-1	120	1	11 WATTS	-	A-18a	2	#12	#12		-

PANEL DATA SCHEDULE

PANEL NAME: _A_

LOCATION OUTDOOR
SERVICE 120/240V.,1PH.,3W.
MAIN BREAKER 125A-3P
MAIN LUGS ONLY
NEUTRAL BUS 125A
GROUND BUS YES
SHORT CIRCUIT RATING 10,000 RMS SYM AMPS

	CONNECTED LOAD	DEMAND LOAD
PHASE A	10.59 KVA	10.89 KVA
PHASE B	9.22 KVA	9.22 KVA
TOTAL	19.81 KVA	20.11 KVA
	83 AMPS	84 AMPS

DEMAND LOAD

KEY: L: LIGHTING	1.50	KVA
R: RECEPTACLES	10.14	KVA
M: MOTORS	8.47	KVA
P: PANELS	0.00	KVA
T: TRANSFORMERS	0.00	KVA
E: EQUIPMENT	0.00	KVA
S & X: SPARE & SPACE	0.00	KVA

FLUSH ☐ SURFACE ■

NOTES: NEMA 3R – SERVICE ENTRANCE RATED – MINIMUM OF 3 # 1 AND 1 # 6 AWG CU SERVICE
* DENOTES LOCK-OUT CLIP: ** DENOTES GFI BREAKER: *** DENOTES VIA TIMECLOCK: **** DENOTES VIA CONTACTOR

CIRCUIT USE	CONNECTED LOAD A	CONNECTED LOAD B	CCT. NO.	CIRCUIT BREAKER	CIRCUIT BREAKER	CCT. NO.	CONNECTED LOAD A	CONNECTED LOAD B	CIRCUIT USE
L: REFRIGERATOR	1,200		1	20A-1P	40A-2P	2	2,500		R: RANGE
R: MICROWAVE		750	3	20A-1P		4		2,500	R:
R: LIVING ROOM # 1	900		5	20A-1P	30A-2P	6	2,250		M: WATER HEATER
S: SPARE		0	7	20A-1P		8		2,250	M:
R: LIGHTING	193		9	20A-1P	20A-1P	10	180		R: KITCHEN
M: KITCHEN CIRCUIT # 2		360	11	20A-1P	20A-1P	12		1,200	R: DISHWASHER/DISPOSAL
M: CU-1/FCU-1	1,800		13	15A-2P	20A-1P	14	1,200		R: WASHER DRYER
M:		1,800	15		20A-1P	16		360	R: BATHROOM
R: ROUTER ABOVE COUNTER	360		17	20A-1P	20A-1P	18	11		M: EXHAUST FAN
S: SPARE		0	19	20A-1P	20A-1P	20		0	S: SPARE
SUB TOTAL	4,453	2,910					6,141	6,310	SUB TOTAL

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PROFESSIONAL SEAL

Registered Professional Engineer (Electrical) CERTIFICATE NO 22987 DAVIS L DICKERSON STATE OF ARIZONA U.S.A.

SIGNATURE

12/01/2022 DATE — 09/30/2023 EXPIRATION DATE

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ARIZONA
20' CASITA B

PAGE LAYOUT

E-1.0 - SYMBOLS & NOTES
E-2.0 - ELEC. FLOOR PLANS

NOTES:

PROJECT # :

DRAWN BY: SR

REVIEWED BY: SB

REVISION:

ISSUE DATE: 11/23/2022

SHEET: E2.0

GENERAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JUSIDICTION AND SUBJECT TO INSPECTION.

2. HOOK-UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONING PLUMBING SYSTEM ARE INCLUDED AS PART OF THE PLUMBING WORK.

3. ALL AUTHORITIES HAVING JURISDICTION SHALL BE NOTIFIED AT LEAST THREE WORKING DAYS PRIOR TO COMMENCEMENT OF WORK.

4. THE WORK INCLUDED PROVIDING THE PLUMBING SYSTEM AND PROVIDING NEW MATERIALS, FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM.

5. THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, FIXTURE AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD ROUGH-IN DRAWINGS FOR PLUMBING FIXTURES FOR EXACT LOCATIONS.

BASIC MATERIALS AND METHODS

1. MATERIALS SHALL BEAR UNDERWRITER LABEL WHERE SUCH STANDARDS HAVE BEEN ESTABLISHED AND LISTED BY UNDERWRITER LABORATORIES, INC. MATERIALS, EQUIPMENT AND APPLIANCES SHALL CONFORM TO THE LATEST STANDARDS OF:
   ANSI -AMERICAN NATIONAL STANDARDS INSTITUTE
   ASHRAE -AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
   ASME -AMERICAN SOCIETY OF MECHANICAL ENGINEERS
   ASTM -AMERICAN SOCIETY FOR TESTING ENGINEERS
   NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION

COORDINATION

1. COORDINATE WITH THE WORK OF OTHER TRADES.

2. REFER TO ARCHITECTURAL DRAWINGS OR CONSULT ARCHITECT FOR EXACT LOCATION OF FIXTURES, EQUIPMENT, ETC., AND FINAL FINISHED ELEVATIONS PRIOR TO ANY INSTALLATION WORK.

3. NO PIPING SHALL BE INSTALLED UNTIL THE DUCTWORK SHOP DRAWINGS HAVE BEEN APPROVED.

4. COORDINATE WITH GENERAL CONTRACTOR WHO SHALL CONSULT WITH THE OWNER FOR ALLOWABLE DAYS THAT WORK CAN BE PERFORMED AND TO SCHEDULE SYSTEM SHUT DOWNS AS REQUIRED FOR RELOCATION OF RISERS, ETC.

DEMOLITION - GENERAL

1. PROVIDE DEMOLITION OF EXISTING SYSTEMS AS SHOWN ON THE DEMOLITION DRAWINGS AND/OR IN THE DEMOLITION NOTES AND AS REQUIRED FOR THE INSTALLATION OF NEW WORK.

INSTALLATION - GENERAL

1. LISTED AND APPROVED THROUGH PENETRATION SYSTEM SHALL BE USED ON ALL PLUMBING PENETRATIONS OF FIRE RATED ASSEMBLIES.

2. ALL PIPING SHALL BE ROUTED IN THE SUSPENDED CEILING SPACE UNLESS OTHERWISE INDICATED. ALL PIPING EXPOSED TO VIEW SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO THE UNDERSIDE OF THE STRUCTURAL STEEL.

3. EXPOSED PIPING IN FINISHED AREA SHALL BE CHROME PLATED WITH CHROME PLATED ESCUTCHEON AT PIPE ENTRY TO FINISHED AREA.

4. PIPING THRU FLOORS SHALL BE WITH PIPE SLEEVES, PIPE SLEEVES SHALL EXTEND 2" ABOVE FINISHED FLOOR LINE. FIRE STOP OPENING AROUND PIPE.

5. ALL PIPING SHALL BE CONCEALED IN WALLS AND BEHIND FIXED FURNISHINGS UNLESS OTHERWISE INDICATED.

6. CUT AND PATCH EXISTING FLOOR, WALL OR CEILING CONSTRUCTION AS REQUIRED FOR THE INSTALLATION OR DEMOLITION WORK.

7. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOIST, ETC. BEFORE DRILLING.

8. WHERE EXISTING INSULATION IS REMOVED FOR DEMOLITION OR INSTALLATION, IT SHALL BE REPLACED AND PATCHED TO MATCH EXISTING.

9. WHEREVER FOUNDATION WALLS, OUTSIDE WALLS, ROOF, ETC. ARE PENETRATED FOR INSTALLATION OF SYSTEMS, THEY SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND SEALED WEATHER TIGHT. WORK SHALL BE PERFORMED BY CRAFTSMAN SKILLED IN THEIR RESPECTIVE TRADES.

10. ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING, PROVIDE AN ISOLATING DIELECTRIC UNION.

11. PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

12. PIPING ROUTED IN EXTERIOR WALLS SHALL BE ROUTED ON THE INTERIOR SIDE OF BUILDING WALL INSULATION.

13. ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, CLEANOUTS, ETC. ARE CONCEALED WITHIN CEILINGS AND WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THRU LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.

14. THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION, CAP PIPE OPENINGS TO EXCLUDE DIRT UNTIL FIXTURES ARE INSTALLED AND FINAL CONNECTIONS HAVE BEEN MADE. SET FIXTURES LEVEL AND IN PROPER ALIGNMENT. INSTALL SUPPLIES IN PROPER ALIGNMENT WITH FIXTURES. INSTALL SILICONE SEALANT BETWEEN FIXTURES AND ADJACENT MATERIAL FOR SANITARY JOINT.

DOMESTIC WATER PIPING

1. PROVIDE PRESSURE REDUCING VALVE ON PLUMBING SYSTEMS WHERE THE INCOMING WATER SERVICE PRESSURE IS IN EXCESS OF 80 PSI.

2. HOT AND COLD WATER PIPING SHALL BE TYPE L COPPER TUBING WITH WROUGHT COPPER FITTINGS AND SWEAT CONNECTIONS. PROVIDE MINIMUM 12" HIGH FULL AIR CHAMBER AT EACH FIXTURE STOP. JOINTS SHALL BE SOLDERED (LEAD FREE). HOT AND COLD WATER PIPING BELOW GRADE SHALL BE TYPE K COPPER TUBING. NO FITTINGS SHALL BE ALLOWED BELOW GRADE.

3. INSULATE ALL HOT AND COLD WATER PIPING BOTH VERTICALLY AND HORIZONTALLY, IN CEILING AND CONCEALED BEHIND WALLS COMPLETELY. PROVIDE 1" PREFORMED FIBERGLASS ASJ-VB, FLAME SPREAD 25, SMOKE DEVELOPED 50, ASTM C-547. MINIMUM INSULATION 'R' VALUE SHALL BE AS REQUIRED BY ADOPTED ENERGY CODE.

4. PROVIDE ISOLATION VALVES FOR EACH BRANCH OFF MAIN SUPPLY.

5. SHUT-OFF VALVES WITH UNIONS SHALL BE PROVIDED FOR SERVICE TO EACH PLUMBING FIXTURE OR OTHER EQUIPMENT ITEM TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT.

6. VALVE LOCATION TAGS REQUIRED ON ALL SHUT-OFFS AND LOCATION CHART REQUIRED.

7. THE DOMESTIC WATER SYSTEM SHALL BE FLUSHED, PRESSURE TESTED AND PURIFIED. TEST WATER UNDER 150 PSIG HYDROSTATIC PRESSURE FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT UNTIL STANDARDS ARE ACHIEVED. ALL PIPING SYSTEMS SHALL BE SUBJECTED TO A DISINFECTION PROCEDURE PER THE RULES AND REGULATIONS OF THE LOCAL AUTHORITIES.

SANITARY SEWER, STORM SEWER, AND VENT PIPING

1. ALL OPENINGS IN DRAINAGE AND/OR VENT SYSTEMS AS A RESULT OF DEMOLITION OR INSTALLATION ROUGH-IN SHALL BE PROTECTED WITH A TEST PLUG THAT IS SECURELY LOCKED IN PLACE UNTIL FINAL FINISHED CONNECTIONS ARE INSTALLED.

2. PROVIDE A COMPLETE SYSTEM OF SCHEDULE 40 GALVANIZED STEEL VENT RISERS ABOVE FLOOR. ALL VENTS SHALL BE CARRIED THROUGH ROOF WITH FLASHING. VENT SHALL BE MINIMUM 10' AWAY FROM ANY OUTSIDE AIR INTAKES OR FURTHER IF REQUIRED BY LOCAL CODES. (ALTERNATE MATERIALS MAY BE ALLOWED IF APPROVED BY LOCAL CODE AUTHORITIES.)

