P4 PANELBOARD

120/240 Single, 1PH, 3W
100 A, M.C.B.
(8) AIC
SURFACE
EQUIPMENT GROUND BUS

SERVES: HOUSE
LOCATION: GARAGE

	DESCRIPTION	WIRE	BRKR	PL	A		B		PL	BRKR	WIRE	DESCRIPTION	
1	LIGHTING GARAGE / MASTER (6)	12	20 A	1	0.93	2.87			2	25 A	10	CU-1	2
3	LIGHITNG LIVING AREA (6)	12	20 A	1			1.12	2.87	--	--	--	--	4
5	LIGHTING BEDROOMS / DINING (6)	12	20 A	1	0.90	1.50			1	15 A	12	GAS FURNACE (6)	6
7	RECEPTS KITCHEN (6)	12	20 A	1			0.72	--	1	--	--	SPACE	8
9	RECEPT KITCHEN COUNTER (6)	12	20 A	1	1.50	--			1	--	--	SPACE	10
11	RECEPT KITCHEN COUNTER (6)	12	20 A	1			1.50	0.10	1	20 A	12	GAS WATER HEATER (6)	12
13	REFRIGERATOR (6)	12	20 A	1	1.08	0.18			1	20 A	12	GAS RANGE (6)	14
15	DISHWASHER / DISPOSAL (6)	12	20 A	1			1.20	1.20	1	20 A	12	GAS DRYER (6)	16
17	RANGE HOOD OR MICROWAVE (6)	12	20 A	1	1.20	2.50			2	30 A	10	FUTURE ELEC DRYER	18
19	RECEPTS DINING ROOM (6)	12	20 A	1			0.54	2.50	--	--	--	--	20
21	RECEPTS LIVING ROOM (6)	12	20 A	1	0.54	1.50			1	20 A	12	WASHER (6)	22
23	RECEPTS LIVING ROOM (6)	12	20 A	1			0.72	1.20	1	20 A	12	GARAGE DOOR OPENER (6)	24
25	RECEPTS MASTER BDRM (6)	12	20 A	1	0.54	0.90			1	20 A	12	RECEPTS EXTERIOR (6)	26
27	RECEPTS MASTER BDRM (6)	12	20 A	1			0.72	0.54	1	20 A	12	RECEPTS GARAGE (6)	28
29	RECEPT MASTER BATH (6)	12	20 A	1	0.18	0.54			1	20 A	12	RECEPTS GARAGE (6)	30
31	RECEPTS BEDROOM 2 (6)	12	20 A	1			0.90	0.72	1	20 A	12	RECEPTS HALL / LAUNDRY (6)	32
33	RECEPTS BEDROOM 2 / 3 (6)	12	20 A	1	0.90	0.07			1	20 A	12	SMOKE DETECTORS (6)	34
35	RECEPTS BEDROOM 3 (6)	12	20 A	1			0.72	0.21	1	20 A	12	MASTER CLOSET (6)	36
37	RECEPT BATHROOM (6)	12	20 A	1	0.18	0.00			1	20 A	--	SPARE (6)	38
39	SPACE	--	--	1			--	--	1	--	--	SPACE	40
41	SPACE	--	--	1	--	--			1	--	--	SPACE	42
		TOTAL CONNECTED			18.00		17.48		KVA				
		TOTAL CONNECTED			149.98		145.67		AMPS			SEE RESIDENTIAL LOAD CALCS	

LIGHTING FIXTURE SCHEDULE

TYPE	QTY	MANUFACTURER	CATALOG NUMBER	VOLT	WATT	LAMP	DESCRIPTION
A	12	ELITE	REL637-1200L-DIMTR-120-30K-90-WH	120V	16 VA	LED	6" RECESSED CAN LIGHT, DAMP LOCATION RATED, RT-CL-WH
B	1	GOLDEN	HOMESTEAD 4 LIGHT MINI CHANDELIER	120V	48 VA	LED	DECORATIVE DINING ROOM LIGHT, PROVIDE 100W EQV E26 3000K LED BULBS
C	2	TBD	TBD	120V	18 VA	LED	BAR PENDANT LIGHT
D	2	COMMERCIAL	9IN 120W EQU MUSHROOM FLUSH MOUNT	120V	32 VA	LED	9" DOME LIGHT
E	2	VOGUE	WS-3127-3000K	120V	39 VA	LED	3' VANITY LIGHT
F	4	EELP	CGF7-19L-120V-30K	120V	480 VA	LED	CEILING FAN W/ LIGHT - VEIRIFY COLOR W/ ARCHITECTURAL
G	3	ELITE	4-OEC-LED-5000L-DIM10-40K-85	120V	37 VA	LED	4' GARAGE LIGHT
H	4	HAMPTON	WICKFORD 1-LIGHT WALL LANTERN	120V	16 VA	LED	WALL MOUNTED PORCH LIGHT, PROVIDE 100W EQV E26 4000K LED BULB
J	2	BROAN	679	120V	240 VA	LED	BATHROOM EXHAUST FAN W/ LIGHT - REF MECHANICAL

TYPICAL MOUNTING HEIGHTS

ALL HEIGHTS ARE FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE. DEVICES ABOVE A COUNTERTOP SHALL BE MOUNTED 4" ABOVE THE BACKSPLASH TO THE CENTERLINE.

RECEPTACLES	+18"
TELEPHONE JACKS	+48"
DATA JACKS	+18"
SWITCHES	+44"

PANELBOARD NOTES (#):

1. TERMINATE GROUND ON ISOLATED GROUND BUS.
2. PROVIDE LOCKING DEVICE (LOCK-OFF FOR MAINTENANCE).
3. PROVIDE LOCKING DEVICE (LOCK-ON FOR CRITICAL LOAD).
4. PROVIDE GFCI BREAKER (PERSONNEL PROTECTION 5 mA).
5. PROVIDE GFCI BREAKER (EQUIPMENT PROTECTION 30 mA).
6. PROVIDE COMBINATION ARC FAULT CIRCUIT BREAKERS WHERE INDICATED PER NEC 210.12(A).
7. CONDUCTOR SIZE HAS BEEN INCREADED TO ACCOUNT FOR VOLTAGE DROP. SIZE GROUNDING CONDUCTOR PROPORTIONALLY PER NEC.
8. COORDINATE PANELBOARD AIC RATING WITH UTILITY.
9. REFERENCE ONE-LINE DIAGRAM FOR WIRE SIZE/QUANTITY.

