



J-SQUARED
ENGINEERING

MECHANICAL - ELECTRICAL - PLUMBING DESIGN DRAWINGS FOR:

The Village at Discovery Park Alura Apartments Pool House

Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

GENERAL MEP SPECIFICATIONS

- GENERAL**
 - ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH LOCALLY ADOPTED CODES AND ORDINANCES. IT IS THE RESPONSIBILITY OF CONTRACTOR TO REVIEW AND UNDERSTAND ALL DRAWINGS AND SPECIFICATIONS IN CONTRACT DOCUMENTS. EACH CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH THEIR TRADE, REGARDLESS OF WHERE WORK IS DEPICTED IN PROJECT DRAWINGS OR SPECIFICATIONS.
 - LAYOUT OF SYSTEMS SHOWN ON PLANS ARE APPROXIMATE AND SCHEMATIC IN NATURE. ALL SYSTEMS WILL NEED TO BE FIELD-COORDINATED. CONTRACTOR SHALL INCLUDE THIS COORDINATION IN THEIR SCOPE AND INCLUDE ALL COSTS OF MODIFYING LAYOUT AS REQUIRED IN THEIR BID. PLANS ARE NOT INTENDED TO BE SHOP DRAWINGS FROM WHICH MATERIALS CAN BE ORDERED, FABRICATED, OR INSTALLED WITHOUT ADDITIONAL FIELD MEASUREMENTS AND COORDINATION.
 - NOT ALL SPECIFIC PIECES AND COMPONENTS OF EACH SYSTEM ARE DETAILED OR OUTLINED ON PLANS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY PARTS AND LABOR TO PRODUCE A COMPLETE AND FULLY OPERATIONAL SYSTEM UNLESS STATED OTHERWISE ON PLANS. CONTRACTOR IS TO PROVIDE AND INCLUDE ALL EQUIPMENT AND MATERIAL NEEDED TO COMPLETE WORK ASSOCIATED WITH THEIR BID UNLESS ANY ITEMS ARE SPECIFICALLY NOTED ON PLANS AS PROVIDED BY OTHERS. ALL MATERIALS TO BE NEW, FIRST CLASS, AND INSTALLED PER MANUFACTURER'S PUBLISHED INSTRUCTIONS.
 - WHERE CONFLICTS EXIST BETWEEN MEP PLANS AND CIVIL, ARCHITECTURAL, OR STRUCTURAL PLANS, NOTIFY MEP ENGINEER OF DISCREPANCIES FOR CLARIFICATION PRIOR TO PERFORMING ANY WORK THAT MAY CONTRADICT INFORMATION ELSEWHERE IN THE PROJECT PLANS.
 - THESE PLANS ARE NOT TO BE SCALED. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE THERE IS A CONFLICT BETWEEN ARCHITECTURAL DIMENSIONS AND MEP DIMENSIONS, ARCHITECTURAL SHALL GOVERN.
 - CONTRACTOR IS TO INCLUDE IN THEIR SCOPE THE COST OF ALL PERMITS, INSPECTIONS, METERING, TAPS, ETC. ASSOCIATED WITH THEIR WORK.
 - CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, CUTTING, CORING, PATCHING, AND BACKFILL REQUIRED TO COMPLETE THEIR WORK, UNLESS NOTED OTHERWISE ON PLANS.
 - SPECIFIC EQUIPMENT MANUFACTURERS AND/OR MODEL NUMBERS LISTED ON PLANS ARE TO ESTABLISH A BASIS-OF-DESIGN FOR QUALITY AND PERFORMANCE, VERIFY THAT SUBSTITUTIONS WILL BE ACCEPTABLE PRIOR TO PURCHASE & INSTALLATION.
 - NOTIFY ENGINEER OF ANY MAJOR PLAN DISCREPANCIES OR CONFLICTS PRIOR TO PROVIDING BIDS OR COMPLETING ANY WORK.
 - SEE DISCIPLINE SHEETS FOR ADDITIONAL TRADE SPECIFIC SPECIFICATIONS.
 - WHERE SHUTDOWN OF ANY EXISTING UTILITY OR SERVICE TO BUILDING IS REQUIRED FOR COMPLETION OF WORK, COORDINATE OUTAGE WITH OWNER AS TO NOT DISRUPT TYPICAL OPERATIONS.
- WORKMANSHIP**
 - SYSTEMS SHALL BE INSTALLED IN A FIRST-CLASS MANNER USING BEST ACCEPTABLE METHODS AND PRACTICES.
 - ALL SYSTEMS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BUILDING ORIENTATION. COMPONENTS SHALL BE INSTALLED LEVEL AND PLUMB WITH ATTENTION GIVEN TO OVERALL AESTHETICS.
 - CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT LOCATIONS AND SYSTEM ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION.
 - CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE THE COMPLETED PROJECT IS RELEASED TO THE OWNER, UNLESS NOTED OTHERWISE ON PLANS.
 - DURING INSTALLATION OF MATERIALS OR ACTIVITIES IN NEW WORK SCOPE, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. ANY DAMAGE TO EXISTING SURFACES OR EQUIPMENT SHALL BE CORRECTED AT NO COST TO OWNER.

DEFERRED SUBMITTAL NOTES

- FIRE ALARM SYSTEM**
 - FIRE ALARM CONTRACTOR SHALL PROVIDE DEFERRED SUBMITTAL PACKAGE FOR FIRE ALARM SYSTEM. SUBMITTAL SHALL INCLUDE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, EQUIPMENT SPECIFICATIONS FOR DEVICES AND PANELS, ETC. DESIGN SHALL BE SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.
 - FIRE ALARM SYSTEM COMPONENTS SHOWN (IF APPLICABLE) ARE GENERAL AND SCHEMATIC IN NATURE, SHOWN FOR APPROXIMATE ROUGH-IN LOCATIONS AND QUANTITIES ONLY. CONTRACTOR TO VERIFY EXACT DEVICE LOCATIONS AND REQUIREMENTS WITH FIRE ALARM SYSTEM DESIGNER OF RECORD PRIOR TO ROUGH-IN.
- FIRE SPRINKLER SYSTEM**
 - FIRE SPRINKLER CONTRACTOR TO PROVIDE DEFERRED SUBMITTAL PACKAGE FOR FIRE SPRINKLER SYSTEM. SUBMITTAL SHALL INCLUDE HYDRAULIC CALCULATIONS AND SPRINKLER SYSTEM DRAWINGS SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.
 - WHERE COMBINED FIRE & DOMESTIC WATER SUPPLY LINES ARE SHOWN ON PLANS, INSTALLING CONTRACTOR SHALL VERIFY WITH FIRE SPRINKLER CONTRACTOR THAT INCOMING LINE SIZE IS ADEQUATE FOR FIRE SUPPRESSION SYSTEM.

REFERENCED CODES IN EFFECT

PROJECT HAS BEEN DESIGNED IN COMPLIANCE WITH THE FOLLOWING CODES LISTED BELOW, BUT THIS IS NOT AN EXHAUSTIVE LIST. PROJECT SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND LOCAL REQUIREMENTS.

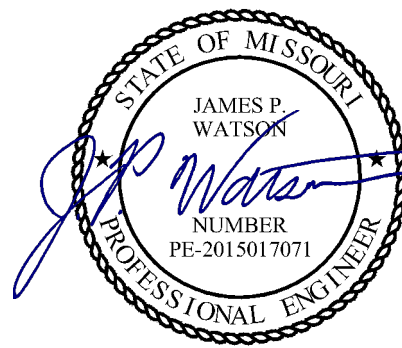
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL PLUMBING CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL FIRE CODE
- 2017 NATIONAL ELECTRIC CODE

FIRE RATED PENETRATION NOTES

- THIS BUILDING CONTAINS FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL PLANS FOR LOCATIONS AND DETAILS.
- A UL-LISTED FIRESTOP SYSTEM SHALL BE INSTALLED AT EACH PENETRATION OF A HORIZONTAL OR VERTICAL RATED ASSEMBLY IN ACCORDANCE WITH ASTM E814 OR UL 1479.
- EACH CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROTECTION FOR THEIR PENETRATIONS THRU RATED ASSEMBLIES.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A CATALOG OF ALL UL LISTED FIRESTOP ASSEMBLIES, AND KEEPING A PHYSICAL COPY OF DETAILS FOR EACH USED FIRESTOP ASSEMBLY ON SITE FOR REFERENCE.

SHEET LIST TABLE

SHEET #	SHEET TITLE
MEP1	MECHANICAL ELECTRICAL PLUMBING COVER SHEET
MEP2	SITE UTILITIES PLAN
MEP3	SITE LIGHTING PLAN
M101	HVAC PLAN
M501	HVAC DETAILS & SCHEDULES
E101	ELECTRICAL PLAN
FP101	FIRE PROTECTION PLAN
E501	ELECTRICAL DETAILS & SCHEDULES
P101	PLUMBING PLAN



James Watson, P.E. April 15, 2025
PE-2015017071
MO Certificate of Authority # 2018029680



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J2 PROJECT No: J21357

J2 DESIGN: ACW

ISSUE TITLE DATE

PERMIT SET 04 - 15 - 2025

MECHANICAL - ELECTRICAL - PLUMBING DESIGN DRAWINGS FOR:
The Village at Discovery Park Alura Apartments
Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