3. CONDENSATE AND INDIRECT DRAIN PIPING SHALL BE TYPE M COPPER TUBING UP TO 1" ID. TYPE DWV TUBING AND FITTINGS FOR 1-1/4" AND LARGER SIZE.

4. DRAINAGE PIPING UNDERGROUND AND OUTSIDE THE BUILDING SHALL BE CAST IRON PIPE AND FITTINGS. (ALTERNATE MATERIALS MAY BE ALLOWED IF APPROVED BY LOCAL CODE AUTHORITIES.)

5. DRAINAGE PIPING INSIDE THE BUILDING SHALL BE PVC PIPE AND FITTINGS WITH SCHEDULE 40 GALVANIZED STEEL VENTS. (ALTERNATE MATERIALS MAY BE ALLOWED IF PVC NOT APPROVED BY LOCAL CODE AUTHORITIES.)

6. ANY SANITARY SEWER RECEIVING WASTE FROM ANY EQUIPMENT WITH A DISCHARGE TEMPERATURE EXCEEDING 140° F MUST BE CAST IRON.

7. PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE. FIELD VERIFY LOCATION OF ALL EXISTING CLEANOUTS AND ADJUST TO NEW FINISHED FLOOR ELEVATIONS AND PROVIDE ACCESS PANELS FOR ALL WALLS AND CEILINGS.

8. ALL DRAINAGE PIPING SHALL BE UNIFORMLY PITCHED, 1/4" PER FOOT UNLESS OTHERWISE REQUIRED BY EXISTING CONDITIONS, MINIMUM SLOPE SHALL BE PER CODE.

9. ALL FLOOR DRAINS SHALL BE CONNECTED TO THE SANITARY SEWER SYSTEM.

10. THE DRAINAGE SYSTEMS SHALL BE FLUSHED AND PRESSURE TESTED.

SUBSTITUTIONS

1. THE NAMING OF MANUFACTURER'S IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED AS ELIMINATING THE MATERIALS, PRODUCTS OR SERVICES OF OTHER MANUFACTURER'S AND SUPPLIERS HAVING EQUIVALENT ITEMS. ANY SUBSTITUTED ITEMS MUST BE EQUAL TO THOSE SPECIFIED, PROVIDE COST SAVINGS AND BE AVAILABLE TO MEET THE CONSTRUCTION SCHEDULE.

PLUMBING SYMBOLS

—CWS—	COLD WATER SUPPLY PIPING
—HWS—	HOT WATER SUPPLY PIPING
— SAN —	SANITARY WASTE PIPING
- - -V- - -	SANITARY VENT PIPING
—— - ——	COLD WATER SUPPLY PIPING
—— - - ——	HOT WATER SUPPLY PIPING
- - - - - - -	SANITARY VENT PIPING
BFP	BACKFLOW PREVENTER
CO	CLEANOUT
CP	CHROME PLATED
DN	DOWN
DW	DISHWASHER
ET	EXPANSION TANK
FD	FLOOR DRAIN
GALV	GALVANIZED
INV. EL.	INVERT ELEVATION
IM	ICE MAKER
LAV	LAVATORY
NC	NEW CONNECTION
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH
S	SANITARY
SHR	SHOWER
SK	SINK
TMV	THERMOSTATIC MIXING VALVE
V	VENT
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WH	WATER HEATER
	LINE SIZE BALL GATE VALVE
	LINE SIZE BALANCING VALVE
	LINE SIZE BALL VALVE (2" & SMALLER) OR LINE SIZE BUTTERFLY VALVE (2-1/2" & LARGER)
	LINE SIZE CHECK VALVE
	LINE SIZE UNION
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	REDUCER
	THERMOMETER

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PROFESSIONAL SEAL

REGISTERED PROFESSIONAL ENGINEER (MECHANICAL) CERTIFICATE NO. 35347 JOSEPH G. THOMAS DATE SIGNED 12/02/22 ARIZONA, U.S.A.