RESIDENTIAL LOAD CALCULATION

PANELBOARD VOLTAGE	=	240 V
DWELLING UNIT AREA	=	1210 SQFT
GENERAL LIGHTING/POWER (3W/SQFT)	=	3630 VA
SMALL APPLIANCE CIRCUIT (2 CIRCUITS)	=	3000 VA
WASHER (ASSUMED)	=	1500 VA
DRYER (MINIMUM)	=	5000 VA
REFRIGERATOR (ASSUMED)	=	1080 VA
VENT HOOD / MICROWAVE (ASSUMED)	=	1200 VA
DISHWASHER / DISPOSAL (ASSUMED)	=	1200 VA
GAS RANGE (ASSUMED)	=	240 VA
GAS WATER HEATER (ASSUMED)	=	100 VA
SUBTOTAL	=	16950 VA
FIRST 10KVA AT 100%	=	10000 VA
REMAINDER AT 40%	=	2780 VA
CONDENSING UNIT / HEAT PUMP	=	5736 VA
GAS FURNACE (0%)	=	1500 VA
HVAC LOAD PER NEC 220.82(C)	=	5736 VA
TOTAL FEEDER LOAD PER NEC 220.85	=	**18516 VA**
	=	**77 A**

KEYNOTES

E01	REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.
E02	MOUNT FIXTURE HORIZONTALLY AND CENTER ABOVE VANITY MIRROR.
E03	SEAL FIXTURE TO CEILING WITH WEATHERPROOF SILICONE PER MANUFACTURERS INSTRUCTION. PROVIDE SHOWER LENS AND TRIM FOR FIXTURE.
E04	WHERE POSSIBLE, SWITCH INTEGRAL LIGHT AND FAN SEPERATELY.
E05	DISCONNECT SWITCH SIZED PER MANUFACTURERS MOCP RATING (MAXIMUM OVER-CURRENT PROTECTION).
E06	PROVIDE CONNECTION OF THERMOSTAT TO FCU USING 18/7 THERMOSTAT WIRING. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL LOCATION PRIOR TO ROUGH-IN.
E07	LOCATION OF PUSHBUTTON CONTROLS FOR GARAGE DOOR OPENER.
E08	DISHWASHER RECEPTACLE TO BE GFCI TYPE. GARBAGE DISPOSAL SWITCH FOR STANDARD RECEPTACLE SHALL BE INTALLED AFTER DISHWASHER RECEPTACLE TO ENSURE SWITCH OPERATION DOES NOT CONFLICT WITH GFCI FUNCTIONALITY.
E09	RECEPTACLE FOR RANGE HOOD OR OVER THE RANGE MICROWAVE SHALL BE INTALLED IN CABINETRY OVER RANGE. COORDINATE ROUTING OF CORD THROUGH MILLWORK IN FIELD.
E10	COORDINATE METER CAN LOCATION AND REQUIREMENTS WITH UTILITY PRIOR TO SITE WORK OR ROUGH-IN.
E11	TRANSFER CENTER WITH MANUAL TRANSFER SWITCH CONTAINING A MINIMUM OF TWO BREAKERS. GENERATOR TWIST LOCK RECEPTACLE LOCATED BELOW.
E12	CONNECT LIGHT AND RECEPTACLE IN HARDENED SPACE ON A DEDICATED CIRCUIT TO BE ROUTED THROUGH TRANSFER CENTER PRIOR TO LANDING ON ELECTRICAL PANEL.

GENERAL NOTES:

1. NOT ALL SYMBOLS MAY APPLY TO ALL SHEETS.
2. PROVIDE ALL POWER CIRCUITS, WIRING, CONDUIT, OUTLETS, DISCONNECT SWITCHES, ETC., AND PROVIDE FINAL ELECTRICAL CONNECTIONS TO ALL EQUIPMENT.
3. PROVIDE A GROUNDING CONDUCTOR FOR ALL CIRCUITS IN ACCORDANCE WITH N.E.C. ARTICLE 250. VERIFY EXACT CONNECTIONS REQUIRED FOR ALL EQUIPMENT PRIOR TO ROUGH--IN.
4. THE USE OF EXTENSION CORDS OR POWER STRIPS AS PERMANENT WIRING TO EQUIPMENT, LIGHTING, FANS, ETC. IS PROHIBITED. ALL ELECTRICAL WIRING SHALL BE IN COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE.
5. ALL ELECTRICAL DEVICE AND COVER PLATE COLORS TO BE COORDINATED WITH ARCHTIECTURAL FINISH PLANS.
6. ALL DEVICES LOCATED WITHIN CLOSE PROXIMITY TO ONE ANOTHER SHALL BE COVERED BY A SINGLE FACE PLATE WHENEVER POSSIBLE.
7. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITHT THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE CONFLICTS ARISE, THE MOST STRINGENT REQUIREMENTS SHALL TAKE PRECEDENCE.
8. BIDDERS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS TO FULLY UNDERSTAND THE NATURE AND SCOPE OF THE WORK PRIOR TO SUBMITTING A BID. THE SUBMISSION OF A BID IS CONSIDERED EVIDENCE THAT SUCH EXAMINATION HAS BEEN PERFORMED AND THAT COMPLIANCE WITH ALL GOVERNING CODES/REQUIREMENTS IS INCLUDED IN BID. LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FORESEEABLE DIFFICULTIES ENCOUNTERED SHALL NOT BE ALLOWED. ALL PERMIT AND INSPECTION FEES SHALL BE INCLUDED IN BASE BID.

GENERAL POWER NOTES:

1. PROTECT ALL ADJACENT SURFACES DURING CONSTRUCTION. ANY SURFACES DAMAGED SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL SYSTEMS WITH OTHER TRADES. SEE MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL AND PLUMBING EQUIPMENT.
3. PROVIDE A IN-GROUND PULL BOX EVERY 200' FOR ALL UNDERGROUND CONDUIT RUNS.
4. WIRING DEVICES: DEVICE MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTER OF OUTLET BOX UNLESS NOTED OTHER WISE ON PLANS. COORDINATE THE STANDARD MOUNTING HEIGHTS WITH MASONRY. REFERENCE TYPICAL MOUNTING HEIGHT SCHEDULE FOR MOUNTING HEIGHTS.
5. WIRING SHALL INCLUDE FINAL CONNECTIONS TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE PANELBOARD IDENTIFICATION SCHEDULES UPON COMPLETION.
7. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUITS AND DE-RATE CURRENT CARRYING CONDUCTORS PER NEC.
8. PROVIDE APPROPRIATE HANDLE TIES FOR TWO SINGLE POLE CIRCUIT BREAKERS AS REQUIRED WHEN USING MULTI-WIRE BRANCH CIRCUITS PER NEC ARTICLE 210.4 PART (B).
9. PROVIDE BLANK FILLERS FOR ALL UNUSED SPACES IN PANELBOARDS WHERE FACTORY KNOCKOUTS HAVE BEEN REMOVED.
10. FEEDERS SHALL CONFORM TO NEC 215.2. BRANCH CIRCUITS AND VOLTAGE DROP REQUIREMENTS SHALL CONFORM TO NEC 210.19(A).
11. ONLY FEEDER CIRCUITS SPECIFICALLY NOTED AS UNDERGROUND ON THE ONE-LINE DIAGRAM AND BRANCH CIRCUITS NOTED BY LEGEND SHALL BE INSTALLED UNDER SLAB. ALL OTHER FEEDER AND BRANCH CIRCUITS SHALL BE INSTALLED OVERHEAD WHERE POSSIBLE. ALL SITE CONDUITS SHALL BE INSTALL AT A MINIMUM OF 24" UNDER FINISHED GRADE.
12. HOME RUNS ARE SHOWN SEPARATELY TO PRESERVE DRAWING CLARITY. COMBINE HOME RUNS SERVING LIGHTING AND WIRING DEVICES AS ALLOWED BY THE NEC.
13. NO EXPOSED CONDUIT OR WIRING IN FINISHED SPACES SHALL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM ARCHITECT/ENGINEER.