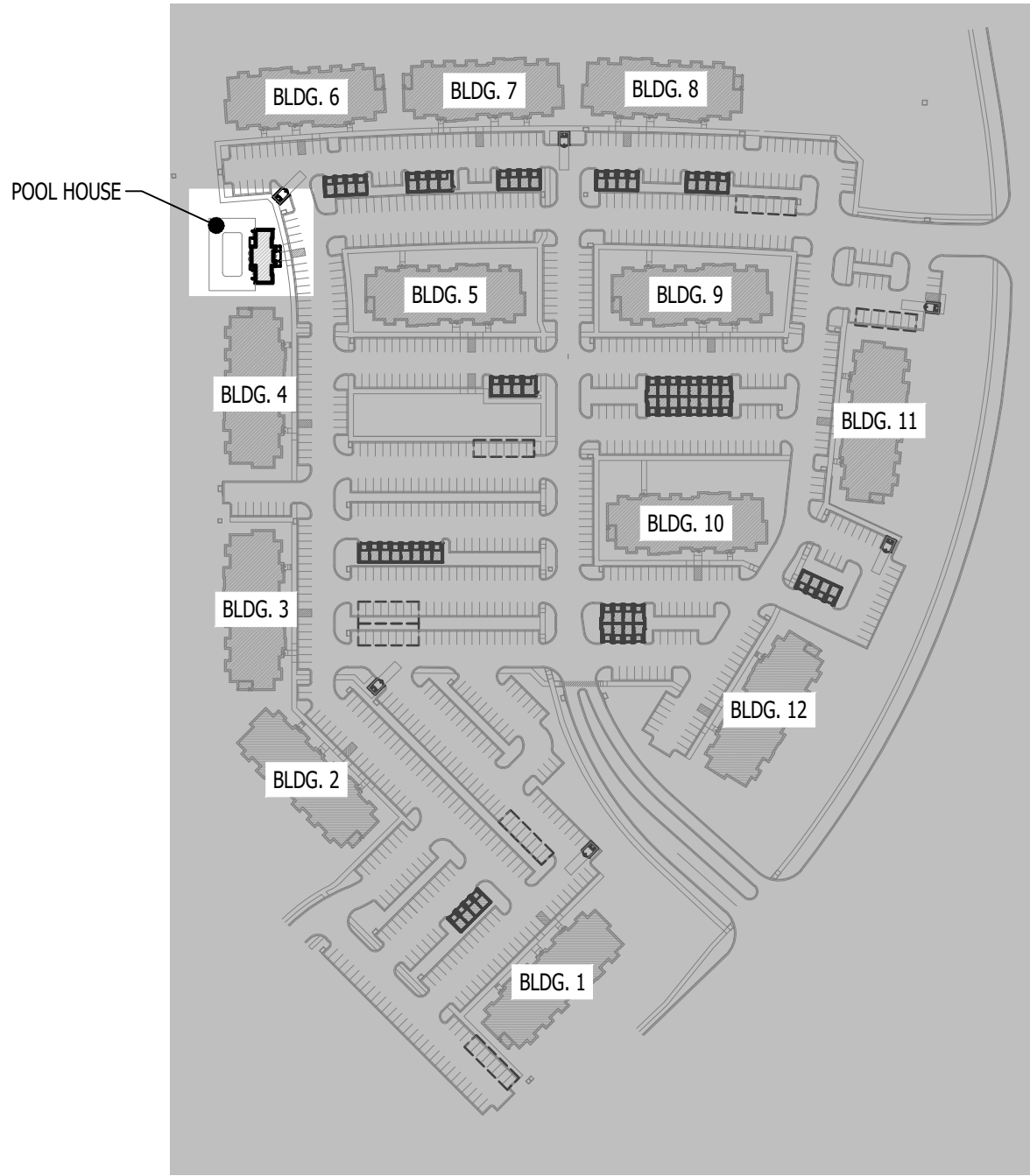
A43 APPROVAL STAMP


SHEET TITLE

MECHANICAL
ELECTRICAL
PLUMBING
COVER SHEET









SHEET NUMBER

MEP1



 **SITE KEY PLAN**
SCALE: 1" = 200 ft

SITE UTILITIES PLAN SYMBOL LEGEND

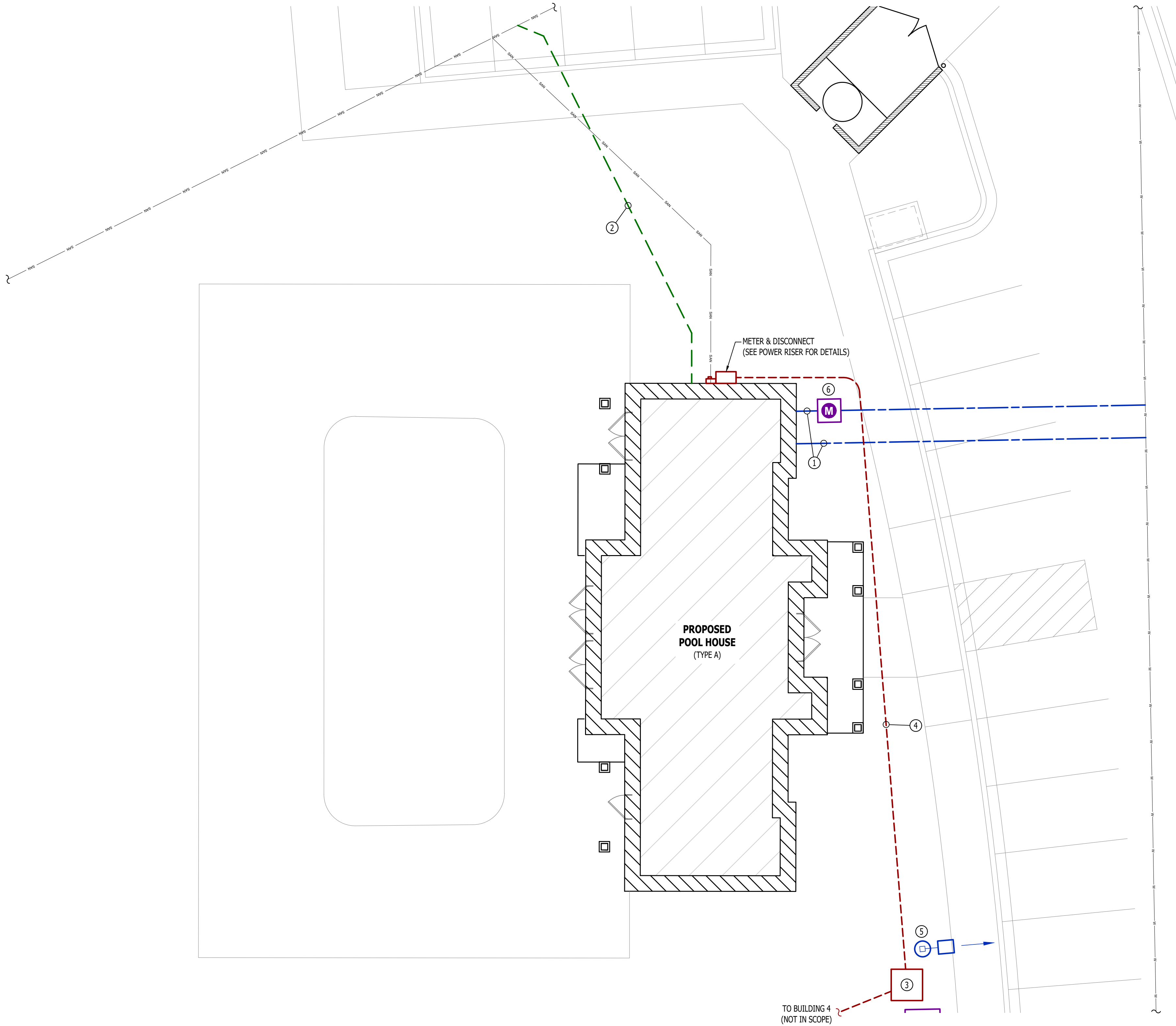
-  SANITARY SEWER PIPING
-  COLD WATER LINE
-  WATER METER
-  VALVE
-  GAS LINE
-  GAS METER
-  TIE INTO EXISTING
-  ELECTRIC

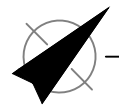
SITE UTILITIES PLAN GENERAL NOTES:

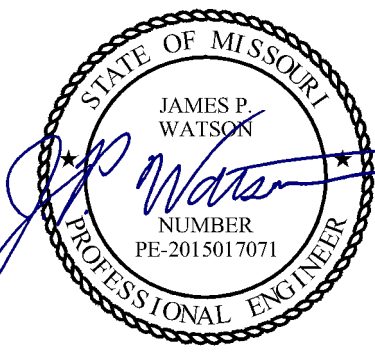
- REFER TO CIVIL PLANS FOR EXACT UTILITY LOCATIONS, CONNECTIONS, DETAILS, ETC.
- COORDINATE EXACT LOCATIONS OF ALL ELECTRICAL CONDUITS & EQUIPMENT WITH EVERY.

SITE UTILITIES PLAN KEY NOTES:

- 6" UN-METERED SPRINKLER LINE & 1/2" CW DOMESTIC LINE TO POOL EQUIPMENT ROOM (SEE PLUMBING PLANS FOR CONTINUATION).
- 4" SAN (SEE PLUMBING PLANS FOR DETAILS).
- PROPOSED PAD-MOUNTED TRANSFORMER (SEE POWER RISER FOR DETAILS).
- UNDERGROUND SECONDARY CONDUIT/CONDUCTORS (SEE POWER RISER FOR DETAILS).
- POLE LIGHT (SEE SITE LIGHTING PLANS FOR DETAILS).
- 1/2" CW DOMESTIC LINE TO METER IN PIT (SEE WATER RISER DETAILS).



 **SITE UTILITIES PLAN**
SCALE: 1/8" = 1'-0"



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J2 PROJECT No: J21357

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SHEET TITLE

**SITE UTILITIES
PLAN**

SHEET NUMBER

MEP2

1. SITE PHOTOMETRIC VALUES SHOWN HAVE BEEN CALCULATED PER SPECIFIED LIGHT FIXTURES AT INDICATED MOUNTING HEIGHTS. ANY CHANGES OR MODIFICATIONS TO LIGHTING LAYOUT SHOWN WILL REQUIRE RECALCULATING SITE PHOTOMETRICS AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR / EQUIPMENT SUPPLIER.
2. PHOTOMETRIC CALCULATIONS SHOWN DO NOT INCLUDE EXISTING LIGHT FIXTURE(S), ONLY NEW POLE LIGHT FIXTURE(S) SHOWN. CALCULATIONS ALSO INCLUDE NEW POLE LIGHT FIXTURES ON ADJACENT LOTS AS PART OF THIS DEVELOPMENT. REFER TO ADJACENT BUILDING SITE LIGHTING AND MASTER SITE LIGHTING PLANS FOR DETAILS & CALCULATIONS SUMMARIES.

The diagram illustrates the components of a lighting fixture schedule entry. It shows a sequence of elements: a blue dashed arc representing 'CIRCUIT WIRING', an arrow pointing right labeled 'PX-XX' representing 'CIRCUIT TAG', a circle with a cross inside labeled 'X1' representing 'POLE LIGHT', a square representing 'ARROW INDICATES FORWARD AIMING DIRECTION', and a plus sign followed by '1.1' representing 'PHOTOMETRIC CALCULATIONS (IN FOOT-CANDLES)'.

POLE MUST MEET EPA RATING FOR 80MPH WIND (ASCE 7-03) WITH SPECIFIED HEAD CONFIGURATION

PVC CONDUIT STUBBED UP ADJACENT TO HANDHOLE (NUMBER & SIZE REQUIRED)

HANDHOLE @ COVER PLATE

POLE ANCHOR BOLTS PER MANUFACTURER RECOMMENDATIONS

1/2" CHAMFER ALL EDGES

24" MIN. TO CURB / PAVING

30" MIN.

FINISH GRADE

CIRCUIT CONDUIT & CONDUCTORS TO POWER SOURCE / NEXT POLE

ATTACH COPPER EQUIPMENT GROUND CONDUCTOR TO INTERNAL LUG WELDED TO INTERIOR OF POLE

TYP. POLE BASE REINFORCING:
#3 HORIZONTAL TIES (20") AT 12" O.C.
w/ #4 VERTICAL BARS AT PERIMETER AT 6" O.C.

CONCRETE TO BE MIN. 3000psi

24"Ø

"X" DEPTH BELOW FINISH GRADE (SEE CHART)

POOL HOUSE

BLDG. 6

BLDG. 7

BLDG. 8

BLDG. 5

BLDG. 9

BLDG. 4

BLDG. 11

BLDG. 3

BLDG. 10

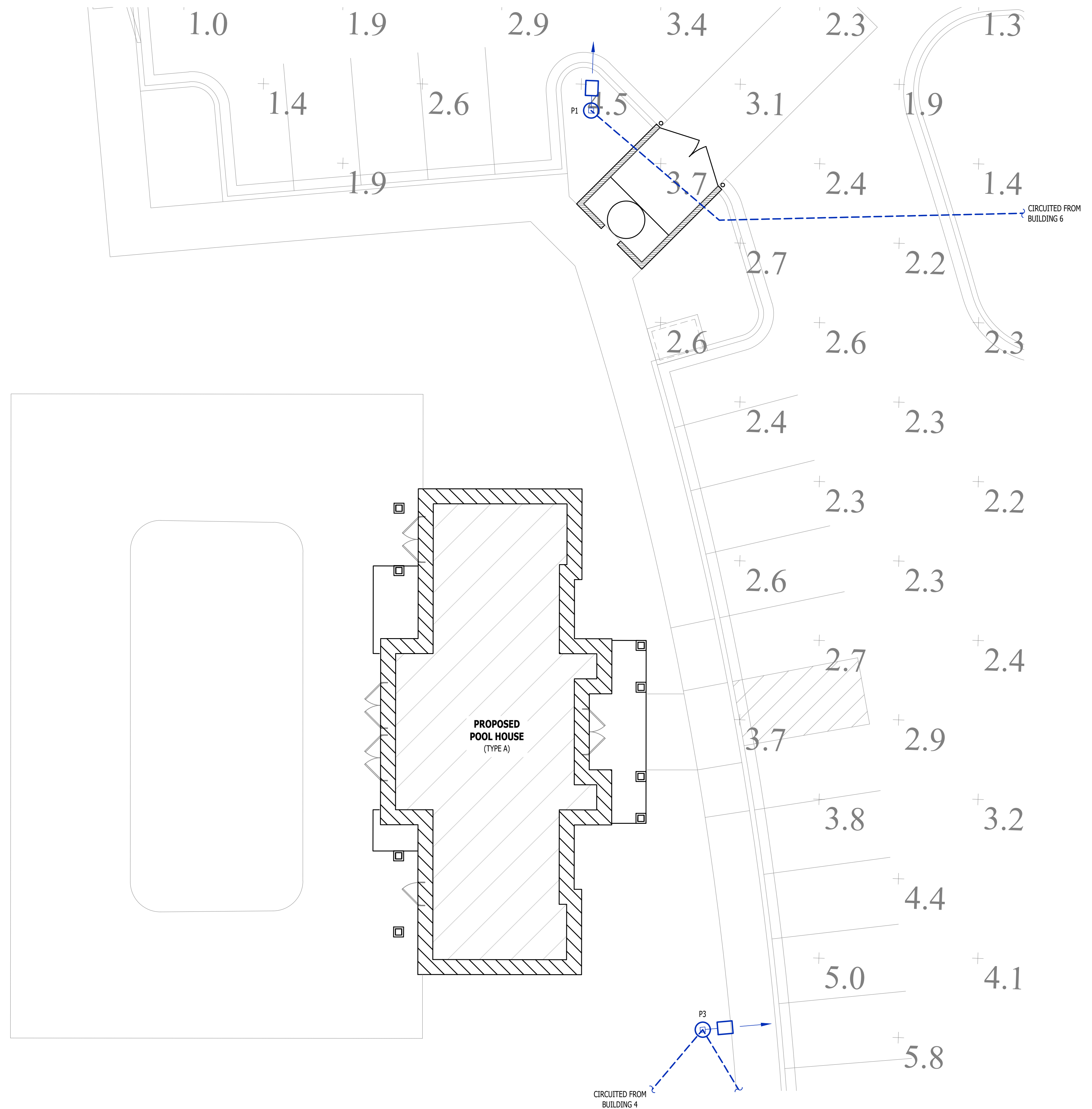
BLDG. 2

BLDG. 12

BLDG. 1

SCALE: 1" = 200 ft

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



MEP3

MECHANICAL - ELECTRICAL - PLUMBING DESIGN DRAWINGS FOR:
The Village at Discovery Park Alura Apartments

Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

AHJ APPROVAL STAMP

SHEET TITLE

HVAC PLAN

SHEET NUMBER

M101

HVAC PLAN SYMBOL LEGEND

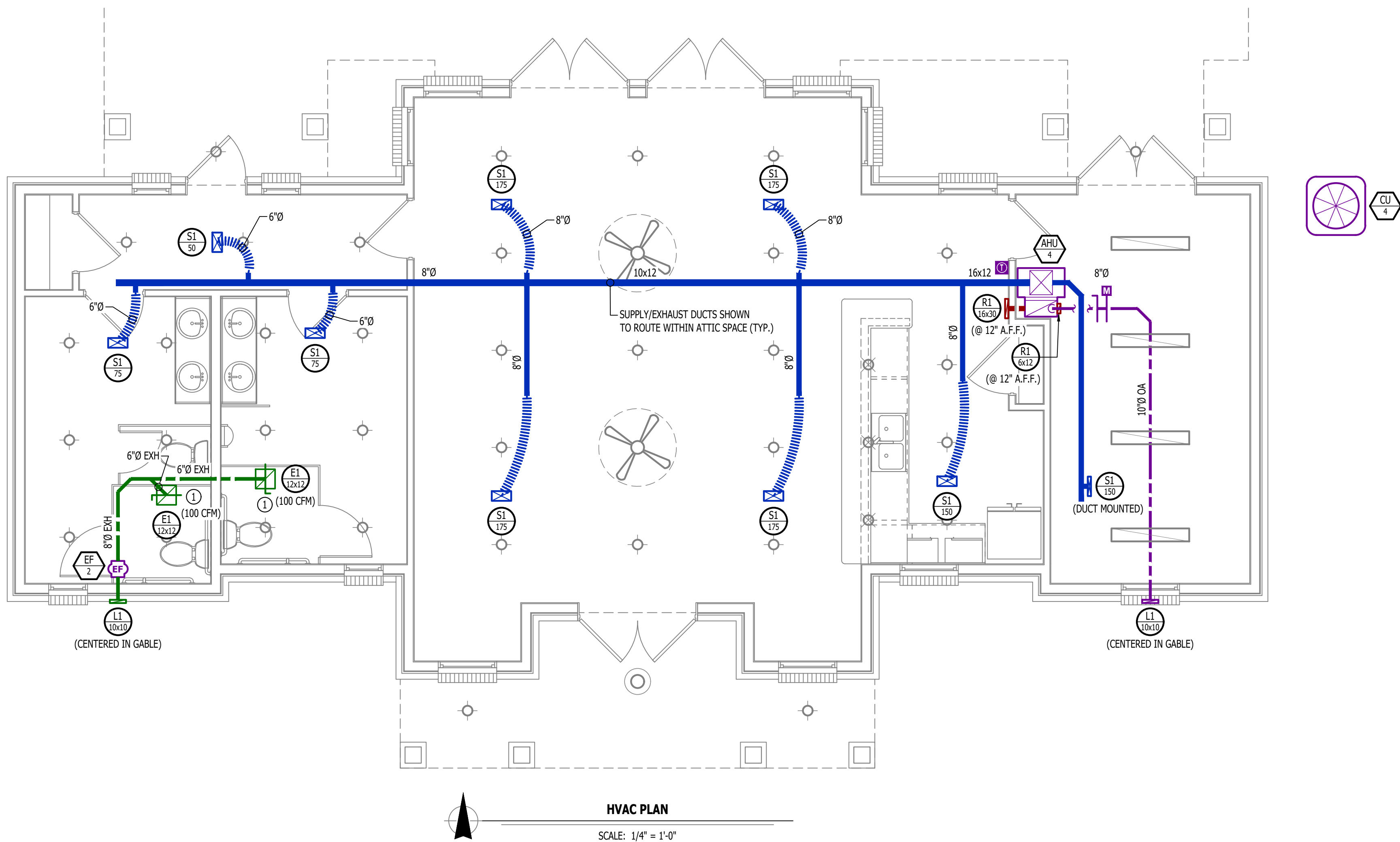
- ← EQUIPMENT TYPE (REFER TO EQUIPMENT SCHEDULE)
← EQUIPMENT REFERENCE NUMBER
← DIFFUSER/GRILLE TYPE (REFER TO SCHEDULE)
← CUBIC FEET PER MINUTE (CFM) / FACE SIZE
- SUPPLY DUCTWORK
- - - RETURN DUCTWORK
- - - EXHAUST DUCTWORK
~ FLEX DUCT
- ⊠ SUPPLY DIFFUSER (HATCH INDICATES "NO FLOW ZONE")
⊠ RETURN DIFFUSER
— BALANCE DAMPER
M MOTORIZED DAMPER
C CEILING RADIATION DAMPER
B BACK DRAFT DAMPER
T THERMOSTAT

HVAC PLAN GENERAL NOTES:

- SEE M500 & M600 SERIES SHEETS FOR HVAC SCHEDULES, DETAILS, REQUIREMENTS, ETC.
- SUPPLY DUCTWORK FROM AHU AT FLOOR/CEILING PENETRATION SHALL BE PROTECTED BY A FIRE DAMPER. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

HVAC PLAN KEY NOTES:

- ① BALANCE EXHAUST FLOW TO AMOUNT SHOWN (XXX CFM).