EXPIRATION DATE: 9/30/24

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MODEL:
20' CASITA B

PAGE LAYOUT
PLUMBING NOTES, SYMBOLS & ABBREVIATIONS

NOTES:

PROJECT # :
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REVIEWED BY: JT
REVISION:
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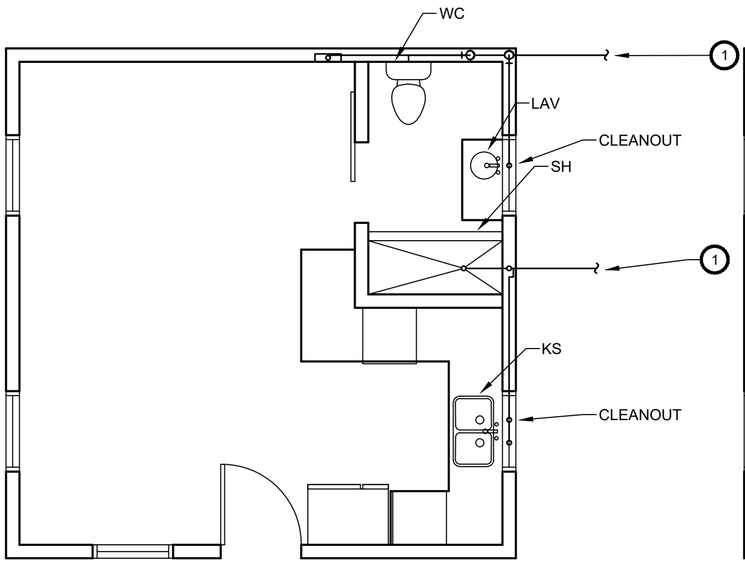
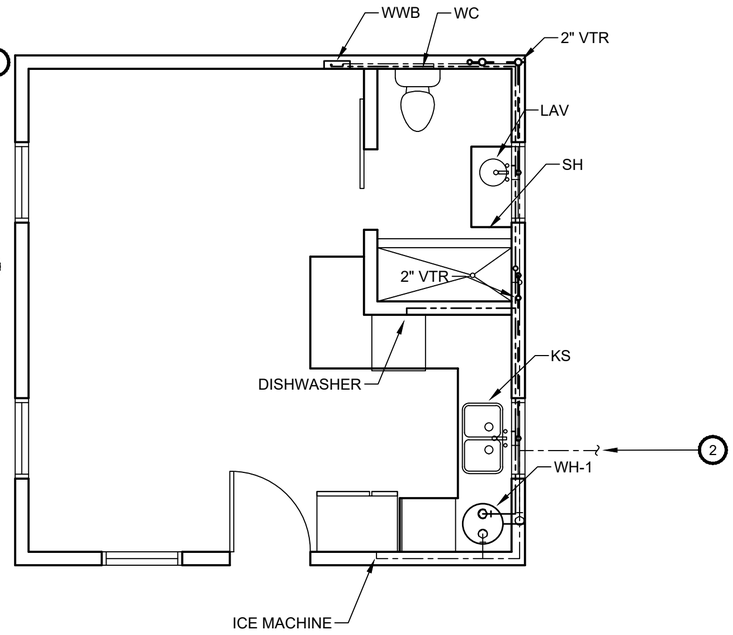
SHEET: P1.0

PLAN NOTES

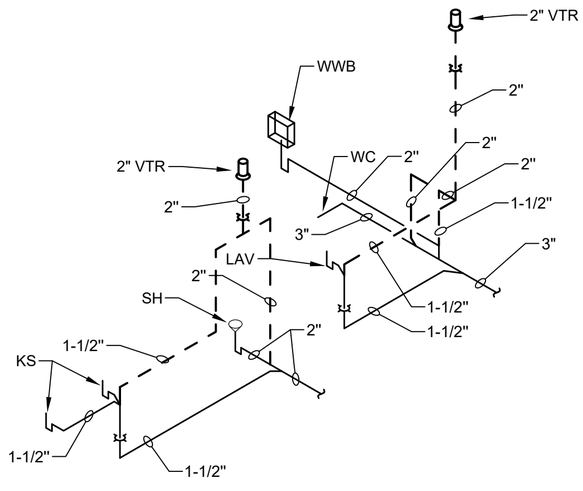
1	PROVIDE 2" & 3" SANITARY PIPING TO THE NEW BOXABL HOUSE. COORDINATE WITH CIVIL DRAWINGS THE EXACT LOCATION OF THE NEW SANITARY PIPING.
2	PROVIDE 3/4" DOMESTIC COLD WATER TO NEW BOXABL HOUSE. COORDINATE WITH CIVIL DRAWINGS THE EXACT LOCATION OF THE NEW DOMESTIC COLD WATER PIPING.



