

ELECTRICAL SYMBOL LEGEND

SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED

CIRCUITING

	HOME RUN (2#12 1#12G UNO)
	INDICATES 2 PHASE, 1 N, & 1 GRD CONDUCTOR
	SPECIAL DUPLEX SHARED CIRCUIT
	HOME RUN: INDICATES SHARED CIRCUIT
	HOME RUN: INDICATES #10 CONDUCTORS ENTIRELY

UTILITIES

---	UG	---	UNDERGROUND ELECTRICAL
---	OHE	---	OVERHEAD ELECTRICAL
---	TELE	---	TELECOMMUNICATIONS CONDUIT
---	UGT	---	UNDERGROUND TELECOMMUNICATIONS CONDUIT

LIGHTING

	FLUORESCENT LIGHT FIXTURE
	FLUORESCENT STRIP FIXTURE
	SURFACE/RECESSED LIGHT FIXTURE
	WALL-MOUNTED LIGHT FIXTURE
	POLE-MOUNTED LIGHT FIXTURE
	EXIT LIGHT
	BATTERY-OPERATED EMERGENCY LIGHT (WALL MTD)
	BATTERY-OPERATED EMERGENCY LIGHT (CEILING MTD)
	WALL-MOUNTED COMBINATION EXIT LIGHT/ BATTERY-OPERATED EMERGENCY LIGHT
	LIGHT SWITCH - 3-WAY
	LIGHT SWITCH - 4-WAY
	LIGHT SWITCH - KEY
	LIGHT SWITCH - DIMMER
	LIGHT SWITCH - PILOT LIGHT
	LIGHT SWITCH - 2 POLE
	LIGHT SWITCH - 3-WAY DIMMER
	WALL-MOUNTED MOTION SWITCH
	CEILING-MOUNTED MOTION SWITCH
	SWITCH-BANK - REFER TO DETAILS
	DIMMER BOARD
	REMOTE CONTROL SWITCH AS SCHEDULED
	TIMECLOCK - REFER TO PLANS / DETAILS

EQUIPMENT

	DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.
	MAGNETIC MOTOR STARTER
	COMBINATION DISCONNECT SWITCH / MOTOR STARTER
	TOGGLE-TYPE DISCONNECT. FURNISH WITH THERMAL MOTOR PROTECTION WHERE SERVING FANS/PUMPS.
	SURFACE PANELBOARD
	RECESSED PANELBOARD
	DISTRIBUTION PANELBOARD
	SWITCHBOARD, FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.

GENERAL SYMBOLS

	INDICATES CONNECT TO EXISTING
	INDICATES ELEVATION

POWER DEVICES

	DUPLEX RECEPTACLE.
	LINE THRU DEVICE INDICATES ABOVE COUNTER
	SPECIAL DUPLEX RECEPTACLE (GFCI, ISOLATED GROUND, ETC.)
	QUADPLEX RECEPTACLE
	SIMPLEX RECEPTACLE W/NEMA CONFIG AS NOTED
	MULTI-POLE RECEPTACLE W/NEMA CONFIG AS NOTED
	RECEPTACLE/DEVICE MOUNTED IN "TOMBSTONE"
	POKE-THRU WITH POWER
	POKE-THRU WITH TELECOMMUNICATIONS
	POKE-THRU W/POWER AND TELECOM
	SINGLE GANG FLOOR BOX (2, 3, 4 GANG SIMILAR)
	DIVIDED POWER POLE
	CLOCK RECEPTACLE
	PLUG MOLD / WIRE MOLD AS SPECIFIED
	THERMOSTAT - ELECTRIC
	PUSH BUTTON
	MOTOR

TELEPHONE/DATA

	TELEPHONE OUTLET (SINGLE-GANG BOX WITH (1) 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
	LINE THRU DEVICE INDICATES ABOVE COUNTER
	DATA OUTLET (DOUBLE-GANG BOX WITH (2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CEILING)
	TELEPHONE/DATA OUTLET (DOUBLE-GANG BOX WITH (2) 3/4" CONDUITS TO ABOVE ACCESSIBLE CLG.)
	PHONE OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED - SEE DETAILS FOR ADD'L INFO.
	DATA OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED - SEE DETAILS FOR ADD'L INFO.
	PHONE/DATA OUTLET WITH NUMBER OF PHONE/DATA JACKS AS INDICATED - SEE DETAILS FOR ADD'L INFO.
	WALL-MOUNTED WIRELESS INTERNET TRANSMITTER
	CEILING-MOUNTED WIRELESS INTERNET TRANSMITTER

AUDIO/VISUAL

	TELEVISION OUTLET (SINGLE GANG BOX WITH (1) 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)
	REVERSE TELEVISION OUTLET - CABLE TO HEAD END
	TEACHER'S DESK CONNECTIONS - RE: DETAILS
	WALL SPEAKER
	CEILING SPEAKER
	WALL SPEAKER - HORN TYPE
	CEILING SPEAKER - HORN TYPE
	CEILING SPEAKER - SUBWOOFER
	CEILING SPEAKER - SOUND SYSTEM
	VOLUME CONTROL
	INTERCOM CALL STATION
	INTERCOM HANDSET
	SOUND SYSTEM AUDIO JACK
	REMOTE MICROPHONE CONTROL
	PUBLIC ADDRESS SYSTEM AMPLIFIER
	INTERCOM MASTER STATION

FIRE ALARM

	MANUAL PULL STATION
	CEILING SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	HEAT DETECTOR
	WATERFLOW SWITCH
	TAMPER SWITCH
	WALL-MOUNTED FA STROBE WITH CANDELA RATING. 15cd RATING UNLESS OTHERWISE NOTED ON PLANS.
	WALL-MOUNTED FA HORN
	WALL-MOUNTED FA SPEAKER
	WALL-MOUNTED FA HORN/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	WALL-MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	CEILING-MOUNTED FA STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	CEILING-MOUNTED FA SPEAKER
	CEILING-MOUNTED FA HORN/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	CEILING-MOUNTED FA SPEAKER/STROBE WITH CANDELA RATING. MINIMUM OF 15cd RATING.
	RELAY
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUCIATOR PANEL
	REMOTE ANNUCIATOR PANEL
	FIRE ALARM EXTENDER CABINET
	DOOR HOLDER
	SINGLE / MULTI-STATION 120V SMOKE ALARM
	ZONE ADDRESSABLE MODULE
	INDIVIDUAL ADDRESSABLE MODULE
	KITCHEN HOOD FIRE SUPPRESSION SYSTEM PANEL
	KITCHEN HOOD REMOTE PULL STATION
	AREA OF RESCUE ASSISTANCE STATION
	AREA OF RESCUE ASSISTANCE MASTER STATION

NURSE CALL

	NURSE CALL STATION
	NURSE CALL EMERGENCY PULL CORD
	CODE BLUE STATION
	NURSE CALL STAFF STATION
	PATIENT MONITOR STATION
	NURSE CALL DUTY STATION
	NURSE CALL DOME LIGHT
	NURSE CALL ZONE LIGHT
	NURSE CALL MASTER STATION
	RESIDENT CALL MASTER STATION
	RESIDENT CALL EMERGENCY PULL CORD

SECURITY

	FIXED CAMERA
	PAN/TILT/ZOOM CAMERA
	PROXIMITY TYPE CARD READER
	SWIPE CARD READER
	ELECTRIC STRIKE
	KEYPAD / MAG LOCK
	BUTTON / MAG LOCK

FIRE SEALING NOTES

- COMPLETE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS.
- COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH-PENETRATION FIRESTOP SYSTEMS.
- DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS THAT ARE COMPATIBLE WITH ONE ANOTHER, WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURERS BASED ON TESTING AND FIELD EXPERIENCE.
- PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INSTALLED.
- PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
- FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS.
- PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING FOR CONSTRUCTION.

MECHANICAL AND PLUMBING SYMBOL LEGEND

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SHEET METAL

	HIGH EFFICIENCY ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)
	SPIN-IN ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)
	CONICAL BELLMOUTH ROUND TAKEOFF
	ROUND DUCT RUNOUT WITH FLEX DUCT
	DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)
	FD-FIRE DAMPER FS-FIRE/SMOKE DAMPER SD-SMOKE DAMPER BD-BACKDRAFT DAMPER (GRAVITY)
	AUTOMATIC MOTORIZED DAMPER
	SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM)
	LINEAR/SLOT DIFFUSER
	RETURN GRILLE OR EXHAUST REGISTER
	SUPPLY AIR FLOW INDICATOR
	RETURN AND EXHAUST AIR FLOW INDICATOR
	THERMOSTAT
	TEMPERATURE SENSOR
	HUMIDISTAT
	CONTROL WIRING

MEDICAL GAS

	MEDICAL VACUUM PIPING
	OXYGEN PIPING
	NITROUS OXIDE PIPING
	MEDICAL COMPRESSED AIR PIPING
	NITROGEN PIPING
	CARBON DIOXIDE PIPING
	VACUUM VENT PIPING
	WASTE ANESTHETIC GAS DISPOSAL PIPING
	MEDICAL GAS VENT PIPING
	MEDICAL GAS OUTLET W/ DESIGNATION (RE: BELOW)
	O OXYGEN
	N NITROGEN
	NO NITROUS OXIDE
	WAGD WASTE ANESTHETIC GAS DISPOSAL
	CO CARBON DIOXIDE
	MV MEDICAL VACUUM
	SA SURGICAL AIR
	S MEDICAL SLIDE

GENERAL SYMBOLS

	INDICATES CONNECT TO EXISTING
	INDICATES ELEVATION

MECHANICAL PIPING

	REFRIGERANT LIQUID
	REFRIGERANT SUCTION
	DRAIN (CONDENSATE)
	COMPRESSED AIR
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CHILLED/HOT WATER SUPPLY
	CHILLED/HOT WATER RETURN
	HOT WATER SUPPLY
	HOT WATER RETURN
	COOLING TOWER SUPPLY
	COOLING TOWER RETURN
	STEAM (ANY #S DENOTE PRESSURE)
	CONDENSATE RETURN (#S DENOTE PRESSURE)
	REFRIGERANT VENT
	RUPTURE DISK

PLUMBING PIPING

	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	RECIRCULATING DOMESTIC HOT WATER
	WASTE ABOVE GRADE OR FLOOR
	WASTE BELOW GRADE OR FLOOR
	STORM ABOVE GRADE OR FLOOR
	STORM BELOW GRADE OR FLOOR
	STORM OVERFLOW ABOVE GRADE OR FLOOR
	STORM OVERFLOW BELOW GRADE OR FLOOR
	PLUMBING VENT
	WATER SERVICE
	GAS (NATURAL)
	FROM SUMP PUMP DISCHARGE
	COMPRESSED AIR
	PROPANE
	SOFT DOMESTIC COLD WATER
	SOFT DOMESTIC HOT WATER
	SOFT RECIRCULATING HOT WATER
	ACID WASTE
	ACID WASTE VENT
	NON-POTABLE
	DEIONIZED WATER
	REVERSE OSMOSIS WATER

FIRE SPRINKLER

	FIRE PROTECTION PIPING
	SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	FIRE PROTECTION SIAMESE CONNECTION
	POST INDICATOR VALVE

PIPING SYMBOLS

	SHUTOFF VALVE
	SHUTOFF VALVE IN RISER
	BALANCING VALVE
	PLUG VALVE
	AUTO FLOW CONTROL VALVE
	PIPING ELBOW UP
	PIPING ELBOW DOWN
	PIPING TEE
	PIPING ELBOW
	PIPING TEE UP
	PIPING TEE DOWN
	INCREASER / REDUCER
	UNION
	CAP
	PIPE FLEX
	STRAINER
	CHECK VALVE
	INLINE STRAINER
	TEST PLUG
	GUIDE
	ANCHOR
	TRIPLE DUTY VALVE
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	SOLENOID VALVE

PIPING SPECIALTIES

	PRESS/ TEMP GAUGE WITH COCK
	THERMOMETER.
	PRESSURE REDUCING VALVE
	RELIEF VALVE
	WATER HAMMER ARRESTOR

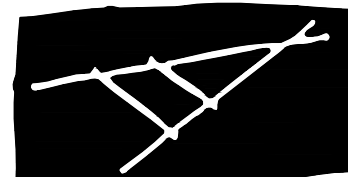
PLUMBING FIXTURES/EQUIPMENT

	HOSE BIBB
	WALL HYDRANT
	CLEAN OUT
	REDUCED PRESSURE BACKFLOW PREVENTER
	DOUBLE CHECK BACKFLOW PREVENTER
	PLUMBING FIXTURE AND CALLOUT
	FD: FLOOR DRAIN, AD: AREA DRAIN, FS: FLOOR SINK, RD: ROOF DRAIN, ORD: OVERFLOW ROOF DRAIN

SHEET INDEX

MEP001 COVER SHEET

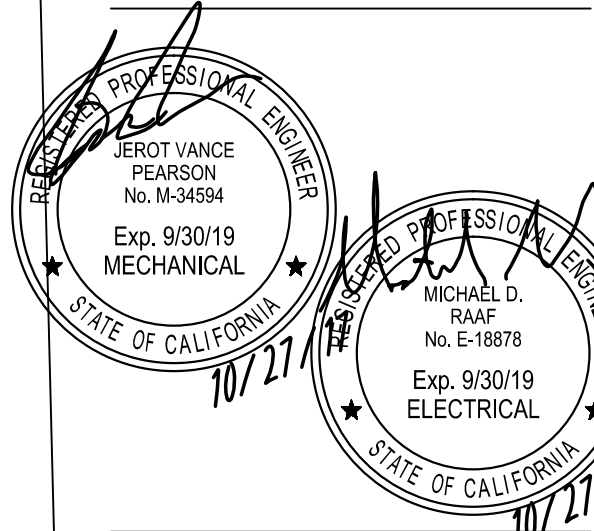
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E401	ELECTRICAL SPECIFICATIONS & DETAILS



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REVISION DATE

25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17

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SHEET

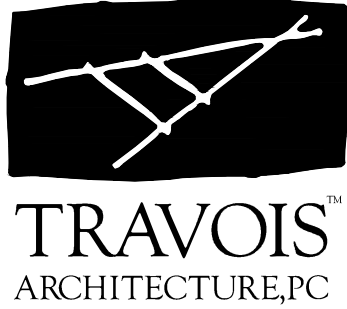
MEP001

MEP
COVER SHEET



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SHEET

M101

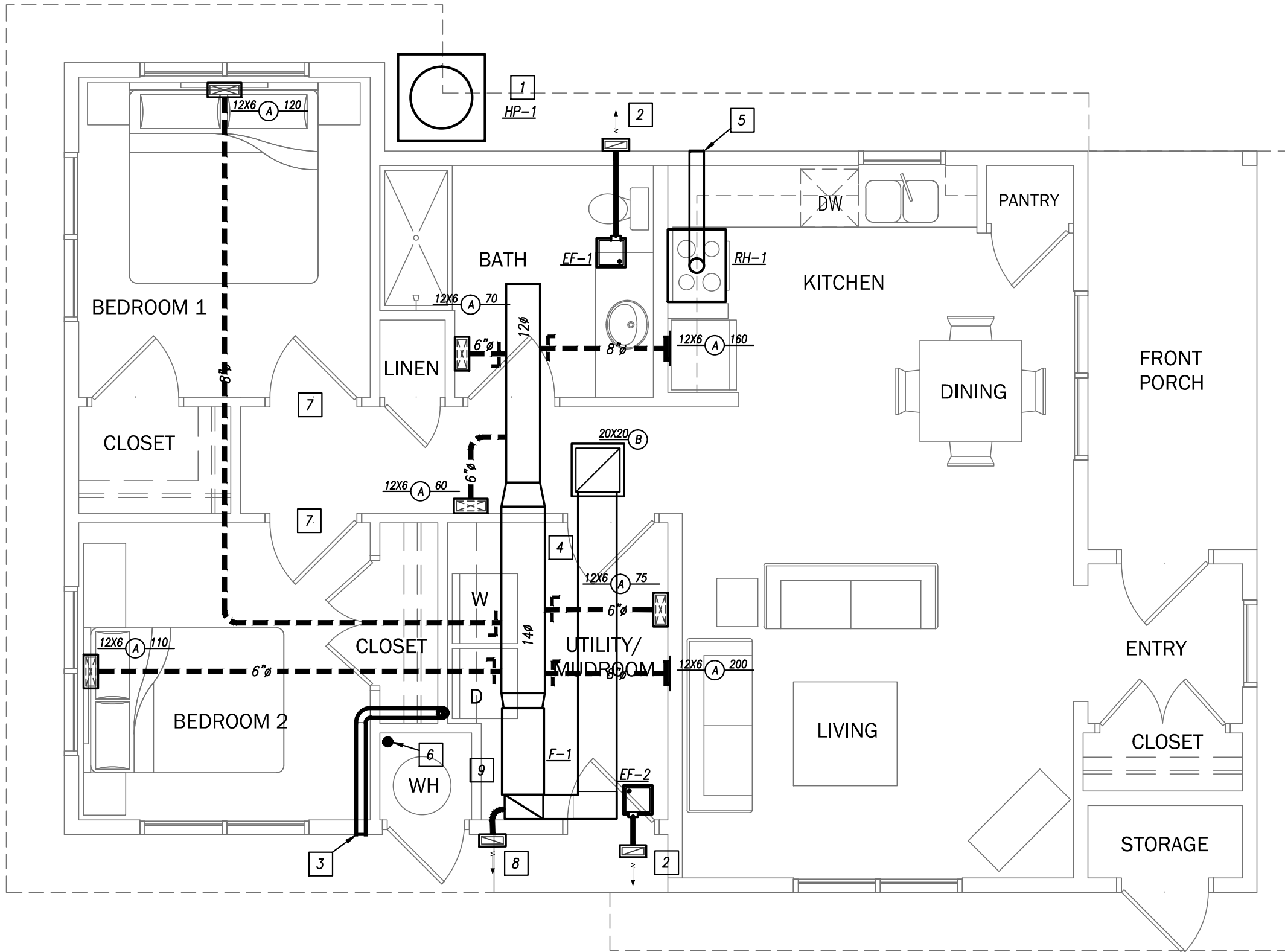
MECHANICAL
UNIT - 2A

GENERAL HVAC NOTES

1. SEAL ALL DUCT CONNECTIONS WITH MASTIC OR APPROVED EQUIVALENT.
2. INSTALL DUCT SYSTEMS THAT COMPLY WITH THE NEW CONSTRUCTION ENERGY CONSERVATION AIR DISTRIBUTION SYSTEMS STANDARD. FLEX DUCT SHALL BE USED WHERE DUCTWORK IS REQUIRED.
3. ROOM PRESSURE SHALL COMPLY WITH THE NEW CONSTRUCTION ENERGY CONSERVATION STANDARD.
4. REVIEW AND NOTE MECHANICAL SPECIFICATIONS AND SCHEDULES SHOWN ON PLANS FOR MORE GRILLE AND REGISTER INFORMATION.
5. PROVIDE DUCT DESIGN PER GENERAL MECHANICAL NOTES AND MECHANICAL KEYED NOTES.
6. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF THE DUCTWORK AND PIPING WITH THE POSITION AND LAYOUT OF THE TRUSSES. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISER AND DROPS FOR DUCTWORK AND PIPING AS NEEDED TO INSTALL THE HVAC SYSTEM AS IT IS DESIGNED WITHIN THE STRUCTURE.
7. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE PROVIDED BY THE M/C CONTRACTOR OR SUBS.
8. PROVIDE HONEYWELL VIP 1007 VOICE PLAYBACK THERMOSTAT OR EQUIVALENT FOR VISUALLY IMPAIRED UNIT.
9. DUCTWORK TO BE ROUTED IN CRAWLSPACE. DUCTWORK TO BE INSULATED WITH MINIMUM R-6 INSULATION VALUE.

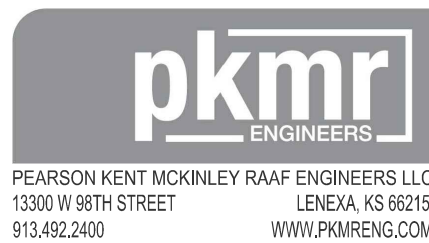
HVAC PLAN KEYED NOTES

- 1 HEAT PUMP SHALL BE INSTALLED ON THE BACK OR SIDE OF HOUSE. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE WITH 3-1/2" FIBERGLASS OR CONCRETE PAD.
- 2 TERMINATE EXHAUST DUCT AT EXTERIOR WITH SOFFIT VENT. ROUTE TO ROOF AND TERMINATE WITH ROOF CAP IF DUPLEX.
- 3 DRYER VENT TO EXTERIOR. TERMINATE WITH WALL CAP. ROUTE TO ROOF CAP IF DUPLEX.
- 4 DUCTWORK ROUTED IN CRAWL SPACE. PROVIDE 12X6 GRILLE IN SIDE OF DUCT IN CRAWL SPACE BALANCED TO 200 CFM TO VENTILATE CRAWL SPACE.
- 5 8" RANGE EXHAUST. PROVIDE STAINLESS STEEL FLANGE AT PENETRATION. TERMINATE AT WALL WITH EXHAUST CAP SUITED FOR RANGE HOOD.
- 6 ROUTE 3" PVC PIPE FOR RADON MITIGATION UP TO ATTIC. COORDINATE WITH RADON FAN OUTLET LOCATION.
- 7 UNDERCUT DOOR (1) INCH.
- 8 TERMINATE OA DUCT AT EXTERIOR WITH SOFFIT VENT. MAINTAIN 10 FEET FROM EXHAUST OUTLET.
- 9 ROUTE FLUE TO ROOF OR EXTERIOR WALL AND TERMINATED WITH GOOSENECK OR PER MANUFACTURER'S REQUIREMENTS.
- 10 ROUTE 12X3 DUCT UP IN STUD SPACE AND ROUTE TO GRILLE IN FLOOR ABOVE.



MECHANICAL - UNIT-2A - FLOOR PLAN

1/4" = 1'-0"



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SHEET

M102

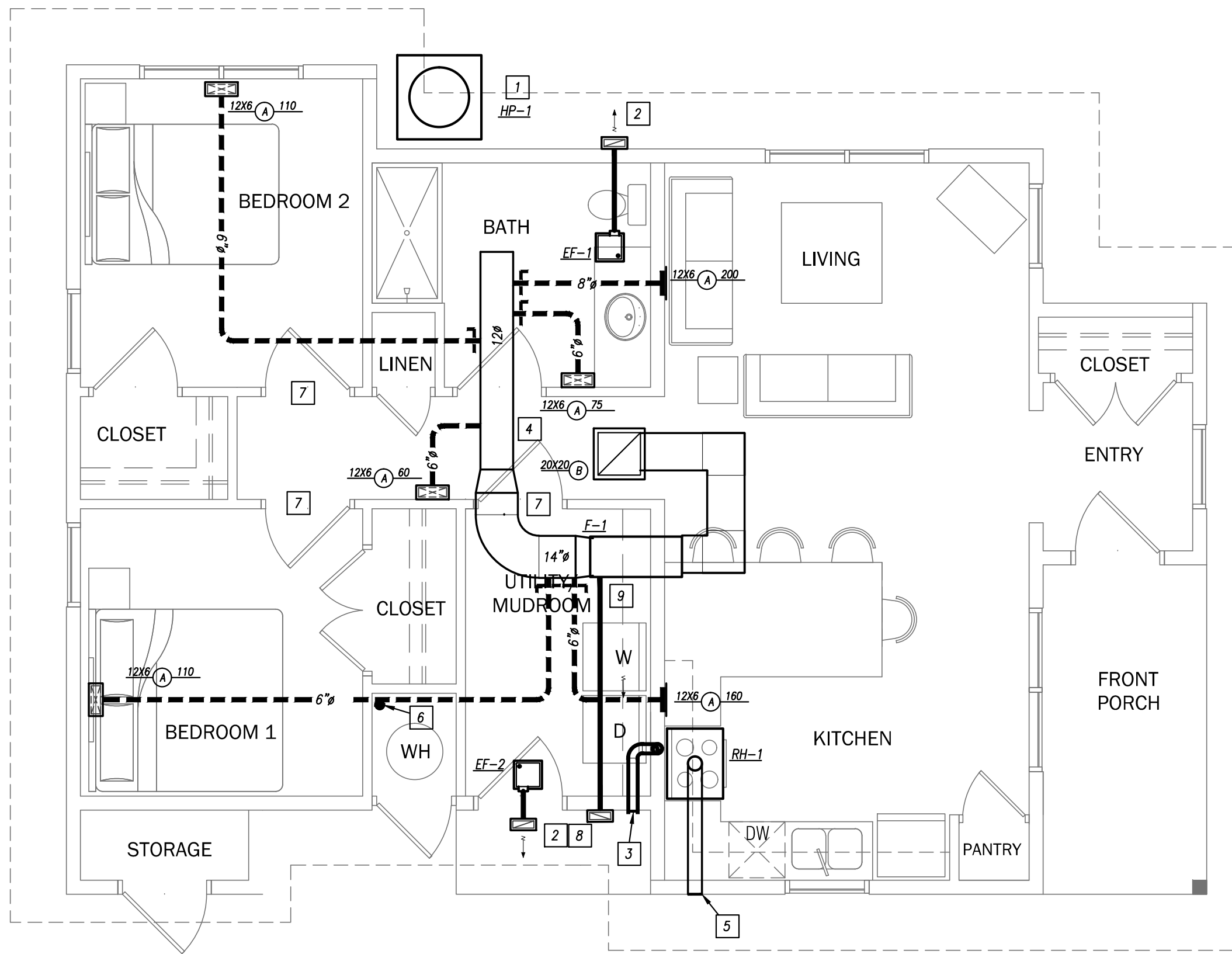
MECHANICAL
UNIT - 2B

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MECHANICAL - UNIT-2B - FLOOR PLAN

1/4" = 1'-0"



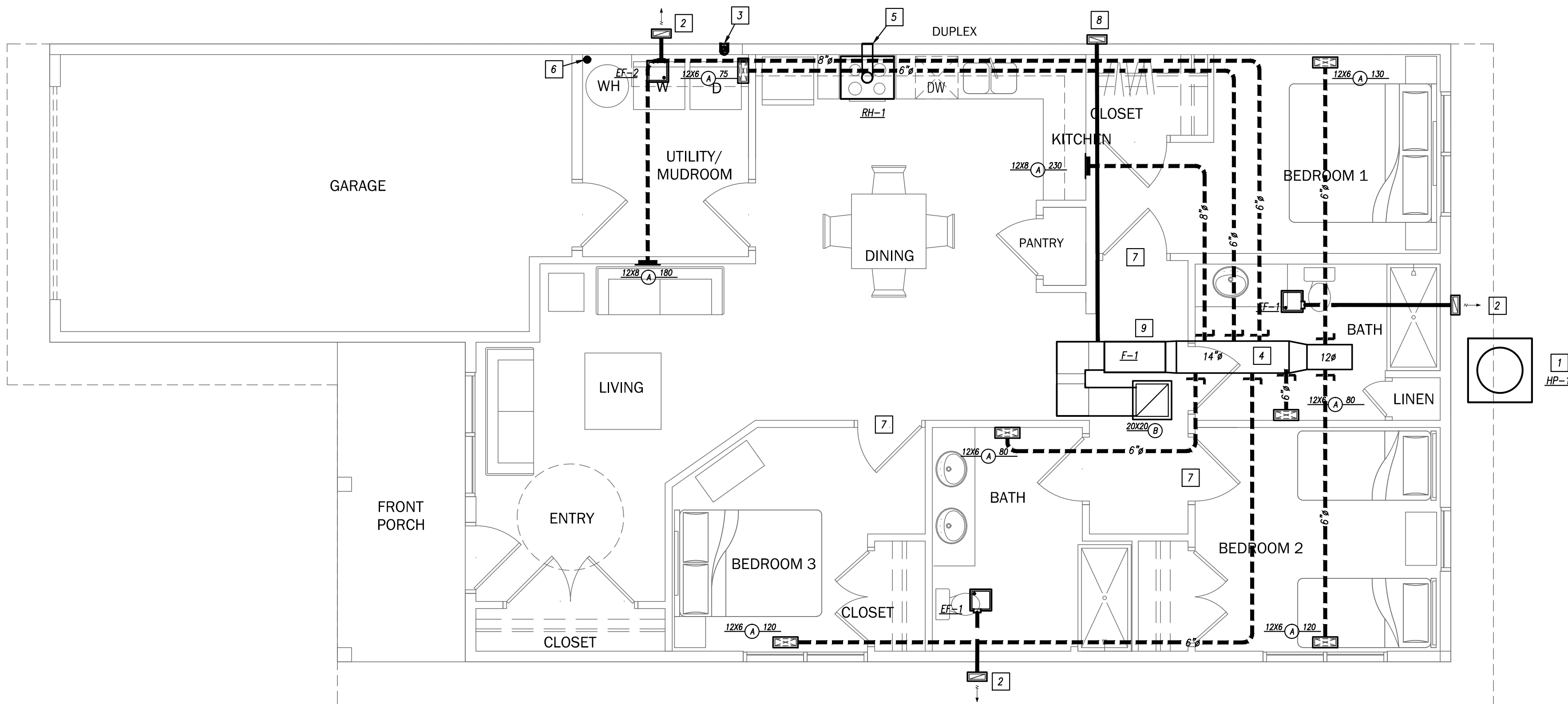
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4. DUCTWORK ROUTED IN CRAWL SPACE. PROVIDE 12X8 GRILLE IN SIDE OF DUCT IN CRAWL SPACE BALANCED TO 200 CFM TO VENTILATE CRAWL SPACE.
5. 8" RANGE EXHAUST. PROVIDE STAINLESS STEEL FLANGE AT PENETRATION. TERMINATE AT WALL WITH EXHAUST CAP SUITED FOR RANGE HOOD.
6. ROUTE 3" PVC PIPE FOR RADON MITIGATION UP TO ATTIC. COORDINATE WITH RADON FAN OUTLET LOCATION.
7. UNDERCUT DOOR (1) INCH.
8. TERMINATE OA DUCT AT EXTERIOR WITH SOFFIT VENT. MAINTAIN 10 FEET FROM EXHAUST OUTLET.
9. ROUTE FLUE TO ROOF OR EXTERIOR WALL AND TERMINATED WITH GOOSENECK OR PER MANUFACTURER'S REQUIREMENTS.
10. ROUTE 12X3 DUCT UP IN STUD SPACE AND ROUTE TO GRILLE IN FLOOR ABOVE.





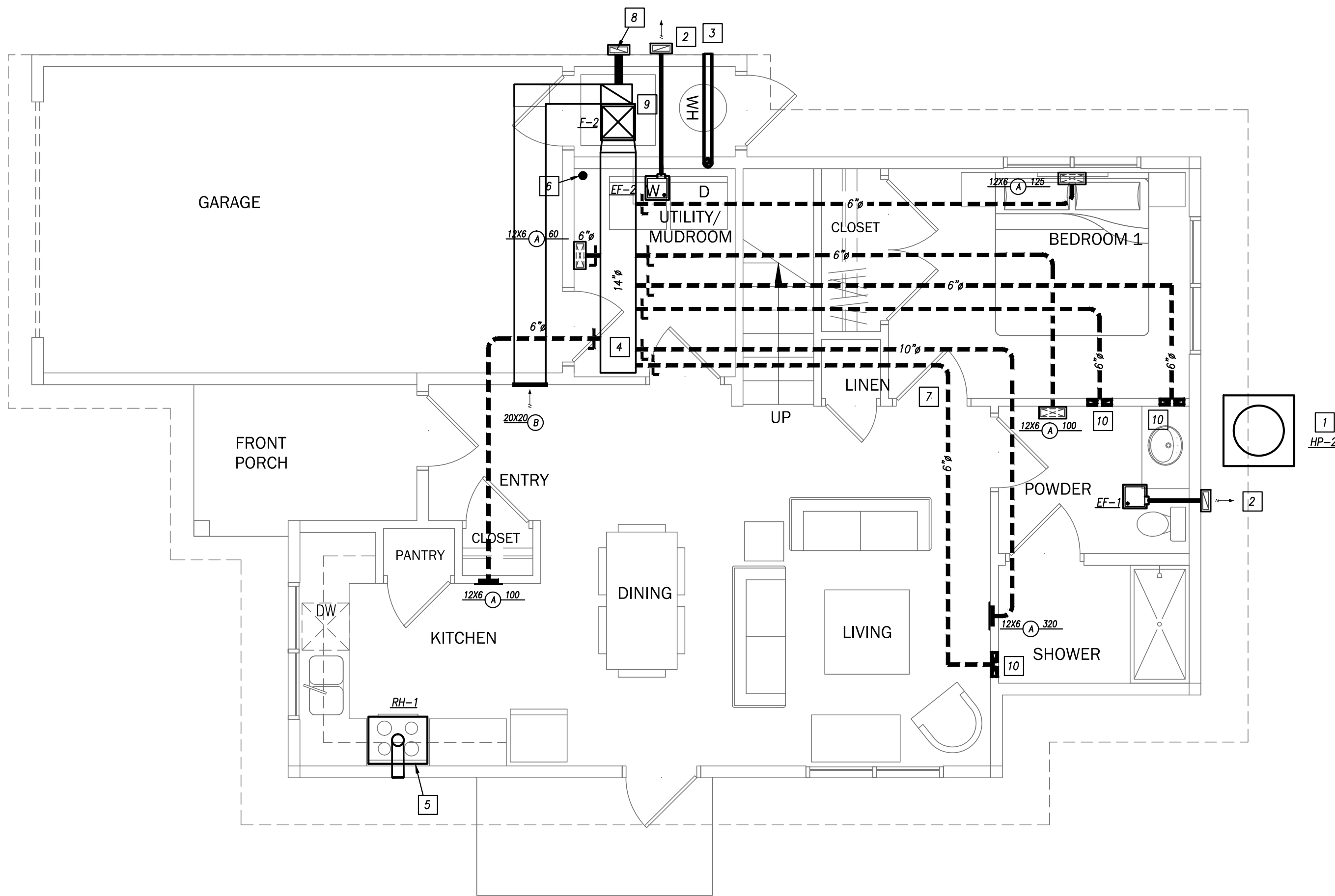
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75% CDs	09/26/17
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GENERAL HVAC NOTES

1. SEAL ALL DUCT CONNECTIONS WITH MASTIC OR APPROVED EQUIVALENT.
2. INSTALL DUCT SYSTEMS THAT COMPLY WITH THE NEW CONSTRUCTION ENERGY CONSERVATION AIR DISTRIBUTION SYSTEMS STANDARD. FLEX DUCT SHALL BE USED WHERE DUCTWORK IS REQUIRED.
3. ROOM PRESSURE SHALL COMPLY WITH THE NEW CONSTRUCTION ENERGY CONSERVATION STANDARD.
4. REVIEW AND NOTE MECHANICAL SPECIFICATIONS AND SCHEDULES SHOWN ON PLANS FOR MORE GRILLE AND REGISTER INFORMATION.
5. PROVIDE DUCT DESIGN PER GENERAL MECHANICAL NOTES AND MECHANICAL KEYED NOTES.
6. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF THE DUCTWORK AND PIPING WITH THE POSITION AND LAYOUT OF THE TRUSSES. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISER AND DROPS FOR DUCTWORK AND PIPING AS NEEDED TO INSTALL THE HVAC SYSTEM AS IT IS DESIGNED WITHIN THE STRUCTURE.
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8. PROVIDE HONEYWELL VIP 1007 VOICE PLAYBACK THERMOSTAT OR EQUIVALENT FOR VISUALLY IMPAIRED UNIT.
9. DUCTWORK TO BE ROUTED IN CRAWLSPACE. DUCTWORK TO BE INSULATED WITH MINIMUM R-6 INSULATION VALUE.