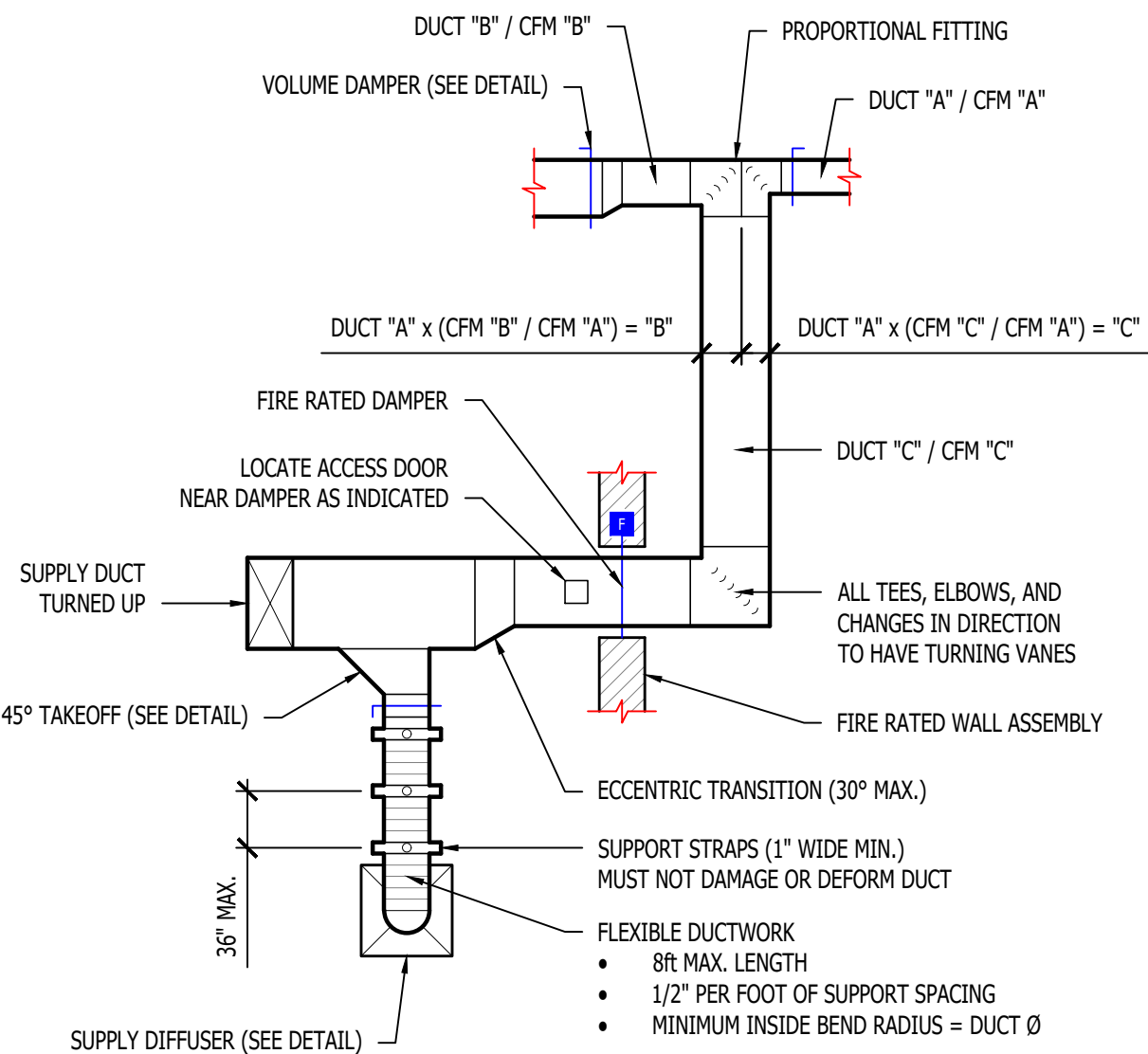


HVAC SPECIFICATIONS

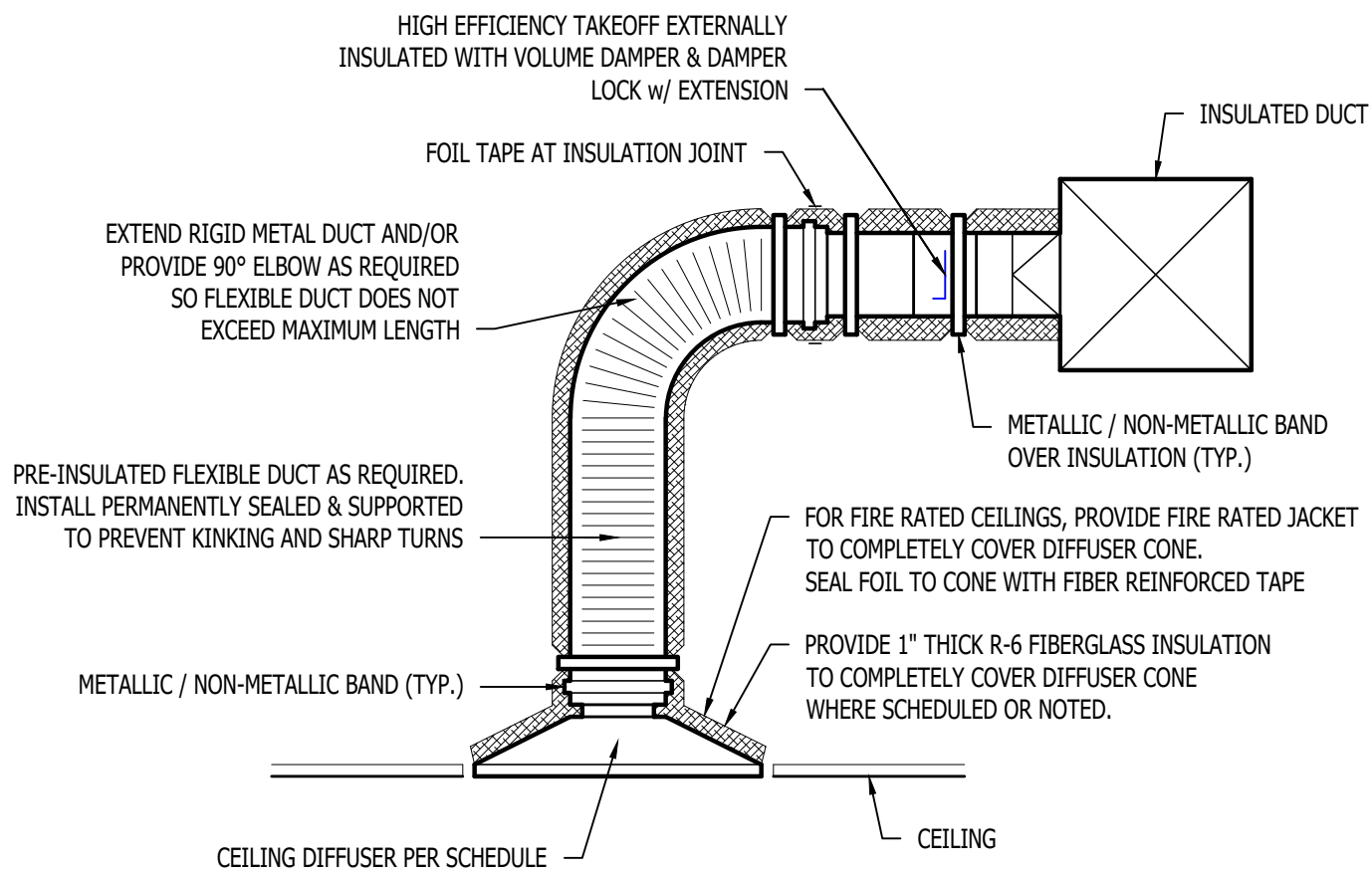
1. GENERAL
- 1.1. REFER TO GENERAL MEP SPECIFICATIONS SECTION FOR ADDITIONAL REQUIREMENTS.
2. WORKMANSHIP
- 2.1. COORDINATE WITH ALL OTHER TRADES SO THAT HVAC EQUIPMENT AND DUCT WORK DOES NOT BLOCK REQUIRED ACCESS OR CLEARANCE TO ANY EQUIPMENT, ACCESS PANELS, ELECTRICAL JUNCTION BOXES, ELECTRICAL PANELS, ETC.
- 2.2. ALL HVAC EQUIPMENT IS TO BE INSTALLED PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS AND/OR INSTALLATION INSTRUCTIONS.
- 2.3. ALL EQUIPMENT TO BE INSTALLED LEVEL AND PLUMB, PARALLEL OR PERPENDICULAR TO BUILDING ORIENTATION WHERE POSSIBLE.
- 2.4. ROOFTOP MOUNTED RTU'S & EXHAUST FANS SHALL BE INSTALLED ON CURBS PER MANUFACTURER'S INSTRUCTIONS. CURB HEIGHT SHALL PROVIDE A MINIMUM OF 12" BETWEEN EQUIPMENT AND TOP OF ROOF IN ALL LOCATIONS.
- 2.5. GRADE MOUNTED RTUS, CONDENSING UNITS, AND HEAT PUMPS TO BE INSTALLED ON 4" REINFORCED CONCRETE PAD EXTENDING 4" BEYOND EACH EDGE OF THE EQUIPMENT, OR A MANUFACTURER APPROVED PRE-MANUFACTURED BASE.
- 2.6. APPROPRIATE ATTENTION SHALL BE GIVEN TO INDOOR AIR QUALITY THROUGHOUT CONSTRUCTION; PROTECT INSIDE OF NEW DUCTWORK & AIR-HANDLING EQUIPMENT FROM DUST, DIRT, DEBRIS, PAINT, MOISTURE, ETC. INSULATION SHALL BE REPLACED IF EXPOSED TO MOISTURE. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL CLEAN ALL NEW DUCTWORK IF EQUIPMENT WAS USED DURING CONSTRUCTION, AND EQUIPMENT/COILS SHALL ALSO BE THOROUGHLY CLEANED.
- 2.7. FIELD COORDINATE LOCATIONS OF ALL DIFFUSERS, GRILLES, REGISTERS, ETC. WITH LIGHT FIXTURE LOCATIONS AND ADJUST AS NECESSARY.
3. EQUIPMENT
- 3.1. ALL EQUIPMENT SHOWN ON MECHANICAL PLANS SHALL BE PROVIDED & INSTALLED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE.
- 3.2. ALL EQUIPMENT MUST PROVIDE PERFORMANCE AS SPECIFIED ON PLANS. WHERE SPECIFIC MANUFACTURERS AND/OR MODELS ARE INDICATED ON PLANS, CONTRACTOR TO PROVIDE MODEL INDICATED OR APPROVED EQUAL. VERIFY SUBSTITUTION APPROVAL PRIOR TO PURCHASE OR INSTALLATION OF EQUIPMENT.
- 3.3. CONTRACTOR TO SUPPLY SUBMITTALS FOR ALL EQUIPMENT FOR REVIEW BY ARCHITECT AND ENGINEER. FORMAL APPROVAL SHALL BE RECEIVED BY CONTRACTOR PRIOR TO EQUIPMENT PURCHASE.
- 3.4. CONTRACTOR TO SHARE APPROVED EQUIPMENT SUBMITTALS WITH ANY PERTINENT ELECTRICAL OR PLUMBING REQUIREMENTS WITH RESPECTIVE CONTRACTORS WITHIN TWO WEEKS OF RECEIVING APPROVED SUBMITTALS FROM ARCHITECT/ENGINEER.
- 3.5. ALL EQUIPMENT SHOWN ON PLANS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS WITH ADEQUATE ACCESS AND CLEARANCE FOR SERVICING OR REPLACEMENT.
- 3.6. ALL HORIZONTAL FURNACES WITH AC COILS SHALL BE EQUIPPED WITH CORROSION RESISTANT DRAIN PAN. DRAIN PAN TO DISCHARGE TO SANITARY WASTE VIA INDIRECT CONNECTION WITH AIR GAP. DRAIN PAN TO PROVIDE SECONDARY OVERFLOW OR FLOAT SWITCH INTERLOCKED WITH UNIT TO SHUT DOWN UNIT ON HIGH WATER SIGNAL.
- 3.7. ALL EXTERIOR REFRIGERANT COILS TO BE PROTECTED BY FACTORY EQUIPPED HAIL GUARDS.
- 3.8. REFRIGERANT PIPING TO BE ACR COPPER OR TYPE L COPPER.
- 3.9. ALL AIR HANDLING EQUIPMENT SHALL BE EQUIPPED WITH MERV-8 FILTRATION AT RETURN OPENING UNLESS OTHERWISE NOTED.
- 3.10. ALL AIR FILTERS SHALL BE SIZED FOR A MAXIMUM FACE VELOCITY OF 500FPM.
- 3.11. PROVIDE & INSTALL ALL EQUIPMENT FLUES/VENTS PER MANUFACTURER'S SPECIFICATIONS. TERMINATIONS SHALL BE AT LEAST 10' FROM ANY FRESH AIR INTAKE.
- 3.12. PROVIDE NEW AIR FILTERS IN ALL EQUIPMENT PRIOR TO TESTING & BALANCING AND BEFORE TURNING OVER SYSTEM(S) TO OWNERSHIP.
- 3.13. IF ANY EXISTING EQUIPMENT IS TO BE REUSED, CLEAN AND INSPECT EQUIPMENT PRIOR TO BEGINNING WORK. VERIFY THAT EQUIPMENT IS IN GOOD WORKING CONDITION, REPORT ANY DEFICIENCIES TO ENGINEER.
4. DUCTWORK
- 4.1. DUCTWORK TO BE GALVANIZED STEEL, SEAL CLASS 8, CONSTRUCTED PER SMACNA STANDARDS.
- 4.2. DUCTWORK THICKNESS:
- 4.2.1. 26 GA. MINIMUM UP TO 16" DUCT
- 4.2.2. 24 GA. UP TO 20"
- 4.2.3. 22 GA. UP TO 24"
- 4.2.4. 20 GA. UP TO 28"
- 4.2.5. 18 GA. UP TO 36"
- 4.3. TURNING VANES SHALL BE PROVIDED AND INSTALLED AT ALL 90° BENDS AND TEES.
- 4.4. ALL DUCT DIMENSIONS LISTED ARE TO INTERIOR OF DUCT LINER UNLESS NOTED OTHERWISE ON PLANS.
- 4.5. BALANCE DAMPERS MUST BE PROVIDED TO ALLOW ADJUSTMENT AT EACH AIR TERMINAL.
- 4.5.1. WHERE BRANCH TAKEOFF IS ACCESSIBLE (ABOVE LAY-IN CEILING OR EXPOSED DUCT), BALANCE DAMPER IS TO BE INSTALLED AT TAKEOFF.
- 4.5.2. WHERE TAKEOFF IS INACCESSIBLE (IN ATTIC OR SOFFIT), BALANCE DAMPER IS TO BE LOCATED SUCH THAT IT IS ACCESSIBLE FROM FACE OF AIR DEVICE.
- 4.6. HVAC CONTRACTOR RESPONSIBLE FOR ALL DUCTWORK TRANSITIONS AND FITTINGS AS REQUIRED FOR FINAL CONNECTIONS TO HVAC EQUIPMENT.
- 4.7. UNLESS NOTED OTHERWISE ON PLANS, FLEXIBLE DUCT CONNECTIONS MAY USED FROM BRANCH DUCTS TO FINAL AIR DEVICES, BUT SHALL NOT EXCEED 8'-0" IN LENGTH. FLEXIBLE DUCT CONNECTORS MUST BE SUPPORTED PER PLAN DETAILS.
5. INSULATION
- 5.1. DUCTWORK
- 5.1.1. SEE "TYPICAL DUCT INSULATION DIAGRAM" FOR INSTALLATION SPECIFIC REQUIREMENTS.
- 5.1.2. INTERNAL DUCT LINER TO BE EQUAL TO 'JOHNS MANVILLE LINACOUSTIC R-300'.
- 5.1.3. EXTERNAL DUCT WRAP TO INCLUDE VAPOR BARRIER. EQUAL TO 'JOHNS MANVILLE MICROLITE' WITH FSK JACKET.
- 5.1.4. WHERE INSULATION IS REQUIRED IN "TYPICAL DUCT INSULATION DIAGRAM", INCLUDE INSULATION ON ALL FITTINGS, INCLUDING CANVAS FLEX CONNECTION FITTINGS.
- 5.2. REFRIGERANT PIPING
- 5.2.1. SPLIT SYSTEM (SUCTION LINE ONLY) - 1" CLOSED CELL ELASTOMERIC FOAM (EQUAL TO 'AERMAFLEX AP').
- 5.3. VRV/VRF SYSTEMS (BOTH SUCTION AND HOT GAS LINES) 1 1/2" EPDM (EQUAL TO 'AEROFLEX AEROCCEL AC') WITHIN CONDITIONED SPACES & 2" EPDM (EQUAL TO 'AEROFLEX AEROCCEL AC') IN UNCONDITIONED SPACES, AND WITH BANDED ALUMINUM SHIELDING IN EXTERIOR SPACES.
- 5.4. CONDENSATE PIPING
- 5.4.1. SPLIT SYSTEMS - WHERE CONDENSATE PIPING IS LOCATED IN UNCONDITIONED SPACE, INSULATE WITH 1/2" ELASTOMERIC. NO INSULATION REQUIRED WITHIN CONDITIONED SPACES.
- 5.4.2. VRV/VRF - INSULATE WITH 1/2" ELASTOMERIC.
6. TESTING AND BALANCING
- 6.1. ALL SYSTEMS MUST BE BALANCED TO WITHIN 10% OF VALUES INDICATED ON PLAN.
- 6.2. HVAC CONTRACTOR TO PROVIDE WRITTEN BALANCE REPORT INCLUDING FLOW VALUES INDICATED ON PLANS, INITIAL MEASURED FLOW VALUES, AND FINAL MEASURED VALUES.
- 6.3. THIRD PARTY CERTIFIED TEST AND BALANCE NOT REQUIRED UNLESS OTHERWISE NOTED ON PLANS OR WITHIN PROJECT MANUAL.

- RECTANGULAR
- SUPPLY = 1" LINER
- RETURN = 1" LINER
- EXHAUST = NONE
- OUTSIDE AIR = 2" WRAP
- RECTANGULAR
- SUPPLY = 1" LINER & 1 1/2" WRAP
- RETURN = 1" LINER & 1 1/2" WRAP
- EXHAUST = 1 1/2" WRAP
- OUTSIDE AIR = NONE
- ROUND
- SUPPLY = 1 1/2" WRAP
- RETURN = NONE
- EXHAUST = NONE
- OUTSIDE AIR = 2" WRAP
- ROUND
- SUPPLY = 2" WRAP
- RETURN = 2" WRAP
- EXHAUST = 1 1/2" WRAP
- OUTSIDE AIR = NONE
- SPIRAL
- SUPPLY = NONE
- RETURN = NONE
- EXHAUST = NONE
- OUTSIDE AIR = 2" WRAP
- SPIRAL
- SUPPLY = 2" WRAP
- RETURN = 2" WRAP
- EXHAUST = 1 1/2" WRAP
- OUTSIDE AIR = NONE