GENERAL LIGHTING NOTES::

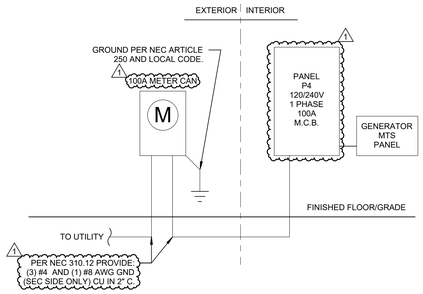
1. PROVIDE ALL ACCESSORIES REQUIRED FOR FUNCTIONAL ELECTRICAL INSTALLATION AND SUPPORT.
2. PROVIDE DRY WALL/PLASTER KIT FOR FIXTURES MOUNTED ON GYPBOARD PER CEILING PLAN.
3. LIGHT FIXTURES SHALL BE SUPPORTED IN ACCORDANCE WITH NEC ARTICLE 300; SPECIFICALLY PARAGRAPH 300.11(A).
4. COORDINATE EXACT FIXTURE LOCATIONS WITH STRUCTURE, DIFFUSERS, ETC.
5. THE LOCATION OF DUCTS, PIPE AND EQUIPMENT AS SHOWN ON THE DRAWINGS IS DIAGRAMMATIC AND SCHEMATIC. IT IS THE RESPONSIBILITY OF OF THE CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES BEFORE INSTALLATION. LIGHT FIXTURE LOCATIONS SUPERSEDE HVAC DUCTWORK, GRILLES AND DIFFUSERS. OFFSET TO AVOID STRUCTURE AND/OR ANY OTHER PIPING.
6. REFER TO LIGHT FIXTURE SCHEDULE FOR ALL LIGHT FIXTURES THAT ARE IC RATED. ALL RECESSED FIXTURES SHALL ADHERE TO ARTICLE 410.116 OF THE NATIONAL ELECTRICAL CODE (NEC).
7. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS FOR ALL LIGHT FIXTURES AND LIGHT CONTROLS.

ELECTRICAL LEGEND

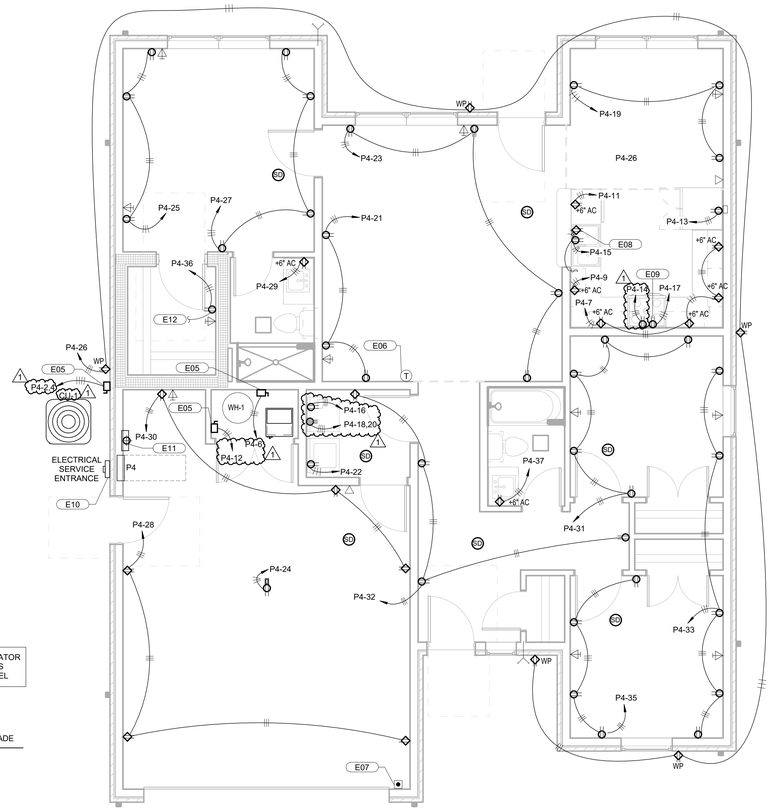
(NOT ALL SYMBOLS MAY BE USED)

SYMBOL	DESCRIPTION
J	JUNCTION BOX
	RECEPTACLE, 120V DUPLEX
	RECEPTACLE, 120V GFI DUPLEX
	RECEPTACLE, 240V SIMPLEX
	RECEPTACLE, 120V QUADPLEX
	PANELBOARD
	DISCONNECT SWITCH, NON-FUSED
	DISCONNECT SWITCH, FUSED
$	SWITCH, SINGLE POLE
$3	SWITCH, 3-WAY
$4	SWITCH, 4-WAY
$D	SWITCH, DIMMER
	LIGHT FIXTURE, LINEAR
	LIGHT FIXTURE, CEILING MOUNTED
	LIGHT FIXTURE, WALL MOUNTED
	CIRCUIT, CONCEALED IN WALLS OR CEILING
	CIRCUIT, CONCEALED IN SLAB
	TELEPHONE
	DATA
	DATA AND COAXIAL CONNECTION UNDER SINGLE FACE PLATE
SD	SMOKE / CARBON MONOXIDE DETECTOR

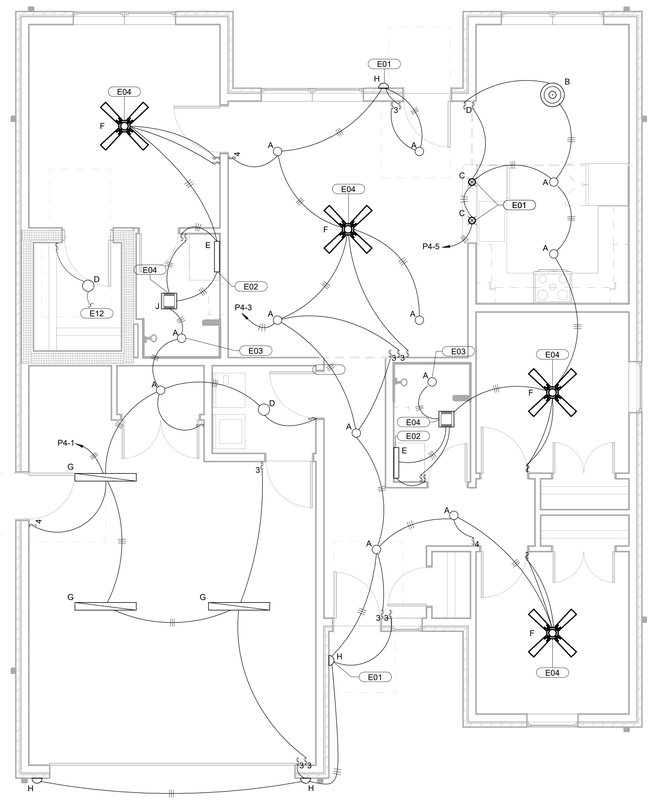
ABBREVIATIONS
AFF -- ABOVE FINISHED FLOOR
WP -- WEATHER PROOF
AFCI -- ARC FAULT CIRCUIT INTERUPTING
GFCI -- GROUND FAULT CIRCUIT INTERRUPTING
AC -- ABOVE COUNTER
TR -- TAMPER RESISTANT
CF -- CEILING FAN
EC -- ELECTRICAL CONTRACTOR
EF -- EXHAUST FAN
NTS -- NOT TO SCALE
FCU -- FAN COIL UNIT (INDOOR)
HP -- HEAT PUMP (OUTDOOR)
WH -- WATER HEATER
UNO -- UNLESS OTHERWISE NOTED