HVAC PLAN KEYED NOTES

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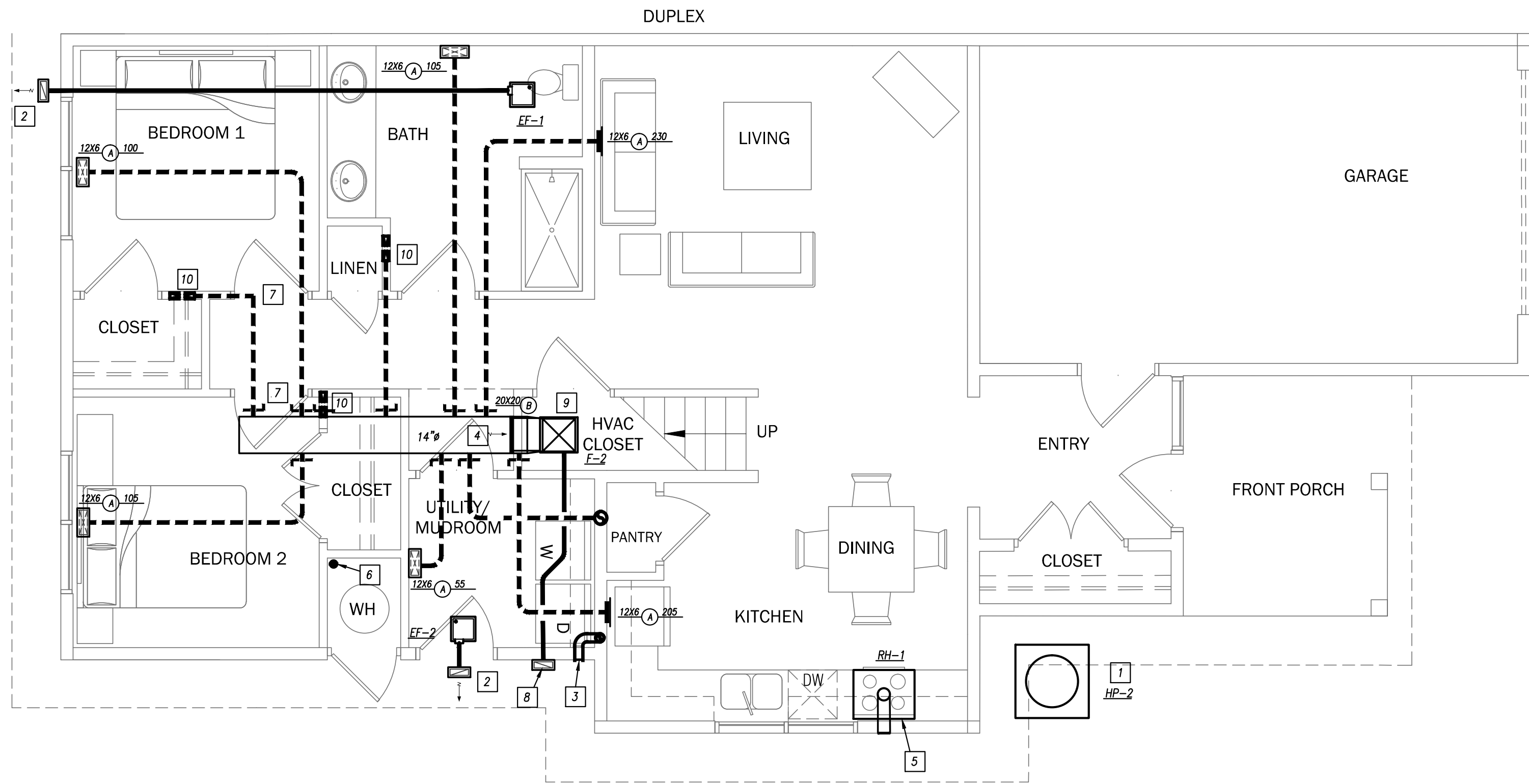
MECHANICAL
UNIT - 3C

GENERAL HVAC NOTES

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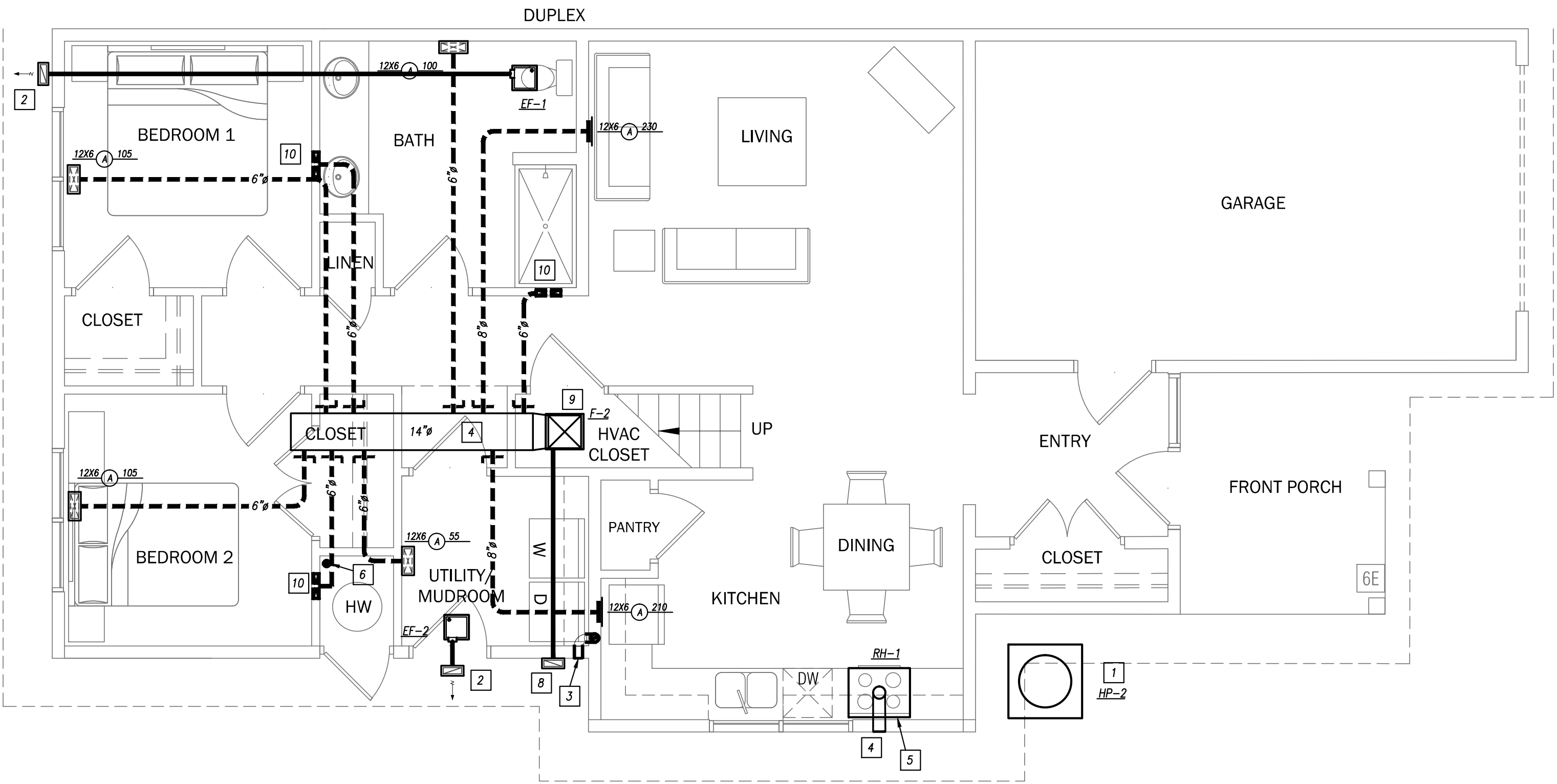
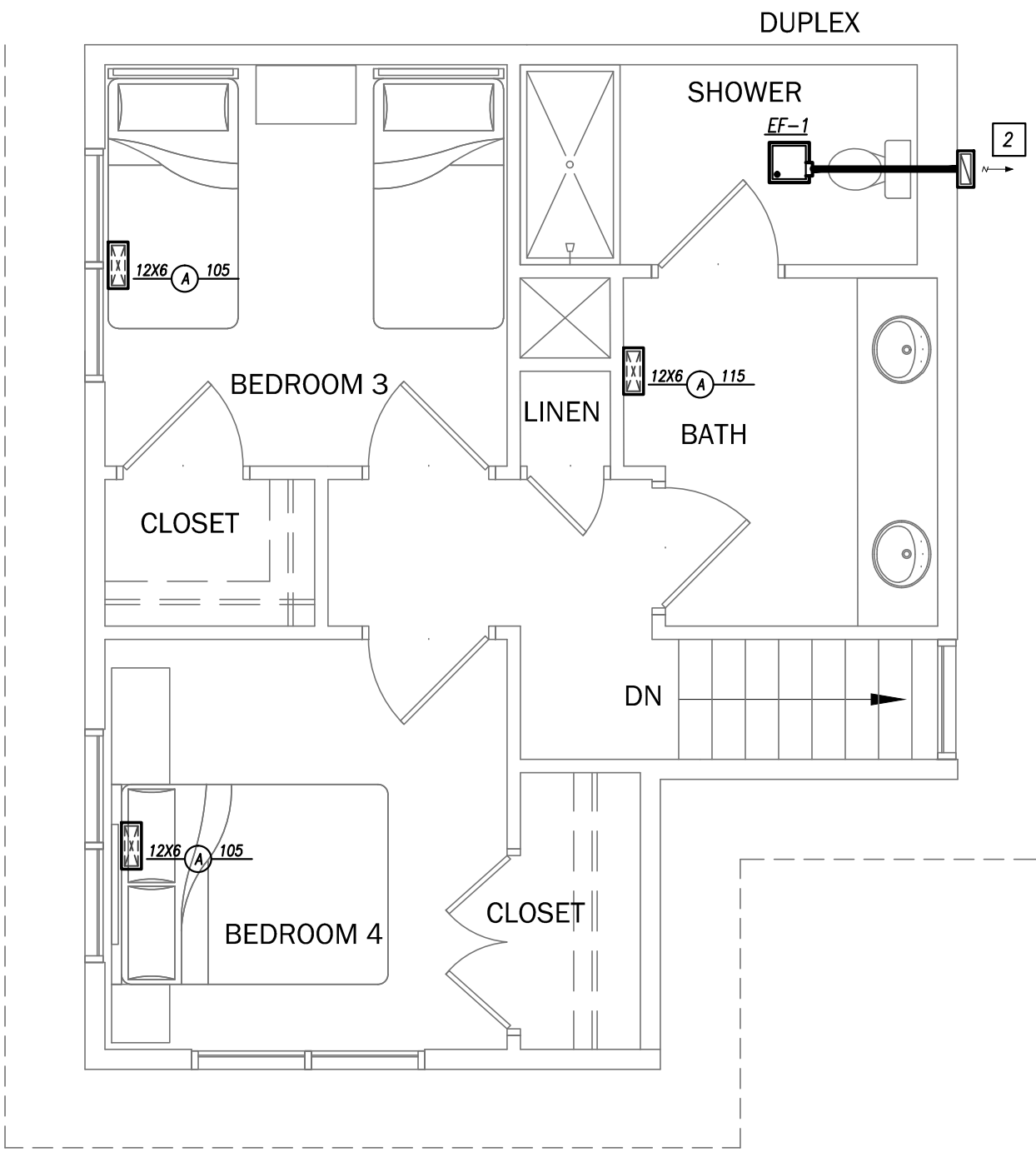
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MECHANICAL - UNIT-3C - FLOOR PLAN

1/4" = 1'-0"



MECHANICAL - UNIT-4A - FLOOR PLAN

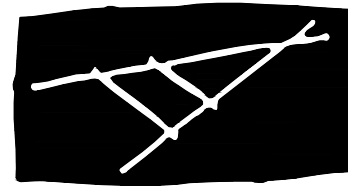
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TRAVOIS
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REVISION DATE

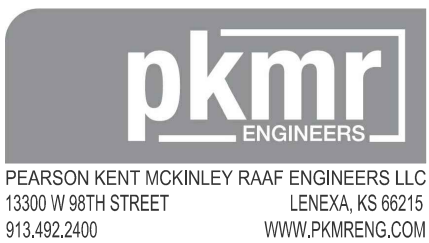
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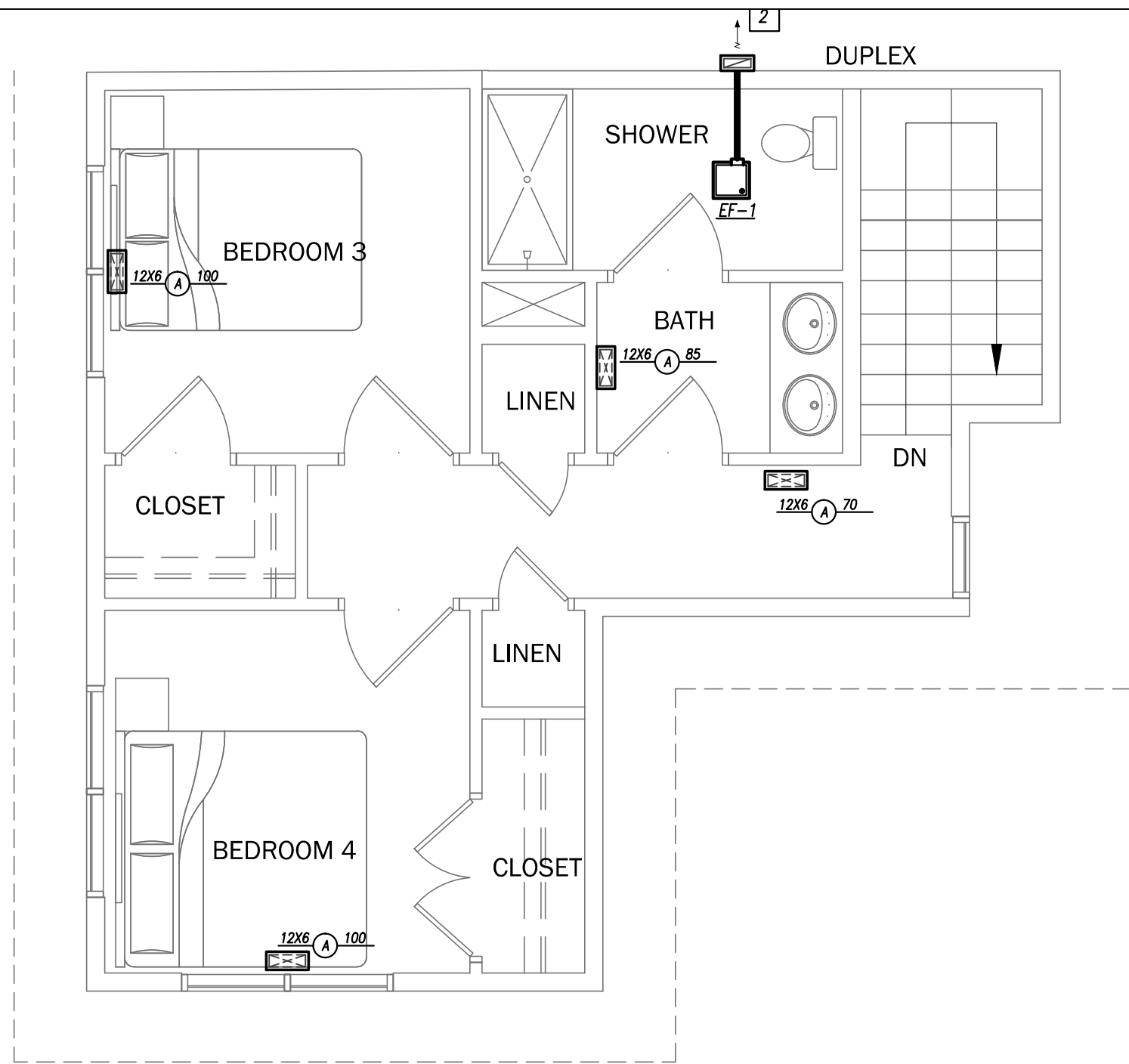
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M106

MECHANICAL
UNIT - 4A



17.311

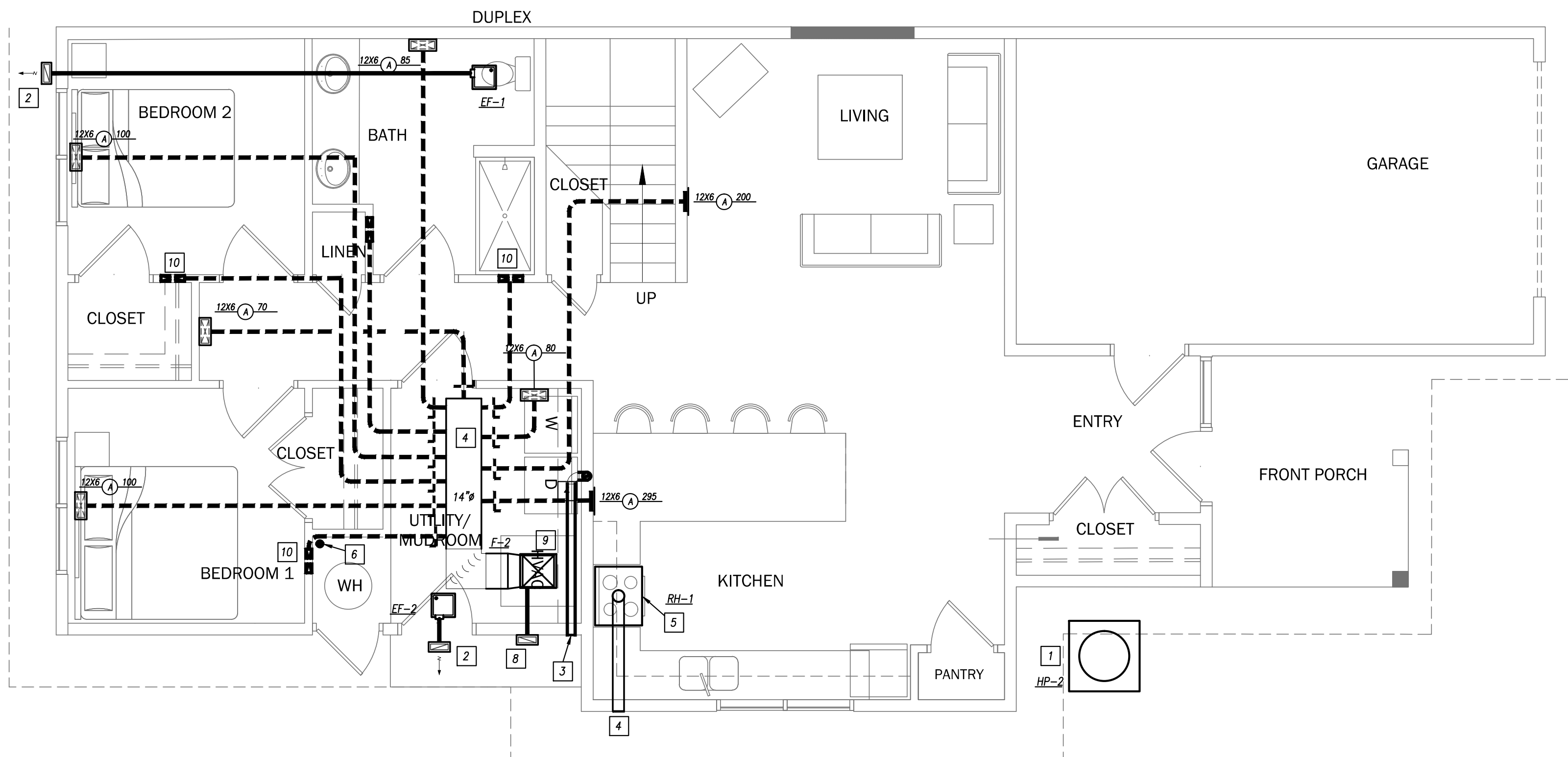


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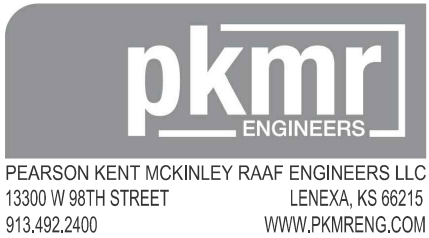
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MECHANICAL - UNIT-4B - FLOOR PLAN

1/4" = 1'-0"



17.311



Coyote Valley Homes I, LIHTC
Redwood Valley, California

TRAVOIS ARCHITECTURE, PC
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KANSAS CITY, MO 64108
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F 816.994.8974



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M107

MECHANICAL
UNIT - 4B

MECHANICAL SYMBOL LEGEND

SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED					
	DRAIN (CONDENSATE)		DOMESTIC COLD WATER		SHUTOFF VALVE
	PUMPED DISCHARGE FROM SUMP PUMPS/EJECTORS		DOMESTIC HOT WATER		SHUTOFF VALVE IN RISER
	HIGH EFFICIENCY ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)		WASTE ABOVE GRADE OR FLOOR		BALANCING VALVE
	SPIN IN ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER)		WASTE BELOW GRADE OR FLOOR		PIPING ELBOW UP
	CONICAL BELLMOUTH ROUND TAKEOFF		PLUMBING VENT		PIPING ELBOW DOWN
	ROUND DUCT RUNOUT WITH FLEX DUCT		WATER SERVICE		PIPING TEE
	DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES)		HOSE BIBB		PIPING ELBOW
	FIRE DAMPER		WALL HYDRANT		PIPING TEE UP
	SMOKE DAMPER		PLUMBING FIXTURE AND CALLOUT		PIPING TEE DOWN
	FIRE/SMOKE DAMPER		CLEAN OUT		INCREASER / REDUCER
	SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM)		FLOOR DRAIN, AREA DRAIN, FLOOR SINK		UNION
	LINEAR/SLOT DIFFUSER		ROOF DRAIN, OVERFLOW ROOF DRAIN		CAP
	RETURN GRILLE OR EXHAUST REGISTER		REDUCED PRESSURE BACKFLOW PREVENTER		PIPE FLEX
	SUPPLY AIR FLOW INDICATOR		DOUBLE CHECK BACKFLOW PREVENTER		STRAINER
	RETURN AND EXHAUST AIR FLOW INDICATOR		FLUSH WALL, CLEAN OUT FLUSH FLOOR, CLEAN OUT		TEST PLUG
	THERMOSTAT		FLUSH GRADE, CLEAN OUT VENT THROUGH ROOF		CHECK VALVE
	CONTROL WIRING		ABOVE FINISHED FLOOR BELOW GRADE		PRESS./TEMP GAUGE WITH COCK
	SUPPLY AIR RETURN AIR EXHAUST AIR OUTSIDE AIR		ABOVE FINISHED GRADE ABOVE GRADE		PRESS./TEMP GAUGE WITH COCK
	INDICATES CONNECT TO EXISTING		SOLENOID VALVE		THERMOMETER
	INDICATES ELEVATION		PRESSURE REDUCING VALVE		RELIEF VALVE
	INDICATES ELEVATION		IN LINE STRAINER		WATER HAMMER ARRESTER

FURNACE SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	CFM	FAN DATA		COOLING CAPACITY (MBH)	INPUT (MBH)	HEATING CAPACITY (MBH)		EFF.	FLUE OUTLET	COMBUSTION AIR INLET	ELECTRICAL	REMARKS
				E.S.P. (IN)	HP			OUTPUT (MBH)	ΔT					
F-1	TRANE	XR9S	800	0.50	1/2	24.0	40.0	38.0	44.0	95.5%	2"	2"	120V / 1PH	1,2,3,4,5,6
F-2	TRANE	XR9S	1,200	0.50	1/2	36.0	60.0	57.0	44.0	95.5%	2"	2"	120V / 1PH	1,2,3,4,5,6
REMARKS: 1. PROVIDE WITH BRAEBURN MODEL 3000 THERMOSTAT. 2. UPFLOW UNIT FOR OUTWORK IN ATTIC. DOWNFLOW UNIT FOR DUCTWORK IN CRAWL SPACE. 3. PROVIDE NATURAL GAS TO PROPANE CONVERSION KITS AT APPROPRIATE UNITS. 4. UNIT IS ENERGY STAR RATED. 5. PROVIDE WITH DISCONNECT AND 2" FILTERS. 6. AMANA, GOODMAN, RHEEM, LENNOX AND TRANE ARE EQUIVALENT UNIT MANUFACTURERS.														

HEAT PUMP UNIT SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	MINIMUM SEER	AMBIENT TEMP. (°F)	ELECTRICAL			REMARKS
							VOLTS / PH	M.C.A.	M.O.C.P.	
HP-1	YORK	YZH	36.0	30.0	16.0	105°	240V / 1PH	17.3	.35	1,2,3,4
HP-2	YORK	YZH	36.0	30.0	16.0	105°	240V / 1PH	21.5	.35	1,2,3,4
REMARKS: 1. COOLING CAPACITY BASED ON A SUCTION TEMPERATURE OF 49°F. 2. HEATING CAPACITIES LISTED ARE AT 47°F AND 17°F. 3. ENERGY-STAR COMPLIANT. 4. PROVIDE WITH 4" CONCRETE PAD.										

GRILLE, REGISTER & DIFFUSER SCHEDULE

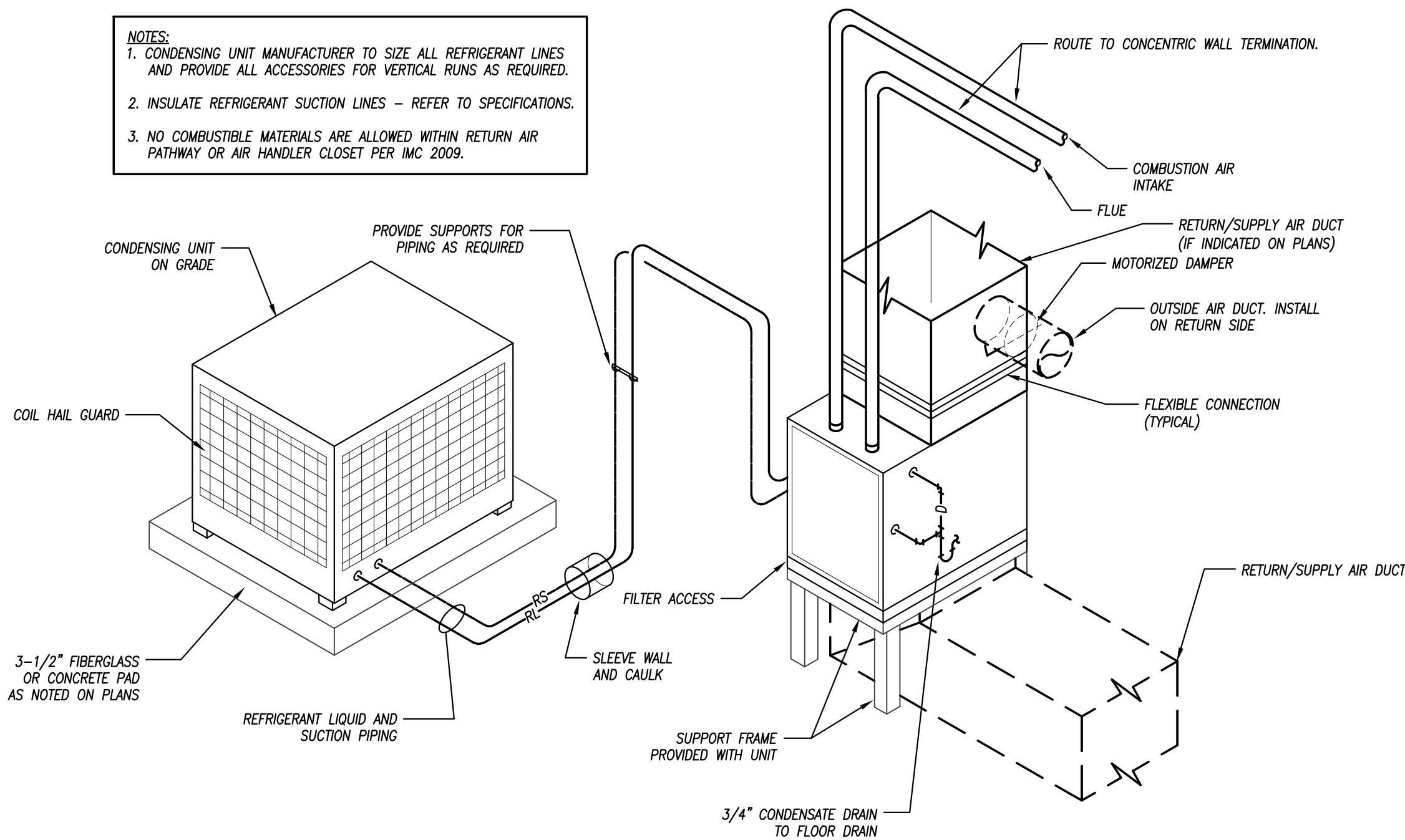
PLAN MARK	MANUFACTURER	MODEL	STYLE	SERVICE	NECK SIZE (IN)	VOLUME DAMPER	MATERIAL	FINISH COLOR	REMARKS
A	HART AND COOLEY	681	GRILLE	SUPPLY	AS INDICATED	YES	STEEL	COORD WITH ARCH	-
B	HART AND COOLEY	650	GRILLE	RETURN	AS INDICATED	NO	STEEL	PAINT GRADE	1
REMARKS: 1. INCLUDE FILTER PER TITLE 24 REQUIREMENTS. PROVIDE NECESSARY ACCESSORIES FOR DOOR INSTALLATION.									

RESIDENTIAL KITCHEN HOOD

PLAN MARK	MANUFACTURER	MODEL NUMBER	DIMENSION	CFM	ELECTRICAL		MATERIAL	REMARKS
					AMPS	VOLTS		
RH-1	BROWN	QSE130	30"	220.0	1.8	120	STAINLESS STEEL	1,2,3
REMARKS: 1. (2) 40 WATT LAMPS, GREASE FILTER 2. VENT TO EXTERIOR AND PROVIDE BACKDRAFT DAMPER. 3. UNIT SHALL BE ENERGY STAR RATED.								

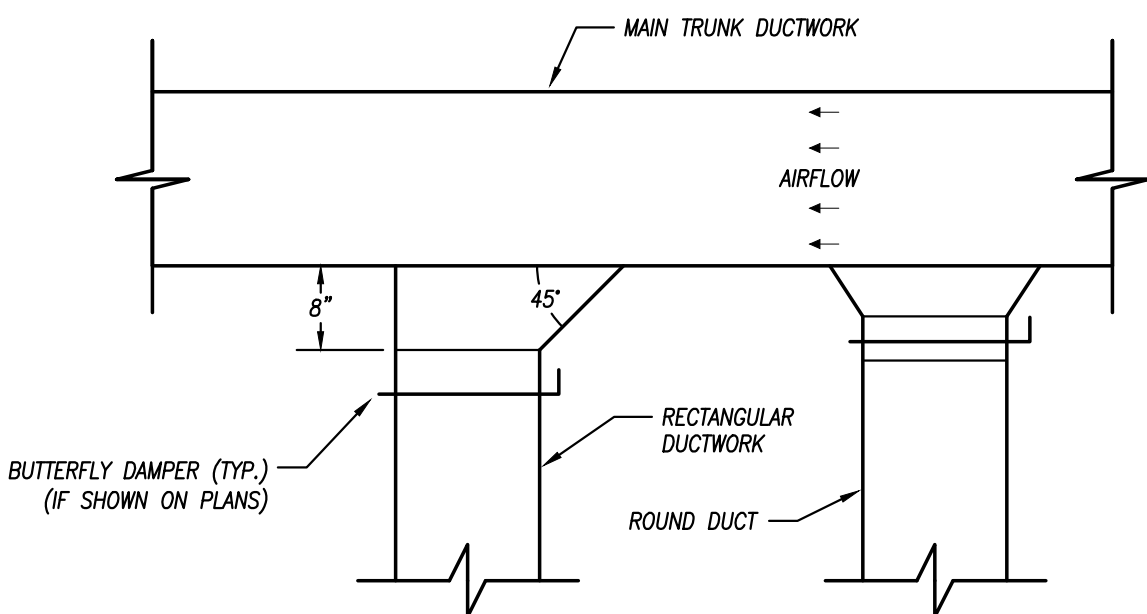
EXHAUST FAN SCHEDULE

PLAN MARK	MANUFACTURER	MODEL NUMBER	FAN DATA		ELECTRICAL	REMARKS
			CFM	E.S.P. (IN)		
EF-1	BROWN	QTR080FLT	80	0.125	120V / 1PH	1,2,3
EF-2	BROWN	AES0	50	0.125	120V / 1PH	2,3,4
REMARKS: 1. PROVIDE WITH WALL MOUNTED SWITCH. COORDINATE WITH ELECTRICAL. 2. VENT TO EXTERIOR. 3. SHALL BE ENERGY STAR RATED. 4. FAN TO RUN CONTINUOUS.						



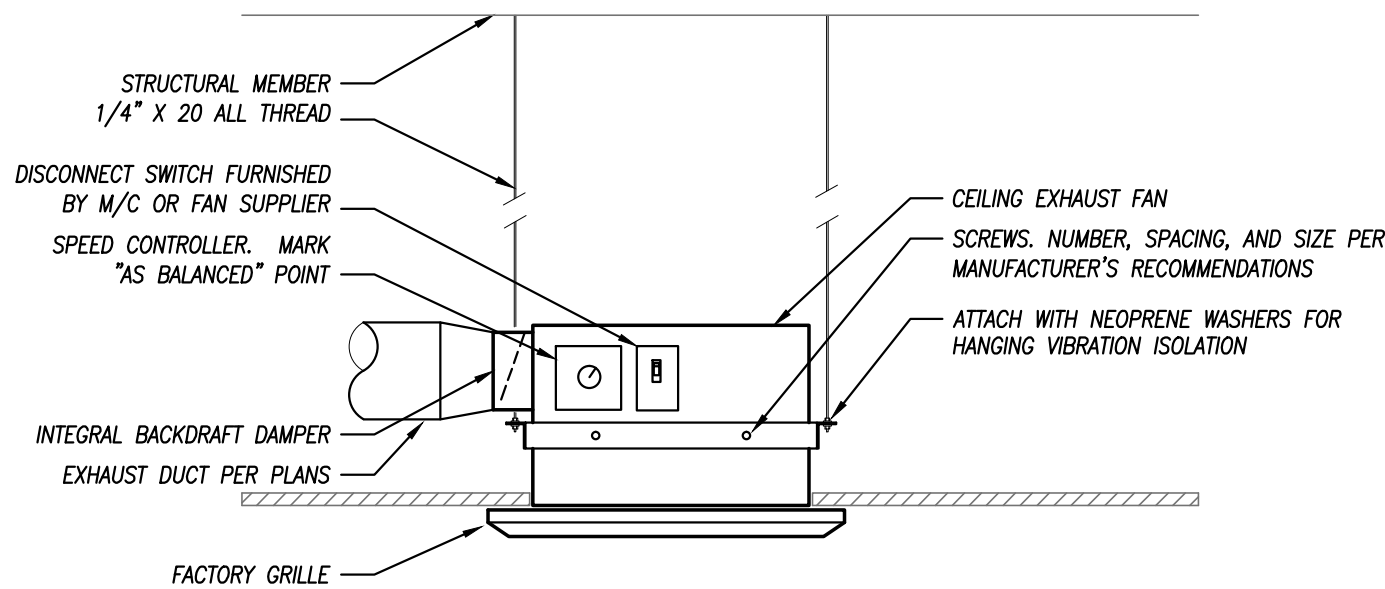
FURNACE AND CONDENSING UNIT DETAIL

NOT TO SCALE



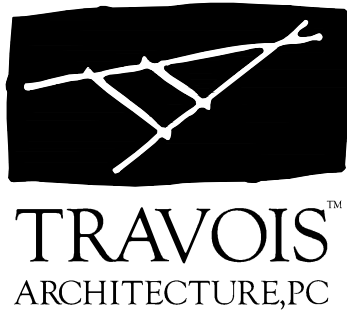
DUCTWORK TAKEOFF

NOT TO SCALE



CABINET EXHAUST FAN MOUNTING DETAIL

NOT TO SCALE



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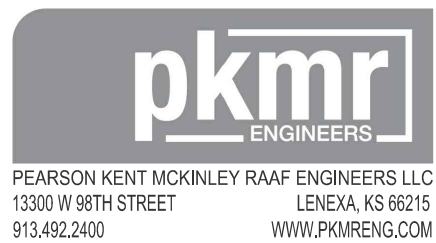
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SHEET

M201

MECHANICAL
SCHEDULES/DETAILS



PEARSON MENT MCKINLEY RAAF ENGINEERS LLC
13300 W 98TH STREET
LENEXA, KS 66215
913.492.2400
WWW.PKMR.ENG.COM

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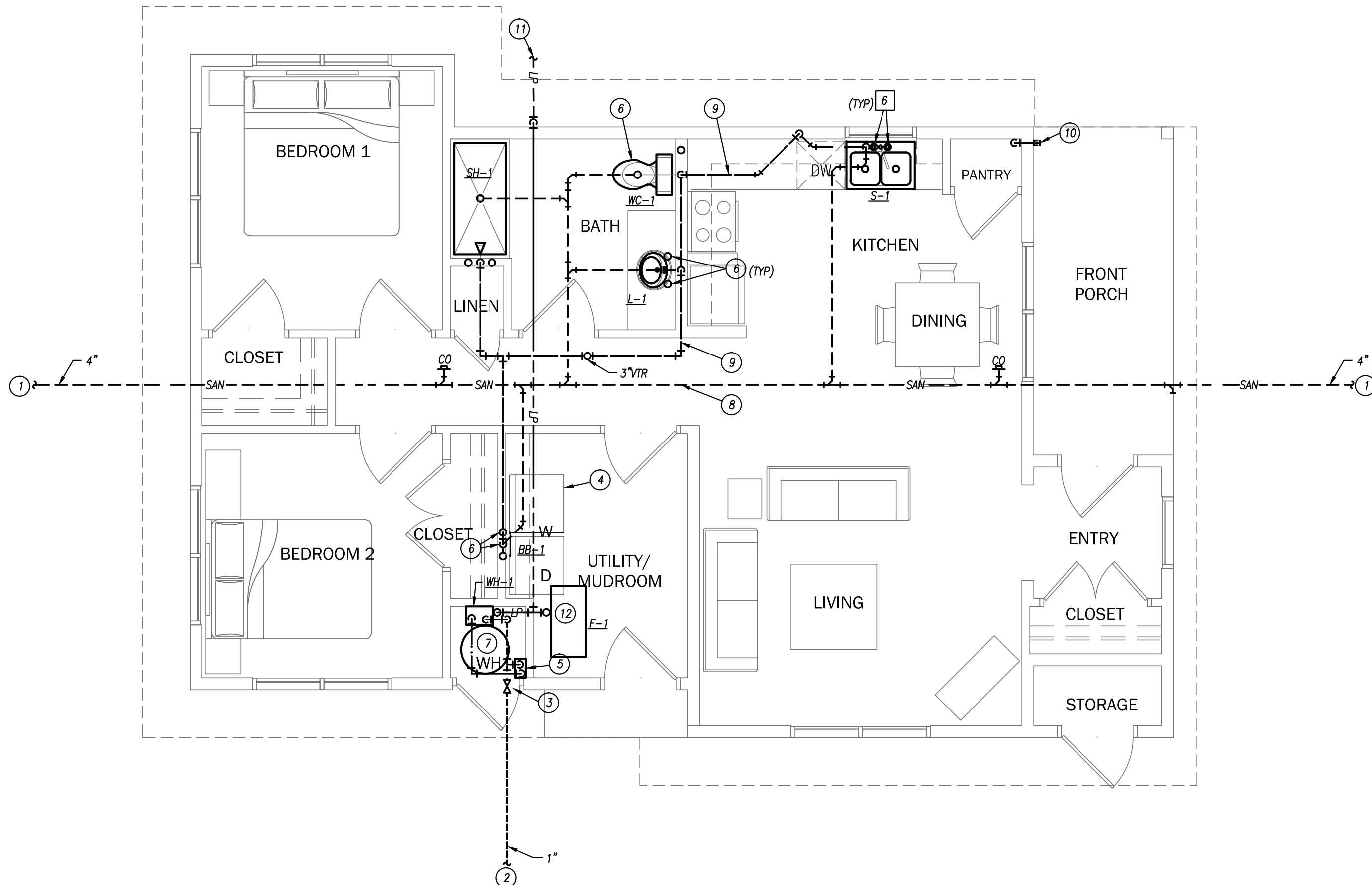
PLUMBING -
UNIT-2A

GENERAL PLUMBING NOTES

1. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS AND EXACT LOCATIONS OF DEVICES, CEILINGS, ETC. REFER TO ARCHITECTURAL PLANS FOR ALL EXACT DIMENSIONS AND DO NOT SCALE FROM MECHANICAL ELECTRICAL OR PLUMBING PLANS.
2. FULLY REVIEW ALL PLANS PRIOR TO ROUGHING IN OR INSTALLATION OF SYSTEMS. IMMEDIATELY REPORT ANY DEVIATIONS OR CONFLICTS IN WORK TO ARCH/ENG FOR RESOLUTION.
3. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF PIPING WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR PIPING AS NEEDED TO INSTALL THE PLUMBING SYSTEM TO CLEAR STRUCTURE AND OTHER SYSTEMS IN CONFLICT WITH PIPE ROUTING.
4. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.
5. NO SANITARY PIPING BELOW GRADE SHALL BE LESS THAN 2".
6. FOR INDIVIDUAL PIPING CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS REFER TO RISER DIAGRAM AND PLUMBING FIXTURE SCHEDULE.
7. NO PIPING SHALL BE INSTALLED WHERE IT WILL BE SUBJECT TO FREEZING TEMPERATURES. ROUTE ALL WATER PIPING (DOMESTIC) IN HEATED / TEMPERED SPACE, SUCH AS IN WALLS OR IN CAVITY ABOVE CORRIDOR LAY-IN CEILING (AND BELOW GYPSUM CEILING). NO WATER PIPING IS PERMITTED IN ATTIC OR UNDERGROUND EXCEPT SERVICE ENTRANCES. NO PIPING SHALL BE INSTALLED WHERE IT WILL BE SUBJECT TO FREEZING TEMPERATURES. COORDINATE EXACT ROUTING OF ALL PIPING WITH OTHER TRADES, EQUIPMENT AND PLUMBING FIXTURES.
8. ALL VENT PIPING IS SHOWN DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
9. NOT ALL CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE REQUIRED CLEANOUTS. COORDINATE LOCATIONS WITH ARCHITECT.
10. PROVIDE CLEANOUTS IN ALL HORIZONTAL DRAINS WITHIN BUILDINGS NOT MORE THAN 100 FEET APART. BUILDING SEWERS SHALL BE PROVIDED WITH CLEANOUTS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. A CLEANOUT SHALL BE PROVIDED AT THE BASE OF EACH WASTE OR SOIL STACK. THERE SHALL BE A CLEANOUT NEAR THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER.
11. COORDINATE LOCATIONS OF FLOOR DRAINS/SINKS WITH MECHANICAL EQUIPMENT.
12. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING SHOWER STALLS AT PROPER ELEVATION TO RECEIVE TILE FLOOR COVERING AND FOR GROUTING GAP BETWEEN THE SHOWER STALL AND THE FLOOR. BLOCK OUT FOR THE SHOWER STALL. PLUMBING CONTRACTOR TO PUT GROUT UNDER SHOWERS TO PROVIDE A FIRM BASE FOR SHOWER FLOORS (TYPICAL FOR ALL SHOWERS).
13. PROVIDE WASTE CLEANOUT AT 18" ABOVE FLOOR FOR ALL WASTE STACKS.
14. PROVIDE ACCESS TO ALL PLUMBING VALVES, ETC. (EG. PROVIDE ACCESS DOORS BEHIND BATHTUBS AND/OR SHOWERS TO ALLOW ACCESS TO FAUCET PLUMBING).
15. PROVIDE PASSIVE RADON SYSTEM. PROVIDE VENT PIPE FROM CRAWLSPACE GRAVEL TO ROOF.