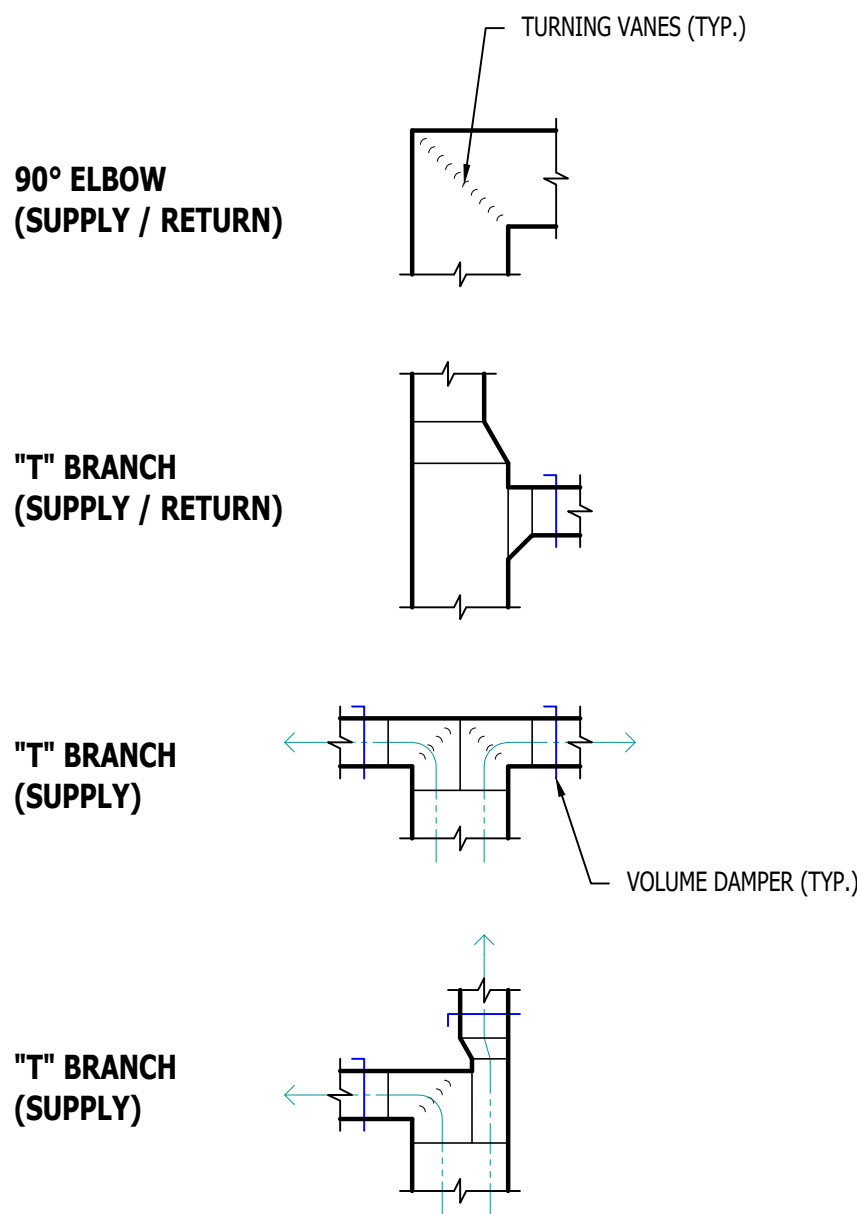
TYPICAL BUILDING INTERIOR DUCT INSULATION DIAGRAM



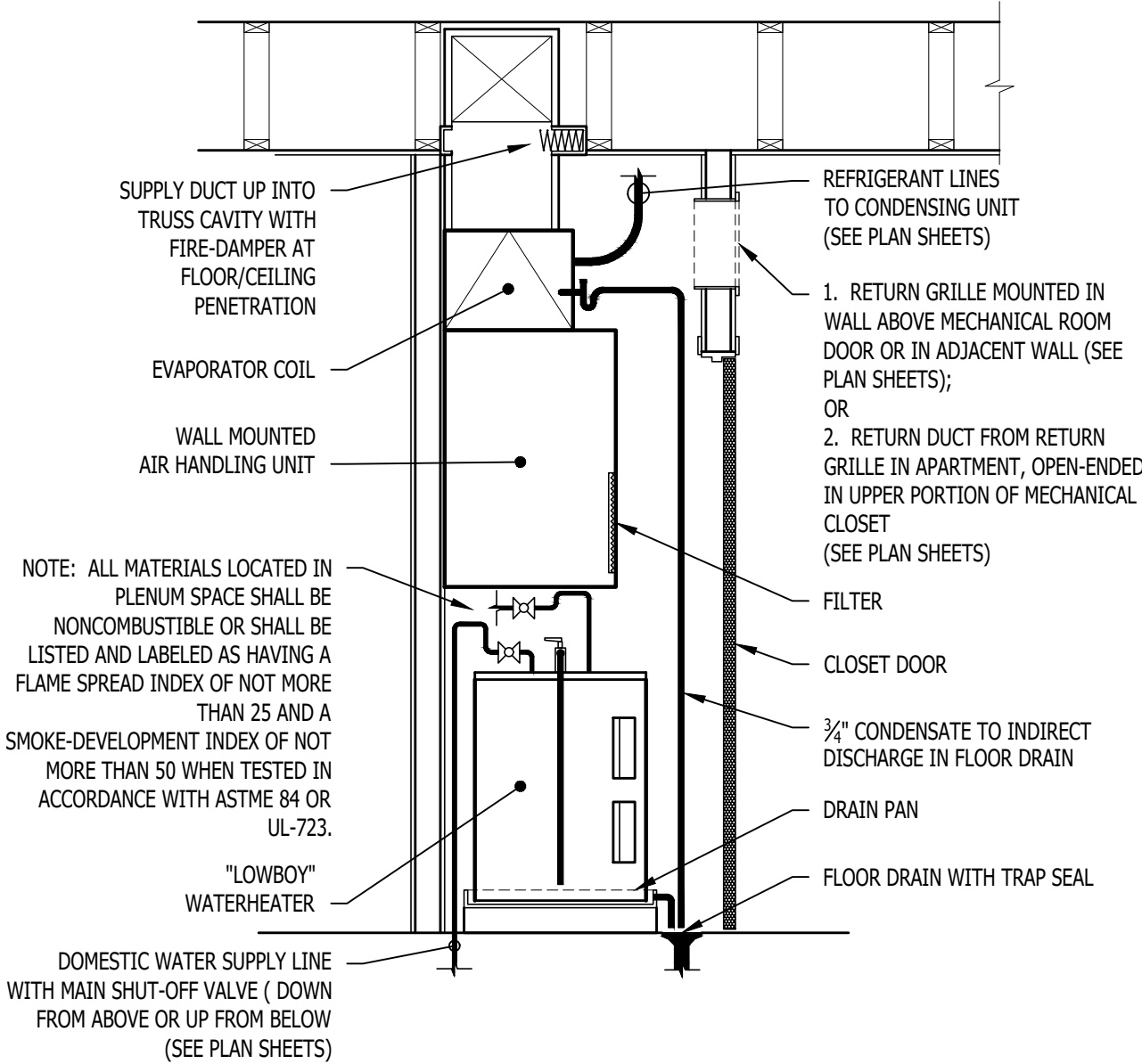
TYPICAL DUCTWORK DETAIL



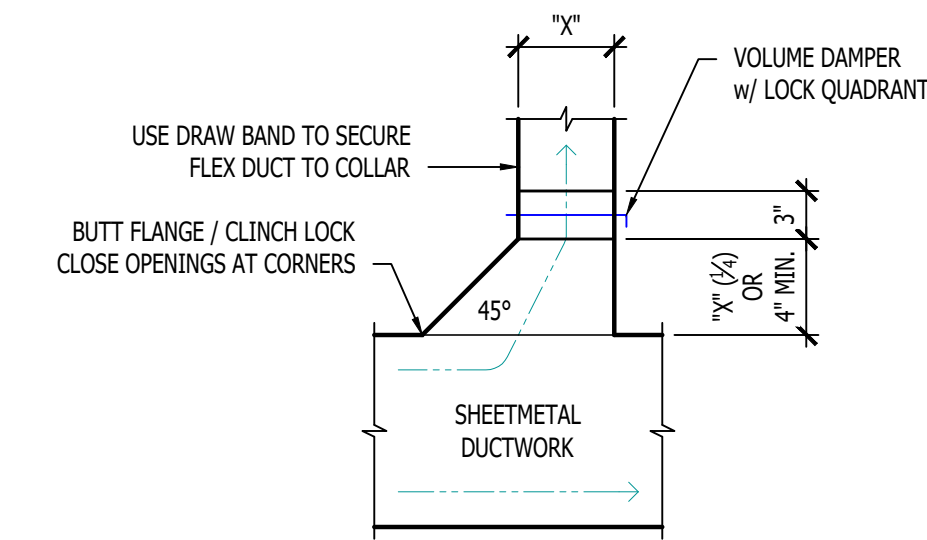
TYPICAL LAY-IN DIFFUSER DETAIL



TYPICAL DUCTWORK FITTINGS DETAIL



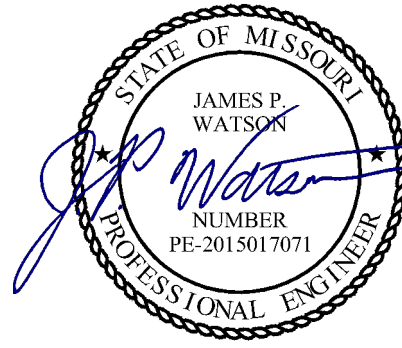
STACKED WATER HEATER / AHU DETAIL



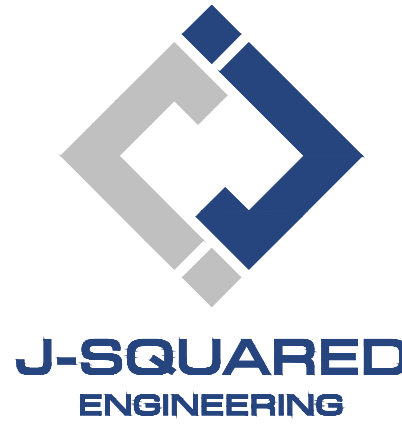
TYPICAL 45° TAKEOFF DETAIL

AIR DEVICE SCHEDULE						
TAG	SERVICE	MANUFACTURER (OR EQUAL)	MODEL (OR EQUAL)	SIZE	COLOR / FINISH	NOTES
LI	OA / EXH	POTTORFF	EFD	AS INDICATED	PRIMED	PAINT TO MATCH EXTERIOR
R1	RETURN	PRICE	530	AS INDICATED	WHITE	
S1	SUPPLY	PRICE	520	12x6	WHITE	
E1	EXHAUST	PRICE	530	AS INDICATED	WHITE	
NOTES:						
1. VERIFY AIR DEVICE FINISHES WITH OWNER/ARCHITECT PRIOR TO INSTALLATION						

SPLIT SYSTEM SCHEDULE - POOL HOUSE												
ORIENTATION	TOTAL AIRFLOW (CFM)	OA AIRFLOW MAX / MIN (CFM)	HEATING	COOLING (IA: 80 DB/67 WB, OA: 95 DB)			ELECTRICAL			NOTES		
			ELECTRIC (KW) 240V (208V)	SENSIBLE (KBTU)	TOTAL (KBTU)	MIN EFF. (SEER)	VOLTS/PH	MCA	OCP			
UPFLOW	1200	220 / 0	15 (10.8)	-	-	-	208/1	51 / 22	60 / 25	1, 2, 5		
-	-	-	-	24.5	33.6	13	208/1	19	30	3, 4		
THERMOSTAT. COORDINATE EXACT MOUNTING LOCATION WITH OWNER.												
ON/OFF SWITCH WIRED TO SHUT DOWN UNIT.												
OCCUPIED HOURS SET THRU THERMOSTAT SCHEDULE												



James Watson, P.E. April 15, 2025
PE-2015017071
MO Certificate of Authority # 2018029680



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J2 PROJECT No: J21357

J2 DESIGN: ACW

ISSUE TITLE DATE

PERMIT SET 04 - 15 - 2025

MECHANICAL - ELECTRICAL - PLUMBING DESIGN DRAWINGS FOR:

The Village at Discovery Park Alura Apartments

Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

AHJ APPROVAL STAMP

SHEET TITLE

HVAC DETAILS & SCHEDULES

SHEET NUMBER

M501

POWER PLAN GENERAL NOTES:

1. SEE E500 & E600 SERIES SHEETS FOR POWER SCHEDULES, DETAILS, REQUIREMENTS, ETC.

POWER PLAN KEY NOTES:

- ① POWER FOR ACCESS CONTROL; COORDINATE EXACT LOCATION & REQUIREMENTS WITH DOOR HARDWARE SUPPLIER/INSTALLER.
② WIRE THRU OCCUPIED HOURS TIMER.
③ WIRE DRINKING FOUNTAIN RECEPTACLE DOWNSTREAM OF GFCI RECEPTACLE SO THAT DRINKING FOUNTAIN RECEPTACLE IS GFCI PROTECTED.

POWER PLAN SYMBOL LEGEND

- CIRCUIT WIRING
→ PK-XX CIRCUIT TAG
J JUNCTION BOX
XX +42 RECEPTACLE
INDICATES MOUNTING HEIGHT TO BOTTOM OF BOX (STANDARD @ 18" AFF UNLESS NOTED OTHERWISE)
"WP" = WEATHERPROOF OUTDOOR RECEPTACLE
GFCI DUPLEX CONVENIENCE RECEPTACLE
208V RECEPTACLE
QUADPLEX CONVENIENCE RECEPTACLE
DATA / PHONE JACK; BOX WITH 1" CONDUIT & CAT6 CABLE BACK TO MEDIA PANEL LOCATION (STANDARD @ 18" AFF UNLESS NOTED OTHERWISE)
DISCONNECT
120V IONIZATION SMOKE 520Hz LOW FREQUENCY ALARM WITH SILENCING CAPABILITIES & LOW-VOLTAGE CONTACTS WIRED TO SHUT DOWN AHU UPON FIRE DETECTION. COORDINATE WITH HVAC CONTRACTOR. SMOKE DETECTOR MUST BE LOCATED AT LEAST 3' FROM CEILING FAN BLADES AND AT LEAST 10' FROM ANY COOKING APPLIANCE (FIELD-COORDINATE)

LIGHTING PLAN SYMBOL LEGEND

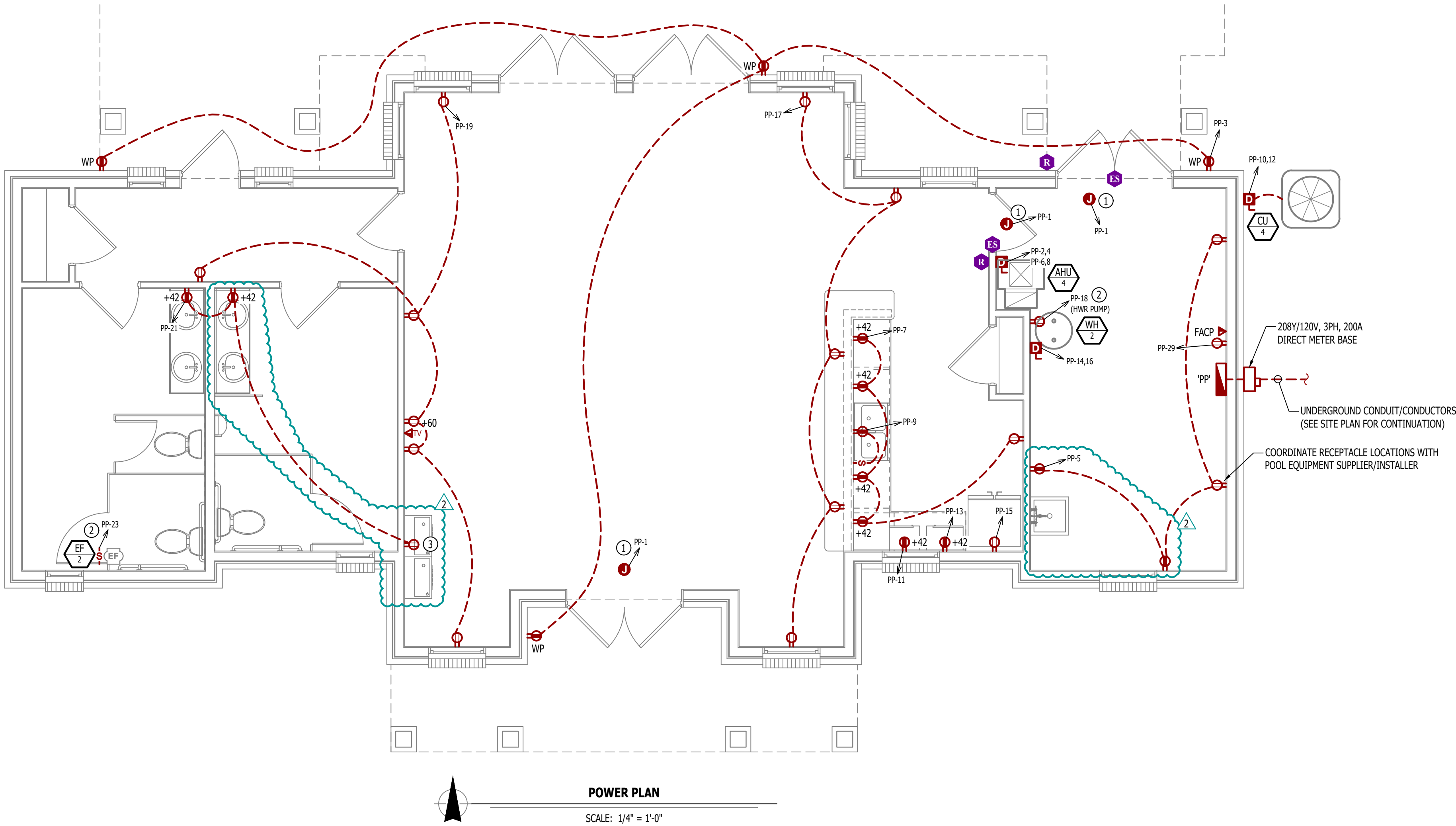
- X1 LIGHTING FIXTURE
"X1" INDICATES FIXTURE TYPE (REFER TO SCHEDULE)
S TOGGLE SWITCH
SW SWITCH TYPE
D DIMMER SWITCH

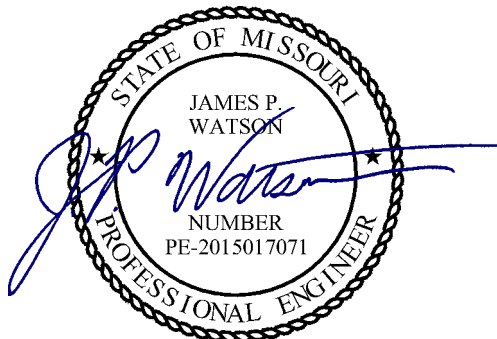
LIGHTING PLAN GENERAL NOTES:

1. SEE E500 & E600 SERIES SHEETS FOR ADDITIONAL ELECTRICAL NOTES, DETAILS, & SCHEDULES.

LIGHTING PLAN KEY NOTES:

- ① WIRE THRU EXTERIOR PHOTOCELL.