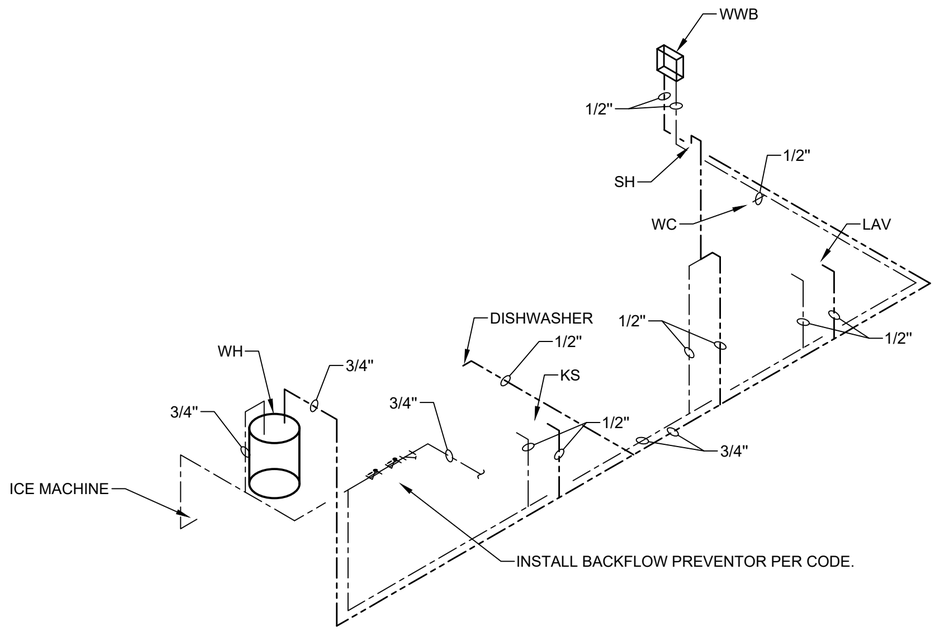
1 PLUMBING SANITARY PLAN
1/4" = 1'-0"



2 PLUMBING DOMESTIC WATER PLAN
1/4" = 1'-0"



3 PLUMBING SANITARY ISOMETRIC
NOT TO SCALE



4 PLUMBING DOMESTIC WATER ISOMETRIC
NOT TO SCALE

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MODEL:
20' CASITA B

PAGE LAYOUT
PLUMBING PLANS

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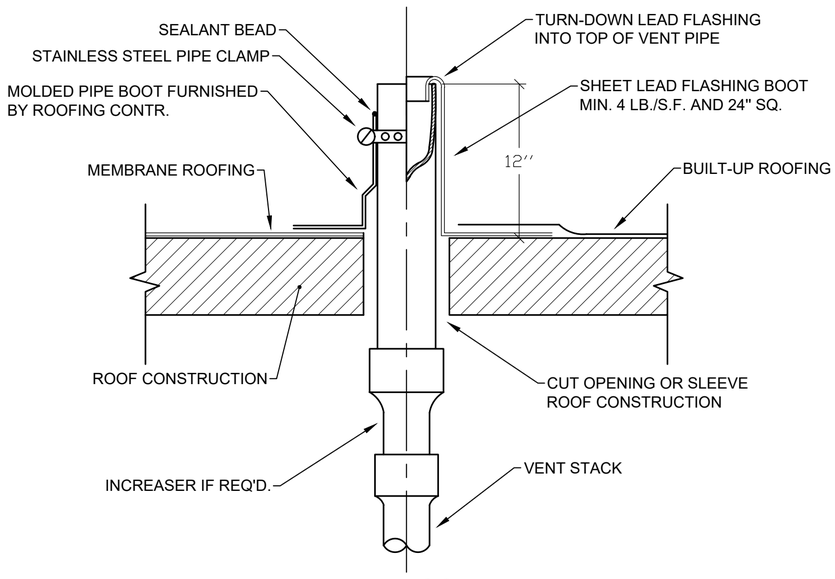
FIXTURE SCHEDULES