PLUMBING PLAN KEYED NOTES

1. EXTEND BUILDING SEWER TO NEAREST MAIN. COORDINATE FOR EACH SITE WHICH DIRECTION THE SANITARY SHALL LEAVE THE BUILDING.
2. EXTEND WATER SERVICE TO NEAREST WATER MAIN.
3. DOMESTIC WATER SHUT-OFF VALVE. PROVIDE ACCESS PANEL TO SHUT-OFF VALVE.
4. WASHING MACHINE DRAIN PAN.
5. PEX DISTRIBUTION HEADER. ROUTE COLD, AND HOT WATER PIPING IN CRAWLSPACE TO EACH FIXTURE. REFER TO SCHEDULE FOR PIPE SIZE TO EACH FIXTURE.
6. 1/2" DOMESTIC COLD AND HOT WATER TO PEX DISTRIBUTION HEADED. (TYPICAL).
7. PROVIDE AND INSTALL NEW GAS WATER HEATER. EXTEND 3/4" GAS TO WATER HEATER AND PROVIDE NEW FLUE EXHAUST TO EXTERIOR PER MANUFACTURERS RECOMMENDATIONS.
8. ROUTE SANITARY PIPING IN CRAWLSPACE AS SHOWN.
9. PROVIDE AND INSTALL 1/2" WALL HYDRANT. CONNECT TO NEAREST 1/2" DOMESTIC COLD WATER. CONTRACTOR TO COORDINATE AND VERIFY WITH ARCHITECT THE EXACT LOCATION OF WALL HYDRANT. SEE PLUMBING FIXTURE SCHEDULE FOR MORE INFORMATION.
10. 1" GAS PIPING TO 500-GALLON PROPANE TANK. REFER TO SITE PLAN FOR LOCATION OF PROPANE TANK.
11. 3/4" GAS PIPING TO FURNACE.



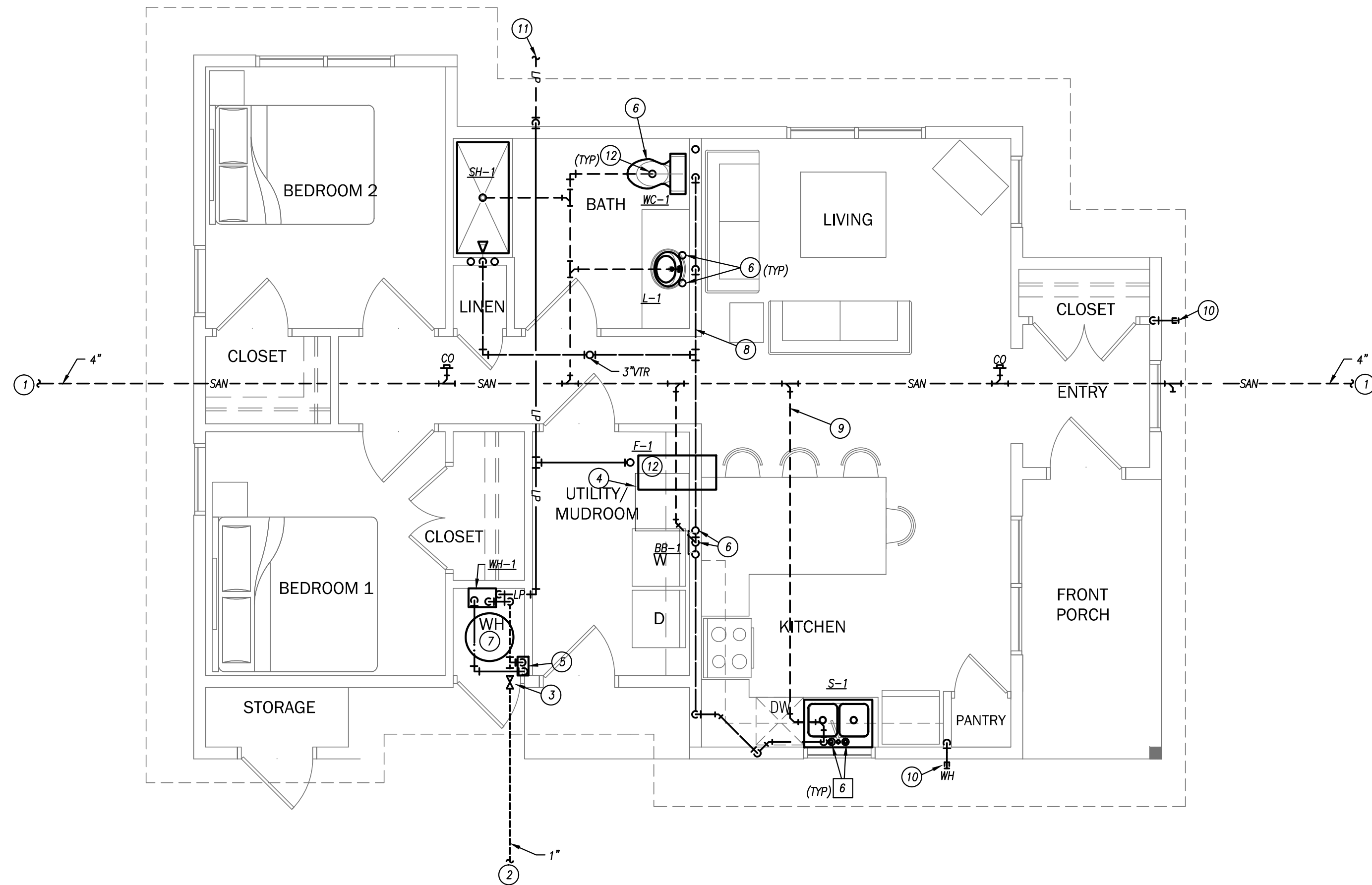
PLUMBING - UNIT-2A - FLOOR PLAN

1/4" = 1'-0"



PEARSON KENT MCKINLEY RAAF ENGINEERS LLC
13300 W 98TH STREET
913.492.2400
LENEXA, KS 66156
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17.311



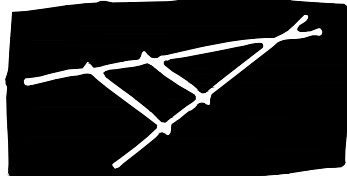
PLUMBING - UNIT-2B - FLOOR PLAN

GENERAL PLUMBING NOTES

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- 2. FULLY REVIEW ALL PLANS PRIOR TO ROUGHING IN OR INSTALLATION OF SYSTEMS. IMMEDIATELY REPORT ANY DEVIATIONS OR CONFLICTS IN WORK TO ARCH/ENG FOR RESOLUTION.
- 3. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF PIPING WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR PIPING AS NEEDED TO INSTALL THE PLUMBING SYSTEM TO CLEAR STRUCTURE AND OTHER SYSTEMS IN CONFLICT WITH PIPE ROUTING.
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- 3. DOMESTIC WATER SHUT-OFF VALVE. PROVIDE ACCESS PANEL TO SHUT-OFF VALVE.
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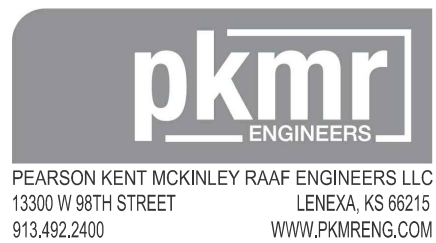


REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17
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PLUMBING -
UNIT - 2B



17.2.11



REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17
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SHEET

P103

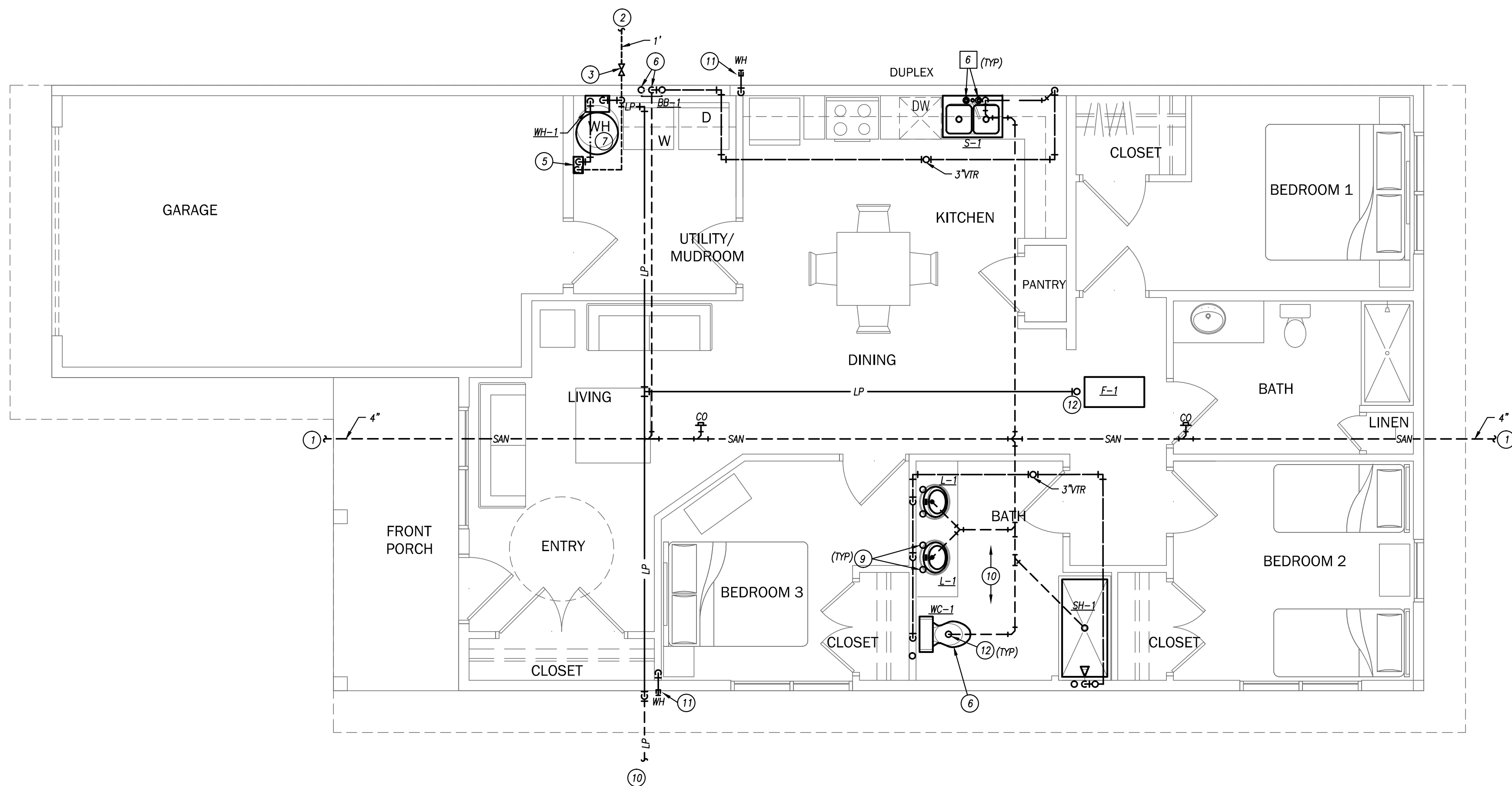
PLUMBING -
UNIT - 3A

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PLUMBING - UNIT-3A - FLOOR PLAN



REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17
(FOR CONSTRUCTION) PERMIT	10/27/17

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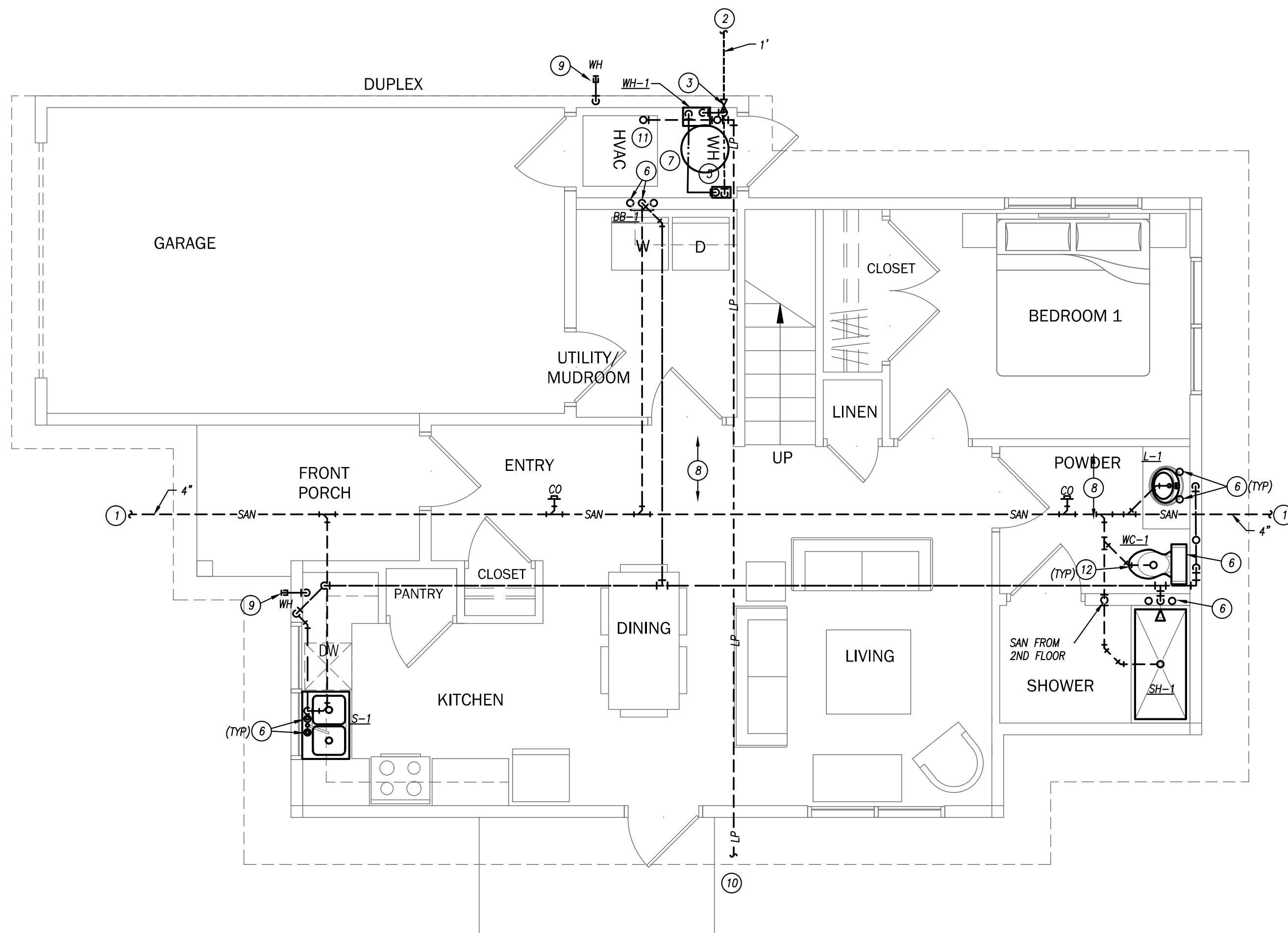
PLUMBING -
UNIT-3B

GENERAL PLUMBING NOTES

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PLUMBING - UNIT-3B - FLOOR PLAN



REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17
(FOR CONSTRUCTION) PERMIT	10/27/17

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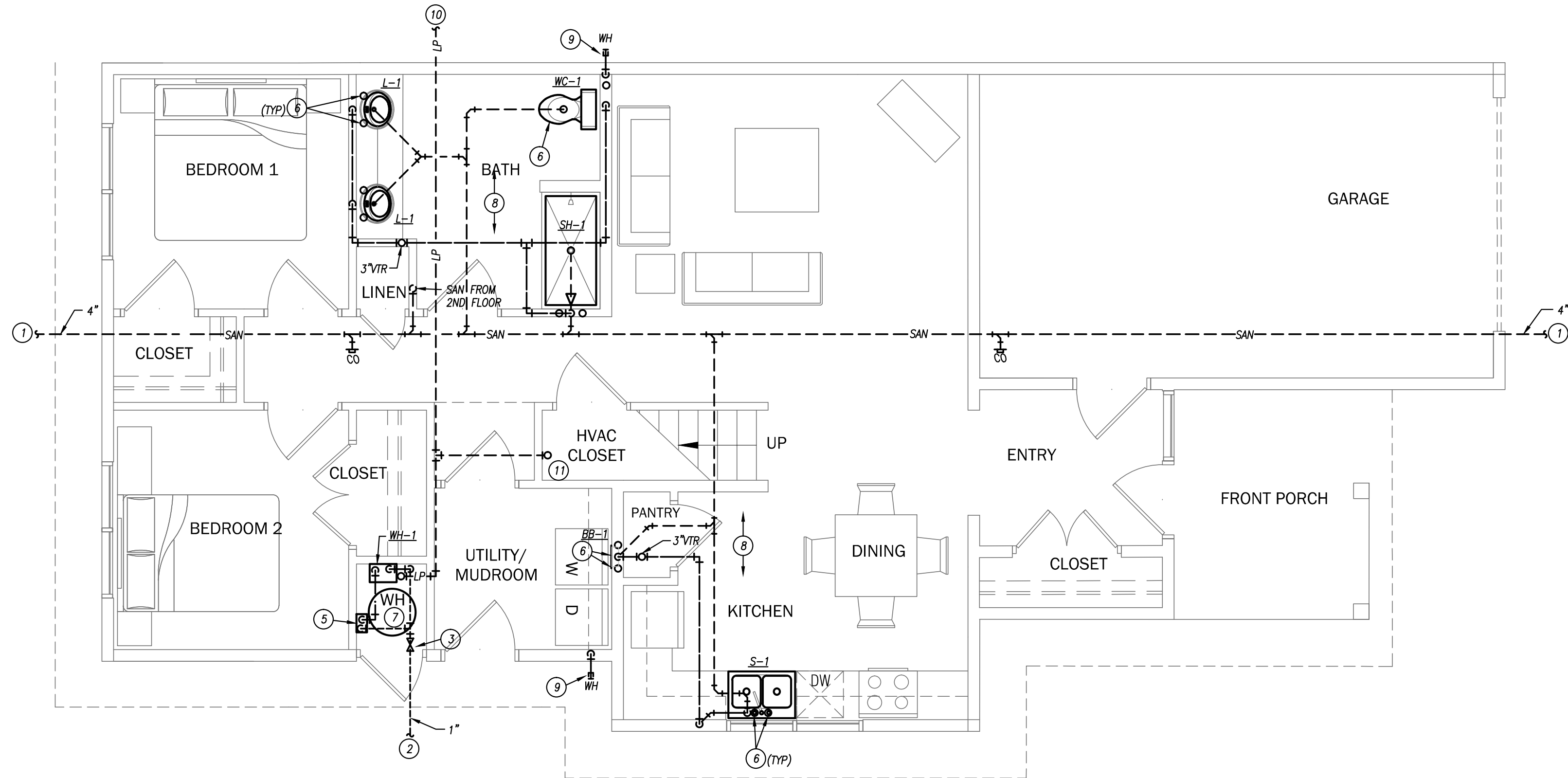
PLUMBING -
UNIT-3C

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15. PROVIDE PASSIVE RADON SYSTEM. PROVIDE VENT PIPE FROM CRAWLSPACE GRAVEL TO ROOF.

PLUMBING PLAN KEYED NOTES

1. EXTEND BUILDING SEWER TO NEAREST MAIN. COORDINATE FOR EACH SITE WHICH DIRECTION THE SANITARY SHALL LEAVE THE BUILDING.
2. EXTEND WATER SERVICE TO NEAREST WATER MAIN.
3. DOMESTIC WATER SHUT-OFF VALVE. PROVIDE ACCESS PANEL TO SHUT-OFF VALVE.
4. WASHING MACHINE DRAIN PAN.
5. PEX DISTRIBUTION HEADER. ROUTE COLD, AND HOT WATER PIPING IN CRAWLSPACE TO EACH FIXTURE. REFER TO SCHEDULE FOR PIPE SIZE TO EACH FIXTURE.
6. 1/2" DOMESTIC COLD AND HOT WATER TO PEX DISTRIBUTION HEADED. (TYPICAL).
7. PROVIDE AND INSTALL NEW GAS WATER HEATER. EXTEND 3/4" GAS TO WATER HEATER AND PROVIDE NEW FLUE EXHAUST TO EXTERIOR PER MANUFACTURERS RECOMMENDATIONS.
8. ROUTE SANITARY PIPING IN CRAWLSPACE AS SHOWN.
9. PROVIDE AND INSTALL 1/2" WALL HYDRANT. CONNECT TO NEAREST 1/2" DOMESTIC COLD WATER. CONTRACTOR TO COORDINATE AND VERIFY WITH ARCHITECT THE EXACT LOCATION OF WALL HYDRANT. SEE PLUMBING FIXTURE SCHEDULE FOR MORE INFORMATION.
10. 1" GAS PIPING TO 500-GALLON PROPANE TANK. REFER TO SITE PLAN FOR LOCATION OF PROPANE TANK.
11. 3/4" GAS PIPING TO FURNACE.



PLUMBING - UNIT-3C - FLOOR PLAN

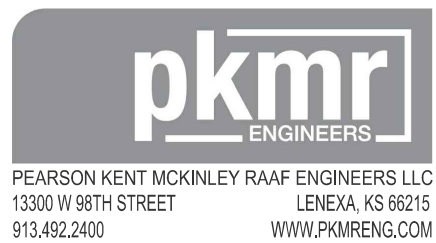
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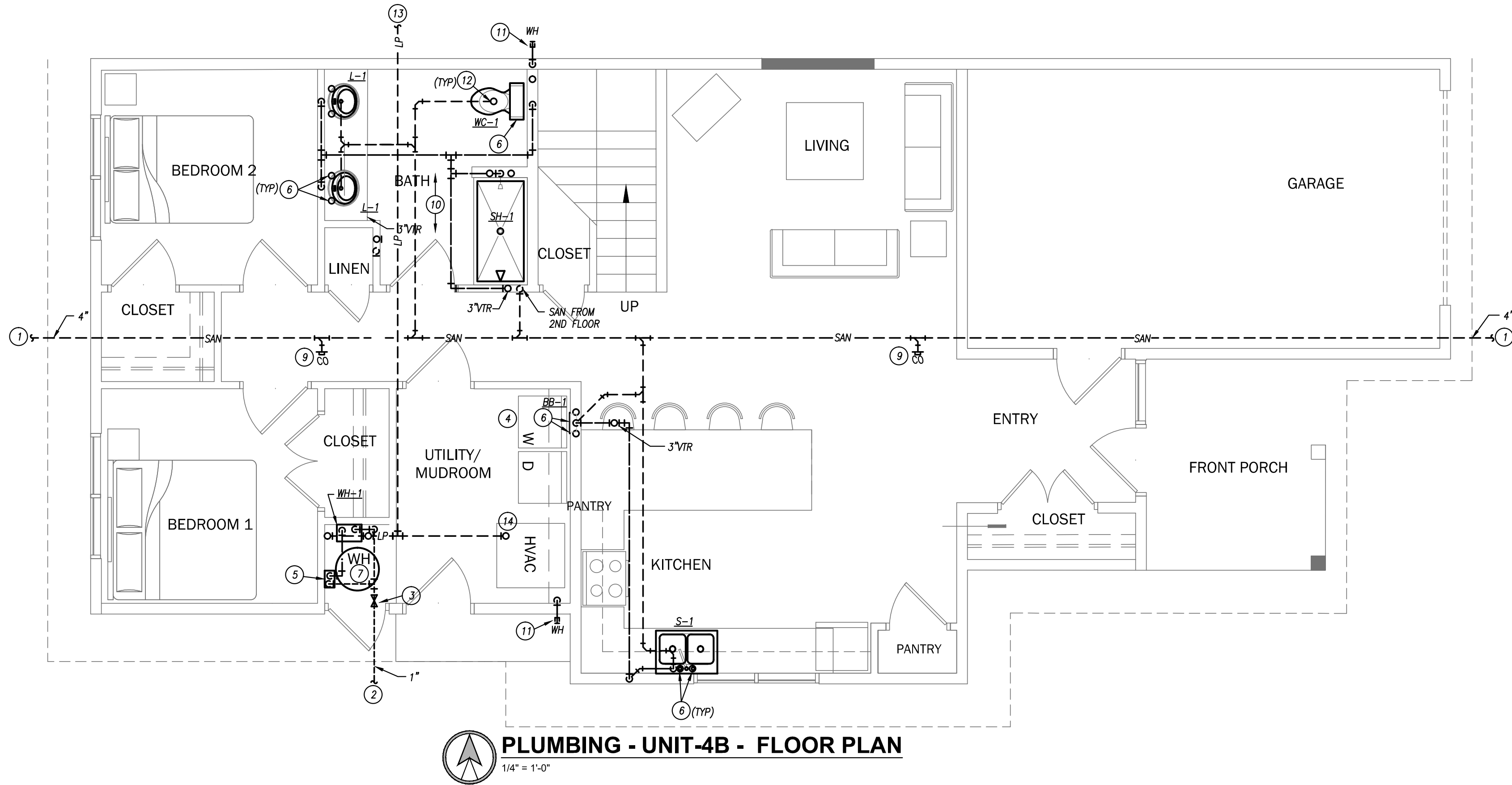
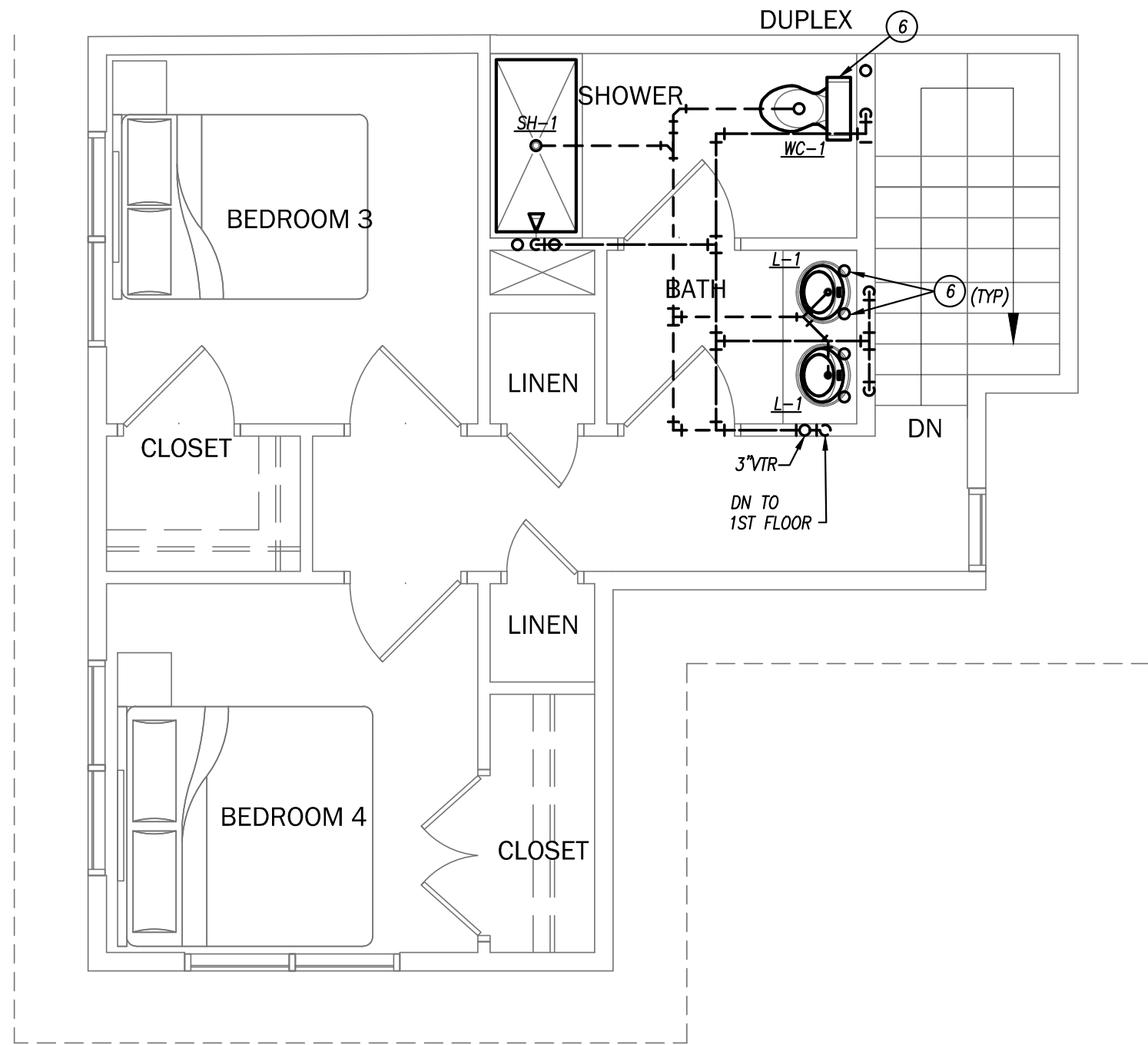


SHEET
P106
PLUMBING -
UNIT-4A

1. PROVIDE ARCHITECTURAL PLANS FOR DIMENSIONS AND EXACT LOCATIONS OF DEVICES, CEILINGINGS, ETC. REFER TO ARCHITECTURAL PLANS FOR ALL EXACT DIMENSIONS AND DO NOT SCALE FROM MECHANICAL ELECTRICAL OR PLUMBING PLANS.
2. FULLY REVIEW ALL PLANS PRIOR TO ROUGHING IN OR INSTALLATION OF SYSTEMS. IMMEDIATELY REPORT ANY DEVIATIONS OR CONFLICTS IN WORK TO ARCH/ENG FOR RESOLUTION.
3. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF PIPING WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISERS AND DROPS FOR PIPING AS NEEDED TO INSTALL THE PLUMBING SYSTEM TO CLEAR STRUCTURE AND OTHER SYSTEMS IN CONFLICT WITH PIPE ROUTING.
4. COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS.
5. NO SANITARY PIPING BELOW GRADE SHALL BE LESS THAN 2".
6. FOR INDIVIDUAL PIPING CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS REFER TO RISER DRAWING AND PLUMBING FIXTURE SCHEDULE.
7. NO PIPING SHALL BE INSTALLED WHERE IT MAY BE SUBJECT TO FREEZING TEMPERATURES. ROUTE ALL WATER PIPING (DOMESTIC) IN TEMPERED SPACE, SUCH AS IN WALLS OR IN CAVITY ABOVE CORRIDOR LAY-IN CEILING (AND BELOW GYPSUM CEILING); NO WATER PIPING IS PERMITTED IN ATTIC OR UNDERGROUND EXCEPT SERVICE ENTRANCES; NO PIPING SHALL BE INSTALLED WHERE IT MAY BE SUBJECT TO FREEZING TEMPERATURES. COORDINATE EXACT ROUTING OF ALL PIPING WITH OTHER TRADES, EQUIPMENT AND PLUMBING FIXTURES.
8. ALL VENT PIPING IS SHOWN DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
9. NOT ALL CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE REQUIRED CLEANOUTS. COORDINATE LOCATIONS WITH ARCHITECT.
10. PROVIDE CLEANOUTS IN ALL HORIZONTAL DRAINS WITHIN BUILDINGS NOT MORE THAN 100 FEET APART. BUILDING SEWERS SHALL BE PROVIDED WITH CLEANOUTS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. THE CLEANOUT SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OR PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF DRAINAGE PIPERUN AT EACH CHANGE OF DIRECTION OR THE BASE OF EACH WASTE OR SOIL STACK. THERE SHALL BE A CLEANOUT NEAR THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER.
11. COORDINATE LOCATIONS OF FLOOR DRAINS/SINKS WITH MECHANICAL EQUIPMENT.
12. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING SHOWER STALLS AT PROPER ELEVATION TO RECEIVE TILE FLOOR COVERING AND FOR GROUTING GAP BETWEEN THE SHOWER STALL AND THE FLOOR. BLOCK OUT FOR THE SHOWER STALL PLUMBING CONTRACTOR TO PUT GROUT UNDER SHOWERS TO PROVIDE A FIRM BASE FOR SHOWER FLOORS (TYPICAL FOR ALL SHOWERS).
13. PROVIDE WASTE CLEANOUT AT 18" ABOVE FLOOR FOR ALL WASTE STACKS.
14. PROVIDE ACCESS TO ALL PLUMBING VALVES, ETC. (EG. PROVIDE ACCESS DOORS BEHIND BATHTUBS AND/OR SHOWERS TO ALLOW ACCESS TO FAUCET PLUMBING).
15. PROVIDE PASSIVE RADON SYSTEM. PROVIDE VENT PIPE FROM CRAWLSPACE GRAVEL TO ROOF.

- ① EXTEND BUILDING SEWER TO NEAREST MAIN. COORDINATE FOR EACH SITE WHICH DIRECTION THE SANITARY SHALL LEAVE THE BUILDING.
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- ⑥ 1/2" DOMESTIC COLD AND HOT WATER TO PEX DISTRIBUTION HEADED. (TYPICAL)
- ⑦ PROVIDE AND INSTALL NEW GAS WATER HEATER. EXTEND 3/4" GAS TO WATER HEATER AND PROVIDE NEW FLUE EXHAUST TO EXTERIOR PER MANUFACTURERS RECOMMENDATIONS.
- ⑧ ROUTE SANITARY PIPING IN CRAWLSPACE AS SHOWN.
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- ⑩ 1" GAS PIPING TO 500-GALLON PROPANE TANK. REFER TO SITE PLAN FOR LOCATION OF PROPANE TANK.
- ⑪ 3/4" GAS PIPING TO FURNACE.





PLUMBING - UNIT 4B - FLOOR PLAN

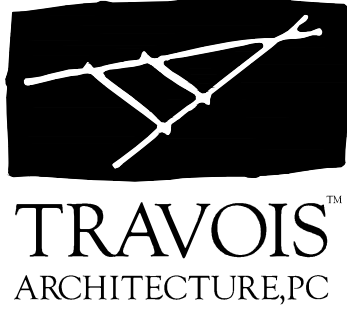
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GENERAL PLUMBING NOTES

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REVISION DATE

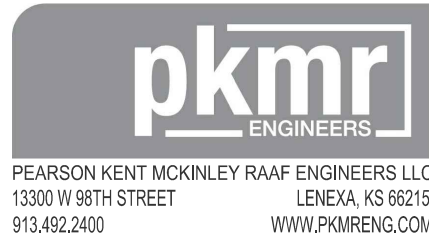
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40% CDs 07/28/17
75% CDs 09/26/17

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PERMIT 10/27/17

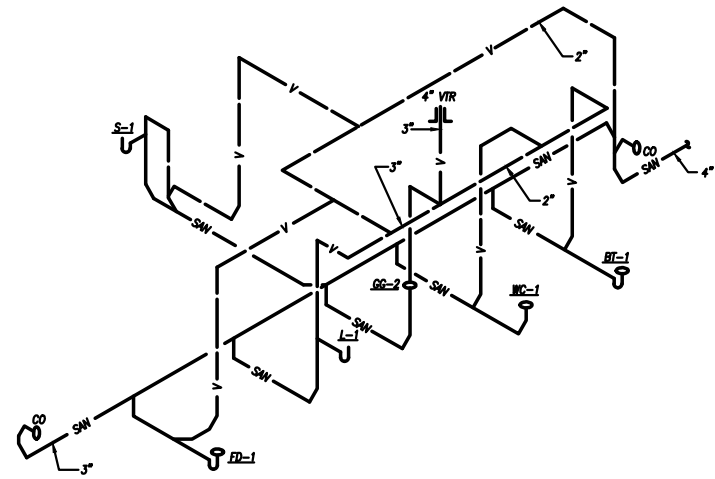
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UNIT - 4B



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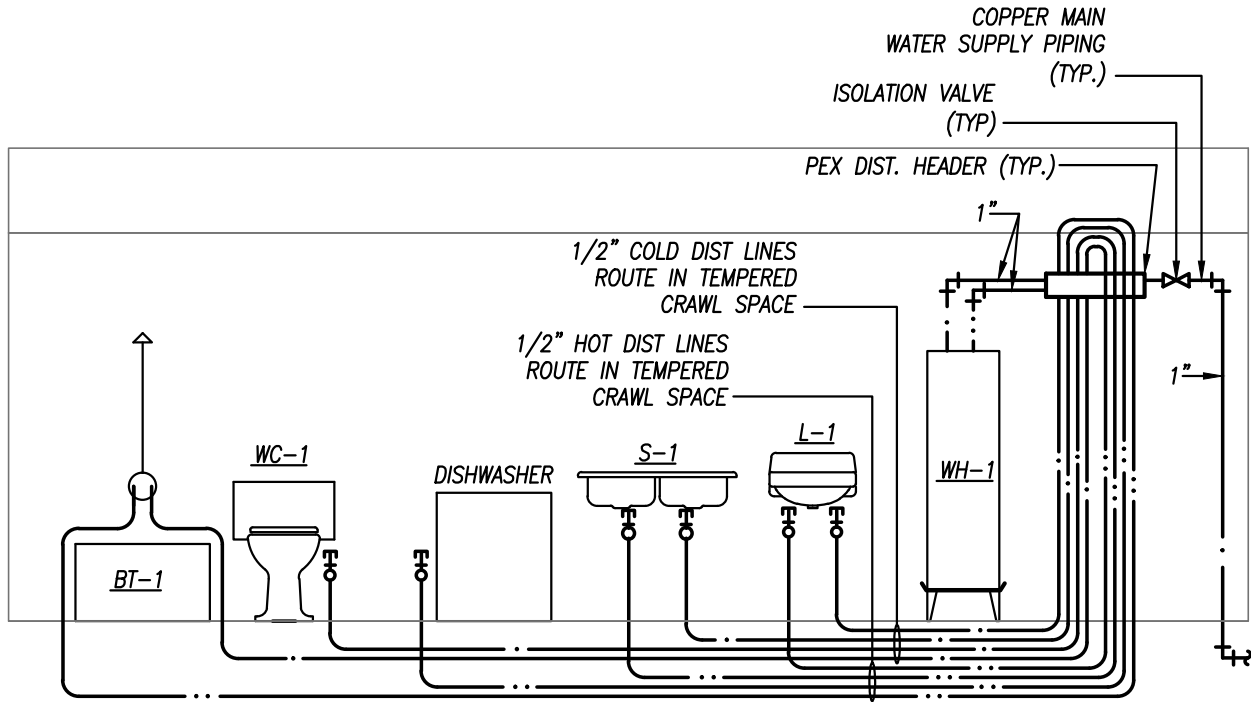


TYPICAL SINGLE RESTROOM WASTE & VENT RISER

NOT TO SCALE

GENERAL RISER NOTES

- PLUMBING RISER IS DIAGRAMMATIC – REFER TO THE FLOOR PLAN TO COORDINATE EXACT ROUTING AND SIZING OF PLUMBING SERVICES.
- REFER TO PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL CONNECTION SIZES AND TRAP REQUIREMENTS.
- NOT ALL CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE REQUIRED CLEANOUTS. COORDINATE LOCATIONS WITH ARCHITECT.
- ALL VENT PIPING IS SHOWN DIAGRAMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE. CONNECTIONS TO HORIZONTAL DRAINS SHALL BE MADE ABOVE CENTER-LINE OF THE HORIZONTAL DRAIN PIPE.
- RISERS MAY BE MIRROR IMAGES OF ACTUAL PLAN. COORDINATE WITH PLUMBING PLANS.