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ADDENDUM 1 05 - 16 - 2025



The Village at Discovery Park Alura Apartments

MECHANICAL - ELECTRICAL - PLUMBING DESIGN DRAWINGS FOR:

Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

AHJ APPROVAL STAMP

SHEET TITLE

ELECTRICAL DETAILS &
SCHEDULES

SHEET NUMBER

E501

POOL-HOUSE PANEL 'PP' SCHEDULE									
PANEL SPECIFICATIONS					TOTAL L CONNECTED LOAD				
VOLTAGE: 120/208V 3-PH			NEMA RATING: 1		PHASE "A" LOAD: 125.5 AMPS				
AMPACITY: 225A MCB			PANEL MOUNTING: SURFACE		PHASE "B" LOAD: 125 AMPS				
AIC-RATING: 22kA					PHASE "C" LOAD: 66 AMPS				
CIRCUIT NUMBER	DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION	CIRCUIT NUMBER	
1	ACCESS CONTROLS	20-1	3	A	51	60-2	AHU-4	2	
3	EXTERIOR RECEPTS.	20-1	6	B	51	-	-	4	
5	POOL EQUIPMENT ROOM RECEPTS.	20-1	6	C	22	25-2	AHU-4	6	
7	KITCHENETTE AREA COUNTER RECEPTS.	20-1	6	A	22	-	-	8	
9	KITCHENETTE DISPOSAL	20-1	8	B	19	30-2	CU-4	10	
11	KITCHENETTE APPLIANCE	20-1	8	C	19	-	-	12	
13	KITCHENETTE APPLIANCE	20-1	8	A	22	30-2	WATER HEATER WH-2	14	
15	KITCHENETTE APPLIANCE	20-1	8	B	22	-	-	16	
17	OPEN AREA RECEPTS.	20-1	7.5	C	1	20-1	HWR PUMP	18	
19	OPEN AREA RECEPTS.	20-1	10.5	A		20-1	SPARE	20	
21	RESTROOM RECEPTS.	20-1	3	B		20-1	SPARE	22	
23	EXHAUST FAN EF-2	20-1	1	C		20-1	SPARE	24	
25	EXTERIOR LIGHTING	20-1	3	A			OPEN	26	
27	INTERIOR LIGHTING	20-1	8	B			OPEN	28	
29	FACP	20-1	1.5	C			OPEN	30	
31	SPARE	20-1		A			OPEN	32	
33	SPARE	20-1		B			OPEN	34	
35	SPARE	20-1		C			OPEN	36	
37	SPARE	20-1		A			OPEN	38	
39	SPARE	20-1		B			OPEN	40	
41	SPARE	20-1		C			OPEN	42	

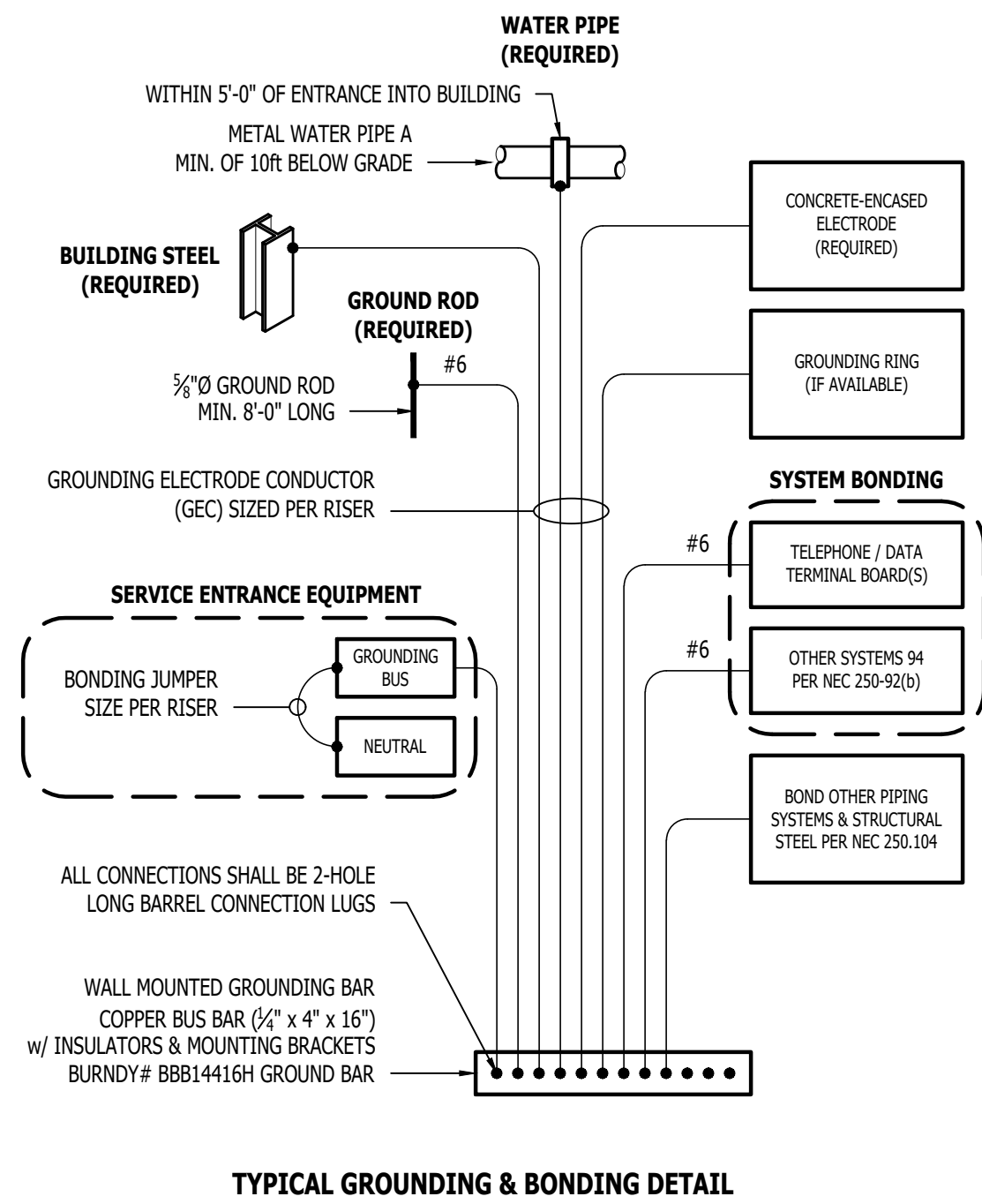
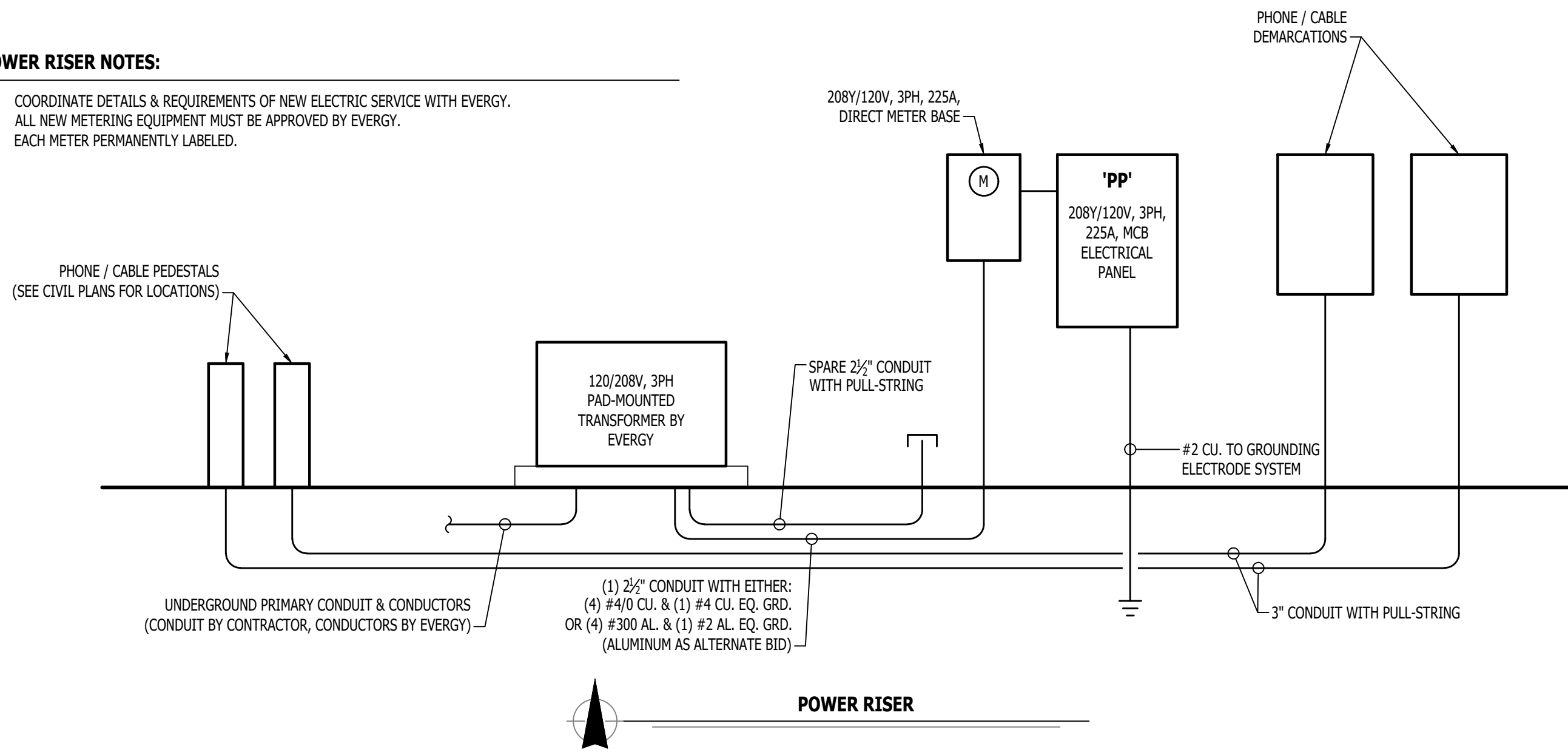
NOTES:
A: PANEL SHALL BE EQUAL TO SQUARE D MODEL "QO"
B: ELECTRICIAN SHALL VERIFY EXACT EQUIPMENT OVERCURRENT PROTECTION REQUIREMENTS PRIOR TO PURCHASE & INSTALLATION OF EQUIPMENT.
C: AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.

LIGHT FIXTURE SCHEDULE										
TAG	MANUFACTURER (OR EQUAL)	MODEL NUMBER (OR EQUAL)	DESCRIPTION	MOUNTING	LUMEN OUTPUT	CCT (*K)	CRI	VOLTS	WATTS	NOTES
C1	HALO	HLCE6129FS1E	6" LED SURFACE CAN	SURFACE / CEILING	1,200	3000	90	120	15	
C2	HALO	SLD6129S1EMW	6" LED SURFACE CAN	SURFACE / CANOPY	1,200	4000	90	120	16	WITH PAINTABLE TRIM - PAINT TO MATCH ADJACENT MATERIAL
E2	SURE LITES	APCH7RG WITH APWR2	INTERIOR EXIT LIGHT WITH EXTERIOR REMOTE HEAD	CEILING	-	-	-	120	1	WITH RED LETTERS
E3	SURE LITES	SEL50	EMERGENCY EGRESS LIGHT	INTERIOR WALL	-	-	-	120	1	
F2	-	-	CEILING FAN	SURFACE / CEILING	-	-	-	120	50 MAX	SELECTED BY OWNER
P1	ROYAL PACIFIC	4430-BN	LED PENDANT	SURFACE / CEILING	600	3000	80	120	8	
P2	-	-	DECORATIVE PENDANT	SURFACE / PENDANT	-	-	-	120	50 MAX	SELECTED BY OWNER
S1	METALLUX	4SNX-SL3-LW-UNV-CCB3-CD-1-FKO-U	4" LED STRIP	SURFACE / CEILING	4,511	4000	70	120	38	WITH 'ELL4W' EMERGENCY BATTERY BACKUP WHERE INDICATED
V1	ROYAL PACIFIC	4904-BN-4	LED VANITY	SURFACE / WALL	2,110	3000	80	120	30	
W2	TECH LIGHTING	7000WVEX9404ZUNV	UP / DOWN WALL SCONCE	EXTERIOR WALL	554	4000	90	120	19	

NOTES:
1. LIGHT FIXTURES PROVIDED BY OWNER THRU NATIONAL ACCOUNT AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. ALL FIXTURE QUANTITIES TO BE VERIFIED BY ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
3. CONTACT JUSTIN HATFIELD (573) 289-0880 (JHATFIELD@LAIWEB.NET) OR PAUL WARNER (314) 531-3500 (PWARNER@LAIWEB.NET) AT LIGHTING ASSOCIATES FOR NATIONAL ACCOUNT DETAILS.
4. CONTACT TRAVIS VOGT (417) 621-5210 (TVOGT@CED1135.COM) AT CED-PHILLIPS & COMPANY FOR NATIONAL ACCOUNT DETAILS.