3 ELECTRICAL ONE-LINE
N.T.S.



2 POWER PLAN
1/4" = 1'-0"



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

blue river ARCHITECTS
A Native American Owned Firm

LICENSED PROFESSIONAL ENGINEER
AARON MORSE
26489
OKLAHOMA
3-3-23

CHEROKEE NATION TAHLEQUAH HOUSING DEVELOPMENT - TYPE 4

E101
TYPE 4 ELECTRICAL PLAN

MPW
MPW ENGINEERING, LLC
110 W. 7TH STREET • SUITE 600
TULSA, OK 74119
(918) 582-4088 • FAX (918) 582-4087
OK COA #2940 • EXP 06/30/2022

BLUE RIVER PROJECT NUMBER:
20220104

ISSUE DATE:
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ISSUE:
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1	ASI#1	03/01/2023

SHEET NAME:
TYPE 4 ELECTRICAL PLAN

SHEET NUMBER:
E101

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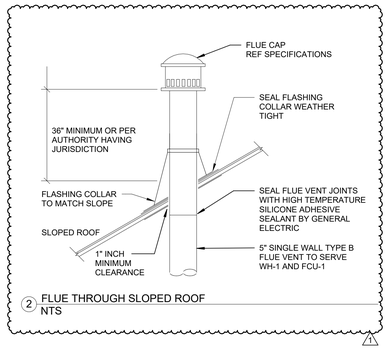
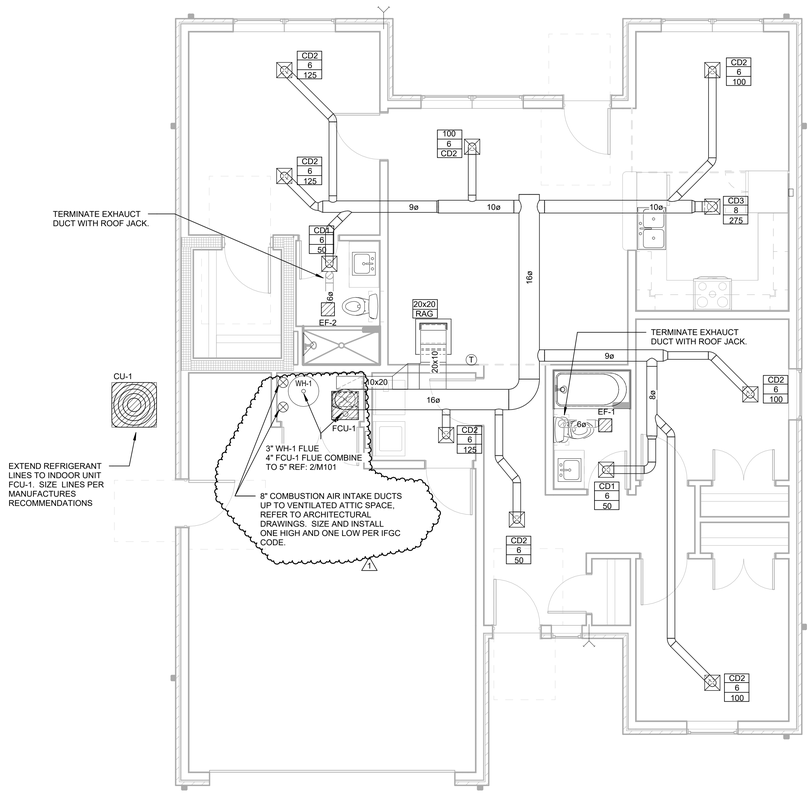


2 FLUE THROUGH SLOPED ROOF
NTS



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

1

CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER & MODEL	RATED COOLING CAPACITY (BTU/H)	HEATING CAPATITY MAX/MIN (BTU/H)	ELECTRICAL			ELECTRICAL			SEER	WEIGHT	NOTES
				VOLTS	HZ	PHASE	MCA	MOCP	RLA			
CU-1	DAIKIN DX6VSS3610	33,600	N/A	230 V	60 Hz	1	23.9 A	25 A	16.8 A	16.2	150 lb	1,2,3,4,5

NOTES:

1. ALL UNITS SHALL BE SUPPLIED ASCOMPLETE SYSTEMS WITH EXPANSION VALVES (TXV), FILTER-DRYERS, SIGHT GLASS, LOW AMBIENT HEATER, CRANKCASE HEATER AND R410A REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR SHALL VERIFY WITH THE UNIT MANUFACTURER THAT REFRIGERANT LINES ARE WITHIN THE RECOMMENDED ALLOWABLE LINE LINGTHS OF RUN AND RISE. CONTACT THE ENGINEER IF LINE LENGTHS EXCEED THESE REQUIREMENTS.
3. INSTALL NEW UNITS ON 4" THICK CONCRETE PAD SUITABLE FOR HVAC SYSTEMS. ANCHOR UNIT TO PAD.
4. INSTALLING CONTRACTOR SHALL BE CERTIFIED BY THE MANUFACTURER TO BID AND INSTALL THE EQUIPMENT.
5. FIELD INSTALLED DISCONNECT SWITCH BY DIF. 26 ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.

FURNACE/COIL UNIT SCHEDULE

MARK	MANUFACTURER	MODEL #	S/A CFM	ESP	HEATING OUTPUT CAPACITY (BTU/H)	ELECTRICAL					SUPPLY FAN		CONFIG	NOTES
						V	Hz	PHASE	MCA	MOCP	MOTOR HP	FLA		
FCU-1	DAIKIN	DC80TN0804BN	1200	0.5	64,000	115 V	60 Hz	1	12 A	15 A	0.75	5 A	VERTICAL	1,2,3,4

NOTES:

1. INSTALL REFRIGERANT LINES PER MANUFACTURER GUIDELINES BASED ON RUN LENGTH.
2. EXTEND CONDENSATE DRAIN PIPING TO NEARES FLOOR DRAIN WITH CODE APPROVED AIR GAP.
3. PROVIDE MANUFACTURER RECOMMENDED 7 DAY PROGRAMMABLE THERMOSTAT.
4. PROVIDE DAIKIN CASED COIL CAPF3137B6 NOMINAL 3 TON COOLING COIL.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER & MODEL	LOCATION	MOUNTING	CFM	ESP	SONES	ELECTRICAL				SPEEDS	REMARKS
							V	P	Hz	WATTS		
EF-1	BROAN 679	BATHROOM	CEILING	70	0.1	3.5	120 V	1	60 Hz	240 W	1	A, B,C,E
EF-2	BROAN 679	BATHROOM	CEILING	70	0.1	3.5	120 V	1	60 Hz	240 W	1	A, C,E,G

NOTES:

1. REFER TO DIVISION 23 SPACIFICATIONS.
2. REFER TO SPECIFICATIONS FOR ACCEPTABLE ALTERNATE MANUFACTURERS.
3. INSTALL FAN SYSTEM COMPLETE PER MANUFACTURER'S INSTRUCTIONS.
4. MECHANICAL CONTRACTOR SHALL COORDINATE FAN OPERATION AND RELAYS REQUIRED WITH THE ELECTRICAL WORK.
5. PROVIDE LABEL FOR EACH PIECE OF MECHANICAL EQUIPMENT. COORDINATE LABEL NAMING CONVENTION WITH OWNER.