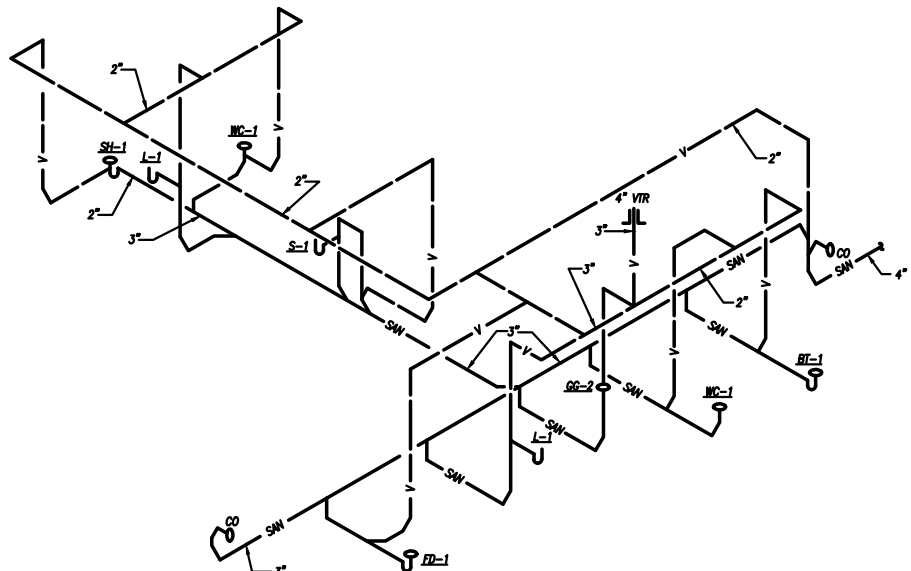


TYPICAL DOMESTIC WATER RISER

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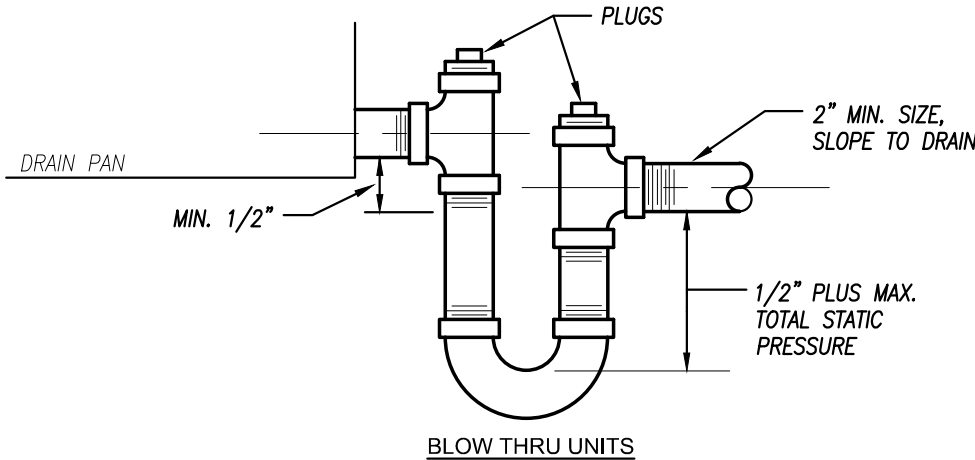
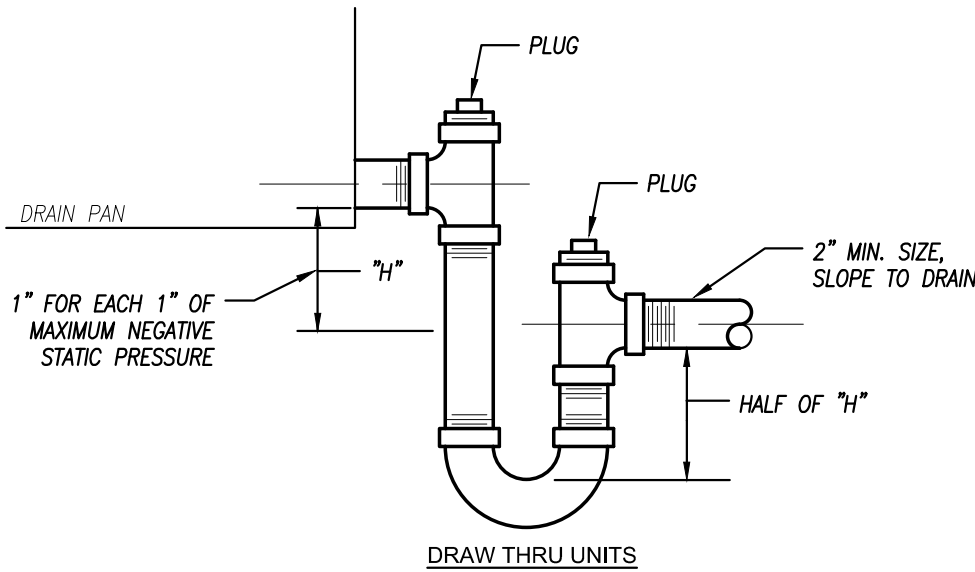
RISER NOTES:

- PLUMBING RISER IS DIAGRAMMATIC – REFER TO THE FLOOR PLAN TO COORDINATE EXACT ROUTING AND SIZING OF PLUMBING SERVICES. (RUN ALL WATER PIPING CONCEALED IN SOFFITS OR WALLS.
- REFER TO PLUMBING FIXTURE SCHEDULE FOR INDIVIDUAL CONNECTION SIZES AND TRAP REQUIREMENTS.



TYPICAL DOUBLE RESTROOM WASTE & VENT RISER

NOT TO SCALE



CONDENSATE TRAP DETAIL

NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS MODEL	FITTINGS AND TRIM	REMARKS	PLUMBING FIXTURE PIPE SIZES			
						WASTE	VENT	DCW	DHW
WC-1	AMERICAN STANDARD AFWALL 3351.101	1.28 GALLON, WALL-MOUNTED FLUSH VALVE WATER CLOSET. SIPHON JET FLUSHING ACTION. TOP SPUD AND FLAT BOLT COVERS. WHITE VITREOUS CHINA ELONGATED BOWL. MOUNT TOP OF RIM AT 15" A.F.F. PROVIDE CHAIR CARRIER, FACEPLATE AND FOOT SUPPORTS FOR HANGER AND ALL OTHER REQUIRED MOUNTING HARDWARE. WHITE, SOLID PLASTIC, OPEN-FRONT SEAT FOR ELONGATED BOWL. INTEGRAL BUMPERS. EXTERNALCHECK HINGES WITH STAINLESS STEEL POSTS.	SLOAN G2 8111-1.28	EXPOSED WATER CLOSET FLUSH VALVE. BATTERY POWERED CHROME-PLATED. HANDS FREE OPERATION. 1" I.P.S. SCREWDRIVER BACK-CHECK ANGLE STOP WITH PROTECTIVE CAP. ADJUSTABLE TAILPIECE. 1.28 GPF, VACUUM BREAKER FLUSH CONNECTION AND SPUD COUPLING FOR 1-1/2" TOP SPUD. PROVIDE WALL AND SPUD FLANGES. MOUNTING HEIGHT PER MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH ADA GUIDELINES.	6	4"	2"	1-1/4"	----
L-1	STERLING 0491.019 "RONDALYN"	ADA-COMPLIANT, COUNTER TOP-MOUNTED LAVATORY. 19" ROUND, WHITE VITREOUS CHINA, SELF-RIMMING BASIN WITH FAUCET HOLES ON 4" CENTERS. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.	DELTA 2520LF-MPU	FAUCET: SINGLE HANDLE CHROME PLATED CAST BRASS MIXING FAUCET, 4" CENTERS, 4-3/4" SPOUT, 0.5 GPM AERATOR DELTA MODEL RRP711111, 4-5/8" METAL LEVER HANDLE. CERAMIC VOLUME CONTROL & HOT WATER LIMIT STOP CARTRIDGE. NO POP UP.	1,2,7	2"	2"	1/2"	1/2"
S-1	DAYTON K23322 (ADA/ ANSI 2-BDR UNITS)	DOUBLE COMPARTMENT SINK. SEAMLESS #18 GAUGE, TYPE 302 (18-8) NICKEL BEARING STAINLESS STEEL. LK-6K-H SATIN FINISH, FULLY UNDERCOATED, HOLES AT 4" O.C. 6-1/2" BOWL DEPTH. 1-3/4" RADIUS CURVED CORNERS. SELF RIMMING.	SYMMONS 2-248-2	SINK FAUCET. 1/2" CONNECTIONS, PROVIDE BASKET STRAINER AND DRAIN.	2,3,5,8	2"	2"	1/2"	1/2"
WH-1	WHIRLPOOL GC-2000PE	CARBAGE DISPOSAL. STAINLESS STEEL SINK FLANGE, STOPPER, GRIND CHAMBER, TWO 360 DEG. SWIVEL IMPELLERS, AUTO REVERSING, PERMANENTLY LUBRICATED BEARINGS, CORROSION PROTECTION SHIELD.							
SH-1	KOHLER K-11230-LA OR RA	ACRYLIC BATH WITH INTEGRAL APRON, 60" X 32" X 19" H, CURTAIN ROD, WHITE VINYL, COMMERCIAL GRADE SHOWER CURTAIN, SLOTTED OVERFLOW FOR MAXIMUM BATHING DEPTH, LOW THRESHOLD HEIGHT, AND INTEGRAL LUMBAR SUPPORT, INTEGRAL APRON AND INTEGRAL TILE FLANGE, ARMRESTS. REFER TO PLANS FOR LEFT OR RIGHT HAND MOUNTING. PROVIDE WITH K-7272-CP SLOTTED OVERFLOW BATH DRAIN.	AMERICAN STANDARD T675.502 BATH/ SHOWER TRIM KIT AMERICAN STANDARD R120SS	METAL LEVER HANDLE, SHOWERHEAD, SHOWER ARM AND FLANGE, DIVERTER TUB SPOUT. PRESSURE BALANCE BATH/ SHOWER FITTING VOLUME AND TEMPERATURE CONTROL VALVE.	-----	2"	2"	1/2"	1/2"
SH-1	AQUA BATH C6536BF 2"-R/L ADA UNITS ONLY	ACRYLIC, ONE-PIECE SHOWER STALL. 60"x36"x78" HIGH INSIDE DIMENSIONS WITH 3/4" THRESHOLD. SELF-Caulking BRASS DRAIN WITH STAINLESS STEEL STRAINER. STAINLESS STEEL GRAB BAR AND CURTAIN ROD. COMMERCIAL-GRADE WHITE VINYL SHOWER CURTAIN. REFER TO PLANS FOR LEFT OR RIGHT HAND MOUNTING.	DELTA T13020 DELTA RPW336HDF	ADA-COMPLIANT TEMPERATURE AND VOLUME CONTROL. SINGLE, VANDAL-RESISTANT LEVER HANDLE. CERAMIC CARTRIDGE. HEAVY-DUTY POLISHED CHROME FINISH. ALL METAL CONSTRUCTION. HAND-HELD SHOWER HEAD. 36" SLIDE AND GRAB BARS. ATMOSPHERIC VACUUM BREAKER. 90° WALL SUPPLY ELBOW.	----	1-1/2"	1-1/2"	1/2"	1/2"
BB-1	IPS W2800-HA	WASHING MACHINE SUPPLY AND DRAIN BACK BOX. PROVIDE WITH VALVES, ARRESTERS AND DRAIN FITTINGS.			-	2"	2"	1/2"	1/2"
BB-2	GLY GREY BMB75	ICE MAKER BACK BOX. PROVIDE WITH STOP VALVE.	----	----	----	----	----	1/2"	----
WH	JAY R. SMITH 55090T-WC	NON-FREEZE WALL HYDRANT. BRONZE NICKEL PLATED, INTEGRAL VACUUM BREAKERM QUARTER-TURN "T" HANDLE KEY, 3/4" THREADED HOSE CONNECTION, ADJUSTABLE WALL CLAMP AND STAINLESS STEEL BOX.			--	--	--	3/4"	-

REMARKS:

- PROVIDE CHROME-PLATED BRASS TAILPIECE AND GRID DRAIN.
- PROVIDE CHROME-PLATED BRASS P-TRAP.
- PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
- PROVIDE CONCEALED ARM TYPE CARRIER WITH SQUARE, TUBULAR STEEL UP-RIGHTS AND BLOCK TYPE BASES.
- INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS. REFER TO SPECIFICATIONS FOR INSULATION METHODS.
- PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF STALL.
- PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.
- PROVIDE CHROME-PLATED BRASS TAILPIECE AND BASKET STRAINER.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

- ALL PUBLIC LAVATORIES AND SINKS SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 LISTED VALVE ON HOT WATER SUPPLY.

PIPING MATERIAL SCHEDULE

PIPING SYSTEM	SIZE	TYPE/SCHED	MATERIAL	ACCEPTABLE FITTINGS	FIELD TEST PRESSURE/TIME	ALLOWABLE IN PLENUMS	INSULATION	
							TYPE	THICKNESS
DOMESTIC COLD WATER	1/2" - 2"	PEX-a OR b	PEX	PRO-PRESS / COLD EXPANSION - BRASS OR POLY	130 PSJ - 1/2HR	YES	ELASTOMERIC	1/2"
DOMESTIC HOT WATER & HW RETURN	1/2" - 2"	PEX-a OR b	PEX	PRO-PRESS / COLD EXPANSION - BRASS OR POLY	130 PSJ - 1/2HR	YES	ELASTOMERIC	1"
DOM. HOT & COLD BELOW GRADE	1/2"-2"	PEX-a OR PEX-b	PEX	PRO-PRESS / COLD EXPANSION - BRASS OR POLY	130 PSJ - 1/2HR	YES	ELASTOMERIC	3/4" (HOT ONLY)
SOIL & WASTE ABOVE GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO	-	-
SOIL & WASTE BELOW GRADE	2"-8"	SCH. 40	PVC	SOLVENT JOINED	10 FT - 1/2HR	NO	-	-
CONDENSATE DRAIN INTERIOR	1/2"-2"	L	COPPER	SOLDER, PRO-PRESS	10 FT - 1/2HR	YES	FIBERGLASS W/ ASJ	1/2" (PLENUM ONLY)

NOTES

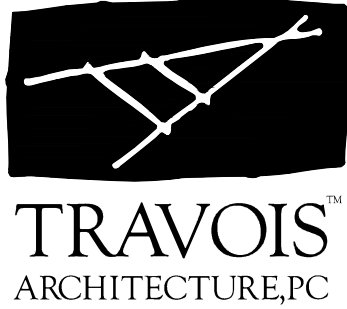
- ALL PIPING AND MATERIALS IN PLENUMS MUST MEET ASTM E84 FLAME/SMOKE RATING OF 25/50.
- ALL INSULATION THICKNESSES SHALL MEET ASHRAE 90.1 - 2007 REQUIREMENTS AT A MINIMUM.
- REFER TO SPECIFICATIONS FOR MORE DETAILED INFORMATION.

WATER HEATER SCHEDULE - SOLAR

PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	# OF HTG. ELEMENTS	WATTS	RECOVERY @ 100°F RISE	VOLTAGE/ PHASE	REMARKS
WH-1	RHEEM	81V80HE-T	80.0	1	12,000	-	120V / 1PH	1,2,3,4,5
REMARKS: 1. PROVIDE APRICUS ETC-30 SOLAR COLLECTOR. PROVIDE WITH MOUNTING HARDWARE. PLACE PER MANUFACTURER'S RECOMMENDATIONS 2. RHEEM SOLARAIDE STORAGE TANK 3. PROVIDE WITH STECA MODEL TR0301 CONTROLS. 4. PROVIDE WITH WILCO-STAR 21 PUMP, EXPANSION TANK AND T&P RELIEF VALVE 5. PROVIDE 30% GLYCOL SOLUTION								

INSTANTANEOUS WATER HEATER SCHEDULE - GAS

PLAN MARK	MANUFACTURER	MODEL NUMBER	GAS INPUT (MBTU/H)	GAS OUTPUT (BTU'S)	VENT/COMB. AIR SIZE	ELECTRICAL	GAS CONNECTION	HYDRONIC CONNECTION	REMARKS
WH-1	NORITZ	N-0751M	199	167	3"	120V/1PH	3/4"	3/4"	1,2,3,4
REMARKS: 1. PROVIDE WITH WALL MOUNTING KIT 2. PROVIDE WITH CONTROLLER AND SYSTEM PUMP. 3. STAINLESS STEEL BURNER & HEAT EXCHANGER 4. EQUIVALENTS BY LAARS, RHEEN, RINNAL									



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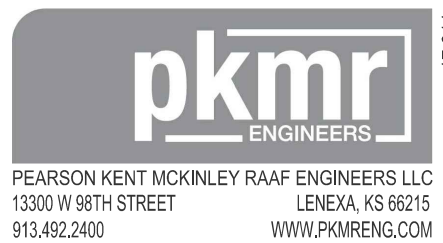
REVISION DATE

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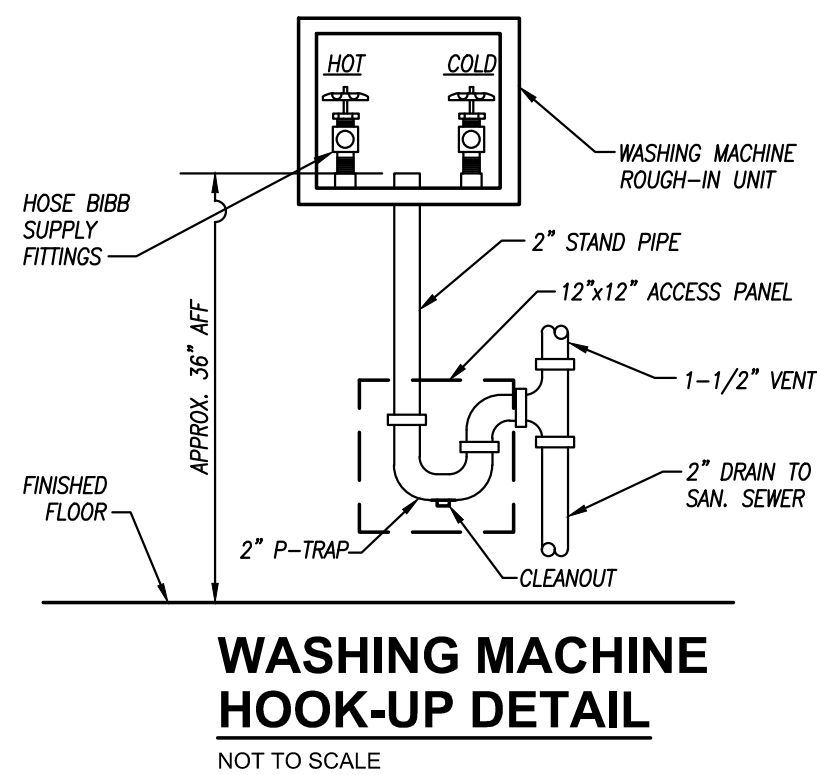
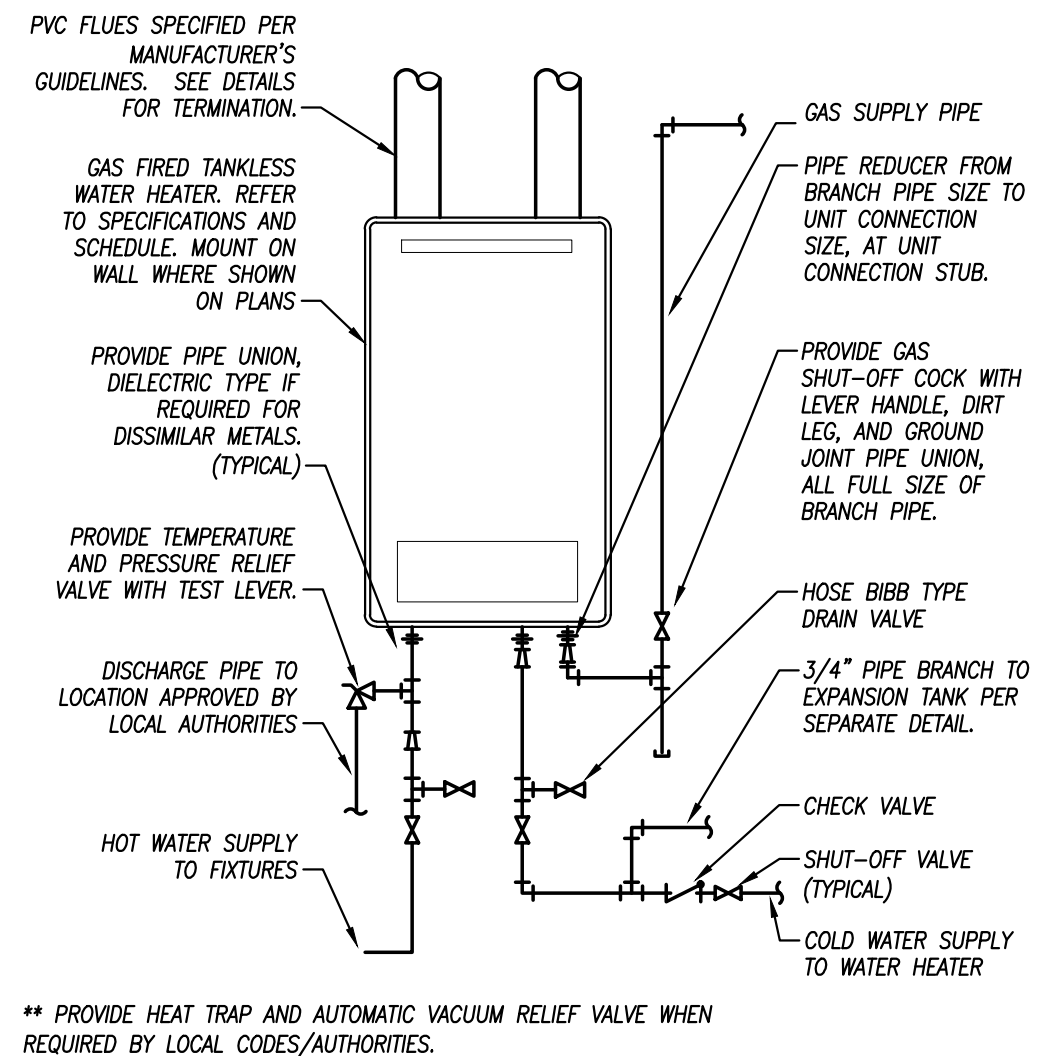
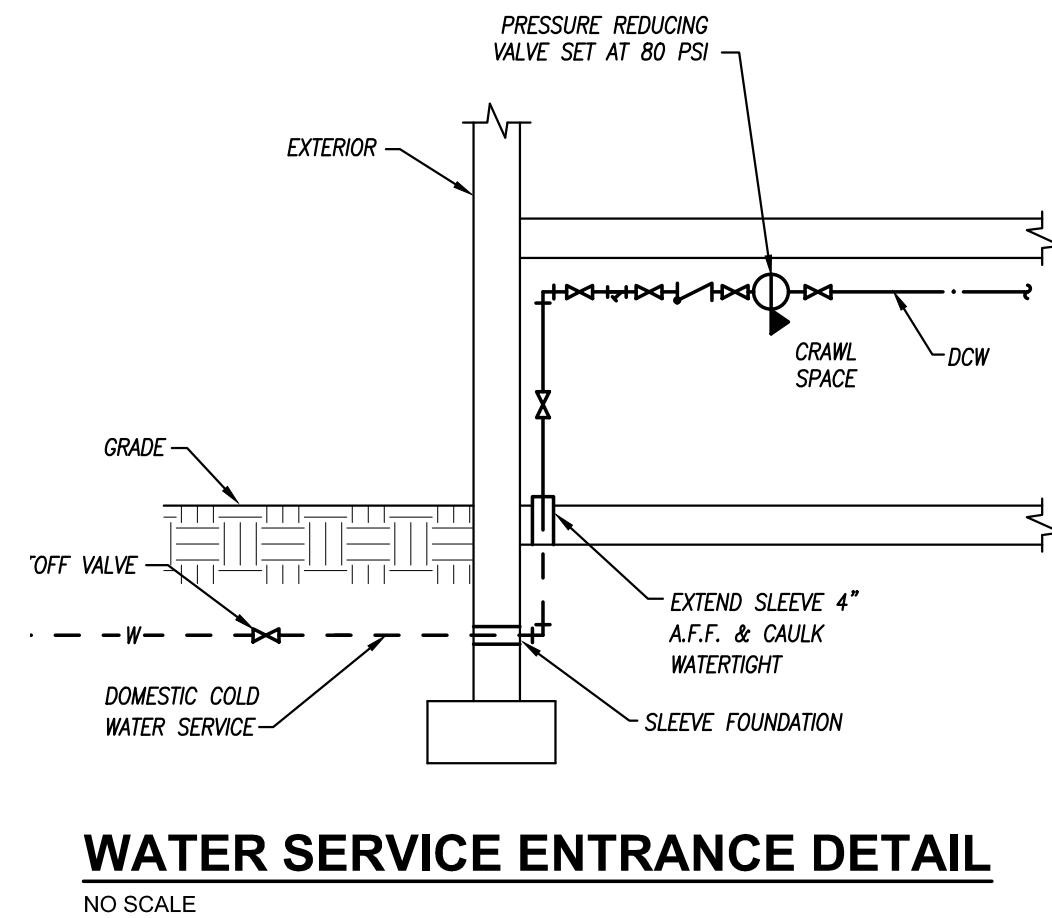
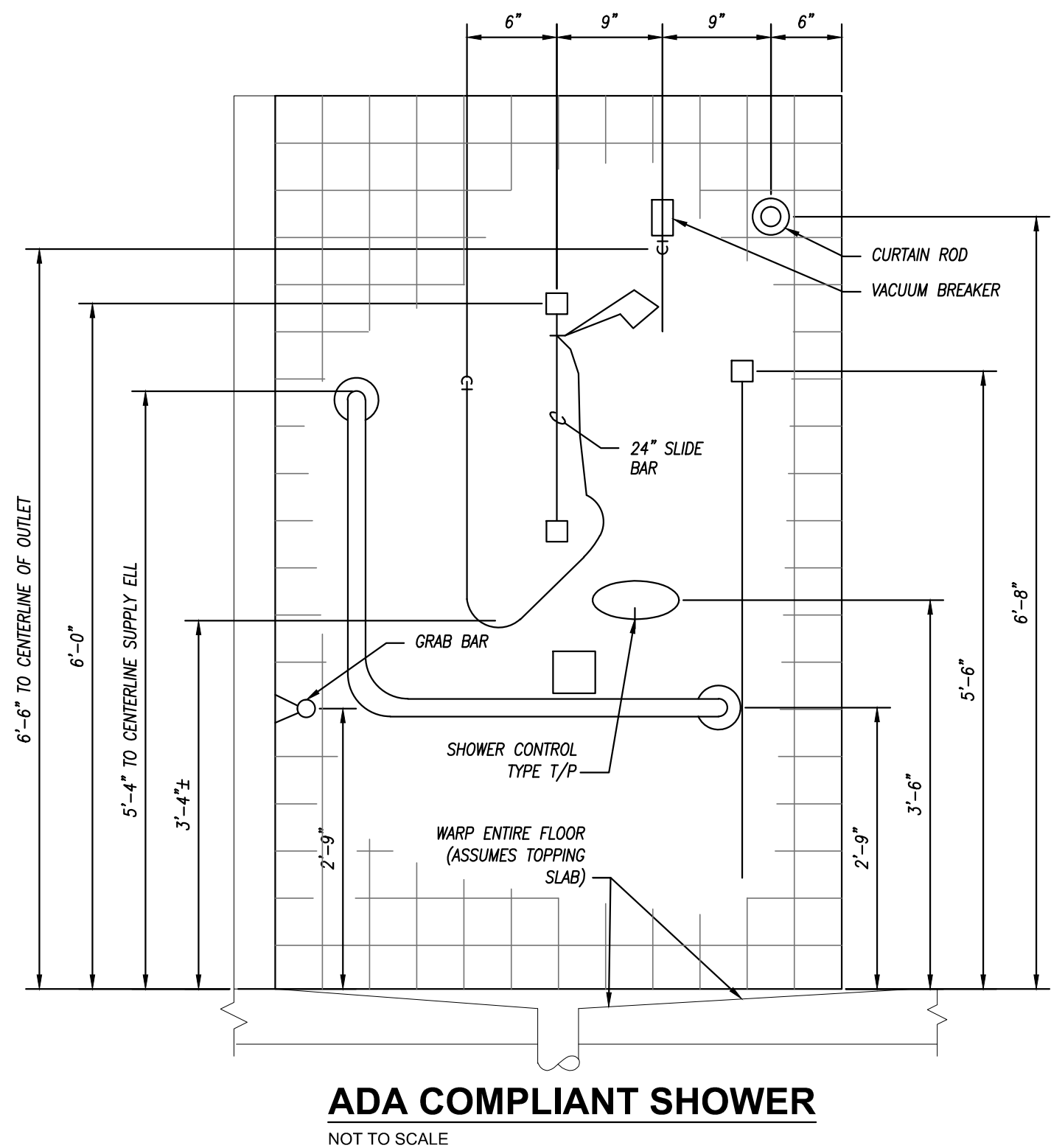
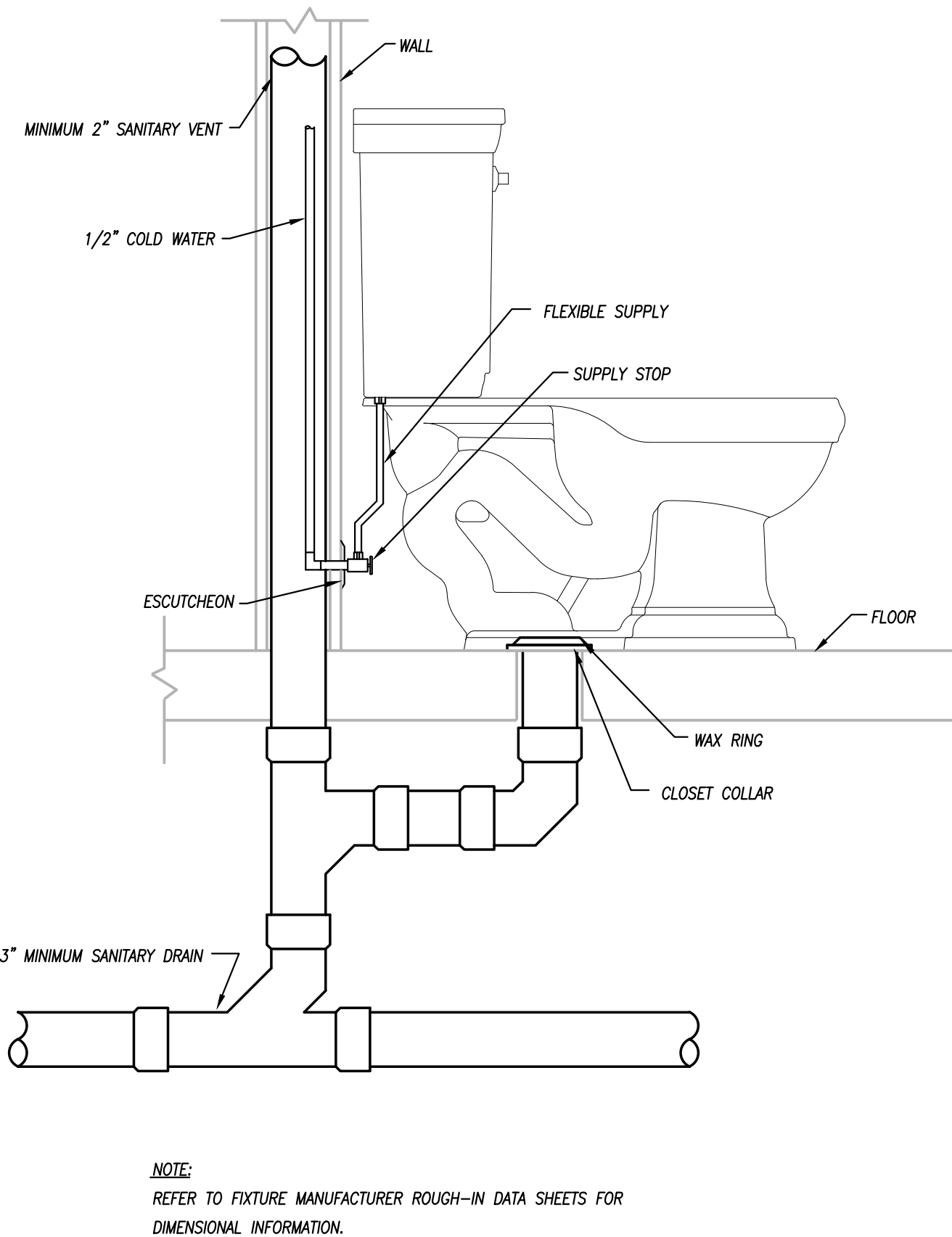
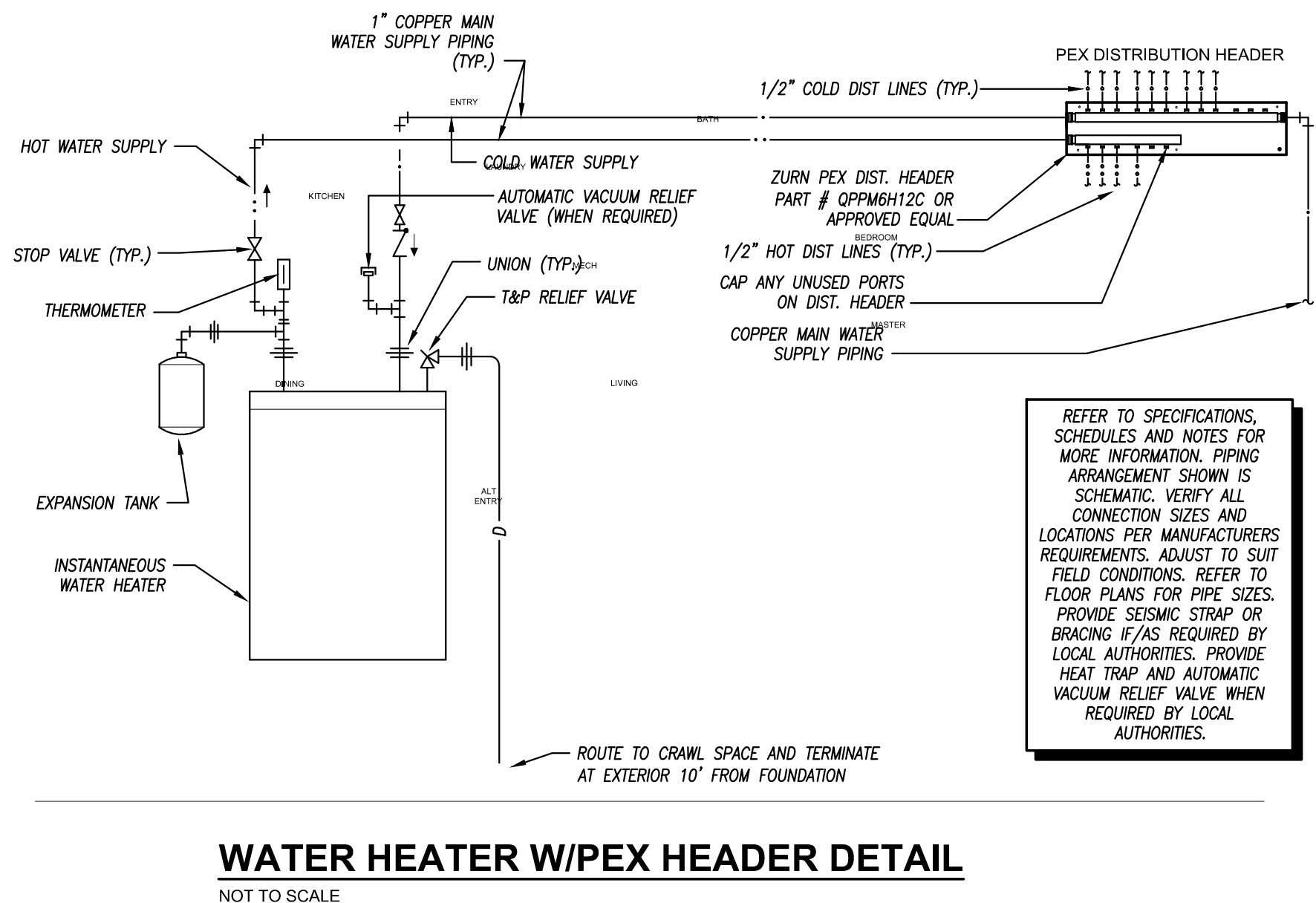
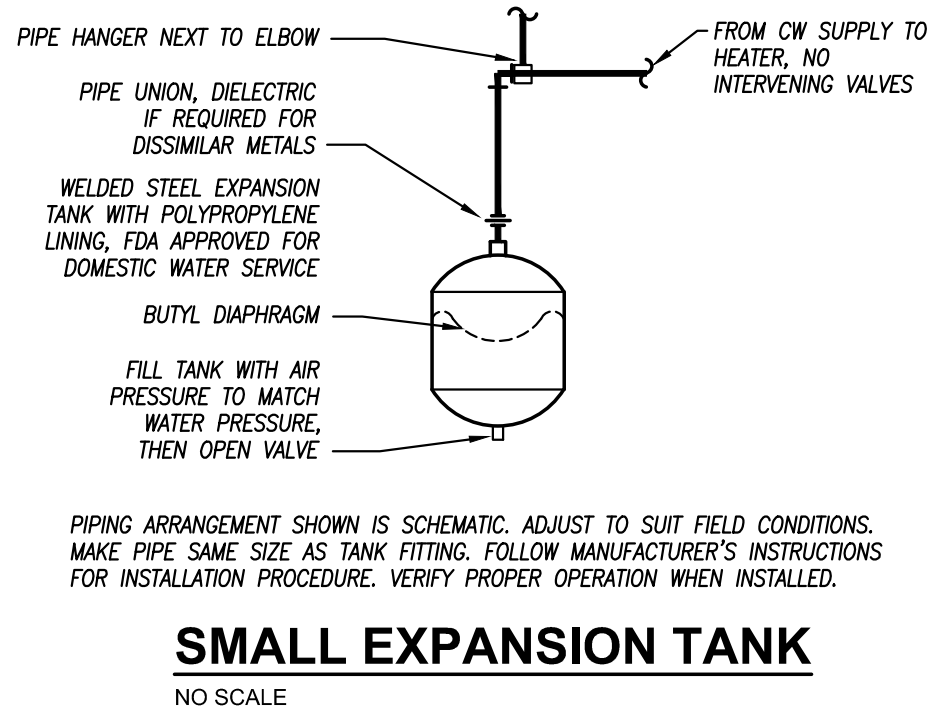
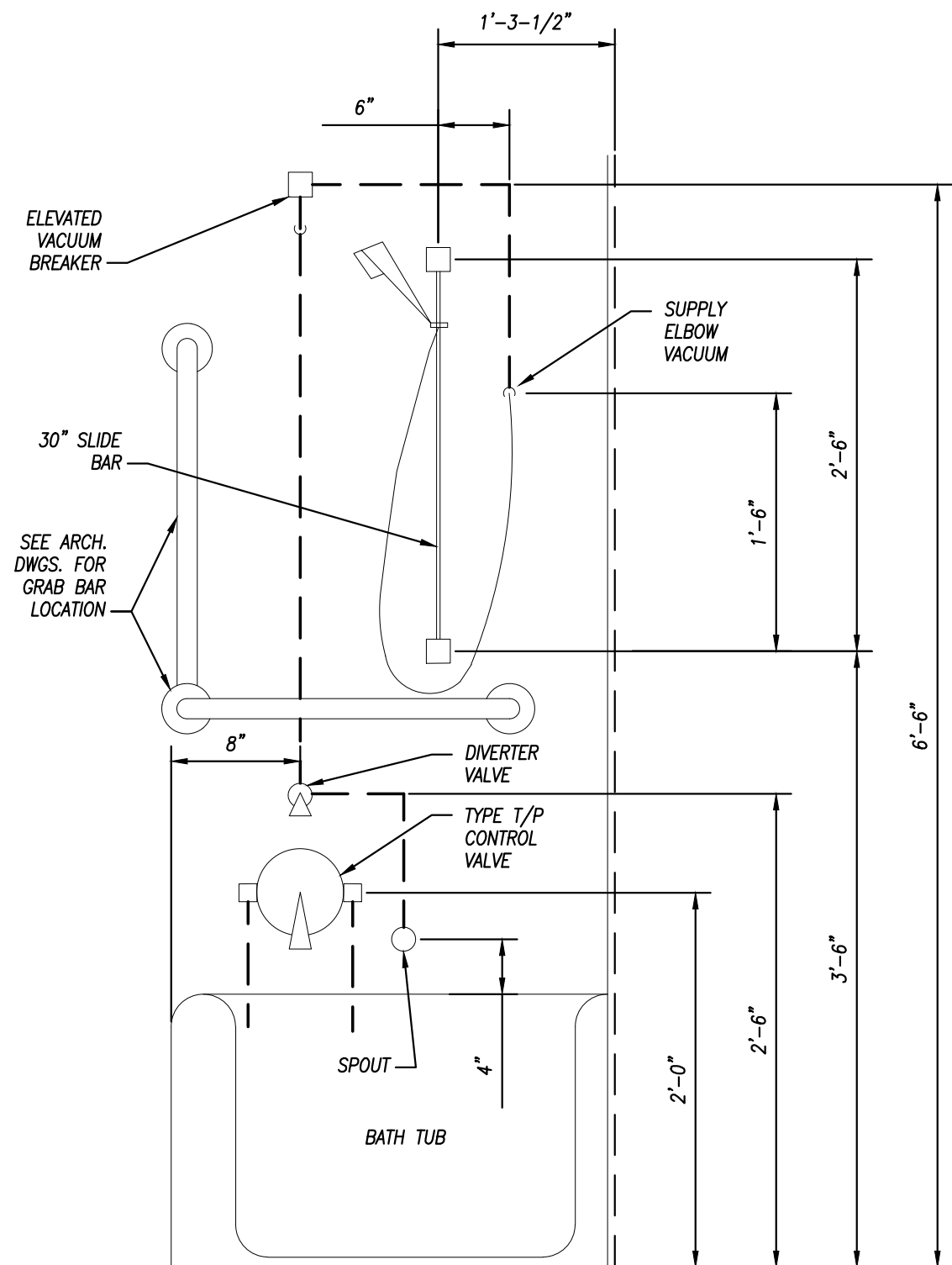
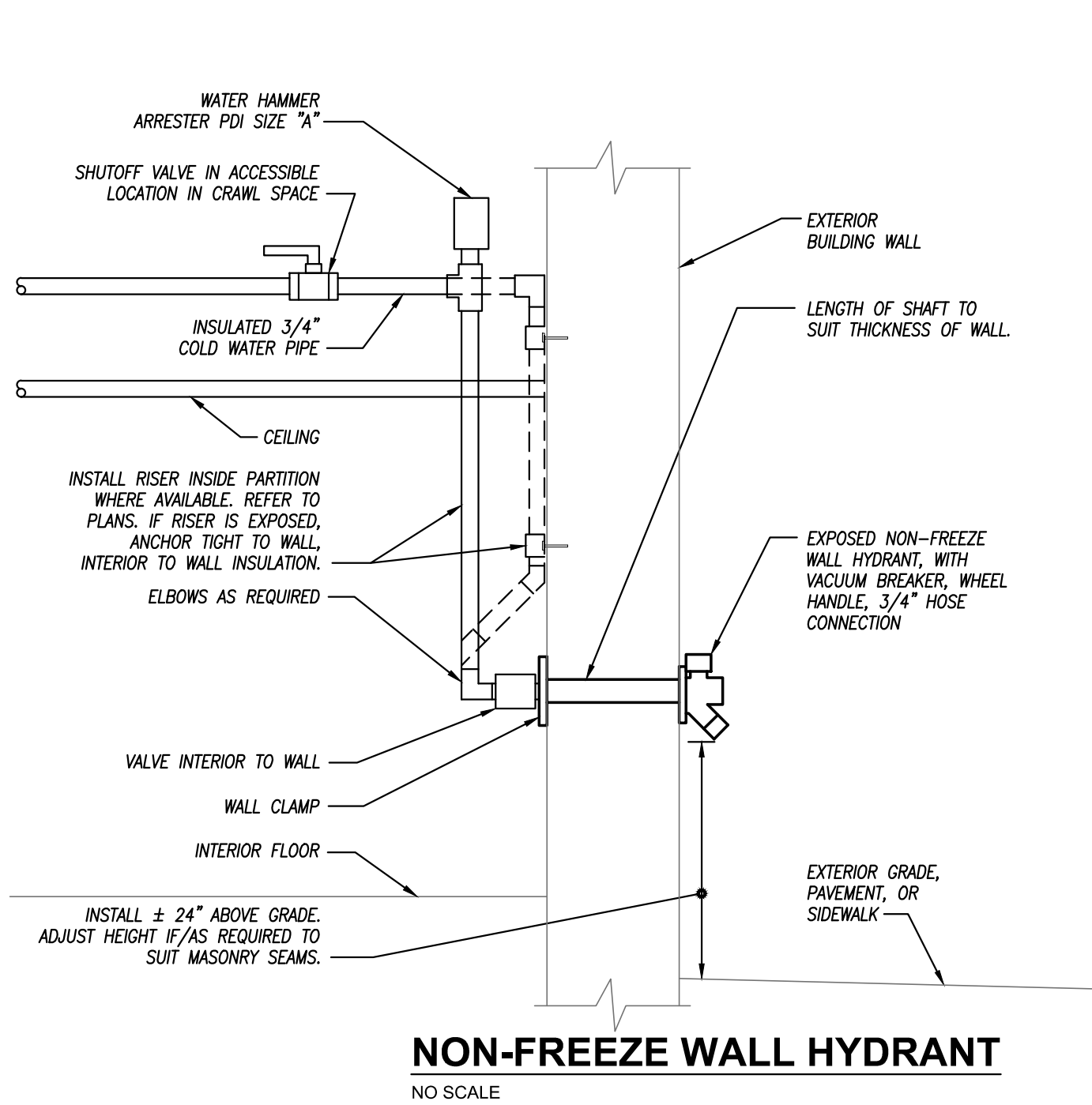
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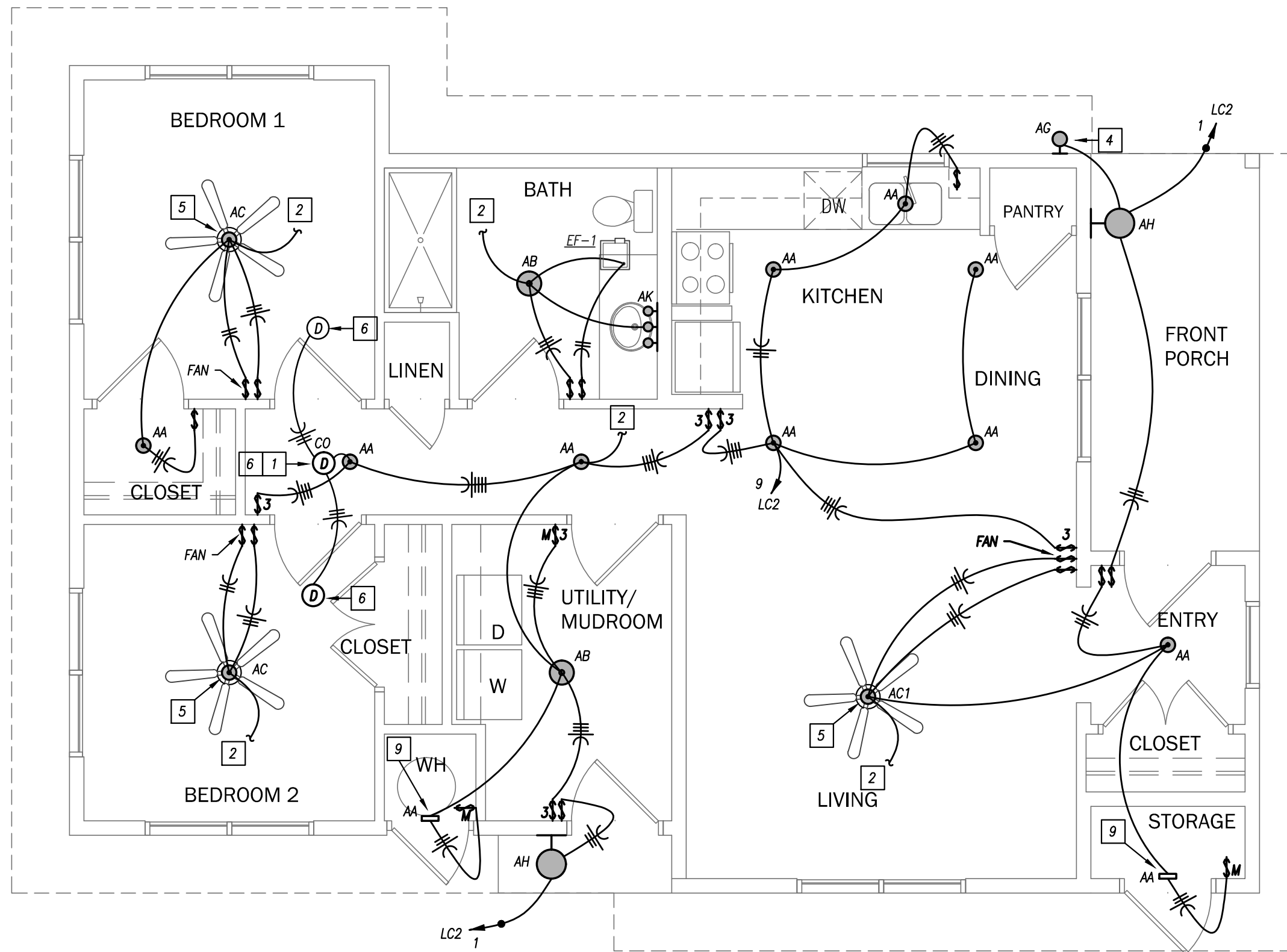
P201
PLUMBING
SCHEDULES AND
DETAILS