POWER RISER NOTES:

- COORDINATE DETAILS & REQUIREMENTS OF NEW ELECTRIC SERVICE WITH EVERGY.
- ALL NEW METERING EQUIPMENT MUST BE APPROVED BY EVERGY.
- EACH METER PERMANENTLY LABELED.



TYPICAL GROUNDING & BONDING DETAIL

DEFERRED SUBMITTAL NOTES

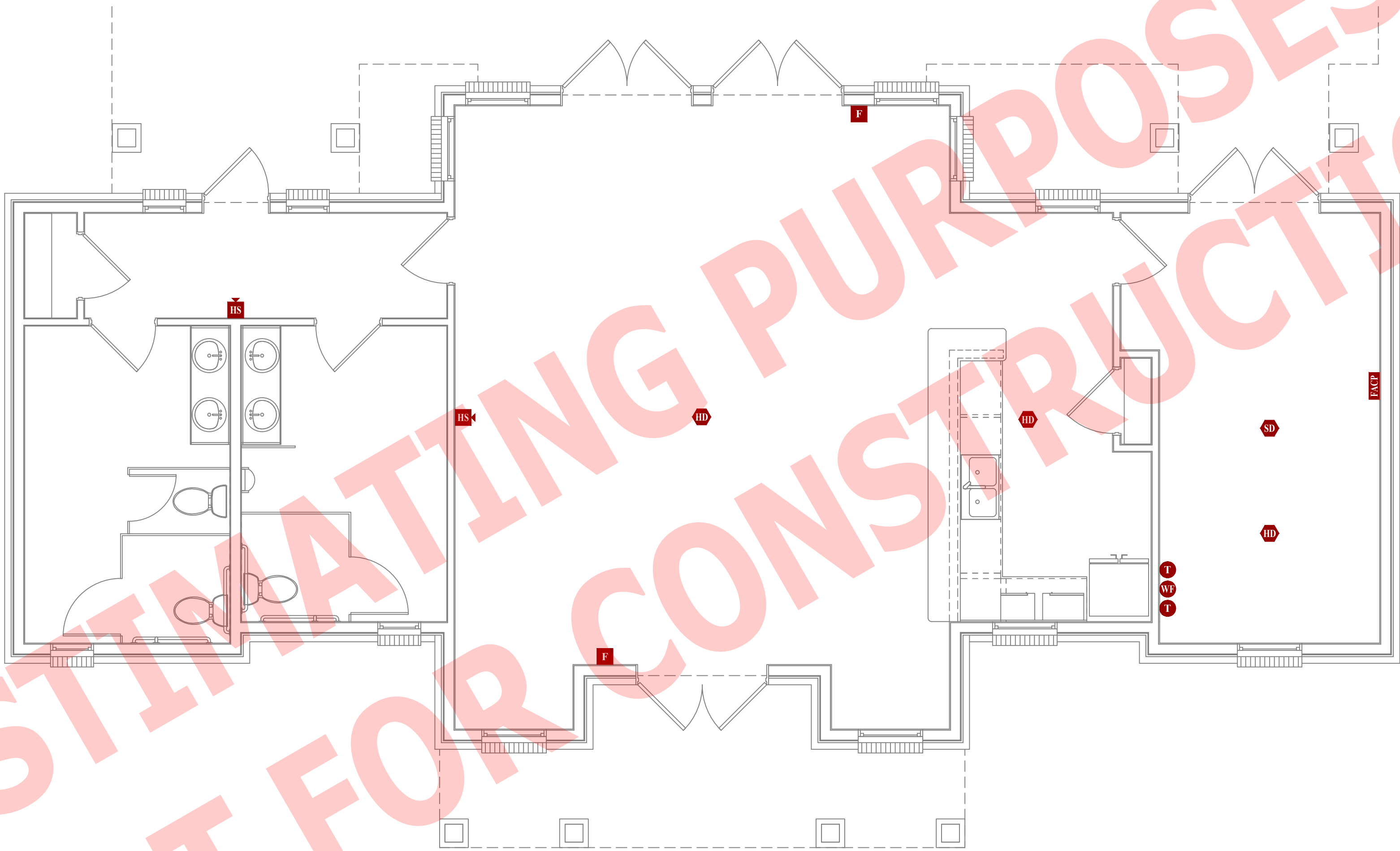
1. FIRE ALARM CONTRACTOR SHALL PROVIDE DEFERRED SUBMITTAL PACKAGE FOR FIRE ALARM SYSTEM. SUBMITTAL SHALL INCLUDE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, EQUIPMENT SPECIFICATIONS FOR DEVICES AND PANELS, ETC. DESIGN SHALL BE SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.
2. FIRE ALARM SYSTEM COMPONENTS SHOWN (IF APPLICABLE) ARE GENERAL AND SCHEMATIC IN NATURE, SHOWN FOR APPROXIMATE ROUGH-IN LOCATIONS AND QUANTITIES ONLY. CONTRACTOR TO VERIFY EXACT DEVICE LOCATIONS AND REQUIREMENTS WITH FIRE ALARM SYSTEM DESIGNER OF RECORD PRIOR TO ROUGH-IN.

FIRE ALARM SYSTEM SPECIFICATIONS

1. FIRE ALARM SYSTEM SHALL BE AN ADDRESSABLE SYSTEM THAT IS NONCODED, UL-LISTED, WITH MULTIPLEX SIGNAL TRANSMISSION AND HORN/STROBE EVACUATION.
2. EVERY FIRE ALARM SYSTEM COMPONENT SHALL BE UL-LISTED AND UL-CERTIFIED, TESTED BY MANUFACTURERS AS A COMPLETE SYSTEM, AND MEET ALL APPLICABLE REQUIREMENTS OF NFPA 72.
3. ALL FIRE ALARM WIRING TO BE PLENUM RATED.
4. ALL INITIATING DEVICES INSTALLED IN UNCONDITIONED SPACES SHALL BE CONVENTIONAL DEVICES SUITABLE FOR USE IN EXTREME HIGH AND LOW TEMPERATURES AND HIGH HUMIDITY. SUCH DEVICES SHALL BE SUPERVISED BY ADDRESSABLE MONITOR MODULES LOCATED IN CONDITIONED SPACES.
5. QUANTITIES, TYPES, AND LOCATIONS OF INITIATING DEVICES AND OUTPUT MODULES FOR INTERCONNECTION WITH FIRE SUPPRESSION MUST BE COORDINATED WITH CONTRACTORS THAT ARE RESPONSIBLE FOR THOSE SYSTEMS.

FIRE ALARM PLAN SYMBOL LEGEND

- | | |
|-------------|--------------------------------|
| F | MANUAL PULL STATION |
| M | MODULE |
| O | OUTPUT MODULE |
| SD | SMOKE DETECTOR |
| HD | HEAT DETECTOR |
| CO | CARBON MONOXIDE DETECTOR |
| S | STROBE - CEILING MOUNT |
| WS | STROBE - WALL MOUNT |
| HS | HORN STROBE - WALL MOUNT |
| CS | HORN STROBE - CEILING MOUNT |
| SS | SPEAKER STROBE - WALL MOUNT |
| CS | SPEAKER STROBE - CEILING MOUNT |
| T | TAMPER SWITCH |
| WF | WATER FLOW SWITCH |
| FACP | FIRE ALARM CONTROL PANEL |
| ANN | FIRE ALARM ANNUNCIATOR |



POWER PLAN

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

FOR ESTIMATING PURPOSES ONLY.
NOT FOR CONSTRUCTION.

James Watson, P.E. April 15, 2025
PE-2015017071
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J2 DESIGN: ACW

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The Village at Discovery Park Alura Apartments

Northeast Douglas Street
Lee's Summit, Jackson County, Missouri

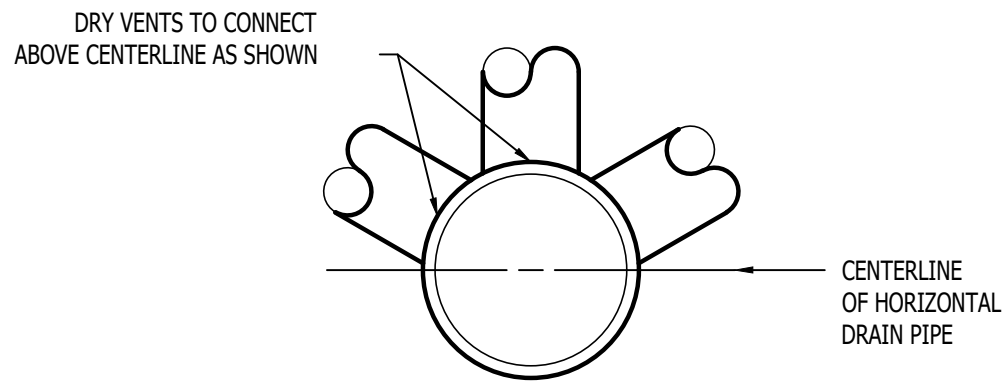
AHJ APPROVAL STAMP

SHEET TITLE

FIRE PROTECTION PLAN

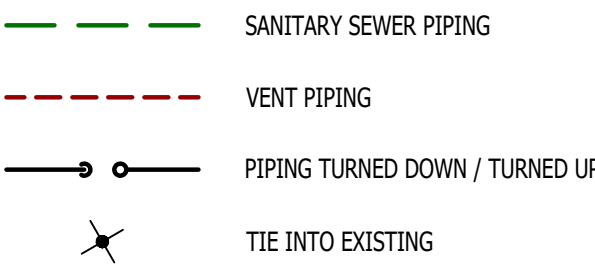
SHEET NUMBER

FP101



DRY VENT DETAIL

SANITARY SEWER PLAN SYMBOL LEGEND



SANITARY SEWER PLAN GENERAL NOTES:

- REFER TO P500 AND/OR P600 SERIES SHEETS FOR ADDITIONAL PLUMBING NOTES, DETAILS, REQUIREMENTS, AND SCHEDULES.
- PLUMBING CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS AND COORDINATE LOCATION OF ALL EQUIPMENT, PIPING, HANGERS / SUPPORTS, ETC. WITH HVAC AND ELECTRICAL TRADES BEFORE INSTALLATION OF ANY MATERIAL. ADDITIONAL COSTS ASSOCIATED WITH LACK OF COORDINATION WILL NOT BE REIMBURSED.

PLUMBING CONNECTION SIZING SCHEDULE

FIXTURE	TYPE	TYPICAL ABBREVIATION	SANITARY PIPING		SUPPLY PIPING	
			WASTE CONNECTION	VENT CONNECTION	COLD WATER CONNECTION	HOT WATER CONNECTION
DRINKING FOUNTAIN	DF	DF	1-1/2"	1-1/4"	1/2"	-
FLOOR DRAIN	FD	FD	3"	2"	-	-
HAND / HAIR SINK	HS / SK	HS / SK	2"	1-1/4"	1/2"	1/2"
HOSE BIBB	HB	HB	-	-	3/4"	-
LAVATORY	LAV	LAV	1-1/2"	1-1/4"	1/2"	1/2"
MOP SINK	MS	MS	3"	1-1/2"	1/2"	1/2"
ICE MAKER OUTLET BOX	REF	REF	-	-	1/2"	-
SHOWER	SH	SH	3"	1-1/2"	1/2"	1/2"
URINAL	UR	UR	2"	1-1/4"	3/4"	-
WATER CLOSET (FLUSH TANK)	WC	WC	3"	2"	1/2"	-
WATER CLOSET (FLUSH VALVE)	WC	WC	3"	2"	1"	-

NOTES:

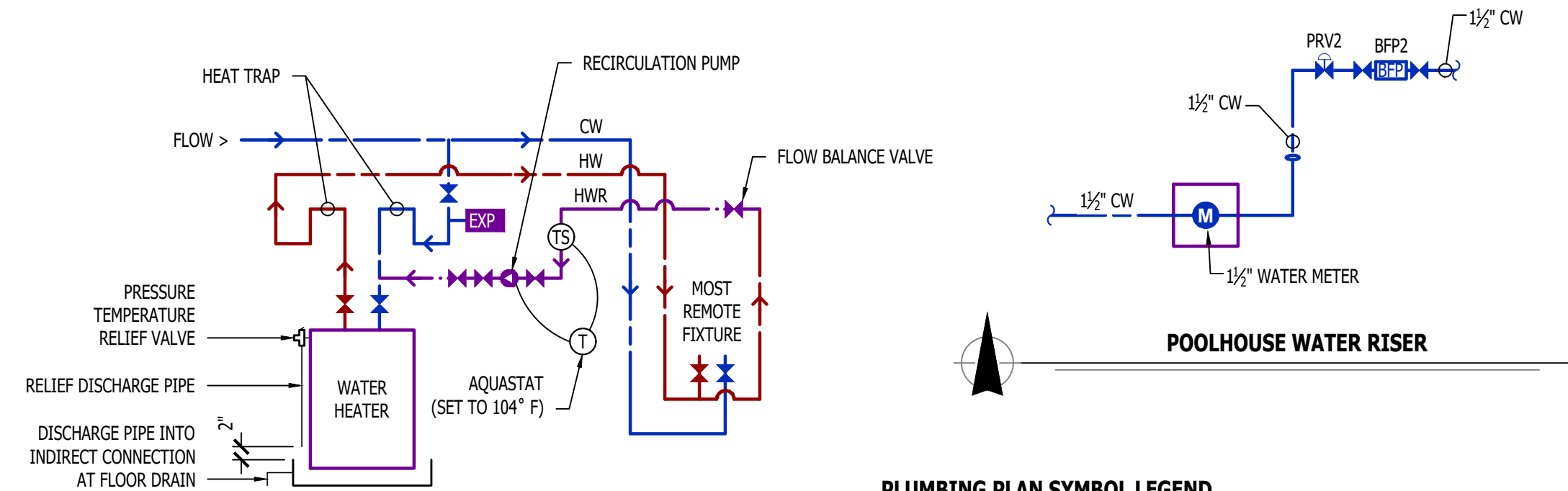
- SIZES SHOWN ABOVE ARE TYPICAL UNLESS NOTED OTHERWISE ON PLANS

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER (OR EQUAL)	MODEL (OR EQUAL)	NOTES
BFP2	BACKFLOW PREVENTER	WILKINS	975XL2	RP2 - 3/4"
DF1	DRINKING FOUNTAIN	ELKAY	EZ5TL8LC	HI/LOW
EXP2	EXPANSION TANK	WATTS	PLT-5	
FCO1	FLOOR CLEAN OUT	ZURN	Z1400	
FD1	FLOOR DRAIN	ZURN	Z415-BZ	WITH Z1072 TRAP SEAL
FPHB1	FROST PROOF HOSE BIB	WOODFORD	MODEL 67	
FS1	FLOOR SINK	ZURN	FD2370	
LAV2	LAVATORY (DROP-IN W/ MANUAL FAUCET)	AMERICAN STANDARD	0475.028	WITH ZURN Z81104-XL FAUCET, 1/4 TURN STOPS, BRAIDED STAINLESS STEEL SUPPLIES, & 'TMV1'
MS1	MOP SINK	FIAT	MSB2424	WITH ZURN Z843M1 FAUCET WITH WALL HOOK
PRV2	PRESSURE REDUCING VALVE	ZURN	600XL	1-1/2"
REF1	REFRIGERATOR BOX	SIOUX CHIEF	696-G1000	
RP1	RECIRCULATION PUMP	GRUNDFOS	UP10-16 AUTO	
SK2	DOUBLE COMPARTMENT SINK W/DISPOSAL (33x22x7)	ELKAY	CR3322	WITH TWO HANDLED ZURN Z871C4-XL FAUCET AND INSINKERATOR BADGER 1 DISPOSAL WITH POWER CORD
TMV1	THERMOSTATIC MIXING VALVE - POINT OF USE	WATTS	LFUSG	
UR1	URINAL - MANUAL FLUSH	AMERICAN STANDARD	6550.001	WITH ZURN Z6003AV-WS1 MANUAL FLUSH VALVE (1.0 GPM/FLUSH)
WC1	WATER CLOSET - STANDARD HEIGHT - TANK	AMERICAN STANDARD	215CA.004	WITH CHURCH 7200SLEC SEAT AND COVER, STAINLESS BRAIDED SUPPLY, AND 1/4 TURN SHUT-OFF.
WC2	WATER CLOSET - ADA HEIGHT - TANK	AMERICAN STANDARD	215AA.004	WITH CHURCH 7200SLEC SEAT AND COVER, STAINLESS BRAIDED SUPPLY, AND 1/4 TURN SHUT-OFF.
WCO1	WALL CLEAN OUT			
WH1	WATER HEATER - ELECTRIC - LOWBOY	AO SMITH	ECLB-40	38 GALLON, 208V 1PH, 4500W; WITH 'EXP1'
YCO1	YARD CLEAN OUT	ZURN	Z1400	

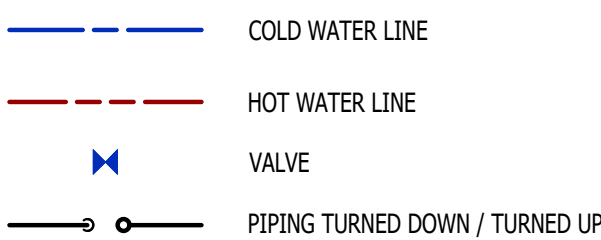
NOTES:

- VERIFY NECESSARY FIXTURES MEET ADA REQUIREMENTS WITH ARCHITECT PRIOR TO INSTALLATION



HOT WATER RECIRCULATION DETAIL

PLUMBING PLAN SYMBOL LEGEND

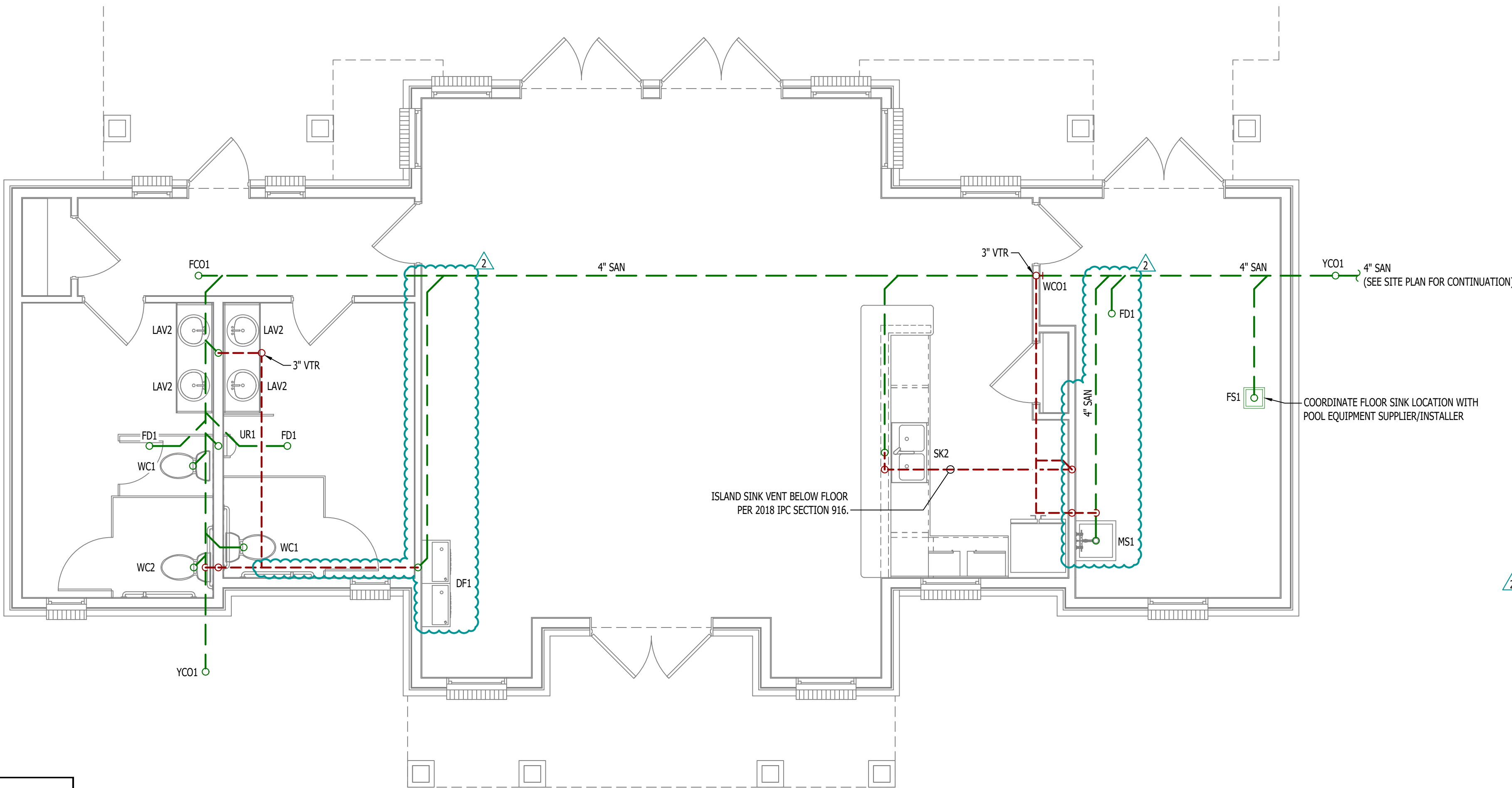


WATER PLAN GENERAL NOTES:

- SEE P500 &/OR P600 SERIES SHEETS FOR ADDITIONAL PLUMBING NOTES, DETAILS, & SCHEDULES.
- ALL PLUMBING LOCATED ON EXTERIOR WALLS SHALL ROUTE WITHIN INSULATION BARRIER.
- ALL DOMESTIC SUPPLY LINES SERVING MORE THAN (1) FIXTURE SHALL BE 3/4" UNLESS NOTED OTHERWISE.

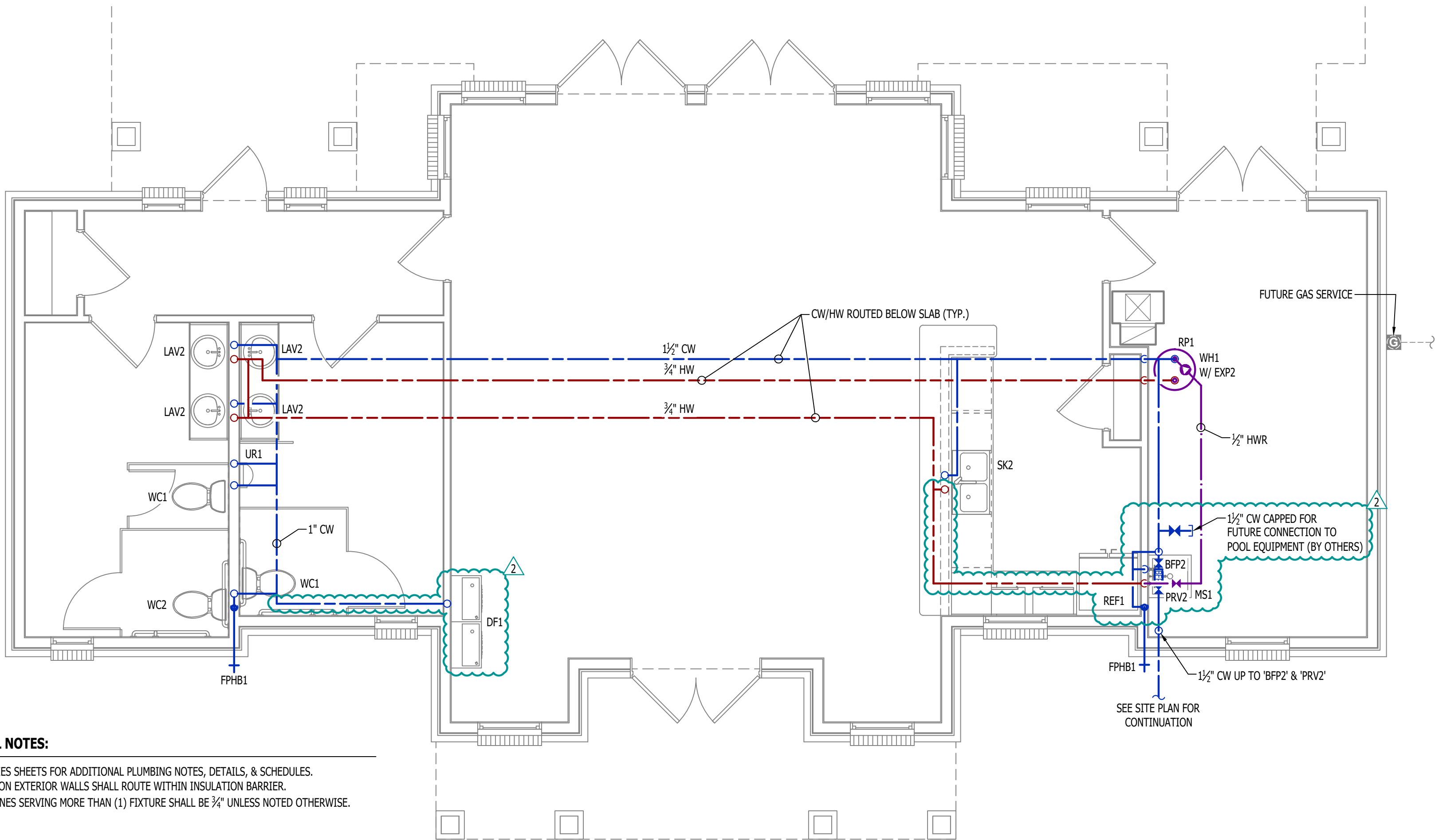
WATER PLAN KEY NOTES:

- 1" CW PIPE UP FROM BELOW WITH SHUT-OFF VALVE IN ACCESSIBLE LOCATION. SEE OVERALL PLUMBING PLANS FOR DETAILS.



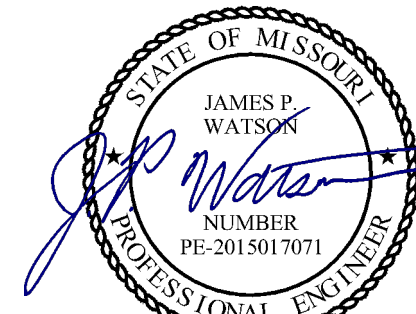
SANITARY SEWER PLAN

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

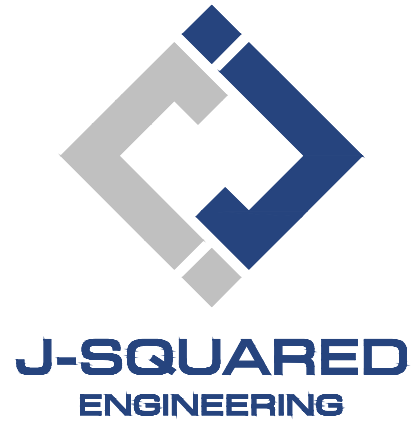


WATER PLAN

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



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HAJ APPROVAL STAMP

SHEET TITLE

PLUMBING PLAN

SHEET NUMBER

P101