REMARKS:

A. STANDARD DISCONNECT. COORDINATE LOCATION WITH ELE TRICAL CONTRACTOR.
B. PROVIDE ROUND WALL CAP.
C. INTEGRAL BACKDRAFT DAMPER
D. FAN CONTROLLED BY TIME CLOCK TO RUN CONTINUOUSLY DURING HOURS OF OPERATION. REFER TO ELECTRICAL DRAWINGS.
E. FAN CONTROLLED BY WALL SWITCH. REFER TO ELECTRICAL DRAWINGS FOR LOCATION BY BAR. PROVIDE LABEL FOR SWITCH ON SWITCH PLATE.
F. FLEXIBLE CONNECTIONS AT DISCHARGE DUCT CONNECTIONS TO MINIMIZE VIBRATION.
G. PROVIDE ROOF JACK.

AIR DEVICE SCHEDULE

MARK	MANUFACTURER & MODEL#	SERVICE	MATERIAL	FACE TYPE	MOUNTING LOCATION	FACE SIZE	NECKSIZE	NOISE CRITERIA (NC)	NUMBER OF SLOTS	SLOT INCHES	NOTES
CD1	TITUS TMS	SUPPLY AIR	ALUMINUM	ROUND NECK	SURFACE	12"X12"	6	25	--	--	1,3,4,6,7
CD2	TITUS TMS	SUPPLY AIR	STEEL	ROUND NECK	SURFACE	12"X12"	6	25	--	--	1,3,4,6,7
CD3	TITUS TMS	SUPPLY AIR	STEEL	ROUND NECK	SURFACE	12"X12"	8	25	--	--	1,3,4,6,7
RAG	TITUS 350RLF1	RETURN AIR	STEEL	SQUARE NECK	SURFACE	24X24	20	25			1,3,6,7,8

NOTES:

1. COORDINATE FRAME TPYE WITH CEILING MATERIALS. DUCT MOUNT WHERE SPIRAL DUCTWORK EXPOSED.
2. NOT ALL GRILLE AND DIFFUSERS SHOWN ARE NECESSARILY USED, REFER TO HVAC PLAN FOR LOCATION AND QUANTITY.
3. FOR SURFACE MOUNTED LAY-IN TYPE DIFFUSERS OR GRILLES PROVIDE TRIM RINGS. REFER TO ARCHITECTURAL DRAWINGS AND COORDINATE CEILING TYPES WITH AIR DEVICE MOUNTING STYLE.
4. WHERE BACK PAN OF DIFFUSER IS EXPOSED TO NON-CONDITIONED ATTIC TYPE SPACES, PROVIDE FACTORY R-6 FOIL BACKED INSULATION TO MINIMIZE CONDENSATION.
5. COORDINATE LOCATION OF GRILLES, REGISTERS AND DIFFUSERS WITH CEILING GRID, LIGHT LOCATIONS, STRUCTURAL MEMBERS AND ARCHITECTURAL FEATURES.
6. FINAL FINISH OF ALL AIR DEVICES SHALL BE VERIFIED WITH ARCHITECT'S FINISH AND PAINTING SCHEDULE.
7. ACCEPTABLE ALTERNATE MANUFACTURERS: HART & COOLEY, TRUAIRE, ANEMOSTAT, AND METALAIRE.
8. PROVIDE 1 INCH THICK 20X20 FILTER.

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blue river® ARCHITECTS
A Native American Owned Firm

SCOTT C. WEBB 18011 3.3.23 PROFESSIONAL ENGINEER OKLAHOMA

CHEROKEE NATION TAHLEQUAH HOUSING DEVELOPMENT - TYPE 4

M101 TYPE 4 HVAC PLAN AND SCHEDULES

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NO.	DESCRIPTION	DATE
1	ASI#1	03/01/2023

SHEET NAME:
TYPE 4 HVAC PLAN AND SCHEDULES

SHEET NUMBER:
M101

PIPE AND FITTINGS

	GATE VALVE
	GLOBE VALVE
	ANGLE GATE VALVE
S	SOLENOID VALVE
	NON SLAM CHECK VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	BALL VALVE
	TWO WAY CONTROL VALVE
	PRESSURE REGULATOR
	THREE WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
	AUTOMATIC AIR VENT
	STRAINER, Y TYPE W/GATE VALVE OR HOSE BIBB
	FLEXIBLE CONNECTION
	JOINT
	EXPANSION JOINT
F	FLOW METER
	FLOW DIRECTION
	ELBOW BASE
	ELBOW REDUCING
	UNION
P	PRESSURE GAUGE WITH TRI-COCK
	PRESSURE INDICATOR
	TEST PLUG
TI	TEMPERATURE INDICATOR
FS	FLOW SWITCH
	FLOW INDICATOR
	REDUCER, CONCENTRIC
	REDUCER, ECCENTRIC STRAIGHT CROWN
	REDUCER, ECCENTRIC STRAIGHT INVERT
	AUTO FLOW BALANCING VALVE
	FLOOR DRAIN W/P-TRAP
	FLOOR CLEANOUT
	WALL CLEANOUT
	BACKFLOW PREVENTER
	LUBRICATED PLUG COCK
	HOSE BIBB W/VACUUM BREAKER
	CAPPED END
	SIDEWALL SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SIAMESE FIRE DEPARTMENT CONNECTION
	ALARM CHECK VALVE
	DELUGE VALVE
	PIPE SWAY BRACING
	PIPE ANCHOR SUPPORT
	BALANCING VALVE