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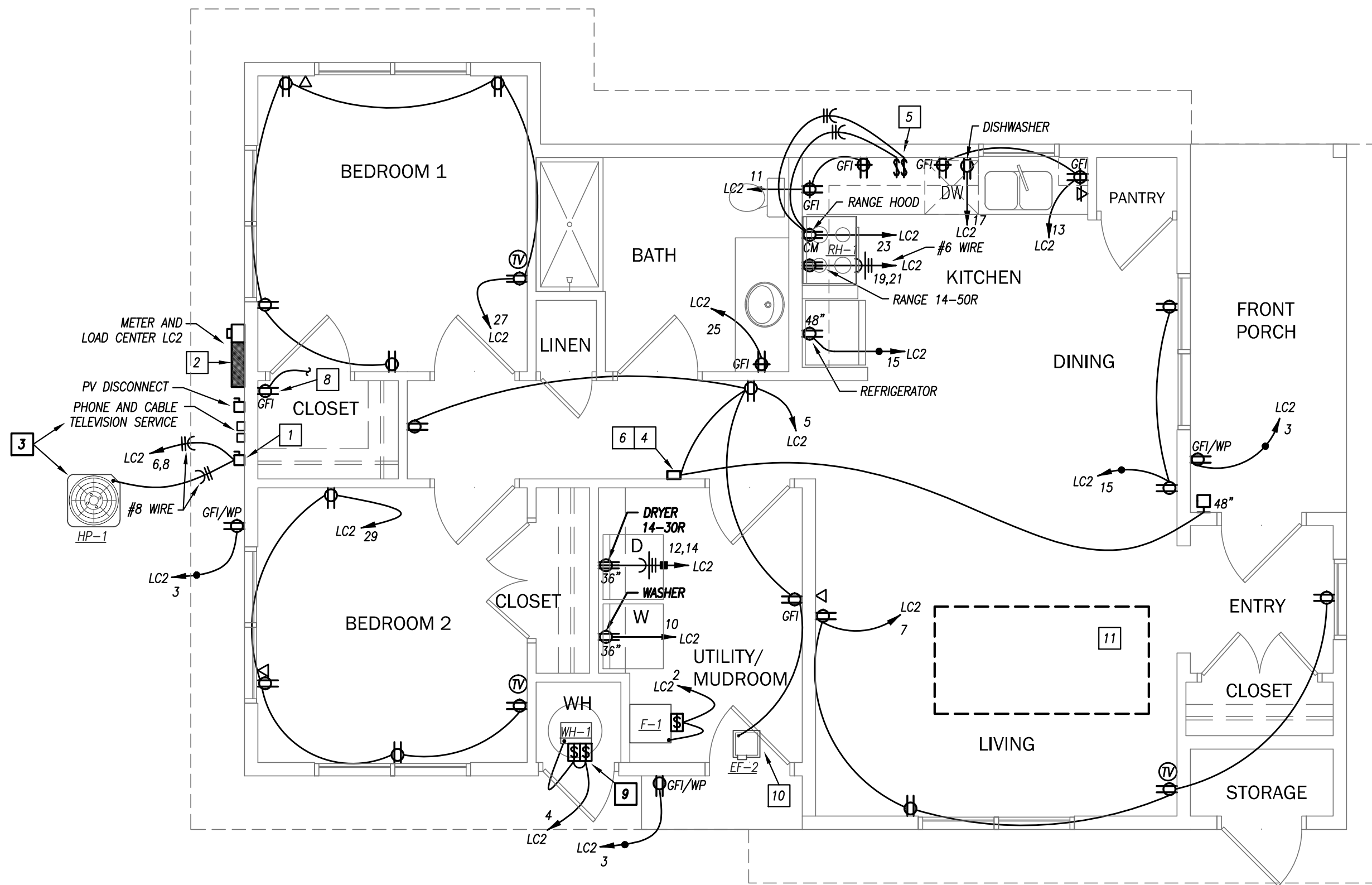
17.311





LIGHTING - UNIT-2A - FLOOR PLAN

1/4" = 1'-0"



POWER - UNIT-2A - FLOOR PLAN

1/4" = 1'-0"

GENERAL ELECTRICAL NOTES

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3. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, DUCT DETECTORS, ETC. WITH MECHANICAL CONTRACTOR.
4. COORDINATE EXACT LOCATIONS OF SMOKE DETECTORS WITH CEILING FANS, HVAC DIFFUSERS, SPRINKLER HEADS, ETC. PER NFPA REQUIREMENTS.
5. COORDINATE EXACT NEMA CONFIGURATIONS OF RECEPTACLES SERVING EQUIPMENT WITH EXACT EQUIPMENT BEING FURNISHED.
6. REFER TO LOW VOLTAGE RISER DIAGRAMS ON SHEET E301 FOR ADDITIONAL WORK NOT SHOWN HERE.
7. CONTRACTOR SHALL INSTALL REMOTE ACCESSIBLE SWITCHES FOR HOOD FAN AND LIGHT IN KITCHENS OF ADA ACCESSIBLE UNITS AS DIRECTED BY ARCHITECT AND OWNER.
8. LIGHT SWITCHES TO BE ROCKER TYPE. SEE SPECIFICATIONS ON SHEET E401, SECTION 16400.1.D.
9. SMOKE/CO ALARMS SHALL BE KIDDE KN-COPE-1 AC WIRE-IN COMBO CO/PHOTO SMOKE ALARM.
10. COORDINATE WITH ARCHITECT WHICH UNIT(S) TO BE DESIGNATED AS HEARING IMPAIRED.

LIGHTING PLAN KEYED NOTES

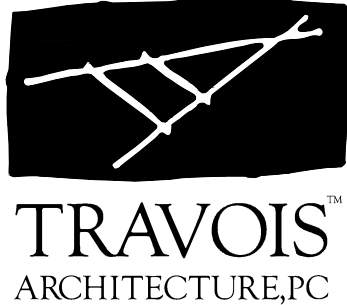
- 1 COMBINATION SMOKE ALARM AND CARBON MONOXIDE DETECTOR.
- 2 CONNECT TO CIRCUIT SERVING RECEPTACLES, THIS ROOM.
- 3 PROVIDE 120 VOLT REMOTE STROBE FOR SMOKE ALARMS. HEARING IMPAIRED UNIT(S) ONLY. PROVIDE ROUGH-IN FOR FUTURE DEVICE IN ALL OTHER UNITS.
- 4 INSTALL MOTION/SECURITY LIGHT NEAR PARKING AREA AT FRONT OF HOUSE. EXACT LOCATION TO BE DETERMINED IN FIELD. DO NOT SWITCH.
- 5 SWITCH FAN AND LIGHT SEPARATELY.
- 6 120 VOLT SMOKE ALARM. PROVIDE WITH SOUNDER/STROBE BASE IN HEARING IMPAIRED UNIT(S).
- 7 CONNECT TO SMOKE DETECTORS ON UPPER LEVEL.
- 8 CONNECT TO SMOKE DETECTORS ON LOWER LEVEL.
- 9 MOUNT LIGHT VERTICALLY ON WALL ABOVE DOOR.

MOTION SENSORS

WALL-MOUNTED MOTION SENSORS: PASSIVE INFRARED, 120V, WALL SWITCH SENSOR. MUST COMPLY WITH TITLE 24 RESIDENTIAL LIGHTING CONTROL REQUIREMENTS.

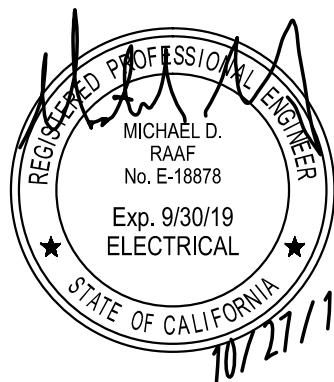
POWER PLAN KEYED NOTES

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- 2 NEW ALL-IN-ONE 200 AMP LOADCENTER AND UTILITY METER. REFER TO ONE-LINE DIAGRAM FOR MORE INFORMATION. COORDINATE EXACT REQUIREMENTS WITH UTILITY.
- 3 COORDINATE FINAL LOCATION OF MECHANICAL AND ELECTRICAL EQUIPMENT, CABLE AND PHONE SERVICES, AND METER IN THE FIELD.
- 4 DOORBELL CHIME / POWER SUPPLY. INSTALL AND WIRE PER MANUFACTURER'S RECOMMENDATION.
- 5 ACCESSIBLE SWITCHES FOR HOOD FAN AND LIGHT. APPLICABLE ONLY TO ADA ACCESSIBLE UNITS.
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- 7 RECEPTACLE FOR GARAGE DOOR OPENER. MOUNT IN CEILING.
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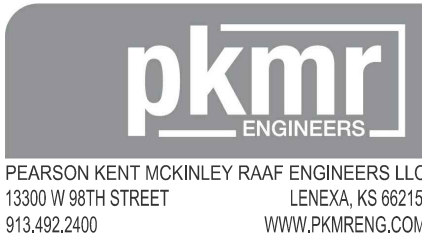
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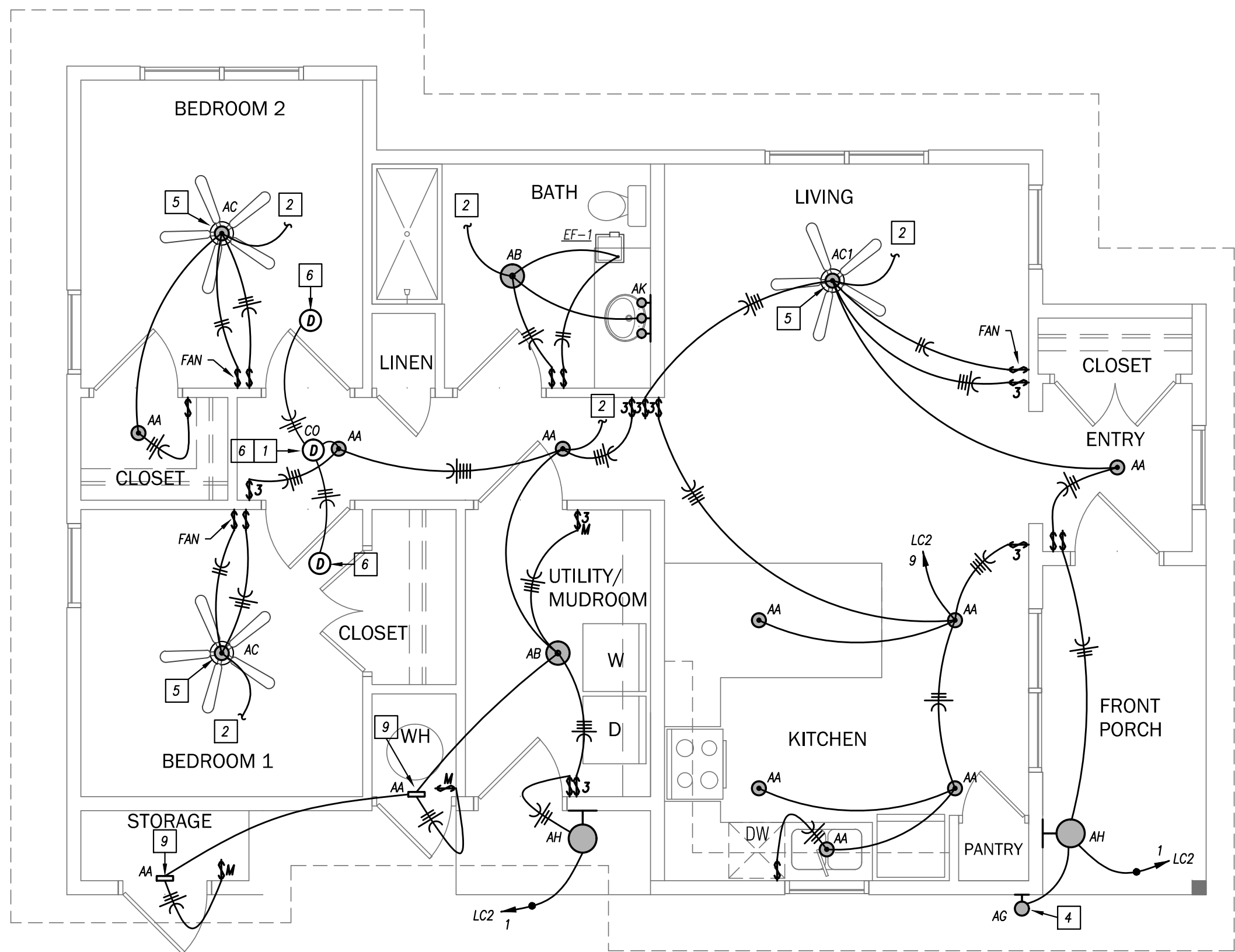
E101

ELECTRICAL
LIGHTING & POWER
UNIT-2A



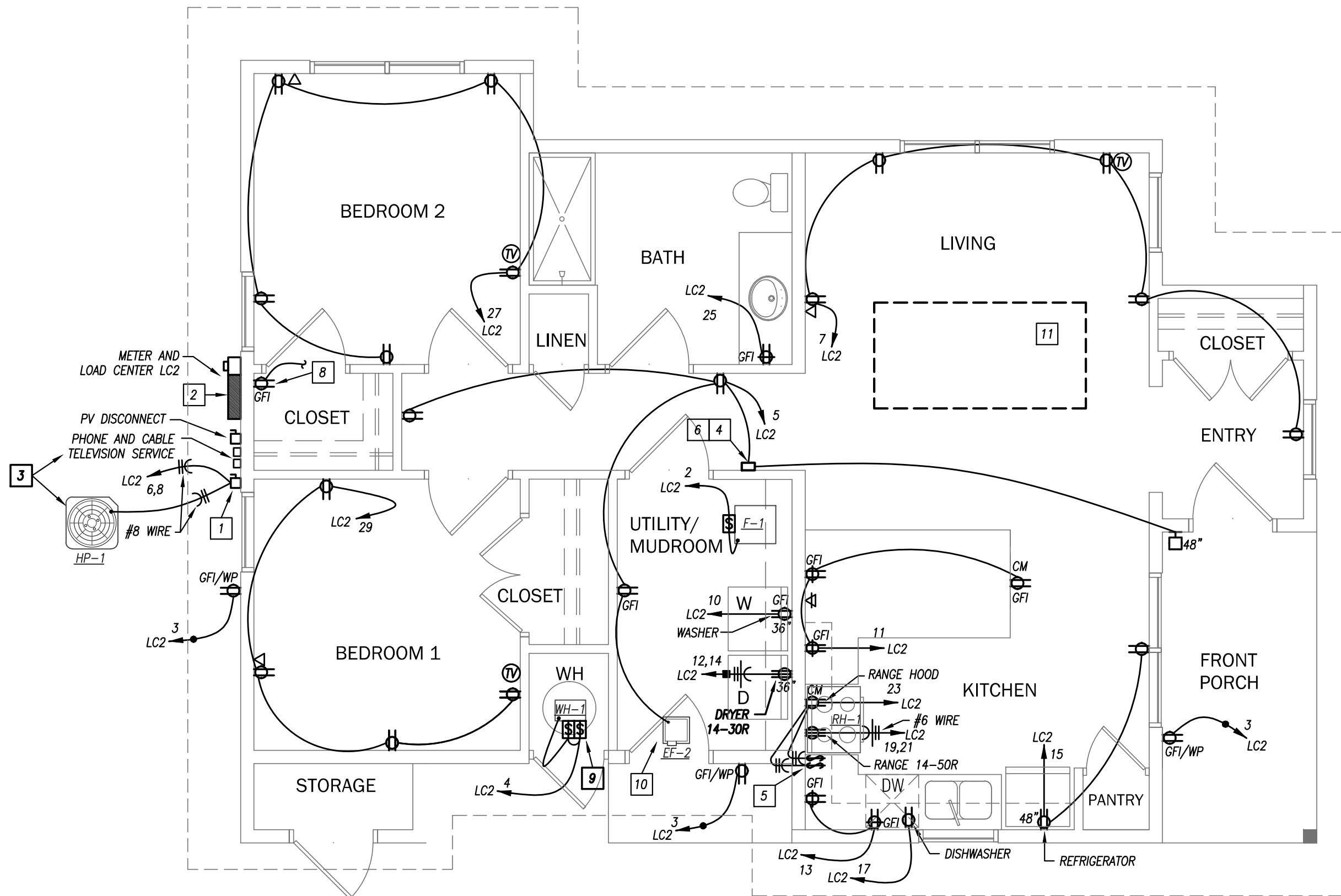
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13300 W 98TH STREET
LENEXA, KS 66215
913.492.2400
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17.311



LIGHTING - UNIT-2B - FLOOR PLAN

1/4" = 1'-0"



POWER - UNIT-2B - FLOOR PLAN

1/4" = 1'-0"

GENERAL ELECTRICAL NOTES

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LIGHTING PLAN KEYED NOTES

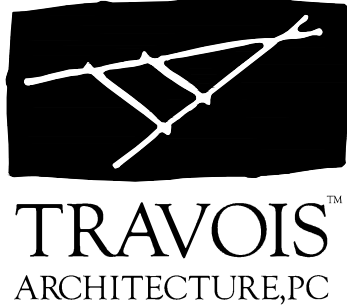
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WALL-MOUNTED MOTION SENSORS: PASSIVE INFRARED, 120V, WALL SWITCH SENSOR. MUST COMPLY WITH TITLE 24 RESIDENTIAL LIGHTING CONTROL REQUIREMENTS.

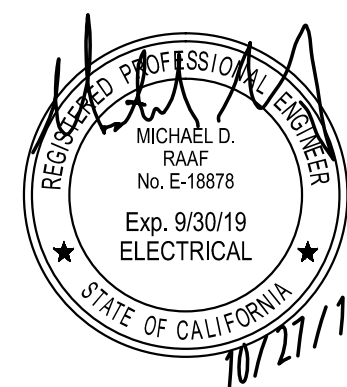
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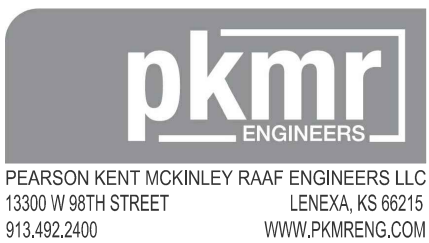
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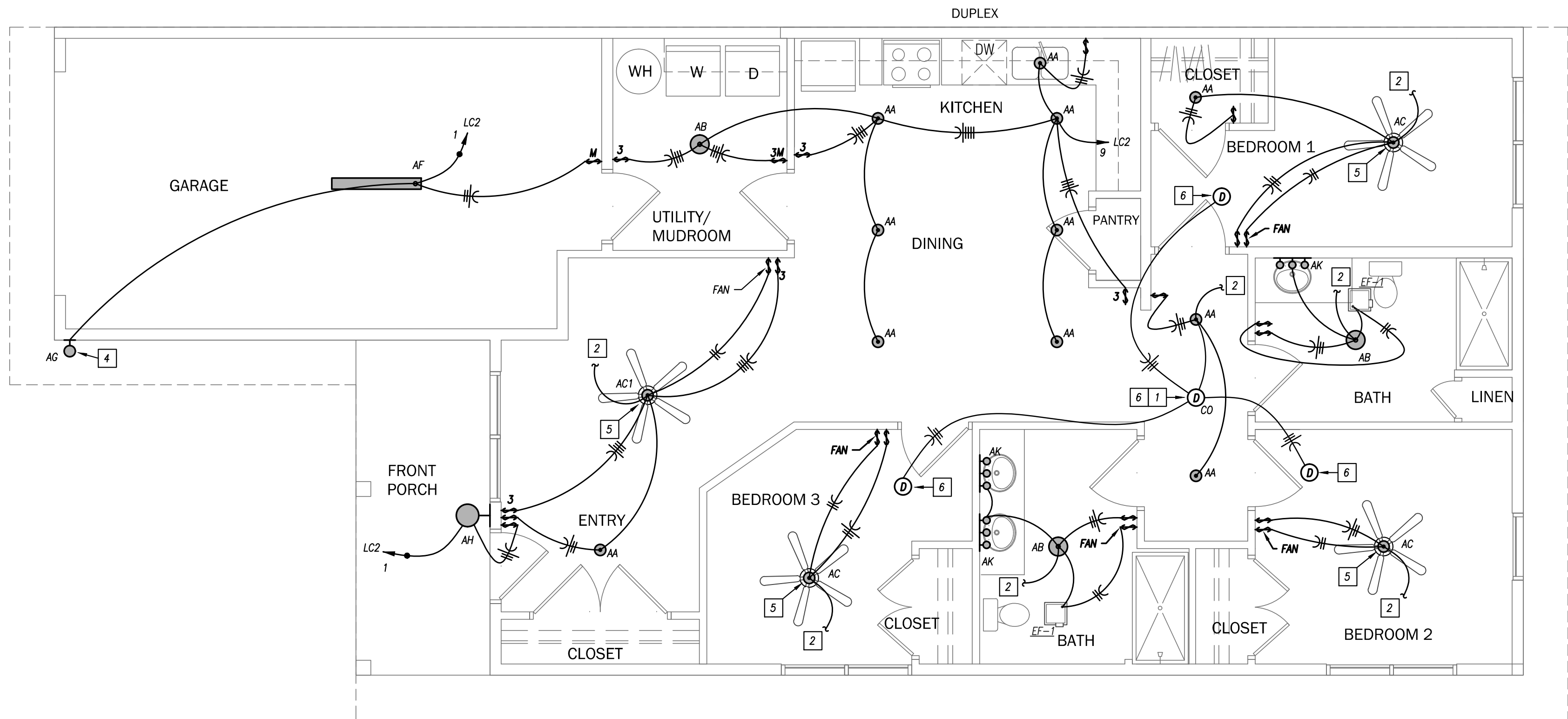
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ELECTRICAL
LIGHTING & POWER
UNIT-2B

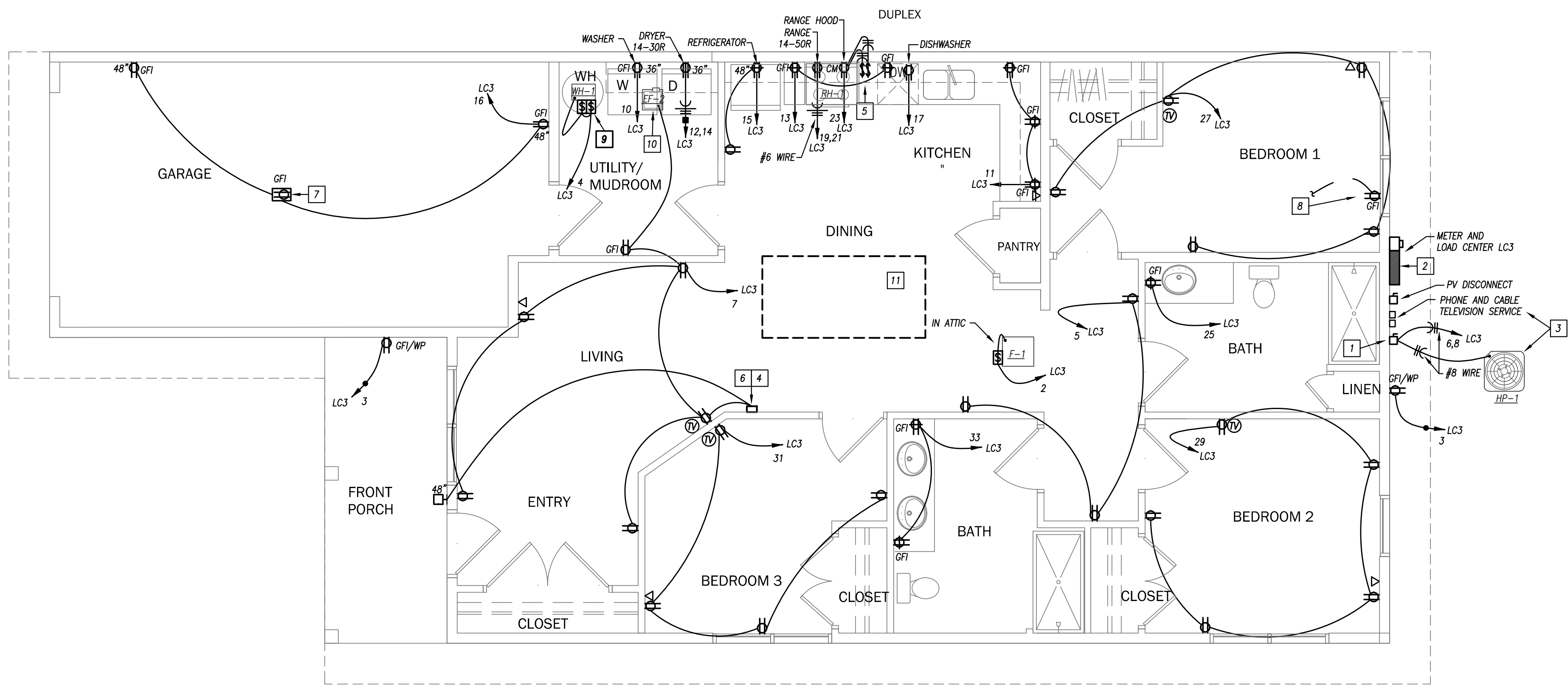


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LIGHTING - UNIT-3A - FLOOR PLAN
1/4" = 1'-0"



POWER - UNIT-3A - FLOOR PLAN
1/4" = 1'-0"

GENERAL ELECTRICAL NOTES

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LIGHTING PLAN KEYED NOTES

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MOTION SENSORS

WALL-MOUNTED MOTION SENSORS: PASSIVE INFRARED, 120V, WALL SWITCH SENSOR. MUST COMPLY WITH TITLE 24 RESIDENTIAL LIGHTING CONTROL REQUIREMENTS.