FIXTURE	TYPE	MFG'R.	MODEL NO.	COLOR	FAUCET	TRAP	TRIM	SUPPLY FITTING	REMARKS
WC	WATER CLOSET	SANIFLUSH	083 & 005	WHITE	N/A	INTERGRAL P-TRAP	N/A	3/8"	
LAV	LAVATORY	BEELEE	BL6790BH	MATTE BLACK	1.2 GPM	N/A	MATTE BLACK	3/8"	
KS	KITCHEN SINK	MOEN	5925BL	MATTE BLACK	1.5 GPM	N/A	MATTE BLACK	3/8"	
SH	SHOWER	MOEN	T2472EPBL	MATTE BLACK	1.75 GPM	N/A	MATTE BLACK	1/2"	
WWB-1	WASHER WALL BOX	GUY GREY	B200	GREY	N/A	N/A	N/A	1/2"	

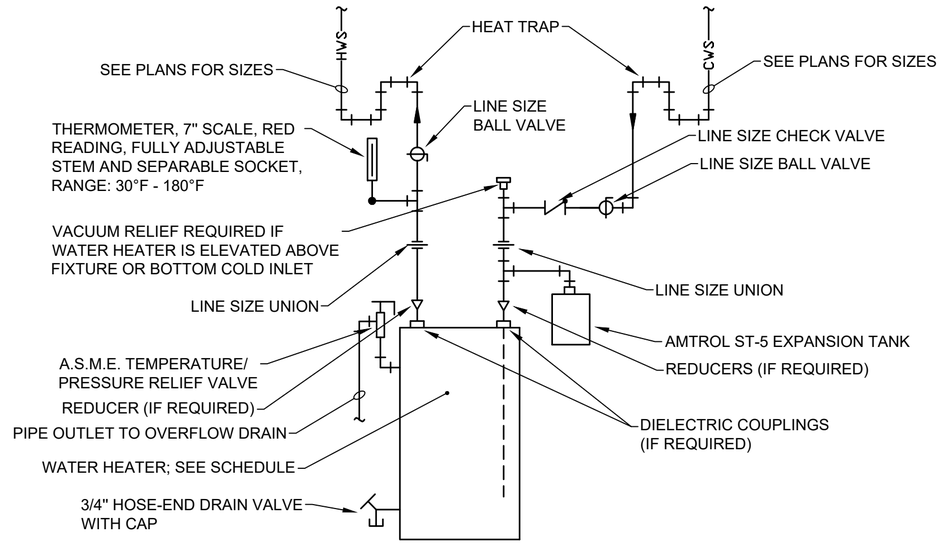
WATER HEATER SCHEDULE

DESIG'N.	TYPE	MFG'R.	MODEL NO.	STORAGE GALLON CAPACITY	ELECTRICAL			RECOVERY AT 80°F RISE	TANK LINING	WARRANTY	REMARKS
					KW	VOLTAGE	PHASE				
WH-1	TANK	A.O. SMITH	ENLB-30	30	4.5	240	SINGLE	23	YES	YES	



VENT THRU ROOF DETAIL

NOT TO SCALE



DOMESTIC WATER HEATER PIPING DETAIL - ELECTRIC

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MODEL:
20' CASITA B

PAGE LAYOUT
PLUMBING DETAILS

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