ABBREVIATIONS

A	A	AIR
	ABV	ABOVE
	ACCU	AIR COOLED CONDENSING UNIT
	ACL	ACETYLENE GAS
	ACU	AIR CONDITIONING UNIT
	AD	ACCESS DOOR
	AF	AIR FILTER
	AFF	ABOVE FINISHED FLOOR
	AFH	AIR FILTER, HIGH EFFICIENCY
	AHU	AIR HANDLING UNIT
	APD	AIR PRESSURE DROP
	AR	ACID RESISTANT
	ASSY	ASSEMBLY
	AUX	AUXILIARY
	AV	AUTOMATIC AIR VENT
B	BDD	BACKDRAFT DAMPER
	BHP	BRAKE HORSE POWER
	BP	BACKFLOW PREVENTER
	BS	BIRD SCREEN
C	C	CONDENSATE
	C/L	CENTER LINE
	CD	CEILING DIFFUSER
	CFM	CUBIC FEET PER MINUTE
	CH	CHILLER
	CHDR	CHEMICAL DRAIN
	CHP	CHILLED WATER PUMP
	CLG	CEILING
	CO	CLEANOUT
	CONC	CONCRETE
	CONN	CONNECTION
	CONT	CONTINUED/CONTINUATION/CONTINUOUS
	COTG	CLEAN OUT TO GRADE
	CU	CONDENSING UNIT/COPPER
	CV	CONSTANT VOLUME
	CW	COLD WATER
D	DDC	DIRECT DIGITAL CONTROL
	DG	DOOR GRILLE
	DIA	DIAMETER
	DIM	DIMENSION
	DMPR	DAMPER
	DN	DOWN
	DPS	DIFFERENTIAL PRESSURE SWITCH
	DR	DRAIN
	DSD	DUCT SMOKE DETECTOR
	DSW	DISTILLED WATER
	DWG	DRAWING
E	EAT	ENTERING AIR TEMPERATURE
	ED	EQUIPMENT DRAIN
	EDB	ENTERING DRY BULB
	EER	ENERGY EFFICIENCY RATIO
	EF	EXHAUST FAN
	EFF	EFFICIENCY
	EG	EXHAUST GRILLE
	EL	ELEVATION
	ELEC	ELECTRICAL
	ENT	ENTERING
	ER	EXHAUST REGISTER
	EWB	ENTERING WET BULB
	EWC	ELECTRIC WATER COOLER
	EWT	ENTERING WATER TEMPERATURE
	EXH	EXHAUST
	EWS	EYE WASH/SHOWER STATION
F	FCO	FLOOR CLEANOUT
	FD	FIRE DAMPER/FLOOR DRAIN
	FH	FUME HOOD
	FL	FLOOR
	FLEX	FLEXIBLE
	FOR	FUEL OIL RETURN
	FOS	FUEL OIL SUPPLY
	FP	FIRE PUMP
	FPI	FINS PER INCH
	FPM	FEET PER MINUTE
	FT	FEET
	FV	FACE VELOCITY
G	GA	GAUGE
	GIV	GRAVITY INTAKE VENTILATOR
	GND	GROUND
	GPM	GALLONS PER MINUTE
	GRV	GRAVITY RELIEF VENTILATOR
H	HB	HOSE BIBB
	HORIZ	HORIZONTAL
	HP	HORSE POWER/HEAT PUMP
	HTG	HEATING
	HUMID	HUMIDISTAT
	HWS	HOT WATER SUPPLY
	HWB	HOT WATER BOILER
	HWP	HOT WATER PUMP
	HWR	HOT WATER RETURN
I	ID	INSIDE DIAMETER
	IN	INCHES
	INV EL	INVERT ELEVATION
K	KW	KILOWATT
L	LAB	LABORATORY
	LAT	LEAVING AIR TEMPERATURE
	LAV	LAVATORY
	LB	POUND
	LD	LINEAR DIFFUSER
	LDB	LEAVING DRY BULB
	LF	LINEAR FEET
	LFD	LAMINAR FLOW DIFFUSER
	LP	LIQUID PROPANE
	L/S	LITERS PER SECOND
	LWB	LEAVING WET BULB
	LWT	LEAVING WATER TEMPERATURE
M	MAU	MAKE-UP AIR UNIT
	MAX	MAXIMUM
	MB	MIXING BOX/MOP BASIN
	MBH	THOUSAND BTU/HR
	MD	MOTORIZED DAMPER
	MECH	MECHANICAL
	MIN	MINUTE/MINIMUM
	MM	MILLIMETERS
	MS	MOTOR STARTER
N	N	NITROGEN
	NC	NORMALLY CLOSED
	NG	NATURAL GAS
	NIC	NOT IN CONTRACT
	NO	NUMBER
	NOX	NITROGEN OXIDE
	NTS	NOT TO SCALE
O	O	OXYGEN
	OA	OUTSIDE AIR
	OAL	OUTSIDE AIR LOUVER
	OBD	OPPOSED BLADE DAMPER
	OC	ON CENTER
	OS	OVERFLOW SCUPPER
	OS&Y	OUTSIDE SCREW & YOKE
P	PD	PRESSURE DROP
	POC	POINT OF CONNECTION
	PRESS	PRESSURE
	PRV	PRESSURE REDUCING VALVE
	PSIG	POUNDS PER SQUARE INCH
	PVC	POLYVINYL CHLORIDE
R	RA	RETURN AIR
	RAG	RETURN AIR GRILLE
	RAR	RETURN AIR REGISTER
	RC	RAIN CONDUCTOR
	RD	ROOF DRAIN
	REF	REFERENCE
	RF	RETURN FAN
	RL	RAIN LEADER
	RM	ROOM
	RTN	RETURN
S	SA	SUPPLY AIR
	SAG	SUPPLY AIR GRILLE
	SAN	SANITARY
	SAR	SUPPLY AIR REGISTER
	SD	SMOKE DAMPER
	SD/FD	COMB. SMOKE DAMPER\FIRE DAMP.
	SF	SUPPLY FAN
	SH	SHEET
	SP	STATIC PRESSURE
	SQ FT	SQUARE FEET
	SST	STAINLESS STEEL
T	TCU	TERMINAL CONTROL UNIT
	TEMP	TEMPERATURE
	TG	TRANSFER GRILLE
	TP	TRAP PRIMER
	TYP	TYPICAL
U	UC	UNDERCUT
V	V	VENT
	VAV	VARIABLE AIR VOLUME
	VD	VOLUME DAMPER
	VEL	VELOCITY
	VERT	VERTICAL
	VFD	VARIABLE FREQUENCY DRIVE
	VSD	VARIABLE SPEED DRIVE
	VTR	VENT THRU ROOF
W	W/	WITH
	W/O	WITHOUT
	WCO	WALL CLEANOUT
	WC	WATER COLUMN
	WH	WALL HYDRANT
	WHA	WATER HAMMER ARRESTORS
	WR	WATER RISER
	WTR	WATER

DOMESTIC WATER GENERAL NOTES

1. CUTOFF VALVES AND STOPS SHALL BE PROVIDED WHERE SHOWN ON DRAWINGS AND AT FIXTURE CONNECTIONS.

2. TEST ALL WATER SYSTEM IN PRESENCE OF OWNER'S REPRESENTATIVE AT MIN. 100 PSIG FOR 8 HOURS. SANITARY, WASTES, AND VENTS SHALL BE TESTED WITH 10' HEAD OF WATER FOR 8 HOURS WITH LEVEL OF WATER REMAIN UNCHANGED.

3. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.

4. INSTALL ALL WATER PIPING SYSTEMS SO THAT THEY WILL NOT BE SUBJECT TO ANY UNDUE STRAINS OR STRESSES. PROVISIONS SHALL BE MADE FOR EXPANSION, CONTRACTION AND STRUCTURAL SETTLEMENT.

5. ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOOR CEILING ASSEMBLY SHALL BE INSTALLED AND SEALED TO MAINTAIN FIRE RATING WITH U.L. LISTED ASSEMBLIES, MATERIALS AND SEALANTS.

6. BELOW GROUND PIPE SHALL BE INSTALLED NO LESS THAN 6" BELOW FROST LINE. REFER TO STRUCTURAL DETAILS FOR FOUNDATION PENETRATION.

7. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO BE SCALED FOR DIMENSIONS.

8. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.

9. ALL TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR, WITHOUT EXTRA COST FOR THE OWNER.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A WATER FLOW AND PRESSURE TEST FOR EVALUATING INCOMING DOMESTIC AND FIRE PROTECTION SERVICE PRESSURES.

11. WHERE STREET WATER MAIN PRESSURES FLUCTUATE, THE BUILDING WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED FOR MINIMUM PRESSURE AVAILABLE. WHEREVER WATER PRESSURE FROM THE STREET MAIN OR OTHER SOURCE OF SUPPLY IS LESS THAN 60 PSI, A WATER PRESSURE BOOSTER SYSTEM SHALL BE INSTALLED ON THE BUILDING WATER SUPPLY SYSTEM. WHERE WATER PRESSURE WITHIN A BUILDING EXCEEDS 80 PSI STATIC, AN APPROVED WATER-PRESSURE REDUCING VALVE WITH STRAINER CONFORMING TO ASSE 1003 SHALL BE INSTALLED TO REDUCE THE PRESSURES TO BELOW 80 PSI.