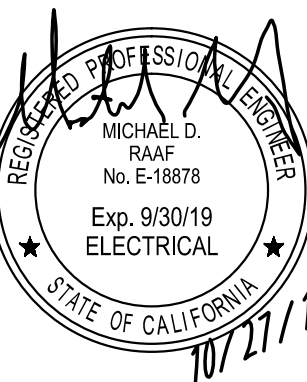
POWER PLAN KEYED NOTES

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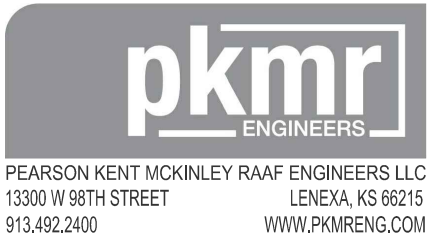


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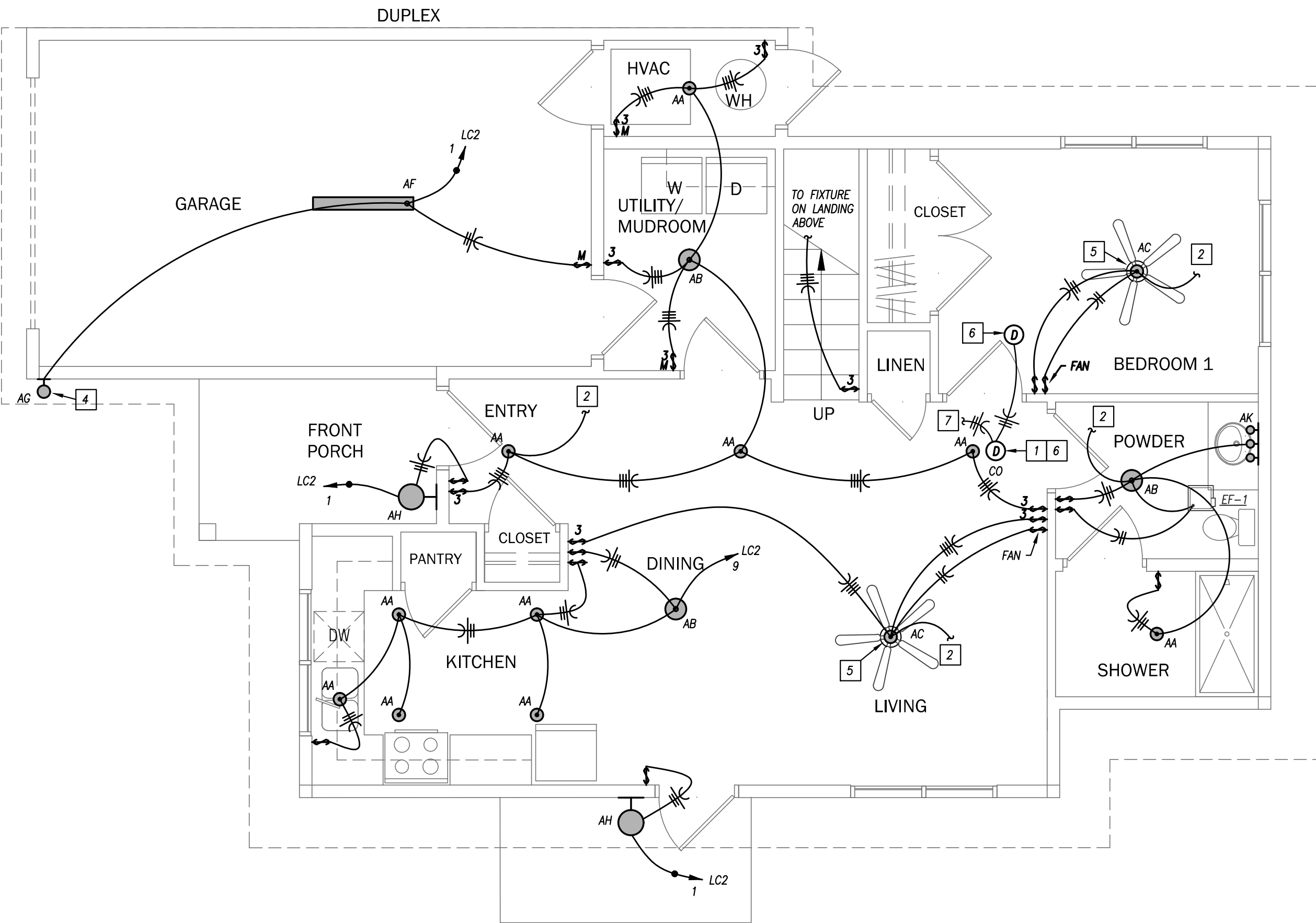
E103

ELECTRICAL
LIGHTING & POWER
UNIT-3A



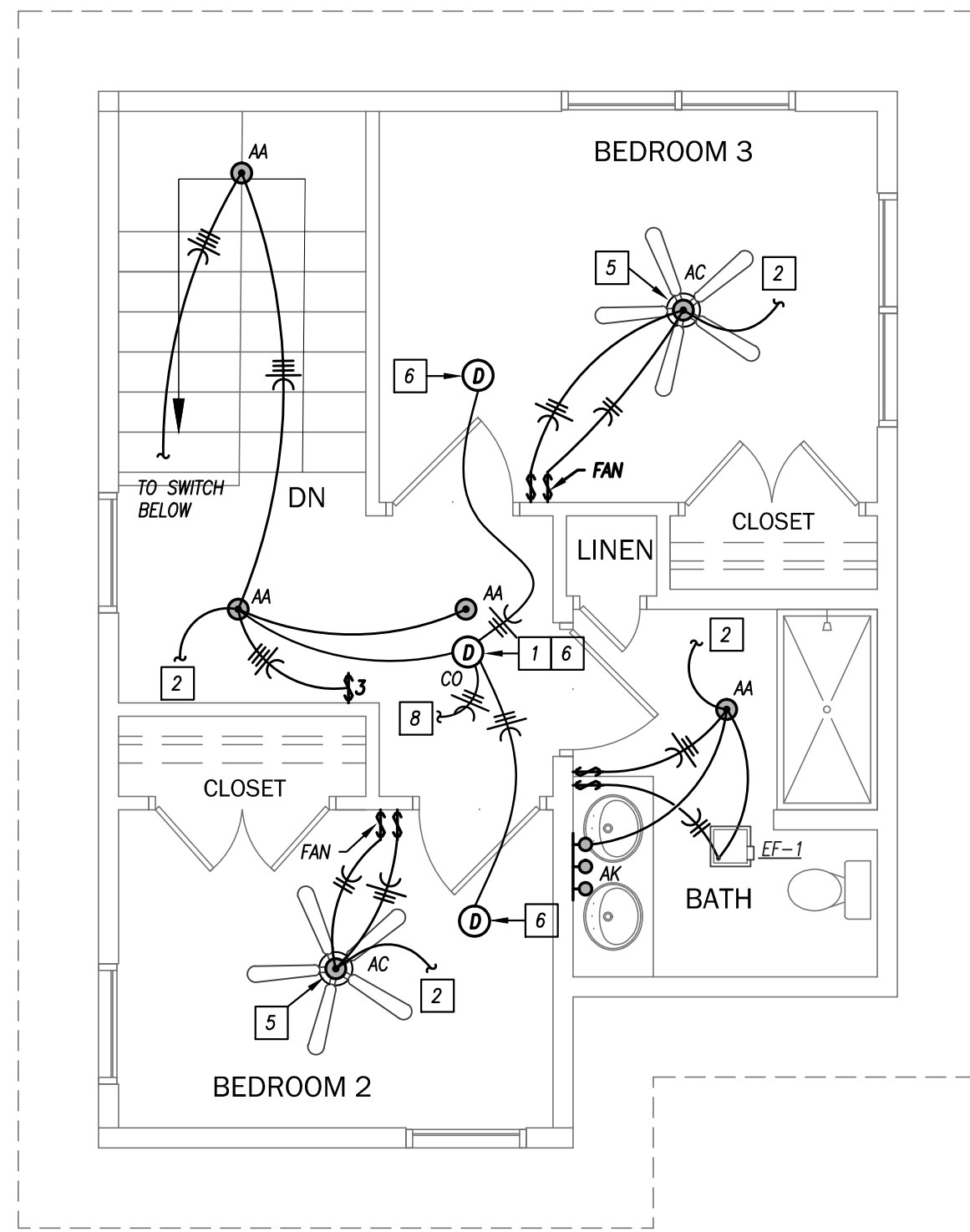
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LIGHTING - UNIT-3B - FIRST FLOOR PLAN

1/4" = 1'-0"



LIGHTING - UNIT-3B - SECOND FLOOR PLAN

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GENERAL ELECTRICAL NOTES

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LIGHTING PLAN KEYED NOTES

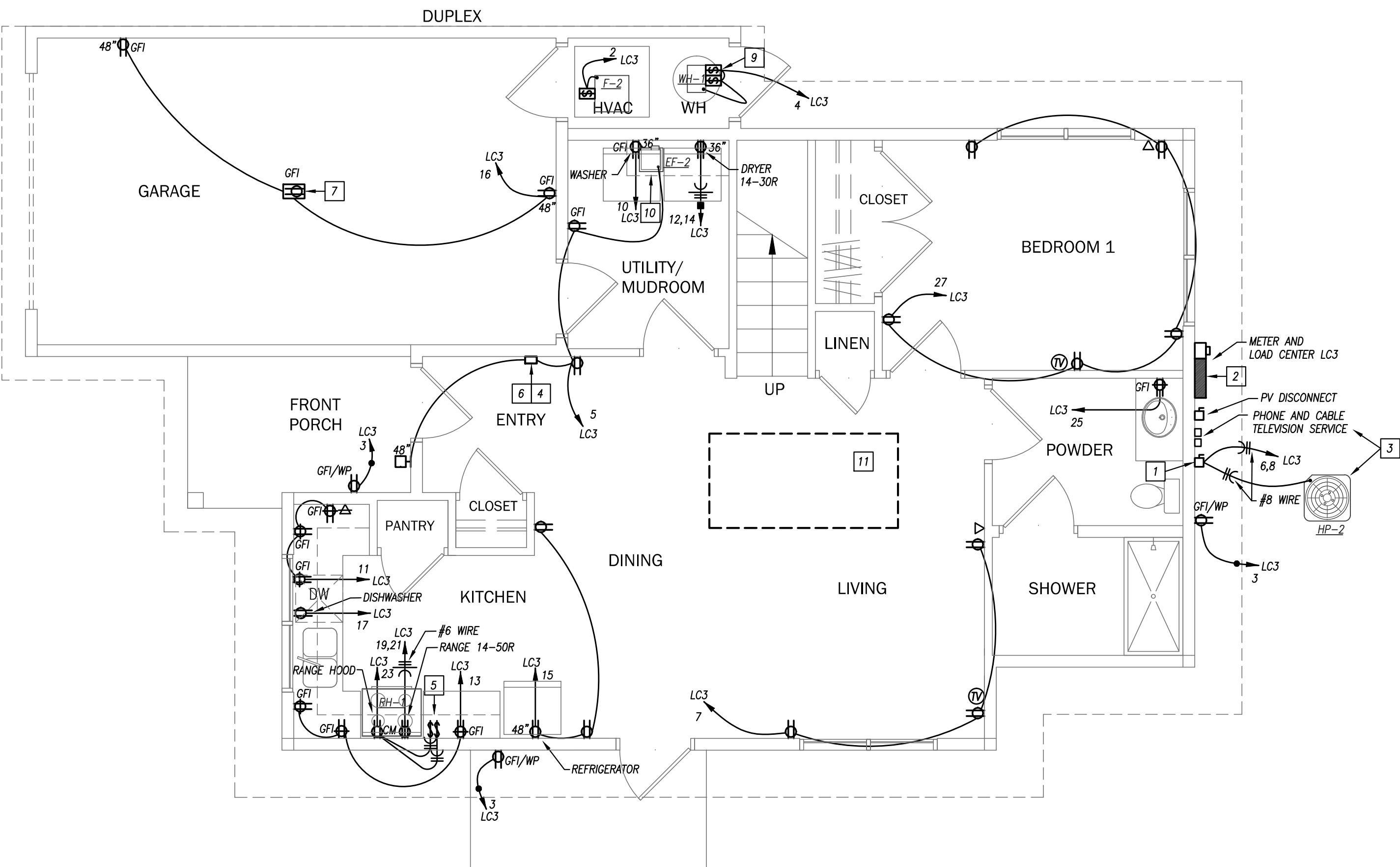
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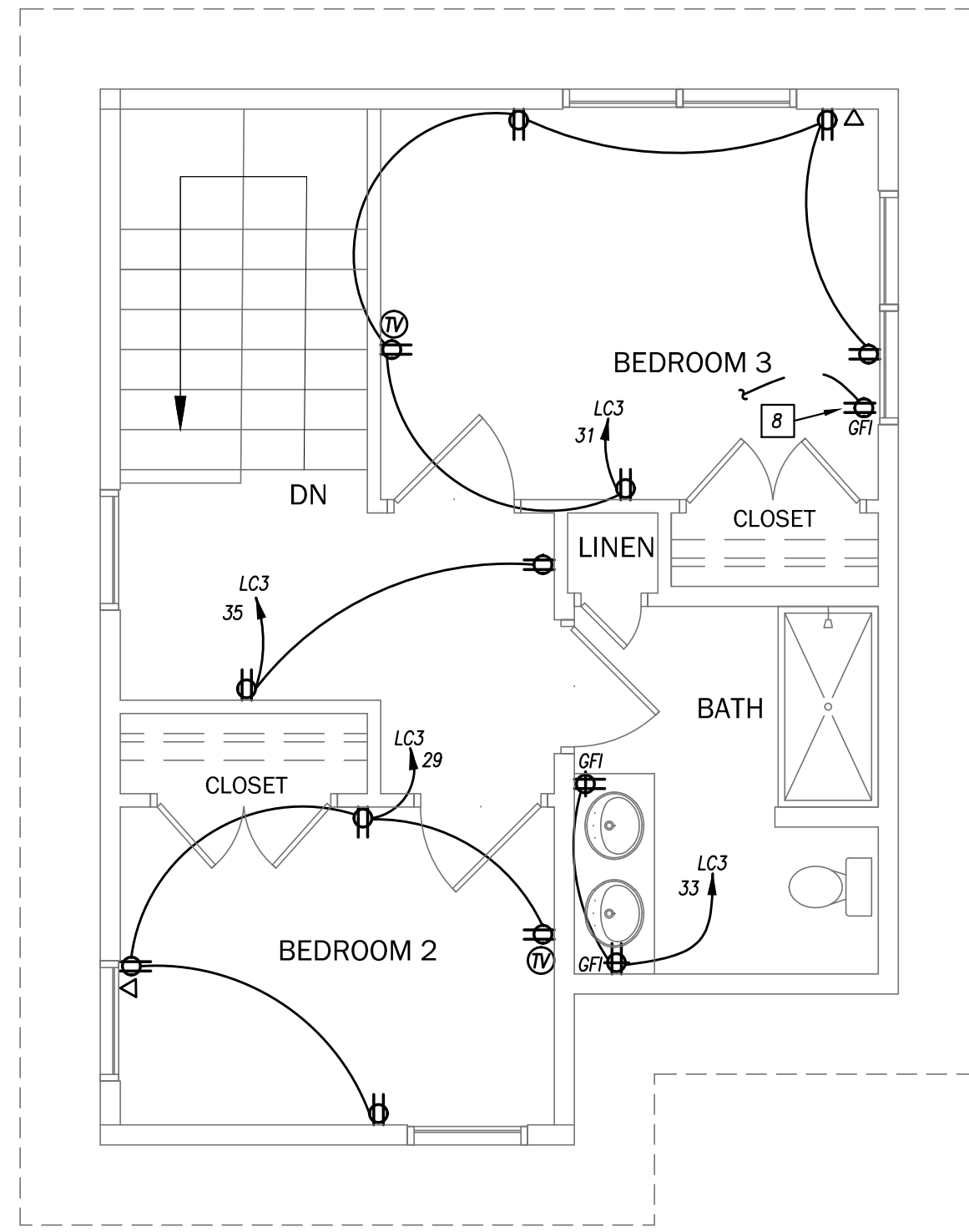
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POWER - UNIT-3B - FIRST FLOOR PLAN

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TRAVOIS ARCHITECTURE, PC
310 W. 19TH TERRACE
KANSAS CITY, MO 64108
P 816.994.8970
F 816.994.8974



REVISION DATE

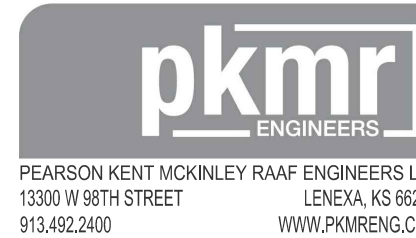
25% CDs 06/30/17
40% CDs 07/28/17
75% CDs 09/26/17

(FOR CONSTRUCTION)
PERMIT 10/27/17

SHEET

E104

ELECTRICAL
LIGHTING & POWER
UNIT-3B



PEARSON KENT MCKINLEY RAAF ENGINEERS LLC
13300 W 98TH STREET
LENEXA, KS 66215
913.492.2400
WWW.PKMRENG.COM

17.311

REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17

(FOR CONSTRUCTION)
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GENERAL ELECTRICAL NOTES

1. ALL WORK SHALL COMPLY WITH LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES.
2. REFER TO MOUNTING HEIGHTS DETAIL ON SHEET E401 FOR MOUNTING HEIGHTS OF ALL DEVICES NOT INDICATED OTHERWISE.
3. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT, DUCT DETECTORS, ETC. WITH MECHANICAL CONTRACTOR.
4. COORDINATE EXACT LOCATIONS OF SMOKE DETECTORS WITH CEILING FANS, HVAC DIFFUSERS, SPRINKLER HEADS, ETC. PER NFPA REQUIREMENTS.
5. COORDINATE EXACT NEMA CONFIGURATIONS OF RECEPTACLES SERVING EQUIPMENT WITH EXACT EQUIPMENT BEING FURNISHED.
6. REFER TO LOW VOLTAGE RISER DIAGRAMS ON SHEET E301 FOR ADDITIONAL WORK NOT SHOWN HERE.
7. CONTRACTOR SHALL INSTALL REMOTE ACCESSIBLE SWITCHES FOR HOOD FAN AND LIGHT IN KITCHENS OF ADA ACCESSIBLE UNITS AS DIRECTED BY ARCHITECT AND OWNER.
8. LIGHT SWITCHES TO BE ROCKER TYPE. SEE SPECIFICATIONS ON SHEET E401, SECTION 16400.1.D.
9. SMOKE/CO ALARMS SHALL BE KIDDE KN-COPE-1 AC WIRE-IN COMBO CO/PHOTO SMOKE ALARM.
10. COORDINATE WITH ARCHITECT WHICH UNIT(S) TO BE DESIGNATED AS HEARING IMPAIRED.

LIGHTING PLAN KEYED NOTES

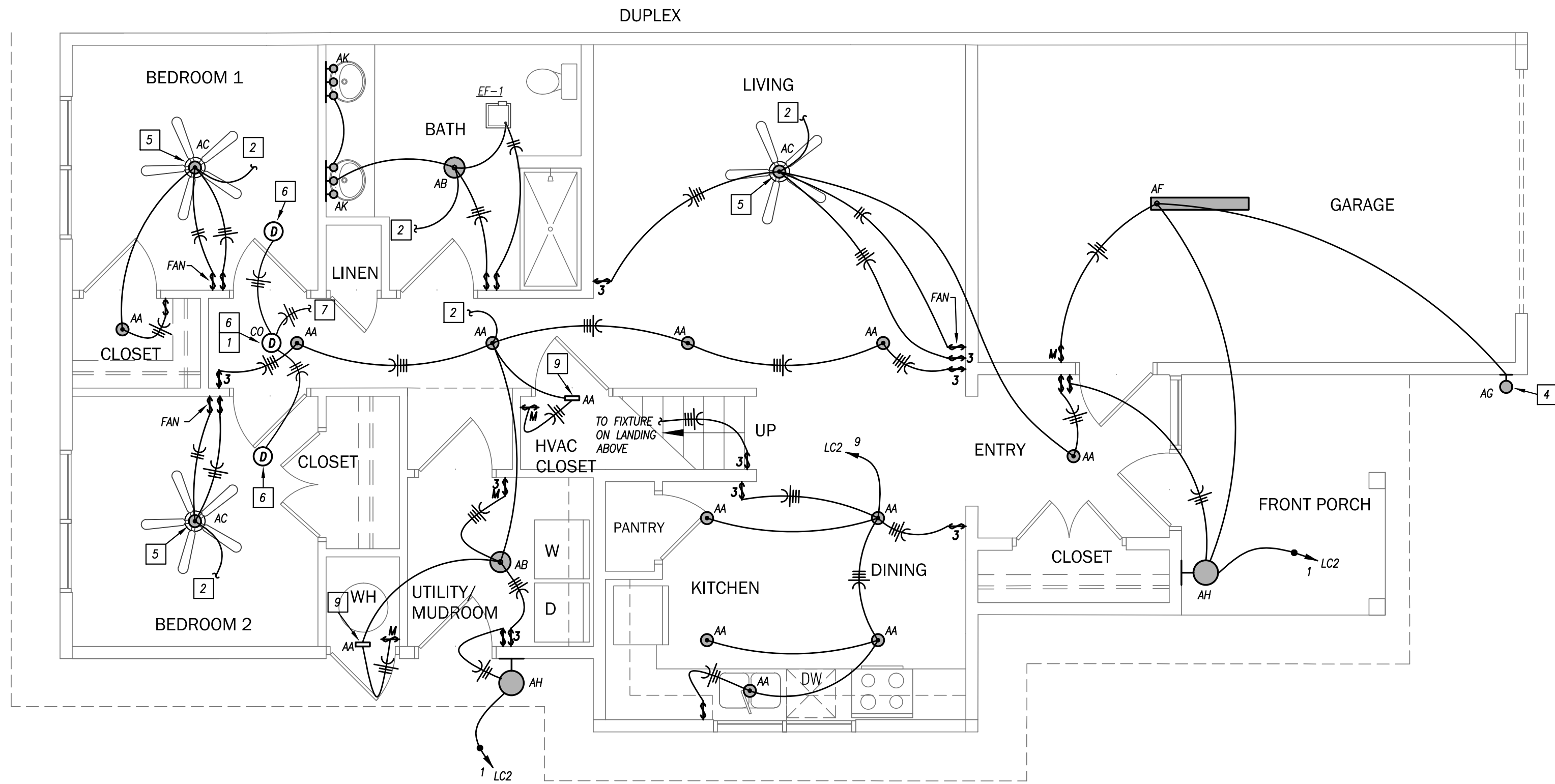
- 1 COMBINATION SMOKE ALARM AND CARBON MONOXIDE DETECTOR.
- 2 CONNECT TO CIRCUIT SERVING RECEPTACLES, THIS ROOM.
- 3 PROVIDE 120 VOLT REMOTE STROBE FOR SMOKE ALARMS. HEARING IMPAIRED UNIT(S) ONLY. PROVIDE ROUGH-IN FOR FUTURE DEVICE IN ALL OTHER UNITS.
- 4 INSTALL MOTION/SECURITY LIGHT NEAR PARKING AREA AT FRONT OF HOUSE. EXACT LOCATION TO BE DETERMINED IN FIELD. DO NOT SWITCH.
- 5 SWITCH FAN AND LIGHT SEPARATELY.
- 6 120 VOLT SMOKE ALARM. PROVIDE WITH SOUNDER/STROBE BASE IN HEARING IMPAIRED UNIT(S).
- 7 CONNECT TO SMOKE DETECTORS ON UPPER LEVEL.
- 8 CONNECT TO SMOKE DETECTORS ON LOWER LEVEL.
- 9 MOUNT LIGHT VERTICALLY ON WALL ABOVE DOOR.

MOTION SENSORS

- WALL-MOUNTED MOTION SENSORS: PASSIVE INFRARED, 120V, WALL SWITCH SENSOR. MUST COMPLY WITH TITLE 24 RESIDENTIAL LIGHTING CONTROL REQUIREMENTS.

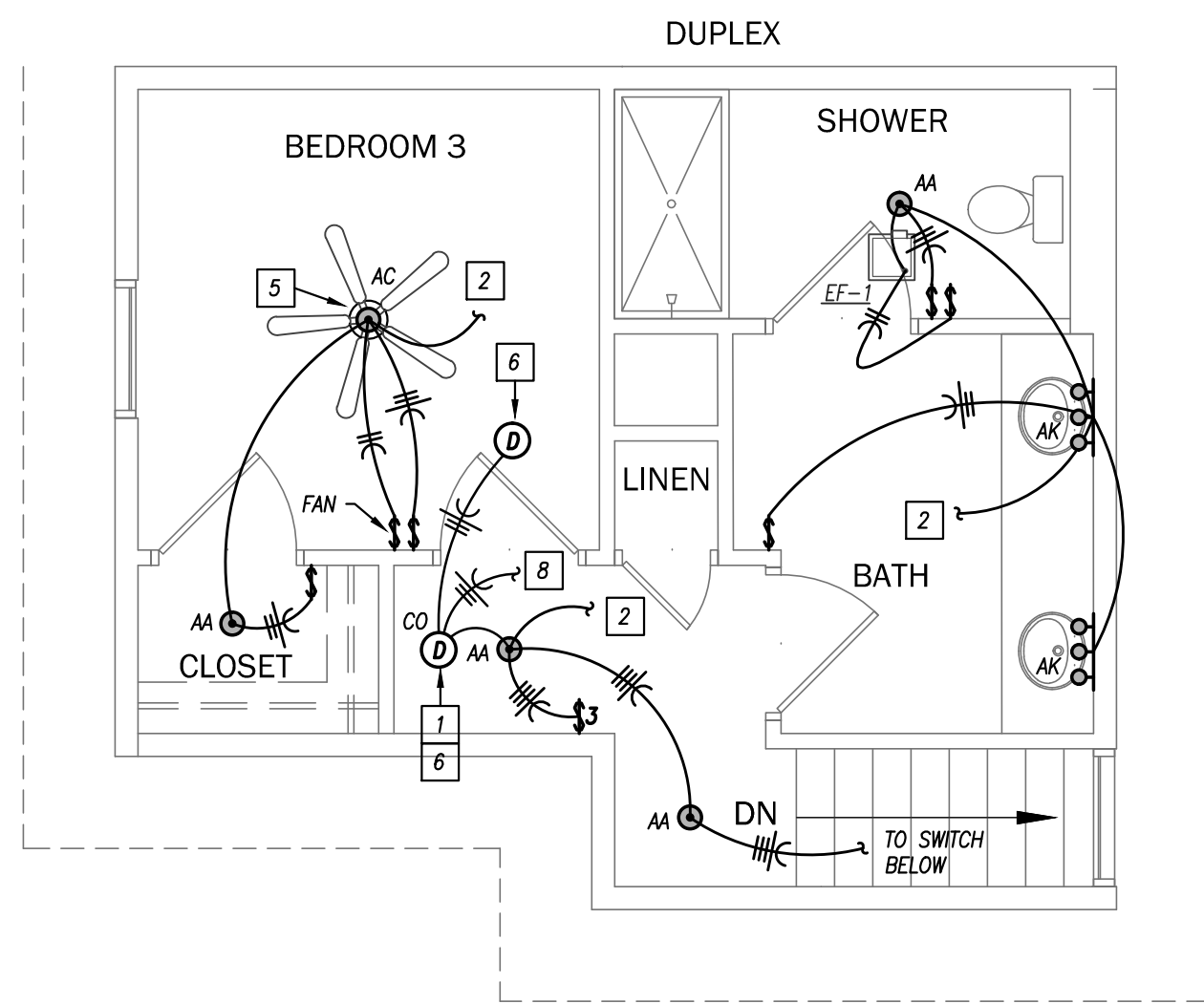
POWER PLAN KEYED NOTES

- 1 60 AMP, 2 POLE, PULL-OUT TYPE, DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.
- 2 NEW ALL-IN-ONE 200 AMP LOADCENTER AND UTILITY METER. REFER TO ONE-LINE DIAGRAM FOR MORE INFORMATION. COORDINATE EXACT REQUIREMENTS WITH UTILITY.
- 3 COORDINATE FINAL LOCATION OF MECHANICAL AND ELECTRICAL EQUIPMENT, CABLE AND PHONE SERVICES, AND METER IN THE FIELD.
- 4 DOORBELL CHIME / POWER SUPPLY. INSTALL AND WIRE PER MANUFACTURER'S RECOMMENDATION.
- 5 ACCESSIBLE SWITCHES FOR HOOD FAN AND LIGHT. APPLICABLE ONLY TO ADA ACCESSIBLE UNITS.
- 6 HEARING IMPAIRED UNITS WILL REQUIRE A DOORBELL WITH A CHIME AND VISUAL NOTIFICATION. PROVIDE ADDITIONAL VISUAL NOTIFICATION DEVICES IN EACH ROOM. NOT ALL DEVICES SHOWN.
- 7 RECEPTACLE FOR GARAGE DOOR OPENER. MOUNT IN CEILING.
- 8 RECEPTACLE IN THE ATTIC FOR FUTURE RADON MITIGATION. EXACT LOCATION TO BE DETERMINED IN FIELD. CONNECT TO CIRCUIT SERVING RECEPTACLES IN NEAREST BEDROOM BELOW.
- 9 PROVIDE POWER TO SOLAR WATER HEATER SYSTEM AND GAS WATER HEATER AS NEEDED PER MANUFACTURER'S SPECS.
- 10 EXHAUST FAN TO RUN CONTINUOUSLY.
- 11 SOLAR ARRAY. FACE SOUTH AT 45°. ADJUST LOCATION PER BUILDING.



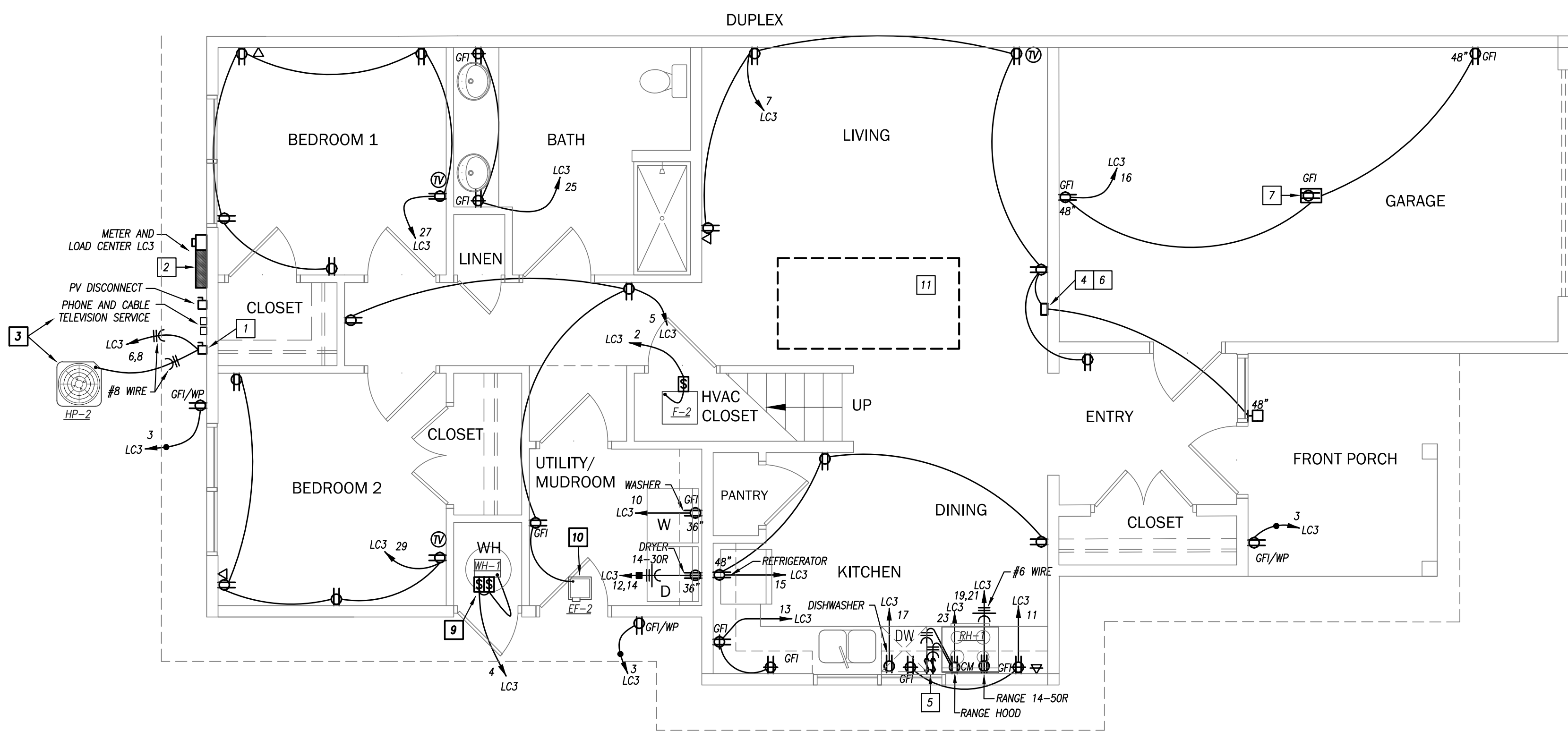
LIGHTING - UNIT-3C - FIRST FLOOR PLAN

1/4" = 1'-0"



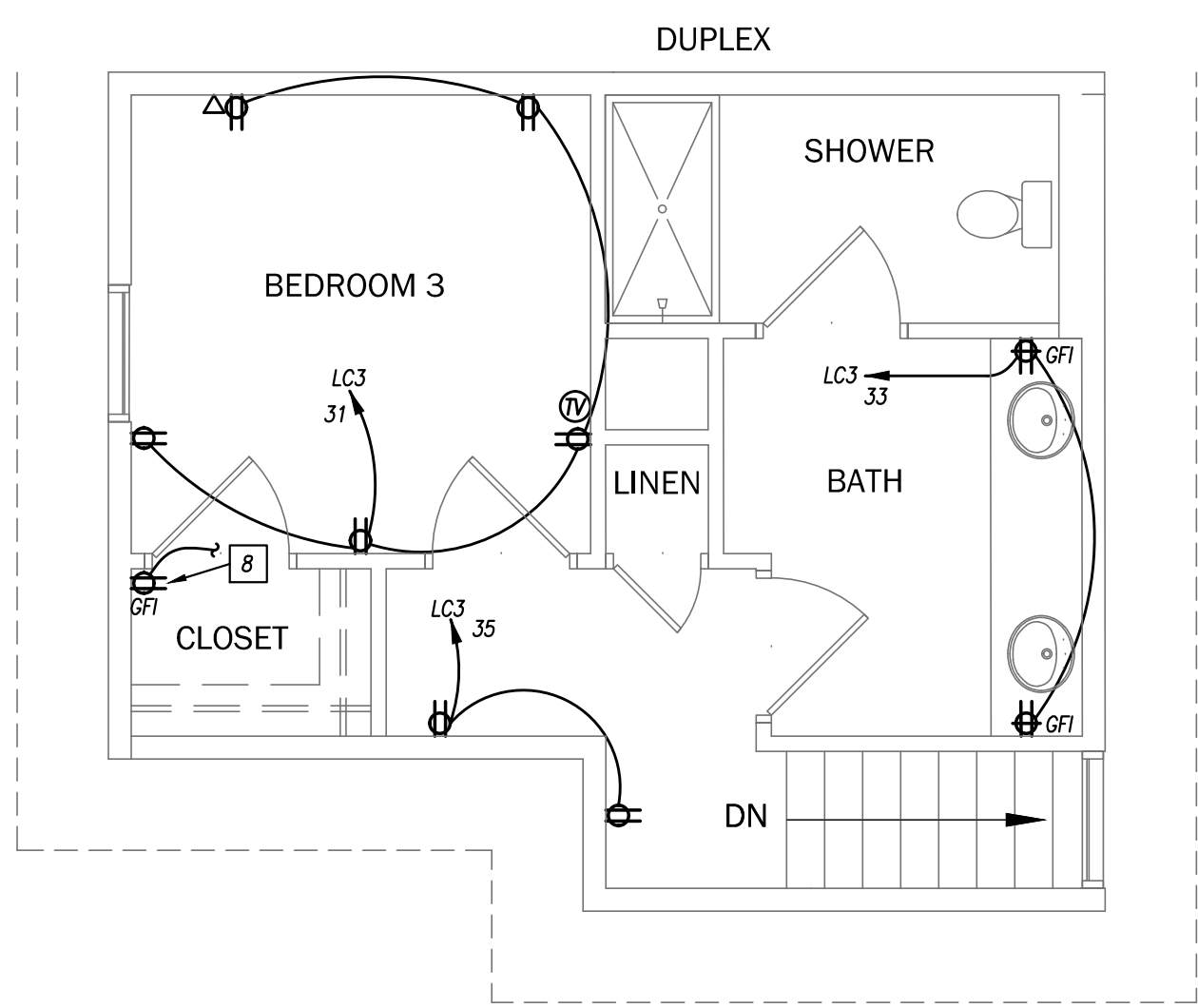
LIGHTING - UNIT-3C - SECOND FLOOR PLAN

1/4" = 1'-0"



POWER - UNIT-3C - FIRST FLOOR PLAN

1/4" = 1'-0"



POWER - UNIT-3C - SECOND FLOOR PLAN

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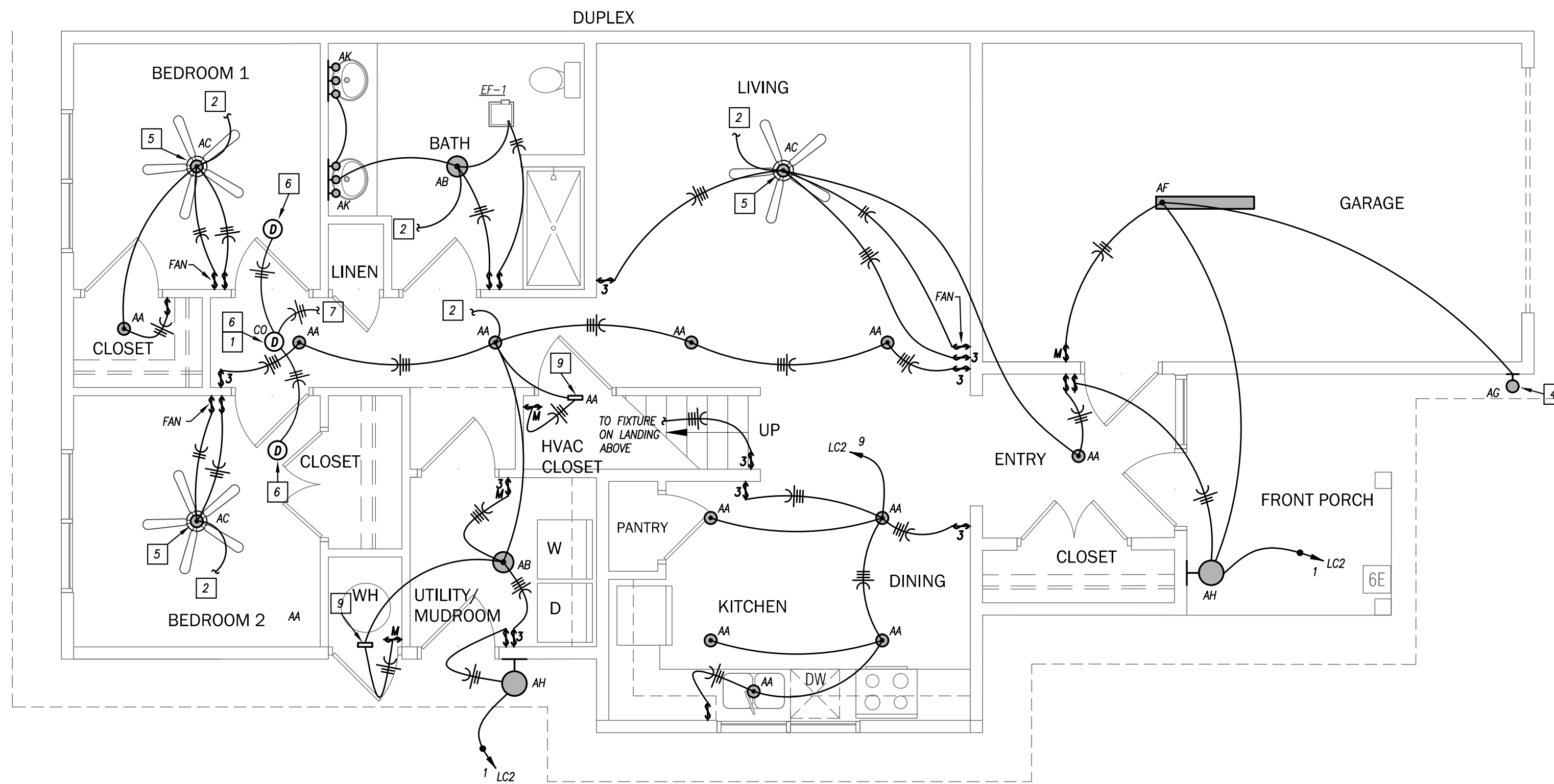
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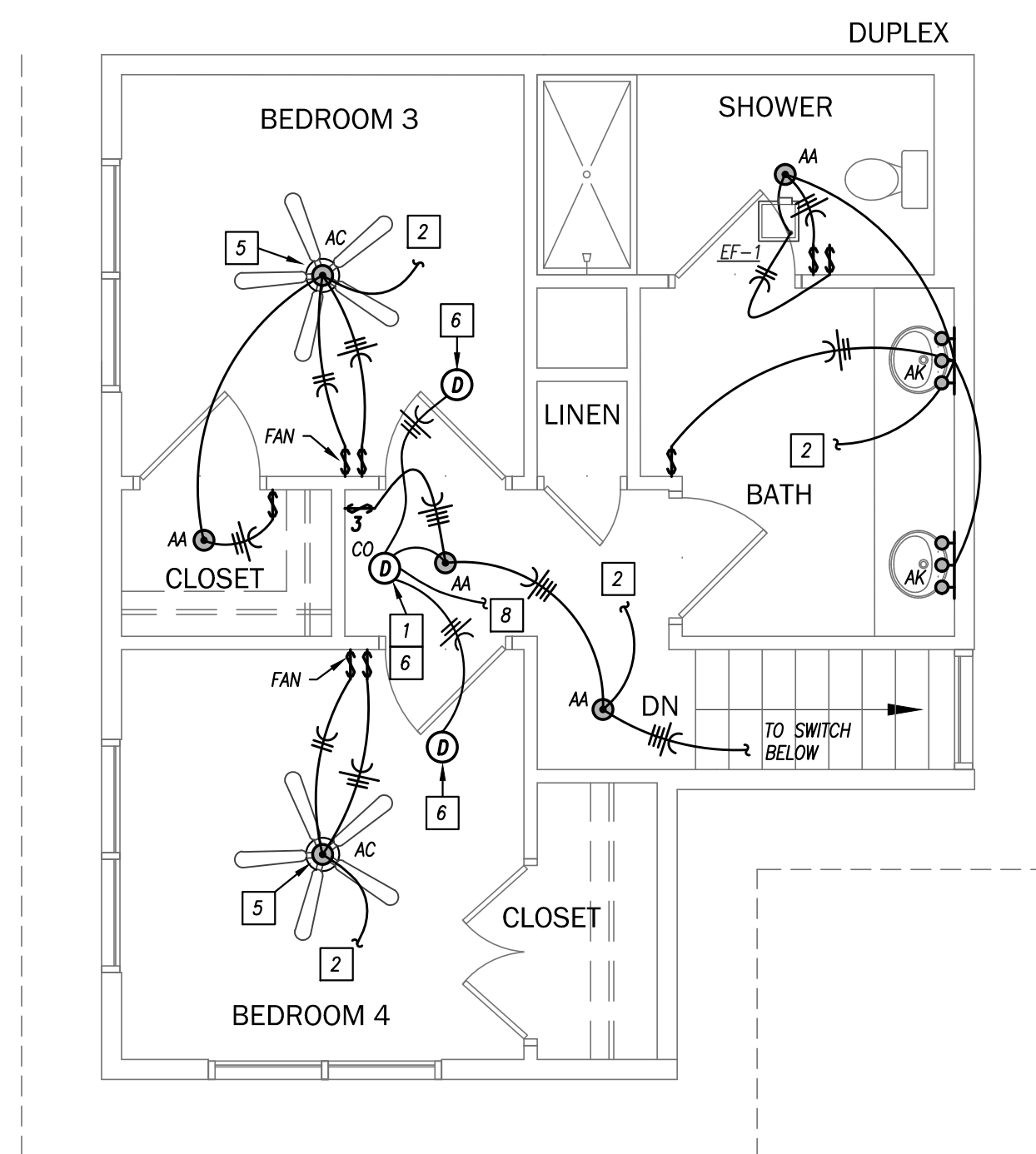
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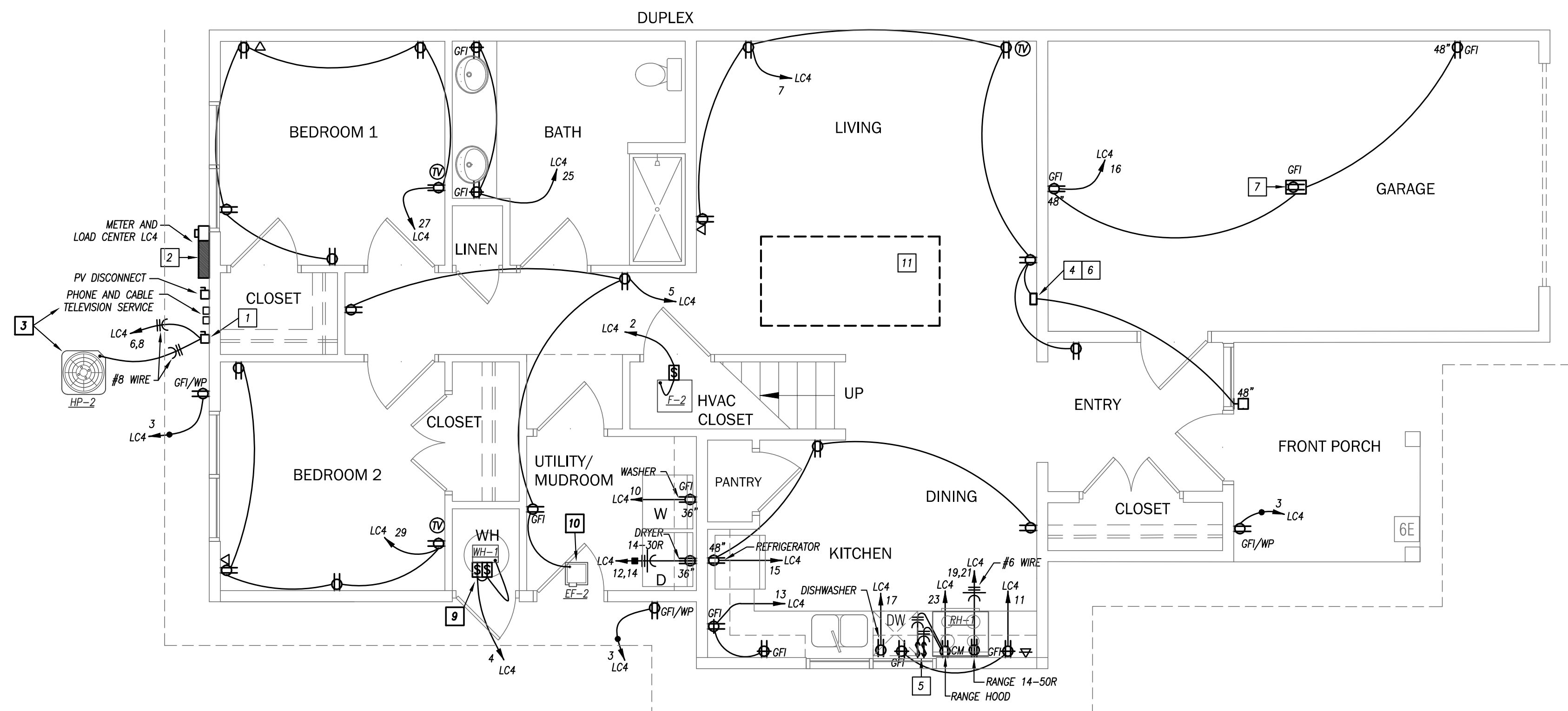
LIGHTING - UNIT-4A - FIRST FLOOR PLAN

1/4" = 1'-0"



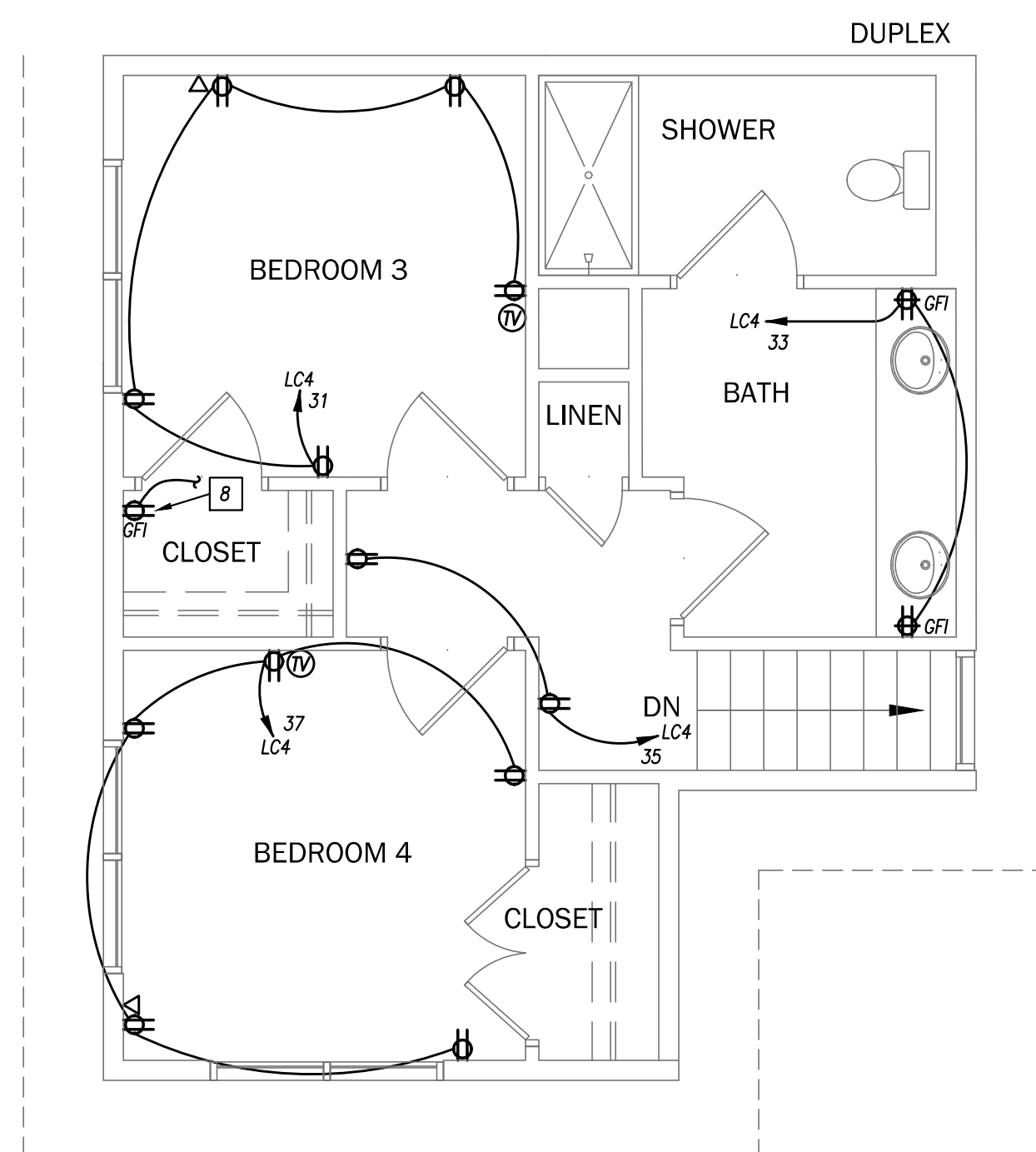
LIGHTING - UNIT-4A - SECOND FLOOR PLAN

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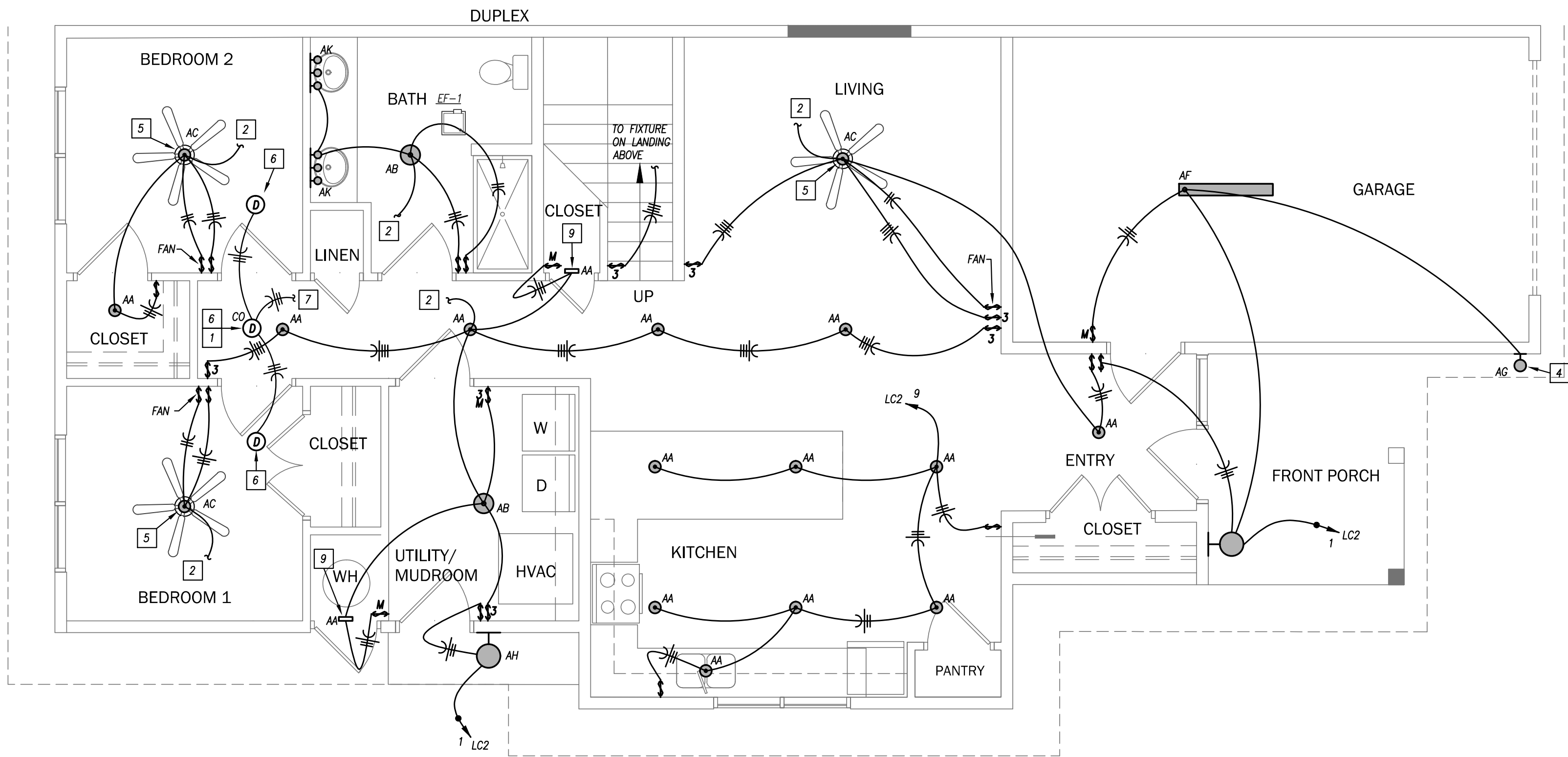
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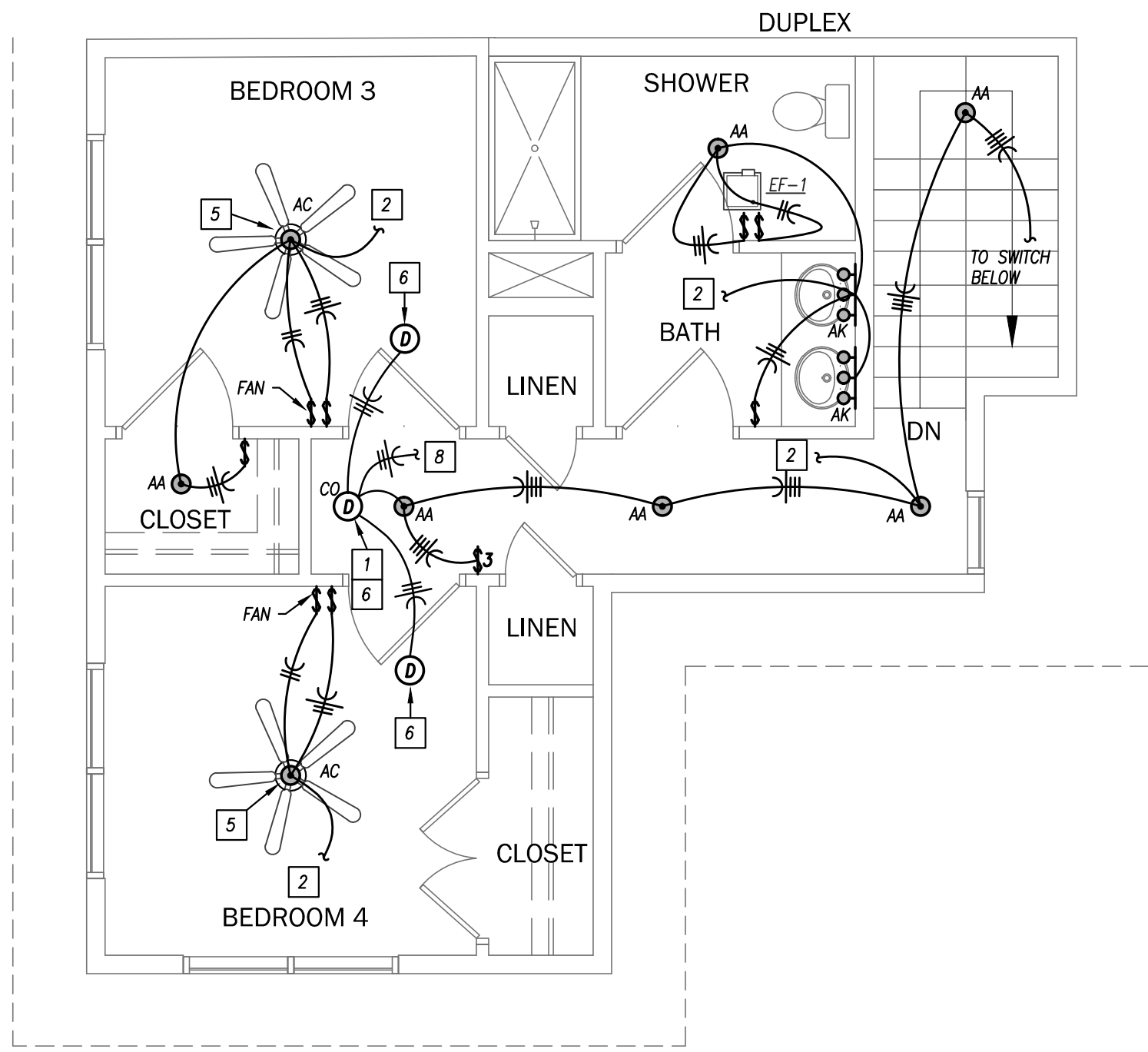
POWER - UNIT-4A - SECOND FLOOR PLAN

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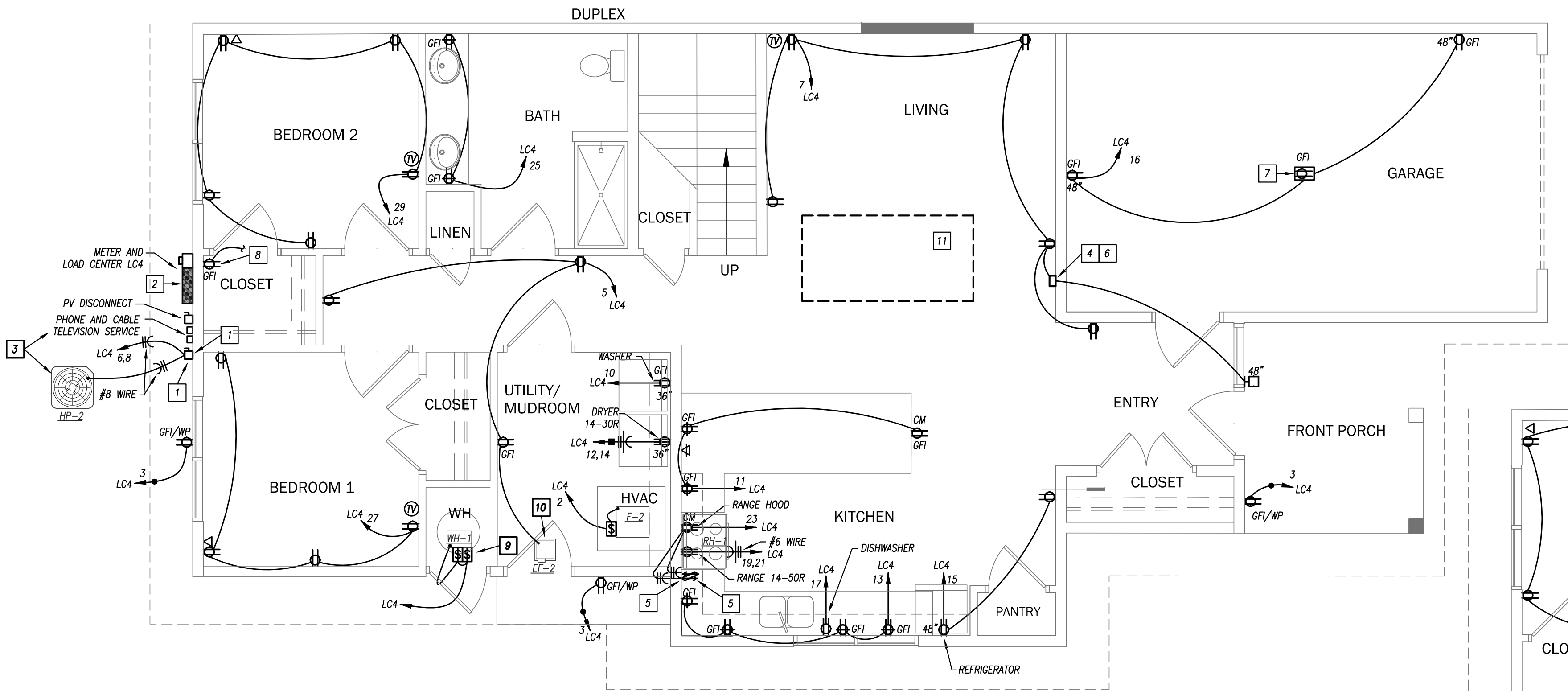
LIGHTING - UNIT-4B - FIRST FLOOR PLAN

1/4" = 1'-0"



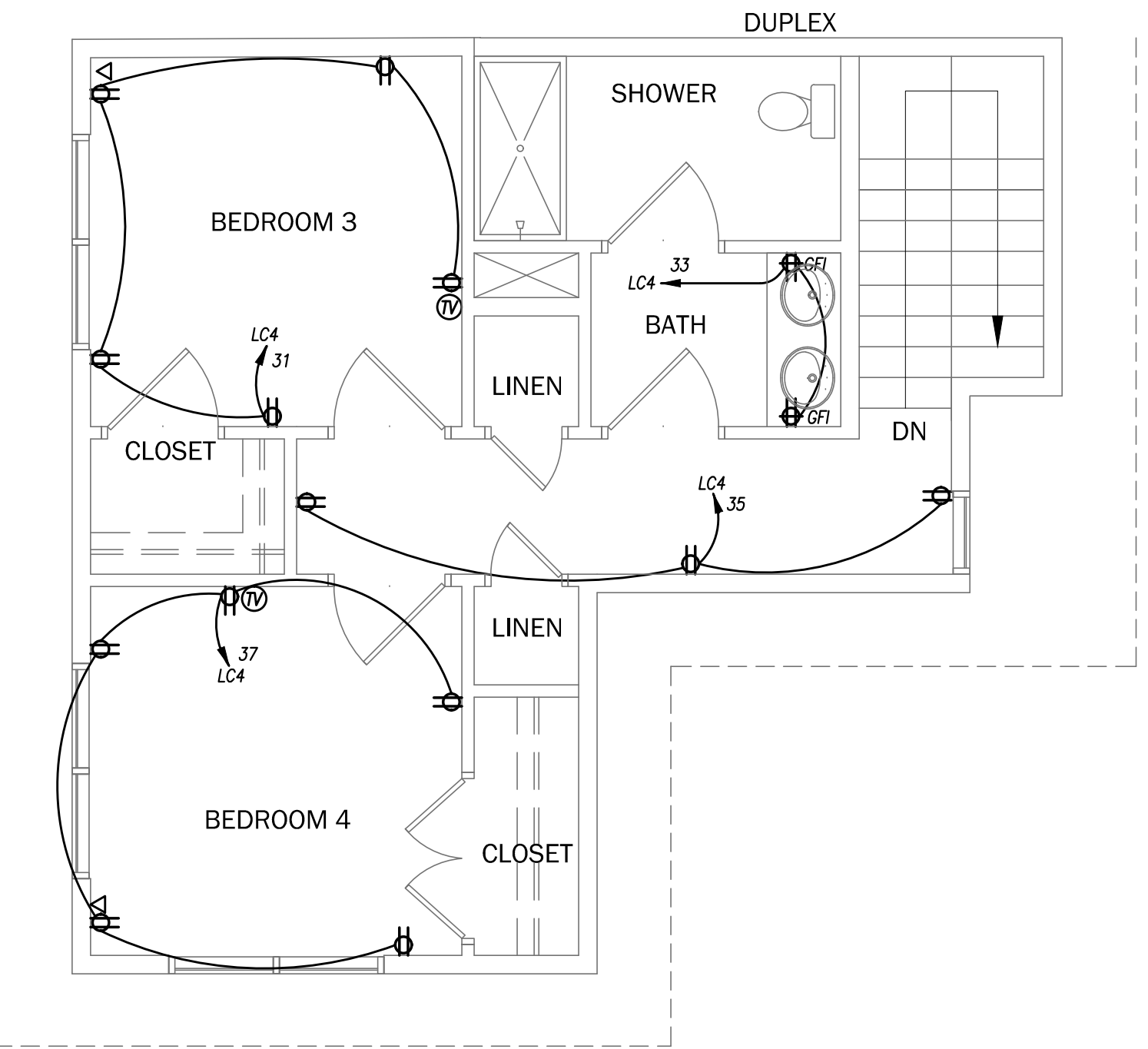
LIGHTING - UNIT-4B - SECOND FLOOR PLAN

1/4" = 1'-0"



POWER - UNIT-4B - FIRST FLOOR PLAN

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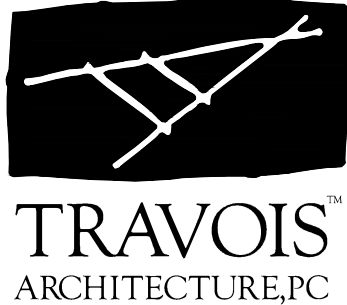
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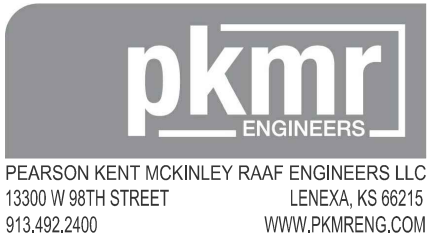
Coyote Valley Homes I, LHTC
Redwood Valley, California

TRAVOIS ARCHITECTURE, PC
310 W. 19TH TERRACE
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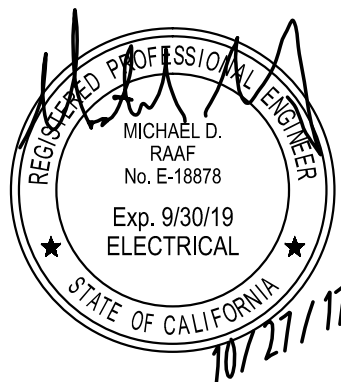
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E107
ELECTRICAL
LIGHTING & POWER
UNIT-4B



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SHEET

E201

ELECTRICAL
LOAD CENTERS AND
CALCULATIONS

LOAD CENTER SCHEDULE											
LOAD CENTER DESIGNATION: LC4						MAIN LUG AMPS: 200 MAIN BREAKER: 200 VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W					
MOUNTING: SURFACE LOCATION: EXTERIOR											
			C/B								
DESCRIPTION			TRIP	POLE		POLE	TRIP		POLE	TRIP	DESCRIPTION
LTS: EXTERIOR	15	1	1	2	1	15			1	15	FURNACE F-2
RECEPT: EXTERIOR	15	1	3	4	1	15			1	15	WATER HEATER WH-1
LTS/RECEPT: HALL/UTILITY	15	1	5	6					2	35	HEAT PUMP HP-2
LTS/RECEPT: LIVING ROOM	15	1	7	8							
LTS: KITCHEN/DINING ROOM	15	1	9	10	1	15			1	15	WASHER
RECEPT: KITCHEN COUNTER 1	20	1	11	12					2	30	DRYER
RECEPT: KITCHEN COUNTER 2	20	1	13	14							
RECEPT: REFRIGERATOR/DINING	20	1	15	16	1	15					
DISHWASHER	15	1	17	18	1	15					
RANGE	50	2	21	22	1	20					
RANGE HOOD	15	1	23	24							
LTS/RECEPT: BATHROOM 1	20	1	25	26							
LTS/RECEPT: BEDROOM 1	15	1	27	28							
LTS/RECEPT: BEDROOM 2	20	1	29	30							
SPACE			31	32							
SPACE			33	34							
SPACE			35	36							
SPACE			37	38							
SPACE			39	40							
SPACE			41	42	2	15					PV SYSTEM

REMARKS:
1. PROVIDE SPARE/UNUSED CIRCUIT BREAKERS WHERE MARKED "SPARE."
2. PART OF EXTERIOR COMBO METER/LOAD CENTER.
1 BREAKERS SHALL BE ARC-FAULT PROTECTED.
2 BREAKERS SHALL BE DUAL FUNCTION AFCI/GFCI.
3 COORDINATE FINAL SIZE WITH PV INSTALLER.

LOAD CENTER SCHEDULE											
LOAD CENTER DESIGNATION: LC3						MAIN LUG AMPS: 200 MAIN BREAKER: 200 VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W					
MOUNTING: SURFACE LOCATION: EXTERIOR											
			C/B								
DESCRIPTION			TRIP	POLE		POLE	TRIP		POLE	TRIP	DESCRIPTION
LTS: EXTERIOR	15	1	1	2	1	15			1	15	FURNACE F-2
RECEPT: EXTERIOR	15	1	3	4	1	15			1	15	WATER HEATER WH-1
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RECEPT: KITCHEN COUNTER 2	20	1	13	14							
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DISHWASHER	15	1	17	18	1	15					
RANGE	50	2	21	22	1	20					
RANGE HOOD	15	1	23	24							
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LTS/RECEPT: BEDROOM 1	15	1	27	28							
LTS/RECEPT: BEDROOM 2	20	1	29	30							
LTS/RECEPT: BEDROOM 3	15	1	31	32							
LTS/RECEPT: BATHROOM 2	20	1	33	34							
LTS/RECEPT: UPSTAIRS HALL	15	1	35	36							
SPACE			37	38							
SPACE			39	40							
SPACE			41	42	2	15					PV SYSTEM

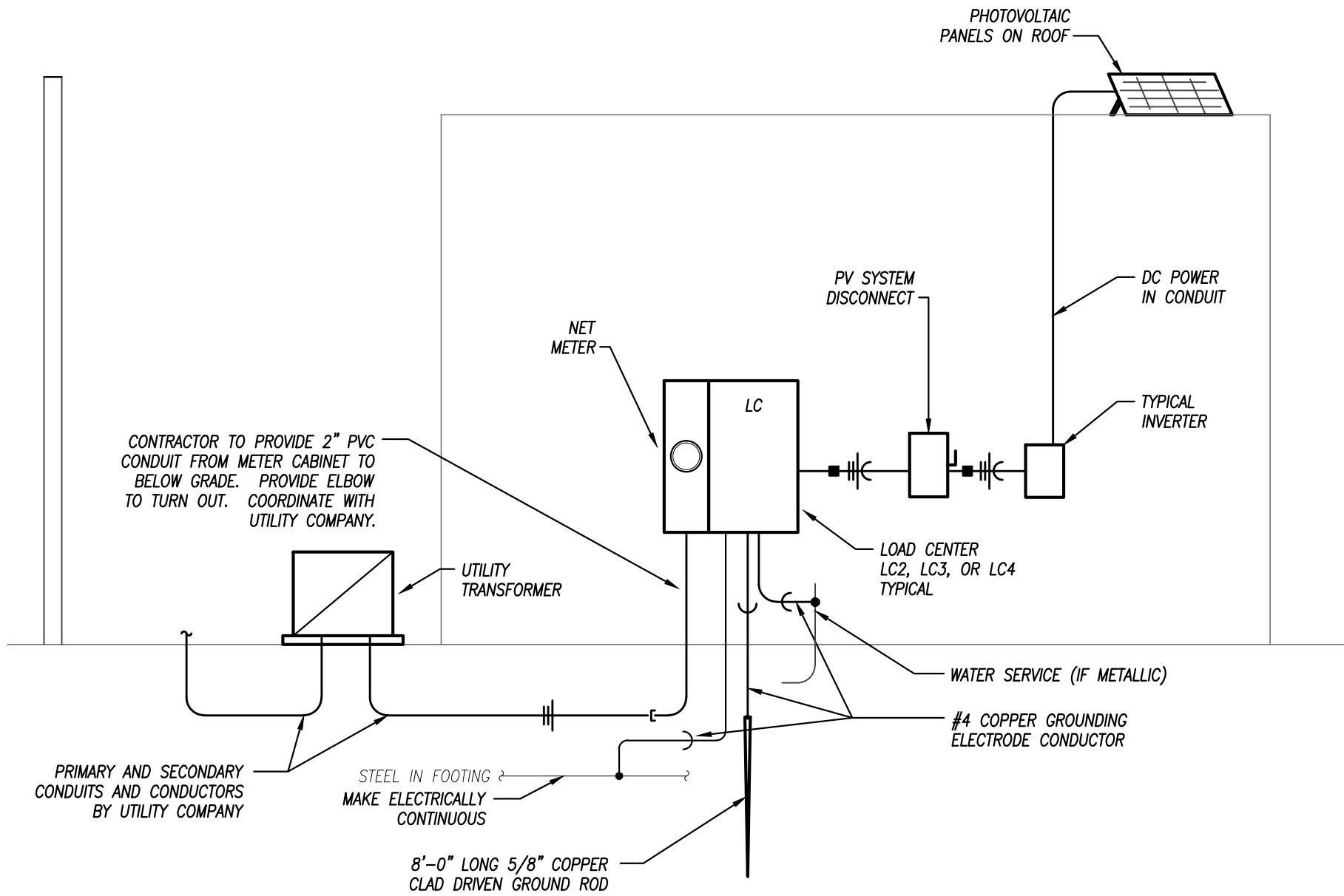
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LOAD CENTER SCHEDULE											
LOAD CENTER DESIGNATION: LC2						MAIN LUG AMPS: 200 MAIN BREAKER: 200 VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W					
MOUNTING: SURFACE LOCATION: EXTERIOR											
			C/B								
DESCRIPTION			TRIP	POLE		POLE	TRIP		POLE	TRIP	DESCRIPTION
LTS: EXTERIOR	15	1	1	2	1	15					FURNACE F-1
RECEPT: EXTERIOR	15	1	3	4	1	15					WATER HEATER WH-1
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LTS/RECEPT: LIVING ROOM	15	1	7	8							
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RECEPT: KITCHEN COUNTER 1	20	1	11	12							
RECEPT: KITCHEN COUNTER 2	20	1	13	14							
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DISHWASHER	15	1	17	18	1	15					
RANGE	50	2	21	22	1	20					
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LTS/RECEPT: BEDROOM 1	15	1	27	28							
LTS/RECEPT: BEDROOM 2	20	1	29	30							
SPACE			31	32							
SPACE			33	34							
SPACE			35	36							
SPACE			37	38							
SPACE			39	40							
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Standard Method Load Calculation for One-Family Dwellings											
UNIT DESIGNATION:				LOAD CENTER DESIGNATION:				VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W TOTAL AREA: 1909			
UNIT 4				LC4							
1 General Lighting and Receptacle Loads 220.12 Do not include open porches, garages, and unused or unfinished spaces not adaptable for future use.				3 x $\frac{1,909}{(\text{sq ft using outside dimensions})}$				1		5,727	
2 Small Appliance Branch-Circuits 220.52(A) At least two small appliance branch-circuits must be included. 210.11(C)(1)				1,500 x $\frac{2}{(\text{minimum of two})}$				2		3,000	
3 Laundry Branch Circuit 220.52(B) At least one laundry branch-circuit must be included. 210.11(C)(2)				1,500 x $\frac{1}{(\text{minimum of one})}$				3		1,500	
4 Add lines 1, 2, and 3				4	10,227		Lines 5 through 8 utilize the demand factors found in Table 220.42.				
5 $\frac{10,227}{(\text{line 4})} - 3,000 =$				5	7,227 (if 120,000 or less, skip to line 8)		6 $(\text{line 5, if more than } 120,000) - 120,000 =$		6	-	
7 $\frac{7,227}{(\text{line 6})} \times 25\% =$				7	-		8 $\frac{7,227}{(\text{smaller of line 5 or } 120,000)} \times 35\% =$		8	2,529	
9 Total General Lighting and Receptacle Load				3,000	+ $\frac{7,227}{(\text{line 7})} + \frac{2,529}{(\text{line 8})}$		9		5,529		
10 Fastened-In-Place Appliances 220.53 Use the nameplate rating. Do not include electric ranges, clothes dryers, space-heating equipment, or air-conditioning equipment.				Hood - Range / 216 Dishwasher / 1,000 - / - - / - - / -		- / - - / - - / - - / -		- / - - / - - / - - / -			
If fewer than four units, put total volt-amperes on line 10. If four or more units, multiply total volt-amperes by 75%						- X 100% =		10		1,216	
11 Clothes Dryers 220.54 (If present, otherwise skip to line 12.) Use 5,000 watts or the nameplate rating, whichever is larger.								11		5,000	
12 Ranges, Ovens, Cooktops, and Other Household Cooking Appliances Over 1750 Watts 220.55 (If present, otherwise skip to line 13.) Use Table 220.55 and all of the applicable notes.								12		10,000	
13 Heating or Air-Conditioning System (Compare the heat and A/C, and omit the smaller.) 220.60 Include the air handler when using either one. For heat pumps, include the compressor and the maximum amount of electric heat that can be energized while the compressor is running.								13		5,400	
14 Largest Motor (one motor only) 220.50 and 430.24 Multiply the volt-amperes of the largest motor by 25%.						1,176 (volt-amperes of largest motor) X 25% =		14		294	
15 Total Volt-Ampere Demand Load: Add lines 9 through 14 to find the minimum required volt-amperes.								15		27,439	
16 Minimum Amperes Divide the total volt-amperes by the voltage				27,439 (line 15) / - 240 =		16 114 (minimum amperes)		17 Minimum Size Service and/or Feeder (240.6(A))		17 200	

Standard Method Load Calculation for One-Family Dwellings											
UNIT DESIGNATION: UNIT 3				LOAD CENTER DESIGNATION: LC3				VOLTAGE: 240/120V PHASE/WIRE: 1PH/3W TOTAL AREA: 1647			
1 General Lighting and Receptacle Loads 220.12 <small>Do not include open porches, garages, and unused or unfinished spaces not adaptable for future use.</small>				$3 \times \frac{1,647}{(\text{sq ft using outside dimensions})} =$				1 4,941			
2 Small Appliance Branch-Circuits 220.52(A) <small>At least two small appliance branch-circuits must be included. 210.11(C)(1)</small>				$1,500 \times \frac{2}{(\text{minimum of two})} =$				2 3,000			
3 Laundry Branch Circuit 220.52(B) <small>At least one laundry branch-circuit must be included. 210.11(C)(2)</small>				$1,500 \times \frac{1}{(\text{minimum of one})} =$				3 1,500			
4 Add lines 1, 2, and 3				4	9,441			Lines 5 through 8 utilize the demand factors found in Table 220.42.			
$\frac{9,441}{(\text{line 4})} - 3,000 =$				5	6,441 <small>(if 120,000 or less, skip to line 8)</small>			$6 \frac{6,441}{(\text{line 5, if more than } 120,000\text{---})} = 120,000 =$ 6 -			
$7 \frac{6,441}{(\text{line 6})} \times 25\% =$				7	-			$8 \frac{6,441}{(\text{smaller of line 5 or } 120,000\text{---})} \times 35\% =$ 8 2,254			
9 Total General Lighting and Receptacle Load				3,000	+	$\frac{2,254}{(\text{line 7})} + \frac{2,254}{(\text{line 8})} =$			9	5,254	
10 Fastened-In-Place Appliances 220.53 <small>Use the nameplate rating. Do not include electric ranges, clothes dryers, space-heating equipment, or air-conditioning equipment.</small>				Hood - Range / 216 Dishwasher / 1,000 - / - - / - - / -				- / - - / - - / - - / -			
If fewer than four units, put total volt-amperes on line 10. If four or more units, multiply total volt-amperes by 75% <small>(volt-amps of four or more) X 100% =</small>				-				10 1,216			
11 Clothes Dryers 220.54 <small>(if present, otherwise skip to line 12.) Use 5,000 watts or the nameplate rating, whichever is larger.</small>				-				11 5,000			
12 Ranges, Ovens, Cooktops, and Other Household Cooking Appliances Over 1750 Watts 220.55 <small>(if present, otherwise skip to line 13.) Use Table 220.55 and all of the applicable notes.</small>				-				12 10,000			
13 Heating or Air-Conditioning System (Compare the heat and A/C, and omit the smaller.) 220.60 <small>Include the air handler when using either one. For heat pumps, include the compressor and the maximum amount of electric heat that can be energized while the compressor is operating.</small>				-				13 5,400			
14 Largest Motor (one motor only) 220.50 and 430.24 <small>Multiply the volt-amperes of the largest motor by 25%.</small>				$\frac{1,176}{(\text{volt-amps of largest motor})} \times 25\% =$				14 294			
15 Total Volt-Ampere Demand Load: Add lines 9 through 14 to find the minimum required volt-amperes.				-				15 27,164			
16 Minimum Amps <small>Divide the total volt-amperes by the voltage</small>				$\frac{27,164}{(\text{line 15})} \div \frac{240}{(\text{voltage})} =$				16 113 <small>(minimum amperes)</small>			
17 Minimum Size Service and/or Feeder 240.6(A)				-				17 200			



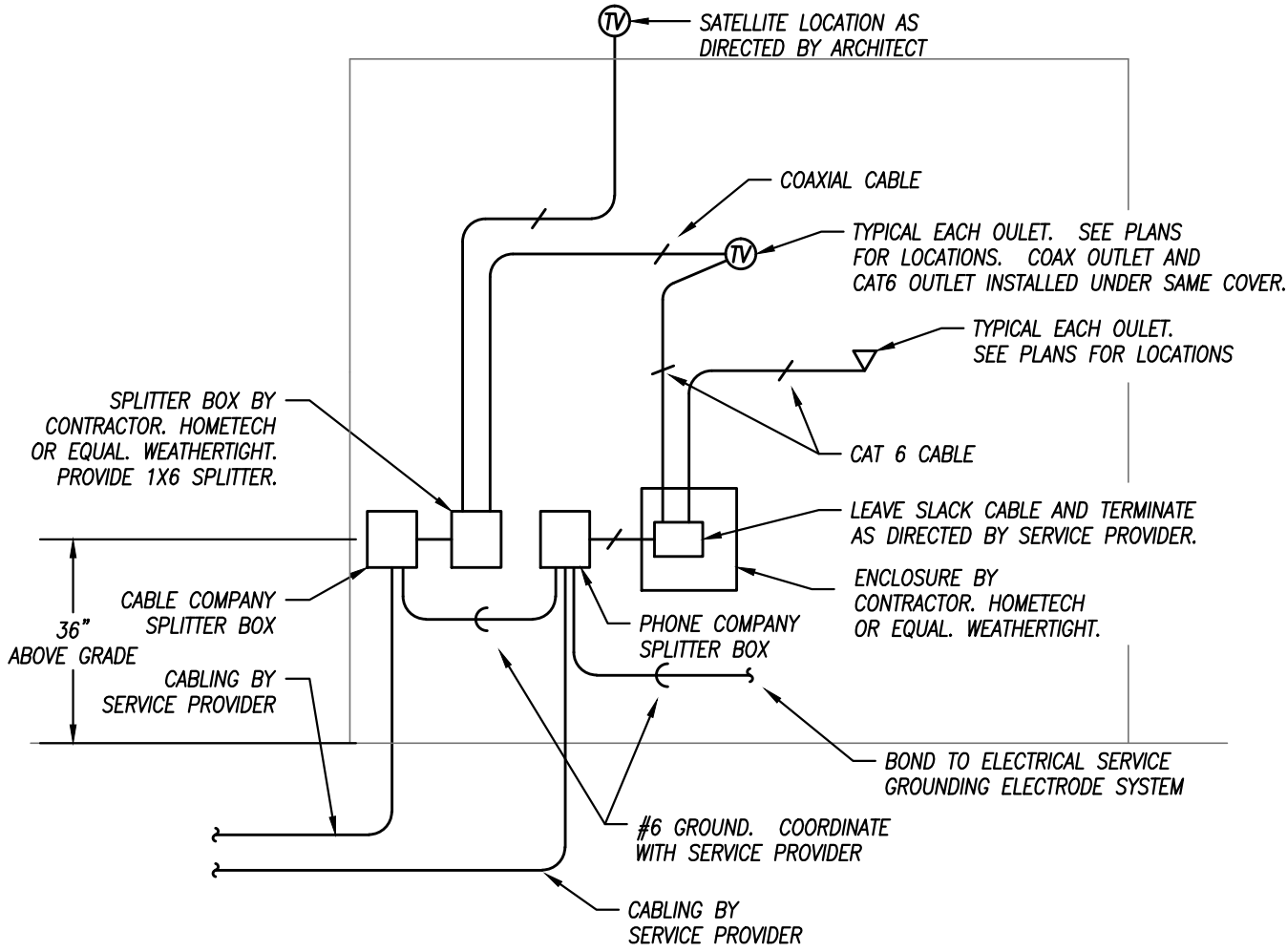
HOMES ELECTRICAL RISER DIAGRAM - UNDERGROUND

NOT TO SCALE

THIS RISER IS DIAGRAMMATIC ONLY AND MEANT TO GENERALLY DEFINE SCOPE OF WORK. ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY COMPANY STANDARDS. COORDINATE IF SERVICE IS TO BE OVERHEAD OR UNDERGROUND.