PIPE LINES

———	POTABLE COLD WATER
———	POTABLE HOT WATER
———	POTABLE HOT WATER RETURN
———	VENT

PIPE TAGS

XX" CW	POTABLE COLD WATER
XX" HW	POTABLE HOT WATER
XX" HWR	POTABLE HOT WATER RETURN
XX" V	VENT
XX" CA	COMPRESSED AIR
XX" SS	SANITARY SEWER
XX" OW	OIL\WASTE WATER
XX" G	NATURAL GAS
XX" VTR	VENT THROUGH ROOF

SANITARY SEWER GENERAL NOTES

1. PROVIDE CLEANOUTS AT LOCATIONS AND WITH CLEARANCES AS REQUIRED BY THE CODE NOT EXCEEDING 50 FEET IN HORIZONTAL RUNS AT EACH CHANGE OF DIRECTION, VERTICAL OR HORIZONTAL, GREATER THAN 45°. AT THE BASE OF EACH WASTE OR VENT STACK 5 FEET AFF. PROVIDE WALL CLEANOUTS IN LIEU OF FLOOR CLEANOUTS WHEREVER POSSIBLE. ALL INTERIOR CLEANOUTS SHALL BE ACCESSIBLE FROM WALLS OR FLOORS.

2. THE FLOOR DRAIN IN TOILETS AND MECHANICAL ROOMS SHALL BE PROVIDED WITH BACKWATER VALVES.

3. MAINTAIN MINIMUM OF 10 FEET CLEARANCE BETWEEN ANY VTR AND OUTSIDE AIR INTAKES. WHERE HORIZONTAL CLEARANCE CANNOT BE PROVIDED, EXTEND VENTS A MIN OF 24" ABOVE EACH OUTSIDE AIR INTAKE.

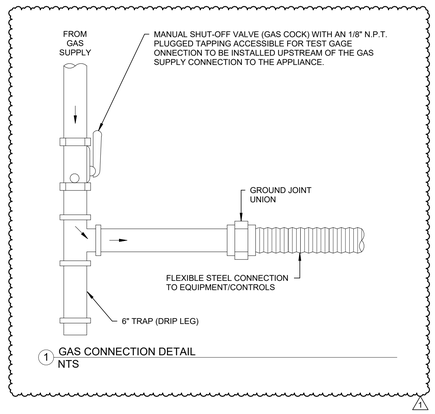
4. VTR'S ROOF PENETRATIONS, WATER PROOFING AND FLASHINGS SHALL BE PROVIDED BY ROOF CONTRACTOR.

5. ALL TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR. TEST ALL SEWER AND VENT SYSTEMS IN PRESENCE OF OWNER'S REPRESENTATIVE.

6. INVERT ELEVATION SHOWN BASED ON 100.0 FT. FF ELEVATION. REFER TO CIVIL DRAWINGS FOR ACTUAL ELEVATIONS.

7. SEWER PIPE SHALL BE INSTALLED NO LESS THAN 6" BELOW THE FROST LINE.

NOTE:
THIS IS A STANDARD SYMBOLS & ABBREVIATIONS SHEET. THEREFORE, SOME SYMBOLS & ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.



1 GAS CONNECTION DETAIL
NTS

blue river® ARCHITECTS
A Native American Owned Firm

SCOTT C. WEBB 18011 3.3.23 OKLAHOMA REGISTERED PROFESSIONAL ENGINEER

CHEROKEE NATION TAHLEQUAH HOUSING DEVELOPMENT - TYPE 4

P001 PLUMBING NOTES AND NOTES

MPW
MPW ENGINEERING, LLC
110 W. 7TH STREET • SUITE 600
TULSA, OK 74119
(918) 582-4088 • FAX (918) 582-4087
OK COA #2940 • EXP 06/30/2022

BLUE RIVER PROJECT NUMBER:
20220104

ISSUE DATE:
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CONSTRUCTION DOCUMENTS

OTHER ISSUE DATES:

NO.	DESCRIPTION	DATE
1	ASI#1	03/01/2023

SHEET NAME:
PLUMBING NOTES AND NOTES 1

SHEET NUMBER:
P001

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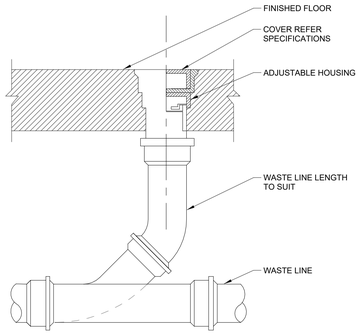
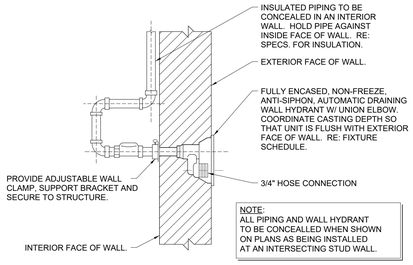
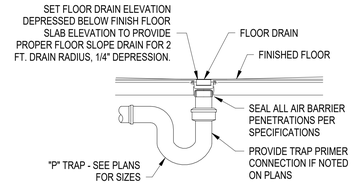


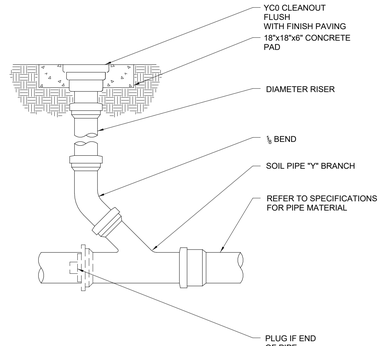
3 FLOOR CLEAN-OUT (FCO)
NTS



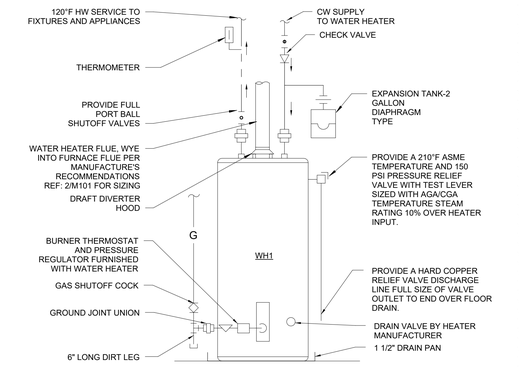
4 FREEZE PROOF WALL HYDRANT (FPWH)
NTS



5 FLOOR DRAIN DETAIL
NO SCALE



6 YARD CLEAN-OUT (YCO)
NTS



7 GAS WATER HEATER DETAIL
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	UNIT TYPE	BRANCH SIZES (MIN) WASTE	VENT	CW	HW	MANUFACTURER & MODEL	FAUCET/TRIM	DESCRIPTION
BT-1	SHOWER AND TUB VALVE	0"	0"	1/2"	1/2"	AMERICAN STANDARD RU102SS	T385.502 RELIANT 3 BATH/SHOWER TRIM KIT	FLASH ROUGH VALVE BODY
FD-1	FLOOR DRAIN	2"	1 1/2"			JAY R. SMITH 2005B		FLOOR DRAIN SQUARE
FPWH-1	WALL HYDRANT			1/2"		WOOFORD B67		FREEZELESS WALL HYDRANT
IMB-1	ICE MAKER BOX	0"	0"	1/2"	0"	SIOUX CHIEF 696-G1010MF		1/4" COMPRESSION OUTLET CONNECTION OUTLET BOX
KS-1	KITCHEN SINK	2"	1 1/2"	1/2"	1/2"	AMERICAN STANDARD 22DB.6332283C.075.50/5	AMERICAN STANDARD 4175.300.F15	COLONY 33 x 22 ADA DOUBLE BOWL STAINLESS STEEL KITCHEN SINK KIT
LAV-1	DROP IN	2"	1 1/2"	1/2"	1/2"	AMERICAN STANDARD 0476.028.020	AMERICAN STANDARD 7075.050	AQUALYN DROP IN SINK VITREOUS CHINA
SD-1	SHOWER DRAIN	2"	1 1/2"			JAY R. SMITH 216		
SH-1	SHOWER VALVE	0"	0"	1/2"	1/2"	AMERICAN STANDARD RU102SS	TU662SG.211SHOWER TRIM	FLASH ROUGH VALVE BODY
WB-1	WASHER WALL BOX	2"	1 1/2"	1/2"	1/2"	SIOUX CHIEF696 series		DOUBLE HOSE BIBB OUTLET CONNECTION OUTLET BOX WITH DRAIN BOX
WC-1	TANK TYPE RIGHT FLUSH	3"	2"	3/4"		AMERICAN STANDARD 211AA.004	N/A	COMPLETE TOILET WITH ANK AND SEAT HYDRAPRO MODEL HPWPTSESC
3"YCO	YARD CLEAN-OUT	3"				ZURN ZI449		CAST IRON FERRULE AND PLUG, DURA-COATED CAST IRON, DOUBLE-FLANGED HOUSING, AND EXTRA HEAVY DUTY SCORIATED CAST IRON COVER WITH LIFTING DEVICE, VANDAL-PROOF SCREWS.
4"YCO	YARD CLEAN-OUT	4"				ZURN ZI449		CAST IRON FERRULE AND PLUG, DURA-COATED CAST IRON, DOUBLE-FLANGED HOUSING, AND EXTRA HEAVY DUTY SCORIATED CAST IRON COVER WITH LIFTING DEVICE, VANDAL-PROOF SCREWS.

NOTES:

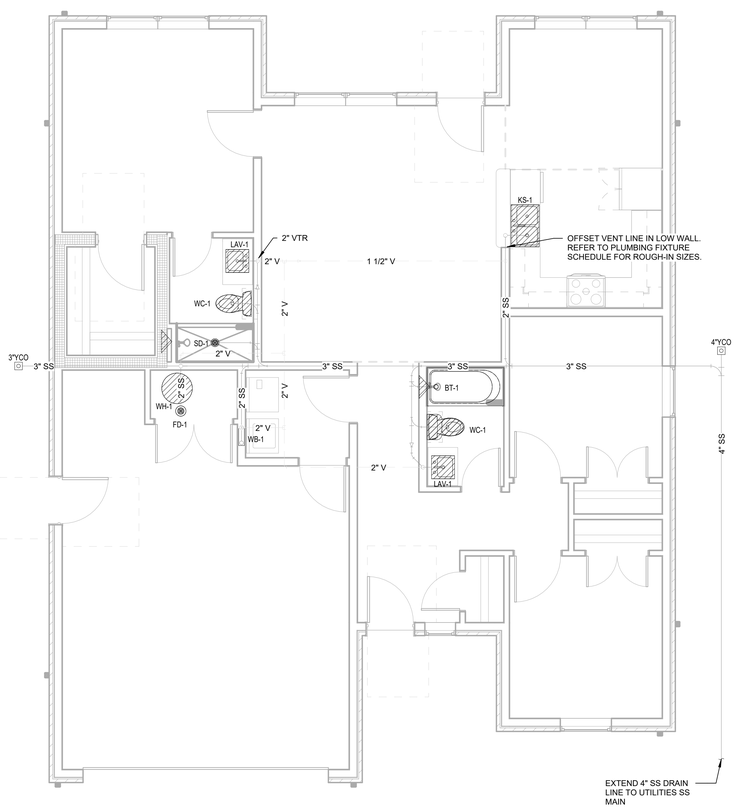
1. CONTRACTOR TO COORDINATE FINAL SELECTIONS OF ALL PLUMBING FIXTURES WITH OWNER PRIOR TO ORDERING.
2. NOT USED.

GAS WATER HEATER SCHEDULE

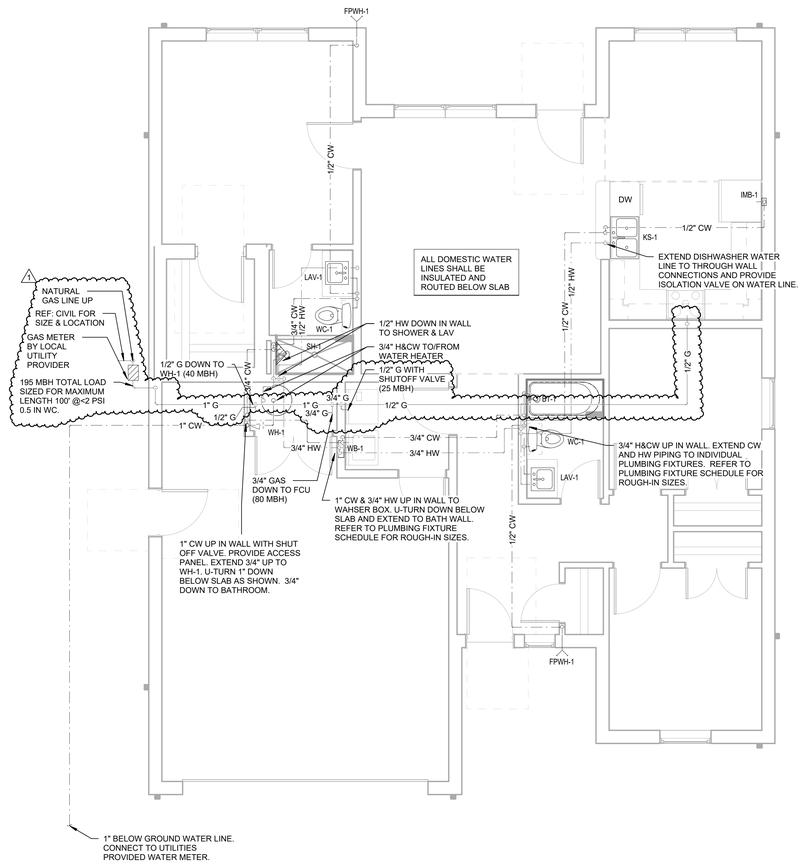
MARK	SERVICE	MANUFACTURER & MODEL	TANK VOLUME	MBH	RECOVERY GPH @ 90 RISE	VOLTAGE	FREQUENCY	PHASE	WEIGHT	NOTES
WH-1	HOT WATER	AM STD EN50H-6,	50.0 gal	4,500	21	120 V	60 Hz	1	150 lb	1,3,4,5

NOTES:

1. WH-1 GAS WATER HEATER INSTALL PER MANUFACTURES RECOMENDATIONS, PROVIDE ALL CODE REQUIRED SAFETY DEVICES.
2. PROVIDE CIRCULATION PUMP AS REQUIRED PER CODE.
3. PROVIDE OVERFLOW PAN OATEY MODEL 34173.
4. PROVIDE EXPANSION TANK, EACH SIZED PERMANUFACTURE'S RECOMMENDATION.
5. ROUTE PRESSURE RELIEF TO NEAREST FLOOR DRAIN WITH CODE APPROVED AIR GAP.



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



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

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blue river ARCHITECTS
A Native American Owned Firm

CHEROKEE NATION TAHLEQUAH HOUSING DEVELOPMENT - TYPE 4

P101
TYPE 4 PLUMBING PLANS

MPW
MPW ENGINEERING, LLC
110 W. 7TH STREET • SUITE 600
TULSA, OK 74119
(918) 582-4088 • FAX (918) 582-4087
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