PV SYSTEM

2KW PV SYSTEM, PANELS, WIRING, INVERTER(S), AND DISCONNECT TO BE PART OF BID. PROVIDE CONDUITS, INSTALLED CONCEALED, TO EQUIPMENT LOCATIONS. COORDINATE CONDUIT SIZES AND REQUIREMENTS WITH PV INSTALLER. CONDUIT SHALL NOT PENETRATE ROOF OR EXTERIOR WALLS. CAP EACH END AND MARK FOR INTENDED PURPOSE.



LOW VOLTAGE CABLING SYSTEM

NOT TO SCALE

NOTE: ALL CABLING TO BE INSTALLED CONCEALED. PROVIDE FOR SLACK AND TERMINATE ALL CABLE AT EACH END. COORDINATE WORK WITH THE SERVICE PROVIDER. ALL WORK TO BE COMPLETED TO SERVICE PROVIDERS STANDARD.

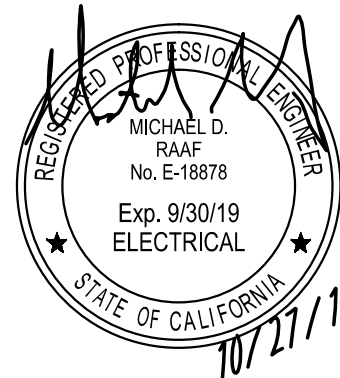
LIGHT FIXTURE SCHEDULE

FIXTURE TYPE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP NUMBER / DESCRIPTION	VOLTAGE	REMARKS
AA	SYLVANIA	LED	RECESSED OR SURFACE MOUNT LED DOWNLIGHT, 900 LUMEN @ 13 WATT, 3000K, 82 CRI, SUITABLE FOR USE IN CLOSETS, COMPLIANT WITH NFPA 70, NEC SECTION 410.16 (A)(3) AND 410.16(C)(5), SUITABLE FOR DRY, DAMP AND WET LOCATIONS. ENERGY STAR.	LED, 900 LUMENS, 13 WATTS, 3000K, 82 CRI	120	1
AB	CANARM	IFMB31B13213BPT	13" ENERGY STAR FLUSH MOUNT, FROSTED MELON GLASS, BRUSHED PEWTER FINISH GLOBE FIXTURE.	TWO (2) 11 WATT GU-24 LED LAMPS	120	1
AC	HAMPTON BAY	CARRIAGE 52-HL W/LIGHT KIT	CEILING FAN. 52" DIAMETER WITH FIVE (5) BLADES AND 3-SPEED REVERSIBLE MOTOR. SATIN NICKEL FINISH HOUSING WITH DOWNROD. ENERGY STAR QUALIFIED. FURNISH WITH TYPE 2, FLAT BLACK FINISH FAN BLADES. STANDARD MOUNTING. PROVIDE WITH OPTIONAL COMPACT FLUORESCENT BOWL LIGHT KIT. SATIN NICKEL FINISH WITH FROSTED GLASS. HARDWIRED CONTROL.	65 WATTS TWO (2) 11 WATT GU-24 LED LAMPS	120	1
AC1	HAMPTON BAY	CARRIAGE 52-HL W/LIGHT KIT	SAME AS 'C' FIXTURE, EXCEPT PROVIDE WITH APPROPRIATE EXTENDED DOWNROD.	65 WATTS TWO (2) 11 WATT GU-24 LED LAMPS	120	1,2,3
AF	UTILITECH	PRO STRIP SHOP LIGHT	4'-0" LONG STRIP SHOP LIGHT, 4000K, ENERGY STAR AND UL RATED FOR WET LOCATIONS, DURABLE METAL FRAM CONSTRUCTION, WITH WHITE ACRYLIC LENS.	LED, 40 WATTS, 4000K, 3500 LUMENS	120	1
AG	SECURE HOME	SH-5942-BZ-A	WALL MOUNTED MOTION-ACTIVATED FLOOD LIGHT WITH TIMER. 240 DEGREE FIELD, (2)TWO HEAD DUAL DETECTION ZONE. BRONZE FINISH. UL LISTED WET LOCATION. ENERGY STAR QUALIFIED.	LED	120	1
AH	HAMPTON BAY LIGHTING	NTSW30030LBL-MS	LUMSDEN WALL-MOUNT OUTDOOR BLACK LED MOTION SENSOR LANTERN. ENERGY STAR CERTIFIED.	ONE (1) 9 WATT LED	120	1
AK	PORTFOLIO	WL 9360	3-LIGHT WALL MOUNTED VANITY FIXTURE. FROSTED GLASS GLOBE. CAST ALUMINUM METAL HOUSING. FURNISH FOR WALL MOUNTING. BRUSHED NICKEL FINISH. PORCELAIN SOCKET. UL LISTED DAMP LOCATION. ENERGY STAR QUALIFIED.	THREE (3) 11 WATT GU24 LED LAMPS	120	1

- FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.
- PROVIDE CANOPY FOR MOUNTING TO SLOPED CEILING IF NEEDED.
- FIXTURE FOR MOUNTING IN SLOPED CEILING.

GENERAL NOTES (APPLICABLE TO ALL FIXTURES):

- ALL FIXTURES SHALL BE IC RATED OR PROVIDED WITH INSULATION SHIELDS WHEN INSTALLED IN INSULATED AREAS OF THE TRUSS SPACE.
- FIXTURES SHALL BE PROVIDED WITH LED REPLACEMENT LAMPS AS SCHEDULED. ALL LED LAMPS SHALL BE ENERGY STAR QUALIFIED.
- ALL FIXTURES SHALL BE ENERGY STAR QUALIFIED.

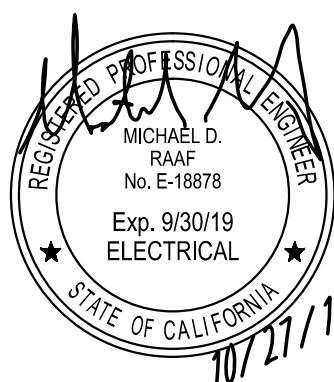


REVISION	DATE
25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17
(FOR CONSTRUCTION) PERMIT	10/27/17

SHEET

E301

ELECTRICAL
RISERS &
SCHEDULES



REVISION	DATE
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25% CDs	06/30/17
40% CDs	07/28/17
75% CDs	09/26/17

(FOR CONSTRUCTION)
PERMIT 10/27/17

SHEET

E401

ELECTRICAL
SPECIFICATIONS &
DETAILS

ELECTRICAL SPECIFICATIONS

ALL ELECTRICAL SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR

SECTION 16000 - ELECTRICAL REQUIREMENTS

1. GENERAL REQUIREMENTS

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL LABOR AND MATERIALS REQUIRED TO HAVE A COMPLETE FUNCTIONING ELECTRICAL LIGHTING AND POWER SYSTEMS TOGETHER WITH ALL ASSOCIATED EQUIPMENT AND APPARATUS AS SHOWN ON THE PLANS.
- CODES: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NFPA, CITY OF AND ALL OTHER APPLICABLE CODES.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE U.L. LABEL WHERE APPLICABLE. PROVIDE WATERPROOF EQUIPMENT ENCLOSURES WHERE REQUIRED.
- CONTRACTOR SHALL FURNISH AND INSTALL FOR WORK DESIGNATED AS HIS RESPONSIBILITY, ALL WIRE, WIREWAY, CONDUIT, CONNECTORS, OUTLETS, ETC., NECESSARY TO ACHIEVE A COMPLETE ELECTRICAL INSTALLATION. WHERE AN ELECTRICAL DEVICE IS REQUIRED BY CODE BUT NOT SHOWN, IT SHALL BE FURNISHED AND INSTALLED AS THOUGH FULLY SHOWN AND SPECIFIED.
- THE CONTRACTOR SHALL VISIT THE SITE AND OBSERVE THE CONDITIONS UNDER WHICH THE WORK WILL BE DONE. ANY DISCREPANCIES SHALL BE CALLED TO THE ARCHITECT'S ATTENTION. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION FOR ANY ERROR OR NEGLIGENCE ON THE CONTRACTOR'S PART.

SECTION 16100 - CABLING, CONDUIT AND CONDUCTORS

1. PRODUCTS

- FOLLOW CIRCUITING SHOWN ON PLANS. USE NO CONDUCTORS SMALLER THAN #14 GA. UNLESS NOTED OTHERWISE. USE #14 GA. WIRE FOR ALL 15 AMP CIRCUITS AND #12 GA. FOR ALL 20 AMP CIRCUITS OR AS OTHERWISE NOTED ON THE PLANS.
- BRANCH CIRCUIT WIRING FOR INDIVIDUAL DWELLING UNITS SHALL BE TYPE NM CABLE. THINW COPPER CONDUCTOR. NM CABLE SHALL HAVE A GROUNDING CONDUCTOR.
- SER CABLE MAY BE USED FOR FEEDERS TO INDIVIDUAL DWELLING UNITS FROM THE METER TO THE LOAD CENTER WHERE PERMITTED BY CODE. STYLE SER CABLE SHALL BE CONSTRUCTED OF SUNLIGHT RESISTANT TYPE XHHW-2 CONDUCTORS OR TYPE THHN/THWN CONDUCTORS. COPPER CONDUCTOR. CABLE ASSEMBLY PLUS REINFORCEMENT TAPE JACKETED WITH GRAY SUNLIGHT RESISTANT PVC. INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NEC. WHERE OTHERWISE REQUIRED TO BE PROTECTED MC CABLE SHALL BE USED.
- WIRING INSTALLED BELOW GRADE SHALL BE INSTALLED IN SCHEDULE 80 PVC HEAVY WALL PLASTIC CONDUIT MEETING NEMA STANDARDS AND UL LISTED FOR UNDERGROUND AND EXPOSED USE. PROVIDE GALVANIZED RIGID STEEL (GRS) RADIUS BENDS AND RISERS AS CONDUITS RISE ABOVE GRADE OR ABOVE FLOOR SLAB.
- LIGHTING AND RECEPTACLE CIRCUIT CONDUCTORS SHALL BE COPPER THERMOPLASTIC INSULATED TYPE THHN/THWN 600 VOLT, 75 DEGREES C. COLOR CODED AS DESCRIBED UNDER APPLICABLE CODES. LIGHTING FIXTURE WIRE INSULATION SHALL HAVE A TEMPERATURE RATING NOT LESS THAN THE INDIVIDUAL LIGHTING FIXTURE MANUFACTURER'S RECOMMENDED RATING.
- CIRCUITS WITH NO. 8 OR LARGER CONDUCTORS AND BUILDING SERVICE FEEDERS SHALL BE COPPER THERMOPLASTIC INSULATED TYPE THHN/THWN 600 VOLT, 75 DEGREES C.
- WHERE NM CABLE IS INSTALLED EXPOSED SAME SHALL BE INSTALLED IN CONDUIT.

2. EXECUTION

- ALL NEW CABLING SHALL BE INSTALLED CONCEALED IN WALLS OR CEILINGS.

SECTION 16200 - GROUNDING

1. GENERAL

- SUPPLEMENT GROUNDING NEUTRAL OF SECONDARY DISTRIBUTION SYSTEM WITH EQUIPMENT GROUNDING SYSTEM, INSTALLED SO THAT METALLIC STRUCTURES, ENCLOSURES, RACEWAYS, JUNCTION BOXES, OUTLET BOXES, CABINETS, MACHINE FRAMES, PORTABLE EQUIPMENT AND OTHER CONDUCTIVE ITEMS OPERATE CONTINUOUSLY AT GROUND POTENTIAL AND PROVIDE LOW IMPEDANCE PATH FOR GROUND FAULT CURRENTS.

2. PRODUCTS

- PROVIDE EQUIPMENT GROUND BUS IN LOAD CENTER CONNECTED BY AN APPROVED METHOD TO GROUND RODS.
- PROVIDE IN CONDUIT A GREEN INSULATED COPPER GROUND CONDUCTOR TO MAIN METALLIC WATER SERVICE ENTRANCE AND CONNECT BY MEANS OF ADEQUATE GROUND CLAMPS.

3. EXECUTION

- EQUIPMENT GROUNDING CONDUCTORS FOR BRANCH CIRCUIT HOME RUNS SHOWN ON THE DRAWINGS SHALL INDICATE AN INDIVIDUAL AND SEPARATE GROUND CONDUCTOR FOR THAT BRANCH CIRCUIT WHICH SHALL BE TERMINATED AT THE BRANCH CIRCUIT PANELBOARD, SWITCHBOARD, OR OTHER DISTRIBUTION EQUIPMENT.
- PROVIDE LOW VOLTAGE DISTRIBUTION SYSTEM WITH A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR FOR EACH FEEDER. SINGLE PHASE 120 VOLT BRANCH CIRCUITS FOR LIGHTING AND POWER SHALL CONSIST OF PHASE AND NEUTRAL CONDUCTORS AND A GREEN GROUND CONDUCTOR INSTALLED IN COMMON CABLE ASSEMBLY.
- GROUNDING CONDUCTORS SHALL BE AS SHOWN ON PLANS OR IF NOT SPECIFICALLY SHOWN SHALL BE NO SMALLER THAN THAT REQUIRED BY THE NEC.

SECTION 16300 - ELECTRICAL EQUIPMENT

1. PRODUCTS

- ALL JUNCTION BOXES AND OUTLET BOXES FOR LIGHT FIXTURES, RECEPTACLES, AND WALL SWITCHES SHALL BE RACO OR CARLON NONMETALLIC OUTLET BOXES PERMITTED FOR NM CABLE INSTALLATIONS AS ALLOWED BY CODE. LIGHTING FIXTURE OUTLET BOXES IN CEILINGS SHALL NOT BE LESS THAN 4" OCTAGONAL. OUTLETS SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE DRAWINGS AND AS REQUIRED TO MEET THE NEC. OUTLET BOXES SHALL BE FLUSH MOUNTED ON ALL WALLS FOR CONCEALED WORK. GANGABLE TYPE BOXES SHALL BE USED IN ALL GYPBOARD SURFACES. PROVIDE CEILING FAN RATED CEILING BOXES AT CEILING FAN LOCATIONS.

2. COMBINATION METER CABINETS / LOAD CENTERS

- EQUIPMENT SHALL BE CUTLER-HAMMER WIRE 120/240 COMBINATION METER CABINET/LOAD CENTER OR EQUAL.
- EQUIPMENT SHALL BE OF THE CAPACITY SHOWN ON THE DRAWINGS WITH COPPER BUSSING AND BRACED FOR A MINIMUM OF 22,000 AIC UNLESS OTHERWISE NOTED ON PLANS. PROVIDE WITH MAIN DISCONNECT AS INDICATED ON THE PLANS.
- PROVIDE WITH A SEPARATE EQUIPMENT GROUND BUS AND BONDABLE NEUTRAL.
- COORDINATE METERING TYPE WITH THE UTILITY COMPANY.
- PROVIDE WITH WEATHER-PROOF NEMA 3R ENCLOSURE FOR EXTERIOR INSTALLATION.
- SERVICE ENTRANCE RATED.
- PROVIDE WITH NUMBER AND SIZE OF BREAKERS AS INDICATED ON THE LOAD CENTER SCHEDULE ON THE DRAWINGS.
- PROVIDE AFCI AND HACR CIRCUIT BREAKERS WHERE REQUIRED BY CODE.
- PAD-LOCKABLE COVER.
- EQUIVALENT BY SQUARE D, SIEMENS, CUTLER HAMMER, OR GE.

3. DISCONNECT SWITCHES

- PROVIDE NON-FUSIBLE SAFETY DISCONNECT SWITCHES OF SIZE AND TYPE INDICATED ON THE DRAWINGS.
- EQUIVALENT BY SQUARE D, SIEMENS, CUTLER HAMMER, OR GE.

SECTION 16400 - WIRING DEVICES

1. PRODUCTS

- EQUIVALENT DEVICES BY COOPER, LEVITON, PASS & SEYMOUR, AND HUBBELL.
- CONVENIENCE RECEPTACLES SHALL BE COOPER COMMERCIAL GRADE 15 AMP DUPLEX WITH GROUND AS SHOWN. OTHER OUTLETS SHALL BE VERIFIED WITH EQUIPMENT SUPPLIERS FOR PROPER NEMA CONFIGURATIONS. PROVIDE GFI RATED DEVICES WHERE INDICATED.
- 15 AMP AND 20 AMP, 120 VOLT RECEPTACLES SHALL BE TAMPER-RESISTANT AS REQUIRED BY CODE.
- LIGHT SWITCHES SHALL BE COOPER COMMERCIAL GRADE 15 AMP ROCKER TYPE SWITCHES.
- WALL PLATES SHALL BE NYLON WITH BEVELED EDGES.
- COLOR OF DEVICES AND WALL PLATES AS DIRECTED BY THE ARCHITECT.

2. EXECUTION

- ALL OUTLETS, SHALL BE MOUNTED WITH BOTTOM AT 18" AFF AND SWITCHES WITH BOTTOM AT 44" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON PLANS.

SECTION 16500 - LUMINAIRES, LAMPS AND BALLASTS

1. PRODUCTS

A. LUMINAIRES

- PROVIDE LIGHTING FIXTURES COMPLETE WITH LAMPS AND ACCESSORIES REQUIRED FOR HANGING. COORDINATE MOUNTING OF CEILING MOUNTED LIGHTING FIXTURES WITH GENERAL CONTRACTOR. WHERE ADDITIONAL FIXTURE SUPPORTS ARE REQUIRED THEY SHALL BE PROVIDED BY E/C. LIGHTING FIXTURE SUPPORTS SHALL COMPLY WITH THE LATEST EDITION OF THE NEC SECTIONS 410-15 AND 410-16. PROVIDE LIGHTING FIXTURE SECURING CLIPS AS REQUIRED. CONSULT ARCHITECTURAL PLANS FOR CEILING TYPES AND PROVIDE SURFACE AND RECESSED LIGHTING FIXTURES WITH APPROPRIATE MOUNTING COMPONENTS AND ACCESSORIES.
- SEE LIGHTING FIXTURE SCHEDULE ON PLANS FOR FIXTURE TYPES. EQUIVALENT LUMINAIRES BY HUBBELL, INFINITY, LITHONIA, WILLIAMS, COLUMBIA, EXTRONICS, LITELARM, EXIDE.

B. LAMPS

- FIXTURE LAMPS SHALL BE LAMP TYPE RECOMMENDED BY FIXTURE MANUFACTURER. LAMP NO FIXTURES ABOVE MANUFACTURERS RECOMMENDED MAXIMUM WATTAGES. PROVIDE T-8 FLUORESCENT LAMPS AS 32 WATT, WITH A COLOR RENDITION INDEX(CRI) OF NO LESS THAN 75 AND A COLOR TEMPERATURE OF 4100 DEGREES K. , 2900 APPROXIMATE INITIAL LUMENS AND PROVIDE T-5 FLUORESCENT LAMPS AS 54 WATT HIGH OUTPUT, WITH A COLOR RENDITION INDEX(CRI) OF NO LESS THAN 85 AND A COLOR TEMPERATURE OF 5000 DEGREES K. , 5000 APPROXIMATE INITIAL LUMENS UNLESS OTHERWISE CALLED FOR IN THE FIXTURE SCHEDULE.
- EQUIVALENT LAMPS BY G.E., VENTURE, PHILLIPS OR SYLVANIA.

C. BALLASTS

- FLUORESCENT ELECTRONIC BALLASTS SHALL BE THE ELECTRONIC TYPE HAVE A THD OF LESS THAN 20% BY ADVANCE, G.E., MOTOROLA, OR MAGNETEK.

SECTION 16600 - SMOKE ALARMS

1. PRODUCTS

- PHOTOELECTRIC, 120-VOLT, SINGLE AND MULTI-STATION CEILING-MOUNTED SMOKE DETECTORS WITH AN INTEGRAL 9 VOLT DC BATTERY FOR BACKUP.
- PROVIDE 120-VOLT, MULTI-STATION COMBINATION SMOKE/CARBON MONOXIDE DETECTORS WHERE INDICATED.
- DETECTOR SHALL BE FURNISHED WITH SOUNDER BASE. MULTIPLE DETECTORS WITHIN THE SAME DWELLING UNIT SHALL BE WIRED TOGETHER SO THAT THE ACTIVATION OF ONE DEVICE WILL SIGNAL ALL DEVICES IN THE DWELLING UNIT TO ALARM. DETECTOR SHALL BE SUITABLE FOR WALL OR CEILING INSTALLATION.
- HEARING IMPAIRED DWELLING UNITS SHALL HAVE A SINGLE STATION SMOKE DETECTOR THAT OPERATES FROM 120 VAC OR ITS 9 VDC BATTERY BACK UP. THE SMOKE DETECTOR SHALL HAVE A BUILT-IN 177-CANDELA STROBE THAT WILL ACTIVATE WITH THE AUDIBLE ALARM WHEN SMOKE IS DETECTED.

2. EXECUTION

- SYSTEM SHALL BE INSTALLED AND TESTED PER NFPA 72 AND APPLICABLE SECTIONS OF NFPA 70. FURNISH AND INSTALL A COMPLETE MULTI-STATION FIRE ALARM SYSTEM AS DESCRIBED HEREIN AND AS SHOWN ON THE PLANS; TO BE WIRED, CONNECTED, AND LEFT IN FIRST CLASS OPERATING CONDITION. INCLUDE SUFFICIENT WIRING, TERMINATIONS, ELECTRICAL BOXES, AND ALL OTHER NECESSARY MATERIAL FOR A COMPLETE OPERATING SYSTEM.

3. SYSTEM WIRING: WIRE AND CABLE SHALL BE A TYPE LISTED FOR ITS INTENDED USE BY AN APPROVAL AGENCY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ) AND SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES FROM THE CURRENT APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC)(NFPA 70).

1. PRODUCTS

- PROVIDE BROADBAND RG COAXIAL CABLE FOR CABLE TELEVISION OUTLETS.
- PROVIDE CAT 5e CABLING FOR PHONE.
- PROVIDE CAT 6 CABLING FOR DATA AND INTERNET SERVICES.
- PROVIDE CAT 5e RJ45 JACK FOR PHONE AND CAT 6 RJ45 JACK FOR DATA.
- PROVIDE ALL NECESSARY CABLING, EQUIPMENT, BOXES, SPLITTERS, CONNECTORS, COVERS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
- REFER TO LOW-VOLTAGE DIAGRAM FOR MORE INFORMATION.

2. EXECUTION

- CABLING SHALL BE INSTALLED CONCEALED IN CONSTRUCTION.
- MAKE ALL TERMINATIONS.
- CABLING SHALL BE UL LISTED FOR ITS INTENDED USE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES FROM THE CURRENT APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC)(NFPA 70).

SECTION 16700 - LOW VOLTAGE CABLING AND EQUIPMENT

1. PRODUCTS

- PROVIDE BROADBAND RG COAXIAL CABLE FOR CABLE TELEVISION OUTLETS.
- PROVIDE CAT 5e CABLING FOR PHONE.
- PROVIDE CAT 6 CABLING FOR DATA AND INTERNET SERVICES.
- PROVIDE CAT 5e RJ45 JACK FOR PHONE AND CAT 6 RJ45 JACK FOR DATA.
- PROVIDE ALL NECESSARY CABLING, EQUIPMENT, BOXES, SPLITTERS, CONNECTORS, COVERS, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
- REFER TO LOW-VOLTAGE DIAGRAMS FOR MORE INFORMATION.

2. EXECUTION

- CABLING SHALL BE INSTALLED CONCEALED IN CONSTRUCTION.
- MAKE ALL TERMINATIONS.
- CABLING SHALL BE UL LISTED FOR ITS INTENDED USE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES FROM THE CURRENT APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC)(NFPA 70).

ELECTRICAL SPECIFICATIONS

ALL ELECTRICAL SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR

SECTION 16800 - PHOTOVOLTAIC SYSTEM

THE DESIGN OF THE ON-SITE SOLAR PV SYSTEM WILL BE THE RESPONSIBILITY OF THE CONTRACTOR; HOWEVER, THE SYSTEM MUST BE COMPLIANT WITH APPLICABLE DESIGN GUIDELINES. IT IS THE INTENT OF THE SPECIFICATIONS TO INSURE THAT THE PV SYSTEM INSTALLED IS CONSISTENT WITH AND ADHERE TO ANY AND ALL BUILDING CODES AND STANDARDS, APPLICABLE UTILITY RULES AND TARIFFS, AND ANY AND ALL TECHNICAL AND INSTALLATION SPECIFICATIONS AND GUIDELINES AS MAY BE DEVELOPED AND ESTABLISHED. BIDDERS ARE ADVISED TO BE FAMILIAR WITH THESE RULES, REQUIREMENTS AND SPECIFICATIONS AS THEY PERTAIN TO THE INSTALLATION OF SOLAR PV SYSTEMS.

PV SYSTEM:

- THE PV SYSTEM SHALL GENERATE A MINIMUM OF 2,750 KWH/YR.
- THE BASIS OF DESIGN IS A 2 KW SYSTEM; HOWEVER, THE CONTRACTOR SHALL SUBMIT DETAILED CALCULATIONS TO SUBSTANTIATE PROPOSED SYSTEM SIZE. INDICATE ANY FACTORS INFLUENCING PERFORMANCE (SUCH AS DC-TO-AC DERATE FACTOR, TILT, ORIENTATION, AND ANY OTHER FACTORS).
- ARRAYS SHALL BE INSTALLED PARALLEL TO THE ROOF. THE ROOF SLOPE IS APPROXIMATELY 25 DEGREES.
- MAINTAIN 36" CLEARANCE FROM RIDGE 36" ACCESS PATH.

MODULES

- SYSTEM MUST COMPLY WITH IEEE 1282 - "RECOMMENDED PRACTICE FOR QUALIFICATIONS OF PHOTOVOLTAIC MODULES".

ELECTRIC POWER REQUIREMENTS:

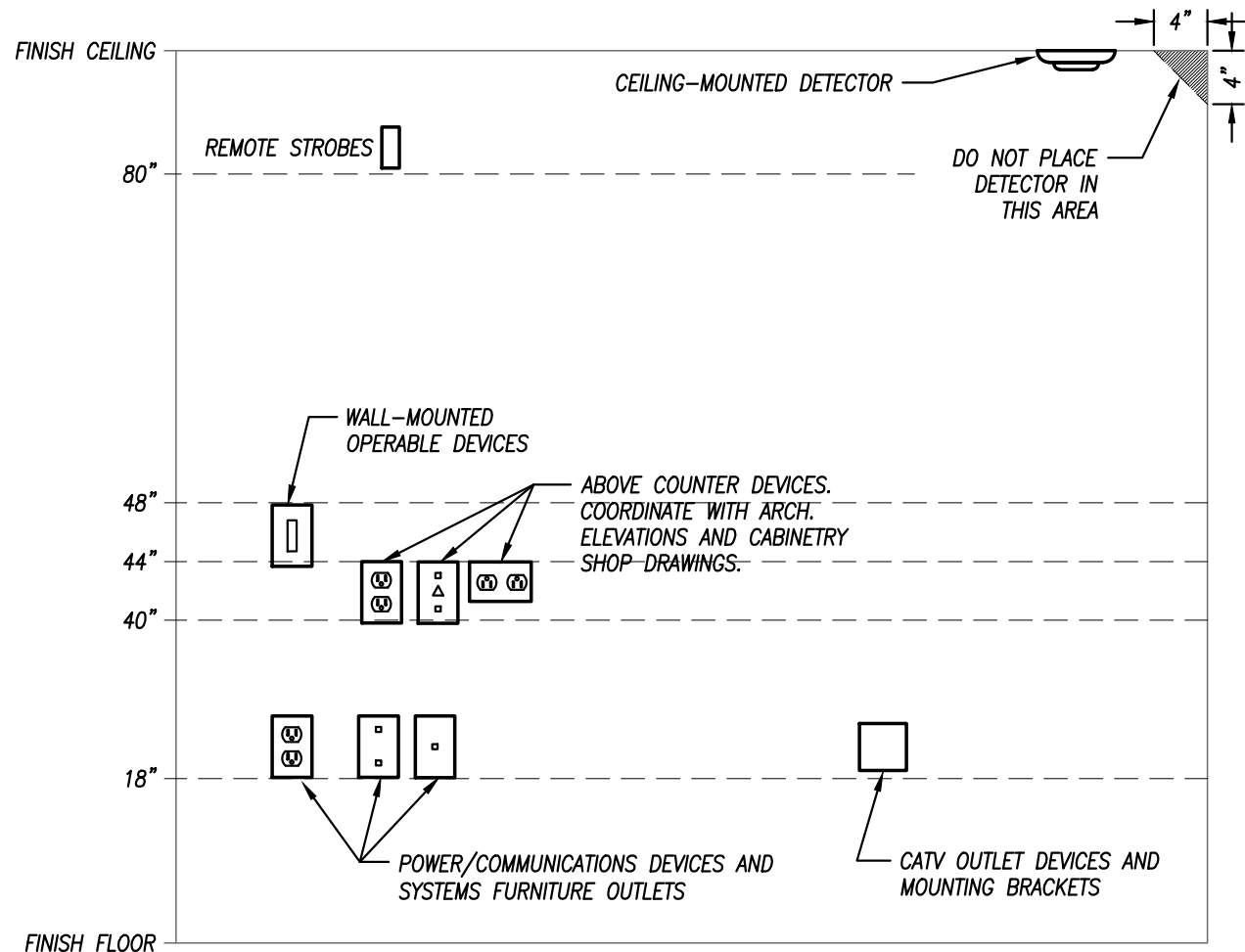
- POWER PROVIDED MUST BE COMPATIBLE WITH THE ONSITE ELECTRICAL SYSTEM. INVERTER OUTPUT SHALL BE 120/240 VOLT, SINGLE-PHASE WITH INTERNAL DISCONNECT MEANS.
- POWER CAPACITY SHOULD BE MEASURED AT THE INVERTER AC OUTPUT.
- CONTRACTOR SHALL PROVIDE ANY AC AND/OR DC DISCONNECTS AS REQUIRED BY CODE.
- THE SYSTEM MUST INCLUDE ALL THE HARDWARE NEEDED FOR THE SOLAR PV.
- ALL SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF LOCAL ELECTRICAL CODES AND THE NATIONAL ELECTRICAL CODE (NEC), INCLUDING BUT NOT LIMITED TO ARTICLE 690, "SOLAR PHOTOVOLTAIC SYSTEM" AND ARTICLE 705 - "INTERNATIONAL ELECTRICAL POWER PRODUCTION SOURCES".
- SYSTEMS MUST BE DESIGNED AND INSTALLED USING UL OR ETL LISTED COMPONENTS, INCLUDING MOUNTING SYSTEMS.
- MODULES MUST BE CERTIFIED TO UL 1703 - "FLAT-PLATE PHOTOVOLTAIC MODULES AND PANELS".
- INVERTERS MUST COMPLY WITH THE FOLLOWING REQUIREMENTS:
 - IEEE 929-2000 - "RECOMMENDED PRACTICE FOR UTILITY INTERFACE OF PHOTOVOLTAIC SYSTEMS"
 - UL 1741 - "STANDARD FOR STATIC INVERTERS AND CHARGE CONTROLLERS FOR USE IN PHOTOVOLTAIC SYSTEMS"
- OTHER TECHNICAL CODES THAT WILL APPLY INCLUDE:
 - ANSE PTC 50 (SOLAR PV PERFORMANCE)
 - ANSI Z21.83 (SOLAR PV PERFORMANCE AND SAFETY)
 - NFPA 853 (SOLAR PVS NEAR BUILDINGS)
 - NEPA 70 (ELECTRICAL COMPONENTS)
 - IEEE 1547 (INTERCONNECTIONS)
 - NATIONAL ELECTRICAL SAFETY CODE - ANSI C2 - 1999
- ALL APPLICABLE STATE BUILDING CODES AND REQUIREMENTS
- ALL BALANCE OF SYSTEMS (WIRING, COMPONENTS, WIRING, CONDUITS, AND CONNECTIONS) MUST BE SUITED FOR CONDITIONS FOR WHICH THEY ARE TO BE INSTALLED. THE INVERTERS SHALL BE LOCATED INSIDE IN A MINIMUM NEMA 1 ENCLOSURE. AN INTERVAL DATA METER MUST BE INSTALLED TO MEASURE THE AC OUTPUT OF THE INVERTER. THIS METER SHOULD BE LOCATED IN AN ACCESSIBLE LOCATION ACCESSIBLE TO BE DETERMINED BY THE OWNER.
- INTERCONNECTION MUST COMPLY WITH THE LOCAL UTILITY COMPANY REQUIREMENTS. LICENSEE WILL ASSIST THE OWNER IN PREPARING AND SUBMITTING APPROPRIATE INTERCONNECTION AGREEMENTS WITH THE UTILITY COMPANY. THIS SHALL BE DONE AT NO COST OR LIABILITY TO THE OWNER.

METERS

- COORDINATE WITH THE LOCAL UTILITY COMPANY FOR THE UTILITY COMPANY TO PROVIDE NET METERING. COMPLETE ANY NECESSARY NET METERING INTERCONNECTION APPLICATIONS FOR PURPOSES OF CONNECTING TO THE ELECTRICAL GRID.

STRUCTURAL REQUIREMENTS

- ALL STRUCTURE AND STRUCTURAL ELEMENTS, INCLUDING ARRAY STRUCTURES, SHALL BE DESIGNED IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND STANDARDS PERTAINING TO THE ERECTION OF SUCH STRUCTURES.
- THE CONTRACTOR SHALL PROVIDE STRUCTURAL CALCULATIONS, STAMPED BY A LICENSED PROFESSIONAL STRUCTURAL ENGINEER IN GOOD STANDING WITH THE STATE OF NEVADA.
- ALL STRUCTURAL COMPONENTS, INCLUDING ARRAY STRUCTURES, SHALL BE DESIGNED IN A MANNER COMMENSURATE WITH ATTAINING A MINIMUM 30 YEAR DESIGN LIFE. PARTICULAR ATTENTION SHALL BE GIVEN TO THE PREVENTION OF CORROSION AT THE CONNECTIONS BETWEEN DISSIMILAR METALS.
- THE STRUCTURAL DESIGN SHOULD PROVIDE FOR EASY AND COST EFFECTIVE REPAIR OR REPLACEMENT OF THE ROOF.
- ROOF PENETRATIONS MUST BE DESIGNED AND CONSTRUCTED IN COLLABORATION WITH THE ROOFING PROFESSIONAL OR MANUFACTURER RESPONSIBLE FOR THE ROOF AND ROOFING MATERIAL WARRANTY FOR THE SPECIFIC SITE, TO ENSURE THAT THE EXISTING ROOF WARRANTY IS NOT INVALIDATED BY THE INSTALLATION OF THE PV SYSTEM.



GENERAL NOTES:

- MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS OTHERWISE NOTED ON THE PLANS.
- SEE ARCHITECTURAL ELEVATIONS FOR SPECIAL CONDITIONS. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.
- ALL INSTALLATIONS SHALL COMPLY WITH ADA.

POWER/COMMUNICATION DEVICES:

- OUTLETS SHALL BE LOCATED AT 18" A.F.F. TO THE BOTTOM OF THE BOX. ABOVE COUNTER DEVICES SHALL BE LOCATED AT 2" ABOVE THE BACKSPASH OF THE COUNTER TO THE BOTTOM OF THE DEVICES. VERIFY WITH ARCHITECTURAL DETAILS.

WALL-MOUNTED OPERABLE DEVICES:

- OPERABLE DEVICES SHALL BE LOCATED AT 48" A.F.F. TO THE TOP OF THE OPERABLE PORTION OF THE DEVICE.

- WALL-MOUNTED OPERABLE DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
 - LIGHT SWITCHES, DIMMERS, CONTROLS, ETC.
 - PUSH BUTTONS

MOUNTING HEIGHTS FOR WALL-MOUNTED DEVICES

NOT TO SCALE